BANKSRenewables
development with care

KYPE MUIR WIND FARM EXTENSION

Wind Farm Proposal
Section 36C Variation Application

NON-TECHNICAL SUMMARY

BANKS

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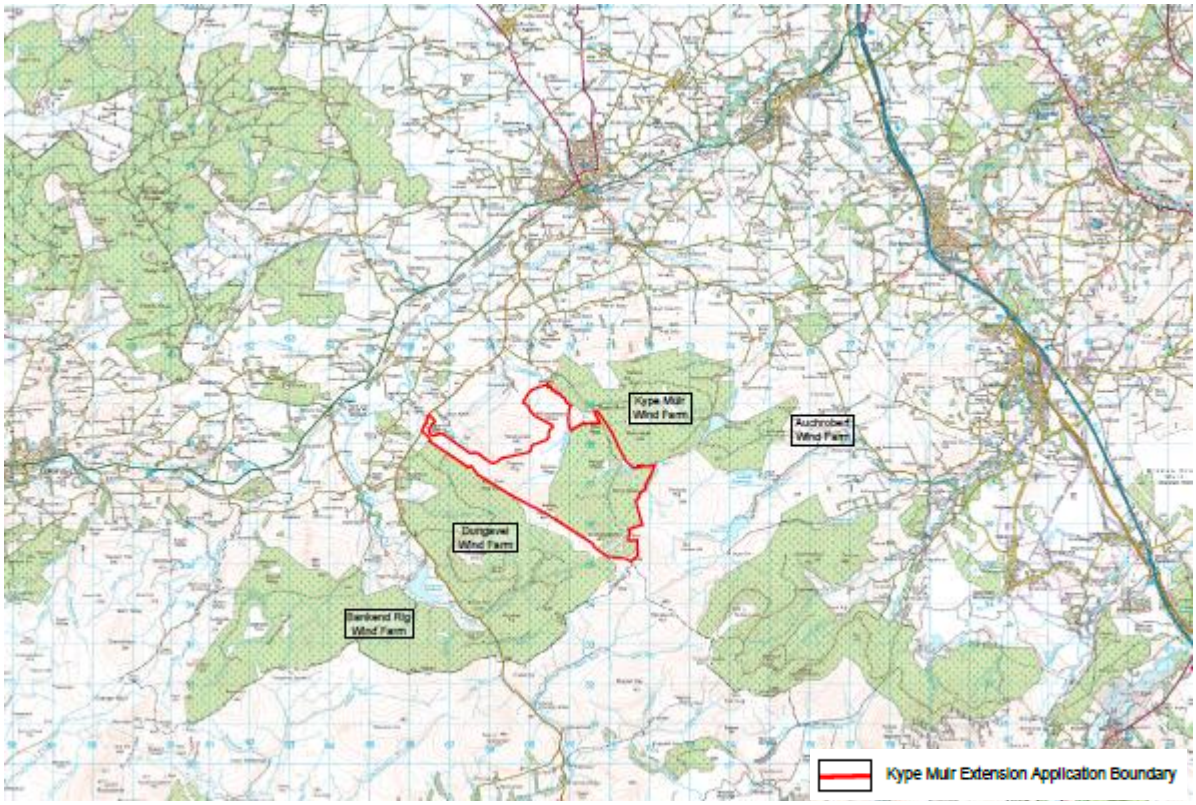
1. KYPE MUIR EXTENSION

BACKGROUND

1.1 In September 2016 Banks Renewables (Harting Rig Wind Farm) Limited (hereafter referred to as Banks Renewables) was granted consent for Kype Muir Extension under Section 36 of the Electricity Act (the 2016 Consented Layout). The consent is for 15 wind turbines, 8 turbines with a maximum tip height of 152 m, 7 turbines with a maximum tip height of 132 m, and associated infrastructure on land approximately 6.5 km to the south-west of Strathaven and 4.5 km south-east of Drumclog.

