

# Contents

## Volume 1

Chapter 1	Introduction
Chapter 2	Site Selection and Design
Chapter 3	Proposed Development
Chapter 4	Approach to EIA
Chapter 5	Planning and Energy Policy Context
Chapter 6	Landscape & Visual
Chapter 7	Ecology & Nature Conservation
Chapter 8	Ornithology
Chapter 9	Noise & Vibration
Chapter 10	Archaeology and Cultural Heritage
Chapter 11	Hydrology, Hydrogeology and Geology
Chapter 12	Traffic and Transport
Chapter 13	Socio-Economics, Tourism and Recreation
Chapter 14	Aviation, Radar and Telecommunications
Chapter 15	Shadow Flicker
Chapter 16	Forestry
Chapter 17	Summary of Cumulative Effects
Chapter 18	Schedule of Environmental Commitments
Chapter 19	Summary of Residual Effects

## Volume 2

### Figures 1 - Introduction

Figure 1.1	Site Location Plan
Figure 1.2	Hagshaw Wind Cluster Context
Figure 1.3	Other Wind Farms within 10 km

### Figures 2 - Site Selection and Design

Figure 2.1	Layout A Initial Layout
Figure 2.2	Layout B
Figure 2.3	Layout C
Figure 2.4	Layout D
Figure 2.5	Layout E

### Figures 3 - Proposed Development

Figure 3.1	Site Layout
Figure 3.2	Site Layout - Aerial
Figure 3.3	Environmental Designations

Figure 3.4	Developments within 5 km
Figure 3.5	Typical Turbine Elevation
Figure 3.6	Typical Turbine Foundation Design
Figure 3.7	Typical Crane Hardstanding Detail
Figure 3.8	Route to Site
Figure 3.9	Typical Access Track Cross-Section
Figure 3.10	Existing and New Access Tracks
Figure 3.11	Substation Elevation and Battery Storage Facility Elevation
Figure 3.12	Meteorological Monitoring Mast
Figure 3.13	Construction Compound
Figure 3.14	Core Paths and Wider Path Network

### **Figures 6 - Landscape and Visual**

Figure 6.1	Site Location and LVIA Study Area
Figure 6.2	Blade Tip ZTV up to 35 km
Figure 6.3	Blade Tip ZTV up to 20 km
Figure 6.4	Landscape Designations within 35 km
Figure 6.5	Landscape Designations within 20 km
Figure 6.6	Blade Tip ZTV up to 20 km with Landscape Designations
Figure 6.7	Landscape Character Types within 35 km
Figure 6.8	Landscape Character Types within 20 km
Figure 6.9	Blade Tip ZTV up to 15 km with Landscape Character Types
Figure 6.10	Topography within 35 km Study Area
Figure 6.11	Local Landscape Character Context within 5 km
Figure 6.12	Principal Visitor Receptors to 35 km
Figure 6.13	Blade Tip ZTV up to 35 km with Principal Visual Receptors
Figure 6.14	Blade Tip ZTV up to 35 km with Viewpoints
Figure 6.15	Blade Tip ZTV to 35km (NE Quadrant)
Figure 6.16	Blade Tip ZTV to 35km (SE Quadrant)
Figure 6.17	Blade Tip ZTV to 35km (SW Quadrant)
Figure 6.18	Blade Tip ZTV to 35km (NW Quadrant)
Figure 6.19	Hub Height ZTV to 35 km
Figure 6.20	Hub Height ZTV to 20 km
Figure 6.21	Hub Height ZTV to 35km (NE Quadrant)
Figure 6.22	Hub Height ZTV to 35km (SE Quadrant)
Figure 6.23	Hub Height ZTV to 35km (SW Quadrant)
Figure 6.24	Hub Height ZTV to 35km (NW Quadrant)
Figure 6.25	Other Wind Farms 35 km
Figure 6.26	Other Wind Farms 15 km
Figure 6.27	Cumulative ZTV with Nutberry, Galawhistle, Hagshaw Hill, Hagshaw Hill Extension and Hazelside Farm

