Chapter 03
Project Description

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3 Project Description

Contents

Figures

Appendices

3 Project Description

3.1 Introduction

3.1.1 This chapter provides a description of the site and the geographical context. It presents a description of the Proposed Development for which consent is being sought, and for the purposes of informing the identification and assessment of likely significant environmental effects. This includes the anticipated construction and operation activities connected with the Proposed Development.

3.2 Site Status and Context

Background and Context

3.2.1 The Proposed Development site comprises a total area of c.965 hectares (ha), split into two main development areas connected by the B743. The proposed wind turbines and associated infrastructure are located in the northern development area (Dungavel Forest) (**Figure 3.1**), and the proposed solar panels and long duration energy storage (LDES) and associated infrastructure are located in the southern development area (Netherwood) (**Figure 3.2**) - refer to **Figure 1.2**. Short duration battery energy storage system (BESS) options are included in each development area as explained below. These two areas of the Proposed Development site will hereafter be referred to as 'the northern development area' (**Figure 3.1**) and 'the southern development area' (**Figure 3.2**).

3.2.2 The current contracted grid connection agreement for the project with the National Electricity System Operator (NESO) provides for the grid connection point for the Proposed Development being within the southern development area, to the west of Linburn Farm (refer to **Figure 3.2**). A Proposed Development substation and short duration BESS compound are therefore also shown to be located within the southern development area to the west of Linburn Farm as illustrated on **Figure 3.2**. An alternative substation location and short duration BESS compound for the Proposed Development has also been contemplated within the northern development area, and for completeness this alternative option has also been shown on the plans (refer to **Figure 3.1**) and considered in this assessment. Further detail and explanation of this is given in **Section 3.3**.

3.2.3 The northern development area is located within the western and southern parts of Dungavel Forest, bounded to the north and east by the operational Dungavel and Kype Muir Wind Farms, to the south by the proposed Bankend Rig 3 wind farm, and to the west by the B743, within South Lanarkshire. The southern development area is principally located on the Netherwood Farm landholding, including small parts of Burnfoot Fram and Linburn Farm, approximately 1.4 km (at its closest point) to the north of Muirkirk in East Ayrshire. The two development areas are connected by the public road corridor of the B743 and would be connected electrically by up to three underground cables running along the existing road corridor.

3.2.4 Access to the two development areas is proposed to be taken from two existing and one new entrance off the B743, as shown on **Figure 1.2**.

3.2.5 The northern development area extends to approximately 750 ha, comprising commercial coniferous plantation and existing forestry tracks. The southern development area extends to approximately 204 ha and comprises rough grassland principally used for silage and grazing cattle and sheep, with woodland fringes.

3.2.6 The site comprises a series of summits within the northern development area, which include Dungavel Hill (458 m, Above Ordnance Datum (AOD)), Auchengilloch (462 m AOD), Brown Hill (313 m AOD) and Regal Hill (428 m AOD). The southern development area is located on the south facing lower slopes of Middlefield Law (466 m AOD).

3.2.7 There are a number of watercourses that traverse the site. The northern development area is drained by the Bught Burn, Patrick Burn, and Powbrone Burn which flow in a south-westerly directly to meet with the Glangavel Water and into the Glengavel Reservoir, located outside the site

boundary. The southern development area is traversed by a number of smaller watercourses and the Black Burn, Harwood Burn, and Lamon Burn, which flow in a southerly direction to meet with the Greenock Water, located on the southern boundary of the site.

3.2.8 A small stand of woodland noted on the Ancient Woodland Inventory of semi-natural origin is located along the southern boundary of the site around Middlefield.

3.2.9 In terms of cultural heritage, there is one scheduled monument, Dungavel Hill cairn (SM2848), which lies within the north-west of the site boundary.

3.2.10 Three residential properties lie within the site boundary which are all in the ownership of one of the principal landowners for the Proposed Development:

- Linburn Farm, Muirkirk, Cumnock, KA18 3NL
- Middlefield Farm, Muirkirk, Cumnock, KA18 3NL
- Middlefield Cottage, Muirkirk, Cumnock, KA18 3NL

Environmental Designations

3.2.11 **Figure 1.3** shows environmental designations within 5 km of the Proposed Development site boundary.

3.2.12 The existing road corridor (B743) between the two development areas crosses the Muirkirk and North Lowther Uplands Special Protection Area (SPA) designated for its breeding and non-breeding hen harrier as well as other breeding bird populations and overlaps with the area of the Muirkirk Uplands Site of Special Scientific Interest (SSSI), designated for its breeding bird assemblage and upland habitats including blanket bog.

3.2.13 The Blood Moss and Slot Burn SSSI is located to the west of the B743 road corridor, outside the site boundary. It is an area of around 162 ha designated for its fossil-bearing rocks (yielding fossil fish and water scorpions) alongside the Slot Burn, and blanket bog. The Airds Moss Special Area of Conservation (SAC) is designated for its blanket bog habitat and located approximately 2.3 km to the south-west of the site boundary.

3.2.14 There are three further scheduled monuments within 5 km of the site all located to the south and south-west of the site boundary, alongside a number of scattered B-listed and C-listed structures. Two historic battlefield locations are also located approximately 3.6 km to the north-west of the site and relate to the Battle of Loudoun Hill and Battle of Drumclog.

Cumulative Developments

3.2.15 **Figure 5.20** shows the locations of other relevant large wind farm developments in planning, consented/under construction, and operational within 20 km of the Proposed Development at the time of assessment (January 2025). Potential cumulative effects with these developments have been assessed throughout the EIA Report as appropriate to each technical discipline.

3.2.16 There are no other relevant large solar or BESS developments in planning, consented/under construction, and operational within close proximity of the Proposed Development at the time of assessment (March 2025). The closest relevant development is Carlisle Road Battery Energy Storage System, a 200 MW BESS development, located approximately 9.8 km east of the site boundary. Due to this development's distance from the Proposed Development, with the Hagshaw Energy Cluster and large areas of forestry located between, it is not considered that it could give rise to any significant cumulative effects, and it is therefore not considered in the cumulative assessments for any of the technical topics.

3.2.17 Further detailed discussion on the approach to cumulative assessment is presented in each technical assessment chapter as relevant.

3.3 Description of the Proposed Development

3.3.1 The Proposed Development (see **Figure 1.2**) is planned to comprise approximately **415 megawatts (MW)** of renewable energy generation and energy storage output capacity, including:

- approximately 130 MW wind energy,
- approximately 60 MW solar energy,
- approximately 25 MW short duration BESS, and
- approximately 200 MW long duration BESS.

