M74 West Renewable Energy Park

Environmental Impact Assessment Report

Volume 1: Non-Technical Summary

September 2024

Introduction

M74 West Limited ('the Applicant') has applied for consent to construct and operate a renewable energy park, including up to 22 wind turbines with a combined generation capacity of greater than 50 MW; solar power generators of approximately 80 MW generating capacity, and a battery energy storage system (BESS) with approximately 50 MW capacity. The project is referred to as M74 West Renewable Energy Park ('the Proposed Development'). The Proposed Development would be located immediately northwest of Abington and approximately 4.5 km southeast of Douglas in South Lanarkshire ("the Site"). The Site location is shown in **Figure 1**.

An Environmental Impact Assessment Report (EIAR) has been prepared to form part of the application for consent. The EIAR has been prepared in accordance with The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 ('the EIA Regulations').

The EIAR documents the Environmental Impact Assessment (EIA) process that has influenced the design of the project and reports on any predicted likely significant effects of the Proposed Development. Where it has been possible to do so through the design process and/or through commitments made as part of the Proposed Development, the EIAR sets out how these effects have been reduced or mitigated.

This document provides a Non-Technical Summary (NTS) of the EIAR, as required by the EIA Regulations.

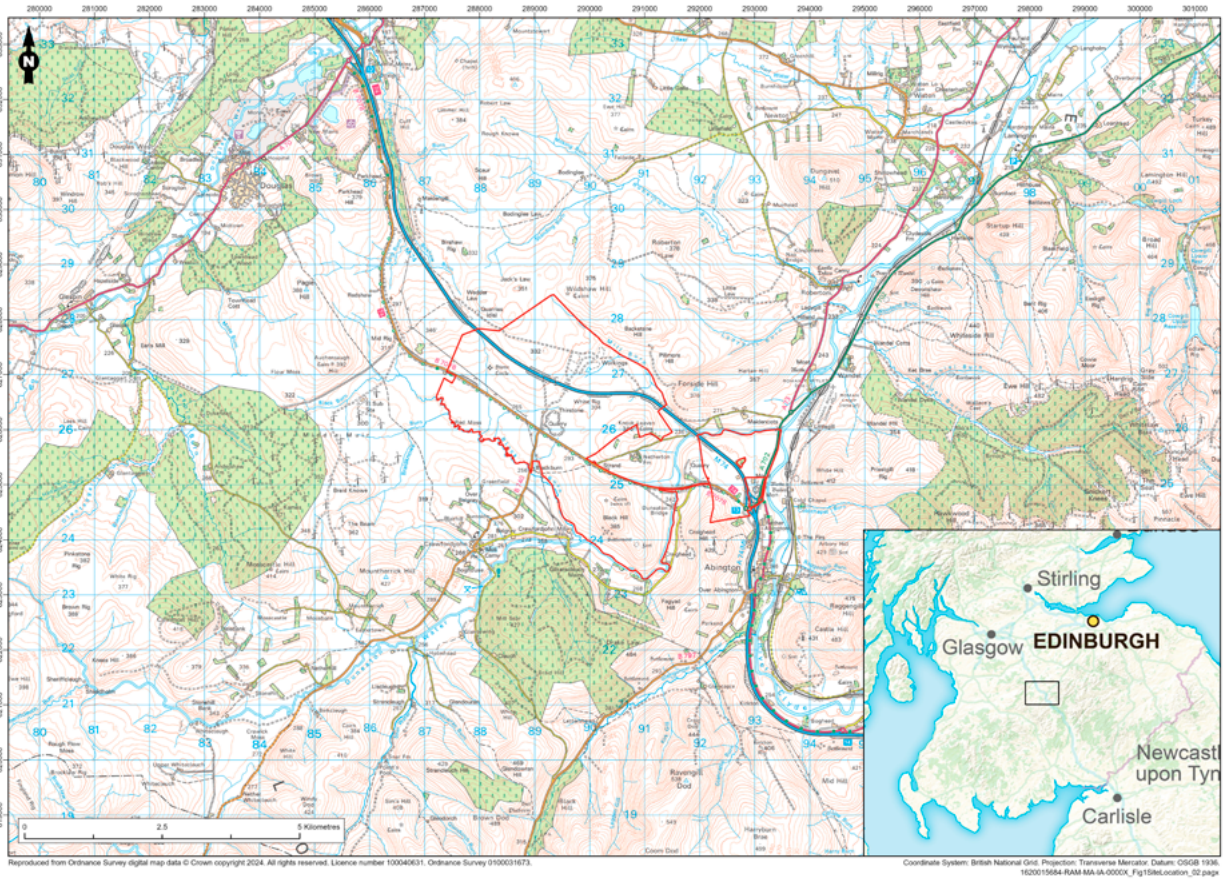

Figure 1: Site Location

Purpose of the Non-Technical Summary

The aim of the NTS is to summarise the content and main findings of the EIAR in a clear and concise manner to assist the public in understanding what the likely significant environmental effects of the Proposed Development are, where it has been possible, how such effects have been reduced, and any mitigation of effects proposed.

The EIAR comprises the following volumes:

- Volume 1: Non-Technical Summary (NTS);
- Volume 2: Main Report;
- Volume 3a: Figures;
- Volume 3b: Visualisations;
- Volume 4: Technical Appendices.