Figure 6.28	Cumulative ZTV with Auchrbert, Kype Muir, Dungavel and Bankend Rig
Figure 6.29	Cumulative ZTV with Birkhill, Auchren Farm, JJ Farm Turbine, Nether Fauldhouse, Letham Farm, Low Whistleside Farm, Yonderton Farm, Lochhead and Eastertown
Figure 6.30	Cumulative ZTV with Middlemuir and Andershaw
Figure 6.31	Cumulative ZTV with Cumberhead, Dalquhandy, Douglas West and Hagshaw Hill Repowered
Figure 6.32	Cumulative ZTV with Broken Cross, Broken Cross Small Turbines and M74 Eco Park
Figure 6.33	Cumulative ZTV with Kype Muir Extension and Bankend Rig II
Figure 6.34	Cumulative ZTV with Penbreck and Kennoxhead
Figure 6.35	Cumulative ZTV with Douglas West Extension and Hare Craig
Figure 6.36	Cumulative ZTV with Glentaggart and Kennoxhead Extension

### **Figures 7 - Ecology**

Figure 7.1	Ecological Designated Sites within 5km
Figure 7.2	Carbon and Peatland Map (2016)
Figure 7.3a-e	NVC & Habitats Study Area and Survey Results
Figure 7.4a-e	Potential GWDTE Study Area and Survey Results
Figure 7.5A	Protected Species Survey Results
Figure 7.6	Desk Study Results
Figure 7.7	Bats Study Area
Figure 7.8	Preliminary Bat Roost Assessment Results
Figure 7.9	Overall Median Risk Assessment (June, July, August, September) for Common Pipistrelle
Figure 7.10	Overall Median Risk Assessment (June, July, August, September) for Soprano Pipistrelle
Figure 7.11	Overall Median Risk Assessment (June, July, August, September) for Nyctalus Spp.
Figure 7.12	Fish Habitat Survey Results 2019
Figure 7.13	Outline Habitat Management Plan: Management Areas

### **Figures 8 - Ornithology**

Figure 8.1	Ornithological Designated Sites within 20km
Figure 8.2	Wind Farm Projects within 2km
Figure 8.3	Site Boundary and Study Area
Figure 8.4	Flight Activity Surveys Vantage Points and Viewsheds
Figure 8.5	Raptor Flight Activity: 2019 Breeding Season and Non-Breeding Season 2019/2020
Figure 8.6	Golden Plover, Herring Gull and Pink Footed Goose Flight Activity: Breeding Season 2019 and Non-Breeding Season 2019/2020
Figure 8.7	Wader Activity: Breeding Season 2019 and Non-Breeding Season 2019/2020
Figure 8.8	Black Grouse Historic Records

### **Figure 9 - Noise and Vibration**

Figure 9.1	Noise Sensitive Receptors Locations
------------	-------------------------------------

### **Figures 10 - Cultural Heritage**

Figure 10.1	Inner Study Area
-------------	------------------

Figure 10.2	Outer Study Area
Figure 10.3	Cumulative Schemes
Figure 10.4	Wireline Image - Dungavel Hill, Cairn
Figure 10.5	Wireline Image - Black Hill, Fort and Cairn
Figure 10.6	Wireline Image - New Lanark World Heritage Site
Figure 10.7	Wireline Image - Corra Linn, Bonnington Pavillion

### **Figures 11 - Hydrology, Hydrogeology and Geology**

Figure 11.1	Hydrology Study Area
Figure 11.2	Watercourses and Waterbodies
Figure 11.3	Solid Geology
Figure 11.4	Superficial Geology
Figure 11.5a	Peat Survey Results Overview
Figure 11.5b	Peat Survey Results South and West
Figure 11.5c	Peat Survey Results Centre and North
Figure 11.5d	Peat Survey Results East
Figure 11.6	Potential GWDTE

