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4. Development Description

4.1 Introduction

4.1.1 This chapter describes the components of the Proposed Development for which planning permission is being sought and which has been assessed through the EIA process. It includes details about the construction, operation and decommissioning of the Proposed Development. This chapter also provides details of the Likely Grid Connection Route and point of connection which, although not part of the Proposed Development for planning purposes, has been included in the EIA assessments.

4.1.2 This chapter is supported by the following figures and appendices which are referenced throughout the text:

■ **EIA Report Volume 3a: Figures**

- **Figure 4.1: Site Layout Plan (Overview);**
- **Figure 4.1a-b: Site Layout Plan (Detailed);**
- **Figure 4.2: Typical Wind Turbine Elevations;**
- **Figure 4.3a: Typical Piled Turbine Foundation Details;**
- **Figure 4.3b: Typical Excavated Turbine Foundation Details;**
- **Figure 4.4a: Typical Crane Hardstanding Layout Plan;**
- **Figure 4.4b: Bespoke Hardstanding Layout Plan – T1;**
- **Figure 4.5: Typical Cable Trench Details;**
- **Figure 4.6: Typical Substation Layout Plan;**
- **Figure 4.7: Typical Control Building Elevations;**
- **Figure 4.8a: Likely Grid Connection Route**
- **Figure 4.8b: Likely Grid Connection Route with Constraints**
- **Figure 4.9: Typical Excavated and Floated Track Details;**
- **Figure 4.10: Typical Watercourse Crossing Methods; and**
- **Figure 4.11: Typical Construction Compound Layout Plan.**

■ **EIA Report Volume 4: Technical Appendices**

- **Technical Appendix 4.1: Wind Farm Forestry Plan;**
- **Technical Appendix 4.2: Outline Construction Environmental Management Plan (CEMP);**
- **Technical Appendix 4.3: Aviation Assessment; and**
- **Technical Appendix 4.4: Shadow Flicker Assessment.**

4.2 Overview of the Proposed Development

4.2.1 The Proposed Development is a wind farm comprising up to five wind turbines with associated infrastructure. A summary of the main components is provided below:

- Up to five wind turbines each with a maximum blade tip height of 200 metres (m) and an indicative combined site output capacity of 36 megawatts (MW).
- Medium intensity (2000 candela (cd)) steady red aviation warning lights installed on the hubs (nacelles) of Turbines (T)1, T3, T4 and T5 which will be reduced to 200 cd in clear weather conditions, and infra-red (non-visible) warning lights on all turbines¹;

¹ The lighting scheme has been approved by the Civil Aviation Authority (CAA) through consultation (see **Technical Appendix 4.3**);

- Foundations supporting each turbine comprising a mixture of piled (for T1, T2 and T3) and excavated (for T4 and T5) construction methods;
- Permanent crane hardstandings at each turbine location comprising a mixture of piled (for T1, T2 and T3) and excavated (for T4 and T5) construction methods;
- A site access point which links to an existing track which runs alongside the M77 motorway to the unclassified road at Floak Bridge;
- Approximately 4.1 kilometres (km) of new onsite access track comprising approximately 1.3 km of excavated track and approximately 2.8 km of floated track;
- Up to 12 new crossings, which include five minor watercourses and five artificial drains not shown on the OS 1:25K mapping but mapped in the field, and two watercourses shown on OS 1:25K mapping data;
- A control building and substation;
- A network of underground cables to connect turbines to the substation; and
- A Biodiversity Enhancement Management Plan (BEMP).

4.2.2 In addition to the above permanent components associated with the operation of the Proposed Development, construction will also require the following components/works:

- A temporary construction compound including car parking;
- Approximately 0.3 km of temporary floated track north-east of the substation which will be used as a dedicated passing place for construction vehicles as they enter and exit the Site;
- Temporary auxiliary hardstandings at each turbine (comprising a mixture of excavated, piled and floated construction methods); and
- The removal of approximately 105 hectares (ha) of forestry to physically construct the Proposed Development, support wider woodland management and enable forest-to-bog restoration².

4.2.3 **Figures 4.1 and 4.1a-b** show the layout of the Proposed Development including the key infrastructure components noted above. Forestry works are detailed in **Technical Appendix 4.1** and accompanying figures.

Table 4.1 Wind Turbine Details

Turbine No	Easting (X)	Northing (Y)	Maximum Blade Tip Height (m)	Visible Aviation Lights (Y/N)
1	247580	648865	200	Yes
2	247990	648778	200	No
3	248296	649118	200	Yes
4	247852	648363	200	Yes
5	248291	648357	200	Yes

4.3 The Proposed Development

Wind Turbines

4.3.1 Planning permission is being sought for the installation and operation of up to five, three-bladed, horizontal axis turbines with maximum blade tip heights as presented in **Table 4.1**. For assessment purposes, and unless otherwise stated, the Vestas V162 (7.2 MW) turbine has been chosen as a representative candidate turbine that may be installed, giving an indicative combined output capacity of 36 MW. Based on this candidate model, hub heights will be up to 119 m and the rotor diameter will be 162 m. It should be noted that the final chosen turbine may have larger

² As detailed in **Technical Appendix 4.1: Wind Farm Forestry Plan** which also includes long-term forestry works associated with the operation of the Proposed Development.

or smaller blade lengths and higher or lower hub heights depending on the technology available at the time of construction (i.e. they are indicative at this stage only), however, it is expected that the maximum blade tip height proposed for each turbine will be fixed by a planning condition, such that the maximum blade tip height will not exceed 200 m. Likewise, the overall capacity rating of turbines could change and be greater than the current candidate turbine, however, any more advanced and powerful turbine chosen will again need to comply with the maximum blade tip height parameters allowed by the planning permission.

- 4.3.2 A diagram of a typical 200 m maximum blade tip height turbine is shown on **Figure 4.2**. Turbine blades will be made from glass fibre/carbon spar with glass fibre airfoil shells, and will have serrated edge technology. The turbine towers will be of tapering tubular steel construction, likely to be finished in a light grey semi-matt colour. The colour and finish of the wind turbine blades, nacelles and towers are expected to be the subject of a condition of consent.

Aviation Warning Lights

- 4.3.3 In the interests of aviation safety in periods of darkness, Article 222 of the Air Navigation Order (ANO) 2016³ requires that all structures of 150 m or more above ground level should have medium intensity (2000 cd) steady red lights (one operating and one for back-up should the other fail) installed as close as possible to the top of obstacles, as well as three fixed red 32cd lights on the tower at half the nacelle height (to provide 360 degree coverage). There are, however, exceptions that can be made under Article 222(7) where it is demonstrated to the Civil Aviation Authority (CAA) that a reduced lighting design would still be sufficient for the purposes of managing air safety. A reduced lighting scheme has been derived which satisfies the design criteria set out in CAP 764⁴ and this has been agreed with the CAA (see **Technical Appendix 4.3**). As such, two steady red lights (one of which will be for back up) will be installed on T1, T3, T4 and T5, with no visible lights being installed on T2. No 32 cd lights are required to be installed on the turbine towers. CAP 764 also allows lights to be dimmed to no less than 10% of the required full intensity where meteorological visibility is beyond 5 km in all directions of the turbines, as determined by sensors mounted on the turbine hubs. This substantially reduces the operating time of full intensity lights during periods of darkness. Should atmospheric conditions mean that visibility around the Site is greater than 5 km, lights would operate in a lower intensity mode of 200 cd. If visibility is restricted to 5 km or less then lights would operate at 2000 cd. In addition to visible aviation lights, Ministry of Defence (MoD) accredited infrared lights will be installed on all turbines. This allows military and emergency service aircrafts fitted with a range of Night Vision Devices (NVDs) to detect objects whilst flying at night. Infrared lighting cannot be seen by the naked eye. The visual effects of the proposed lighting scheme are assessed in **Technical Appendix 5.3: Aviation Lighting Assessment**.

Turbine Foundations and Hardstandings

- 4.3.4 The turbines will be installed on foundations comprising both stone and steel-reinforced concrete. These will typically measure up to approximately 25 m diameter (area of approximately 491 m² with a concrete depth of approximately 3.5 m). Each turbine foundation will require up to approximately 1,700 m³ of concrete. The detailed design, sizing and specification for each foundation will depend on the final turbine selected and the ground conditions encountered at each turbine location, which will be confirmed by detailed site investigation post-consent, in the pre-construction period. There are two options proposed for the turbine foundations:

- Piled turbine foundations; and
- Excavated turbine foundations.

Piled vs Excavated Turbine Foundations

- 4.3.5 Whilst every effort has been made to position turbines on shallow peat (see **Chapter 3: Site Selection and Design Strategy**), this has not always been possible due to other environmental and technical constraints. As a result, T1, T2, and T3 will be located on peat depths of between 3-4 m. In order to minimise the excavation of large volumes of peat for the construction of these turbines, it is proposed that a piled construction method will be used – see **Figure 4.3a**. This will involve installing concrete piles at suitable intervals around the perimeter of the foundation area using a rotary rig. The pile foundation drilling will extend down to 5 m into competent rock. After that, the piles will be socketed into these holes. To achieve accurate levels, the piles may need to be cut from near ground level to the

³ Air Navigation Order (2016). Available online at: <https://www.legislation.gov.uk/uksi/2016/765/contents/>. [Accessed: 17th March 2026]

⁴ Civil Aviation Policy (CAP) 764: CAA Policy and Guidelines on Wind Turbines. Available [online] at: <https://www.caa.co.uk/data-and-publications/publications/documents/content/cap-764/>. [Accessed: 17th March 2026]

underside of the gravity base. The concrete foundations shall then be constructed and be supported on the piles. These will be backfilled with appropriate engineering fill to integrate with the surrounding ground levels.