The Application is accompanied by the following additional documents that do not form part of the EIAR:

- Planning Statement;
- Design and Access Statement;
- Pre-Application Consultation Report;
- Community Benefit Statement; and
- Economic and Community Impact Report.

Copies of the EIAR

Paper copies of this NTS and the other volumes of the EIAR will be made available to view at the following publicly accessible locations:

- Crawfordjohn Village Hall, Crawfordjohn; and
- The Old Schoolhouse, Abington.

Printed copies of this NTS and USB sticks containing the full EIAR are also available to take away from the above locations, while stocks last.

The EIAR, including all figures, technical appendices and accompanying documents are available to view on the project website (https://www.renewcopower.com/portfolio/united-kingdom/uk-projects/m74-west-renewable-energy-park/).

The application documents are also available via the Scottish Government Energy Consents Unit portal (Scottish Government - Energy Consents Unit) and South Lanarkshire Council's planning portal.

For anyone who has difficulty accessing the documentation online, a USB copy will be made available free of charge by contacting m74west@renewcopower.com. Hard copies can also be printed for purchase on request. The cost of supplying a full printed copy can be confirmed on writing to the above email address.

Commenting on the Application

At the time that the Proposed Development was lodged with the Scottish Government, the Applicant advertised the application in local and national press in accordance with legislation. The advertisement provides details of the date by which representations should be made. The Scottish Government invites formal representations on the Proposed Development, which will be taken into account before any decision is reached on the application.

Any comments on the application should be made to the Energy Consents Unit mail box, at representations@gov.scot, via the Energy Consents website at www.energyconsents.scot, or by post to The Scottish Government, Energy Consents Unit, 4th Floor, 5 Atlantic Quay, 150 Broomielaw, Glasgow, G2 8LU, identifying the Proposed Development. Written or emailed representations should be dated, clearly stating the name (in block capitals), full return email and postal address of those submitting comments.

Consultation on the Scope of the EIA

Scoping

A Scoping Opinion request accompanied by a Scoping Report was submitted to the Scottish Ministers in January 2024, under the provisions of Regulation 12 of the EIA Regulations. A Scoping Opinion was received on 15th April 2024.

The scoping process allowed the EIA to focus on the main areas of interest raised by the various consultees. It was agreed that impacts which are not likely to result in significant effects could be scoped out of further assessment.

Public Consultation

The Applicant conducted two public exhibitions to seek the views of the local community. Exhibitions were held as follows:

- 8th February 2024, Abington; and
- 12th June 2024, Crawfordjohn

Site Location

The Site covers an area of approximately 1,275 hectares (ha) and is located immediately northwest of Abington and approximately 4.5 km southeast of Douglas, in South Lanarkshire (approximate OS Grid Reference for Site centre: NS 989983 26013).

