3 High Clachaig Wind Farm

3.1 Site Description

The proposed site as illustrated in Figures 1 and 2 is located on the Kintyre peninsula, approximately 20km north of Campbeltown and 1.8km north east of the small hamlet of Muasdale, and has an approximate area of 13.6km^2 (1,360 hectares (ha)). The A83 between Tarbert and Campbeltown (which passes through Muasdale on the western coast of Kintyre peninsula) is located approximately 1km to the west of the land available for turbine and associated development Access to the site can be gained from the A83 turning east onto existing forest roads to the south of Muasdale and at Killean, the latter of which is an existing access track used for the delivery of infrastructure and periodic maintenance access for the Deucheran Hill wind farm (this is discussed further in section 10 of this report). There are no public roads within the site itself, although there are a number of forest roads.

There are a number of properties located within 3km of the site, including several isolated properties located adjacent to the west of the A83 associated with the small settlements of Muasdale, Beacharr and Glenbarr. The closest properties are located at North and South Beachmore, Crubasdale, Low Clachaig, Aronod and Arnicle. The closest of these at Low Clachaig is located approximately 0.5km from the land available for turbine and associated development (i.e. the blue line boundary shown on Figure 2), whilst other nearby properties are located within 1km of the land available for turbine and associated development.

The majority of the site is dedicated to commercial timber (sitka spruce) production operated by the FCS with the exception of the summit of Cruach Mhic an t-Saoir (on the eastern boundary of the site) and along the ridge to the south to an unnamed summit at 329 metres above ordnance datum (mAOD). The sitka spruce is in various stages of growth across the site with operations currently ongoing throughout. The upland areas of the site are dominated by common heather, blaeberry and grass species with smaller areas of scrub including goat willow and bracken.

The southern part of the site area maintains height from the main eastern ridge at 251m to the south western part. From this ridge the ground falls steeply to 200m in a valley with Clachaig Water before rising to 318m to the north. This main valley, through the centre of which flows Clachaig Water (there are many minor watercourses which converge), falls to 140m at the western boundary of the site, and Clachaig Water continues west where it eventually meets the sea. The site contains a small loch in the crags on the eastern ridge part of the site. Loch na Naich is located outside of the site area, but lies immediately adjacent between the land available for associated infrastructure and the existing forest roads. The Kintyre Way Long Distance Route passes the land available for associated infrastructure boundary approximately 200m to the north at the closest point.

The higher areas of the site offer views to the west, across to the Isle of Jura, which extend to the National Scenic Area to the north of the Island. Two operational wind farms can also be seen, which lie within 5km of the site: Deucheran Hill, approximately 1.8km to the north east (owned and operated by E.ON), and Beinn an Tuirc, approximately 4.9km to the south east.

3.2 The Design Process

The proposed development comprises the construction, operation and decommissioning of a wind farm and associated development (not including grid connection or habitat management). This will include internal access tracks (referred to as forest roads) other than FCS access roads already in place which may be upgraded, a permanent anemometry mast and a control building with a substation.

The land available for turbine and associated development (outlined in blue on Figure 2) has been initially determined using desk based environmental and technical constraints (as outlined in Figure 3). The layout of the wind farm and associated development and infrastructure will be further informed and assessed through the EIA process described within this Scoping Report.

Further technical design will be taken into consideration, as well as the results of consultation with statutory and non-statutory consultees and the local community. The FCS will be engaged throughout the project and will develop

a revised Forest Design Plan that complies with the *UK Woodland Assurance Standard* and minimises any compensatory planting requirements. E.ON will take account of the revised Forest Design Plan within the project design and layout.

3.3 The Proposed Development

The following sections outline indicative dimensions for the proposed development which will be informed by the EIA process and then confirmed in the ES.

3.3.1 Turbines

There is a range of turbines available that could be considered appropriate for High Clachaig Wind Farm. The final choice of turbine for the proposed development will be subject to a competitive tendering process once consent has been granted. It is proposed that the turbines will have a maximum tip height of 126.5m.

The turbines are likely to be constructed on reinforced concrete foundations although the foundation type will be confirmed further to ground investigations and dependent upon localised ground conditions.

