

SCOTTISH BORDERS COUNCIL

PLANNING AND BUILDING STANDARDS COMMITTEE

29th April 2019

APPLICATION FOR PLANNING PERMISSION

ITEM:	REFERENCE NUMBER: 18/00768/S36
OFFICER:	Mr Scott Shearer
WARD:	Mid Berwickshire
PROPOSAL:	Erection of 11 turbines, 4 No turbines up to 149.9m high to tip, 3 No turbines 174.5m high to tip, and 4 No turbines 200m high to tip and associated works
SITE:	Crystal Rig Wind Farm Cranshaws
APPLICANT:	Crystal Rig IV Limited on behalf of Fred Olsen Renewables LTD
AGENT:	Natural Power

1.0 PLANNING PROCESSING AGREEMENT

1.1 Following the submission of Supplementary Environmental Information on the 19th February, a Planning Processing Agreement (PPA) has been agreed with the agent for this application to be determined by the 29th April 2019.

2.0 PURPOSE OF REPORT

2.1 To advise the Scottish Government of the response from Scottish Borders Council on an application which has been submitted under section 36 of The Electricity Act 1989 (as amended) to construct 11 additional wind turbines and associated infrastructure at Crystal Rig. The proposed development is hereafter referred as Crystal Rig IV.

3.0 PROCEDURE

3.1 Scottish Borders Council (SBC) is a consultee as a 'relevant planning authority'.

3.2 The views of SBC will be provided to the Energy Consents Unit at Scottish Government (ECU), the body responsible for processing onshore Section 36 planning applications. In this instance, the Crystal Rig IV proposal is required to be determined via Section 36 of the Electricity Act 2017 because the extended total capacity of the windfarm would be in excess of 50MW. The ECU advertises the application and carries out consultation with other interested bodies. There is, therefore, no need for Scottish Borders Council to undertake a tandem process although consultation has taken place with relevant specialists within the Council.

3.3 It should be noted that if permission is granted, the Council (rather than the ECU) would become the relevant enforcement authority responsible for monitoring compliance with the terms of an approval and any conditions imposed thereon.

3.4 The application site extends across Scottish Borders and East Lothian Council areas. The proposed wind turbines all fall within the Scottish Borders Council administrative area. The ECU has sought the views of East Lothian Council as part of their process of consideration.

4.0 **SITE DESCRIPTION**

4.1 The application site is located within an upland area of the Lammermuir Hills. The site includes the existing Crystal Rig Wind Farm which consists of up to 91 turbines ranging from 100 – 125m in tip height. The proposed development works are focused around the southern edge of the existing array. Turbines are sited on undulating valleys of the Bothwell Water, along Crichness Law and towards Upper Monynut to the East. The land is presently used for grazing and commercial forestry.

4.2 The Aikengall windfarm lies directly to the east of this site. 16 turbines which measure 125m are currently operational with a further 19 turbines measuring 145m are under construction. Consent has also been granted by Scottish Ministers for Aikengall IIa which will have a further 19 turbines to the southern side of this array which consist of 18 turbines at 145m and 1 turbine at 125m. The applicants are currently engaging with the Planning Authority to discharge the conditions for this planning permission.

4.3 A small number of residential properties are located at Crichness, Upper Monynut and Bothwell which are located between 0.8 and 1.9km from the proposed development. The nearest settlement to the site are;

- Cranshaws, 4.5km to the south
- Whiteburn 7.3km to the south east
- Cockburnspath 8.8km to the north east
- Gifford 12.4km to the west

Public Access and Paths:

4.4 Access within and around the site is for recreational use, mainly by walkers. There are minor public roads within the site however their use would appear to be limited to provide connection to properties at Crichness and Upper Monynut. There is one right of way within the site which follows the Bothwell Water.

4.5 The Southern Upland Way which is one of Scotland's Great Trails as a Coast to Coast route between Cockburnspath and Portpatrick is located to the south east of the site and in places is approximately 7km away from the proposed development.

Landscape Designations:

4.6 The site is located within the Lammermuir Hills Special Landscape Area (SLA), as designated by policy EP5 of the Local Development Plan 2016 and shown within the 2012 Supplementary Planning Guidance Note on Local Landscape Designations.

Landscape Character:

- 4.7 The site lies within Landscape Character Type (LCT) 1LP: Dissected Plateau Moorland: Lammermuir Plateau; an 'Upland type' but it is also very close to LCT 24: Upland Valley with Farmland: Upper Whiteadder; a 'river valley type'.
- 4.8 This Landscape Character Area (LCA) forms an expansive upland plateau with a generally simple landform of sweeping ridges with more defined hills and landmark features. The landscape is sparsely settled but it does form the backdrop to more settled valleys and lowlands within the Scottish Borders and East Lothian. Land cover is dominated by grass and heather moorland with some commercial forestry.
- 4.9 Extensive large scale wind energy developments are located within and adjacent to the LCA. In particular, the Aikengall windfarm is often experienced alongside Crystal Rig as a single windfarm cluster within the landscape. Fallago Rig windfarm is also located within this LCT to the south west.

Designated Nature Conservation Sites:

- 4.9 The Bothwell Water which dissects part of this development forms part of The River Tweed Special Area of Conservation (SAC). The SAC is designated for its Atlantic salmon, three species of lamprey and as a water course typically supporting water crowfoot species.

5.0 PROPOSED DEVELOPMENT

- 5.1 The applicant is seeking consent to build and operate a wind farm. The main components of the proposed development are;
- 11 new wind turbines and their foundations
 - External transformers
 - Crane pads
 - Site tracks
 - Undergrounds electricity cables
 - Up to six borrow pits
 - Forestry felling
 - Signage
 - Temporary construction and storage compounds
- 5.2 Each of the 11 wind turbines will be three bladed. A mixture of turbine sizes are proposed;
- Four turbines up to 149.9m tip height, comprising 92.9m hub, and 114m blade diameter
 - Three turbines up to 174.5m tip, comprising 109.5m hub, and 130m blade diameter
 - Four turbines up to 200m tip, comprising 135m hub, and 130 blade diameter
- 5.3 The majority of the development works including all 11 turbines are located within the Scottish Borders. The site will remain to be accessed via the north from East Lothian.
- 5.4 The proposed development will use existing infrastructure which has previously been installed at the Crystal Rig Wind Farm such as access tracks, anemometry masts and substation building. It is proposed that the operational life of the existing infrastructure would be extended to coincide with the

intended life of the Proposed Development. This does not include an extension to the operational time of the existing wind turbines at Crystal Rig

5.5 The applicant is seeking consent for an operational period of 35 years. At the end of this period, unless 're-powered' or unless a new planning permission is granted that would extend the wind farm's life, it would be decommissioned and the site restored in agreement with a decommissioning method statement.

5.6 Members should note that a separate planning application has been lodged to renew planning permission to extend the existing Crystal Rig Substation.

6.0 **PLANNING HISTORY**

6.1 Crystal Rig Wind Farm has been developed over a number of phases. The original phase became operational in 2003. Presently 85 turbines are operational at Crystal Rig with a combined generating capacity of 226.5 MW. A further 6 turbines which were approved under Crystal Rig 3 are under construction. Each phase of the development of this wind farm has been determined by the Scottish Government as planning authority as a Section 36 development but with SBC as a consultee.

6.2 Planning application for related developments have been approved by SBC at this wind farm site which consist of works to; undertake mineral workings, form borrow pits, reinstate a site compound and extend a electricity substation.