Figure 1.1 – Site Location



1.2 The Applicant is seeking to amend the consent to:

a) A wind farm of generating capacity exceeding 50 MW;

b) Increase the maximum tip height and rotor diameter of the turbines;

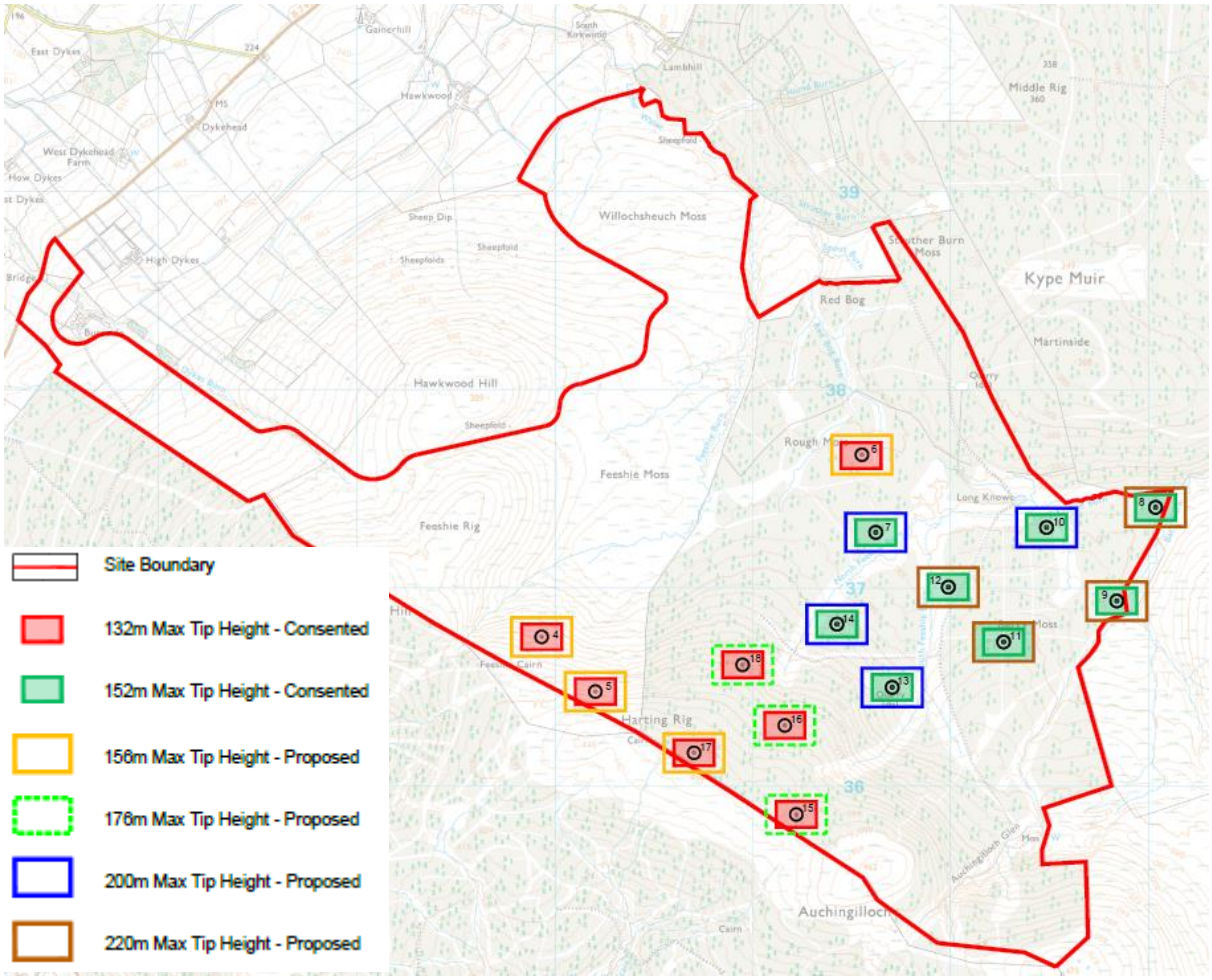
c) Make minor alterations to turbine foundations, crane pads and track orientation;

d) Update the draft Habitat Management Plan (HMP) and associated forestry plan;

e) Increase the duration of consent from 25 to 30 years; and

f) Vary the time period for commencement of development from five years to seven years.

Figure 1.2 – Turbine height comparison



1.3 The site is currently used for commercial forestry and rough grazing. The grid reference of the approximate centre point of the site boundary is NS 69832, 37323.