- 4.3.6 Peat depths are shallower at T4 and T5 (between 1-2 m), so it is intended to adopt a conventional excavated foundation method at these locations (see **Figure 4.3b**). Construction of these foundations will require the excavation of peat and/or soils to a depth of approximately 4 m. This excavated material will be used to partially backfill the excavation and provide material for landscaping and surfacing reinstatement. As such, this material will be stored near to the excavation until required. The underlying rock will be levelled to provide a workable platform for the assembly of reinforcing bars and formwork used to contain the poured concrete.
- 4.3.7 During construction, dewatering may be required to keep the foundations dry (for example, if rainwater gets into construction areas). Suitable filtration systems will be employed to ensure that silt laden water will not contaminate surface watercourses, and that extracted water will be returned to the surrounding area with a limited effect on local hydrology.
- 4.3.8 The design approach for the turbine foundations (and hardstandings – see below) has informed the approach to the outline **Peat Management Plan (PMP)** (see **Technical Appendix 9.3**).

Piled vs Excavated Crane Hardstandings

- 4.3.9 Mobile cranes will be used to erect the turbine components into position on the Site. To do this, a permanent crane hardstanding (with a total area of 1,365 m²) will be built adjacent to each wind turbine (see **Figure 4.4a** which shows an indicative crane hardstanding for a Vestas V162 candidate turbine). The crane hardstandings will also be used as laydown areas to provide safe access for maintenance and repairs, and will therefore remain in place for the operational life of the Proposed Development.
- 4.3.10 Similar to the turbine foundations noted above, the hardstanding construction technique has also been determined by peat depths. The crane hardstandings for T1, T2 and T3 will be piled and the hardstandings for T4 and T5 will be excavated. The proposed piled hardstanding at T1 has a bespoke design in order to also maintain the hydrological flow pathway associated with a small watercourse in the vicinity. Details of the design strategy and bespoke design for T1 are provided in **Chapter 3** and shown on **Figure 4.4b**.
- 4.3.11 For T1, T2 and T3, a piling rig will be set up to install piles in the area required for the main crane. A pilot hole will be excavated, then rectangular concrete piles or steel cylindrical piles will be driven through the peat to a suitable load bearing material. Once the piles are in place, either a reinforced concrete pad or a reinforced mattress consisting of geogrid and aggregate can be supported on the piles. Frequency of piles will be determined at detailed design post consent, following further ground investigation and will depend on the proposed crane used for turbine erection.
- 4.3.12 For T4 and T5, peat and other surface organic material will be excavated and replaced with bulk rock fill and aggregate. Once suitable material is encountered, a coarse aggregate material will be backfilled with geogrid layers added to increase stiffness. This material will be backfilled in compacted layers until the fill achieves the surface level required. This area will be clearly marked and recorded to ensure the crane is situated correctly.

Temporary Auxiliary Hardstandings

- 4.3.13 Additional temporary auxiliary hardstanding areas measuring approximately 3,106 m² will be required for each turbine, and these will be positioned directly adjacent to the permanent crane hardstanding. Part of this temporary hardstanding area (see **Figure 4.4a-b**) will be constructed as two platforms for assist cranes needed to build the main crane. Due to peat constraints, it is proposed that these auxiliary crane pads at T1-T3 will have a piled construction technique. The auxiliary crane pads at T4 and T5 will have a conventional construction technique. The additional areas of temporary hardstandings at each turbine will be used as laydown areas for the blades and towers before being lifted into position. The temporary hardstandings for T1, T2 and T3 will be floated and for T4 and T5 these will be excavated. The floated hardstandings will be constructed similar to floated tracks. Layers of geogrid and crushed rock will be used to prepare a mattress typically 600-1000 mm thick which will provide a durable surface. For the excavated temporary hardstandings at T4 and T5, the ground surface will be levelled using cut and fill and surfaced using crushed stone to provide a durable surface. For T4 and T5, the temporary hardstands will be reinstated using peat originally excavated from the temporary hardstand areas in the stratigraphic sequence in which the peat was excavated (see **Technical Appendix 9.3**). Clearance areas required around the temporary auxiliary hardstandings measuring approximately 3,000 m² (see **Figure 4.4a-b**) will also be required at each turbine. These areas will be cleared of any vegetation that could impede turbine erection, but will not require any physical works.

Onsite Cables and Turbine Transformers

- 4.3.14 Each turbine will require an electrical transformer and will most likely be located within the turbine tower or within the turbine nacelle (hub). Should the transformers be externally located, they will be positioned adjacent to each turbine within a metal ventilated auxiliary cabin typically measuring 4 m x 2.5 m x 3 m, as indicated on **Figure 4.2**. The transformers will be either oil-filled with a bunded footing to remove any risks of spillage or a solid cast resin type which is effectively non-polluting. The transformers will increase the electrical voltage to 33 kilovolts (kV) and will be connected to the control building within the onsite substation compound via underground high voltage cables as described below.
- 4.3.15 Power, earthing, communication and control circuits will be required to link each wind turbine to the 33kV substation. These cables will be buried in trenches and located adjacent to the proposed/existing access tracks, where practicable. Typical cable trench details are shown in **Figure 4.5**.
- 4.3.16 The 33 kV cabling connecting each wind turbine to the control building will be single core and consequently each circuit will comprise three individual power cables laid in a trefoil arrangement and surrounded by sand backfill. Approximately 9 km of cabling will be required. Detailed construction and trenching specifications will depend on ground conditions encountered. Typically, cables will be laid in a trench 1.5 m deep and 1.2 m wide. Cables will be routed along the side of the access tracks to minimise ground disturbance. Cables will be laid within a sand or granular bedding to prevent damage to the cables from sharp stones. Trenches will be backfilled with excavated material and the surface redressed to allow natural revegetation.

Control Building and Substation

- 4.3.17 A compound measuring approximately 100 m x 60 m containing the 33 kV substation and control building measuring 21 m x 6 m x 5 m is proposed (see **Figures 4.6 and 4.7**) at the eastern end of the Site as shown on **Figures 4.1 and 4.1a-b**. The substation compound will be constructed as per ScottishPower Energy Networks' (SPEN) requirements and will contain all the electrical equipment required for connecting the Proposed Development to the electricity grid network (the 'grid'). Within the substation compound there will also be an auxiliary transformer and auto-start standby diesel generator with close coupled fuel storage tank.
- 4.3.18 The control building will contain metering equipment, electrical control panels and communications equipment, welfare, central computer systems and spare parts/maintenance consumables associated with the operation and maintenance of the wind turbines. The fuel will be stored in accordance with the Environmental Authorisation (Scotland) Regulations 2018 (EASR)⁵. Rainwater will be collected from the roof of the building via a gutter and inlet pipe to fill a header tank. Waste will be held in a closed system and removed by a licensed contractor at regular intervals. The building will be constructed in keeping with the local built environment.

Likely Grid Connection Route

- 4.3.19 As noted above, the Proposed Development will be connected to the electricity grid network. At this stage, it is anticipated that the connection to the grid will be via an underground connection to the existing Crookston Substation located approximately 11.6 km north of the Site. The Likely Grid Connection Route (see **Figure 4.8a**) will be subject to a separate application for consent by SPEN to the Scottish Ministers, as the grid operator for the South of Scotland, under Section 37 of the Electricity Act 1989. The Likely Grid Connection Route has been selected based on the routing principles from the Holford Rules applied to the grid connection route options for the Proposed Development (see **Chapter 3**). At this stage, the Likely Grid Connection Route has been considered as part of this EIA in combination with the Proposed Development for the reasons given in **Chapter 2: Approach to the EIA**, and an assessment of the likely significant environmental effects associated with the Likely Grid Connection Route is considered in **Chapters 5 - 12** of the EIA Report.
- 4.3.20 Consent/planning permission **is not** being sought for the Likely Grid Connection Route as part of the Proposed Development planning application.
- 4.3.21 Grid reform is being pursued by the National Energy Systems Operator (NESO) and its network partners to streamline the existing connection queue, prioritising projects that are credible and capable of delivery. This

⁵ The Environmental Authorisation (Scotland) Regulations 2018 (EASR). Available [online] at: <https://www.legislation.gov.uk/sdsi/2018/9780111039014/contents> [Accessed: 3rd August 2026]

approach is intended to support the UK Government's Clean Power 2030 objectives by removing stalled or non-viable schemes that are unlikely to come forward.

- 4.3.22 The reforms mark a fundamental shift away from a first-come, first-served model for grid connections. In its place, a "first ready, first required and connected" framework has been introduced, allowing NESO and Transmission Operators (TOs) to more strategically plan and expand the transmission network. This is critical to meeting Clean Power and Net Zero targets in the context of increasing system demand and accelerated decarbonisation.
- 4.3.23 Gate 2 to the Whole Queue (G2TWQ) is a one-off process currently in progress that applies the new reform criteria retrospectively across all projects already holding queue positions. As part of this exercise, NESO and the TOs are reassessing and optimising the technical solutions for projects that remain in the refined queue, including how and where they connect to the transmission system. As a consequence, many projects are expected to receive revised connection points, ensuring the overall network design is both cost-effective and operationally efficient.
- 4.3.24 The Proposed Development does not currently hold a formal connection offer. Therefore, until it receives planning permission, has re-applied during one of the future NESO application windows, and subsequently receives and signs a Gate 2 offer, the grid connection point and route connecting the Proposed Development to the grid network cannot be known for certain.
- 4.3.25 Nevertheless, the most likely point of connection can be identified in light of feasibility work undertaken by the Applicant which suggests that capacity for a grid connection is available at the Crookston substation about 11.6 km to the north of the Proposed Development. The Crookston substation is therefore considered as a likely Point of Connection (PoC) for the Proposed Development at this stage.