3.3.2 It should be noted that although the Proposed Development comprises a total of approximately 415 MW of renewable energy generation and energy storage output capacity, no more than 400 MW will be exported to the grid at any one time.

3.3.3 As described in **Paragraph 3.2.1** and shown on **Figure 3.1**, the proposed wind turbines will be sited in the northern development area, and the proposed solar panels and long duration BESS will be sited in the southern development area. Short duration BESS options are provided in each area as explained below.

3.3.4 As noted in **paragraph 3.2.2,** the Proposed Development substation and short duration BESS compound are currently proposed to be located in the southern development area next to the currently contracted grid connection point for the project to the west of Linburn Farm (refer to **Figure 3.2**). However, an alternative grid connection point for the project has also been considered within the northern development area in Dungavel Forest (refer to **Figure 3.1**). The final decision on location of the Proposed Development substation and associated short duration BESS compound is subject to ongoing discussions with NESO and ScottishPower Energy Networks (SPEN) to determine the optimum grid connection solution for the project. Therefore, for the purposes of fully assessing potential environmental effects that may arise from the Proposed Development, both options (i.e. currently contracted location in southern development area and alternative location in northern development area) are considered in this assessment, as shown on **Figures 3.1** and **3.2**. However, it should be noted that only one Proposed Development substation and short duration BESS compound would ultimately be constructed, and it is proposed that confirmation of the final selected location be provided prior to the commencement of construction which can be secured by way of an appropriately worded planning condition.

3.3.5 As well as a substation for the Proposed Development itself, SPEN (the Transmission Network Operator (TNO) will need to construct a substation within the site boundary to facilitate connection of the development to the National Grid. Similarly to the Proposed Development substation and short duration BESS compound, two potential locations for the TNO substation are shown on the figures and have been assessed in the EIA (i.e. currently contracted location in southern development area and alternative location in northern development area **Figures 3.1** and **3.2**), however only one of the two prospective locations will be selected for construction. The Proposed Development substation and short duration BESS compound will be constructed adjacent to the final location of the TNO substation.

3.3.6 The 200 MW long duration BESS compound covers an area of approximately 6 ha and is located within the southern development area as shown on **Figure 3.2**.

Micro-siting

3.3.7 Although the layout and locations of the infrastructure elements described in this chapter have been determined through an iterative environmental based design process (refer to **Chapter 2**), there is the potential for the precise locations to be altered through micro-siting allowances prior to or during construction. A micro-siting allowance of up to 100 m in all directions is being sought in respect of all infrastructure, to suitably respond in the event that pre-construction surveys identify unsuitable ground conditions or environmental constraints that could be avoided by relocation. It is

proposed that the micro-siting of all infrastructure will be subject to an appropriately worded planning condition.

Wind Development

3.3.8 The Proposed Development comprises 18 wind turbines as well as associated infrastructure, located within the northern development area.

Turbines

3.3.9 Seventeen turbines will to be up to 230 m maximum blade tip height and one turbine (T06) up to 200 m maximum blade tip height. Each turbine will have a generating capacity of up to *c.*7.2 MW and the indicative combined generation capacity is therefore *c.*130 MW. The rotor diameter for all turbines will be up to 163 m.

3.3.10 These dimensions are indicative and final turbine dimensions will be determined based upon turbine availability and procurement prior to construction. The tip height of the chosen turbine will not exceed a blade tip height of 230 m (200 m at T06).

3.3.11 For the purposes of the Landscape and Visual Impact Assessment (LVIA), different candidate turbine hub height/rotor diameter combinations have been assumed for daytime and night-time, so that the assessment considers the 'worst-case' for each of these scenarios. This is explained further in **Chapter 5**.

3.3.12 Given the committed maximum tip height, the range of turbine models likely to be available and suitable for the local wind conditions, and the 'worst-case' approach to assessment of daytime and night-time landscape and visual effects, there is considered to be negligible potential for the significance of environmental effects to be different than as assessed based on the candidate turbine model for each assessment. It is anticipated that confirmation of the final selected turbine dimensions prior to commencement of construction will be secured by a suitably worded planning condition.

3.3.13 The layout of the northern development area, including the wind turbines as well as associated infrastructure, is provided in **Figure 3.1.**

3.3.14 The proposed final locations of the turbines have been defined in order to enable the EIA Report to describe fully the Proposed Development for which permission is being sought. The British National Grid (BNG) coordinates denoting where each of the turbines are proposed to be located are listed in **Table 3.1**.

3.3.15 Each of the wind turbines will comprise the following components:

- three blades;
- tower;
- nacelle;
- hub; and
- transformer and switchgear.

3.3.16 Each wind turbine will have a nacelle mounted on a tapered tubular steel/concrete tower. The nacelle will contain the gearbox or direct drive, the generator, the transformer, and other associated equipment. The hub and rotor assembly, including three blades, will be attached to the nacelle.

3.3.17 An elevation drawing of an indicative wind turbine and dimensions is illustrated in **Figure 3.3**. The wind turbines will be of a typical modern, three-blade, horizontal axis design in semi-matt white or light grey with no external advertising or lettering except for statutory notices.

3.3.18 The switchgear will be sited either within the base of each tower or externally sited, on the ground inside its own enclosure, a few metres away from the tower. For the purpose of the EIA, it has been assumed that the switchgear and transformer will be contained within each tower base.

Table 3.1 – Wind Turbine Coordinates

Wind Turbine	Easting	Northing	Turbine Tip Height (m)	Turbine Hub Height (m)
T01	266556	635949	230	149.5
T02	266843	635542	230	149.5
T03	266986	635135	230	149.5
T04	267094	634729	230	149.5
T05	267526	634632	230	149.5
T06	268084	635338	200	119.5
T07	268223	634795	230	149.5
T08	267695	634272	230	149.5
T09	267848	633917	230	149.5
T10	268359	634251	230	149.5
T11	268871	634104	230	149.5
T12	269463	634090	230	149.5
T13	269992	634055	230	149.5
T14	270546	634398	230	149.5
T15	269727	635147	230	149.5
T16	270324	635435	230	149.5
T17	270629	635118	230	149.5
T18	271042	634990	230	149.5

3.3.19 Infrastructure associated with the wind turbine component of the Proposed Development will include.

- turbine foundations;
- crane hardstandings;
- on-site access tracks between turbines and from the point of access to the turbines, with watercourse crossings where needed;
- up to four temporary construction compounds and laydown areas, with a concrete batching plant at one of the construction compounds;
- underground cabling between the wind turbines to the electricity substation and BESS compounds; and
- up to three borrow pits for excavation of stone to use in the construction of the Proposed Development.

