



M74 West Renewable Energy Park

Other Documents

Design Statement

September 2024



M74 WEST RENEWABLE ENERGY PARK DESIGN STATEMENT

Project name	M74 West Renewable Energy Park
Project no.	1620015684
Recipient	M74 West Ltd
Document type	Design Statement
Version	1
Date	22 nd August 2024
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Preliminary Site and Design Guidance for M74 West Renewable Energy Park

1. INTRODUCTION

- 1.1.1 M74 West Limited ('the Applicant') proposes to construct and operate a renewable energy development consisting of 22 wind turbines, with generating capacity of greater than 50 MW, in addition to solar power generators with approximately 80 MWac capacity, and a battery energy storage system (BESS) of up to 50 MW capacity. The project is to be referred to as M74 West Renewable Energy Park (the 'Proposed Development') and is located approximately 1.1 km northwest of Abington and approximately 4.5 km southeast of Douglas in South Lanarkshire ('the Site').
- 1.1.2 An application for consent is being made under Section 36 of the Electricity Act 1989¹ to the Scottish Ministers.

1.2 Legislative Framework

- 1.2.1 The Town and Country Planning (Development Management Procedure (Scotland) Regulations 2008/ 2013 require applications for 'major' development to be supported by a Design Statement. There is no statutory requirement for applications for consent under the Electricity Act 1989 to be supported by a Design Statement; however, the Applicant has opted to provide one as a good practice measure.
- 1.2.2 The purpose of the Design Statement is to explain the design principles and concepts that have been applied. Consideration has been given to PAN 68² which outlines the key principles and concepts to be considered within a design statement. In line with the Scottish Government guidance³, the statement does not extend to the consideration of internal aspects of individual buildings.

¹ Electricity generation projects below 50 MW are authorised under the Town and Country Planning (Scotland) Act, 1997. Those over 50 MW are authorised under Section 36 of the Electricity Act, 1989.

² Scottish Government, 2003. Planning Advice Note 68: Design Statements. Online. Available at: https://www.gov.scot/publications/planning-advice-note-68-design-statements/ [Accessed: 12/06/2024]

³ Scottish Government, 2013. Scottish Planning Series Circular 3 2013: Development Management Procedures. Available at: https://www.gov.scot/publications/planning-series-circular-3-2013-development-management-procedures/ [Accessed: 12/06/2024]

2. POLICY CONSIDERATIONS

2.1 Relevant Planning Policy

- 2.1.1 National Planning Framework 4 (NPF4)⁴ is the national spatial strategy for Scotland, setting out the spatial principles, regional priorities, national developments and national planning policy.
- 2.1.2 A dominant theme within NPF4 is addressing the global climate emergency through the need to reduce greenhouse gas emissions and adapt to the impacts of climate change. NPF4 sets out a spatial strategy to ensure a net zero society and nature positive country.
- 2.1.3 NPF4 has introduced centralised development management policies which are to be applied Scotland wide, and also continues the approach set out in NPF3 of identifying national developments. Proposed National Development 3 (ND3), entitled 'Strategic Renewable Electricity Generation and Transmission Infrastructure', includes renewable energy developments of over 50 MW in installed capacity; therefore, the Proposed Development has national development status. The Proposed Development will make a contribution to the attainment of renewable energy and electricity targets and emissions reduction at both the Scottish and UK levels; the quantification of this contribution is described in EIAR Chapter 2: Development Description (EIAR Volume 2).
- 2.1.4 Policy 11 of NPF4, the principle policy used in the assessment of wind energy developments, intends to "To encourage, promote and facilitate all forms of renewable energy development onshore and offshore. This includes energy generation, storage, new and replacement transmission and distribution infrastructure and emerging low-carbon and zero emissions technologies including hydrogen and carbon capture utilisation and storage (CCUS)".
- 2.1.5 Since the adoption of NPF4 in 2023, NPF3 and Scottish Planning Policy (SPP) has been superseded.
- 2.1.6 The South Lanarkshire Local Development Plan 2 (LDP2), adopted in April 2021, also forms part of the relevant statutory Development Plan for the area where the Proposed Development is located.
- 2.1.7 The design statement has also, amongst others, given regard to:
 - The Electricity Act 1989⁵;
 - The Town and Country Planning (Scotland) Act 1997⁶;
 - Climate Change Act 20087;
 - Committee on Climate Change The Sixth Carbon Budget, The UK's Path to Net Zero⁸;
 - Progress in Reducing Emissions and Progress in Scotland 2023 Progress Reports to Parliament⁹;
 - Energy White Paper Powering our Net Zero Future¹⁰;

⁴ Scottish Government (2023) National Planning Framework 4. Available at: https://www.gov.scot/publications/national-planningframework-4/documents/ [Accessed: 12/06/2024].

⁵ Scottish Ministers. Electricity Act 1989. Online. Available at: <u>https://www.legislation.gov.uk/ukpga/1989/29/contents</u> [accessed 12/06/2024]

⁶ Scottish Ministers. Town and Country Planning (Scotland) Act 1997. Online. Available at:

https://www.legislation.gov.uk/ukpga/1997/8/contents [accessed 12/06/2024]

⁷ UK Government. The Climate Change Act 2008 (2050 Target Amendment) Order 2019. Online. Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111187654 [accessed 12/06/2024]

⁸ Climate Change Committee, December 2020. Sixth Carbon Budget. Online. Available at: <u>https://www.theccc.org.uk/publication/sixth-carbon-budget/</u> [accessed 12/06/2024]

⁹ Climate Change Committee, March 2024. Progress Report to Parliament. Online. Available at: <u>https://www.theccc.org.uk/publication/progress-in-reducing-emissions-in-scotland-2023-report-to-parliament/</u>[accessed 12/06/2024]

¹⁰ UK Government, December 2020. Energy White Paper – Powering out Net Zero Future. Online. Available at: <u>https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future</u> [accessed 08/02/2022]

- The Scottish Government's 'Programme for Scotland 2023-2024 'A Fairer, Greener Scotland'¹¹;
- The Scottish Climate Change Plan: third report on proposals and policies 2018-2032 (RPP3)¹²;
- Update to the Climate Change Plan 2018–2032: Securing a Green Recovery on a Path to Net Zero¹³;
- The Scottish Energy Strategy¹⁴;
- Scotland's Energy Strategy Position Statement¹⁵;
- The Onshore Wind Policy Statement 2022¹⁶; and
- The Onshore Wind Sector Deal¹⁷.