The Proposed Route

- 4.3.26 For the purposes of assessing the Likely Grid Connection Route in the EIA, the connection is assumed to comprise the installation of a 33 kV underground cable. The Likely Grid Connection Route (see **Figures 4.8a** and **4.8b**), based on the routeing principles set out in **Chapter 3**, has been defined as follows:
- The underground cable will exit the Proposed Development Site at the access point at the Drumboyle Bridge, crossing the bridge and following the road down to the A77.
 - It will then be placed in the roadside verge of the A77 northwards to Malletsheuch Road to the west of Newton Means where it would turn west. The cable will be placed in the road or roadside verge of Malletsheugh Road to the B769 Dodside Road.
 - It will then turn north and be placed in the road or roadside verge to Aurs Road. It will then travel north-west in the road or roadside verge of Aurs Road as far as the Dovecothall Roadabout.
 - It will then cross the roundabout in the road to Dovecothall Road which turns to the A736 Glasgow Road. Travelling north in the A736 the cable will be laid in the road or roadside verge to Hurlet Road, passing under the road to Barrhead Road (A736) to Crookston Substation which is about 500m north of the junction with Hurlet Road.
- 4.3.27 The final alignment will be confirmed through detailed design in consultation with SPEN and relevant stakeholders.

Method of Construction

- 4.3.28 For the underground cable, the method of construction is expected to comprise cut and fill trenching in progressive sections. Trenching will typically be undertaken in short sections (generally up to approximately 25 m in length at any one time), with cable installation and reinstatement completed before works progress to the next section. Works at any individual location will therefore be temporary and short-term in duration.
- 4.3.29 The precise length of cable being laid on a given day will be dependent upon the nature of the ground encountered and its complexity, having regard to issues such as the presence of existing infrastructure and trees etc. The decision as to the order in which route sections are constructed will be taken by the appointed contractor in consultation with the Roads Authority where work is being undertaken in the public road and having regard to any other identified constraints.
- 4.3.30 Construction techniques will be based on open cut methods. This involves the excavation of a trench into which the cables could either be directly laid, or a duct could be laid through which cables could then be pulled. Trenches will typically be no deeper than 1 m.

- 4.3.31 Reinstatement will be carried out using existing excavated materials where possible. If the original 'turf' is unable to be re-laid or is of a poor quality, then new topsoil and grass seed will be used. Areas of existing permeable surface therefore remain permeable. Digging will be undertaken using mechanical aids except where trees or other obstructions exist when sensitive installation technique such as hand digging or vacuum excavation will be employed.
- 4.3.32 When installing cables within hard surfaced areas (such as roadway, cycleways), these sections will be open cut using a disc cutter and/or a mechanical pecker to break up the top surface. Mechanical means will then be used to remove the subsurface and associated materials to the correct depths. If mechanical method is not appropriate for the location, again alternative methods such as hand dig or the use of a vacuum excavator may be introduced. Once the cable is installed, the original surface will then be reinstated to the specifications for the type of surface cut, in agreement with the roads authority.
- 4.3.33 Construction will generally operate as a mobile working area progressing along the route including welfare and storage facilities. This may include:
- Excavators (usually a variation of sizes);
 - Dumpers;
 - Cable wrench pullies;
 - Tractors/trailers;
 - Fuel cubes;
 - Herras fencing;
 - Forklift truck;
 - Storage container(s); and
 - Ground hog welfare units.
- 4.3.34 Construction of the Likely Grid Connection Route is assumed to take place over a period of up to nine months and may occur concurrently with construction of the Proposed Development.
- 4.3.35 The approximate working corridor for the Likely Grid Connection Route for sections where not within highway will be between 10 m and 15 m depending on the specific plant and cable laying equipment used and the specific local conditions and wayleaves. Where cable is to be laid within the highway or highway verge, it is envisaged that the working corridor will be reduced to a minimum width of approximately 3.5 m with appropriate traffic management (e.g. sectional short term lane closure with temporary signals).
- 4.3.36 Delivery of construction materials to cable locations will be achieved by access from public roads to the roadside verge at the point of construction.
- 4.3.37 Due to the nature, design and rate of construction of the Likely Grid Connection Route, it is expected that vehicle movements at any one location will be limited to three or four visits per day over the course of the construction period which will not lead to any noticeable increase in traffic volumes on the surrounding road network. Where the cable is laid in roadside verges it is assumed that there will be localised traffic management at the point of construction, similar to routing road maintenance works.

Operation

- 4.3.38 The cable will deliver electricity generated from the Proposed Development to the Crookston substation. Annual maintenance checks on foot are commonly required for underground cables, once operational.

Decommissioning

- 4.3.39 As set out in Section 4.10 of this chapter, it is expected that on decommissioning of the Proposed Development, all cables would be made safe and left in situ. This is considered to be the preference compared to extracting cables from the cable trenches due to the potentially greater associated environmental impacts.

Access from the Public Road Network

- 4.3.40 It is anticipated that the majority of the general construction vehicles (HGVs) and staff vehicles will travel from the north and south (i.e. from Glasgow and Ayrshire) and will enter the Site via the existing junction off the A77 to the west of North Drumboy Quarry. These vehicles will then use the minor road (Floak Road) and existing bridge (Floak Bridge) crossing the M77 which provides access to five properties/farms, as well as Floak Quarry. From there, vehicles will use the existing and gated M77 service road to travel south-west into the Site.
- 4.3.41 It is anticipated that the turbine components will be delivered to King George V Docks in Glasgow. Abnormal Indivisible Load (AIL) vehicles will then transport the components to the Site via the M8, M77 (exiting at Junction 6) and the A77 before turning onto Floak Road west of Drumboy. It is proposed that a blade lifter will be used from port to the Site to enable safe passage of turbine components over Floak Bridge. Again, the existing and gated M77 service road will be used by abnormal load vehicles to reach the Site entrance. The abnormal loads delivery route is shown on **Figure 11.4**. A High-level Access Review, detailing the proposed route and where temporary works may be required to transport the turbine components, is provided in **Annex A of Technical Appendix 11.1: Transport Assessment**. The temporary works include for widening works at corners of the junctions from the A77 onto Floak Road and then from Floak Road to the existing M77 service road. All the works lie within the adopted road. The works involve the laying down of a temporary surface to allow vehicle wheels to track across the ground to allow for safe manoeuvres. The works being in the roadside verge are not considered to result in any significant environmental effects.
- 4.3.42 Suitable traffic management measures will be put in place to maintain safe access to local properties at Floak during construction, and to minimise conflicts with existing traffic associated with North Drumboy Quarry, such as issuing prior notification to residents and businesses of the proposed abnormal load movements and implementing wheel cleaning facilities to reduce the transfer of dirt and debris onto Floak Road and the A77. An Outline Construction Traffic Management Plan (CTMP) is provided in **Technical Appendix 11.1**, and contains further details on how impacts associated with abnormal loads and general construction traffic will be carefully managed.
- 4.3.43 During operation, the Site entrance will be gated to prevent any unauthorised vehicle access.

Onsite Access Tracks

- 4.3.44 Approximately 4.1 km of new permanent track (with a minimum running surface of 6 m) will be required to facilitate access to the turbines, construction compound and substation, and this will commence at the Site entrance off the existing M77 service road. Owing to the deep peat design considerations (see **Chapter 3**), approximately 2.8 km of new track will be of a floated design (on sections where tracks are on slopes that are less than 3 degrees and peat is ≥ 0.5 m over spans of ≥ 100 m), and 1.3 km will be of a conventional excavated design. An additional section of temporary floated track is proposed north-east of the substation and will act as a passing place for construction vehicles entering and existing the Site. This section of track will be approximately 12 m wide, but will be restored to 6 m following construction.

Floated Track vs Excavated Track

- 4.3.45 The floated track construction technique will incorporate geosynthetic material laid on the surface of the peat turf. This approach will significantly increase the load carrying capability of the access tracks and reduce variable settling of the access track into the peat. A layer of approximately 700 mm of crushed stone will then be laid on the geosynthetic material to form the access track, incorporating a further geosynthetic layer within the stone aggregate. The access track will have a relatively steep stone batter face with the edges of the Site track raised above the peat surface by approximately 900 mm, which will be landscaped with peat and subsoil as appropriate.
- 4.3.46 The excavated track technique will involve the excavation of soil and vegetation down to a suitable foundation depth, with this then being placed to the sides of the tracks for reinstatement across the Site. The tracks will have adequate crown or cross-slope to allow rainwater to be shed and, where gradients are present, lateral drainage will intercept flow. A drainage ditch will be formed on the upslope side of the track, dependent on a detailed drainage design. A layer of stone will be compacted on top of the base formation to a thickness of around 400 mm dependent upon ground conditions.
- 4.3.47 **Figure 4.9** shows the difference between floated and excavated track construction techniques.

Watercourse Crossings

4.3.48 The number of watercourse crossings has been minimised through design and there are 12 new crossings proposed which have been confirmed through walkover survey. These include crossings of five minor watercourses and five artificial drains not shown on the OS 1:25K mapping but mapped in the field, and two watercourses shown on OS 1:25K mapping data (see **Figure 9.2a-e: Watercourse Buffers, Crossings and Flood Risk** and **Technical Appendix 9.1: Watercourse Crossings and Buffer Assessment**). The necessary authorisation will be obtained from the Scottish Environmental Protection Agency (SEPA) in accordance with The EASR 2018 prior to undertaking works in the water environment. Wherever possible, a bottomless arched culvert design (see **Figure 4.10**) will be used to allow for mammal passage. In addition, all crossings will be designed to withstand a 200 year flow event plus an allowance for climate change and freeboard. All crossings will be regularly checked and maintained during construction.

4.3.49 **Figures 9.2a-e** and **Table 4.2** provides the locations of the 12 proposed crossing locations.

