



CRUACH CLENAMACRIE WIND FARM

CHAPTER 5: PROJECT DESCRIPTION

November 2024

RESPONSIBILITIES

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ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
ANO	Air Navigation Order	HVAC	Heating, Ventilation and Air Conditioning
AOD	Above Ordnance Datum	kN/m²	kilonewtons per square metre
BESS	Battery Energy Storage System	kN/m³	kilonewtons per cubic metre
BSU	Battery Storage Units	LVA	Local Value Added
BP	Borrow Pit	MoD	Ministry of Defence
CAA	Civil Aviation Authority	m	metres
CDM	Construction (Design and Management)	m³	metres cubed
CEMP	Construction Environmental Management Plan	m/s	metres per second
cm	centimetre	NMP	Noise Management Plan
CTMP	Construction Traffic Management Plan	NPF4	National Planning Framework 4
DMP	Dust Management Plan	OAMP	Outdoor Access Management Plan
EERP	Emergency Environmental Response Procedure	OEMP	Operation Environmental Management Plan
ECoW	Ecological Clerk of Works	oHMP	outline Habitat Management Plan
EHO	Environmental Health Officer	PMP	Peat Management Plan
EIA	Environmental Impact Assessment	PPP	Pollution Prevention Plan
FLS	Forestry and Land Scotland	SAC	Special Area of Conservation
FTE	Full Time Equivalent	SCADA	Supervisory Control and Data Acquisition
GCR	Green Cat Renewables Ltd	SEPA	Scottish Environmental Protection Agency
Ha	Hectares	SSEN	Scottish and Southern Energy Networks
HMP	Habitat Management Plan	SSSI	Site of Special Scientific Interest
HMU	Habitat Management Units	WMP	Waste Management Plan

5 PROJECT DESCRIPTION

5.1 Introduction

This chapter provides a description of the Proposed Development and ancillary infrastructure in its geographical context. It also outlines the anticipated construction, operation, and decommissioning activities connected with the Proposed Development.

This chapter should be read in conjunction with the following figures and application drawings:

- **Figure 5.1** – Site Constraints Plan
- **Figure 5.2** – Site Constraints Plan with Layout
- **Figure 5.3** – Proposed Route to Site
- **Figure 5.4** – Foundation Details
- **Figure 5.5** – Site Location
- **Figure 5.6** – Site Layout
- **Figure 5.7** – Site Layout- Block Plans
- **Figure 5.8** – Substation Details
- **Figure 5.9** – Drainage Layout
- **Figure 5.10** – Hardstanding and Road Details
- **Figure 5.11** – Turbine Elevations
- **Figure 5.12** – Drainage Details
- **Figure 9.4.1** – Watercourse Crossings
- **Figure 10.5.5** – Habitat Management Units Overview
- **Appendix 12.1 Appended Drawings** – Access Junction Arrangement & Access Junction Swept Paths

5.2 Development Description

The Proposed Development would comprise up to six turbines with a generating capacity of approximately 45MW and approximately 20MW of Battery Energy Storage System (BESS) and associated infrastructure comprising:

- New Access tracks, passing places, and turning heads;
- Site entrance from the A85;
- Access route through Fearnoch Forest;
- Turbine foundations;
- Hardstanding areas for cranes at each turbine location;
- Blade laydown areas;
- Temporary construction compound, including parking, and welfare facilities;
- Watercourse crossings;
- Drainage works;
- Power cables, linking the wind turbines, laid in trenches underground, including cable markers;
- An on-site electrical substation, parking, and a small storage compound;
- Borrow Pits; and
- Aviation obstacle lighting fitted to turbines.

The Proposed Development will connect to the electricity grid at Taynuilt Substation, which is located approximately 6.7km to the east of the proposed on-site substation.

5.3 The Site

The Application Site, hereafter referred to as ‘the Site’ is located approximately 7km east of Oban within the Argyll and Bute Council administrative area.

The Site is comprised of land owned by private landowners and Fearnoch Forest which is owned and managed by Forestry and Land Scotland (FLS).