¹⁵ Scottish Ministers, 2021. Scotland's Energy Strategy Position Statement. Online. Available at: https://www.gov.scot/publications/scotlands-energy-strategy-position-statement/ [accessed 12/06/2024]

¹¹ Scottish Ministers. The Scottish Government's 'Programme for Scotland 2023-2024 'A Fairer, Greener Scotland, 2023. Online. Available at: https://www.gov.scot/publications/programme-government-2023-24/ [accessed 12/06/2024]

¹² Scottish Ministers, 2018. The Scottish Climate Change Plan. Online. Available at: https://www.gov.scot/publications/scottish-governments-climate-change-plan-third-report-proposals-policies-2018/ [accessed 12/06/2024]

¹³ Scottish Ministers, 2020. Update to the Climate Change Plan 2018 – 2032: Securing a Green Recovery on a Path to Net Zero. Online. Available at: https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/ [accessed 12/06/2024]

¹⁴ Scottish Ministers, 2017. The Scottish Energy Strategy. Online. Available at: https://www.gov.scot/publications/scottish-energystrategy-future-energy-scotland-9781788515276/ [accessed 12/06/2024]

¹⁶ Scottish Ministers, 2022. Onshore Wind Policy Statement. Online. Available at: https://www.gov.scot/publications/onshore-wind-policy-statement-2022/ [accessed 12/06/2024]

¹⁷ Scottish Ministers, 2023. Onshore wind sector deal. Available at: https://www.gov.scot/publications/onshore-wind-sector-deal-scotland/ [accessed 12/06/2024].

3. SITE CONTEXT

- 3.1.1 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). The Site location is shown in Figure 1.
- 3.1.2 The Site predominantly comprises open moorland, improved and semi-improved grassland, an area of forestry, and is intersected by the M74 motorway and B7078 and B740 local roads. The landscape is typical of the wider location, with the Site positioned in the northern portion of the Southern Upland Hills, with Tinto Hill located approximately 8 km to the north.
- 3.1.3 The Duneaton Water, a tributary of the River Clyde, passes through the eastern part of the Site and forms part of the northern and southern boundaries. The A702 forms the eastern boundary. There are numerous existing wind farms within 15-20 km, including large developments such as Clyde and its extension to the east, and Andershaw and Middlemuir occupying the western part of the wider moorland area which includes some of the proposed turbine array.
- 3.1.4 A number of relevant developments are proposed in the immediate vicinity, including the Redshaw 400 kV substation and Bodinglee wind farm on land immediately northwest of the Site, north of the B7078 and M74 respectively.
- 3.1.5 There are two statutory sites designated for nature conservation within 5 km of the Site: Red Moss Special Area of Conservation (SAC) and Red Moss Site of Special Scientific Interest (SSSI), both designated for raised bog. The Site boundary slightly overlaps with the Red Moss SAC and SSSI; no development would be undertaken within this part of the Site; however, habitat management for waders is proposed in this area as part of the Outline Biodiversity Enhancement Management Plan (EIAR Volume 4, Technical Appendix 6.6).
- 3.1.6 There are five designated heritage assets (all of which are scheduled monuments) within the Site boundary, as well as two sites recorded in the Historic Environment Record (HER) classed as being of potential national importance. Ten listed buildings have been identified as being within 5 km of the Site: eight of Category B and two of Category C.
- 3.1.7 A number of watercourses run through the Site. Mill Burn is present along the northeastern boundary of the Site and Black Burn is present at the southern boundary. The Duneaton Water forms the south-most part of the Site boundary. The eastern part of the Site drains in a generally easterly direction towards the Duneaton Water and the River Clyde. Duneaton Water forms the northern boundary of the solar array area to the north of Abington Services.

4. **DESIGN APPROACH**

- 4.1.1 The Applicant appointed a team of specialist consultants to work alongside M74 West Ltd in designing and developing the energy park proposal. Consistent with renewable energy policy, the key overall objective is to maximise the energy generation potential of the Site, whilst having regard to the protection of sensitive environmental receptors. A design process was agreed with the team that included the parameters set out in the following paragraphs.
- 4.1.2 The approach to design was informed by and responded to:
 - Good practice and windfarm design guidance such as SNH (2017) Siting and Design of Wind Farms in the Landscape (Version 3a);
 - Planning policy documents (e.g. NPF4, South Lanarkshire Local Development Plan); and
 - Consultation responses received through pre-application consultation, EIA scoping and the Gatecheck process.

4.2 Design Brief

- 4.2.1 A design brief was agreed with the Applicant setting out key parameters for the Proposed Development. The brief included:
 - A preliminary landscape-led turbine layout provided by the Applicant, which had been designed to create a legible composition in views from the surrounding area and when travelling through the Site;
 - Details of land available (illustrated by the Site boundary);
 - Indication of the section of the Site technically suitable for locating the solar array; and
 - Requirements for Site construction compounds, borrow pits, substation, BESS, laydown areas, access track geometry and crane hardstanding geometry.
- 4.2.2 The design brief subsequently set the scope for constraint mapping with the Applicant being responsible for defining technical requirements such as turbine spacing to avoid turbulence, maximum gradient of potential turbine locations and associated track infrastructure.

4.3 Design Guidance

- 4.3.1 Design guidance from the Applicant confirmed the following requirements for Site infrastructure:
 - Turbines should be located at a distance of at least tip height + 10% (i.e. 220 m distance) from the M74 motorway and from the existing 400 kV OHL;
 - Turbines should be located at a distance of hub height + 50% (i.e. 183.75 m distance) from the underground gas pipeline which crosses the Site;
 - Turbines should be contained within the Site boundary by a distance equivalent to turbine tip height (i.e. 200 m distance) where practicable;
 - All watercourses should have a 50 m exclusion area placed around them, in order to ensure protection of water quality, in line with SEPA requirements;
 - Access tracks should minimise the need for watercourse crossings;
 - Access track running width to be between 4.5 m and 7 m depending on gradient and bends;
 - Access tracks should be straight for 20 m before and after a bridge, culvert or hardstanding area;
 - Turning areas to be provided sized to allow turning of loaded or unloaded blade transporters (as required); and

- Where possible, borrow pit search areas should be sited in locations that can be reached via existing tracks, in order to avoid the need to construct extensive sections of track to reach them and obtain materials.
- 4.3.2 Following agreement of the design brief, the team was instructed to undertake all necessary desktop studies and field work to identify key environmental receptors and constraints (including cumulative constraints) of relevance to the design and assessment of the Proposed Development.
- 4.3.3 Further analysis was completed to categorise constraints as either 'hard constraints' or 'soft constraints'. Hard constraints were defined as those features with formal protection as defined in legislation or adopted planning/ industry guidance, whereas soft constraints were characterised as having potential to constrain the development but, subject to careful design consideration and/ or mitigation measures, the Proposed Development could be accommodated.