1.4 The site is situated within South Lanarkshire Council (the Council). If consented, the development would utilise the area's natural wind resource to generate in excess of 50 MW of renewable electricity.

REASON FOR APPLICATION

1.5 Due to the recent changes in onshore wind farm economics, many wind farm developers, including the Applicant are seeking to increase the height of the turbines to maximise the efficiency of the wind farm. To assist in maximising the efficiency of the wind farm, the Applicant is also seeking to increase the rotor diameter of the consented turbines and extend the permitted operational life.

2. NON-TECHNICAL SUMMARY

THIS DOCUMENT

2.1 This document provides a non-technical summary (NTS) of the findings of the Environmental Impact Assessment Report (EIAR) that has been produced following a full Environmental Impact Assessment (EIA) of the proposed Development. It accompanies an application submitted to the Scottish Government Energy Consents & Deployment Unit (ECDU) for the variation of consent for Kype Muir Wind Farm Extension (the proposed Development) under Section 36C of The Electricity Act 1989 and the associated direction under Section 57 of the Town and County Planning Act 1997 as amended (The Planning Act) for deemed planning permission. This NTS has been made available as a separate stand-alone document, allowing interested parties to understand the predicted significant environmental effects without having to refer to the EIAR.

2.2 This NTS contains a description of the proposed Development, consideration of the potential environmental effects and details the measures taken to prevent and reduce these effects to acceptable levels.

BANKS RENEWABLES

2.3 Banks Renewables is part of the Banks Group, which has been successfully developing a range of projects for over 40 years and employs around 420 people. The Group has offices across the UK, including an office in Hamilton which employs 10 people.

2.4 Banks Renewables identifies suitable sites for onshore wind farms as well as looking at opportunities for other forms of renewable energy generation. The company currently has renewable energy projects throughout the UK at various stages of the development process.

2.5 Its success in delivering large scale projects has largely been attributed to the development with care approach which ensures that sites are developed in close consultation with the community, as well as carrying out extensive environmental assessments considering all likely impacts related to a proposed development. Local communities are actively encouraged to become involved at all stages of the development process.

2.6 This approach ensures that our developments have a positive long term effect on the environment and local communities.

3. WHY WIND ENERGY?

CLIMATE CHANGE

3.1 Climate change is a global issue that needs to be addressed. The need to reduce CO2 (carbon dioxide) emissions is widely accepted due to the increasing changes to our climate and the impact it is already having on wildlife species, ecosystems, the weather and sea levels.

3.2 The UK government has signed up to a number of international agreements and has a legally binding obligation to increase its share of renewables in our energy mix to 15% by 2020 in order to address climate change. In addition to these UK targets, the Scottish Government has adopted a target for the amount of Scotland's electricity consumption produced by renewable energy in 2020 of 100% and to produce 50 % of Scotland's energy demand for heat, transport and electricity as well as to increase the productivity of energy use across the Scottish economy by 30 % by 2030.

3.3 Capturing the wind's natural energy is the most proven form of renewable electricity generation in the UK and is low cost compared with conventional power generation methods. It therefore provides the opportunity for the most immediate way of reducing CO2 emissions from our electricity use and assisting in meeting the international and national targets that have been set.

3.4 It is anticipated the wind farm would have paid back the carbon used in its construction in 3 years and 1 months. Following which, all electricity would be carbon neutral for the remainder of its 30 year operational life.

3.5 Aside from this, within the next 20 years the indigenous fossil fuels which we currently rely on to provide our energy will become scarcer and we will become ever more reliant on imports from overseas.

3.6 The proposed Development would provide a secure, reliable energy supply in line with the government's national energy goals. It would provide, on average, enough electricity to meet the domestic needs of approximately 57,000 homes (based on a 4.2MW candidate turbine).

3.7 Scotland has the best wind resource in Europe and capturing this to provide indigenous green energy, whilst continuing research into energy efficiency and other renewable sources is a logical step forward.

