

Hagshaw Energy Cluster Western Expansion – Phase I

Environmental Impact Assessment Report

Volume 2 – Figures



This page is intentionally blank.



Volume 2 Contents

Chapter Number and Topic	Figure Number and Name
01 Introduction	Figure 1.1 Site Location Plan and Cumulative Context
	Figure 1.2 Proposed Development Layout
	Figure 1.3 Environmental Designations within 10km
02 Site Selection & Design	Figure 2.1 Phase 1 & 2 Location and Cumulative Context
	Figure 2.2 Abnormal Load Routes and Access Points A-C
	Figure 2.3 Layout AB and Layout AH
	Figure 2.4 Layout AO and Layout AP
	Figure 2.5 Layout AQ and Layout AR
	Figure 2.6 Layout AS and Layout AU
	Figure 2.7 Layout AV and Layout AX
	Figure 2.8 Layout AY V21 and Layout AY V22
	Figure 2.9 Northern Development Area - Final Layout and Onsite Constraints
	Figure 2.10 Solar - Layout A and Layout B
	Figure 2.11 Solar - Layout C and Layout D
	Figure 2.12 Southern Development Area - Final Layout and Onsite Constraints
03 Project Description	Figure 3.1 Site Layout Plan Northern Development Area
	Figure 3.2 Site Layout Plan Southern Development Area
	Figure 3.3 Indicative Turbine Elevation
	Figure 3.4 Indicative Turbine Foundation
	Figure 3.5 Indicative Crane Hardstanding
	Figure 3.6 Indicative Solar Panel Elevations
	Figure 3.7 Indicative Inverter and Transformer Elevations
	Figure 3.8 Indicative CCTV and Fencing Elevations
	Figure 3.9 Indicative 25 MW short duration BESS Layout and Elevations
	Figure 3.10 Indicative 200 MW long duration BESS Layout and Elevations
	Figure 3.11 Indicative Proposed Development Substation Compound Layout and Elevations
	Figure 3.12 TNO Substation Compound Layout
	Figure 3.13 Indicative Wind Farm Cable Arrangement
	Figure 3.14 Indicative Cable Arrangement Along B743
	Figure 3.15 Abnormal Load Transport Routes to Site
	Figure 3.16 Indicative Access Track Cross Section and Drainage Arrangement (Wind / AIL)

Chapter Number and Topic	Figure Number and Name
	Figure 3.17 Indicative Access Track Cross Section and Drainage Arrangement (Solar)
	Figure 3.18 Indicative Construction Compound
	Figure 3.19 Indicative Concrete Batching Plant
	Figure 3.20 Local Access Routes
04 Approach to EIA	No Figures
05 Landscape & Visual Impact Assessment	Figure 5.1 Site Location and Initial LVIA Study Area to 35km
	Figure 5.2 Site Location and Initial LVIA Study Area to 20km
	Figure 5.3 Northern Development Area Turbine Blade Tip ZTV to 20km with Viewpoints
	Figure 5.4 Northern Development Area Turbine Hub Height ZTV (daytime) to 20km with Viewpoints
	Figure 5.5 Northern Development Area Turbine Hub Height ZTV (night) to 20km with Viewpoints
	Figure 5.6 Northern Development Area Combined Turbine Blade Tip and Substation ZTV to 20km with Viewpoints
	Figure 5.7 Dark Sky Baseline Satellite Image to 20km
	Figure 5.8 Lit Turbine ZTV to 20km with Viewpoints
	Figure 5.9 Lit Turbine Lighting Intensity ZTV to 20km with Viewpoints
	Figure 5.10 Southern Development Area Solar BESS Substation ZTV to 20km with Viewpoints
	Figure 5.11 Southern Development Area Solar BESS Substation ZTV and Turbine Blade Tip to 20km with Viewpoints
	Figure 5.12 Proposed Development Combined ZTV Wind Solar BESS Substation to 35km with Viewpoints
	Figure 5.13 Landscape Designations within 20km
	Figure 5.14 Landscape Designations to 20km with Combined Development ZTV and Viewpoints
	Figure 5.15 Landscape Character Types within 20km
	Figure 5.16 Landscape Character Types within 20km with Combined Development ZTV and Viewpoints
	Figure 5.17 Topography Plan to 20km
	Figure 5.18 Local Landscape Context to 5km
	Figure 5.19 Principal Visual Receptors to 20km with Combined Development ZTV and Viewpoints