4.4 Key Issues and Constraints

- 4.4.1 In addition to the policy considerations identified, key issues and constraints for consideration in the design process were established through a combination of desk-based research, field survey and consultation (through the EIA scoping process). The design process considered the following issues:
 - Landscape character and visual, recreational and tourism amenity within a 25 km study area;
 - Cultural heritage, including mapping all known assets within the Site, all designated heritage assets within 5 km and nationally important designated assets within a 10 km study area of the Site to assess the potential for visibility and setting effects;
 - Sensitive fauna, with the mapping of the presence of European protected species;
 - Sensitive habitats, particularly peat forming habitats (supported by habitat and peat probing surveys) and habitats dependent on groundwater;
 - Ornithology, including surveys for bird flight activity and breeding bird activity on the Site;
 - Hydrology, hydrogeology and geology, including identifying all sensitive surface water features, groundwater dependent terrestrial ecosystems, and peat depth;
 - Traffic and transport, including all trunk roads and local roads that are likely to experience increased traffic flows;
 - Cumulative operational noise levels and exposure at nearby properties;
 - Aviation and telecommunications assessments; and
 - Plantation forestry within the Site.
- 4.4.2 Further detail on environmental considerations is provided in Appendix 2.

4.5 Alternatives

Do-Nothing Alternative

- 4.5.1 The "do nothing" scenario is considered in the Environmental Impact Assessment Report (EIAR) as a basis for comparing the development proposal under consideration. This scenario is considered to represent the current baseline situation as described in the individual chapters of the EIAR. Section 3 outlines the Site Context which characterises the baseline environment and assumed future environmental conditions assuming no development on the Site is established.
- 4.5.2 Historically, the Site has been subject to extensive sand and gravel quarrying, with quarrying activity currently being concluded at Thirstone Quarry, located to the north of the B7078 and M74 in the central and northern parts of the Site, and previous quarrying activity identified by Ordnance Survey mapping in the northern and western parts of the Site. In addition, there are a number of utility and telecommunications links that cross the Site, including two high pressure

gas pipelines, Scottish Water pipelines and fixed telecommunications links operated by Vodafone Ltd.

4.5.3 It is recognised that the baseline would not remain static for the lifetime of the Proposed Development. In particular, and apart from any changes arising from economic and agricultural policies and economic market considerations, it is predicted that biodiversity and landscape would undergo some level of change as a result of climate change. Two publications from the Landscape Institute¹⁸ and Scottish Natural Heritage¹⁹ (now NatureScot) consider the potential climate change effects on the landscape character. Due to the complexities and uncertainties inherent in attempting to predict the nature and extent of such changes to landscape and biodiversity during the lifetime of the Proposed Development, it has been assumed that the current baseline would subsist. It is considered that this represents an appropriate approach for EIAR preparation purposes.

Wind Turbine Layout

Turbine Numbering

4.5.4 Throughout the design evolution process, the removal/addition of turbines resulted in the need to re-number turbines. Figure 2 summarises the design evolution process for the turbine array. A summary of turbine numbering is shown in Table 4.1.

¹⁸ Landscape Institute (2008) Landscape architecture and the challenge of climate change, Position Statement, London, October 2008 – URL: https://www.landscapeinstitute.org/wp-content/uploads/2016/03/LIClimateChangePositionStatement.pdf

¹⁹ Land Use Consultants (2012) An assessment of the impacts of climate change on Scottish landscapes and their contribution to quality of life: Phase 1 – Final Report. Scottish Natural Heritage Commissioned Report 488 – URL: http://www.snh.org.uk/pdfs/publications/commissioned_reports/488_1.pdf

Table 4.1: Summary of Turbine Numbering					
Layout 1	Layout 2	Layout 3	Layout 4		
1	1	1	1		
2	2	2	2		
3	3	3	3		
4	4	4	4		
5	5	5	5		
6	6	6	6		
7	7	7	7		
8	8	8	8		
9	9	9	9		
10	Removed				
11	10	10	10		
12	11	11	Removed		
13	12	12	11		
14	13	13	12		
15	14	14	13		
16	15	15	14		
17	16	16	15		
18	17	17	16		
19	18	18	17		
20	19	19	18		
21	20	20	19		
	21	21	20		
	22	22	21		
	23	Removed			
	24	23	22		

Layout 1: Landscape Design Layout (21 turbines)

- 4.5.5 The Landscape Design Layout represented the original turbine layout proposed by the Applicant, based on consideration of landscape capacity only in conjunction with landownership constraints.
- 4.5.6 The Landscape Design Layout considered landscape design and wind yield constraints using available wind yield data at the time.
- 4.5.7 At this stage in the Site's design, it was considered that the Site could theoretically accommodate up to 21 turbines up to a 200 m maximum tip height. The Landscape Design Layout formed the basis for which initial environmental considerations would be reviewed against.

Layout 2: Scoping Layout (24 turbines)

- 4.5.8 The Scoping layout represented the layout that was developed based on an initial desk-based constraints review, taking account of the following:
 - The findings of the ornithology surveys and initial ecology surveys;
 - The results of the Stage 1 peat probing survey;
 - Constraints mapping of cultural heritage assets, watercourses and corresponding buffer distances and residential properties; and

- Confirmation that one residential property (the Strand) would be purchased by the Applicant for conversion to use spares stores should the development proceed.
- 4.5.9 As a result of a review of the constraints listed above, the following turbine movements were made:
 - Turbines 1, 2 and 3 were moved southeast, as a group, to provide greater separation from Wildshaw Hill cairn scheduled monument;
 - Turbines 4, 5, 6 were moved as a group to maintain further distance to the buffer around a potential bat roost feature (a group of trees) to the west of Turbine 4;
 - Turbine 10 was removed, in order to preserve the line of sight between Wildshaw Hill cairn and Auchensaugh Hill cairn scheduled monuments;
 - Turbine 14 was moved north to avoid the buffer around a bat habitat at Thirstone cottage (outhouse);
 - Turbine 18 was moved northeast to increase its distance from a fixed telecommunications link, while maintaining elevation;
 - Turbines 14, 15, 16, 17 and 18 were reviewed again in terms of landscape composition and moved to ensure maintenance of a linear arc when travelling through the Site on the M74;
 - Turbines 19, 20 and 21 were moved northwards, as a group, in order to avoid deep peat and to increase their distance from the Red Moss SAC/SSSI;
 - Four new turbines were added to the west of Black Hill and in proximity to the Strand residential property. These additions were made based on further landscape analysis and the involvement of the Strand in the Proposed Development rendering it less sensitive to noise impacts.
- 4.5.10 Overall, one turbine was removed (Turbine 10) and four turbines (Turbines 21, 22, 23 and 24) were added, resulting in a 24-turbine Scoping Layout. Turbines were re-numbered for the EIA Scoping Report, as presented in **Table 4.1**.