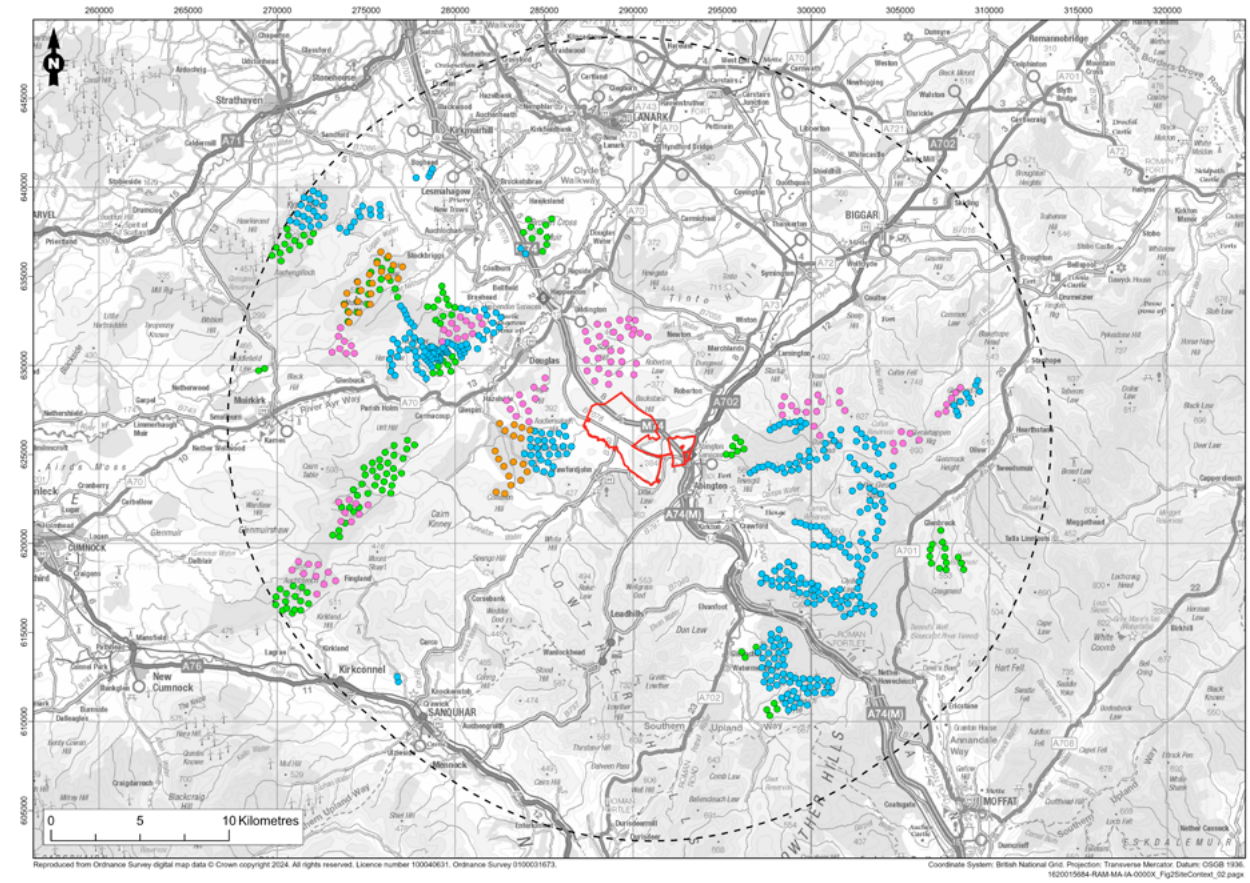

Figure 2: Site Context

As illustrated on **Figure 2**, there are numerous existing wind farms within 20 km of the Proposed Development, including large developments such as Clyde wind farm and its extension to the east, and Andershaw and Middlemuir wind farms occupying the western part of the wider moorland area which includes some of the proposed turbine array. A number of relevant developments are proposed in the immediate vicinity of the Proposed Development, including Redshaw 400 kV substation and Bodinglee wind farm on land immediately adjacent to the northwest of the Site, north of the B7078 and M74 respectively.

Proposed Development Description

The Proposed Development is shown on **Figure 3** and includes the following key components:

- 22 wind turbines with a maximum tip height of 200 m;
- permanent turbine foundations and associated permanent and temporary crane hardstanding at each turbine location;
- a main entrance for use during construction and operations, at the current entrance to Thirstone Quarry;
- two Site entrances to the south of the B7078 and one Site entrance off the B740 directly south of the B7078, which have been designed to accommodate abnormal indivisible loads (AIL) required for turbine component delivery;
- a further Site entrance from the M74 motorway to the northern part of the Site only to allow delivery of AIL required for turbine component delivery. Empty loads would return to the road network via the existing underpass and the B7078, rejoining the M74 at Junction 13;
- five further Site entrances to the solar array area, four from the B7078 (two to the north and two to the south) and one from the A702 immediately north of Abington services;
- a series of new on-site access tracks with associated watercourse crossings and turning heads;
- underground cable arrays within the Site connecting the turbines and solar panels to the on-site substation;
- substation compound and control building;
- repurposing of the house at Thirstone Cottage as a Site office;
- repurposing of the property at The Strand as a strategic spares store;
- solar power generators, of approximately 80 MW generating capacity;
- a BESS with approximately 50 MW capacity' and 200 MW/h of storage;
- four temporary construction compounds and laydown areas; and
- associated ancillary works:
  - habitat management plan areas, forestry felling and replanting;
  - extraction of rock from borrow pits;
  - temporary on-site concrete batching plant (this would be located within the temporary compound areas and/or borrow pit search area); and
  - works on land outside the main development area and immediately adjacent to the M74 to allow the delivery of abnormal loads to the northern area of the Site.

The locations of the proposed turbines and other infrastructure would be subject to 'micrositing'. This process allows for minor changes in turbine or infrastructure locations to respond to possible variations in ground conditions across the Site, which would only be confirmed following detailed site investigation work carried out immediately prior to construction. This process also provides scope for further mitigation of localised potential environmental effects through avoidance of sensitive features. It is anticipated that the micrositing distance of 100 m would form a condition accompanying any consent. Any repositioning would not encroach into environmentally constrained areas and would be carried out under the supervision of an Ecological Clerk of Works and an appropriately experienced and qualified engineer.