Chapter Number and Topic	Figure Number and Name
	Figure 5.20 Other Wind Farms within 20km
	Figure 5.21 Cumulative ZTV with all Operational Under Construction Wind Farms to 20km
	Figure 5.22 Cumulative ZTV with Consented Wind Farms within 10km
	Figure 5.23 Cumulative ZTV with Consented Wind Farms beyond 10km
	Figure 5.24 Cumulative ZTV with In Planning Wind Farms within 10km
	Figure 5.25 Cumulative ZTV with In Planning Wind Farms beyond 10km
	Figure 5.26 Landscape Strategy Plan
	Figure 5.27 Residential Properties within 1km of Southern Development Area
06 Ornithology	Figure 6.1 VP and Viewsheds
	Figure 6.2 Survey Areas
	Figure 6.3 Ornithological Designations
07 Ecology	Figure 7.1 Study and Survey Areas
	Figure 7.2 Designated Sites
	Figure 7.3 Habitat Surveys
	Figure 7.4 Static Bat Detector Locations
08 Hydrology, Peat, Geology and Hydrogeology	Figure 8.1 Site Location and Study Area
	Figure 8.2 Hydrological Features
	Figure 8.3 Superficial Geology
	Figure 8.4 Peat Classification
	Figure 8.5 Peat Depth
	Figure 8.6 Bedrock Geology
	Figure 8.7 Hydrogeology
	Figure 8.8 Watercourse Crossing Locations
	Figure 8.9 Private Water Supply Risk Assessment
	Figure 8.10 Potential Groundwater Dependent Terrestrial Ecosystems
09 Noise	Figure 9.1 Study Area and 25dBLA90 and 35dBLA90 Noise Contour
	Figure 9.2 Study Area Southern Development Area BESS and Solar
	Figure 9.3 Cumulative Wind Turbines and Proxy Baseline Survey Location
10 Cultural Heritage	Figure 10.1a Northern Area - Inner Study Area
	Figure 10.1b Southern Area - Inner Study Area
	Figure 10.2a Heritage Outer Study Area - ZTV
	Figure 10.2b Heritage Outer Study Area - Combined ZTV
	Figure 10.3a Heritage Cumulative Sites - ZTV
	Figure 10.3b Heritage Cumulative Sites - Combined ZTV

Chapter Number and Topic	Figure Number and Name
11 Access, Traffic & Transportation	Figure 11.1 Traffic and Transport Study Area
	Figure 11.2 Traffic Counter Locations
	Figure 11.3 Abnormal Loads Route
12 Aviation and Radar	Figure 12.1 Proposed Aviation Lighting Scheme
13 Forestry	Figure 13.1 Northern Development Area - Baseline Phased Felling Plan
	Figure 13.2 Northern Development Area - Baseline Restructuring Plan
	Figure 13.3 Southern Development Area - Baseline Species Plan
	Figure 13.4 Northern Development Area - Long-Term Forest Plan
	Figure 13.5 Northern Development Area - Proposed Development Felling Plan
	Figure 13.6 Northern Development Area - Proposed Development Restructuring Plan
	Figure 13.7 Northern Development Area - General Yield Class Distribution Within Felling Area
	Figure 13.8 Southern Development Area - Proposed Development Compensatory Planting
	Figure 13.9 Northern Development Area - Proposed Development Forest Residue Management Plan
	Figure 13.10 Northern Development Area - Compensatory Planting
14 Shadow Flicker	Figure 14.1 Shadow Flicker Study Area
	Figure 14.2 Shadow Flicker Results
	Figure 14.3 Cumulative Shadow Flicker Study Area
	Figure 14.4 Cumulative Shadow Flicker Results - Realistic Scenario
15 Glint & Glare	Figure 15.1 Glint & Glare Study Area
	Figure 15.2 Glint & Glare Ground-Based Receptors
16 Schedule of Mitigation	No Figures
17 Summary of Residual Effects	No Figures