7.0 **APPLICANTS SUPPORTING INFORMATION**

7.1 The Section 36 planning application is supported by a full ES, which comprises the following documents:

- Volume 1 - Chapters
- Volume 2 - Non Technical Summary
- Volume 3A - Figures
- Volume 3B - Figures
- Volume 3C - Figures
- Volume 4 - Technical Appendices

Other Information:

- Planning Design and Access Statement
- PAC Report

Supplementary Information (SI) was submitted on the 19th February 2019 to provide further information on aviation warning lighting and its potential effects.

8.0 **REPRESENTATION SUMMARY**

8.1 Third party representations are submitted to the ECU and it is for that authority to take these in to consideration when assessing the proposed developments on behalf of the Scottish Ministers.

8.2 At the time of writing this report, three objections from one third party are known to have been received by the ECU. This does not include submission by Community Councils.

9.0 DEVELOPMENT PLAN POLICIES

9.1 Local Development Plan 2016 (LDP):

Policy Reference	Policy Name
PMD1	Sustainability
PMD2	Quality Standards
ED9	Renewable Energy Development
HD3	Protection of Residential Amenity
EP1	International Nature Conservation Sites and Protected Species
EP3	Local Biodiversity
EP5	Special Landscape Areas
EP8	Archaeology
EP15	Development Affecting the Water Environment
IS2	Developer Contributions
IS5	Protection of Access Routes
IS8	Flooding
IS9	Waste Water Treatment Standards and Sustainable Urban Drainage

9.2 SESplan Strategic Development Plan June 2013:

Policy 1B The Spatial Strategy: Development Principles
Policy 10 Sustainable Energy Technologies

10.0 OTHER PLANNING CONSIDERATIONS:

10.1 Adopted SBC Supplementary Planning Guidance (SPG) and other documents:

- Renewable Energy (2018)
- Visibility Mapping for Windfarm Development (2003)
- Biodiversity (2005)
- Local Landscape Designations (2012)
- Developer Contributions (2010)

- Ironside Farrar Study (2013) on Wind Energy Consultancy Landscape Capacity and Cumulative Impact

10.2 Scottish Government Policy and Guidance:

- Scottish Planning Policy (SPP) (June 2014)
- National Planning Framework for Scotland (3) (June 2014)

10.3 Scottish Government On-line Renewables Advice:

- Circular 3/2011 Environmental Impact Assessment (S) Regulations 2011
- PAN 60 Planning for Natural Heritage 2008
- PAN 51 Planning, Environmental Protection and Regulation

- PAN 1/2011 Planning and Noise
- PAN 2/2011 Planning and Archaeology
- PAN 1/2013 Environmental Impact Assessment

10.4 **Historic Scotland Publications:**

- Scottish Historic Environment Policy (2011)

10.5 **SNH Publications:**

- Siting and designing windfarms in the landscape (2014)
- Visual Representation of Wind Farms (2014)
- Assessing the cumulative impact of onshore wind energy developments (2012)

10.6 **Other Publications:**

ETSU-R-97 - The Assessment and Rating of Noise from Wind Farms
 The Scottish Governments Onshore Wind Policy statement 2017
 CAA Policy and Guidelines on Wind Turbines 2016

10.7 Schedule 9 to the Electricity Act 1989

11.0 **CONSULTATION RESPONSES:**

11.1 The following consultation responses have been received in by specialist officers at Scottish Borders Council. A summary of the consultation responses received to each is provided below.

11.2 **Archaeology** - Content with the findings of the ES and no objection is raised, recommending that;

- Direct Impacts – Can be mitigated through the use of temporary fencing to avoid identified archaeological areas during development works is suitable. Watching briefs should be carried out where works are taking place in areas with a moderate potential for encountering archology. The intention to conduct a survey in the afforested area following felling is welcomed and any possible finding can be further investigated.
- Indirect Impacts – Concerns have been raised that the development would adversely impact the setting of the Yadlee Stone Circle which provides a sense of a communal, ritualised, landscape in the Bronze Age. The final design has moved turbines away from the stone circle however it will site a still pose an individual and cumulative impact to its setting. This is caused by turbines 10 and 11 introducing an incongruous frame to the hill which creates and sense of dominance. Also the movement of turbines across the valley from the established area of wind farm also creates a new and competing element with the remaining areas of setting that retain a rural rough grazing landscape. It is recommended that the adverse indirect impacts can be offset via a developer contributions towards an archaeological landscape, excavation and enhancement project.

11.3 **Access Officer** – No objection. Recommend that the following mitigation;

- Path Planning Study across the wind farm site to demonstrate the impact of the development on public access and where improvements can be made to offset the impact of development works.
- Right of Way No BB96 which dissects the site should remain open at all times.
- Right of Way BB96 and BB97 (which is located to the east) should be waymarked
- After construction all wind farm access tracks available for all types of non-motorised recreational users.
- A reasonable development contribution should be sought for the promotion, maintenance and management of the wider path network in the local area.

11.4 **Ecology Officer** – No objection has been raised. A summary of the most pertinent matters are as follows:

- A watercourse which is designated to be part of the River Tweed SAC and other water courses which join the SAC are located in the site. provided that the proposed mitigated is implemented in full which includes a 50 buffer distance to the water courses (where practical) the development is unlikely to have a significant adverse effect on the integrity of the SAC's qualifying interests.
- There are some deficiencies with the Ecological Impact Assessment under the EIA including the lack of an Outline Habitat Management Plan to compensate for loss of habitats and provide proportionate enhancements, omission of consideration of previously identified Local Biodiversity site and a lack of detail for Compensatory Replanting proposals.
- An extensive list of protected species and ornithology has the potential to be impacted on.
- A number of planning conditions are required to address the omissions from the EIA and to provide suitable impact on species where appropriate. These conditions include;
 - appointment of an ecological Clerk of Works
 - a Construction Environmental Management Plan
 - a Species Protection Plan
 - a Species Protection Plan
 - a woodland planning scheme
 - a programme of ecological monitoring
 - a programme of monitoring and mitigation place specifically for goshawk and osprey
 - a Decommissioning Restoration and Aftercare Strategy

11.5 **Environmental Health** – Commented in relation to noise. The noise assessment complies with current guidance. Recommend that the predicated noise emissions are below the relevant consented noise limits for the existing wind farm and cumulative limits. Further information was sought to qualify some of the calculations.

The assessment is based on candidate turbines, if models change then confirmation from the development should be provided to ensure that noise limits are not breached. A warranty from the turbine manufacturers should be supplied to ensure that no tonality penalty would apply. Construction noise should be controlled by way of a planning condition which requires a noise management plan and blast management plan to be submitted for approval before commencement of construction works.

- 11.6 **Forward Planning** – The Ironside Farrar Study which was commissioned to guide development broadly identifies that there is capacity in this area for turbines over 120m. The excessive height of the proposed turbines appear beyond the consideration of this study. It is recognised that as subsidies have diminished that turbines will become higher to make them more efficient. Economic benefits of larger turbines must be carefully balanced against landscape and visual impacts.

Turbines over 150m are required to be lit with medium intensity lights to warn civil aviation. This is an extremely important aspect of this proposal which will introduce artificial lighting into a dark rural area and it is absolutely vital this matter is fully scrutinised. Without absolute certainty as to what the visual impacts of the lighting will be it would be wrong to determine this proposal without this being clarified.

There are locations in the Scottish Borders where there would be very serious concerns about the scale of turbines which are proposed. If sufficient information is provided to demonstrate that the impact of turbine lighting is satisfactory then perhaps this is a location where large turbines could potentially be supported.