The area where the wind turbines are proposed is bordered by Fearnoch Forest to the east, south, and west. This part of the Site is part of an estate of agricultural and sporting enterprise. The access to the wind farm is largely through Fearnoch Forest.

The A85 lies approximately 3km north of the Site and is a key transportation route within the immediate area, due to its connection with the central belt of Glasgow – Stirling - Edinburgh. The A85 joins the A82, A816 and A8.

The landscape within the Site is characterised as craggy upland with oak-birch woodland, rounded knolls, rocky outcrops, and numerous lochs in low-lying hollows and glens. The terrain is hilly with a maximum elevation of 273m Above Ordnance Datum (AOD). Deadh Choimhead Hill is situated south of the Site.

There are no Scheduled Monuments within the Site. Glenamachrie Cairn and An Dun, dun and Glenamachrie Standing Stone are the closest Scheduled Monuments located approximately 0.8km south-west of the Site.

The carbon and peatland map 2016¹ indicates that most of the Site is underlain with Class 2 peat with pockets of Class 5 peat dispersed across the Site. The largest section of Class 5 peat is found towards the south-west of the Site. The Lusragan Burn and Black Loch's tributaries run through the Site.

Directly north of the Site lies an area of the Loch Etive Woods Special Areas of Conservation (SAC) which is located within the Clais Dhearg Site of Special Scientific Interest (SSSI). In addition, there are areas of Ancient Woodland Inventory in the forestry surrounding the Site.

Fearnoch located approximately 2km north-east of the Site. Glenamachrie is the nearest residential property at approximately 0.8km south-west of the Site.

5.4 Proposed Development

5.4.1 Access

5.4.1.1 Route to Site

Turbine manufacturers usually have a preferred port of delivery regarding the transportation of turbine components to the Site. The turbine supply route will be finalised following the selection of the turbine supplier. For the purposes of this assessment, the Applicant assumes that Corpach Harbour will be used. This is the nearest feasible and economical port of entry for the Proposed Development and has been used in the past for wind turbine imports. The proposed route to the Site for abnormal loads can be seen in **Figure 5.3**. Delivery vehicles will navigate the A830 eastbound from Corpach to the A830/A82 roundabout where it will follow the A82 until Tyndrum, where it will join the A85 travelling west towards the Site. Further information can be found in the **Annex C of Appendix 12.1: Transport Assessment**.

5.4.1.2 Access Junction

¹ [The Carbon and Peatland Map 2016](#) (Accessed 12/07/2024)

At present it is proposed to bring the turbine components through Corpach Harbour directly to the Site. An upgraded access junction is proposed from the A85 at Dailnamac through Fearnoch Forest and into the Site.

The access point will provide two junctions:

- One to be used by abnormal loads which can only turn right upon joining the A85; and
- One to be used by construction traffic and maintenance vehicles during the operation phase of the wind farm which can turn either left or right upon joining the A85.

Visibility splays of the new junctions can be seen in the **Access Junction Drawings** appended to **Appendix 12.1: Transport Assessment**.

5.4.1.3 Access Tracks

Approximately 10.1km of new/upgraded access tracks would be required for the Proposed Development. The proposed access tracks start at the new junction with the A85 and would travel in a southerly direction for approximately 400m at Dailnamac to join the existing forestry access tracks. The proposed access track then largely follows the existing forestry track until a point approximately 1.1km from the point where the track exits FLS land and enters the area of the Site where the turbines are proposed.

Once within the area of the Site, there is a spine track, and the six turbines spur off of this main spine.

Table 5.1 outlines the length of the track and the aggregate required for the construction of new access tracks and upgrade of existing tracks. The proposed access within the Site is shown further in **Figure 5.6 and 5.7**.

TABLE 5.1: LENGTH OF AND AGGREGATE REQUIRED FOR ACCESS TRACKS

APPROXIMATE LENGTH OF TRACK	ESTIMATED AGGREGATE REQUIRED
10.1km	39299.15m ³

It is envisaged that the proposed access tracks would comprise of stone sourced from the proposed borrow pits as illustrated in **Figure 5.6 and Figure 5.7** and discussed in **Section 5.4.10**.