3.3.2 Permanent Anemometry Mast

There is currently no identified location for the permanent anemometry mast, as this is dependent upon the turbine layout. The mast will be located within the land available for turbine and associated development (within the land outlined in blue on Figure 2). It is likely to consist of a lattice tower to which meteorological measuring equipment will be attached. Its height will be subject to the candidate turbine assessed within the ES.

3.3.3 Access and Onsite Forest Roads

Due to the ongoing commercial forestry activities within the land available for turbine and associated development, there are several well-established forest roads. Where new forest roads are required these will be built from the existing FCS forest roads to the individual turbine sites or site infrastructure. Some upgrades may be required to existing forest roads, for example increases to the turning areas, but these will be agreed with the FCS and assessed as part of the EIA.

The layout of the new forest roads will be designed to minimise potential hydrological effects associated with known sensitive ground conditions, such as peat and steep slopes.

Aggregate will be required for the upgrade and construction of new forest roads and the construction of hardstanding areas. This material could be sourced from onsite small temporary quarries (and will therefore be subject to *The Quarry Regulations 1999)*. Alternatively, if there are no sources of suitable material available onsite, the aggregate will be imported from an off-site source.

3.3.4 Associated Development

The land available for turbine and associated development includes access roads and buildings associated with the wind farm, but does not include grid connection routes and area for habitat management.

Underground cables will link the turbines to an on-site substation. Detailed construction and trenching will depend on the ground conditions encountered at the time, but typically cables will be laid in a trench which will be routed along the side of forest roads where practicable to avoid disturbance.

The control building would be a single storey building. The design of the control building would be sympathetic to the local area and would be agreed with the Argyll and Bute Council prior to construction.

3.3.5 Forestry

The land available for turbine and associated development comprises a mix of currently unforested open moor / heathland and commercial with productive forestry operation areas, and the proposed development will necessitate some tree felling and clearance of these forested areas. Any landuse changes including removal or other potential effects on forestry will be considered within each of the EIA chapters as appropriate and will be in accordance with the Scottish Government's policy on the Control of Woodland Removal. In addition, input will be provided to assist FCS with any amendments to the Forest Design Plans which may be required as a result and a Draft Forest Management Plan will be included as part of the ES.

3.3.6 Construction Process

The construction period for the wind farm is expected to last approximately 18 months, depending on the size and constraints of the final scheme and the weather and ground conditions encountered during the construction period. The construction process will consist of the following principal activities:

- Import of construction materials from off-site location for forest road and turbine foundation construction;
- Excavation of rock and aggregate for use in construction;
- Enhancement of existing road infrastructure and construction of on-site forest roads inter-linking the turbine locations and substation, incorporating relevant works to maintain hydrology and manage surface water on the forest roads;
- Construction of temporary hard standing, construction compound, passing places and temporary site office and welfare facilities;
- Construction of turbine foundations;
- Construction of control building with substation;
- Excavation of trenches and cable laying adjacent to site roads;
- Delivery to site and erection of turbines;
- Commissioning of site equipment; and
- Site restoration following construction.

Many of these operations will be carried out concurrently, although predominantly in the order identified above reducing the overall length of the construction programme. In addition, development may be phased such that at different parts of the site the civil engineering works will be continuing whilst turbines are being erected elsewhere. Site restoration will be programmed and carried out to allow restoration works to disturbed areas to occur as early as possible and in a progressive manner.

3.3.7 Decommissioning

The proposed development will be designed with an operational life of 25 years. There is no automatic right to extend the lease on the land or continue to generate power. At the end of its operational life the wind farm will be decommissioned and the turbines removed.

Decommissioning will include the removal of all above ground structures and equipment, cables cut off to at least 1m below ground but otherwise left *in situ*, the base of turbines cut off below ground level and covered with topsoil to encourage regeneration of the surrounding vegetation. Roads would either be left for use by the FCS, or where appropriate material is available, may be covered with topsoil to also encourage regeneration of the habitat. The environmental effects of this approach to decommissioning are considered to be less than those arising from the break up and removal of road and turbine foundations from the site.

A decommissioning plan will be prepared by the wind farm operator and agreed with the relevant authorities.

3.3.8 References

Forestry Commission Scotland (FCS) (2009) *The Scottish Government's Policy on the Control of Woodland Removal*. FCS: Edinburgh.