Table 4.2 Onsite Watercourse Crossings

Watercourse Crossing	Crossing Category	Easting	Northing
1	Ordnance Survey (1:25k) mapped watercourse	249168	649087
2	Natural minor watercourse mapped during site surveys	248960	648855
3	Artificial drain mapped during site surveys	248724	648582
4	Artificial drain mapped during site surveys	248643	648486
5	Artificial drain mapped during site surveys	248313	648378
6	Ordnance Survey (1:25k) mapped watercourse	248151	648404
7	Natural minor watercourse mapped during site surveys	248039	648416
8	Natural minor watercourse mapped during site surveys	248137	648734
9	Natural minor watercourse mapped during site surveys	248295	648826
10	Artificial drain mapped during site surveys	248344	648985
11	Artificial drain mapped during site surveys	247657	648722
12	Natural minor watercourse mapped during site surveys	247624	648808

Construction Compound

4.3.50 A temporary construction compound measuring approximately 100 m x 60 m will be located adjacent to the proposed substation location and approximately 850 m from the Site access point. The compound will allow the

Balance of Plant (BoP) contractor to store materials (including fuel and oil) and will also provide appropriate welfare facilities, site offices and car parking. The construction compound will be formed by stripping organic and soft surface material and laying geotextile and crushed rock to create a firm regular surface. Site offices (likely to be temporary portacabin style buildings) will be transported to the Site via typical curtain trailer HGVs.

- 4.3.51 Any oil storage areas will be appropriately bunded to ensure secondary containment is provided in line with the requirements of the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended). Perimeter drainage will intercept rainfall and then channel water to temporary filtration and dispersion structures, utilising where possible the natural contours of the landscape. The stripped surface material will be stockpiled nearby for reinstatement.

Forestry

- 4.3.52 There is currently approximately 163.5 ha of coniferous forestry within the Site redline boundary and this makes up 65% of the area within the Site (an area of 205 ha as defined by the planning redline boundary). The Site forms part of a larger property area (Glenouther Forest) totalling approximately 378 ha and over which the Applicant has control.
- 4.3.53 During construction, approximately 105 ha of forestry will be removed within the Site to facilitate construction of infrastructure and wider forest management. Of the 105 ha felled, approximately 28 ha will be removed for the construction of infrastructure (and working areas) and 77 ha for management felling (comprising 73.5 ha to provide wind farm boundaries to the adjoining compartments and 3.5 ha as purely forest-to-bog restoration). Of the 105 ha initially felled, approximately 58 ha will be restocked (comprising a mixture of coniferous and broadleaved trees to achieve species diversity) and approximately 47 ha will be left unstocked (comprising approximately 6 ha as long-term open ground for wind farm infrastructure and 41 ha for forest-to-bog restoration). Approximately 6.12 ha will be provided within the wider property area or at a suitable donor site as compensatory planting in accordance with the Scottish Government's Control of Woodland Removal Policy. The remaining 59 ha of forestry within the Site which is not felled during construction (for infrastructure, wider forest management or forest-to-bog), as well as the remaining forestry within the larger property area, will be managed as part of the Long-Term Forestry Plan (LTFP) which will be prepared post-consent covering the whole of Glenouther Forest.
- 4.3.54 Tree crop clearance will be carried out by competent forestry specialists adhering to relevant safety and environmental guidelines. Tree harvesting will utilise the most suitable systems at the time of felling with the forest products uplifted by roadgoing timber lorries and delivered to the appropriate markets.
- 4.3.55 Both replanting onsite and compensatory planting will typically be prepared by the most appropriate cultivation methods following relevant safety and environmental guidelines. During cultivation, any drains to manage water run-off will be installed to meet the Forest and Water guidelines. Planting will be by manual means. The compensatory planting area will be subject to regular inspection, monitoring and remedial management inputs when required covering replacing dead trees, weeding and vermin control, so as to ensure the initial stocking density of the crops is maintained until the trees are fully established. Areas restocked after management felling within the Site will be governed by the controls and obligations of the LTFP agreed for Glenouther Forest.
- 4.3.56 Further details on forestry loss, restocking and compensation (including figures) are provided in **Technical Appendix 4.1**.
- 4.3.57 The environmental effects of the forestry proposals associated with the Proposed Development are assessed fully in the topic chapters where relevant.

Micrositing

- 4.3.58 It is proposed that the turbines and other infrastructure will be subject to a 50 m horizontal micrositing allowance which will be applied should adverse ground conditions be encountered during pre-construction ground investigations, or when optimal ground conditions are available. Movement of infrastructure will, however, be dependent on other onsite constraints and subject to advice from an Ecological Clerk of Works (ECoW). This allowance will ensure that the final position of the turbines and associated infrastructure are not varied to such a degree as to cause a notable change in the predicted environmental effects outlined in the EIA Report. Beyond this distance, any relocation of components will require either written approval from East Ayrshire Council (EAC) in consultation with statutory consultees or will be treated as a formal variation to the application. Where relevant, the

specialist chapters detail individual proposed directional restrictions on the overall micro-siting allowance to ensure that environmental effects no greater than those identified within this EIA Report occur during construction.

4.4 Land Take

4.4.1 **Table 4.3** provides a summary of the approximate temporary and permanent land take for the components of the Proposed Development for which planning permission is being sought.

Table 4.3 Areas of Temporary and Permanent Land Take (Approximate)

Project Component	Temporary land Take (m ²)	Permanent Land Take (m ²)	Track Extents (km)
Turbine Foundations, Crane Hardstandings and Temporary Hardstands (both piled, floated and excavated)	15,530	6,825	
Substation/Control Building Compound		6000	
Construction Compound	6,000		
Excavated Onsite Access Tracks (New)		7,100	1.3
Floated Onsite Access Tracks (New)		18,750	3.1 (includes 0.3 km of temporary floated passing place)
Cut Earthworks		2,160	
Fill Earthworks		15,690	
Peatland Restoration – Forest to Bog		410,000	
Total Land Take	21,530	466,525	
Total Land Take as % of Site Area (205 ha)	1%	22% (2.8% for infrastructure and 19.2% for biodiversity enhancement)	

4.5 Construction Details

Construction Programme

4.5.1 It is estimated that it will take approximately 20 months to construct the Proposed Development (including forestry works). Where possible, construction activities will be carried out concurrently to reduce the overall length of the construction programme. Phasing of the construction process may result in civil engineering works progressing in some areas of the Site whilst turbines are being erected elsewhere. To minimise disruption to land use, Site restoration will be undertaken as early as possible. Works will comprise of the following principal activities:

- Mobilisation and enabling works (including forestry felling and construction compound establishment);
- Creation of new onsite access tracks, watercourse crossings, and turning heads;
- Construction of turbine foundations at each turbine location;
- Construction of crane hardstandings and laydown/storage at each turbine location;
- Excavation of trenches and laying of electrical cables;
- Construction of substation and control building;
- Delivery and erection of wind turbines;

- Testing and commissioning of equipment including turbines, control building, substation;
- Commissioning of and site restoration; and
- Implementation of the BEMP proposals (not included in the programme below).

4.5.2 An indicative construction programme is provided in **Table 4.4** below.

Table 4.4 Construction Programme

Construction Task	Construction Month																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Mobilisation & enabling works (including forestry felling)																				
Onsite access tracks																				
Wind turbine foundations																				
Crane hardstandings																				
Cabling and electrical Works																				
Substation and control building																				
Wind turbine delivery and erection																				
Commissioning and restoration																				

Working Hours

- 4.5.3 In general, working hours for construction of the Proposed Development will be from 07.00 to 19.00 Monday to Friday and 07.00 to 13.00 on Saturday, and this will be enforceable through a planning condition. No working is proposed on Sundays and public holidays. Exceptions to the proposed working hours will be made for foundation pours and turbine erection, emergency works, dust suppression and testing of plant and equipment where necessary. Concrete pouring for an individual turbine foundation must take place continuously and so activity will only cease when the pour has been completed. Turbine erection can only occur during periods of low wind speeds and so to minimise the construction programme, lifting operations may need to be scheduled outwith the above hours. In addition, it could be necessary to complete a particular lifting operation to ensure the structure is left in a safe condition.
- 4.5.4 Depending on the findings of pre-construction breeding bird surveys, there may be a requirement to restrict construction activities within 500 m of the active nest locations of rare and protected species. Again, this would be secured via a planning condition and through the implementation of a Bird Protection Plan (BPP) as part of the overarching Construction Environmental Management Plan (CEMP). Further details of these good practice bird protection measures are included in **Chapter 8: Ornithology**.

Construction Personnel

- 4.5.5 It is estimated that during the peak construction works, approximately 20 staff members per day will be working on the Site, undertaking various activities, including civil engineering, turbine installation and electrical works.

- 4.5.6 Where feasible and subject to procurement rules, local contractors or sub-contractors will be invited to tender. Prior to construction the Applicant will hold a meeting in the local area to introduce and discuss any aspects of the Proposed Development to local contractors.

Erection of Turbines

- 4.5.7 It will take approximately six days to completely erect the proposed five turbines into their locations, although this will be dependent on the weather conditions at the time as generally turbines are erected in wind speeds not exceeding 8 to 10 m/s for health and safety reasons. Cranes will be used to off-load of turbine components from the abnormal load vehicles onto the temporary hardstandings at turbine locations and to assist in the assembly. A 'crawler' or mobile wheeled crane of larger capacity, working in tandem with the main crane, will be used to erect the turbines. The turbine erection contractor will specify the type of cranes used during the installation process. The cranes will be positioned on the hardstanding area adjacent to each turbine. As only five turbines are proposed, it is anticipated that only one main crane and one crawler crane will be required for the Proposed Development.