All new access tracks have been designed to avoid sensitive environmental receptors where possible. It is proposed that the access tracks from E196438 N730140 to E196628 N730166 through Fearnoch Forest are floated in order to minimise the potential excavation and disruption to the surrounding peatland. Further detail on the potential impacts to peat have been outlined within **EIA Report Chapter 9: Geology, Hydrogeology, Hydrology and Soils**. Additional information relating to floating roads is included in **Appendix 9.2: outline Peat Management Plan**.

5.4.2 Grid Connection

The electrical power produced by the individual wind turbines would be transmitted to the proposed Substation via underground cables. The proposed Substation location is shown on **Figure 5.6 and 5.7**. A connection to the national grid's electricity transmission/distribution system will be required. This does not form part of the Proposed Development and is not the subject of the current application to which this EIA Report relates.

The proposed Substation includes space for both the proposed Substation that is part of the Proposed Development and the substation that would be required by Scottish and Southern Energy Networks (hereafter referred to as 'SSEN'), which they will design, build, and operate. **Figure 5.8** shows the proposed Substation elevation. Energy generated by the Proposed Development would be exported to the grid by a direct connection from the SSEN substation to the grid connection location. Underground power cables

would run alongside the access tracks in trenches from each of the wind turbines to the proposed Substation.

The grid connection point will be at the Taynuilt substation. The nature and location of the connection will be determined by SSEN in a separate application process. The grid connection therefore is not included as part of this current application and will not be assessed in this EIA Report.

5.4.3 Wind Turbines

The Proposed Development would comprise of six wind turbines up to 200m tip height, a maximum hub height of 119m and a maximum rotor diameter of 165m. The exact model of wind turbine to be installed will be selected through a competitive procurement process, however for the purposes of the assessments, currently available wind turbine models are being considered which fit this height parameter. There are a number of potential wind turbine models which fit within the height parameter, which differ in properties, such as noise emissions. In each instance, a 'worst case' potential wind turbine has been used in the assessments throughout this **EIA Report** as appropriate.

The Easting and Northing coordinates for the proposed final locations of the wind turbines (subject to micro-siting) are presented in **Table 5.2** below.

TABLE 5.2: TURBINE LOCATIONS

TURBINE	EASTING	NORTHING
T1	193137	729822
T2	193575	729153
T3	194247	730351
T4	194392	729793
T5	194873	730439
T6	195082	729892

Each wind turbine will comprise the following components:

- Three blades;
- Tower sections;
- Nacelles;
- Hardstanding and Laydown Areas; and
- Hub.

The colour/finish of the turbines will be a light grey, the final RAL number is to be determined but would be in the vicinity of RAL 7035.

The turbines will rotate in a clockwise direction. The computerised control system within the turbine continuously monitors the wind direction and instructs the turbine to turn (yaw) to face into the wind to maximise the amount of energy that is captured. The turbines will begin generating at a wind speed of 3-4m/s and operate with a storm control feature that enables the turbine to continue to operate at very high wind speeds; avoiding the need for sudden shutdowns and energy yield losses.

In the event of extreme wind speeds, in excess of those that the turbines can operate at (typically 10-minute averages of 25m/s or a gust of 34m/s), the turbines would shut down until the wind speed has dropped to a level where they can safely start operating again.

5.4.4 Turbine Foundation

A typical turbine foundation is shown in **Figure 5.4**. The foundation would typically have a diameter of approximately 22.65m, and a depth of 2.7m. When the foundations are excavated, an additional 1m around the foundation edge will be dug to allow working space during construction. A concrete blinding, 10cm thick, will be poured to provide a surface on which the foundation can be constructed.

The turbine foundations will be covered by a consolidated backfill, that will have a density of no less than 18kN/m³. It is anticipated that excavated material will be used for backfilling. A plinth of approximately 7m in diameter is left, just above the surface level, upon which the turbine is bolted.