Layout 3: Further Environmental Constraints Layout (23 turbines)

- 4.5.11 Following the Scoping stage, further environmental constraints information was gathered and led to the development of an amended layout, which was identified in response to the following:
 - Initial noise modelling based on a number of candidate turbines;
 - Community feedback following the initial public consultation period in February 2024;
 - The results of the Stage 2 peat probing survey;
 - Confirmation of the preferred stand-off distance from the high-pressure gas pipeline crossing the Site; and
 - Additional ecological survey information.
- 4.5.12 As a result of a review of the constraints outlined above, the following turbine movements were made:
 - Turbine 8 was moved south to the edge of the gas pipeline buffer to allow the track towards Turbine 9 to cross the gas pipeline at 90 degrees;
 - Turbine 9 was moved southwest to maintain spacing with Turbine 8;
 - Turbine 13 was moved northeast to take it out of the constraint area identified around a badger sett;
 - Turbine 14 was moved north to ensure suitable track alignment to reach Turbine 15 whilst avoiding deep peat;
 - Turbine 15 was moved west in response to the movement of Turbine 16 to the west;

- Turbine 16 was moved west to take it out of the gas pipeline buffer;
- Turbine 17 was moved west to maintain spacing with Turbine 16;
- Turbine 18 was moved northwest in order to take it out of an area of blanket bog and wet modified bog habitat;
- Turbine 19 was moved west to ensure greater distance from the unnamed watercourse to the east, as well as from an area of blanket bog habitat and deep peat;
- Turbine 21 was moved east of the unnamed watercourse, to allow access to be taken from the access point off the B7078 further southeast. It was also moved slightly further south to avoid oversailing the B7078 road;
- Turbine 22 was moved north to ensure a 100 m buffer between it and a potential bat roost feature (the Strand property);
- Turbine 23 was removed following analysis of initial noise modelling results. In particular, this was based on the identification of noise exceedances at Blackburn Farm, as well as to a lesser extent at other properties (Crawfordjohn Mill Farm, Greenfield and Over Balgray). It was also identified that removal of this turbine would reduce potential impacts on residential visual amenity at Crawfordjohn Mill Farm and nearby properties on Manse Road, and would reduce the potential for adverse impact on the settings of the scheduled monuments Netherton, cairn 800m SW of (SM4513) and Auchensaugh Hill, cairn (SM4234).
- 4.5.13 In addition, Turbines 2 and 3 were moved south to avoid oversailing the Site boundary to the north.
- 4.5.14 Overall, one turbine was removed (Turbine 23) resulting in a 23-turbine Further Environmental Constraints Layout. Turbines were re-numbered as presented in **Table 4.1**.

Layout 4: Design Freeze Layout (22 turbines)

- 4.5.15 The design freeze layout represents the final layout which was amended in response to the following:
 - Further consideration of cultural heritage constraints following a consultation meeting with Historic Environment Scotland (HES) on 14th May 2024.
- 4.5.16 In response to the concerns of HES in relation to the potential for impact on heritage assets, the following design changes were made:
 - Turbine 11 was removed following further analysis of its potential impact on the setting of the scheduled monument Thirstone, stone circle 1300m NNW of (SM 5094).
- 4.5.17 The removal of this turbine resulted in a 22-turbine Design Freeze Layout, and turbines were renumbered as presented in **Table 4.1**.

Solar Layout

4.5.18 The layout of the proposed solar array was adapted in response to environmental and technical constraints as detailed below. Two iterations of the solar layout were produced. (Figure 3 summarises the design evolution of the solar array.

Scoping Layout

4.5.19 The scoping layout was presented as an indicative area. The first iteration of the solar design aimed to maximise the number of solar arrays within the search area and it was considered that that Site could accommodate solar PV generators in the areas shown on the Scoping Layout in Figure 3.

Design Freeze Layout

- 4.5.20 Environmental constraints information was gathered and the following constraints led to the refinement of the indicative solar PV area:
 - Cultural heritage constraints, in particular, non-designated heritage assets;
 - Ecology constraints, including protected species signs;
 - Landscape and visual considerations;
 - Hydrology considerations; and
 - Infrastructure constraints.

4.5.21 The solar layout was refined in response to these constraints as follows:

- A cultural heritage walkover survey was undertaken in November 2023, which identified a number of non-designated assets within the indicative solar area. The extent of the solar area was refined to ensure greater distance would be maintained from these heritage assets, particularly in the northeastern part of the solar array area, as advised by the heritage consultant;
- The ecology constraints identified included a potential bat roost feature and an otter couch. Suitable buffer distances to these features were suggested and these were incorporated into the design of the solar layout, including placement of panels, inverters, access and compounds;
- The landscape analysis identified the importance of placing solar panels selectively and avoiding the smaller unconstrained parcels of land within the solar search areas and more undulating parts of the Site. It was also recommended that parcels of land with steep slopes should be avoided in order to reduce overall visibility. In particular, it was recommended that the sections closest to the roundabout on the B7078/M74 slip road should be excluded, as well as the section of the western solar area which lay to the north of the OHL.
- The hydrology analysis identified drains on the east of Black Hill and Craighead Hill that should be subject to a minimum 10 m buffer. The final layout avoids areas of drains on Craighead Hill and provides a 10 m buffer from the drain on Black Hill in line with the advice.
- Existing underground utilities, including Scottish Water pipelines, a gas transmission pipeline and an ethylene pipeline, were identified within the solar array area and the design was amended in order to ensure that no solar generators would be located directly over these connections.
- 4.5.22 Feedback on other technical disciplines, including noise and glint and glare, was also considered; however, such feedback did not require further changes beyond those described above.

5. CONSULTATION ACTIVITIES

5.1 Scoping

- 5.1.1 The Applicant submitted a request for a Scoping Opinion to Scottish Ministers in January 2024. This request was accompanied by a Scoping Report, prepared by the Applicant, which set out a summary of the proposals; identified the likely significant environmental effects, and summarised the proposed scope of the EIA.
- 5.1.2 A Scoping Opinion was received from ECU on 15th April 2024. The contents of this and other consultation responses received are summarised in EIAR Volume 4 Technical Appendix 1.1: Consultation Register, along with a list of all bodies consulted during the scoping exercise.
- 5.1.3 Following scoping and baseline characterisation, the EIAR provides an impact assessment chapter for each of the following disciplines/factors/issues:
 - Landscape and Visual Amenity;
 - Cultural Heritage;
 - Ecology;
 - Ornithology;
 - Hydrology, Hydrogeology and Geology;
 - Traffic and Transport;
 - Noise;
 - Aviation; and
 - Shadow Flicker.
- 5.1.4 During the scoping process several effects were identified as not being likely to cause significant effects on the environment as a result of the Proposed Development and therefore scoped out of the EIAR, including:
 - Air Quality;
 - Climate Change;
 - Population and Human Health;
 - Risk of Major Accidents and/ or Disasters;
 - Ice Throw;
 - Telecommunications; and
 - Eskdalemuir Seismic Array.