Turbine Foundations

3.3.20 It is expected that typical gravity foundations will be appropriate for the wind turbines, although this will be confirmed following completion of detailed pre-construction ground investigations. Until detailed ground investigations have been undertaken, the exact size and depth of foundations required cannot be determined. Therefore, for the purposes of this EIA Report, the following approximate dimensions have been used:

- a round reinforced concrete slab with total volume of approximately 1,050 m^3;

- approximate slab diameter up to 30 m; and
- depth of the foundations up to approximately 3.5 m.

3.3.21 An illustration of an indicative wind turbine foundation is provided in **Figure 3.4**. The actual foundation design will be specific to the site conditions as verified during detailed pre-construction site investigations. In the unlikely event that ground conditions are unsuitable for the standard foundation design as described above, an alternative foundation design may be required, although it is not expected that this would materially affect the conclusions of the EIA.

Crane Hardstandings

3.3.22 To enable the construction of the turbines, a crane hardstanding area and turning area at each turbine location will be required to accommodate assembly cranes and construction vehicles. This will comprise a crushed stone hardstanding area measuring approximately 3,430 m^2. The actual dimensions will be subject to the specifications required by the selected turbine manufacturer and crane operator and following detailed site investigations prior to construction commencing.

3.3.23 A portion of the crane hardstandings will be 'permanent' infrastructure and remain in place during the lifetime of the Proposed Development to facilitate maintenance work.

3.3.24 Indicative crane hardstandings are illustrated in **Figure 3.5**. Detailed construction drawings with final dimensions will be provided prior to commencement once the final turbine model has been selected.

Solar Development

3.3.25 The proposed solar development is located on south facing slopes of the southern development area. The total installed capacity of the solar PV development will be approximately 60 MW. Infrastructure associated with the solar component of the Proposed Development will include:

- photovoltaic panels and mounting frames;
- access tracks with watercourse crossings where needed;
- two temporary construction compounds;
- perimeter fencing (deer stock);
- closed circuit television (CCTV) cameras;
- inverters and transformers;
- underground cabling between the photovoltaic panels and the electricity substation and BESS compounds; and
- one borrow pit for excavation of stone to use in the construction of the Proposed Development.

Solar Photovoltaic Panels

3.3.26 The modules will stand approximately 0.6 - 0.8 m Above Ground Level (AGL) at their minimum point and will be angled and arranged in rows. Depending on the finalised angle of elevation, and the number of rows of modules stacked, the maximum height of the modules will be up to 3 m AGL (refer to **Figure 3.6**).

3.3.27 Each module will be mounted upon a pre-fabricated alloy metal frame. The module frames will be anchored to the ground via steel piles which will be driven approximately 1.5 m below ground. The PV modules will be fixed to the frame.

3.3.28 The solar development area is identified on **Figure 1.2** with an indicative layout provided in **Figure 3.2.**

Inverters and Transformers

3.3.29 Inverter stations and field transformer units will be installed on site in order to convert the Direct Current (DC) produced by the solar modules, into an Alternating Current (AC) which is compatible with the electricity supply network. Central inverters have been shown as an indicative option on the site layout plan (refer to **Figure 3.2**). The field transformers will be distributed along the access track and each will be placed on a concrete plinth. These are shown on **Figure 3.7**.

Security Fencing and CCTV

3.3.30 Security fencing will be established around the edge of the solar array areas to prevent unauthorised access. The fencing will stand up to 2.4 m AGL and is proposed to comprise standard stock mesh interspersed with wooden fenceposts.

3.3.31 CCTV will be deployed as a security measure. The CCTV will be mounted on posts each measuring up to 4.5 m in height. An example of the security fencing and CCTV is represented in **Figure 3.8**. The number of CCTV units installed will be minimised and will be dependent on lines of sight. The CCTV units will be installed inside and adjacent to the proposed security fencing with the exact locations to be confirmed prior to construction. They will be installed at discreet locations and will be oriented away from external landowners and dwellings.

Energy Storage

3.3.32 The Proposed Development will include approximately 225 MW of energy storage capacity, comprising *c.*25 MW of short duration BESS and *c.*200 MW of long duration BESS.

Short Duration BESS

3.3.33 It is proposed that approximately 25 MW of short duration BESS (up to 4 hours discharge duration) is located adjacent to the Proposed Development substation, which currently has two options presented – one in the southern development area (currently contracted location) and one in the northern development area (alternative location) (see **Figure 1.2**). However, as explained in **Paragraph 3.3.3,** only one of these options will ultimately be built-out.

3.3.34 The short-duration BESS compound shall be approximately 100 m by 50 m surrounded by a security fence up to 2.4 m in height and CCTV will be deployed as a security measure. An example of the security fencing and CCTV is represented in **Figure 3.8**. The compound will include containerised battery units, Power Conversion System (PCS) inverter units, a containerised electrical switch room, a welfare unit, a storage unit, water storage tank(s), access tracks and car parking as shown on **Figure 3.9a**. The indicative height of the battery units themselves will be approximately 3 m (refer to **Figure 3.9b**). It is currently proposed that the short duration BESS facility would utilise conventional lithium-ion battery technology. However, technology continues to develop in the field of energy storage, therefore confirmation of the final design details would be provided nearer to the commencement of construction, proposed to be secured by an appropriately worded planning condition. The design would conform with relevant safety standards and requirements for the selected technology.

3.3.35 An indicative layout and elevations for the 25 MW short duration BESS layout are provided on **Figure 3.9** which has been used in this assessment**.**

Long Duration BESS

3.3.36 In addition to the 25 MW short duration BESS facility, approximately 200 MW of long duration BESS (minimum of 8 hours discharge duration and up to approximately 12 hours discharge duration), comprising an area of approximately 6 ha, will be located in the southern development area.

3.3.37 The long-duration BESS has been designed to service the long duration electricity storage market and will have the capability to draw power from the Proposed Development or the National Grid to be stored for re-use when the National Grid requires it (see **Section 3.8** for more details).

3.3.38 It is currently proposed to use flow batteries as opposed to conventional lithium-ion technology. Unlike lithium-ion batteries, flow batteries use a water based, non-flammable electrolyte, significantly reducing fire risk and allowing safe deployment at greater densities. Long duration BESS technologies like these provide much greater capacity and longer discharge durations than traditional short duration (lithium-ion) BESS schemes and, therefore, provide a different power balancing service to the National Grid.