### **Figure 12 - Traffic and Transport**

Figure 12.1	Traffic Count Locations
-------------	-------------------------

### **Figure 15 - Shadow Flicker**

Figure 15.1	Shadow Flicker Study Area
Figure 15.2	Shadow Flicker Map
Figure 15.3	Cumulative Study Area
Figure 15.4	Cumulative Map

### **Figures 16 - Forestry**

Figure 16.1	Baseline Felling Plan
Figure 16.2	Baseline Replanting Plan
Figure 16.3	Wind Farm Felling Phase Plan
Figure 16.4	Wind Farm Replanting Plan
Figure 16.5	Development Area Felling Plan
Figure 16.6	Compensatory Planting Plan

## **Volume 3**

### **Appendices 3 - Proposed Development**

Appendix 3.1	Outline CEMP
Appendix 3.2	Carbon Calculator Input and Output

Appendix 3.3 New Access Track

#### **Appendices 4 - Approach to EIA**

Appendix 4.1 EIA Scoping Report  
Appendix 4.2 Scottish Government's Scoping Opinion  
Appendix 4.3 Further EIA Consultation  
Appendix 4.4 Section 36 Gatecheck Report

#### **Appendices 6- Landscape and Visual**

Appendix 6.1 LVIA Assessment Criteria  
Appendix 6.2 Information to be Read in Conjunction with Visualisations  
Appendix 6.3 Viewpoint Assessment  
Appendix 6.4 Visible Assessment of Turbine Lighting

##### ***Lighting Assessment Visualisations (Appendix 6.4)***

*Figure 1a-d Viewpoint 1 - Coalburn, Muirburn Place*

*Figure 2a-d Viewpoint 4 - Minor Road, Brackenridge*

*Figure 3a-d Viewpoint 13 - Victory Park, Muirkirk*

Appendix 6.5 Residential Visual Amenity Assessment

#### **Appendices 7 - Ecology and Nature Conservation**

Appendix 7.1 NVC Survey  
Appendix 7.2 Protected Species Report  
Appendix 7.3 Bat Report  
Appendix 7.4 Fish Habitat Survey Report  
Appendix 7.5 Outline Habitat Management Plan  
Appendix 7.6 Ecology Scoping Report

#### **Appendix 8 - Ornithology**

Appendix 8.1 Ornithology Technical Report  
Appendix 8.2 Ornithology Scoping Report  
Appendix 8.3 Habitat Regulations Appraisal

#### **Appendices 9 - Noise and Vibration**

Appendix 9.1 Photographs of Background Noise Survey Locations  
Appendix 9.2 Background Noise Time Histories  
Appendix 9.3 Scatter Plots  
Appendix 9.4 Wind Direction During Surveys  
Appendix 9.5 Predicted Noise Immission Levels

- Appendix 9.6 Cumulative Developments
- Appendix 9.7 Turbine Noise Data

### **Appendix 10 - Cultural Heritage**

- Appendix 10.1 Gazetteer of Heritage Assets within the Inner Study Area
- Appendix 10.2 Gazetteer of Heritage Assets within the Outer Study Area within 5 km
- Appendix 10.3 Gazetteer of Heritage Assets within the Outer Study Area 5 km to 10 km
- Appendix 10.4 Gazetteer of Heritage Assets outside the Outer Study Area

### **Appendices 11 - Hydrology, Hydrogeology and Geology**

- Appendix 11.1 Peat Slide Risk Assessment
- Appendix 11.2 Outline Peat Management Plan
- Appendix 11.3 Watercourse Crossing Schedule