- 11.7 **Flood Risk Officer** – The majority of the lies outwith the floodplain and while there are a number of watercourses in the site the development there is minimal flood risk at this site. No objection is raise on flood grounds provided that the development is carried out in accordance with the following recommendations;
- If culverts are to be used where new tacks cross small burns these must not reduce the flow or conveyance of the water course
 - New hard standings and SUDS discharges should achieve existing greenfield runoff rates so there is no increase effect on downstream receptors.
 - Details of the silt traps should be agreed
 - Any buffer specified by SEPA between the watercourse and the turbines should be adhered to.

- 11.8 **Landscape Architect** – Two responses have been provided. The first response has been a detailed assessment in relation to policy ED9 of the 2016 LDP. The proposed development is judged to be pushing the boundaries of turbine scales which would be acceptable in the Scottish Borders. The majority of views of this development is seen within a context as an extension to a bigger adjoining array of turbines which is largely accommodated within a large scale upland basin. There are few sensitive receptors in the surrounding area. Increased turbine height can be accommodated in this location however it could create a precedent for repowering the rest of Crystal Rig. Serious concerns are however raised about the introduction of turbine lighting for 7 of the proposed turbines. Turbine lighting has the potential to be character changing by reducing the remoteness of the area and the visual amenity of the dark sky landscape.

The second reply responded to additional SEI on lighting. The Lammermuir ridge is seen as a dark line of hills with scatted domestic lighting which contain the Scottish Borders. This development would introduce a cluster of red lights which would draw attention and suggest a more developed landscape to the receptor. This situation could be further exaggerated in periods of low light levels when the red lights are seen in the context of the wider wind turbine

development. The most sensitive receptors are likely to be people travelling through the landscape however this area is also valued for tourism. In dark rural landscapes there is a need to apply caution where the introduction of a new light source is untested. While the principle of lighting is not objected to, the landscape architect is unconvinced that the mitigation methods proposed are sufficient to reduce light intensity to acceptable levels in all locations because the mitigation proposed is untested as are the lighting effects in dark sky environments as seen on a hill ridge line.

- 11.9 **Roads Planning** – The main access route to the site is via East Lothian with two locations where the internal access crosses minor public roads. It is recommended that a Traffic Management Plan is agreed before development commences to minimise the impact on all other road users on the surrounding network. A concern was raised that it is normally desirable for wind turbines to be set back at least 1.5 times their tip height from public roads to allow a margin of safety in the unlikely event of a structural failure.

12.0 OTHER IMPORTANT CONSULTATION RESPONSES (SUBMITTED TO SCOTTISH GOVERNMENT):

As members are aware, the Council is a consultee in the Section 36 application process and does not undertake any outside consultation itself. Nevertheless, some of the responses received by the ECU have been made known to the Department and Members may be interested in the more significant responses which are detailed below.

Scottish Natural Heritage (SNH) – In response to natural heritage impacts, recommend the Scottish Government carry out a Habitat Regulation Appraisal to determine if the development would have a detrimental impact on the qualifying interests of the River Tweed SAC and Forth Islands and St Abb's Head to Fast Castle Special Protection Areas.

With regard to landscape and visual effects SNH has not objected however the following concerns are raised;

- The scale and siting differ from original phases of Crystal Rig and instead has more in common with the consented Aikengall IIa development.
- The density of the development is increased and there is a lateral spread of turbines along the Lammermuir skyline.
- The overall size of the turbines proposed represents a 'step change' in scale, with the proposed turbines appearing significantly larger than the consented Aikengall IIa turbines, and increasing the prominence, adverse scale effects and general perception of wind development within the areas to the south, south east and south west of the proposal.
- The introduction of turbine lighting into the 'dark' landscape of the Lammermuir Hills plateau and into settlements in the area will result in significant adverse effects due to the incongruity of lights in this area.
- Removal of Crystal Rig 1 and 2 would reduce the density of the development by the visual impact of CR IV would remain. If Crystal Rig 1 and 2 were repowered CR IV could make it more challenging to create and maintain a coherent design rational.

Scottish Environmental Protection Agency (SEPA) – Following confirmation that the turbines and all structures are located outside of the a 50m

buffer to water courses objections on grounds of flood risk and ecology have been removed.

Ministry of Defence – Object. The turbines would have a significant detrimental effect on radar Air Defence Operations. Research in to technical solutions is ongoing. If the developer can overcome issues. Turbines 1 – 7 require to be lit in accordance with Article 219 of the Air Navigation Order. Turbines 8 and 11 should be fitted with MOD accredited 25 candela omnidirectional red lighting or infrared lighting with an optimised flash pattern of 60 flashes per minute of 200ms to 500ms duration at the highest practicable point.

East Lothian Council (ELC) – Maintain objection on ground that the introduction of lighting on turbines proposed within the Lammermuir Hills will have an adverse landscape and visual impact on East Lothian.

Abbey St Bathens, Bonkyl and Preston Community Councils all object on grounds that this location is saturated with turbines and the grid does not have any further capacity.

13.0 KEY PLANNING ISSUES:

13.1 Bearing in mind that SBC is a consultee rather than the determining authority, the following are the key issues to be reported in the following Assessment:

- land use planning policy principle
- economic benefits attributable to the scheme
- benefits arising in terms of renewable energy provision
- landscape and visual impacts including turbine lighting
- residential amenity visual impacts, arising from turbines and infrastructure
- cumulative landscape and visual impacts with other wind energy developments
- physical and setting impacts on cultural heritage assets
- noise impacts
- ecological, ornithological and habitat effects
- impact on road safety and the road network
- impacts on the public path network and public access on accessible land

14.0 ASSESSMENT OF APPLICATION:

Planning Policy Principle:

14.1 Scottish Government Policy, regional strategic policy and local planning policy/guidance are supportive of the principle of constructing wind energy projects unless, with regard to the specific circumstances, the environmental harm caused outweighs the benefits of energy provision.

14.2 Assessed against Table 1 of SPP 2014, the site falls under the definition, “Group 3” of the Spatial Framework: Group 3 locations are places where wind farm development may be acceptable. It is therefore the detail of the proposal which is key in this case. The primary topics requiring consideration by the Council are as follows:

Economic Benefit:

- 14.3 Wind Energy development is important in terms of the contribution it makes to the economy in the UK and internationally, alongside other forms of alternative energy production. Associated with implementation, planning and operation are employment opportunities for a wide range of contributors both directly and indirectly across supply chains.
- 14.4 The existing Crystal Rig Wind Farm is operational and successful in making its contribution to the energy industry. Adding a further 11 turbines to the existing wind farm would further consolidate the wind farm as a significant economic entity the rural area.
- 14.5 Scottish Government recognises this type of contribution as important and valuable to the Scottish Energy Industry. However, the potential for such benefits and thereby economic growth to be supported in consideration of energy proposals must be balanced against the possibility that wind energy developments in particular can bring high levels of environmental impact which are potentially of greater significance than the economic benefits.

Renewable Energy Benefits:

- 14.6 The consented wind farm developments at Crystal Rig are understood to have a combined generating capacity of up to 214.3MW. The proposed development would add up to 48MW which would make a notable contributions to the provision of sustainable renewable energy.
- 14.7 Extending existing wind farms provides a degree of logic because it provides opportunities to take advantage of existing infrastructure which is the intention of this proposal. Furthermore, the presence and consolidation of an existing development can to some extent offset environmental and visual impacts concern in comparison to seeking to introduce a wind farm in a location where one has not been previously developed.