4. OUR PROPOSAL

KEY FACTS

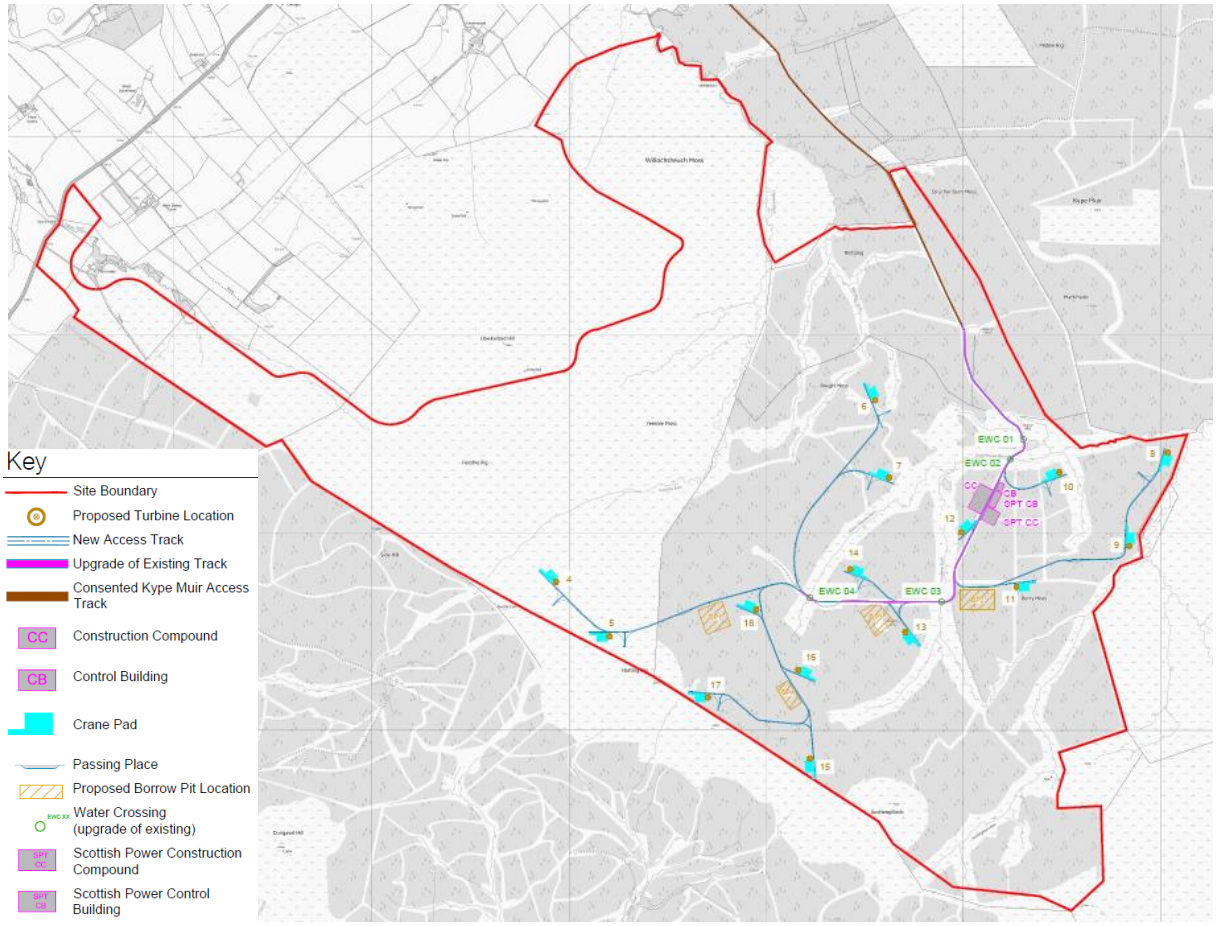
Site Area

4.1 The proposed Development Area covers approximately 942 hectares, of which 13 hectares (1.3%) would be occupied by the wind turbines and their associated infrastructure.

Table 6.1 Proposed Development

Number of Turbines	15
Turbine Heights	Between 150m and 220m
Rated Output of Wind Farm	Exceeding 50 megawatts
Length of Access Tracks	Approximately 13.5 km
Life Span	30 years operational (plus 24 months construction and 12 months decommissioning periods)
Employment	Approximately 216 jobs will be supported over the lifetime of the wind farm
Vehicle Movements	An average of 87 vehicle movements per day during the construction period

Figure 4.1 – Site Layout Plan



TURBINES

4.2 The proposed turbines would be of modern design with three bladed rotors. Each turbine would begin generating power at wind speeds of around 3-5 metres per second (m/s) and would shut down at wind speeds of approximately 25 m/s. On average, wind farms generate power approximately 70 to 85 per cent of the time in the UK. Subject to agreement with the Council, the finish and colour of the turbines is likely to be semi-matt and pale grey.