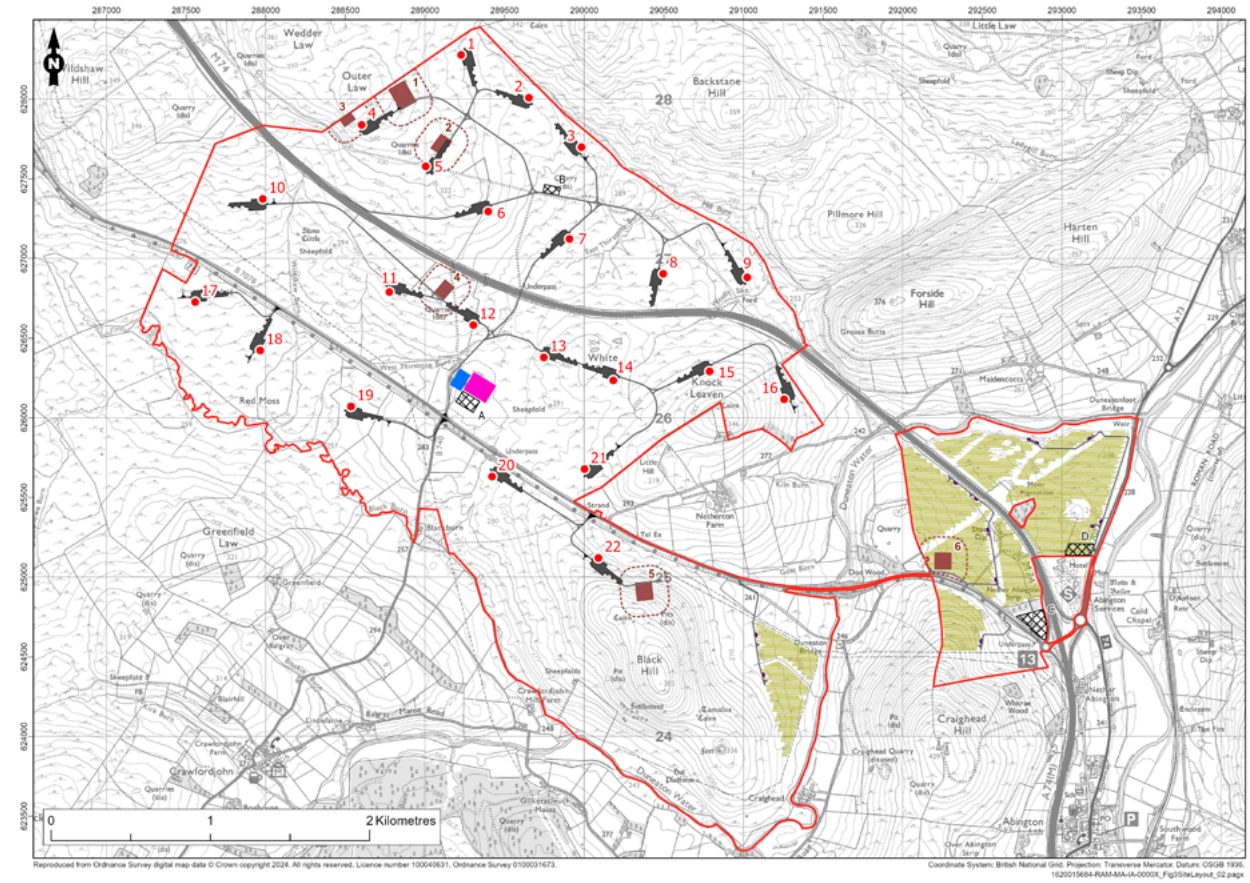

Figure 3: Site Layout

The Proposed Development would be fitted with lighting to comply with aviation regulations. In order to mitigate the night time visual impact of the Proposed Development on non-aviation receptors, a reduced lighting scheme has been designed and will be submitted to the Civil Aviation Authority for approval. It proposes 2000 candela steady red lights on eight of the 22 turbines but no mid-tower lighting.

The Proposed Development has a grid connection contract to connect to the proposed Redshaw Substation, which is to be located on a site approximately 2 km northwest of the Proposed Development's substation. Design and construction of the grid connection would be the responsibility of the transmission licence holder (Scottish Power Energy Networks); however, it is anticipated that the connection would be made via underground cable. This would be subject to a separate planning process and the details of the grid connection route are unknown at this stage.

Construction Activities

The construction of the Proposed Development would take approximately 18 months.

The typical construction hours of work would be Monday to Friday 0700 to 1900 and Saturday 0700 – 1300. No works, with the exception of turbine delivery, the completion of turbine erection and commissioning or emergency work, would take place outside these hours, and any such out-of-hours works would be subject to prior agreement with South Lanarkshire Council (SLC).

A Traffic Management Plan would be agreed in consultation with SLC and Transport Scotland. This would address the scheduling, routing and overall management of abnormal loads movements along with the programming and management of all other HGV movements.

A Construction Environmental Management Plan (CEMP) would be implemented during construction to avoid, reduce or control associated adverse environmental effects. An Outline Construction Management Plan has been produced and submitted as part of the application submission. The CEMP would, as a minimum, include details of:

- construction methodologies;
- pollution prevention measures;
- public liaison provision;
- peat slide, erosion and compaction management;
- control of contamination/pollution prevention;
- drainage management and SuDS;
- water quality monitoring;
- management of construction traffic;
- control of noise and vibration; and
- control of dust and other emissions to air.

Operation Management and Maintenance

The expected operational life of the Proposed Development is 40 years from the date of commissioning.

Wind turbines and wind energy projects are designed to operate largely unattended. Each turbine at the Proposed Development would be fitted with an automatic system designed to supervise and control a number of parameters to ensure proper performance (e.g. start-up, shut-down, rotor direction, blade angles etc.) and to monitor condition (e.g. generator temperature).

The control system would automatically shut the turbine down should the need arise. Sometimes the turbines would re-start automatically (if the shut-down had been for high winds, or if the grid voltage had fluctuated out of range), but other shut-downs (e.g. generator over temperature) would require investigation and manual restart.

The Solar photovoltaic (PV) array is designed to operate largely unattended; however, maintenance may be required on a six-monthly basis. Maintenance would consist of cleaning of the solar modules and inverters, maintenance of landscaping and electrical maintenance.

Residues and Emissions

The EIAR has considered the potential for residues and emission associated with the construction and operation of the Proposed Development. As required by the EIA Regulations, this includes consideration of: water; air; soil and subsoil; noise and vibration; light; heat and radiation; and waste. With the implementation of the CEMP, no significant residues or emissions have been identified during the construction phase. No significant residues or emissions would result from the operation of the Proposed Development.

Design Evolution and Alternatives

Site Selection Considerations

In 2022, the Applicant undertook a number of Site search studies followed by an early evaluation of feasibility, based primarily on landscape and visual amenity. These studies served to identify potential sites that might be available and which, based on a high-level evaluation of landscape and visual considerations, would have the potential for wind energy development.