3.3.39 For the purposes of the EIA, a maximum design envelope for both the density of long-duration BESS units in plan, and the height of long-duration BESS units in elevation, has been assumed. The assumed maximum layout density of units is shown on **Figure 3.10a**, with units in elevation being up to triple-stacked as illustrated on **Figure 3.10b**, meaning an indicative maximum height up of to 9 m. The long-duration BESS compound shall be surrounded by a security fence up to 2.4 m in height and CCTV will be deployed as a security measure (**Figure 3.8**). For clarity the triple stacking assumption would only be implemented for non lithium-ion storage technologies such as flow batteries that have no thermal runaway risks. The compound will include containerised flow battery units, Power Conversion System (PCS) inverter units, string control units, DC combiners, AC distribution panels, containerised electrical switch rooms and energy management systems, a welfare unit, storage units, water storage tank and access tracks as shown on **Figure 3.10a**. The indicative height of the individual flow battery units themselves will be approximately 3 m (refer to **Figure 3.10b**).

3.3.40 Technology continues to develop in the field of energy storage, therefore confirmation of the final design details would be provided nearer to the commencement of construction, proposed to be secured by an appropriately worded planning condition. The design would conform with relevant safety standards and requirements for the selected technology.

3.3.41 An indicative layout and typical elevations for the 200 MW long duration BESS facility are provided on **Figure 3.10a** and **3.10b** which have been used in this assessment**.**

Substations and Cabling

3.3.42 The electrical power produced by the individual turbines and solar panels will be fed to an on-site substation and energy storage facilities via underground cables. The two potential locations of the Proposed Development substation and short-duration energy storage facility are shown on **Figure 3.1** and **Figure 3.2**. The design of the Proposed Development substation and control room building is relatively flexible and where appropriate may be clad in local materials to match in with the surroundings.

3.3.43 The Proposed Development substation facility will be approximately 7,000 m^2 to incorporate a substation and control room building, and some external electrical equipment. The substation and control building will accommodate all the equipment necessary for automatic remote control and monitoring of the Proposed Development, in addition to the electrical switchgear, fault protection and metering equipment required to connect the Proposed Development to the electricity transmission network. There will also be some external electrical infrastructure adjacent to the control building. An indicative Proposed Development substation layout and elevation drawing are provided in **Figure 3.11a** and **3.11b**.

3.3.44 The wind farm and solar array cables on site will be laid in trenches, typically no shallower than 900 mm deep with an overall trench depth approximately 1.5 m. The trench width will depend on the number of cables per trench, but is expected to be approximately 2 m. The cables will be laid on a sand bed and backfilled using suitably graded material. The trenches will also carry earthing and communication cables for the operation of the Proposed Development. Cabling will mainly be located adjacent to the access tracks. The long duration and short duration BESS facilities will also be connected to the substation via underground cables. Indicative cable trench details are shown in **Figure 3.13**.

3.3.45 Located close to the Proposed Development substation (as explained in **Paragraph 3.3.4**) shall be the TNO substation compound which will be approximately 70m by 50 m surrounded by a security fence up to 3 m in height. The TNO compound shall contain a control building, external electrical equipment and a standby diesel generator. An indicative layout for the TNO substation compound

is shown on **Figure 3.12**. There is also a requirement for the TNO compound to have an associated temporary construction compound which would measure 100 m by 50 m. If the northern option is ultimately selected for construction of the substations, then it is proposed that the temporary compound used for construction of the TNO substation will be converted for use as the short duration BESS compound thereafter which his is illustrated on **Figure 3.1**.

3.3.46 An underground cable route will be required along the B743 in order to electrically connect the northern and southern development areas. At the time of writing, the most likely configuration of this cable route would comprise either:

- One 132kV cable;
- Two 66kV cables; or
- Three 33kV cables.

For the purpose of the EIA the three 33 kV cables have been assessed as the 'worst-case' scenario. The three cables would be located in three separate trenches with c.1 m separation between each. An indicative cable arrangement running along the B743 road corridor is shown in **Figure 3.14**.

Grid Connection

3.3.47 The Proposed Development is currently contracted to be connected to the wider electricity network via the proposed Redshaw Transmission Substation to the south-east of the site. The final routing and design of the grid connection cable(s) between the on-site substation and Redshaw Transmission Substation will be the responsibility of the TNO. At present it is proposed that the electrical power produced by the Proposed Development will be exported/imported via two 132kv overhead lines, the exact routing of which is still to be determined by the TNO.

3.3.48 The Proposed Development presently has a grid connection date of July 2028 and would therefore contribute to Scotland and the UK's 2030 renewable energy and climate change targets.

Site Access Tracks and Site Tracks

Access to the Site

3.3.49 There are two routes for abnormal loads to the site presently being considered for the Proposed Development (see **Figure 3.15**). All abnormal loads would be manufactured off-site and transferred to the site for assembly from the proposed Port of Entry (PoE) at King George V (KGV) Docks in Glasgow.

3.3.50 The first route, Route Option 1, is to be taken from Junction 11 (Poniel) of the M74, through the existing Hagshaw Energy Cluster to join the A70 east of Muirkirk. Vehicles would then follow the A70 west through Muirkirk, then turning right (north) just west of Smallburn using the site entrance to the former Burnfoot Moor Opencast Coal Site and following the existing tracks through and along the edge of forestry land, to join the B743 and continuing north entering the site at Access Point A (see **Figure 1.2**).

3.3.51 The second route, Route Option 2, would be to leave the M74 trunk road at Junction 8 (Canderside Toll) and travel west along the A71, travelling around the settlement of Stonehouse, leading to Strathaven. Vehicles would then turn left (south-west) onto the B743 for approximately 13.5 km where they would turn left (east) into the site at Access Point A (see **Figure 1.2**).

3.3.52 Component deliveries for the southern development area will use the existing public road network to access the site and will come directly off the B743 at an amended entrance to Linburn Farm to access the solar, BESS and substation development areas (Access Point C shown on **Figure 3.2)**.

3.3.53 It is proposed that lighter goods vehicles and personnel vehicles will also be able to access the Proposed Development site from the two existing entrances into Dungavel Forest on the B743 (Access Points A and B on **Figure 3.1),** and the amended entrance to Linburn Farm (Access Point C).

3.3.54 The Abnormal Load Assessments for both routes is provided in **Technical Appendix 11.1** and preliminary junction designs for the three Access Points (A-C) provided in **Technical Appendix 11.2**.