Construction Lighting

- 4.5.8 Depending on the time of the year and the stage of the construction programme, temporary lighting may be required at the temporary construction compound and substation/control building compound during working hours. It is not proposed that the lighting will be left on outside working hours unless time critical lifting or concrete pours are required. A temporary lighting scheme for the construction period of the Proposed Development can be secured to the grant of consent by condition.

Construction Materials and Deliveries

- 4.5.9 The wind turbines will all be delivered to the Site in component form and will consist of tower sections, blades, hub, gear assembly and nacelle. This will result in approximately 19 abnormal load deliveries. Wind turbine components that do not classify as AILs, will be delivered in addition to these, resulting in a further approximate 16 load deliveries. All of these deliveries are expected to occur over a period of approximately three months.
- 4.5.10 Approximately 93,000 tonnes of stone aggregate will be required for the construction of the access tracks, crane hardstandings, construction compound surface etc. As no borrow pits are proposed, the required stone aggregate will be fully sourced offsite from nearby quarries, with the nearby Floak Quarry or North Drumboy Quarry being options at this stage. It is estimated that this will require 4,630 HGV deliveries.
- 4.5.11 It is estimated that approximately 11,000 tonnes of concrete will be required for the substation, control building, construction compound and turbine foundations. **Chapter 11: Access, Traffic and Transport** has assumed that concrete will be delivered to the Site which will generate approximately 1,034 HGV deliveries.
- 4.5.12 Steel reinforcement for the turbine foundations and for other components of the Proposed Development (estimated to be 850 tonnes) will generate 29 HGV deliveries. 1,620 tonnes of sand will be required for cable trenches which will generate 81 HGV deliveries. Approximately 9 km of cable will be required (three per trench) generating two HGV deliveries (18 drums, 500 m per drum).
- 4.5.13 It is proposed that materials will be sourced and transported to the Site from local suppliers, where possible.
- 4.5.14 The removal of 105 ha of forestry during the first 12 months of the construction programme will generate 1,247 timber lorry loads.
- 4.5.15 Further details regarding construction traffic generation and the estimated volumes over the 20 month construction period is provided in **Technical Appendix 11.1: Transport Assessment**.

4.6 Environmental Management and Construction Working Practices

Construction Environmental Management Plan (CEMP)

- 4.6.1 A CEMP will be prepared prior to the start of construction, detailing measures to avoid or mitigate potential effects associated with key construction activities. These will reflect and expand upon measures identified in this EIA Report and will be agreed with EAC, SEPA, NatureScot and other stakeholders, as appropriate. The preparation and implementation of the CEMP will be subject to a planning condition.
- 4.6.2 The purpose of the CEMP will be to:

- Provide a mechanism to ensure that construction methods avoid, minimise and control potentially adverse significant environmental effects, and act as a means to ensure the implementation of location specific additional mitigation measures as identified in the EIA Report.
- Ensure that good construction practices and all environmental legislation are adopted throughout the construction of the Proposed Development.
- Provide a framework for responding to and mitigating unexpected effects during construction.
- Provide assurance to third parties that agreed environmental performance criteria will be met.
- Establish procedures for ensuring compliance with environmental legislation and statutory consents.
- Detail the process for monitoring and auditing environmental performance.

4.6.3 The CEMP will be updated when necessary to account for changes or updates to legislation and good practice methods throughout the construction phase. The CEMP will also be amended to incorporate information obtained during detailed ground investigations which will be undertaken post consent and prior to construction activities. Compliance with the CEMP (including procedures, record keeping, monitoring and auditing) will be overseen by a suitably qualified and experienced ECoW, and will be a contractual obligation of the Principal Contractor.

4.6.4 The CEMP will contain the following documents, which the Principal Contractor and their sub-contractors will be required to adhere to throughout the construction process:

- Pollution Prevention Plan (PPP);
- Emergency Response Plan (ERP);
- Surface Water Management Plan (SuWMP);
- Construction Method Statements (CMS);
- Site Waste Management Plan (SWMP);
- Construction Traffic Management Plan (CTMP) (also comprising Staff Travel Plan and Abnormal Load Delivery Plan) (following the principles set out in the draft CTMP presented in **Technical Appendix 11.1**);
- Species Protection Plan (SPP) (following the principles included in **Technical Appendix 7.5: Outline Species Protection Plan**);
- Peat Management Plan (PMP) (following the principles presented in **Technical Appendix 9.3: Outline Peat Management Plan**);
- Water Quality and Fish Monitoring Plan (WQFMP);
- Bird Protection Plan (BPP) (following the details provided in **Chapter 8**); and
- Site Restoration Plan.

4.6.5 The CEMP will also contain the following information:

- The name, qualifications and CV of the nominated person(s) with the responsibility for all environmental matters, for approval.
- A completed register of contacts confirming the contact details for all key personnel for managing environmental issues, including the Applicant's representatives, the ECoW, Principal Contractor contacts and appropriate regulator contacts.
- The construction programme and detailed working method statements.
- A site-specific action plan, providing a register of environmental risks and outlining the requirement for accompanying site-specific mitigation, monitoring and reporting procedures.
- Audit and inspection procedures.

4.6.6 The Principal Contractor will be responsible for the continual development of the CEMP to take account of monitoring and audit results during the construction phase and changing environmental conditions and regulations.

- 4.6.7 The services of other specialist advisers will be retained as appropriate, to be called on as required to advise on specific environmental issues.
- 4.6.8 Performance against these documents will be monitored by the Applicant's Construction Project Manager and the ECoW throughout the construction period. They will ensure that the works carried out will be in accordance with the relevant legislation and best practice guidance documents.
- 4.6.9 An outline CEMP is included in **Technical Appendix 4.2**.

Good Practice Construction Measures

- 4.6.10 Good practice measures will be employed as standard techniques during the construction, operation and decommissioning of the Proposed Development. Therefore, these are not considered to be mitigation as such, but an integral part of the construction of the Proposed Development in accordance with current regulatory context and accepted good practice across the industry.
- 4.6.11 During construction, there will be a suitably qualified environmental manager appointed with responsibilities including training, liaison with SEPA and ensuring applicable licences are held (for example CAR licences and abstraction licences). This role will have authority for halting works if necessary. Emergency procedures will be detailed and subsequently agreed with SEPA, including contact lists and the personnel responsible.
- 4.6.12 Good practice measures will include (but are not limited to) measures associated with the following:
- Pollution incidents;
 - Erosion and sedimentation;
 - Modification of surface water drainage patterns (including flooding);
 - Modification of groundwater levels and flows;
 - Peat re-use and management;
 - Peat stability;
 - Ecology and ornithology; and
 - Forestry.
- 4.6.13 SEPA guidance, including its Guidance for Pollution Prevention (GPPs), CIRIA SUDS Manual⁶, Control of Water Pollution from Construction Sites Guidance⁷ and the joint publication: Good Practice during Wind Farm Construction⁸ amongst others will be followed at all times.
- 4.6.14 Further details on these measures, which are considered to be an inherent part of the Proposed Development construction process, can be found in **Technical Appendix 2.2: Schedule of Mitigation, Good Practice, Enhancement and Monitoring** along with other good practice measures proposed for individual topics assessed in this EIA Report.

Site Reinstatement

General Approach

- 4.6.15 All areas disturbed will be reinstated post construction. This will form part of the contract obligation for the Principal Contractor and will involve the removal of any temporary infrastructure and the re-vegetation of disturbed ground.
- 4.6.16 Details of the reinstatement works will form part of the CEMP.
- 4.6.17 The anticipated type and extent of reinstatement is outlined below. Where a re-turfing method is appropriate, such as along track verges, the surface layer of soil and vegetation will be stripped and stored separately from the lower soil layers and replaced as intact as possible once construction is complete. Local reinstatement will be carried out to retain the structure and composition of the original plant communities, as well as forming a stable area over reformed

⁶ CIRIA SUDS Manual (2015) C753

⁷ CIRIA Control of water pollution from construction sites. Guidance for consultants and contractors, (2001) C532

⁸ Forestry Commission Scotland, Historic Environment Scotland, Scottish Renewables, Scottish Environment Protection Agency, NatureScot et al. (2024): Good Practice during Wind Farm Construction

ground, thus reducing erosion by rain, run-off and wind. Bare soil areas will be allowed to re-vegetate naturally in combination with reseeding using a low-density seed mix which mirrors local vegetation to help bind the soil more quickly.

Site Tracks

- 4.6.18 Site tracks are required throughout the operational phase to permit access for maintenance and repair operations. They will also be necessary to allow access during the decommissioning stage.
- 4.6.19 Generally, the sloping verges of access tracks will be dressed with turf or seed bank material sourced from spoil from the Site. If suitable material is generated during the construction of the track, this material can be used to form a low-lying bund along the downhill side of the track, to be dressed as per the track verges.

Turbine Bases and Crane Hardstandings

- 4.6.20 Turbine foundations will be capped with soil material, which may form a raised mound above the existing ground level. These will be re-turfed with the removed material, but where vegetation is sparse or unlikely to regenerate, reseeding with an appropriate local seed mix may be undertaken as outlined above.
- 4.6.21 The condition of turfs will be monitored regularly during the first few months following reinstatement. If necessary, water will be imported to the Site to ensure the re-establishment of this vegetation.
- 4.6.22 Permanent hardstanding areas at each turbine location will be retained for use during operation and decommissioning, however the edges of these permanent areas as well as all temporary hardstanding areas, will, as far as possible, be blended to the adjacent contours and natural vegetation allowed to re-establish.

Temporary Construction Compound and Turbine Hardstands

- 4.6.23 The temporary construction compound and temporary areas of hardstands at turbines will be reinstated into the surrounding landscape and restored to their original condition.