Design Methodology:

- 14.8 The siting and design of the proposed development has evolved significantly since the initial Scoping Report in 2014 which is illustrated in Volume 3a of the ES.
- 14.9 Initially 26 wind turbines up to 135m were proposed to occupy areas to the north, west, south and a central area of the existing array. The removal of subsidies from the UK Government for the development of on shore wind farms significantly affected the viability of the original proposals. This had the effect of dramatically reducing the number of turbines but significantly increasing tip heights in order to maximise energy yields. This trend has been reflected in other wind farm development proposals and is perhaps the most significant challenge for wind energy proposals not just within the Scottish Borders but across the country.

Landscape and Visual Impacts:

Landscape Capacity

- 14.10 Policy ED9 gives significant weight to The Landscape Capacity and Cumulative Impact Study 2013, this study was updated in 2016 by Ironside Farrar (IF). Part of the main objectives of the update were to;
- take cognisance of turbine approvals since 2013 to build a clearer picture of landscape capacity
 - adopt new turbine typologies with the upper scale of turbines heights extended from 100m+ to 120m+ to reflect industry changes where there is a greater demand for larger turbines
- 14.11 The development is located within a large scale upland landscape. The study raises the possibility that this location may be the only part of the Scottish Borders which is perceived to have the potential landscape capacity to accommodate turbines over 120m. The height of the turbines proposed within this application, especially those which measure 174.5m and 200m are of a scale which is probably beyond the upper limits of the IF study, primarily because there was no precedent for such large turbines at the time the report was produced. This study is however a guide and it is pertinent to note that since it has been updated the Scottish Government granted consent for the Aikengall IIa development which will introduce turbines with a 145m high tip height into part of this landscape where the IF study did not identify that there is any potential for turbines over 120m.

Theoretical Visibility

- 14.12 According to the submitted Zone of Theoretical Visibility (ZTV) mapping showing potential visibility (refer to Figure 8.1 – 8.4). The ZTV illustrates that visibility within the Borders is concentrated in upland areas in close proximity to the development. Thereafter, visibility is generally channelled in a south easterly direction with landform providing some relief at the 15 – 20km distance. Sparleton Edge to the south west and Monynut Edge to the east help to provide some screening from these directions.
- 14.13 Because the proposal relates to the extension of an existing windfarm and it is located within an area where there are a number of existing and consented wind farms, the consideration of Cumulative Zone of Theoretical Visibility maps (CZTVs) is significant, these are provided from Figure 8.16a – 8.16v. This analysis indicates that there is already significant visibility across the study area of wind farm development. Comparing the ZTV of this development with cumulative ZTVs reveals that there are very few areas where Crystal Rig IV would be visible in isolation without sight of any other wind farm development. The visibility of this proposal is closely related to the visibility of the existing operational and consented wind farms at Crystal Rig and Aikengall (see figures 8.16a, 8.16c and 8.16m) which this application is most directly related to.
- 14.14 The proposed development will unquestionably result in an increase in the scale of the combined windfarm at Crystal Rig from certain locations and this will be discussed further below. Nevertheless the theoretical visibility of the new development closely matches the theoretical visibility of the existing windfarm, meaning that there will be few locations from where the existing turbine arrays

will not already be visible. The theoretical visual impact of the new development is judged to be minimal based on its association with the existing windfarm.

Impact on Landscape Character

- 14.15 The acceptability of landscape impacts depends on the level of change of the existing character 'pre-development' weighed against the 'post-development' impact of the proposals. The introduction of a further 11 turbines which extend up to 200m in tip height will further industrialise the Landscape Character Area (LCA). This impact will however be located in a landscape context which has already been altered by the granting of consent for up to 145 commercial wind turbines at the Crystal Rig/Aikengall cluster. In determining the application for Aikengall IIa, the Reporter acknowledged that;

“the existence of Crystal Rig, Aikengall I and the approved Aikengall II wind farms on the same upland mass underpins the appropriateness of this location for further well planned, wind farm development. The sensitivity and susceptibility of the landscape to change has been lowered by the existing development, thereby increasing its inherent carrying capacity”

- 14.16 The Lammermuir plateau is a large scale landscape which contains much of the northern Borders. The site and the majority of its surroundings fall within the Lammermuir Hills SLA with wind farm development listed as a force which could change this SLA. The establishment of wind energy developments and consented windfarms in this landscape has been recently considered by the Reporter to have reduced its sensitivity to wind farm development and potentially increasing its capacity for further development. How the proposed development integrates with the existing array is therefore important. Presently the Crystal Rig development occupies a shallow basin on the Lammermuir Plateau. Crystal Rig IV would bring turbines close to the southern edge of the upland plateau where they appear to step out of the containing landform. This impact is not entirely desirable however the siting of Aikengall IIa has already been granted consent and will bring large turbines down from the containing Lammermuir ridge adjacent to this site. Cumulatively, Crystal Rig IV would continue to further extend the array to the south and add further very large turbines along the skyline of the simple Lammermuir ridge, as experienced particularly from Viewpoints (VPs) 2 and 4.
- 14.17 The impacts of this proposal would not go unnoticed however a lot of these impacts are already apparent within this LCA. This may mean that the impacts of further development may be proportionately less significant, in comparison to siting wind turbines up to 200m tall in a landscape where there is no pre-existing wind farm development.
- 14.18 The proposed extension of wind turbines of the scale proposed is however judged to have an adverse impact on the Upper Whiteadder LCA. Because the current Crystal Rig development remains within the containing bowl this LCA is presently less exposed to windfarm development. VP 3 shows turbines spreading out of the containing bowl where their enormous scale does conflict with the setting of this medium scaled valley landscape. This result has a character changing impact on the setting of this neighbouring LCA. While detrimental, the adverse impacts of the development on the Upper Whiteadder LCA are of a localised nature.

- 14.19 Undeniably, this proposed development does result in causing some adverse impacts within upland LCAs by introducing excessively large turbines which extend outwith the landform which contains existing development at Crystal Rig development and along the Lammermuir ridge. This impact has already been introduced by the siting of the neighbouring Aikengall Ila development within the SLA. With the exception of turbine lighting which will be discussed later in this report, given the existing and consented impact of wind farm developments within this LCA it is difficult to argue that the resultant impacts of these turbines would cause a unacceptably harmful degree of change.

Wild Land

- 14.20 The site is not one of the nationally designated areas of Wild Land. Landscape qualities of the landscape have already been significantly affected by the presence of the existing windfarm and largescale overhead power line. The addition of 11 extra turbines would not have a significant impact on the landscape, due to the presence of the existing development.

Visual Impact

- 14.21 The ZTV has identified that the proposal will be visible from roads, paths (including the Sothern Upland Way) and some small clusters of residential properties which are located close to the development. A selection of key viewpoints (VPs) has been selected to illustrate the visual effects of the development from important public locations. During day light hours the ZTV reveals that the visual impact of the development in the Scottish Borders is likely to be contained within a 15km distance of the development. Viewpoints further than this distance are likely to have a negligible visual impact.