Access within the Site

3.3.55 The Proposed Development will include approximately 20,149 m of new access tracks and 1,369 m of existing tracks which will be upgraded. They will be formed largely of locally sourced stone from the on-site borrow pits and will have a typical running width of 5 m plus drainage provision in verges. An indicative track drainage layout is shown in **Figure 3.16** for the northern development area and in **Figure 3.17** for the southern development area.

3.3.56 Where proposed access tracks cross areas of deeper peat, floated track construction is proposed to avoid the requirement for excavation of peat. It is proposed that approximately 2,730 m of the new access track would be floated if, following detailed site investigations, deeper peat cannot be avoided by micro-siting. This is based on an assumption of floating new access track across areas with peat depth 0.8 m and greater, and is subject to confirmation through detailed intrusive ground investigations and engineering design prior to construction. Construction of floated tracks would involve placing of a geotextile membrane on existing topsoil and vegetation followed by aggregate layers. Floating tracks would be designed to ensure suitability for site traffic during construction and operation.

3.3.57 The total length of tracks for the Proposed Development is approximately 21,520 m and can be sub-divided into the categories detailed in **Table 3.2**. New and existing tracks are shown in **Figure 3.1**.

Table 3.2 – Access Track Composition

Type	Approximate Length (m)	Percentage of Total (%)
Existing track, to be upgraded/ widened where necessary	1,370	6.36
New cut track	17,420	80.95
New floated track	2,730	12.69

Watercourse Crossings

3.3.58 The tracks providing access to and within the Proposed Development will need to cross surface watercourses at several locations. Watercourse crossings have been avoided in the design of the access track layout as far as possible, however a total of 16 watercourse crossings would be required for the Proposed Development: 12 new watercourse crossings and 4 existing watercourse crossings (coordinates provided in **Table 3.3**).

3.3.59 **Table 3.3** below summarises the new watercourse crossings that will be required. Further details of the water crossings (existing and proposed) are included in **Appendix 8.1** and discussed within **Chapter 8: Geology, Peat, Hydrology and Hydrogeology**.

3.3.60 It is proposed that the final detailed design for all water crossings, including any potential upgrades or amendments required to existing crossings, will be addressed through an appropriately worded planning condition and will be in accordance with the requirements of the Water Environment (Controlled Activities) (Scotland) Regulations 2011.

Table 3.3 – New Watercourse Crossing Detail

ID	Easting	Northing	Watercourse	Proposed Crossing Type
WX01	266604	635522	New	Culvert
WX02	266135	635803	New	Culvert
WX03	266604	635522	New	Culvert
WX04	267571	634302	New	Culvert

ID	Easting	Northing	Watercourse	Proposed Crossing Type
WX05	267879	634703	Existing to be upgraded	1.5 m steel circular culvert
WX06	268061	633972	Existing	Culvert N/A
WX07	268241	633989	New	Bottomless Arch Culvert
WX08	270739	634545	New	Culvert
WX09	270842	634896	New	Culvert
WX10	269595	629608	New	Culvert
WX11	269143	629588	New	Bottomless Arch Culvert
WX12	268478	629342	Existing to be upgraded	0.3 m Plastic Circular Culvert
WX13	268295	629278	New	Culvert
WX14	267995	629069	New	Culvert
WX15	267702	629066	New	Bottomless Arch Culvert
WX16	267230	628846	Existing	Stone Arch Culvert

Temporary Construction Compounds

3.3.61 Several secure construction and material storage compounds will be required during the construction period. The locations of these compounds are shown in **Figure 3.1** and **Figure 3.2** and are summarised in **Table 3.4**. The compounds will comprise areas ranging between approximately 1,500 m^2 and 10,000 m^2. An indicative layout of a typical construction compound is provided in **Figure 3.18.**

Table 3.4 – Details of Temporary Construction Compounds

ID	Centre Point (BNG)	Area (m^2)
Northern Development Area		
SPEN - CC01*	267406, 634296	5,000
CC01	266175, 635648	1,500
CC02	267762, 633692	1,500
CC03	267947, 634156	10,000
CC04	269085, 633935	2,500
Southern Development Area		
SPEN – CC02*	269389, 629580	5,000
CC05	269771, 629801	2,500
CC06	269463, 629607	2,400

**As explained in Paragraph 3.3.4, only one of these compound locations will ultimately be selected.*

3.3.62 The compound areas will house temporary portable cabin structures to be used as the main site office and welfare facilities, including toilets, clothes drying and kitchen, with provision for sealed waste storage and removal. They may also be used for the storage and assembly of some wind turbine components, parking for vehicles, containerised storage for tools and small parts, and storage for cables, oil and fuel as required.

3.3.63 A concrete batching plant will be located within one of the construction compounds in the northern development area, and will comprise aggregate and cement hoppers, water bowsers/tanks, a mixer

and a control cubicle. Aggregates and sand would be stockpiled and contained adjacent to the plant. An indicative batching plant compound is shown in **Figure 3.19** with an approximate area of 4,000 m^2.

3.3.64 The proposed locations of the compounds are on firm ground and avoid areas of highest sensitivity. Prior to commencing construction work, a detailed appraisal of the areas will be undertaken, including an assessment by the project ecologist/Ecological Clerk of Works (ECoW) and also trial pits and/or boreholes to confirm the nature of the sub-strata.

3.3.65 The detailed location, size and engineering properties of the construction compounds will be confirmed prior to the start of construction, after the turbine supplier and model have been confirmed. The confirmation of these details can be secured via an appropriately worded planning condition.

3.3.66 On completion of construction works, it is proposed that all temporary structures be removed and the compound areas be restored.

Borrow Pits

3.3.67 To minimise the volume of imported material brought onto the site and any associated environmental impact, borrow pits located within the site will be used to source stone for access track and compound construction.

3.3.68 Four borrow pit search areas have been identified within the Proposed Development boundary; these are shown on **Figure 3.1** and **Figure 3.2**. As described in **Chapter 2**, these search areas were identified as areas anticipated to have suitable bedrock geology (based on British Geological Survey mapping), shallow peat depth and suitable topography. Field survey work by an experienced geologist has been undertaken to gain further understanding of the proposed borrow pit search areas and verify their suitability, based on information available to date (refer to **Chapter 8** for further information).

3.3.69 Detailed site investigations prior to construction will be carried out to further confirm the rock type, rock characteristics and suitability, as well potential volumes to be extracted from each search area. The final borrow pits identified during the geotechnical evaluation will be defined within the Construction Environmental Management Plan (CEMP) (refer to **Appendix 3.1** which provides an Outline CEMP). The pollution control measures to be implemented during usage of the borrow pits and their reinstatement will also be covered within this document. A Borrow Pit Desk Top Appraisal is included as **Appendix 8.6** and discussed within **Chapter 8**.