Public and Private Water Supplies

- 4.6.24 Desk based study (consultation with EAC and issuing of questionnaires to nearby residences) was used to identify properties within 1 km of the Site boundary who rely on a Private Water Supply (PWS) which could be potentially affected during construction works. This identified nine PWS sources supplying 11 properties. An additional five properties within 1 km potentially have a PWS (but for which the sources are unknown). None of these known or potential PWS sources are considered to be hydrologically connected to the Proposed Development infrastructure, and no effects will occur. Consultation with SEPA identified that there are no licenced abstractions for public drinking water within 1 km of the Site. See **Chapter 9: Hydrology, Hydrogeology, Geology and Peat** and **Figure 9.1: Hydrological Features**.

Peat Slide Risk

- 4.6.25 A Peat Landslide Hazard and Risk Assessment (PLHRA) (**Technical Appendix 9.4**) has been undertaken and assesses the peat landslide risk associated with the Proposed Development for known receptors. **Technical Appendix 9.4** describes the assessment methodology and results of the assessment under both natural conditions and in association with construction of the Proposed Development. The assessment also provides mitigation and control measures to reduce the identified risks prior to, during and after construction. The PLHRA has been informed by results from the Peat Survey Report (**Technical Appendix 9.2**). The PLHRA has found that there will be a low risk of peat slide occurrence for identified receptors, and that this can be managed through good practice measures.

Peat Management

- 4.6.26 An Outline PMP (**Technical Appendix 9.3**) has been produced to provide indicative volumes for soil and peat extraction and outline good practice measures for the excavation, handling, re-use, and storage of soil and peat materials during construction of the Proposed Development.
- 4.6.27 **Technical Appendix 9.3** estimates that the overall volume of peat to be excavated during construction will be 34,180 m³ (23,187 m³ to be permanently excavated and 10,993 m³ to be temporarily excavated). Peat will be re-used in two ways:

1. Through reinstatement of temporary infrastructure – T4 and T5 temporary hardstandings and the construction compound will be used to reinstate approximately 10,993 m³ of excavated peat.
2. Through translocation to proposed forest-to-bog restoration areas which will fully use the remaining 23,187 m³.

4.6.28 Excavated soils (non-peat) will either be reinstated within their original locations (temporary construction compound, blade laydowns and secondary hardstandings) or used to tie-in (or landscape) the surroundings of infrastructure by providing a vegetated top surface to areas of earthwork cut and fill. Overall, there will be no surplus of peat or soil materials following their re-use, so no materials will leave the Site. These plans will be developed to update the CEMP with detailed post construction restoration plans. This will be reviewed and monitored along with the updated PMP and CEMP to ensure compliance with method statements.

4.6.29 Further details, including proposed monitoring measures to assess the efficacy of re-use proposals, are provided in **Technical Appendix 9.3**.

Waste Management

4.6.30 As noted above, there will be no residual soil or peat materials generated following reinstatement works which will be classified as waste. Good practice waste management methods will be implemented during the construction phase. These will encourage the reduction, reuse and recycling of wastes. Mitigation measures will be put in place to further minimise the potential environmental effects associated with the storage and transportation of waste, with further details provided below:

- Any materials that cannot be reused will be disposed of according to relevant waste management legislation which will serve to address a number of possible environmental effects.
- All measures will be enforced through a SWMP as part of the CEMP.

4.6.31 In relation to forestry felling, a hierarchy of uses is proposed, derived from the waste hierarchy contained within the Waste (Scotland) Regulations 2012 Regulations⁹ and best practice guidance¹⁰, summarised as follows:

- Prevention via the production of timber products and associated materials for use in timber and other markets;
- The re-use of materials onsite for a valid purpose, where such a use exists e.g. track construction including floating tracks;
- There is no valid re-cycling use for forestry residues;
- Other recovery via collection and use as biomass for energy recovery or other markets, where not included above; and
- Where no valid onsite or offsite use can be found for the material, disposal would be in a way that is considered to deliver the best overall environmental outcome.

4.6.32 Crops will be replanted except where the land is required for infrastructure associated with the Proposed Development or forest to bog restoration – see **Technical Appendix 4.1**. Brash will be left in situ to provide nutrients for the next rotation where the crops are being replanted as per standard forestry practice. Where crops are not being replanted brash will be removed and treated in line with the proposed hierarchy described above.

4.6.33 Stumps will be left in situ as per good practice guidance, except where excavated as part of the construction activities or where stump turning is considered to encourage forest to bog restoration. Excavated stumps will be treated in line with the proposed hierarchy described above.

4.6.34 In areas of lower yielding crops which are felled during construction, the objective will be to recover as much merchantable timber as possible, failing that to treat them in line with the hierarchy outlined above. Where suitable, whole trees will be extracted and used in the biomass market. As a result, it is anticipated the forestry waste arising from the works will be minimal.

⁹ Waste Scotland Regulations (2012). Available at: <https://www.legislation.gov.uk/ssi/2012/148>

¹⁰ SEPA (2014), LUPS-GU27, 'Use of Trees Clear Felled to Facilitate Proposed Development on Afforested Land', Available at: https://www.sepa.org.uk/media/143799/use_of_trees_cleared_to_facilitate_development_on_afforested_land_sepa_snh_fcs_guidance-april_2014.pdf

Construction Traffic Management

- 4.6.35 **Technical Appendix 11.1** sets out the expected number of vehicle movements to and from the Site each month of the indicative construction programme, taking into account forecasted vehicle numbers from construction activities and assuming a construction start year of 2030. The peak traffic volume associated with construction of the Proposed Development is predicted to occur during concrete deliveries due to the time sensitive nature of these works. Further details on the peak daily construction traffic are presented in **Technical Appendix 11.1**. The anticipated transport route for abnormal loads and other imported materials is discussed above and shown in **Figure 11.4: Abnormal Individual Load Delivery Route**.
- 4.6.36 In consultation with EAC, a detailed CTMP, Abnormal Load Management Plan and Staff Travel Plan will be prepared prior to the construction of the Proposed Development, should planning permission be granted, and this will form a suspensive planning condition meaning that EAC will need to be satisfied that traffic and its associated impact will be carefully and appropriately managed before any works take place. Further details of the proposed measures to be included in the CTMP are provided in **Technical Appendix 11.1**.

4.7 Health and Safety

- 4.7.1 All construction activities will be managed within the requirements of the Construction (Design and Management) Regulations 2015 and will not conflict with the Health and Safety at Work etc. Act 1974. The design of the Proposed Development has taken full account of these regulations. To further reduce possible health and safety risks, a Health and Safety Plan for the Proposed Development will also be drawn up prior to construction commencing. All staff and contractors working on the construction will be required to comply with the safety procedures and work instructions outlined in the plan at all times.
- 4.7.2 To ensure that hazards are appropriately managed, risk assessments will be undertaken for all major construction activities, with measures put in place to manage any hazards identified.
- 4.7.3 The Construction (Design and Management) Regulations 2015 have formed an integral part of the Site concept design and the resulting layout presented within the EIA Report. In accordance with these Regulations, a Principal Designer was appointed from the outset to oversee the design process. Any 'significant' (as defined by the regulations) health and safety risks have been taken account of and investigations have been undertaken throughout the pre-consent phase of the Proposed Development in order to, as far as reasonably practicable, identify, manage and if possible, avoid any potential risks during construction.
- 4.7.4 These will require on-going review throughout the proposed construction period, in line with current regulations.

4.8 Operational Management and Maintenance

- 4.8.1 The turbines will start to generate electricity at wind speeds of around 3 m/s (6.7 mph). Electricity output will increase as the wind speeds increase up to a maximum of around 13.5 m/s (30.1 mph), when the turbines will reach their maximum generating capacity. The turbines will continue to operate at maximum generating capacity up to wind speeds of around 20 m/s (44.7 mph). Above 20 m/s the turbines will operate at a reduced output, up to 25 m/s (55.9 mph) where they will cut-out and automatically stop as a safety precaution.
- 4.8.2 The turbines will be controlled and managed remotely by Vestas, however routine service and maintenance team visits will take place. Routine maintenance and servicing are expected to take place approximately twice per year. Servicing will include the performance of tasks such as adjustment of blades, inspection of blade tip brakes and inspection of welds in the tower. Other visits to the Site will take place more frequently to ensure that the turbines are operating at their maximum efficiency. In the event of any unexpected events onsite appropriate repair works will be carried out.
- 4.8.3 There may also be a requirement for more extensive maintenance or repair. Notwithstanding, the amount of traffic associated with the operational phase of the Proposed Development will be minimal. Wind turbine operations will be overseen by suitably qualified contractors.
- 4.8.4 The vehicle used for most of these visits will likely be a 4x4 vehicle, although there could be an occasional need for an HGV or crane to access the Site for heavier maintenance and repairs. Ongoing track maintenance will generally be undertaken in the summer months when tracks will be dry. Safe access will be maintained all year round.

Aviation

- 4.8.5 The Aviation Assessment (**Technical Appendix 4.3**) has been undertaken for the Proposed Development to determine its potential impact on aviation operations. The primary risk identified is the potential impact on Prestwick Airport Primary Surveillance Radar (PSR), NATS en Route plc (NERL) Lowther Hill, Cumbernauld and Glasgow Terma PSRs. The Applicant will provide for the required configuration changes to the radar to mitigate any adverse effects through commercial agreements with the affected parties which will be secured by planning conditions. Potential impacts on Prestwick Airport Very High Frequency (VHF) air-to-ground radio communications can be operationally accommodated. The Applicant has commissioned an Instrument Flight Procedure (IFP) assessment from Glasgow Airport's Approved Procedure Design Organisation. Pending completion of that assessment, preliminary analysis suggests that impacts on Glasgow Airport's IFPs are unlikely to occur. As detailed above, an aviation lighting scheme consisting of lights on the nacelles of T1, T3, T4 and T5 has been agreed with the CAA.