5.2 Public Exhibitions

- 5.2.1 In addition to seeking a Scoping Opinion, 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.
- 5.2.2 A summary of the representations received during the public exhibitions is provided in the Pre-Application Consultation Report (PACR) which accompanies the consent application.
- 5.2.3 The events were advertised in advance in the Carluke and Lanark Gazette and Hamilton Advertiser (including Lanark and Carluke Advertiser edition).
- 5.2.4 For both consultations, more than 330 residences and businesses within 5 km of the Site were invited to attend. A dedicated project website (https://www.renewcopower.com/portfolio/united-

kingdom/uk-projects/m74-west-renewable-energy-park/) has been set up to allow access to information on the Proposed Development, including the consultation event boards and the proposed turbine layout. The website also provides contact details to enable residents to contact the Applicant easily and a form that can be used to provide feedback on the project.

5.3 Consultation with Local Community Councils

- 5.3.1 Throughout the consultation period, the Applicant engaged with local community councils. The Applicant wrote on more than one occasion to six local community councils: Duneaton; Douglas; Crawford, Elvanfoot and Daer;, Symington; Quothquan and Thankerton; and Carmichael. Formal meetings took place with Duneaton and Quothquan and Thankerton (at the invitation of the community councils) on 2nd April and 12th March respectively.
- 5.3.2 The Applicant intends to keep the various community council updated on progress and to further discuss the community benefits associated with the Proposed Development.

6. **DESIGN SOLUTION**

6.1 Design Freeze Layout

- 6.1.1 The finalised design freeze turbine and solar layout is the accumulated final design as a result of numerous design iterations as outlined in Section 4 of this Design Statement. The finalised layout includes the following key components:
 - 22 wind turbines with a maximum tip height of 200 m;
 - Permanent foundations supporting each wind turbine, and associated crane hardstanding at each wind turbine base;
 - A main site entrance for use during construction and operation, at the current entrance to Thirstone Quarry;
 - Two site entrances to the south of the B7078 and one site entrance off of the B740 directly south of the B7078, which will be 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 will return to the road network via the existing underpass and the B7078, rejoining the M74 at Junction 13;
 - Three further site entrances to the solar array area, two from the B7078 (one to the north and one 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 onsite substation;
 - Substation compound and control building;
 - Repurposing of the house at Thirstone Cottage as a site office;
 - Solar power generators, of approximately 82.5 MW generating capacity;
 - A BESS with up to 50 MW capacity and 200 MW/h of storage; and
 - Four temporary construction compounds and laydown areas, the main one located adjacent to the substation and BESS sites and three satellite areas: one located in the northern area of the turbine array and the other two located in the solar array area, one adjacent to the B7078 and other adjacent to the A702 road.
- 6.1.2 In addition, the following ancillary works would be necessary:
 - Habitat management areas, including plantation forestry felling and replacement planting;
 - Extraction of rock from borrow pits; five borrow pit search areas have been sized and located within the turbine area, a sixth borrow pit search area is proposed within the solar area;
 - 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 (e.g. construction of over-run areas, temporary modifications to street furniture).

7. ACCESS

7.1 Access from Public Roads

- 7.1.1 Access to Site would be taken from the following roads:
 - Access to the northern section of the turbine array would be taken directly from the M74 motorway, with unloaded vehicles leaving the Site via the existing underpass and the B7078 road;
 - Access to the middle and southern sections of the turbine area would be taken from the B7078 and the B740 roads; and
 - Access to the solar array area would be taken from the B7078 and the A702 roads.
- 7.1.2 For more information on the delivery route to the Site see EIAR Volume 2, Chapter 9: Traffic and Transport.

7.2 Internal Site Access

- 7.2.1 Approximately 21.1 km of new onsite access tracks and approximately 1.17 km of upgraded track would be required to provide access to the wind turbines, substation compound, solar array, borrow pit search areas and construction compounds (**Figure 4: Site Layout**). Typical access track designs are shown in **Figure 5: Typical Access Track Detail**. This figure shows the use of typical cut and fill access tracks.
- 7.2.2 Tracks would have a typical 5 m running width with appropriate widening on bends, at junctions and passing places.
- 7.2.3 In all areas, the peat and topsoil have been confirmed as being less than 1 m deep. As such, the vegetation and soil would typically be stripped to a suitable subsoil layer (to a depth of approximately 300 mm 500 mm) and the track would be constructed on the subsoil. The upper topsoil layer, together with turf, would be stored temporarily for use in landscaping and revegetating the track shoulders and track side drainage or other reinstatement works across the Site.
- 7.2.4 Once the soil has been removed, as described above, to a suitable founding layer, the road and running surface would be constructed by tipping and compacting aggregate of the required shape and thickness. Cross-sections of the final road shape following reinstatement of the roadside slopes by replacing the layers of excavated material in the correct order are presented in **Figure 5.**
- 7.2.5 The on-site track layout has been designed to minimise environmental disturbance and land take by avoiding areas of deeper peat and steep slopes in excess of 12 degrees as well as, wherever possible, avoiding or minimising impact on areas of identified environmental constraints.
- 7.2.6 The track layout has been carefully designed to minimise the number of watercourse crossings where possible.

8. PROGRAMME

8.1.1 The estimated construction period of the Proposed Development is approximately 18 months. This period is indicative only and may be subject to variation as a result of factors which include, but are not limited to, weather restrictions, ground conditions encountered through detailed investigation, turbine component and material delivery, timing of grid connection works and public highway constraints.

	Month																	
Task*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1																		
2																		
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1 Eor	Octru	, folli	inσ															
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3 Boi	row	nit v	vorki	ng a		s tra	rk ro	nstr	uctio	n an	d hai	rdsta	nding	, area	as			
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5. Sul	ostati	ion c	onst	ructi	on													
6. BES	SS Ing	stalla	tion	and	civil	s woi	rks											
7. Cat	oling																	
8. Ere	ctior	n and	l con	nmis	sioni	ng o'	fturl	oines	s / Sc	olar P	V ins	tallat	ion					
9. Site	e reir	nstat	eme	nt &	resto	orati	on		,									
10. Te	esting	z and	l con	nmis	sioni	ng												
11 н		, mnlo	mon	tatio		-o												

8.1.2 An indicative construction programme is illustrated in **Table 8.1** below:

9. SUMMARY

- 9.1.1 This document provides an overview of the design process undertaken by the Applicant while preparing the planning application for the Proposed Development. This document summarises the relevant local development plan policy considerations, the Site context, the design approach, consultation activities and the final design solution.
- 9.1.2 The careful placement of the proposed turbines, solar array and BESS within the Site boundary has facilitated effective mitigation of the majority of potentially significant effects through the design process. Further information on the residual environmental effects is presented in the EIAR Volume 2, Chapter 13: Summary and Schedule of Mitigation. This document describes the principles that have shaped and influenced the design of the Proposed Development.