The Site was identified as having potential for the generation of large amounts of additional renewable energy, from wind in particular, for a number of reasons:

- 'The Site is situated amidst a cluster of operational and proposed wind farm developments, and as such there is similar development already in the area.
- The Site has good anticipated wind resource.
- The Site has suitable space, topography, and gradient to accommodate solar PV panels.
- Part of the Site have been used extensively in the past for rock and sand and gravel quarrying and these areas are considered unlikely to contain significant depth of peat.
- The Site has good proximity to the national road network, with suitable access options for both construction traffic and abnormal indivisible loads (AIL).
- The Site has good access to the electricity transmission network, being crossed by an existing 400 kV overhead transmission line (OHL) and located in close proximity to a proposed transmission substation.

Alternative Layouts

Figure 4 (overleaf) summarises the design evolution of the wind turbine layout for the Proposed Development, from layout 1 (landscape design layout) to layout 4 (design freeze layout).

The Proposed Development design process was iterative, with the design evolving as environmental constraints were identified and as a result of feedback from consultees. Layout 4 forms the conclusion of the design process because:

- The Site layout creates a legible composition in views from the surrounding area and when travelling through the Site;
- The Site layout was designed to minimise impacts on the settings of the scheduled monuments and non-designated heritage assets of national importance within the Site boundary;
- The Site layout incorporates suitable buffers to watercourses and relevant protected species including bats, badger, otter and bird species; and
- The Site layout incorporates suitable buffer distances between infrastructure and the Red Moss Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI).
- The Site layout minimises the number of watercourse crossings required, including those hydrologically linked to the Red Moss SAC/SSSI, avoiding likely significant effects on the water environment as far as possible.
- The location of the substation and BESS was selected to allow use of an existing access point and brownfield (former quarry) land.

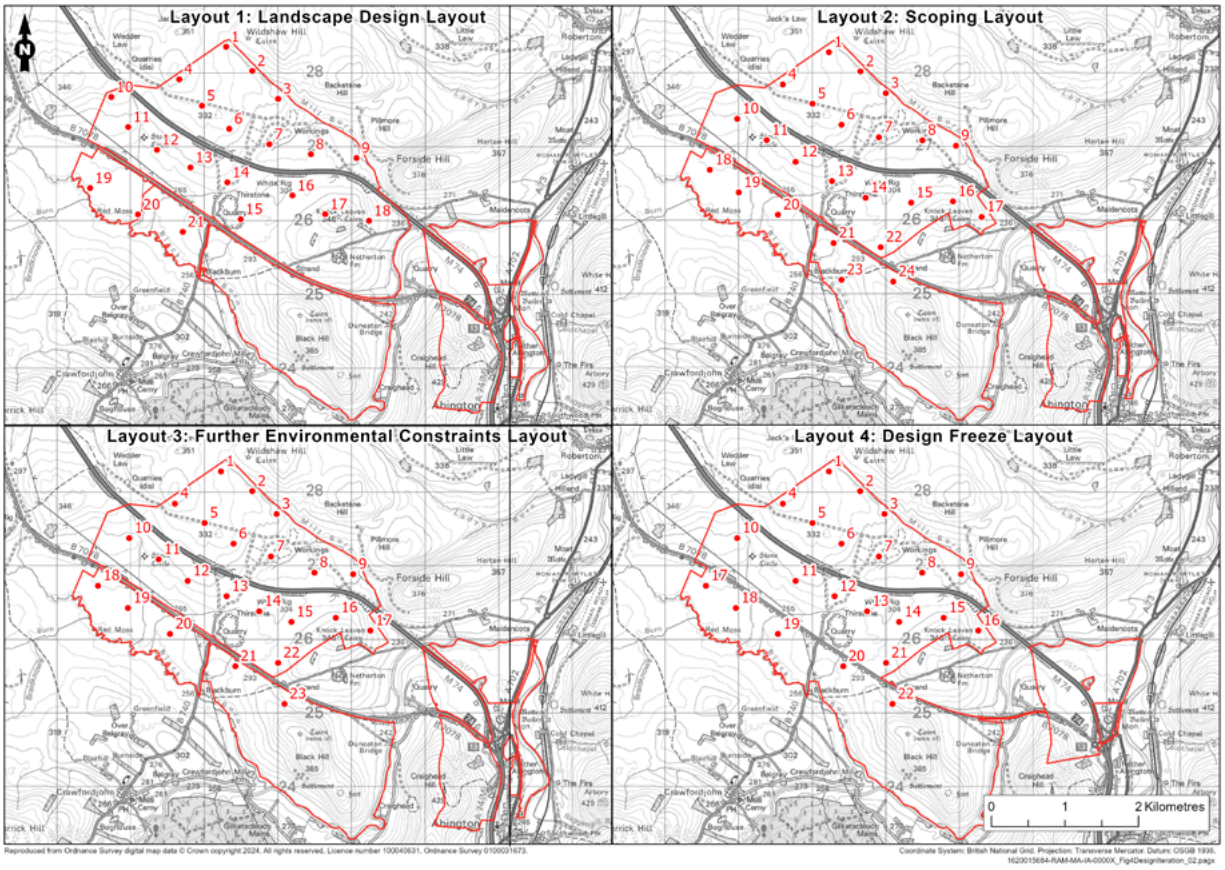

Figure 4: Wind Turbine Layout Design Evolution

Figure 5 summarises the design evolution of the solar array layout for the Proposed Development. Two iterations of the solar layout were produced in response to the environmental information generated.