5.4.5 Crane Hardstandings

Crane hardstanding areas are required at each turbine location to facilitate the erection of the wind turbine. The indicative hardstanding design measures is 107mx63m. The hardstandings will be constructed using aggregate with a topping layer of type 1 aggregate, or similar, and will be designed to withstand a minimum surface pressure of 135kN/m² for Storage/Assembly/Auxiliary Platform Hardstandings, 185 kN/m² for Crane Platform Hardstandings and 75 kN/m² for construction compound hardstanding. This is shown in **Figure 5.10**.

Adjacent to the crane hardstanding would be laydown areas for the blades comprising a disturbance area of approximately 83m long by 18m wide.

Additional hardstanding areas would be required to accommodate auxiliary cranes needed to lift and assemble the crane boom sections. These areas would measure approximately 10mx5m, be comprised of crushed stone, and would be positioned along the access tracks. The assembly areas are typically required to be constructed to the same level as the main crane hardstanding.

The crane hardstanding and laydown areas would remain a permanent feature of the Proposed Development to facilitate maintenance.

5.4.6 Substation

The substation and control building would be located within the area marked as substation area on the Site Layout Plan (**Figure 5.6 and 5.7**). A substation plan and elevation are shown in **Figure 5.8**. The Substation Area would also contain the SSEN substation, which would be designed, built and owned by the electricity grid network operator (SSEN) and is not part of this Proposed Development.

The substation would host a range of electrical grid equipment, including but not limited to:

- Transformers;
- Heating, ventilation and air conditioning (HVAC) coolers;
- Electrical cabling; and
- Any other electrical equipment necessary.

The control building would be used to contain the Supervisory Control And Data Acquisition (SCADA) facilities.

5.4.7 Battery Energy Storage System

A Battery Energy Storage System (BESS) of up to 20MW is proposed to be included as part of the Proposed Development. This would be located within the footprint of the construction compound as illustrated in **Figure 5.6 and 5.7**. The minimum export capacity of the BESS would be approximately 0MW/0MWh and the maximum would be approximately 20MW/40MWh.

This would comprise of:

- Battery Storage Units (BSU);
- Power conversion system units;
- Switchgear units; and
- Control buildings.

Each BSU will be delivered to the Site prefabricated, contained within a steel container, similar in size and appearance to a standard shipping container with a maximum size of approximately 8m x 2m.

The BSU's will be co-located with the substation enabling all elements to be contained within the same security fence to restrict access, serviced via a locked gate.

5.4.8 Watercourse Crossings

Watercourse crossings have been minimised as far as possible in the design of the access track layout. Five new watercourse crossings will be required, and two existing watercourse crossings will require upgrading/replacement as part of the Proposed Development. These crossings would be registered under the Water Environment (Controlled Activities) (Scotland) Regulations 2011². Locations of the watercourse crossings are shown on **Figure 9.4.1**.

Further discussion of the water crossings proposed as part of the Proposed Development are provided in **EIA Report Chapter 9: Geology, Hydrogeology, Hydrology and Soils**. Coordinates for each watercourse crossing are provided in **Table 5.3**.

TABLE 5.3: WATERCOURSE CROSSINGS

WATERCROSSING	EASTING	NORTHING	STATUS
WC1	194296	729836	New
WC2	194401	730118	New
WC3	194499	730455	New
WC4	195069	730375	New
WC5	195077	730315	New
WC6	197238	731327	Existing – Upgrade/Replace
WC7	197212	730313	Existing – Upgrade/Replace

5.4.9 Construction Compound

The construction compound (approximately 100m x 50m) would be utilised as the centre for all construction activities. The location of the construction compound is shown in **Figure 5.6 and 5.7**. The final size and engineering properties of the construction compound will be confirmed prior to the start of construction after the wind turbine supplier and model have been confirmed.

The construction compound would be used for the storage and assembly of certain components, tools, small parts, and oil and fuel storage. Adequate parking would be provided for cars and light vehicles. The construction compound will also serve as an area for controlling access to the Site during construction.

Prior to construction, a Construction Environmental Management Plan (CEMP) and a Pollution Prevention Plan (PPP) will be put in place to outline mitigation strategies and adhere to standards put in place by the Scottish Environmental Protection Agency (SEPA) and Argyll and Bute Council.