FOUNDATIONS

4.3 The turbine foundations will typically be reinforced concrete pads, with dimensions of up to approximately 18–26 m in diameter by approximately 3.5 m in depth. The foundation plinth would protrude from the finished ground by approximately 0.2 m. All of the rock and most of the excavated material is placed back on top of the foundations and a layer of topsoil to an approximate depth of 200 mm will be overlaid to encourage vegetation growth.

CABLING AND GRID CONNECTION

4.4 Underground cables linking the turbines will generally be laid alongside the access tracks. A control building and onsite substation will be built in a compound area from which electricity generated by the turbines will be fed into the grid.

ACCESS TRACKS AND COMPOUND

4.5 Access to the wind turbines and meteorological mast would require construction of approximately 11.24 km of new access tracks and the upgrading of approximately 2.26 km of existing tracks. The tracks would typically be 5 m wide, widening at bends and passing places to up to 7.5 m, and would be designed to allow the efficient drainage of rain water. It is expected that stone for the new tracks would be extracted from up to four borrow pits within the site.

4.6 A temporary compound would be required during the construction phase for the storage of plant and materials, and to provide site workers with welfare facilities.

TRAFFIC AND SITE ENTRANCE

4.7 Access to the site is identical to the consented Kype Muir Extension and is proposed to be taken from the B743 to the north, via the consented entrance to Kype Muir Wind Farm. All construction and operational traffic will access the site via this junction, and it is anticipated that the turbine components will travel from the motorway network to the site. During the construction phase general construction traffic would utilise a variety of routes to site including:

- A70 east of Muirkirk
- A70 west of Muirkirk
- A71
- A723 north of Strathaven
- A726 north of Strathaven
- B743 south of Strathaven
- Lambhill Road

4.8 The results of the traffic impact assessment undertaken for weekday conditions indicates that the greatest impact of construction traffic will be on the B743 and Lambhill Road. The comparison of development traffic flows with theoretical road link capacities indicates that there is significant spare capacity on the local road network and no link capacity issues associated with the construction traffic would be anticipated.

4.9 A Traffic Management Plan would be produced and agreed with the Council prior to the construction process and delivery of wind turbine components to the site. This plan would include mitigation measures to ensure that impacts on local communities and the road network are minimised.

5. DESIGN EVOLUTION

5.1 As Kype Muir Extension has already received consent, the principle of a wind farm at this location has been established.

5.2 When considering the proposed increase in turbine height, a wide range of technical and environmental constraints were considered in detail during the redesign process, which culminated in the site being identified as being suitable in planning and environmental terms for the increase in turbine size, as well as having the capability of being physically developed and supplying electricity on a viable basis to the National Grid.

5.3 Due to the recent changes in onshore wind farm economics, many wind farm developers, including the Applicant are seeking to increase the height of the turbines to maximise the wind farms efficiency. To assist in maximising the efficiency of the wind farm, the Applicant is also seeking to increase the rotor diameter of the consented turbines and extend the permitted operational life.

5.4 The Onshore Wind Policy Statement, sets out the Scottish Governments support for the use of larger turbines where they are appropriately sited. Due to the nature of the site within a cluster of operational and under construction wind farms, and the capacity of the landscape, Banks Renewables believe that Kype Muir Extension is a site which can accommodate larger turbines.

5.5 As a result of the iterative design process that has been undertaken, Banks Renewables believes that the amended design balances the need to maximise the efficiency and output of the wind farm with ensuring the environmental impacts remain acceptable.

6. BENEFITS OF THE PROJECT

6.1 The proposed Development would contribute significant environmental and socio-economic benefits at both a national and local level[1].