The main environmental reasons for the refinement of the solar layout include:

- To avoid non-designated heritage assets within the indicative solar area;
- To incorporate buffer distances to ecological constraints, such as a potential bat roost feature and an otter couch;
- Reducing overall visibility through selectively placing solar panels and avoiding areas with steep slopes;
- To avoid drains on Craighead Hill and Black Hill; and
- To avoid siting solar generators directly over underground utilities, including Scottish Water pipelines, a gas transmission pipeline and an ethylene pipeline.

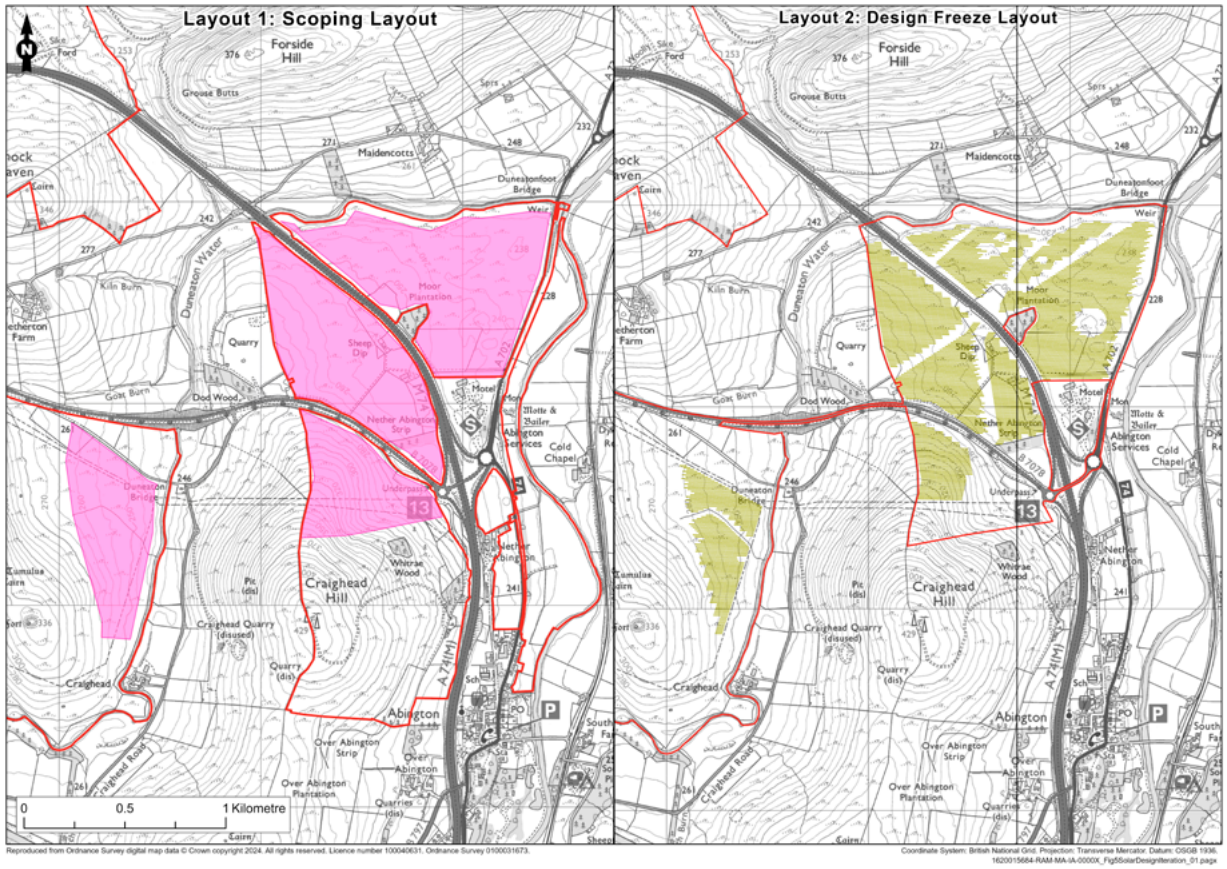

Figure 5: Solar Array Layout Design Evolution

Potential Environmental Effects

The following environmental topics have been considered within the EIA:

- Landscape and Visual;
- Cultural Heritage;
- Ecology;
- Ornithology;
- Hydrology, Hydrogeology and Geology;
- Traffic and Transport;
- Noise;
- Aviation; and
- Shadow Flicker.

The conclusions of the EIA are that potential likely significant effects were identified for a number of topics, however for the majority of these application of mitigation would reduce these effects to a non-significant level. The only exception to this is for certain effects on Landscape and Visual Amenity and Cultural Heritage receptors, where some significant residual effects would remain.

Landscape and Visual Amenity

Desk-based studies and field survey work have been carried out to establish the current landscape and visual baseline context of the Site and to identify key sensitive receptors. The Landscape and Visual Impact Assessment (LVIA) considered:

- Effects during construction and operation of the Proposed Development on the landscape character of the Site and the surrounding Study Area, views, and visual amenity of the local environment;
- Effects during operation on views across the Study Area towards the Proposed Development, including views from key viewpoint locations agreed through consultation, from settlements, and as part of sequential experiences along routes, including those used by recreational receptors;
- Cumulative effects on landscape character and views should other consented or in-planning wind farm sites be present;
- Effects from aviation lighting on landscape character and visual amenity; and
- The implications of landscape and visual effects on the special qualities and integrity of designated landscapes.