Visual Impacts – Roads and Paths

- 14.22 VP2 and VP4 both illustrate similar visual impacts on key routes south of the proposal. VP2 is located 12.5km to southeast of the development adjacent to the A6112 which is the primary route when travelling north east from Duns. VP4 is from the Southern Upland Way (SUW) 9.6km to the south of the proposal. There are similar visual impacts from these viewpoints and also from Sequential Viewpoints (SEQ) 14 and 17 which demonstrates the impact along the B6355 between Longformacus and Whitchester. These VP provides a view of the Lammermuir skyline. The Crystal Rig and Aikengall combined and consented developments are already very prominent.
- 14.23 It is evident that the existing Crystal Rig development is set back from the southern edge of the plateau. The siting and scale of Crystal Rig IV turbines dominate the skyline more than the existing Crystal Rig development. The siting of the does follow the pattern of Aikengall Ila by appearing to step down from the upland plateau. This development would continue the lateral spread of large turbines across the skyline. Sparleton Hill and the rising landform to the west does help to contain the spread of the array. There is a distinct step up in scale of the proposed turbines in front of the smaller existing Crystal Rig turbines. When comparing the height of the turbines with those consented at Aikengall Ila (shown in blue in the wirelines) despite these proposed turbines being up to 55m taller, from these VPs on lower ground to the south the Crystal Rig IV turbines do not appear to extend above the tip height of the consented Aikengall turbines which these proposals would be visible alongside. This is confirmed in S.I Figure 2.1 Wind Turbine Heights which reveals that the Turbine

4 of this development would occupy a tip height of 545 AOD (m) and there are 3 turbines within the Aikengall array which are positioned higher than this turbine with the tallest standing at 556 AOD.

- 14.24 From VP3 the sheer scale of the turbines is perhaps most apparent. This is however a minor road therefore the sensitivity of this viewpoint is low.
- 14.25 From the west, VP7 is provided from a path to the west of Cranshaws. The greatest effects will be on views from the path at the base of Cranshaws Hill looking north. The scale of the turbines dominates the foreground of the existing array and have a poorer relationship with the heights of the consented 145m turbines at Aikengall IIa. Visually, the step change in the scale of turbines is directly evident from VP7 which will affect the users of this route, however there do not appear to be any residential receptors at Cranshaws due to screening provided by tree cover and landform. The sensitivity of this view point is not significant, likely impacting on local recreational users of this route.
- 14.26 Viewpoint 11 is on the Twin Law which is a scenic viewpoint on the SUW. This is a popular walking route but from here the viewer is in the middle of a wind farm landscape with the Crystal Rig/Aikengall cluster to the north east and Fallago Rig to the south west. There is a similar experience from VP13. The location of larger turbines in the foreground of these VPs will bring the perception of turbines closer in to view however these 11 turbines are located towards the centre of the very long array.

Visual Impacts – Residential Receptors

- 14.27 Scottish Planning Policy (SPP) advocates the identification in Local Development Plans of an area not exceeding 2km around settlements as a community separation for consideration of visual impacts. No settlements are located within this distance of the site.
- 14.28 Theoretical visibility does suggest that turbines would appear prominent when viewing north from Cranshaws. From Cranshaws, the assessment of the LVIA is that roadside planting would provide some screening from Sequential Viewpoint Wireline (SVP) 01 and the general orientation of buildings do not face towards the development. That assessment is accepted.
- 14.29 SVP3 at Whiteburn suggests that turbines would be visible, however these turbines would be visible through the existing array where they don't compete with taller turbines in the foreground. There does however remain the potential for turbine lighting to affect residents when travelling around these locations. This impact will be considered in detail in a subsequent section of this assessment.
- 14.30 The development does have the potential to impact on a small number of dispersed properties which are located in close proximity to the development, these are considered to be Residential Receptors (RR). Properties at Crichness and Upper Monynut have the potential to be significantly affected by this proposed development. At RR1 our Landscape Architect has advised that;

“turbines will be seen on or close to the plateau ridge line north, north east and west of the residential location. Significant effects will result from the geographical extent, size and scale of change. There is some degree of

screening of these impacts provided by farm buildings and garden vegetation. This property appears to be the most adversely affected sensitive receptor.”

- 14.31 The property at Upper Monynut would also appear to be significantly affected by this proposal as a result of removing a block of forestry which is associated with these development works. It is understood that this property has been vacant for some time. While the development may not affect the primary outlook of this property, it would still compromise the enjoyment of this residential property for future occupants.
- 14.32 The introduction of red turbine lighting would add a new impact for these properties from this development at night time which is not presently caused by the existing windfarms.
- 14.33 The ES informs that both of the Crichness property group and Upper Monynut are properties have a financial interest in this development. These properties would stand to benefit from this development, directly or indirectly, and accepted practice is that because of this is that any detrimental impacts on the amenity of these properties would not warrant grounds to oppose this development, as these effects have been acknowledged by the respective landowners in the development of the scheme.
- 14.34 Theoretically, the Bothwell property group would also be affected by this development. It is not clear whether this property group has a financial interest. Turbines 1 – 5 would dominate the skyline behind this group however the intervening planting and farm buildings would screen the residential properties from being visually affected. The development would affect the setting of these buildings on approach, including at night when the turbines would be lit but because this wouldn't affect their residential amenity, this development is not opposed on amenity grounds.

Visual Impact of Associated Infrastructure

- 14.35 Where possible the proposal is generally seeking to use existing infrastructure. All new infrastructure associated with this proposal is standard for a wind farm development. Given the significant presence of wind farm development in this location, the impact of all new infrastructure is considered to be negligible.

Turbine Lighting

- 14.36 Seven of the eleven (turbines no 1-7) are over 150m tall. Under Civil Aviation Authority (CAA) regulations it is a legal requirement for all structures over 150m to be fitted with a visible red aviation warning light. The light is required to be a 2000 candela, omni directional light which has to be fitted as close as practicable to the top of a fixed structure. For wind turbines the lights are fitted to its nacelle (hub). Additionally, 3no. low-intensity 32 candela steady lights are required to be fitted around their towers. Members will be aware that lights are often fitted to wind turbines to aid the navigation of Ministry of Defence aircraft the difference being that the MOD lighting requirements are for the use of infra-red lighting which is no noticeable to the naked eye.
- 14.37 The introduction of aviation lighting on wind farms in the UK is a recent phenomenon following the increase in turbine heights. Currently none of the turbines within the Crystal Rig/Aikengall array are lit and neither are any other wind turbines within the Scottish Borders. Consideration of the effects of

lighting is a complex matter to assess and it is a relatively new area of assessment.

14.38 Included with the original LVIA the applicants provided photomontages, wirelines and a written assessment to help assess the effects of the proposed lighting.

14.39 By way of comparison, examples of other civil aviation warning lighting which has been fitted onto other infrastructure include;

- the Selkirk and Ashkirk transmitters
- cranes at the St James Centre redevelopment in Edinburgh
- the Queensferry crossing
- offshore wind turbine at Methil in Fife

all of which, necessarily, are visible from distance.

14.40 The specification and direction of the lights which have been installed on these structures may not be the same specification as those which are proposed for this development however it served a purpose to provide a comparison. Some of these lights are visible across distances of up to 30 - 40km and potentially more depending on light conditions.

14.41 It has been assessed in the landscape and visual impact section above that the combined Crystal Rig/Aikengall array has significantly changed the rural landscape where it is located to an extent that it is now described as a Wind Turbine Landscape. Presently, the visual industrialisation of this landscape is limited to hours of day light. During hours of darkness the landscape is characterised as being dark and remote with the large wind farm development not being visible. It also the case that, owing to the limited habitation in these areas, light pollution generally is minimal. Having considered the original ES information on lighting, on the 21st of November 2018 officers wrote to the ECU with the following summary;

“the visual impact of red turbine lighting is considered to be incongruous with the landscape character of the dark sky environment. Its introduction will significantly increase the overall prominence of the development so that distant locations which are not currently detrimentally affected by the existing Crystal Rig/Aikengall will now be able to perceive the red safety lighting set within an unlit environment.”