ENVIRONMENTAL BENEFITS

- Produce an indigenous energy supply, reducing Scotland's reliance on imported fossil fuels;
- Produce up to the equivalent of the annual electricity consumption of approximately 57,000 homes (based on a 4.2MW turbine) which equates to approximately 39% of the households in South Lanarkshire;
- Reduce greenhouse gas emissions by harnessing power from the wind, equating to potential CO2 savings of approximately 2,918,434 tonnes (based on a 4.2MW turbine) over the 30 year lifetime of the development;
- Make a positive contribution to Scottish Government's renewable energy targets, which aim for 100% of Scotland's electricity consumption to be produced by renewable sources by 2020 and to produce 50 % of Scotland's energy demand for heat, transport and electricity as well as to increase the productivity of energy use across the Scottish economy by 30 % by 2030;
- Create additional path networks throughout the site for recreational use;
- Deliver a Habitat Management Plan (HMP) which will see the restoration of areas of degraded and modified blanket bog and includes enhancement of habitat to benefit hen harriers.

ECONOMIC BENEFITS

- As per the original Kype Muir Extension, the proposed Development will support Scotland's growing renewables industry. During the construction phase it is anticipated that 167 construction jobs will be directly supported. It is likely that many more will be indirectly supported throughout the supply chain. During the operational phase around 24 jobs will be supported, with approximately 25 jobs supported during decommissioning.
    - A total estimated spend of £151million on development, construction, operation and decommissioning:
        - An estimated £58.4million of this will be spent within 30km of the wind farm; and
        - An estimated £69.1, million within Scotland.
- Through Banks Renewables Connect2Renewable charter, a minimum target of economic benefit to the local economy has been set at £500,000

[1] Benefits set out below are based on a 4.2MW candidate turbine.

per installed megawatt over the life of the Development. This would equate to approximately £31.5 million investment in the local economy.

SOCIAL BENEFITS

6.2 The proposed Development will provide local Communities within 10 km of the wind turbines a community benefits funding over the operational lifetime of the wind farm;

- The Communities will be provided with 2.5% share in the annual gross combined revenue generated by Kype Muir and Kype Muir Extension Wind Farms. The Communities will receive 1.5% of the revenue from Kype Muir Wind Farm when it becomes operational in 2019. It is estimated that to reach the combined contribution of 2.5%, 4% of the Kype Muir Extension revenue will be shared with the community. 4% is an estimate, and the exact percentage from Kype Muir Extension will be agreed prior to turbine operation, but the percentage will result in the communities receiving a 2.5% share in the combined revenue of Kype Muir and Kype Muir Extension.

- The share in the gross annual revenue will be underwritten with a guaranteed minimum payment of £5,000 per installed MW per annum = £9.45 million over the wind farms operation based a 4.2MW turbine.

- This is an increase of £1.8 million compared to the guaranteed minimum associated with the 2016 consented scheme.

- Thorough the Connect2Renewables initiative Banks Renewables are committed to maximising contracting opportunities for local firms, provide direct training and employment opportunities for local people and target overall minimum economic benefit to local economy of £50,000 per installed megawatt over the life of the proposed Development which would equate to approximately £31.5 million investment in the local economy.

- Generate £25.7million in business rates over its 30 year operational lifetime

7. ENVIRONMENTAL IMPACT ASSESSMENT

7.1 Results of the environmental impact assessment (EIA).

LANDSCAPE AND VISUAL IMPACT

7.2 The magnitude and significance of the proposed Development for the construction, operational and decommissioning phases of the proposed Development have been assessed, focussing on effects that will differ from the 2016 Consented Layout. Changes to policy and the baseline were also taken into consideration.

7.3 Given the proximity of the existing Kype Muir, Dungavel and Auchrobert wind farms this means that the views towards the proposed Development Area and the landscape near the proposed Development will already be affected by large wind farms and this has a bearing on the significance of effects identified.

7.4 Effects on landscape character will be the same as for the Consented 2016 Layout, except in the area of Rolling Moorland outside the site but within up to 3 km to the southeast – where the effect of being 'near a wind farm' would be slightly intensified and extended by the taller turbines. This is a marginal change which does not result in the effects identified being of higher magnitude or significance.

7.5 Effects on visual receptors would, in general, be very slightly increased for receptors within approximately 7 km. For receptors within 3-6 km to the northwest, there would be effects of increased magnitude and significance with effects on local roads, core paths and settlements including Gilmourton, Caldermill and Drumclog being of Moderate significance and Adverse.