### **Appendix 12 - Traffic and Transport**

- Appendix 12.1 Swept Path Analysis

### **Appendix 15 - Shadow Flicker**

- Appendix 15.1 Meteorological Data
- Appendix 15.2 Shadow Flicker Graphs

## **Volume 4**

### **Viewpoint Visualisations**

- Figure 6.37a Viewpoint 1 – Coalburn, Muirburn Place (Baseline Photo and Future Baseline Photo)
- Figure 6.37b Viewpoint 1 – Coalburn, Muirburn Place (Future Baseline Photo and Cumulative Wireline)
- Figure 6.37c Viewpoint 1 – Coalburn, Muirburn Place (Wireline)
- Figure 6.37d Viewpoint 1 – Coalburn, Muirburn Place (Cumulative Photomontage)
- Figure 6.38a Viewpoint 2 – M74 Overbridge (Baseline Photo and Future Baseline Photo)
- Figure 6.38b Viewpoint 2 – M74 Overbridge (Future Baseline Photo and Cumulative Wireline)
- Figure 6.38c Viewpoint 2 – M74 Overbridge (Wireline)
- Figure 6.38d Viewpoint 2 – M74 Overbridge (Cumulative Photomontage)
- Figure 6.39a Viewpoint 3 – Lesmahagow, Hillcrest (Baseline Photo and Future Baseline Photo)
- Figure 6.39b Viewpoint 3 – Lesmahagow, Hillcrest (Future Baseline Photo and Cumulative Wireline)
- Figure 6.39c Viewpoint 3 – Lesmahagow, Hillcrest Castle (Wireline)
- Figure 6.39d Viewpoint 3 – Lesmahagow, Hillcrest Castle (Cumulative Photomontage)
- Figure 6.40a Viewpoint 4 – Minor Road, Brackenridge (Baseline Photo and Future Baseline Photo)
- Figure 6.40b Viewpoint 4 - Minor Road, Brackenridge (Future Baseline Photo and Cumulative Wireline)
- Figure 6.40c Viewpoint 4 – Minor Road, Brackenridge (Wireline)
- Figure 6.40d Viewpoint 4 – Minor Road, Brackenridge (Cumulative Photomontage)