14.42 Both SNH and East Lothian Council also raised concerns about the impact of turbine lighting associated with this development. Subsequently, the applicants submitted Supplementary Information (SI) on turbine lighting which has provided more detailed information on the proposed lighting. A new ZTV has been provided and a video recording of a 2000 candela warning light at a distance of 8.5km. The SI sets out the controls which can be used to mitigate the impact of 2000 candela lighting, these are summarised as;

- programmed with a timer so they only operate during night time hours i.e. half an hour before sunset until sunrise
- use dimming mechanism to reduce of the intensity of 2000 candela lights to 10% of their peak intensity during period of good visibility which is when visibility in all directions of the windfarm exceeds 5km
- the light is focused to a narrow angle of view so its intensity reduces the further below the light it is being viewed (illustrated on Light Intensity by Angle Drawing on ZTVs)

- 14.43 Paragraph 2.3.4 of the SI recommends that further mitigation could be possible with the addition of a physical shield (within the lights casing) to restrict visibility below -1 degree below the horizontal which is permitted in the UK by the relevant lighting regulations.
- 14.44 Following the submission of the SI officers have undertaken a further assessment of the lighting effects of these proposals. Diagram 2.4 of the SI shows that the intensity of a 2000 candela light is comparable to car headlights when on full beam.
- 14.45 The video which has been supplied by the applicants is helpful, however it must be considered in its context where the aviation lighting is viewed against hill slopes as opposed to the landscape of this development where a cluster of lights will be visible above the dark slopes of the skyline during hours of dusk. The Landscape Architect has identified that the video does demonstrate that;
- the red light is more apparent and stands out in the view in darkness, as is indeed its purpose
 - the contrast in colour with the more commonly seen white light adds to the perception of 'development' in/above the landscape as opposed to properties or settlements.
- 14.46 The ZTV mapping (Figures 3.1 – 3.3) confirms that it the areas where the hubs would be theoretically visible from in daylight hours would also have theoretical visibility of the turbine lighting. Paragraph 2.3.6 suggests that;

“Since the dimming provision in the CAA Policy Statement means that the lights on the proposed turbines will only emit 2000 candela in the horizontal plane when the visibility is at or less than 5 km, this indicates that observers located further away from the light than approximately 5.1 km are expected to only ever be exposed to a light that is producing a maximum of 200 candela.”

Paragraph 2.3.7 goes on to state;

“The implications of this for visibility of the lights from key viewpoints will depend on the exact technical specification of the lights, particularly in relation to vertical beam spread. However the standard requirement for a minimum of 750 candela at -1° elevation could result in the intensity at that elevation angle being reduced to 75 candela when the visibility is in excess of 5 km.”

- 14.47 The proposed mitigation suggests that it is only the orange and yellow coloured areas within the 5km radius of the development which could be subjected to the highest level of intensity of this lighting. This higher intensity lighting would appear to be visible from very limited locations and not affect any settled areas. If shielding were to be added this suggests that visibility at areas -1 degree below the horizontal would be removed, i.e. from areas coloured green, blue and purple on the ZTV mapping would not see the aviation lighting. Clearly this mitigation would begin to reduce the impact of the turbine lighting within the affected areas. Nevertheless while the intensity of the lighting may be reduced it would still be visible with the extent of its visibility dependant on atmospheric conditions. Importantly it is unknown what 200 candela light looks like and how far it will be visible from in this environment. It is also relevant to note that at a recent Aviation Lighting Seminar held by SNH on 3/4/19, SNH advised that there were no examples of shielding currently put in to practice therefore the success of this mitigation is untested. However, given that the purpose of

aviation lighting is that it is intended to be seen from distance, it is not unreasonable to assume that the distances from which visibility is possible would be significant and, because the very purpose of the lighting is to draw attention to the turbines, the perceived impact may actually be greater at night than during the day.

- 14.48 The turbine lighting may not be visible from many settlements or populated areas. Officers would agree with SNH that Cranshaws may be the most affected settlement. The impact of lights on residential properties in this village would be limited by planting. Cranshaws is approximately 4.5km from the nearest lit turbine. There would be concerns that residents may be affected by lighting when moving around the settlement. Because of the location of Cranshaws below the development this would be a lower intensity light level which could be removed if shieling was used. However if the shielding technology was not successful the impact lighting at a settlement at close proximity to the development could detract from its rural setting.
- 14.49 The turbine lights would mostly be apparent when travelling within the landscape. Some significant effects would occur on high ground of minor road networks and part of the SUW to south of Longformacus, Hoardweel and towards Coldingham Moor. VP2 has captured these impacts where a cluster of red lights from lit turbines on the horizon will be distinct from the white and yellow lights seen at lower levels in the foreground. At dawn, dusk and in low light levels these will be seen in the context of the wider turbine array drawing greater attention to the windfarm development and making it a focus in the view.
- 14.50 Travelling north from Longformacus towards Redstone Rig (VP9) up on to the upland plateau on the C98 there are areas of visibility. Aviation lighting would appear stark within this remote part of the Scottish Borders with limited other sources of lighting.
- 14.51 During hours of daylight it is accepted that the visual effects of the wind farm is only generally perceived as far as 15km from the development. The addition of turbine lights may result in extending the visibility of this windfarm across parts of the Scottish Borders where the during daylight hours the existing array has a negligible impact. These would appear to affect locations stretching from Paxton in the south eastern to the central Borders including areas to the south of Kelso and up towards Earlston. VP5 illustrates how this development is seen on the horizon and it contain views across the Borders. During hours of darkness this landscape setting would not be noticeable. The landscape architect has identified that SNH guidance (Siting and Designing Wind Farms) notes that offshore wind turbines are clearly visible at 20 miles or more which suggests that this lights could be visible. That appears to be consistent with distances from which, for example, the Selkirk transmitter can be seen, by comparison. If this is the case it would promote an adverse industrial appearance across the Borders where there are little comparable light sources. This has a character changing impact.
- 14.52 Overall, it has been assessed that the Lammermuir Hills is a dark rural environment. The introduction of red aviation lighting would;
- extend the visual effects of this wind farm into hours of darkness
 - the presence of red lighting would industrialise the rural landscape during hours of darkness when the wind farm development is not visible,

- result in the development being visible from more locations than it is during the day light, and
- draw greater attention to the development and increase the prominence of the windfarm at dawn and dusk.

14.53 These visual impacts may not affect many populated areas however they will affect many people when they are travelling around the eastern and parts of the central Borders on roads and paths during hours of darkness and at dawn and dusk when the attention would be drawn to a cluster of elevated red lights within an otherwise area of low lighting. The red coloured lighting will appear industrial and would detract from the character of the dark rural environment including the night time character of the SLA when the existing Crystal Rig/Aikengall array presently has a little to no impact. The proposed mitigation appears to be unproven and untested. The impact of turbines lighting are judged to be significant and approving this development based on the evidence provided would be a risk which could significantly harm the visual amenity of the Scottish Borders.

14.54 It is judged that the visual impacts cause by turbine lighting on affected public roads, paths and other walking routes are significantly adverse and contrary to the relevant criterion of Policy EP9 of the LDP. Suitable evidence has not been provided to suggest that the adverse visual impacts caused by turbine lighting can in fact be mitigated to any tolerable levels.

Residential Amenity (Noise):

14.55 A noise assessment has been provided which has been assessed by an environmental health consultant on behalf of SBC. Some further information was requested to provide greater transparency to verify the calculations within the report. The applicants have provided this information however an updated response has not yet been received from the Council's Environmental Health Officers. The conclusions of the original noise assessment were not found to cause any adverse noise impacts with the noise immisions associated with the proposed development found to be below relevant noise limits cumulative noise limits associated with this proposal. If Members were minded to recommend approval, planning conditions should be imposed to set appropriate noise levels and investigation and resolution obligation in the event of any noise complaints.