Design Statement M74 West Renewable Energy Park

> APPENDIX 1 FIGURES



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Coordinate System: British National Grid. Projection: Transverse Mercator. Datum: OSGB 1936. 1620015684-RAM-MA-IA-0000X_Fig1SiteLocation_01.pagx



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Coordinate System: British National Grid. Projection: Transverse Mercator. Datum: OSGB 1936. 1620015684-RAM-MA-IA-0000X_Fig2DesignIteration_02.pagx



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Coordinate System: British National Grid. Projection: Transverse Mercator. Datum: OSGB 1936. 1620015684-RAM-MA-IA-0000X_Fig3SolarDesignIteration_01.pagx



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Legend						
	Site Boundary					
•	Turbines					
	Solar PV Modules					
	Inverter					
	Substation					
	Construction Compou	nd				
	Battery Site					
	Borrow Pit Location					
	Borrow Pit Micrositing	Allowance				
	Turbine Hardstanding	Concrete				
	Access Track, Junctio Heads	n & Turning				
Figure Title						
Site Lay	yout					
Project Nam M74 We	e est Renewable Fi	nerav				
Park						
Project Num	ber	Figure No.				
1620015	4					
Sentem	Prepared By					
Scale	Issue					
1:20,000	0 @A3	1				
Client M74 West Ltd						
	RAMBOLL					

Coordinate System: British National Grid. Projection: Transverse Mercator. Datum: OSGB 1936. 1620015684-RAM-MA-IA-0000X_Fig4SiteLayout_02.pagx

Design Statement M74 West Renewable Energy Park

APPENDIX 2 PRELIMINARY SITE AND DESIGN GUIDANCE FOR M74 WEST RENEWABLE ENERGY PARK

Table A2.1: Preliminary Site and Design Guidance for M74 West Renewable Energy Park						
Торіс	Analysis	Design Recommendations				
Landscape and Visual: Landscape Fabric	The M74 corridor in the vicinity of the Site covers a very large area broadly from high ground to the east of Douglas to the lower ground near Moffat, the core area of which is where the M74 dissects or cuts through the Southern Uplands. As is typical throughout this narrow valley, substantial new additional or upgraded infrastructure has been established over time. Either side of the motorway the high ground of the Southern Uplands dominates the landscape character. Numerous landscape studies have identified that the landscape character type of the Southern Uplands can accommodate wind energy development. This is based on the large-scale character of the landscape.	On the basis of the large scale of the landscape and the topographic character of the area, the landscape design of the Proposed Development should relate to the large topographic features or to the large-scale infrastructure. This could mean for example that the turbines are placed on either side of the M74 at regular distances from each other, or as is the case at Clyde, the turbines create random groups on plateaus but when the ridges are narrow the layout follows the centre of the ridge.				
		foothills of the Southern Uplands within the Plateau Moorlands LCT, which is of large scale.				
		The landscape has a simple visual pattern without any predominant visual features. The ground-based features that reinforce the northwest to southeast linear character of the landscape through the valleys that accommodate the Site are the motorway, the railway line, overhead transmission lines and fences. In addition, the River Clyde and its tributaries form a strong landscape feature in the eastern part of the Site. It was therefore considered that the turbine layout should be designed so as to create an immediately legible composition.				
		Land ownership boundaries, in combination with a gentle curving M74, the alignment of the overhead transmission line and the old alignment of the A74 (now the B7078) lent themselves to being reinforced by a strong geometric layout. The geometry of the turbines in a grid like pattern creates a visual interaction between the M74 and the turbines. It introduces logic to the scheme and makes it visually legible.				

Table A2.1: Preliminary Site and Design Guidance for M74 West Renewable Energy Park					
Landscape and Visual: Landscape Character and Designations	From the production of initial Zone of Theoretical Visibility (ZTV), the following designations/ landscape classifications would be assessed within the LVIA:	The land use will be changing from predominantly agricultural to include energy generation and this will also have visual effects.			
	 Special Landscape Areas, South Lanarkshire: Leadhills and Lowther Hills SLA (partly within the Site boundary); Upper Clyde Valley and Tinto SLA (adjacent, to the east of the Site); Douglas Valley SLA (3 km to the northwest); Middle Clyde Valley SLA (11 km to the north); Landscape Character Types within the Site: Plateau Moorlands – Glasgow & Clyde Valley (LCT 213); Upland River Valley – Glasgow & Clyde Valley (LCT 207); Broad Valley Upland (LCT 208); Upland Glen – Glasgow & Clyde Valley (LCT 217); Other nearby LCTs with more than limited theoretical visibility: Rounded landmark Hills LCT 218); and Plateau Farmlands – Glasgow & Clyde Valley (LCT 201). 	When considering cumulative effects, the Proposed Development fills a 'gap' between Middlemuir and Andershaw wind farms to the southwest, Bodinglee (in planning) to the west and Grayside (in planning), Priestgill (consented) and Clyde to the east. The implications of an increasing geographic area with wind turbines as its defining characteristic will be considered in detail as part of the cumulative assessment.			
Landscape and Visual: Visual Amenity	The LVIA would consider the visual impacts on settlements. Significant impacts to visual amenity are unlikely to occur beyond 15 km, therefore settlement beyond this has been scoped out. The ZTV indicated theoretical visibility at a number of settlements surrounding the Site, including Abington, Roberton and Crawfordjohn within approximately 5 km. There are several key transport routes within the study area that would be subject to potential views of the Proposed Development including the M74, the A702, A73, B7078, B740, B797 and the A70 and a small number of local roads in the vicinity of the Site. In addition to roads, the rail links within the study area would also be considered. The Southern Upland Way (SUW) long distance path, closest to the Site at approximately 11 km to the south, would be included within	 Key issues in respect of landscape effects and effects on views and visual amenity, including 'residential' visual amenity are likely to include: effects on the character of the landscape and how this will be perceived by people; effects on the amenity of recreational routes, including the SUW and NCN74; as well as on views from key summits used by hill walkers, such as Tinto Hill; effects on sequential views as obtained from transport corridors including the B7078 and the A720, effects on views from and visual amenity of settlements; and potential effects on visual amenity from residential properties. 			