Effects on landscape character were considered using Landscape Character Types (LCTs) identified by NatureScot as units of landscape character with consistency of character. Significant effects were identified for seven landscape character receptors, this includes six LCTs and the Proposed Development Site itself. The effects on LCTs would be localised, with the significant effects experienced within approximately 8 km of the Site and reducing to not significant as the distance increases.

A Zone of Theoretical Visibility (ZTV) map was used to identify receptors likely to be affected by views of the Proposed Development, including people at local settlements, on roads around the Study Area, and those using local paths.

Key view experiences include views along the M74 motorway corridor, the B7078 road, footpaths and nearby hill summits which would include panoramic views that also include other existing and consented wind energy developments.

Significant effects were identified for seven of 15 viewpoints considered in the assessment. However, it should be noted that these were within 10 km of the Proposed Development. Two settlements were identified as receiving significant effects, Crawfordjohn and Roberton. Both settlements would have close views of the turbine array which would occupy a large horizontal extent of the view within 4 km. No other settlements were identified as receiving significant effects.

Two routes, the M74 motorway and the B7078 road, pass through the Site and road users would experience significant effects as a result. Three routes, the A702, the B740 and the West Coast Main Line roads would receive significant effects for short sections adjacent to the Proposed Development where close views of all the Proposed Development components would be experienced, reducing beyond 2 km to not significant. Two footpaths would receive close views of the turbine array and partial views of the substation and BESS, and part of the solar array, resulting in a significant effect.

One viewpoint, Castle Hill, and two footpaths would experience significant effects as a result of night time aviation safety lights on the hubs of eight turbines.

In the cumulative scenarios considered, there would be an increase in wind energy development in the wider landscape through the enlargement of existing turbine groups and introduction of new turbine groups. No changes to effects were identified to occur with consented or in-planning schemes.

Given the theoretical visibility indicated on the ZTVs, and the scale of the turbines, the significant effects identified are considered to be contained and no more than would be expected for a development of this scale in this type of landscape.

Cultural Heritage

A desk-based assessment and field surveys have been carried out to establish the cultural heritage baseline within the Site boundary (Inner Study Area) and in the wider landscape (Outer Study Area). The assessment has been informed by scoping responses provided by Historic Environment Scotland (HES) and West of Scotland Archaeology Service (WoSAS) and further consultation undertaken with HES.

Five Scheduled Monuments and 42 non-designated heritage assets have been identified in the Inner Study Area. The layout of the Proposed Development has been designed as far as possible to avoid direct effects on the identified heritage assets within the Site. There would be no direct impacts on the Scheduled Monuments. Direct adverse construction impacts on four non-designated heritage assets have been identified. These effects would be offset through a programme of mitigation to recover any archaeological information that may be present at the affected locations.

Significant adverse effects on setting are anticipated for three Scheduled Monuments (Wildshaw Hill, cairn 500m WSW of summit (SM 4511); Netherton, cairn 800m SW of (SM 4513) and Thirstone, stone circle 1300m NNW of (SM 5094)) and for one possible burial cairn (Knock Leaven cairn) determined by WoSAS to be potentially of national importance. The effects, which would not adversely affect the features' cultural significance, would last for the duration of the operational phase of the Proposed Development individually and cumulatively with other operational, consented, or Proposed Developments.

Significant cumulative effects are predicted, arising from the Proposed Development in combination with consented and in-planning developments. The predicted significant effects would occur on the setting of four Scheduled Monuments (Auchensaugh Hill, cairn (SM 4324), Wildshaw Hill, cairn 500m WSW of summit (SM 4511), Netherton, cairn 800m SW of (SM 4513) and Thirstone, stone circle 1300m NNW of (SM 5094) and one possible burial cairn (Knock Leaven cairn). The combined developments would not, however, adversely affect the heritage value or cultural significance of the cultural heritage assets.

Ecology

The ecological assessment focussed on the effects of construction, operation and decommissioning of the Proposed Development on ecological features.

Baseline conditions to inform the design and assessment of the Proposed Development have been established through desk study, ecological field surveys and consultation with nature conservation bodies and specialist species recording groups.

Red Moss Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) are located in the southwest of the Site and extend beyond the Site boundary to the south.

Baseline studies identified a range of habitats present within the Site, with the main habitats of interest being blanket bog and wet modified bog. The Site and adjacent habitats are used by badger, otter, trout and seven species of foraging/commuting bat. Potential for roosting bat and hibernating reptiles were also recorded.

Embedded mitigation and pre-construction works would enable the protection of protected habitats and species during construction works associated with the Proposed Development.

In addition to habitat reinstatement following the cessation of construction works, the Proposed Development also provides an opportunity to deliver long-term beneficial habitat enhancement measures for habitats and species, away from operational infrastructure, including specific management for blanket bog enhancement and and broadleaved woodland.

Residual effects upon any important ecological features are predicted to be not significant as a result of the Proposed Development alone, or in combination, with other renewable energy development.

Ornithology

The ornithology assessment considered the ways in which birds could be affected (both directly and/or indirectly) by the construction and operation of the Proposed Development.

Baseline conditions to inform the design and assessment of the Proposed Development have been established through desk study, ornithological field surveys and consultation with nature conservation bodies and specialist species recording groups.