14.56 Noise which arises during the construction process may impact on the amenity of neighbouring properties. It would however be possible to mitigate this via the agreement of a noise management and blast plans as a condition of any planning consent.

Cultural Heritage impacts:

14.57 There are a number of archaeological assets within the red line boundary of the site, and immediately beyond. The Council's archaeologist is satisfied with that the implementation of mitigation suggested within the ES will avoid detrimental direct impacts for archaeological assets. This mitigation involves the erection of temporary fencing to avoid development works straying into areas where there is known archaeological assets will enable preservation in situ. Where evidence suggests that there is a moderate potential to encounter buried archaeology during development works, watching brief undertakings are

appropriate. The exact methodology for any watching brief would be agreed as part of a Written Scheme of Investigation.

- 14.58 Turning to indirect impacts, the archaeologist observes that there will be a moderate impact on the setting of the Yadlee Stone Circle. This monument is a nationally important asset which consists of nine small bounders arranged in a circle to the north of turbine 11. This latest layout has moved turbines further away from monument which has been welcomed. However, the archaeologist recommends that it will still pose an individual and cumulative on the setting of the stone circle and this view has been shared by HES.

In particular, the archaeologist advises that;

“turbines 10 and 11 provide new and incongruous frames to the hill and do create a sense of dominance for this part of the circle’s setting. The movement of turbines across the valley from the established area of wind farm also creates a new and competing element with the remaining areas of setting that retain a rural rough grazing landscape.”

- 14.59 Historic Environment Scotland do not believe that the development would pose a significant impact on the integrity of the setting of the scheduled monument which would raise issues of national interests. Similarly, the Council’s archaeologist has not objected to this proposal however the changes to the setting of the stone circle as a result of this development are judged to create a moderate degree of effect which is significant in EIA terms. Where these impacts arise, LDP Policy EP8 does encourages adverse impact on the setting of historic environment assets to be mitigated. It would be possible to off-set the adverse impact on the Yadlee Stone Circle by seeking a developer contribution towards an archaeological project within the Lammermuir and East Berwickshire Area which would enhance the ability to experience and appreciate the monument through enhancements. This form of mitigation has been successfully used to offset negative impacts of other wind farm development upon archaeological assets within the Eastern Berwickshire.

- 14.60 The scheme is not opposed on archaeological grounds. It is recommended that if Members were minded to support this development that a combination of conditions and a developer contribution could mitigate the direct and indirect impacts of this development on affected archaeological interests.

- 14.61 The development does not detrimentally affect the setting of any other listed building or Conservation Areas.

Traffic Management, Road Safety and Access:

- 14.62 The site will be accessed via the established route from the north through East Lothian which has successfully served the previous development phases of the existing Crystal Rig wind farm. Use of this means of access is logical. It is recommended that a Traffic Management Plan should be agreed to ensure minimal disruption is caused on the public road network. This matter could be addressed as a condition of any planning permission.

- 14.63 The Council’s Roads Planning Officer has observed that turbines 1 – 5 are closer to public roads than would normally be preferred. Ideally, turbines should be positioned 1.5 times the tip height away from a public road to avoid any road network issues if they malfunction or topple. The affected road is a minor road

which is poorly surfaced. The volume of traffic movements on this route are thought to be low. Journeys are most likely to be associated with properties Crichness and Upper Monynut who are financially involved in this development, wind farm operators and forestry management responsibilities. If this route supported a larger volume of traffic there would be a greater justification to move the turbines further from the road. Given this context, the location of some of the turbines closer to this minor public road than is not judged to be objectable and Roads Planning have not objected on these grounds. Any issues caused by the turbines to this route or its users would ultimately be an issue for the operators of any the development to resolve.

- 14.64 Only one of the affected Rights of Way identified by the Access Ranger falls within the site boundary. The other is directly adjacent to the site, forming part of the public road. These routes should remain open and free from obstruction during development works. The development could mitigate and enhance its impact on the public access if after construction all access tracks are available for public use. A path planning study could agree appropriate integration of these routes through signage and links to the existing rights of way to improve access.
- 14.65 If Members are minded not to object to this development, the requirement to keep rights of way open during construction and agree a path planning study can be agreed by condition.

Ecology and Habitat impacts:

- 14.67 There is potential for drainage and water flow from the development to affect the River Tweed SAC which is of international importance due to its qualifying interests. The site's status as a SAC means that it falls to the Scottish Government as Competent Authority to carry out an Appropriate Assessment to consider the effect of the proposal in the SAC. Despite there being connectivity to the SAC, the Council's Ecologist is of the opinion proposed mitigation which includes siting infrastructure 50m from water courses (where practical) and implementation of the Construction Environment Management Plan which is to be overseen by an Ecological Clerk of Works will ensure that the development does not have a significant effect on the integrity of the SAC.
- 14.68 The development could have connectivity to both Forth Island and St Abbs Head Special Protected Area (SPA). Again, it would be a matter for the Scottish Government to consider the effects through a Habitat Regulations Appraisal.
- 14.69 The Council's Ecologist has identified that the development has the potential to impact on a range of species, including protected species and habitats. In order to comply with LDP policy provision covering biodiversity various forms of mitigation will be required to be undertaken. Mitigation measures will include; pre-commencement species surveys, habitat management plans, compensatory woodland planting schemes and post construction species monitoring. In addition, an Ecological Clerk of Works is recommended to be appointed to ensure that ecological and habitat requirements are upheld during construction and also decommissioning requirements of the development are upheld.
- 14.70 There are not judged to be any ecological reasons why the proposed development would otherwise be considered not to be in compliance with relevant LDP policy provision on Ecology.

15.0 CONCLUSION

- 15.1 Scottish Borders Council remains positive towards the principle of wind energy development, as reflected in its policies and guidance. As required by policy considerations, the benefits of energy production, and the disbenefits of environmental impact must be weighed carefully against one another. This is made clear in the 2014 SPP and reflected within the primary LDP Policy consideration for this development, Policy ED9.
- 15.2 Several key issues stand out in this report. The addition of a further 11 large turbines would increase the production of electricity at Crystal Rig wind farm and make a worthwhile contribution toward the achievement of the Scottish Governments targets for renewable energy production. However, these benefits have to be finely balanced against the environmental impacts of the development which mainly relate to landscape and visual effects.
- 15.3 The height of the turbines which are proposed would be the tallest wind turbines within the Scottish Borders and some of the tallest onshore turbines anywhere in Scotland. They are located within a large scale upland landscape setting where the landscape character has been already been significantly changed following the granting of consent for up to 145 turbines which are between 100 – 145m in height across the combined Crystal Rig/Aikengall array. This has resulted in this part of the Scottish Borders being characterised as a Wind Farm Landscape. During the determination of Aikengall IIa it was recognised by a Reporter that the previous wind farm approvals had reduced the sensitivity of this landscape, and inherently this has increased the capacity of the Lammermuir plateau to support for further windfarm development. This development may adversely affect the setting of the adjacent Upper Whiteadder LCA, however these impacts are of a localised nature.
- 15.4 Primary views of this development are from viewpoints to the south. The proposals would appear to;
- spread out of the basin which presently contains the Crystal Rig wind farm,
 - increase the lateral spread and prominence of turbines across the skyline
 - add a further element of visual confusion by locating larger turbines in front of small turbines at Crystal Rig.
- 15.5 These landscape and visual impacts are adverse; however, these effects are mitigated because the proposed wind turbines would be seen the context of the combined and consented wind farm developments at this location where these impacts have already been created by Aikengall II and IIa. On balance, during hours of day light the introduction of these large scale wind turbines are unlikely to cause any new unacceptable landscape and visual impacts.
- 15.6 Seven of the eleven turbines are required to be fitted with civil aviation warning lights. This lighting would introduce a new landscape and visual element which does not exist at this windfarm. This would give rise to several visual problems which have been discussed earlier in this report and are summarised as follows;
- extend and increase the visual effects of this wind farm into hours of darkness
 - red coloured lighting would industrialise the rural landscape during hours of darkness when the wind farm development is not visible,