² [The Water Environment \(Controlled Activities\) \(Scotland\) Regulations 2011](#) (Accessed 26/09/2024)

On completion of the construction works, all the temporary structures will be removed, and the existing hardstanding will be left in place.

5.4.10 Borrow Pits

To minimise the volume of imported material brought to the Site and any associated environmental impact, borrow pits located within the Site would be used to source aggregate for construction of the Proposed Development, where suitable material is found to be present.

Two borrow pits have been identified to provide a total of approximately 39299.15m³ of aggregate required to construct the Proposed Development. This includes base materials for access tracks, hardstanding, and foundations. The location of the borrow pits is shown in **Figure 5.6 and 5.7**. Volumes of proposed borrow pits are provided in **Table 5.4** and a borrow pit assessment is included as part of this EIA Report in **Appendix 9.5: Borrow Pit Assessment**.

TABLE 5.4 : PROPOSED BORROW PITS

BORROW PIT	ESTIMATED VOLUME OF MATERIAL (M ³)
BP 1	50,000
BP 2	13,000

5.4.11 Biodiversity Enhancement

The Applicant has committed to the provision of an outline Habitat Management Plan (oHMP) (**Appendix 10.5**) to reduce adverse environmental effects, provide significant enhancements for important ecological features, and biodiversity enhancement at the Proposed Development, as advised in Policy 3 of National Planning Framework 4 (NPF4)³. These measures are outlined in **Appendix 10.5: outline Habitat Management Plan** and the Habitat Management Units (HMU) are illustrated on **Figure 10.5.5** and summarised below.

5.4.11.1 Habitat management

- Drainage related: existing local drainage features could be ‘stopped’ in the form of a single dam structure - peat dam or an appropriate plastic piling. In the offsite area, this would be focussed on the edge of the bog to reduce run-off. No mechanical excavations would be required to achieve this. The aims, therefore, will be to raise the water table and reduce erosion, allow rewetting of peatland and bog areas on the Site, and to reduce drying out of Northern Emerald habitat offsite.
- Removal of invasive non-native species: manual removal of self-seeded regenerating young Sitka spruce on the Site. No mechanical excavations would be required to achieve this, although stump removal would be desirable where feasible. The aim of this measure is to reduce the drying out of peatland on the Site.
- Removal of invasive non-native species: Removal of Rhododendron offsite in the wider landholding in HMU F illustrated on **Figure 10.5.5**. Works would be undertaken in line with the Forestry Commission Practice Guide. Hand pulling of smaller plants would be recommended, with cutting and periodic stump treatment undertaken on larger plants. No mechanical excavations would be required to achieve this. This measure aims to improve Marsh Fritillary habitat and Atlantic oak woodland in offsite locations.
- Control of undesirable plant species - bog myrtle and bracken: manual cutting/ removal to reduce cover in HMU D illustrated on **Figure 10.5.5**. Machinery likely to be employed would be a Softrak

³ [National Planning Framework 4](#) (Accessed 26/09/2024)

75 Low Ground Pressure vehicle, fitted with a hammer flail harvester and collector bin. No mechanical excavations would be required to achieve this. Mechanical scraping of rhizomes close to the surface may be required to reduce the cover of dense bracken. Cattle would further break up dense areas, following mechanical removal. This measure aims to prevent further drying out of the Northern Emerald habitat, and to encourage the development of devil's bit scabious (Marsh Fritillary caterpillar foodplant).

5.4.11.2 Grazing management

- **Deer:** The Deer Management Plan (**Appendix 10.6**) outlines recommended deer control measures in unfenced areas to improve the condition of woodland and peatland. Deer fencing is proposed around known and historical hen harrier nest sites to maintain habitat conditions.
- **Cattle:** Within the offsite areas, cattle grazing would be adapted in HMU E illustrated on **Figure 10.5.5** to reduce the cover of undesirable plant species, thereby improving the habitats for Northern Emerald and Marsh Fritillary.