3.3.70 The borrow pits will require the use of plant to both win and crush the resulting rock to the required grading. It is anticipated that rock will be extracted by breakers and other relevant methods that may be required**.**

3.3.71 Environmental considerations have influenced the location of the borrow pit search areas to minimise the effect on ecology, hydrology and landscape, and to allow successful reinstatement measures to be put in place as appropriate. Following completion of extraction, the borrow pits will be restored and reinstated to agreed profiles, including the original baseline vegetation state. Restoration will include backfilling the borrow pit with peaty soils or rocky substate, depending on the immediate geological environment of the pit. Restoration of each borrow pit will be specific, based on surrounding surface geology and habitats.

3.3.72 It is expected that full details of how the borrow pits will be worked and restored can be provided post-determination, after detailed intrusive site investigation works have been undertaken. A detailed Borrow Pit Scheme of Works can be secured via an appropriately worded planning condition.

3.4 Construction

3.4.1 The Proposed Development will be constructed over a period of approximately 24 months. Construction would include the principal activities listed within the indicative construction programme as provided in **Table 3.5** below.

Table 3.5 – Indicative Construction Programme

Task	Month																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mobilisation																								
Tree Felling																								
On-site access tracks																								
Turbine foundations																								
Substation and BESS civils works and installation																								
On-site cabling																								
Crane Hardstanding																								
Turbine Delivery																								
Turbine Erection																								
Constructing Solar Mounting Frames																								
Erecting Solar Modules & Central Inverters																								
Commissioning and Testing																								
Site Reinstatement																								

3.4.2 Normal construction hours will be between 07:00 and 19:00 Monday to Friday and 07:00 and 13:00 on Saturdays. These times have been chosen to minimise disturbance to local residents. It must, however, be noted that out of necessity due to weather conditions and health and safety requirements, some generally quiet activities, for example abnormal load deliveries (which are controlled by Police Scotland) and the lifting of the turbine components, may occur outside the specified hours stated.

Construction Materials

3.4.3 The main materials likely to be required in part or total for the construction of the track, turbine, inverter, BESS and substation foundations, and hardstanding areas are described below: crushed stone

- geotextile;
- stone;
- cement;
- concrete;
- steel reinforcement; and
- electrical cable.

Construction

3.4.4 Excavations for the turbines, solar PV, BESS and substation areas will be made, initially by stripping back the soil from the area to be excavated. This soil will typically be stored separately either in a mound adjacent to the excavation area for backfill, if required, or stored at a designated area on site for further use or reinstatement of temporary works areas. The handling of soils will be undertaken in accordance with best practice techniques.

3.4.5 For the purposes of the transport assessment, to provide a 'worst-case' scenario, it has been assumed that concrete will not be batched on-site. However, it is likely to be more cost-effective, and beneficial for reducing construction traffic movements, for concrete to be batched on-site within the identified concrete batching areas. Confirmation of this will be made by the appointed construction Contractor prior to commencement of construction.

3.4.6 Should surface water run-off or groundwater enter the excavation during construction of any foundations, appropriate pumping measures away from watercourses will be implemented to ensure the works are safely carried out and the excavation is sufficiently dry to allow concrete placement. Once the concrete is cast, the excavated material will be used for backfill and compacted to the required design density. Once this backfill is completed, the crane hardstanding areas will be constructed.

Turbine Erection

3.4.7 The proposed method for constructing the turbines is as follows. The turbines will be erected using two individual cranes, a larger mobile crane or crawler crane, positioned on the hardstanding adjacent to the turbine base, and a smaller tail crane that will be positioned adjacent to the delivery position of the turbine components. The initial delivery position is located within the hardstanding and is used for temporary storage of turbine components prior to assembly. The smaller tail crane will be used to lift the tower sections and blades into their assembly positions before the larger mobile crane is used to lift the tower sections, nacelle and blades into their operational positions.

3.4.8 As soon as practical, once installation is complete, the immediate construction area will be restored to its original profile, although the main area of crane hardstandings will be retained for future maintenance. The soils will be replaced and reseeded where appropriate and as advised by the on-

site ECoW. Any surplus soils will be used to restore track edges after construction. This progressive reinstatement has been found to assist with re-establishment of the local habitats as it minimises the time soils are in storage.

3.5 Environmental Management

Construction Environmental Management Plan (CEMP)

3.5.1 As part of the construction contract, the Contractor responsible for undertaking the construction and/or decommissioning works shall sign up to produce, and adhere to, a CEMP. The CEMP shall be developed in accordance with 'Good Practice During Wind Farm Construction' (Scottish Government *et al*., 2019).

3.5.2 The CEMP shall describe how the Applicant will ensure suitable management of the following environmental issues during construction of the Proposed Development:

- Noise and vibration;
- Dust and air pollution;
- Surface and ground water;
- Ecology (including protection of habitats and species);
- Ornithology;
- Cultural Heritage;
- Waste (construction and domestic);
- Pollution incidence response (for both land and water); and
- Site operations (including maintenance of the construction compound, working hours and safety of the public).

3.5.3 The CEMP is anticipated to include or cross-refer to the following documentation:

- Construction Method Statement (CMS);
- Traffic Management Plan (TMP);
- Pollution Prevention Plan (PPP);
- Site Waste Management Plan (SWMP);
- Drainage Management Plan (DMP);
- Borrow Pit Management Plan (BPMP);
- Peat Management Plan (PMP) (refer to an outline plan in **Appendix 8.4**);
- Battery Safety Statement (**Appendix 3.3**), which details procedures in the event of a maintenance requirement or technical failure of the BESS facility; and
- Habitat Management and Enhancement Plan (HMEP) (refer to an outline plan within **Appendix 7.5**).

3.5.4 The Contractor and/or Applicant shall consult with SLC, EAC, Scottish Environment Protection Agency (SEPA), NatureScot and Historic Environment Scotland (HES) on relevant aspects of the CEMP. The Contractor shall amend and improve the CEMP as required throughout the construction and decommissioning period.

3.5.5 The CEMP shall contain details of all environmental mitigation required during construction and details on how the Contractor will implement and monitor this mitigation. The CEMP will also

contain details on how the Contractor will liaise with the public and landowners and how queries or complaints will be responded to.

3.5.6 Specific requirements of the CEMP for each of the environmental topics assessed within the EIA are provided in the relevant EIA Report chapters and an outline CEMP is provided in **Appendix 3.1**.