- result in the development being visible from more locations than it is during the day light, and
- necessarily draw greater attention to the development and increase the prominence of the windfarm at dawn and dusk

15.6 The adverse visual impacts caused by turbine lighting has the potential to affect the experience of a number of people travelling on roads and paths with the Eastern and across to the Central Borders when a cluster of industrial red lights would appear in elevated positions which would detract the visual amenities of the otherwise dark rural setting. The SI does set out mitigation which can be applied to the turbine lighting, however compelling evidence has not been provided to demonstrate that the impact of turbine lighting can be reduced to a tolerable level.

15.7 The merits of the application have been considered against relevant provisions of the development plan and the requirements of Schedule 9 of the Electricity Act, and the demonstrable harm caused by the introduction of turbine lighting is considered to outweigh the benefits this scheme may bring.

16.0 RECOMMENDATION BY CHIEF PLANNING AND HOUSING OFFICER:

16.1 Reason for Objection 1: Adverse Visual Impact:

The proposed development would be contrary Local Development Plan Policy ED9 in that the visual impact of red aviation lights fitted to the nacelles of seven of the eleven turbines would introduce lighting, whose purpose is to draw attention to the development, with an industrial appearance which would be incongruous and visible from a considerable distance from the development. This is incompatible with the visual amenity of the dark rural environment largely unaffected by artificial light, which is experienced by receptors travelling on public roads and paths within the Eastern and Central Borders in hours of darkness and would also increase the prominence of this wind farm environment from these affected routes at times of dusk and dawn.

16.2 Reason for Objection 2: Impact on Landscape Character

The proposed development would be contrary Local Development Plan Policy EP5 in that the location of red aviation lights on an elevated location within the Lammermuir Hills would adversely affect the night time character of the Lammermuir Hills Special Landscape Area by industrialising the dark rural environment which would be experienced by receptors travelling on roads and paths within the SLA.

16.3 Advisory Note

Should the development be considered for approval, then conditions and the need for a Legal Agreement have been identified covering a number of different aspects including noise limits, roads matters, ecology and archaeology.

17.0 Drawing Numbers;

- Figure 1.2 Site Layout
- Figure 5.1a Indicative Turbine Specification 149.9m Tip Height
- Figure 5.1b Indicative Turbine Specification 174.9m Tip Height

- Figure 5.1c Indicative Turbine Specification 200.0m Tip Height
- Figure 5.2 Typical Turbine Foundations Specification
- Figure 5.3 Access Tracks
- Figure 5.4 Typical Cross Drainage
- Figure 5.5 Typical Crane hardstanding Area
- Figure 5.6 Indicative Transformer Housing
- Figure 5.7 Typical Cable Trench
- Figure 5.8 Typical Layout of a Temporary Construction Compound
- Figure 5.9 Indicative Batching Plant Layout and Elevation
- Figure 5.10 Typical Turbine Signage

Approved by

Name	Designation	Signature
Ian Aikman	Chief Planning and Housing Officer	

The original version of this report has been signed by the Chief Planning and Housing Officer and the signed copy has been retained by the Council.

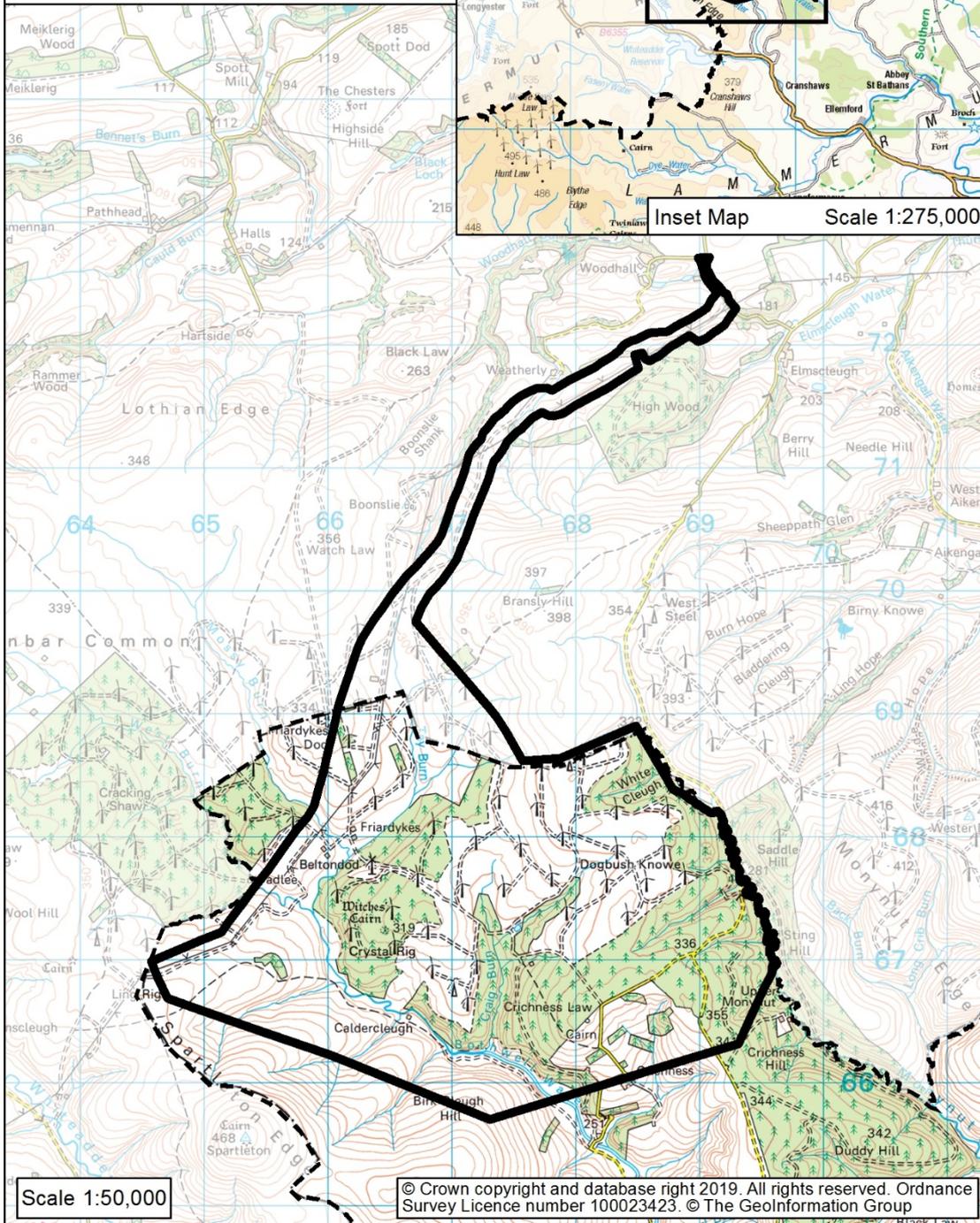
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18/00768/S36

Crystal Rigg Wind Farm
Cranshaws



Scale 1:50,000

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