7.6 There would be no change to effects on designated landscapes.

7.7 A key change to the proposals is the inclusion of aviation lighting. In the host units of the Rolling Moorland character type the introduction of lighting to a relatively dark landscape would give rise to significant adverse effects. Elsewhere, effects on character as a result of the lighting would be negligible.

7.8 Significant adverse visual effects from the lighting would arise at Gilmourton as a result of relatively close views of the aviation lights in views towards the site which are currently dark. Other settlements within 6 km are slightly more distant than Gilmourton and have more existing lighting seen nearby and in views towards the site and would not experience significant effects. Road users would not experience significant effects at night as a result of the turbine lighting.

7.9 Effects on designated landscapes as a result of the proposed aviation lighting would be negligible.

7.10 The residential properties most affected will be those within 2.6 km to the north of the site. For most of these dwellings, screening by other houses and/or vegetation will notably limit effects. None of the properties will be affected such that the property would be rendered an unattractive place in which to live.

7.11 The change of turbine size means that the turbines tend to be perceived as being of the same scale as whichever of the existing Kype Muir and Dungavel wind farms is the closer.

ORNITHOLOGY

7.12 Following further consultation in 2017 and 2018 with SNH regarding the Revised Application, it was agreed that the scope of the ornithological assessment could be limited to consideration of operational effects as a result of the proposed Development.

7.13 The proposed Development lies near the Muirkirk and North Lowther Uplands Special Protection Area (SPA), classified for its internationally important breeding populations of hen harrier, merlin, peregrine, short-eared owl, golden plover and its wintering population of hen harrier.

7.14 No raptors were found breeding within the red line application boundary (proposed Development Area) although during four years of survey hen harrier and merlin did breed at several locations over 1 km away. Occasional foraging flights by hen harrier, merlin, peregrine, goshawk and red kite were recorded within the proposed Development Area and its 500 m buffer. No breeding golden plover were observed within the Development Area but there were low numbers of non-breeding golden plover. A small number of black grouse were also found to use the Development Area, with breeding confirmed on one occasion.

7.15 Modelled mortalities from collision with turbine blades were considered to be insignificant in terms of potential long-term impacts on local bird populations, reiterating the conclusions presented in the 2014 ES for the 2016 Consented Layout that there would be no adverse effect on the integrity of the SPA. All other effects for construction, operation and decommissioning were assessed in 2014 as being negligible and therefore not significant, across all species, for the proposed Development in isolation and in its contribution to regional cumulative effects.

ECOLOGY AND NATURE CONSERVATION

7.16 An Ecological Impact Assessment (EcIA) was undertaken for the proposed Development. Where no update surveys were undertaken, assessment material provided in the original Environmental Statement for the 2016 Consented Layout was used.

7.17 The study area was found to support a number of ecological features, amongst which were blanket bog habitats, ground water dependent terrestrial ecosystems (GWDTEs) and protected species including badger, otters and bats.

7.18 Construction and/or operational phase impacts were identified for blanket bog, GWDTEs and bats, however a hierarchy of mitigation measures has been applied to ameliorate these effects.

7.19 Key amongst the proposed compensation and enhancement measures is the preparation and delivery of a Habitat Management Plan (HMP) which would see the restoration of areas of degraded and modified blanket bog. Other mitigation measures include the use of ‘stand-off’ zones to protect bats and the adoption of standard pollution prevention measures to protect other ecological featured within the study area.

7.20 Implementation of the proposed mitigation measures will reduce the significance of potential effects and, consequently, there may be no significant effect arising from habitat loss. The proposed Development could also have a positive effect on blanket bog habitats, as a result of the implementation of the HMP.

GROUND CONDITIONS AND HYDROLOGY

7.21 The assessment of geology, ground conditions, hydrology and hydrogeology for the consented layout highlighted some potentially sensitive receptors within the site, namely minor watercourses, peat deposits and groundwater.

7.22 The only sensitive receptor within the site to be affected by the proposed Development when compared to the consented layout is peat deposits. The assessment identified the potential to increase the release of carbon due to increased disturbance of the peat due to larger turbine foundations and crane pads.