Pollution Prevention and Health and Safety

3.5.7 Prior to commencement of construction activities, a pollution prevention strategy, contained within the CEMP, will be agreed with SLC, EAC and SEPA to ensure that appropriate measures are put in place to protect watercourses and the surrounding environment.

3.5.8 As with any development, during the construction stage there is the potential for threats to the quality of the water environment in waterbodies, watercourses and local ditches. These mostly arise from poor Site practice so careful attention will be paid to the appropriate guidance and policies to reduce the potential for these to occur.

3.5.9 Any fuel or oil held on-site will only be of an amount sufficient for the plant required. This will be stored in a bunded area to prevent pollution in the event of a spillage. There will be no long-term storage of lubricants or petrochemical products on-site at the Proposed Development.

3.5.10 High standards of health and safety and environmental management will be established and maintained. At all times, all activities will be undertaken in a manner compliant with applicable health and safety and environmental legislation and with relevant good practice, as defined under applicable statutory approved codes of practice and guidance.

3.5.11 Further details of site-specific storage and management of fuel and oil and protection of watercourses during construction are presented in **Chapter 8**.

Traffic and Transport

3.5.12 A detailed Transport Assessment has been undertaken which provides details regarding transport and access to the site (refer to **Chapter 11**).

3.5.13 Traffic associated with the construction and maintenance of the Proposed Development falls into two main categories, namely Abnormal Indivisible Loads (AIL) and Construction / Maintenance Loads. The AILs are those that will require an escort, either by private contractor or by police escort. Construction / Maintenance Loads are those that do not require any special escort or permissions and are only influenced by normal traffic regulations.

3.5.14 The Applicant will ensure that the vehicles will be routed as agreed with SLC, EAC, Transport Scotland and Police Scotland, to minimise disruption and disturbance to local residents and road users. Further details regarding transport and access can be found in **Chapter 11**.

Pre-Construction Surveys

3.5.15 Detailed surveys have informed the design process of the Proposed Development. However, certain design elements are dependent on ultimate turbine/panel/BESS model and manufacturer, therefore detailed construction details will be provided prior to commencement once the final component models have been selected.

3.5.16 Pre-construction surveys will be undertaken to update the ecological and ornithological baseline and to perform detailed geotechnical ground surveys, further details of these are provided in the relevant technical chapters.

3.5.17 The Applicant will engage an Environmental Clerk of Works (EnvCoW) on-site during the construction phase (including post-construction reinstatement). The EnvCoW will be responsible for pre-construction surveys and will monitor the construction process on-site to provide advice and ensure that the measures within the CEMP are followed.

Habitat Management & Enhancement Plan

3.5.18 Significant biodiversity enhancements are proposed as set out in an Outline Habitat Management and Enhancement Plan (OHMEP) in **Appendix 7.5** which includes substantial peatland restoration

and a long-term commitment to funding habitat management and enhancement within the adjoining Muirkirk and North Lowther Uplands SPA and SSSI. This project will be delivered across an area of c.592 ha in the SPA and SSSI to improve habitat and foraging conditions for hen harrier (and other SPA qualifying species merlin, short-eared owl and golden plover), with the target of reversing the decline in numbers within this part of the SPA and returning qualifying species to areas which were historically widely used. A further c.147 ha of land outside the SPA and SSSI will also be managed for wading birds. The OHMEP represents a substantial financial commitment from the Proposed Development to fund nature conservation over a 40 year period which will deliver significant biodiversity enhancements and local job creation (refer to **Appendix 7.5** for further details).

3.6 Operation and Maintenance

3.6.1 The operational lifetime of the Proposed Development is intended to be 40 years from the date of final commissioning to commencement of decommissioning.

3.6.2 The Proposed Development would be maintained throughout its operational life by a service team. The service team would comprise operation management, operations technicians and support functions undertaking the scheduled and unscheduled maintenance throughout the year. This team would either be employed directly by the Applicant or by the turbine manufacturer. Management of the Proposed Development would typically include turbine, solar and BESS maintenance, health and safety inspections and civil maintenance of tracks, drainage and buildings. Maintenance visits would include but not limited to the following:

- Civil maintenance of tracks and drainage;
- Scheduled routine maintenance and servicing;
- Unplanned maintenance or call outs;
- High Voltage (HV) and electrical maintenance; and
- Blade inspections.

3.6.3 In the unlikely event that a major turbine component requires replacement, any areas of the hardstanding previously restored to prior condition may have to be temporarily re-constructed to allow maintenance to occur. These areas will then be restored again upon completion of the works. Re-construction and re-restoration of hardstanding areas will be dependent on the nature of maintenance works. Maintenance vehicles will make use the access tracks which will be retained throughout the operational phase to allow access.

3.6.4 Health and safety and environmental management will be controlled as set out in the construction phase.

Operational Environmental Management Plan

3.6.5 The Applicant will implement an Operation Environmental Management Plan (OEMP). Similar to the CEMP, the OEMP will set out the mitigation measures proposed in the EIA Report and how the Applicant will manage and monitor environmental effects throughout the operation of the Proposed Development. The OEMP will also be developed in consultation with SLC, EAC, SEPA, NatureScot and HES where relevant.

Aviation Lighting

3.6.6 As the turbine structures are over 150 m high, there is a statutory requirement to install visible aviation lighting on the turbines. A proposed reduced lighting scheme has been prepared and will be agreed with the Civil Aviation Authority (CAA) and Ministry of Defence (MoD), as shown on **Figure 12.1**. The specification of the lighting proposed is provided in **Chapter 12**.

3.7 Decommissioning

3.7.1 Consent is being sought for an operational lifespan of 40 years from the date of commissioning the turbines. For the purpose of the EIA Report, it is assumed that the Proposed Development will be decommissioned unless further consents to extend operational life are sought.

3.7.2 It is expected that decommissioning will take approximately 18 months. The environmental effects of decommissioning are considered to be similar to those during construction, excluding the loss of habitat which will have already occurred under construction. Decommissioning is anticipated to be a shorter process than the approximate 24 month construction period.

3.7.3 Prior to decommissioning, a Decommissioning Environmental Management Plan (DEMP) will be produced to reflect then current legislation and policy and will be agreed with the relevant statutory authorities.

3.7.4 During decommissioning, vehicles will access the site by the same routes used for delivery and construction of the Proposed Development.

3.7.5 It is anticipated that the turbines will be dismantled and removed from site for disposal and/or recycling as appropriate and in accordance with regulations in place at the time. It is proposed to leave the buried portion of the foundations of the turbines in situ on decommissioning. This is considered to have less impact on the hydrological system which will have established itself during the lifetime of the development, than complete removal of the foundations.