Table A2.1: Preliminary Site and Design Guidance for M74 West Renewable Energy Park						
	the LVIA, as well as National Cycle Route 74 (NCN74) which passes though the Site along the B7078. NCN74 also forms part of the proposed Clydesdale Way long distance route, which aims to create a long-distance walking/cycling route through Clydesdale by reinficing and closing gaps between existing routes.					
Cultural Heritage and Archaeology: Designated heritage assets (and non- designated heritage assets of national importance) on-site	 There are five scheduled monuments (designated assets of national heritage value and high sensitivity) and two non-designated heritage assets of national importance within the Site boundary. Of these, the assets most likely to experience a significant effect as a result of the proposed development would be: : Thirstone, stone circle 1300m NNW of (SM 5094) Black Hill, fort 650m NW of Craighead (SM 2606) Netherton, cairn 800m SW of (SM4513) Knock Leaven cairn (WoSASPIN 10454) Designated and non-designated assets are protected by NPF 4, Historic Environment Policy for Scotland (HEPS) and the Local Development Plan. Due to the national importance of these assets, no groundbreaking works should take place within these areas, thus limiting the potential for direct impacts. The proximity of turbines to these assets should be carefully considered due to the potential for significant effects on their settings. 	Where possible, turbines, solar arrays and infrastructure should be sited to minimise impacts on the settings of the scheduled monuments and non-designated heritage assets of national importance within the Site boundary. Stand-off buffers have been suggested to minimise, as far as possible, the potential for significant impacts on setting. However, as these assets lie within the area of the Proposed Development there will remain the potential for significant impacts on their settings. Buffers have been placed around the Scheduled Monument polygon data (downloaded from HES's data portal). There is no guidance as to what should, or may, constitute a hard constraint buffer and those allocated are based on professional judgement of what may be appropriate as an initial basis to seek to reduce potential for adverse effects.				
Cultural Heritage and Archaeology: Non- designated heritage assets on-site (regional or local importance)	There are 50 known heritage assets within the Site boundary. These include non-designated assets (of regional or local importance) recorded in the South Lanarkshire's Historic Environment Record (HER), the National Record of the Historic Environment (NHRE) or identified through examination of historic maps or/and lidar imagery. Under NPF 4, non-designated heritage assets, places and their setting should be preserved in situ wherever feasible. Non-designated assets have the potential to be subject to direct physical impacts from the Proposed Development. Impacts would	Where possible, turbines, solar arrays and site infrastructure should be sited to avoid impacts upon known remains. Where infrastructure will be located in close proximity to known assets, but will not directly impact upon them, mitigation measures such as the temporary fencing-off, or marking-off, assets to prevent inadvertent damage by plant movement during the construction phase may be required.				

Table A2.1: Preliminary Site and Design Guidance for M74 West Renewable Energy Park						
	relate to the removal (partial or whole) of these heritage assets through groundbreaking works and construction activities on Site. Where reasonably practicable, direct impacts on non-designated assets should be avoided.	Where assets cannot be avoided, potential direct impacts are likely to require mitigation through preservation by record undertaken through archaeological watching brief(s) or excavation.				
		data derived from the SLC HER, NHRE, and those identified through examination of historic maps or/and lidar imagery.				
Cultural Heritage and Archaeology: Designated heritage assets and non- designated heritage assets of national importance beyond the Site boundary	 There are a number of designated heritage assets and non-designated assets of schedulable quality within 10km of the Proposed Development which could also be subject to impacts on their settings: 55 Scheduled Monuments. 80 non-designated assets of schedulable quality. 99 Listed Buildings. Two Conservation Areas. There are no Inventory Gardens and Designed Landscapes and no Historic Battlefields or World Heritage Sites within 10 km of the Site boundary. These assets are protected by NPF 4, HEPS and the LDP. 	There is no guidance as to what should, or may, constitute an appropriate stand-off distance for the development types proposed sufficient to preserve the integrity of the settings of these assets. Each must be considered on its own merits.				
Ecology	 Key considerations at the Site include: The Red Moss SAC and SSSI - afforded protection in legislation under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and the Nature Conservation (Scotland) Act 2004. Ancient semi-natural woodland or Plantations on ancient woodland sites - afforded protection under Scottish Government's policy on control of woodland removal (NPF4 Policy 6b). Bats - A European protected species - are afforded protection in legislation under Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). A number of Moderate Potential Roost Features and some High Potential Roost Features were recorded on the Site, mostly trees as well as some buildings. Other constraints from protected species include badger setts and an otter couch which were recorded on site. 	A 75 m buffer between infrastructure and the Red Moss SAC/SSSI should be incorporated into the design to avoid impacts on the SAC/SSSI. Crossings over watercourses that are hydrologically linked to the SAC / SSSI should be minimised. Avoid direct impact / land-take of ancient woodland. A 65m buffer (based on the candidate turbine) from blade tip to habitat feature, e.g. woodland edges should be incorporated into the design to avoid impacts on bats. Initially a very precautionary 275.5 m buffer was applied to the identified bat roost features (i.e. 200 m + rotor radius, as per guidance) in the absence of further surveys. However, this large buffer would only apply for maternity				

Table A2.1: Preliminary	Site and Design Guidance for M74 West Renewable Energy Park	
	 Trout were recorded in low numbers in some of the watercourses on site. The Site is not accessible to migratory salmonids. Localised areas of priority habitats present (specified in UK Biodiversity Action Plan, Annex I of the Habitats Directive, or the Scottish Biodiversity List, including blanket bog E1.6.1 and wet heath E1.7) 	roosts/significant hibernation and/or swarming sites. Further surveys were undertaken in respect of two such features, to determine the likelihood of a bat roost being present. The further survey confirmed that the constraint buffer could be removed and only the 50 m to blade tip buffer need apply. A 30 m buffer from active badger setts/holes (100 m buffer if blasting/piling) should be incorporated to avoid impacts on badger. A 30 m buffer from recorded Otter couch should be implemented (for turbines, solar array and infrastructure) to avoid impacts on Otter. Watercourse crossings should be minimised and a 50 m buffer around watercourses for all infrastructure should be maintained except where a minimum number of crossings are essential. Infrastructure, turbines, solar arrays, and works should
		Dependent Terrestrial Ecosystems (GWDTEs) (where possible) in order to minimise impacts.
Ornithology	Baseline surveys for the Proposed Development were undertaken between September 2022 and September 2023. A second summer of bird surveys has been undertaken in 2024 to provide confirmatory information. Surveys recorded the following target species: curlew, golden plover, goshawk, greylag goose, herring gull, lapwing, merlin, osprey, peregrine falcon, pink-footed goose, red kite, ringed plover, short- eared owl and woodcock. Breeding waders: curlew, lapwing and ringed plover were identified to be breeding within the 500m survey area. Breeding Schedule 1/Annex 1 species: red kite, peregrine falcon and short-eared owl were identified to be breeding within the 2km survey area beyond the Site boundary.	No design constraints for breeding curlew, lapwing, ringed plover or short-eared owl recommended/required. Constraint buffers for the breeding red kite and peregrine falcon (500 m buffer from known nest locations) were provided, as a hard constraint for any proposed turbine locations but as a moderate constraint for the solar PV areas. This is due to their locations being outwith the Site boundary and the topography between the nest locations and the Site boundary.