5.5 Construction

The construction start date is estimated to be 2030. The onsite construction period for the Proposed Development is expected to be approximately 12-18 months, subject to the award of consent and award of construction contracts. Normal construction hours would be between 07:00 and 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays, or as agreed with Argyll and Bute Council’s Environmental Health Officer (EHO). It should be noted that in some instances (due to inclement weather or for health and safety reasons), some activities, for example abnormal load deliveries (which are controlled by Police Scotland) and the lifting of the wind turbine components, may occur outside the specified hours stated. **Table 5.5** provides an indicative programme for the main activities to be carried out.

TABLE 5.5: INDICATIVE CONSTRUCTION PROGRAMME

TASK	MONTH																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Delivery/removal of plant and equipment for Welfare Facilities, Craneage, and Civils	█																	
Forestry Felling	█	█																
Delivery of aggregate for access tracks (new) and hardstandings		█	█	█	█	█	█	█	█									
Delivery of Geogrid and Geofabrics		█	█	█	█													
Foundation prep					█	█	█	█										
Delivery of ready mixed concrete for foundations of turbines								█	█	█	█	█						
Substation construction			█	█	█	█	█	█	█	█								
Delivery of crane and ballast									█	█	█	█						
Delivery of turbine components (HGV sized loads)								█	█	█	█	█	█	█				
Delivery of turbine components (Abnormal sized loads)								█	█	█	█	█	█	█				
Commissioning and connection including sub and electrical															█	█	█	█

5.6 Health and Safety

Health and safety during construction will fall under the Construction (Design and Management) (CDM) Regulations 2015⁴. A construction phase health and safety plan will be prepared following award of consent.

5.6.1 Construction Materials

The materials likely to be required for construction of the Proposed Development include:

- Crushed Stone;
- Geotextile;
- Cement;
- Sand;
- Concrete;
- Steel reinforcement; and
- Electrical cable.

5.6.2 Construction Approach

Site investigation and preconstruction surveys required to be undertaken will be done in order to inform detailed design in advance of construction.

Excavation would be undertaken by initially stripping back the soil from the area to be excavated. This soil would typically be stored separately in a designated area on the Site for further use or reinstatement of temporary works areas. This soil could be used for restoration and should be stripped and stored carefully. The handling of soils would be undertaken in accordance with best practice techniques. Soil and peat storage is discussed in **EIA Report Chapter 9: Geology, Hydrogeology, Hydrology and Soils**.

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

5.6.3 Micrositing

For the proposed turbine locations, access tracks and associated infrastructure, a micrositing allowance of up to 50m is requested via planning condition and will assist in reducing environmental impacts during construction. Micrositing of any of the turbines, track, or associated infrastructure would be used to limit environmental impacts following a detailed site and ground investigation, required as part of discharging the planning conditions and the final locations of infrastructure would be agreed in writing with the planning authority prior to construction.

5.6.4 Construction Environmental Management Plan

A Construction Environmental Management Plan (CEMP) will be prepared and implemented ahead of the commencement of construction. The CEMP will detail the mitigation measures which would be applied during construction of the Proposed Development. The CEMP will be prepared by the Principal Contractor,

⁴ [The Construction \(Design and Management\) Regulations 2015](#) (Accessed 26/09/2024)

responsible for undertaking the construction works. It would be based on the mitigation measures outlined in **EIA Report Chapter 18: Summary of Mitigation**.

The CEMP will be prepared and agreed upon with Argyll and Bute Council and relevant consultees prior to the commencement of construction.

The CEMP will describe how the Principal Contractor will ensure suitable management of environmental issues during construction. A typical example could include the following headings:

- Purpose;
- Site Description and Environmental Sensitivities;
- Scope;
- Site Responsibilities;
- Associated Documentation;
- Construction Method Statement;
- Environmental Management Plans;
 - Ecological Clerk of Works (ECoW);
 - Waste Management Plan (WMP);
 - Noise Management Plan (NMP);
 - Pollution Prevention Plan (PPP);
 - Emergency Environmental Response Procedure (EERP);
 - Dust Management Plan (DMP);
 - Peat Management Plan (PMP);
 - Construction Traffic Management Plan (CTMP); and
- Monitoring.

The Applicant would engage an ECoW onsite during the construction phase. The services of other specialist environmental advisors would be procured as required.