3.7.6 It is the intention all cables will be removed from the site upon decommissioning. However, should site conditions and best practice guidance favour leaving cabling in-situ at the point of decommissioning, this outcome may alter. It is proposed that all new access tracks will be retained in situ for use by the landowner for forestry and farming purposes.

3.8 Climate Change and Carbon Emissions

3.8.1 Increasing atmospheric concentrations of greenhouse gases (GHGs), including carbon dioxide (CO_2) (also referred to as carbon emissions) are resulting in climate change. A major contributor to this increase in GHG emissions is the burning of fossil fuels. With concern growing over climate change, reducing its cause is of utmost importance. The replacement of traditional fossil fuel power generation with renewable energy sources provides high potential for the reduction of GHG emissions. This is reflected in UK and Scottish Government climate change and renewable energy policy and commitments. The relevant aspects of such policies are summarised in the Planning Statement.

Energy Generation

3.8.2 The combined electrical installed capacity from the wind turbine generators and solar PV modules within the Proposed Development is currently estimated to be approximately 190 MW, based on the candidate turbine model. Based on the Proposed Development's location and estimated capacity factor, the annual indicative total electricity output from wind turbines and solar panels at the site would be an estimated 477,434 megawatt-hours (MWh), per annum.

3.8.3 Based on the average electricity consumption per Scottish household in 2024 of 3,078 kWh/year (DESNZ, 2024) and assuming generation of 477,434 MWh annually, the Proposed Development would generate enough power to supply approximately 200,192 average Scottish households.

Carbon Emission Savings

3.8.4 Whilst the Proposed Development will reduce carbon emissions by replacing the need to burn fossil fuels for power, carbon emissions will result from the component manufacturing, transportation and installation processes associated with the Proposed Development. There is also the potential for carbon fixers and sinks to be lost through the clearing of vegetation and excavation of peat during construction. There must, therefore, be a sufficient balance between the carbon reduction associated with renewable energy development and that which is produced through construction and fabrication processes and lost through site preparation.

3.8.5 The Scottish Government's online Carbon Calculator Tool takes account of the above considerations to estimate the 'carbon balance' of the wind farm element of the Proposed Development. The Carbon Calculator has been completed for the Proposed Development, as reported in **Technical Appendix 8.7** (note that at the time of submission, the online tool is not accessible, and therefore the assessment has been undertaken using the Carbon Assessment Tool spreadsheet (v2.14.1), issued by SEPA)**.** Input parameters are based on the proposed site design, infrastructure dimensions, results from peat depth surveys and laboratory testing of peat, and other information gained from site survey work, desk study and, where applicable, assumptions relating to groundwater, drainage, and habitat regeneration (including consideration of habitat restoration and enhancement commitments).

3.8.6 The expected carbon payback time of the Proposed Development, based on the Carbon Calculator output, is 1.2 years. This is the period of time for which a wind farm needs to be in operation before it has, by displacing generation from fossil-fuelled power stations, avoided as much carbon dioxide as was released in its lifecycle.

3.8.7 Further information is provided in **Technical Appendix 8.7.**

3.8.8 The provision of long duration electricty storage will also play a crucial role in supporting the continued development of renewable energy and decarbonisation of our electricity network (the National Grid) in line with the Government's Clean Power 2030 Action Plan (CP30 Plan). Since renewable sources like wind and solar are intermittent, long duration BESS stores excess energy when generation is high and releases it when demand increases or generation declines. This ensures a steady and reliable power supply, making renewables more viable as a primary energy source.

3.8.9 Long duration BESS also improves energy security by providing backup power during extreme weather events and grid disruptions. By enabling a more resilient and sustainable energy system, long duration electricty storage is a key enabler of the transition to a low-carbon economy.

3.8.10 The development of long duration electricity storage in the UK is a focus of Government, with the Department for Energy Security and Net Zero (DESNZ) recently (October 2024) consulting on designing a new policy framework to enable investment in long duration storage. The DESNZ consultation document states:

> *"Long duration electricity storage (LDES) is a key enabler to a secure, cost-effective and low carbon energy system. LDES can help to decarbonise the system by storing excess renewable generation over six hours or longer, replacing flexibility from fossil-fuelled generation and helping to alleviate constraints on the grid. LDES assets can reduce costs to consumers through lowering their energy bills, and by avoiding the need for electricity grid reinforcement and peak generation plant build."*

> *"Investment in Long Duration Electricity Storage (LDES) again after a hiatus of four decades will make an important contribution to this [CP30] mission by integrating renewables and reducing electricity system costs while supporting energy security."*

3.9 Public Access

3.9.1 Access to the site is to be taken from the B743 at the two existing entrances to Dungavel Forest and an amended entrance to Linburn Farm.

3.9.2 There are a number of core paths within the northern development area at Dungavel Forest. The Burnfoot Moor core path runs directly adjacent to the south-western boundary of the southern development area.

3.9.3 **Figure 3.20** shows the core paths at and close to the Proposed Development site.

3.9.4 The Proposed Development would contribute to the enhancement of the outdoor recreation offering in the local area through the upgrading of existing, and creation of new, tracks within the northern development area at Dungavel Forest, which will be able to be used for activities such as walking, running, and mountain biking. New parking provision at site entrances on the B743 will be created to improve accessibility. These access improvements can be linked with the wider recreation initiative being taken forward by the Hagshaw Energy Cluster Development Framework

to help establish a local tourism identity, attract visitors, and create employment opportunities for the local communities, transforming the former mining landscape into a vibrant destination.

3.9.5 In the interests of health and safety, the core paths within the site may need to be temporarily diverted or stopped-up during construction. If required, a temporary diversion will be put in place for the construction period for affected path sections, with suitable alternatives clearly signposted. It is proposed that details of temporary path diversions can be secured by an appropriately worded planning condition.

3.10 Community Benefit

3.10.1 Based on an estimated installed wind energy capacity of 129.6 MW (18 turbines x 7.2 MW) and a community benefit contribution of £5,000 per MW of installed wind energy capacity, plus an additional £20,000 per year for the long duration BESS, the Proposed Development would generate up to £668,000 per annum to support local groups and projects in the areas surrounding the site. Further information on the socio-economic benefits of the Proposed Development can be found in the stand-alone **Economic and Community Impact Report**.

3.11 Summary

3.11.1 This chapter has provided a description of the site and surrounding area, alongside details of the Proposed Development and a summary of the associated infrastructure. A description of the likely activities to occur during construction, operation and decommissioning phases is also provided.

3.12 References

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