Shadow Flicker

- 4.8.6 Under certain combinations of geographical position, time of day and year, wind speed and wind direction, the sun may pass behind the rotor and cast a shadow over neighbouring buildings' windows. When the blades rotate and the shadow passes a window, to a person within that room the shadow appears to flick on and off; this effect is known as shadow flicker.
- 4.8.7 A shadow flicker assessment (**Technical Appendix 4.4**) has been undertaken for 20 properties which fall within the study area – an area of 1,620 m (x10 rotor diameters) and 130 degrees either side north of the proposed wind turbine locations. The purpose of the assessment is to quantify the level of occurrence that may happen under a maximum 'worst-case' scenario and a more realistic scenario, and where mitigation may be required.
- 4.8.8 The maximum (worst-case) theoretical occurrence of shadow flicker amounts to 72.81 hours per year and up to 54 minutes hours per day at North Drumboy, located approximately 1.1 km to the south-east of the nearest proposed wind turbine. This level of occurrence does not take into account weather conditions (i.e. when there is no sun or when there is partial cloud cover), local visual obstructions (such as trees, hedges or other structures), turbine orientation and turbine operation. In reality, the amount of time when shadow flicker occurs will be less than that predicted. Accordingly, an assessment has also been undertaken to estimate a more realistic shadow flicker occurrence taking into account typical sunshine hours for the region. A review of historical met data suggests that this typically occurs for 29.4% of all daylight hours. Considering this, the likely occurrence of shadow flicker at the most affected property (North Drumboy) is predicted to be less than 21 hours per year and 16 minutes per day. These values do not exceed the thresholds for determining a significant effect i.e. >30 hours per year or > 30 minutes per day, and so no significant shadow flicker effects are predicted for the Proposed Development (including cumulatively with other nearby wind turbines).
- 4.8.9 No routine mitigation is proposed at this stage. If shadow flicker issues arise during operation, mitigation measures can be incorporated into the operation of the wind turbines to reduce the amount of shadow flicker experienced, for example switching off turbines for the short period of the day where shadow flicker may be experienced, and where conditions are conducive to creating shadow.

Telecommunications and Television

- 4.8.10 Consultation with telecommunications stakeholders has identified microwave links owned and operated by Arqiva and Airwave Solutions which pass through the western and eastern parts of the Site respectively – see **Figure 3.1: Site Constraints**. A 100 m + blade length (181 m) safeguarding distance has been implemented in order to avoid impacts on these links.
- 4.8.11 Analogue television broadcast has now been phased out and replaced by digital television, which is less likely to be affected by atmospheric conditions that rendered analogue television unwatchable and does not suffer reflection effects or ghosted image generation. It is anticipated that an appropriate condition will be attached to the planning permission and will require the Applicant to provide mitigation in the event that effects on television reception occur as a consequence of the operation of the Proposed Development.

4.9 Residues and Emissions

4.9.1 Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 ('the EIA Regulations')¹¹ require that the EIA Report provides an estimate, by type and quantity, of expected residues and emissions (such as water, air and soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced) resulting from the construction and operation of the Proposed Development.

4.9.2 **Table 4.1** below provides a summary of the anticipated residues and emissions.

Table 4.5 Proposed Development Potential Residues and Emissions

Topic	Potential Residue/Emission
Water	Construction Hydrology receptors have been considered as part of the Site's design to avoid areas of higher sensitivity such as, deeper peat and watercourse crossings. In addition, the Applicant is committed to the delivery of a CEMP which will ensure adherence to requirements in relation to the control and management of water quality and quantity from the Proposed Development (refer to Technical Appendix 2.2). Further information is presented in Chapter 9. Operation No significant pollution sources have been identified for the operation phase.
Air	Construction The construction phase will require the need for transport vehicles with associated emissions to the atmosphere. However, the quantity of emissions released from construction vehicle sources is expected to be low relative to the general background air emissions from road traffic. Therefore, no significant air emissions are anticipated. Operation No significant air emissions are expected during operation. The construction of the Proposed Development and subsequent operation will include activities that either directly or indirectly result in carbon dioxide (CO₂) emissions. The Scottish Government Carbon Calculator was used to calculate the payback period for the Proposed Development based on the full development lifecycle. The assessment is provided in Technical Appendix 12.1: Carbon Balance Assessment. The carbon calculator indicates that the overall payback period will be around 1.2 years (approximately 14.4 months). This means that the Proposed Development is anticipated to take around 1.2 years to repay the carbon exchange to the atmosphere (the CO₂ debt) through construction, after which the Site will in effect be in a net gain situation following this time period and can then claim to contribute to national emission reduction objectives.
Noise and Vibration	Construction Noise will be emitted by equipment and vehicles used during construction of the Proposed Development although this will only be on a temporary basis. Operation Noise will be emitted by the wind turbines and some ancillary infrastructure (including substation) during operation. No significant effects in relation to construction and operational noise is predicted. Further information is provided in Chapter 10: Noise and Vibration.
Light	Construction

¹¹ The town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. Available [online] at: <https://www.legislation.gov.uk/ssi/2017/102/contents> [Accessed: 20th February 2026]

Topic	Potential Residue/Emission
	Temporary lighting will potentially be required during construction to light the temporary construction compounds for security purposes and ensure that a safe working environment is provided to construction staff. All temporary lighting installations will be downward facing, and all lights will be switched off during daylight hours and out with working hours. Operation Aviation warning lights will be installed on T1, T3, T4 and T5. The impacts of the operation of these lights during hours of darkness on landscape and visual receptors (including from nearby properties) is presented in Technical Appendix 5.2: Residential Visual Amenity Assessment (RVAA) and Technical Appendix 5.3: Aviation Lighting Night Time Impact Assessment.
Waste	Construction A number of different waste streams are likely to arise during construction of the Proposed Development. The Principal Contractor will be responsible for the production of a SWMP that will identify all waste streams and provide an estimate of expected waste volumes for each waste type generated within the waste stream. There will be no residual soil or peat waste following proposed reinstatement measures – see Technical Appendix 9.3. Operation The general operation and maintenance activities have the potential to produce a small amount of waste. It is unlikely the power generation aspects of the Proposed Development will produce significant waste emissions.
Soil	Construction Excavation, handling and storage of soil and subsoil will be required during construction. Details regarding open trenches, soil handling and topsoil spreading will be considered in the CEMP, which will be developed by the Principal Contractor. Peat excavated during construction will be managed in accordance with a PMP. A draft PMP has been prepared and provides details of the excavation requirements and re-use proposals (see Technical Appendix 9.3). Operation No requirement for soil or subsoil excavation or handling during the operation phase has been identified.
Heat and Radiation	No significant sources of heat and radiation have been identified during either the construction or operation phase of the Proposed Development.

4.10 Decommissioning

- 4.10.1 The operational life of the Proposed Development and associated infrastructure will be 35 years. Following this, an application could be submitted to retain or replace the turbines, or they could be decommissioned. Details of the standard approach to decommissioning is set out below.
- 4.10.2 The decommissioning requirements will be agreed with EAC and other appropriate regulatory authorities in line with best practice guidance and requirements of the time. This would be done through the preparation and agreement of a Decommissioning Environmental Management Plan (DEMP). Financial provision for the decommissioning will be provided. It is anticipated that the DEMP will be enforceable through a planning condition.

Turbines and Underground Cabling

- 4.10.3 Turbine components and electrical equipment will be dismantled and removed in a similar fashion to their delivery and erection. The turbines will be split into sections which will then be transported from the Site by HGVs unless the components are sold on, in which case, they will be removed as abnormal loads. Turbine components will be cut up offsite in controlled environments with re-use or recycling being preferred. Turbine oils will be removed from the Site

and disposed of appropriately. It is not commonplace to remove concrete foundations from sites as this will cause more damage to the environment. The exposed concrete plinth will be removed to a depth of 1 m below the surface and the entire foundation will be graded over with soil and replanted if appropriate. The removal of the top of the turbine base will be undertaken requiring an excavated trench around the upstand to provide a working area. Breakout of the top part of the plinth will be undertaken using an excavator mounted jack hammer. The cables will be cut level with the remaining concrete. Once the broken-out concrete has been removed, the area will be reinstated by backfilling with soil/peat to an agreed method statement, as outlined in the restoration section above. Underground cables will be made safe and left in-situ. This is considered preferential to extracting cables from the cable trenches due to the potentially greater environmental impacts.

Crane Hardstandings, Tracks and Watercourse Crossings

- 4.10.4 Topsoil material that has revegetated the crane hardstandings will be excavated first and temporarily stored for reuse following partial removal of crane hardstandings. The top 1 m of the crane hardstandings would be removed and disposed of appropriately. This is considered preferential to removing all infrastructure, due to the potentially lower environmental impacts associated with excavating, processing and removing aggregate from the Site. The excavated hardstandings would be reprofiled with soil and reseeded. Recovered geogrids and geotextiles would be disposed of appropriately. All granular materials would be excavated and removed from the Site, for re-use where practicable.
- 4.10.5 All access tracks will be left onsite to ensure the continued benefit of improved site access for the landowner and the public or they could be reinstated. All watercourse crossings will remain in-situ in association with the access tracks after decommissioning. This will reduce decommissioning activities in the vicinity of watercourses and thus potential for contamination as a result of run-off.

Substation

- 4.10.6 All equipment from within the substation compound will be removed from Site and either reused, recycled or disposed of appropriately. Oils or lubricants from the compound will be removed and disposed of appropriately. The control building, and related infrastructure, will then be demolished and all materials reused, recycled or disposed of appropriately.