The construction mitigation measures proposed by each of the environmental topics assessed in the EIA Reports are provided in the relevant EIA Report chapters.

5.6.5 Drainage

Clean water cut-off ditches are proposed for the access track and hardstandings at all turbine locations. These would be positioned on the “high side” of relevant infrastructure to allow clean discharge to be diverted away from the Proposed Development towards a designated outfall point and avoid accumulating pollutants and sediment.

V-Ditches with check dams are also proposed. These would be installed alongside the hardstanding and access tracks to collect any runoff and aid the filtration of pollutants and sediment.

The drainage plan is outlined in drawings:

- **Figure 5.9** – Drainage Layout; and
- **Figure 5.12** – Drainage Details.

Further details on drainage can be found in **EIA Report Chapter 9: Geology, Hydrogeology, Hydrology and Soils**.

5.7 Forestry

A forestry assessment is provided in **EIA Report Chapter 13: Forestry**. This evaluates the potential effects of the Proposed Development on the forestry and woodland within the Site.

5.7.1 Felling

The Proposed Development would require felling of forestry for the access track through Fearnoch Forest. The total wooded area impacted by the Proposed Development is 18.1ha, this is primarily Sitka Spruce. A full summary of the felling areas can be found in **Table 13.1** of **EIA Report Chapter 13: Forestry**. This felling would be undertaken in close consultation with Scottish Forestry and FLS who operate the land.

5.7.2 Compensatory Planting

Removal of 18ha is required for the construction and operation of the Proposed Development. As part of the proposal, 6.8ha would be restocked in line of the aims of the Taynuilt Land Management Plan (LMP). This is detailed in **EIA Report Chapter 13: Forestry**.

As a result of the construction of the Proposed Development, there would be a net loss of woodland area. The area of stocked woodland in the forestry search area would decrease by 11.2ha.

In order to comply with the criteria of the Scottish Government's Control of Woodland Removal Policy, compensation planting would be required. The Applicant is committed to providing appropriate compensatory planting. The extent, location, and composition of such planting is to be agreed with Scottish Forestry, taking into account any revision to the felling and restocking plans prior to the commencement of construction of the Proposed Development.

5.8 Operation and Maintenance

5.8.1 Operational Life

It is proposed that the operational lifetime of the Proposed Development will be up to 50 years. For the purpose of this EIA Report, it has been assumed that certain elements of the Proposed Development such as the wind turbines will be decommissioned after this period of time, as set out in **Section 5.9** (Reinstatement and Decommissioning) below. Therefore, the assessment considers the effects of the operational phase of the Proposed Development to be temporary.

5.8.2 Lighting

Turbines will be fitted with aviation obstacle lighting to meet the requirements of both the Civil Aviation Authority (CAA) and the Ministry of Defence (MoD). As the turbine tip heights exceed 150m they are within the scope of Air Navigation Order 2016 (ANO) Article 222 for aeronautical obstacle lighting.

The following lighting scheme is proposed for the Proposed Development and was approved by the CAA on the 24 September 2024:

- Five of the six turbines – T1, T2, T3, T5 and T6, marking the corners and perimeter of the wind farm – will be lit with 2000 candela steady red lights and MoD specification infra-red lights on the nacelle;
- A second 2000 candela light will be fitted to those same five turbines, to act as a back-up in the event of failure of the main light;
- T4 will be fitted with MoD specification infra-red lighting only to minimise landscape and visual impacts;
- No mid-tower 32 candela lighting is proposed for any of the turbines;
- The 2000 candela lights will be programmed to switch on at 30 minutes after sunset and switch off at 30 minutes before sunrise; and
- The 2000 candela lights will be dimmed to 10% of their peak intensity when visibility at the wind farm is recorded as exceeding 5 km.

This is discussed further in **EIA Report Chapter 14: Aviation**.

5.8.3 Maintenance

The Proposed Development would be maintained throughout its operational life by a service team made up of operation management, operations technicians, and support functions. During periods of scheduled maintenance, technicians who may be based in the local area would be required for up to several weeks per year. Although activity on the Site will be limited during the operational phase, any maintenance works that are required will comply with the requirements of an Operational Environmental Management Plan (OEMP).