7.23 Mitigation measures have been developed to remove or reduce the likely effects of the development, including maximising use of existing access tracks and avoiding sensitive areas, minimising the number of watercourse crossings and total length of new track, development of drainage and watercourse crossing strategies, management and re-use of excavated peat material and construction in line with best practice.

7.24 Implementation of the proposed mitigation measures and carrying out the construction works in accordance with best practice should ensure there are no significant residual effects from the development on geology, ground conditions, hydrology and hydrogeology.

CULTURAL HERITAGE AND ARCHAEOLOGY

7.25 Due to the increase in turbine blade tip height compared to the 2016 Consented Layout, the impact of the proposed Development on the settings of three heritage assets in the Wider Study Area has been re-evaluated. These were found to not be adversely affected by the proposed Development.

7.26 Taking into account the limited extent of the proposed ground disturbance generated by the proposed Development, the likelihood of encountering remains of archaeological importance is assessed to be low. In the event of any construction activities taking place in close proximity to archaeological assets, mitigation measures would be out in place that would provide protection for those assets.

FORESTRY

7.27 The majority of the proposed Development is located within an extensive area of commercial forestry, which was planted between 1989 and 1990.

7.28 The structure of the forest will inevitably alter, even in the absence of development, as crops mature and are harvested.

7.29 As a result of the proposed Development, 134.4 ha of conifer woodland would be felled as a single operation of facilitate the Development.

7.30 Tree harvesting associated with the proposed Development will produce more timber than the Baseline Forest Plan in absence of Development. The Proposed Development will also produce more timber than set out in the 2016 Consented Layout.

7.31 The applicant is willing to agree to an off-site compensatory condition as set out in Condition 40 of the consent for the 2016 Consented Layout.

7.32 Overall, it is considered that the net residual effect on forestry is minimal and not significant.

NOISE

7.33 To take into account the proposed increase in turbine hub height, a new set of Total ETSU-R-97 Noise Limits have been derived for the operational phase of the proposed Development.

7.34 Predicted operational noise levels indicate that for dwellings neighbouring the development, wind turbine noise will meet the daytime and night-time site-specific noise limits established in accordance with ETSU-R-97 and current good practice.

7.35 A cumulative noise assessment has been undertaken to consider the proposed Development operating concurrently with a number of nearby operational and consented wind turbine developments. The cumulative noise assessment indicates that the total predicted cumulative noise levels meet the Total ETSU-R-97 Noise Limits at the nearest noise sensitive receptors.

7.36 There are a range of turbine models that may be appropriate for the proposed Development, and if consent is granted, further data will be obtained.

AVIATION

7.37 The assessment has identified that the proposed amendments to the height of the turbines will not alter the effects on civilian and military aviation and radar operations when compared with the 2016 Consented scheme. Therefore the mitigation that has been agreed with Glasgow Airport, NATS and Glasgow Prestwick Airport remains valid. As such there would be no significant additional effects upon civilian and military aviation interests.

7.38 Civil Aviation Authority (CAA) regulations stipulate that any en-route structure extending 150 m or greater must be fitted with medium intensity steady red, visible aviation lighting at the highest practical point and low intensity lights around the half-way of the tower. Therefore, all the turbines at the proposed Development will require to be lit with visible aviation lighting.

OTHER CONSIDERATIONS

Carbon Balance

7.39 The development would result in carbon savings by displacing fossil fuel generated electricity. The wind farm would save approximately 2.9 million tonnes of Carbon Dioxide equivalent (tCO2e) over its lifetime.

7.40 Approximately 3 years and 1 months after the construction of the wind farm it is expected to have paid back the carbon that was used in its construction. After this initial period all electricity generated by the wind farm would be carbon neutral.

8. CONCLUSION

8.1 The proposed variation of consent for Kype Muir Wind Farm Extension has been subject to an extensive design process involving consultation with key consultees. The proposals have been the subject of an EIA, which has examined in great detail the potential environmental effects of the wind farm.

8.2 Overall, the EIA concludes that there are no unacceptable significant effects for the proposed Development when taking into account the changes from the 2016 layout. The proposed changes to the wind farm would increase the benefits to the local area, as well as contributing to renewable energy generation targets more efficiently with minimal additional impacts.