Table A2.1: Preliminary Site and Design Guidance for M74 West Renewable Energy Park						
	Black grouse: no black grouse leks were recorded and no evidence of black grouse was recorded across the baseline survey period.					
Hydrology and Hydrogeology	 In respect of hydrology and hydrogeology, the following was identified on-site: The potential for two high Groundwater Dependent Terrestrial Ecosystems (GWDTE) areas within the northern and central part of the Site, to the north of Knock Leaven hill; and The potential for three moderate GWDTE areas within the southern part of the Site, on the lower slopes of Black Hill 	SEPA guidance is that 250 m/ 100 m buffers are needed for high and moderate GWDTEs respectively. Potential high GWDTEs should be considered; however where the habitats are clearly linked to either rainfed systems or surface watercourses/ features, they should not be treated as a design constraint.				
	There are two private water supplies (PWS) within 1 km of the Site; however, both are located on the opposite bank of the Duneaton Water to the Site and there would be no potential for interaction with the Proposed Development.	The design should avoid placing turbines, and infrastructure within 50 m of natural watercourses in order to protect water quality. For the solar array, the design should ensure a suitable buffer from land drains on the east of Black Hill and Craighead Hill.				
		For the solar areas proposed on the east slopes of Black Hill and Craighead Hill, panels should ideally contour with the slopes so runoff is conveyed over the shortest possible distance before falling to ground.				
		The design should aim to minimise the number of direct interactions with the water environment by designing out watercourse crossings where possible and minimising interactions with the SAC/SSSI in particular.				
		Tracks should be perpendicular to watercourses at crossing points.				
		Impermeable surface for infrastructure / battery storage etc would require detailed drainage design to manage surface water runoff.				
		Planting below the solar arrays should ensure greenfield conditions are maintained and that rates of infiltration and runoff do not increase. Planting should also ensure soil integrity is maintained such that soil erosion does not occur below the lower edge of panels.				

Table A2.1: Preliminary Site and Design Guidance for M74 West Renewable Energy Park						
Peat	A review of the SNH Carbon Rich Soil, Deep Peat and Peatlands Habitat Map (2016) and peat probing confirms that areas of peat and organic material are present across the Site.	The design should avoid siting turbines and infrastructure in areas of peat, particularly deep peat (>1 m depth).				
	The Stage 1 peat probing survey confirmed that peat >0.5 m depth is present across 9.0% of the Site; and no peat (0 – 0.5 m depth) is present across 91.0% of the Site. Peat >1.0m depth is present at 4.7% of the Site.					
Traffic and Transport	The main transport impacts would be associated with the movement of general HGV (and LGV) traffic travelling to and from the Site during the construction phase of the Proposed Development. Each turbine is likely to require between 11 and 13 abnormal loads to deliver the components to Site. The components would be delivered on extendable trailers which would then be retracted to the size of a standard HGV for the return journey.	HVGs taking access to the northern part of the Site will access this area from the M74 motorway. Southern parts of the Site will be accessed from the B7078 road.				
Noise	 IOA GPG guidance state 'If the proposed wind farm produces noise levels within 10 dB of any existing wind farm/s at the same receptor location, then a cumulative noise impact assessment is necessary'. Due to the proximity of neighbouring schemes, an initial cumulative noise review was undertaken. The initial cumulative noise review identified the following key noise sensitive receptors: Greenfield; Over Balgray; and Red Moss Hotel. It should be noted that the Red Moss Hotel will no longer considered a residential receptor, on the basis that it is permanently closed. In addition, the Applicant is aware of the submitted request for EIA screening at Red Moss Hotel for Battery Storage, covering the entire Red Moss Hotel (Application ref. ECU00005043) 	The key design criteria for the Site should ensure that the 'Total ETSU-R-97 Noise Limits' are not exceeded by the cumulative operation of all turbines in the area. To enable wind farm noise for individual developments to be controlled 'Site Specific Noise Limits' must be set which take account of the proportion of the Total ETSU-R-97 Noise Limit which has been given to, or could realistically be used by other schemes.				
Aviation	Impacts on the Lowther Hill radar are certain since turbines of any height within the Site would be within line of sight of this radar.	NATS En Route will require the developer to enter into a radar mitigation services contract. This is likely to focus on using the inherent technical capacity of the Lowther Hill				

Table A2.1: Preliminary Site and Design Guidance for M74 West Renewable Energy Park		
Certain areas of the Site are outwith line of sight of the Cumb primary surveillance radar. Layout design and/or turbine heig	Certain areas of the Site are outwith line of sight of the Cumbernauld primary surveillance radar. Layout design and/or turbine height	radar but may also require in-fill using another NATS radar that does not have line of sight to the turbines.
	reduction may reduce/eliminate visibility from the Cumbernauld radar.	Regarding the Low Flying Area the EIAR will explore the potential for a reduced lighting scheme for submission to the Civil Aviation Authority (CAA) for approval. Radar- activated lighting systems would also be evaluated.
	The Site is within Low Flying Area 20(T) – a Tactical Training Area (TTA) where Operational Low Flying down to 100ft agl is permitted.	
	Lanarkshire and Lothians Soaring Club operates paragliders regularly from a number of sites on and around Tinto Hill.	The Site is located in the outer parts of the 10 km radius zone around Tinto Hill and does not include any significant ridges that might be used for soaring.
Telecommunications	 The Ofcom Spectrum Information Portal identified two fixed telecommunications links within 2 km of the Site, both Vodafone microwave links starting from Craighead Hill (immediately south of the Site). However, further investigation identified three fixed telecommunications links, operated by Vodafone, that cross the Site. Details below: Vodaphone Link 1 (I.D: 0496701/1 /) runs between transmitters at Craighead Hill (292260E 623760N) to Lesmahagow, South Lanarkshire (284070E 640870N). Vodafone Link 2 (I.D: 1332702/1 /) runs between transmitters at Craighead Hill (292276E 623789N) to Douglas, South Lanarkshire (286947E 629964N). Vodafone Link 3 (I.D: 1334216/1 /) runs between transmitters north of Crawfordjohn, South Lanarkshire (289181E 626910N) to Whitelaw Brae, South Lanarkshire (300392E 625963N). The JRC has confirmed that there are no energy industry scanning telemetry links in the vicinity of the Site. 	Detailed calculations have been completed to identify potential infringements of the links by turbines, and these confirm that Turbines 5 and 14 would be within the Fresnal Zone of one telecommunications link (see EIAR Volume 4, Technical Appendix 1.6. The Applicant will undertake further micrositing at the detailed design stage to achieve greater distance, where possible, or will seek to agree a technical solution with the service operator. There are no scanning telemetry systems in the vicinity with the potential to be affected.