Additionally, the technicians would be required to undertake unscheduled maintenance throughout the year. This team would either be employed or contracted directly by the Applicant, by the wind turbine manufacturer, or by the maintenance service provider. Management of the Proposed Development would typically include wind turbine maintenance, health and safety inspections, and civil maintenance of tracks, drainage, and buildings. Employment opportunities predicted to be generated by the Proposed Development are detailed in **Appendix 5.1: Socio-Economic Statement**.

Maintenance activities could include but are not limited to:

- Civil maintenance of tracks and drainage;
- Scheduled routine maintenance and servicing;
- Unplanned maintenance or call outs;
- Electrical maintenance;
- Blade inspections;
- Fencing;
- Snow clearing; and
- Replacement of turbine components.

Further activities include any ongoing environmental management or monitoring identified in species protection plans, the Habitat Management Plan (HMP) or any planning conditions that will be ongoing during the operation of the Proposed Development.

5.9 Reinstatement and Decommissioning

5.9.1 Reinstatement

Any reinstatement and restoration proposals will consider, and mitigate against, all residual risks to environmental receptors. These proposals will be submitted and agreed upon with Argyll and Bute Council pursuant to any planning conditions.

Prompt completion of post-construction reinstatement works shall be undertaken, where reasonably practicable. Early reinstatement reduces the temporary storage of materials and the associated visual impact.

Excavated materials will be replaced in sequence and to a depth similar to those recorded during excavation, or similar to the surrounding undisturbed ground at the point of reinstatement.

5.9.2 Decommissioning

At the end of its operational life, it is assumed that the Proposed Development will be decommissioned. The decommissioning will be undertaken in accordance with good practice guidance available at the time. While details of the decommissioning stage cannot be known at this time, it is assumed for the purpose of

the EIA, that decommissioning will involve the removal of all above-ground infrastructure. On completion of the decommissioning works, all temporary facilities will be removed and areas of excavation disturbed will be reinstated.

All works during the decommissioning phase will be undertaken in accordance with a decommissioning plan that will be prepared by the Applicant. It is proposed that the decommissioning plan will be agreed with Argyll and Bute Council and relevant consultees prior to the end of the operational life of the Proposed Development, in line with planning conditions.

It is estimated that the decommissioning process would take up to a year to complete.

Activities anticipated during the decommissioning phase include the following:

- Turbines would be dismantled and removed from the Site;
- The top 1m of the turbine foundations will be dismantled and removed then they will be covered with suitable material and reinstated;
- Crane pads and hardstandings will be left in-situ but will be covered over with suitable material;
- The substation and control building will be dismantled and removed;
- Electrical cables would be de-energised and left in place, with any cable marker signs removed; and
- A temporary compound will be required during decommissioning. The compound may be in the same location as the construction compound; however, this will be confirmed at the time following consultation with Argyll and Bute Council.

5.10 Economic Benefits

The **Appendix 5.1: Socio-Economic Statement** assesses the effects of the Proposed Development on socio-economics, tourism, and recreation during the construction and operation phases. The key takeaways of this statement are summarised below:

- Up to £8.2 million is anticipated to be spent within the local economy during phase the construction and up to £1.3 million is anticipated to be spent annually during the operational phase.
- Net employment benefit of up to 43 jobs (direct, indirect and induced) will be created across Argyll and Bute during the construction phase, as well as up to 8 jobs (direct, indirect and induced) during the operational phase. This will provide up to 66 Full Time Equivalent (FTE) job years during the construction phase and up to 382 job years during the operational phase.
- Net economic benefit of up to £4.3 million during the construction phase and up to £786,344 (annually) during the operational phase.
- Any impacts on recreational activity upon forest tracks due to the construction phase will be mitigated through the implementation of an Outdoor Access Management Plan (OAMP).
- No changes in tourism or recreational activity are anticipated as a result of the Proposed Development.

GCR have undertaken a comprehensive socio-economic assessment, and when this is considered in conjunction with the range of community benefits the Applicant is proposing, it is considered that the Applicant is maximising the potential net economic impact of the Proposed Development for the local community.