4.11 Benefits of the Proposed Development

Environmental Benefits

Carbon Emissions Offset and Homes Powered

- 4.11.1 The principal atmospheric pollutants produced by burning fossil fuels are CO₂, sulphur dioxide (SO₂), and oxides of nitrogen (NO_x). In contrast, the harnessing of wind energy is non-consumptive and produces no gases or other by-products. The key environmental benefit of the Proposed Development will be the generation of electricity from a renewable energy source that will reduce or avoid the use of fossil fuels through the displacement of electricity generated from other sources of energy.
- 4.11.2 The purpose of the Proposed Development is to generate electricity from a renewable source of energy, offsetting the need for power generation from the combustion of fossil fuels, and to add capacity to the electrical generating potential to facilitate a decarbonisation of heat and transport networks, and ultimately contribute towards Scotland's net zero obligations. Consequently, the electricity that will be produced by the Proposed Development will result in a saving in emissions of CO₂ with associated environmental benefit. The 'payback time' is defined as the length of time (in months) required for the Proposed Development to be considered a net avoider of emissions rather than a net emitter. The calculation of payback time includes a consideration of emissions resulting from the construction and operational phases, and the quantification of the carbon storage loss as a result of loss of peat and forestry within the Site (expressed as CO₂ emissions).
- 4.11.3 Use of the Scottish Government's latest carbon calculator with best estimate values, based on available information, indicates that the Proposed Development will pay back the carbon emissions associated with its construction, operation and decommissioning in roughly 1.2 years (roughly 14.5 months). The amount of carbon that will be offset by the Proposed Development each year is estimated to be approximately 49,025 tonnes (tCO₂) assuming electricity generated is used to offset fossil fuel electricity generation, giving a total saving of approximately 1,715,875 tCO₂

over its 35 year operational life. Given the total net emissions of CO₂ due to the construction and operation (67,515 tCO₂) whilst also accounting for net gains through peatland restoration (6,298 tCO₂), there will be a total net saving of approximately 1,654,658 tCO₂ over the lifetime of the Proposed Development. Further details are provided in **Technical Appendix 12.1**.

- 4.11.4 The Proposed Development will produce an average of approximately 109,430 Mega-watt hours (MWh) of electricity annually (based on a site derived capacity factor of 34.7%). This equates to the power consumed by approximately 32,931 average UK households¹².

Biodiversity Enhancement Management Plan (BEMP)

- 4.11.5 In line with NPF4¹³ (further detailed in Scottish Government planning guidance for biodiversity¹⁴), the Onshore Wind Policy Statement¹⁵ and the Scottish Biodiversity Strategy to 2045¹⁶, consideration has been given to how the Proposed Development can deliver significant enhancements to biodiversity over its lifetime. A Biodiversity Enhancement Management Plan (BEMP) for the Proposed Development will be developed to compensate for habitat loss within the Site, and further enhance habitats, thus delivering significant biodiversity enhancement.
- 4.11.6 An Outline Biodiversity Enhancement Management Plan (OBEMP) has been prepared and is provided in **Technical Appendix 7.6**. The OBEMP proposes three Habitat Management Units (HMU)(A-C) with the aim of restoring degraded habitats, enhancing habitats, and creating habitats of ecological value, which in turn will benefit existing flora and fauna as well as increase biodiversity in general. It also details the aims, objectives and management prescriptions pertaining to these three HMUs. HMU A-B proposals are shown on **Figure 1** of **Technical Appendix 7.6**.

■ **HMU A (67.86 ha) - Forest to Bog and Peatland Restoration and Enhancement**

- **Aim** - To restore and enhance blanket bog habitat within HMU A through forest-to-bog restoration, the removal of non-native conifer regeneration, to promote of key peat-forming species (particularly *Sphagna*, *Ericoids* and *Eriophorum* spp) to improve peatland condition, and to maintain and increase numbers and diversity of breeding wader species.

Details - The 67.86 ha of peatland restoration and enhancement will comprise of 41.27 ha of pure forest-to-bog restoration (as discussed in **Technical Appendix 4.1**) and an additional 26.59 ha of existing blanket bog habitat enhancement through rewetting and increasing the water table. In accordance with NatureScot guidance¹⁷, these measures will create up to 53.56 ha of peatland enhancement once the compensation requirements for priority peatland habitat loss have been considered (14.30 ha).

■ **HMU B (7.96 ha) - Native Broadleaved Woodland & Riparian Corridor Enhancement, Creation & Connectivity**

Aim - To enhance and expand native broadleaved and riparian woodland habitats within HMU B, improving habitat connectivity, structural diversity and ecological resilience while providing enhanced breeding, shelter and foraging opportunities for birds, bats, small mammals and invertebrates.

Details - Native broadleaf and riparian woodland totalling 7.96 ha is proposed within the Site along forest edges and sections of the Swinzie Burn, and will generally take the form of low-density peatland edge woodland planting and establishment that will replace existing conifer plantation and in consideration of the prevailing peat

¹² Based on the latest Department for Energy Security and Net Zero (DESNZ) figures, which provide an average UK annual household electrical consumption of 3,323 KWh.

¹³ Scottish Government (2023). National Planning Framework 4. Available at: <https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2023/02/national-planning-framework-4/documents/national-planning-framework-4-revised-draft/national-planning-framework-4-revised-draft/govscot%3Adocument/national-planning-framework-4.pdf> (Accessed: 6 March 2026).

¹⁴ Scottish Government (2025). Planning Guidance: Biodiversity. Available at: <https://www.gov.scot/publications/scottish-government-planning-guidance-biodiversity/documents/> (Accessed: 6 March 2026).

¹⁵ Scottish Government (2022). Onshore Wind Policy Statement 2022. Available at: <https://www.gov.scot/publications/onshore-wind-policy-statement-2022/> (Accessed: 6 March 2026).

¹⁶ Scottish Government (2022). Scottish Biodiversity Strategy to 2045 - Tackling the Nature Emergency in Scotland. Available at: <https://www.gov.scot/publications/scottish-biodiversity-strategy-2045-tackling-nature-emergency-scotland/documents/> (Accessed: 6 March 2026).

¹⁷ NatureScot (2023). Advising on peatland habitats and carbon-rich soils in development management. Available at: <https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management>.

depths present locally. It is anticipated that this will provide enhancement and wider biodiversity benefits to a range of species.

■ **Confidential HMU C - Breeding Raptor and Owl Productivity**

Details - Details pertaining to HMU C and ornithological interests, including associated protected species, with details regarding the area and rationale and proposed measures, is presented in a confidential version of **Technical Appendix 7.6** within **Volume 5: Confidential Documents** of the EIA Report. The OBEMP will be refined and developed into a final BEMP post-consent. The final BEMP will confirm the overarching Biodiversity Enhancement Area (BEA) encompassing all habitat management proposals, and any finalised management units (i.e., the refined land parcels/areas for specific habitat management proposals) therein, where the aims, objectives and management prescriptions will apply. The final BEMP will be agreed with EAC in consultation with NatureScot prior to the commencement of construction of the Proposed Development.

- 4.1.1 Monitoring will establish whether the aims and objectives of the BEMP are being met and will inform adaptive management to ensure the aims and objectives are achieved through the life of the BEMP.

Socio-Economic Benefits

- 4.11.7 The development and construction phase of the Proposed Development is expected to generate:
- £4.3 million Gross Value Added (GVA) and the equivalent of 50 years of employment in East Ayrshire; and
 - £15.4 million GVA and 175 years of employment across Scotland.
- 4.11.8 The Applicant has committed to active supply chain engagement, including the creation of a Local Contractor Database to ensure East Ayrshire firms are visible to the main contractor. Once operational, the Proposed Development will continue to provide annual economic benefits, supporting:
- £0.5 million GVA and three jobs in East Ayrshire every year; and
 - £1.2 million GVA and eight jobs across Scotland each year.
- 4.11.9 These impacts will be realised through the use of local contractors and suppliers wherever possible. The main contractor is likely to be Scotland-based, but it is assumed that whoever is appointed as the main contractor, that a significant proportion of the work will be carried out by sub-contractors and labour resident in East Ayrshire. The Applicant is committed to giving local businesses every possible opportunity to share in the financial and employment benefits of the construction and operation of the Proposed Development. If consented and constructed, the Proposed Development will offer opportunities for local businesses such as accommodation providers, hire companies, fencing contractors, tradespeople and machinery plant owners.
- 4.11.10 Once operational, the Proposed Development will require a small team of personnel to service, maintain and operate it. It is predicted that one permanent site operator will be employed who will be responsible for overseeing the operation and maintenance of the Proposed Development during its lifetime (of up to 35 years). The Site operator may oversee a number of other wind farms in the region, and so will not be permanently based onsite.
- 4.11.11 In accordance with the Scottish Government's Good Practice Principles, the Applicant is committed to providing a voluntary community benefit package that is competitive, deliverable and aligned with good practice at the time. The current Scottish Government recommended value is £5,000/MW of installed capacity per annum. The Applicant will pay £5000/MW for each year of the Proposed Development's operational period of up to 35 years, to help fund local community projects. Based on an indicative combined site output capacity of 36 MW, this generates a significant long-term potential revenue stream for the local area of an:
- Annual Fund Value of up to £180,000; and
 - Lifetime Fund Value (35 years) of up to £6.3 million.
- 4.11.12 Following planning permission being granted, the Applicant is committed to the security of the community benefit fund to be set out via a Memorandum of Understanding (MOU), if requested by participating communities. The Applicant is also willing to explore a Local Electricity Discount Scheme out of its community benefit fund to provide direct support to residents, where requested by community interests.
- 4.11.13 Skills and training are a vital part of Scotland's transition to a green economy that is powered by renewable energy. The Applicant has a significant existing operational footprint in south-west Scotland. With a service base in Prestwick

and approximately 40-50 technicians already employed in the region, the Applicant is well positioned to offer genuine skills development, local job opportunities through the Proposed Development and long-term career pathways.

- 4.11.14 Further details are provided in the **Socio-Economic, Tourism and Recreation Impact Assessment Report** which accompanies the planning application.