Baseline studies identified that the Site and adjacent habitats are used by foraging, breeding and roosting raptors and owls including barn owl, hen harrier, peregrine, red kite and short-eared owl. An assemblage of breeding ground nesting waders was also identified.

Collision mortality risks from the turbine array have been estimated for curlew, herring gull, lapwing and red kite, with collision mortality risks predicted as being low or negligible for all species.

Embedded mitigation and pre-construction works would enable the protection of protected habitats and species during the construction of the Proposed Development.

In addition to habitat reinstatement following the cessation of construction works, the Proposed Development would also provide for the delivery of long-term beneficial habitat enhancement measures for bird species and wider biodiversity. This would include in areas away from operational infrastructure where specific management for breeding waders, black grouse and nesting raptors will be undertaken.

Residual effects on important ornithological features are predicted to be not significant as a result of the Proposed Development alone, or in combination with other wind farm developments.

Hydrology, Hydrogeology and Geology

The assessment considered the likely significant effects on Hydrology, Hydrogeology and Geology associated with the construction, operation and decommissioning of the Proposed Development.

The assessment considered the effects on water quality, flood risk, water resources, Groundwater Dependent Terrestrial Ecosystems (GWDTE) and the potential for effects on carbon rich soils and deep peat, including potential for peat landslide effects. The assessment was informed by hydrological surveying and peat depth surveys.

Throughout the design of the Proposed Development, consideration has been given to avoiding or minimising adverse effects on hydrological, geological and hydrogeological receptors. Examples include minimising the number of proposed watercourse crossings, siting the Proposed Development at a suitable buffer from watercourses and locating development away from deeper peat locations where practicable.

Based on the design of the Site, the implementation of best practice measures during construction, operational and decommissioning phases of the development and the implementation of mitigation measures, no significant effects to the water environment or to peat resources is anticipated.

Traffic and Transport

The assessment considered the likely effects on traffic, transport and access associated with the construction, operation and decommissioning of the Proposed Development.

During the construction phase of the Proposed Development there would be a temporary increase in traffic flows. General construction traffic movements would be managed through the provision of a Construction Traffic Management Plan (CTMP) to reduce the traffic impacts. Where applicable, the CTMP would outline the approach to construction vehicle routing and management, delivery control, usage of warning and information signs. The CTMP would also include a Transport Management Plan for Abnormal Indivisible Load traffic. With these measures in place, effects during the construction stage are not considered to be significant.

Once the Proposed Development is operational, the volume of traffic associated with the operations would be minimal, relating to maintenance. It is predicted that during the operation of the Site there would be up to two vehicle movements per fortnight for maintenance purposes. There would be no significant residual effects from the operational phase of the Proposed Development.

Noise

The assessment considered the potential noise impacts at nearby noise sensitive receptors during the construction and operational phases.

Background noise monitoring was undertaken at five locations representative of properties close to the Site. The background noise data measured was used to set noise limits for the Proposed Development.

The noise modelling demonstrated that the construction noise activities associated with the Proposed Development would be below the appropriate construction noise limits; therefore, no significant effects are anticipated.

Best practice guidance was used to predict the operational wind turbine noise from the Proposed Development on its own and cumulatively (i.e. noise resulting from nearby operational, consented and proposed wind farms, as well as the Proposed Development). Significant noise effects are anticipated for Red Moss Hotel; however, it is understood that the hotel has been uninhabited for some time and the land on which it is situated has been the subject of an EIA screening request for a large BESS facility. For all other receptors, the modelling indicated that operational noise levels from the Proposed Development on its own and cumulatively would be within the noise limits; therefore, no other significant effects are anticipated.

Aviation

The aviation assessment assessed the potential effects of the Proposed Development on:

- the air traffic control primary surveillance radars (PSRs) at Lowther Hill and Cumbernauld;
- the air traffic control secondary surveillance radar (SSR) at Lowther Hill;
- the Green Lowther distance measuring equipment (DME) aeronautical radio navigation aid;
- Glasgow Airport instrument flight procedures (IFPs); and
- Hang gliding/paragliding activity on Tinto Hill.

Following the implementation of mitigation, the assessment has identified no residual effects on aviation as a result of the construction, operation or decommissioning of the Proposed Development.

Shadow Flicker

Shadow flicker is caused by the moving shadow of the turbine rotor being cast over a narrow opening, such as a window or open door. The assessment considered the potential impacts on residential amenity resulting from shadow flicker from the Proposed Development.

The assessment indicates that there are four properties which would likely experience an exceedance of the accepted threshold shadow flicker levels, resulting in a potential significant effect.

Mitigation has been proposed by the Applicant to avoid significant shadow flicker effects. With appropriate mitigation measures in place the impact from shadow flicker is predicted to be non-significant for the Proposed Development.

Summary

As a result of a combination of design-led mitigation and additional construction mitigation measures, the EIAR concludes that the likely significant effects associated with the Proposed Development, alone and in addition to other wind farm developments, are limited to landscape and visual effects (in localised areas within 15 km of the Site) during construction and operation of the Proposed Development and setting effects on five heritage assets (within 5 km of the Site), during the operation of the Proposed Development.

With the implementation of mitigation measures, no significant effects are identified on ecology, ornithology, hydrology, hydrogeology and geology, traffic and transport, noise, aviation and shadow flicker.