Figure 6.41a	Viewpoint 5 – Sandford, School Road (Baseline Photo and Future Baseline Photo)
Figure 6.41b	Viewpoint 5 – Sandford, School Road (Future Baseline Photo and Cumulative Wireline)
Figure 6.41c	Viewpoint 5 – Sandford, School Road (Wireline)
Figure 6.41d	Viewpoint 5 – Sandford, School Road (Cumulative Photomontage)
Figure 6.42a	Viewpoint 6 – Strathhaven War Memorial (Baseline Photo and Future Baseline Photo)
Figure 6.42b	Viewpoint 6 – Strathhaven War Memorial (Future Baseline Photo and Cumulative Wireline)
Figure 6.42c	Viewpoint 6 – Strathhaven War Memorial (Wireline)
Figure 6.42d	Viewpoint 6 – Strathhaven War Memorial (Cumulative Photomontage)
Figure 6.43a	Viewpoint 7 – A71, Bridge Crossing Calder Water (Baseline Photo and Future Baseline Photo)
Figure 6.43b	Viewpoint 7 – A71, Bridge Crossing Calder Water (Future Baseline Photo and Cumulative Wireline)
Figure 6.43c	Viewpoint 7 – A71, Bridge Crossing Calder Water (Wireline)
Figure 6.43d	Viewpoint 7 – A71, Bridge Crossing Calder Water (Cumulative Photomontage)
Figure 6.44a	Viewpoint 8 – Black Hill (Baseline Photo and Future Baseline Photo)
Figure 6.44b	Viewpoint 8 – Black Hill (Future Baseline Photo and Cumulative Wireline)
Figure 6.44c	Viewpoint 8 – Black Hill (Wireline)
Figure 6.44d	Viewpoint 8 – Black Hill (Cumulative Photomontage)
Figure 6.45a	Viewpoint 9 – A70 Rigside (Baseline Photo and Future Baseline Photo)
Figure 6.45b	Viewpoint 9 – A70 Rigside (Future Baseline Photo and Cumulative Wireline)
Figure 6.45c	Viewpoint 9 – A70 Rigside (Wireline)
Figure 6.45d	Viewpoint 9 – A70 Rigside (Cumulative Photomontage)
Figure 6.46a	Viewpoint 10 – Tinto Hill (Baseline Photo and Future Baseline Photo)
Figure 6.46b	Viewpoint 10 – Tinto Hill (Future Baseline Photo and Cumulative Wireline)
Figure 6.46c	Viewpoint 10 – Tinto Hill (Wireline)
Figure 6.46d	Viewpoint 10 – Tinto Hill (Cumulative Photomontage)
Figure 6.47a	Viewpoint 11 – Douglas, Hill Street (Baseline Photograph and Future Baseline Photograph)
Figure 6.47b	Viewpoint 11 – Douglas, Hill Street (Future Baseline Photo and Cumulative Wireline)
Figure 6.47c	Viewpoint 11 – Douglas, Hill Street (Wireline)
Figure 6.47d	Viewpoint 11 – Douglas, Hill Street (Cumulative Photomontage)
Figure 6.48a	Viewpoint 12 – Auchensaugh Hill (Baseline Photo and Future Baseline Photo)
Figure 6.48b	Viewpoint 12 – Auchensaugh Hill (Future Baseline Photo and Cumulative Wireline)
Figure 6.48c	Viewpoint 12 – Auchensaugh Hill (Wireline)
Figure 6.48d	Viewpoint 12 – Auchensaugh Hill (Cumulative Photomontage)
Figure 6.49a	Viewpoint 13 – Victory Park, Muirkirk (Baseline Photo and Future Baseline Photo)
Figure 6.49b	Viewpoint 13 – Victory Park, Muirkirk (Future Baseline Photo and Cumulative Wireline)
Figure 6.49c	Viewpoint 13 – Victory Park, Muirkirk (Wireline)
Figure 6.49d	Viewpoint 13 – Victory Park, Muirkirk (Cumulative Photomontage)
Figure 6.50a	Viewpoint 14 – Nether Wellwood A70 (Baseline Photo and Future Baseline Photo)
Figure 6.50b	Viewpoint 14 – Nether Wellwood A70 (Future Baseline Photo and Cumulative Wireline)
Figure 6.50c	Viewpoint 14 – Nether Wellwood A70 (Wireline)
Figure 6.50d	Viewpoint 14 – Nether Wellwood A70 (Cumulative Photomontage)

Figure 6.51a	Viewpoint 15 – Cairn Table (Baseline Photo and Future Baseline Photo)
Figure 6.51b	Viewpoint 15 – Cairn Table (Future Baseline Photo and Cumulative Wireline)
Figure 6.51c	Viewpoint 15 – Cairn Table (Wireline)
Figure 6.51d	Viewpoint 15 – Cairn Table (Cumulative Photomontage)
Figure 6.52a	Viewpoint 16 – Cairn Kinney (Baseline Photo and Future Baseline Photo)
Figure 6.52b	Viewpoint 16 – Cairn Kinney (Future Baseline Photo and Cumulative Wireline)
Figure 6.52c	Viewpoint 16 – Cairn Kinney (Wireline)
Figure 6.52d	Viewpoint 16 – Cairn Kinney (Cumulative Photomontage)
Figure 6.53a	Viewpoint 17 – Hyndford Bridge (Baseline Photo and Future Baseline Photo)
Figure 6.53b	Viewpoint 17 – Hyndford Bridge (Future Baseline Photo and Cumulative Wireline)
Figure 6.53c	Viewpoint 17 – Hyndford Bridge (Wireline)
Figure 6.53d	Viewpoint 17 – Hyndford Bridge (Cumulative Photomontage)
Figure 6.54a	Viewpoint 17 – Loundoun Hill (Baseline Photo and Future Baseline Photo)
Figure 6.54b	Viewpoint 17 – Loundoun Hill (Future Baseline Photo and Cumulative Wireline)
Figure 6.54c	Viewpoint 17 – Loundoun Hill (Wireline)
Figure 6.54d	Viewpoint 17 – Loundoun Hill (Cumulative Photomontage)



Page intentionally left blank