4. Approach to Preparing the Environmental Impact Assessment Report

4.1 The Environmental Impact Assessment Process

4.1.1 The preparation of the EIA Report is one of the key stages in the EIA process, as it brings together information about any potentially significant environmental effects, which the Local Planning Authority, in this case East Ayrshire Council ('EAC'), will use to inform its decision about whether the Proposed Development should be allowed to proceed.

4.2 EIA Terminology

Impacts and Effects

4.2.1 In some EIA Reports, the terms 'impacts' and 'effects' are used interchangeably, whilst in others the terms are given different meanings. Some use 'impact' to mean the cause of an 'effect', whilst others use the converse meaning. This variety of definitions has led to a great deal of confusion over the terms, both among the authors and the readers of EIA Reports.

4.2.2 The convention used in this EIA Report is to use 'impacts' only within the context of the term EIA, which describes the process from scoping through EIA Report preparation to subsequent monitoring and other work. Otherwise, this document uses the word 'effects' when describing the environmental consequences of the Proposed Development, which may for example come about as a result of physical activities that would take place if the development were to proceed (e.g., vehicle movements during construction operations). The environmental changes that occur as a result of these activities (e.g., loss of vegetation prior to the start of construction work or an increase in noise levels) may in some cases cause another change, which in turn results in another environmental effect.

4.2.3 The predicted environmental effects are the consequences of the environmental changes for specific environmental receptors. For example, with respect to a species of bat, the loss of roosting sites or foraging areas (the change) could reduce the population size (the effect); with regard to people, an increase in noise levels (the change) could affect people's amenity, reducing their enjoyment of the local area (the effect).

4.2.4 This EIA Report is concerned with assessing the significance of the environmental effects of the Proposed Development, which requires the activities that will be undertaken to be understood and the resultant changes to be identified and quantified, often based on predictive assessment work.

Spatial and Temporal Scope

4.2.5 Spatial scope is the area over which changes to the environment are predicted to occur as a result of a proposed development. In practice, an EIA should focus on those areas where these effects are likely to be significant.

4.2.6 In this EIA Report, the spatial scope varies between environmental topics and is therefore described in each of the topic chapters. For example, the spatial effects of a development on landscape and visual amenity will probably cover a much greater area to that affected by noise.

4.2.7 The temporal scope covers the time period over which changes to the environment and the resultant effects are predicted to occur. As the Proposed Development nears the end of its operational life, a decision will be taken as to whether or not a life extension, repowering or decommissioning will be required. However, for impact assessment purposes, the EIA Report assumes that the project will be decommissioned at the end of its operational life. Therefore, the focus of the assessments is on the potential effects during construction, operation and decommissioning. Should the assessment of an individual technical topic deviate from this general approach, it will be clarified within the technical chapter. For example, traffic and transport assessments for wind farm developments typically focus on the construction period as this is when there is greatest potential for significant effects to occur because of the increase in the volume of Heavy Goods Vehicles. During operation, indeed, traffic is generally restricted to occasional monitoring and maintenance visits which is unlikely to result in significant effects and is therefore typically scoped out of detailed assessment. Changes as a result of the Proposed Development that occur during construction, operation and decommissioning may result in effects that persist beyond these phases. The effects are typically defined as either being temporary or permanent.

4.3 EIA Scoping

4.3.1 The EIA scoping process aims to identify those aspects of the environment that are likely to be significantly affected by a particular project. In particular, the process involves identifying the following:

- The people and environmental resources (collectively known as 'receptors') that could be significantly affected by the Proposed Development; and
- The methodology required to take forward the assessment of those effects identified as being potentially significant.

4.3.2 The preparation of a scoping report is informed by the legislative and policy context that will influence the scheme as well as the environmental information relevant to the Development Site and its surroundings. It is also informed by the simple rule that, to be significant, an effect must be of sufficient importance that it should influence the process of decision-making about whether or not consent should be granted for a proposed development or an element of it. In this EIA Report, this is referred to as the 'significance test'.

4.3.3 At the scoping stage, the conclusion that is made using the significance test is based upon professional judgement, with reference to the project description, and available information about:

- The magnitude and other characteristics of the potential changes that are expected to be caused by the Proposed Development;
- The sensitivity of relevant receptors to these changes;
- The effects of these changes on relevant receptors; and
- The value of receptors.

4.3.4 A precautionary approach is taken such that if the information that is available at scoping report stage does not enable a robust conclusion to be reached that a potential effect is not likely to be significant, the effect is taken forward for further assessment.

4.3.5 The EIA Scoping Report for the Proposed Development was submitted for comment to EAC on 21 February 2020 along with a request for a scoping opinion (the EIA Scoping Opinion) and is included as **Appendix 4B**

4.3.6 Subsequent to the issuing of the EIA Scoping Report, the scope of the assessment was progressively refined in response to comments from the EAC and from consultees (see **Section 4.4**), together with environmental information that has been obtained from work carried out as part of the EIA and the evolution of the project proposals. A summary of further consultation undertaken is provided in **Table 4.2**.

4.3.7 The environmental topic **Chapters 6** to **17** of the EIA Report detail the final scope of the assessment in relation to effects that were assessed as potentially significant; and therefore, needed to be subject to more detailed assessment. All other effects (i.e., those that are not referred to in the technical chapters) are not likely to be significant.

4.4 Consultation

EIA Scoping Opinion

4.4.1 EAC issued the EIA Scoping Opinion on 2 April 2020, and this is presented in full in **Appendix 4A**. The scoping responses and where they are addressed in the EIA Report are summarised in **Table 4.1**.

Table 4.1 Summary of the EIA Scoping Opinion

Consultee(s)	Consultee Response	EIA Report Location
East Ayrshire Council (EIA Scoping Opinion April 2020)	**General** Provided general information on the format, methodology and content required in the NTS and EIA report along with information in relation to Land Use Planning/Policy, Consideration of alternatives, baseline information and EIA Assessment Methodology. Stated that some consultees had not responded, namely: Ayrshire Roads Alliance (except for the flooding section); Countryside Access Officer; West of Scotland Archaeological Service; Environmental Health; Scottish Forestry; SEPA; Transport Scotland; Scottish Power; New Cumnock Community Council; Dalmellington Community Council; Ochiltree Community Council; Netherthird and District Community Council, and the MOD (although the MOD were expected to provide a response in the next week).	N/A
	Noise and Vibration Stated any turbine selected for construction would be required to comply with any set noise limits. Stated it was expected that the cumulative assessment should take into account the larger turbines of the Enoch Hill Section 36C variation application. Stated that should consult with Council's noise consultant, ACCON on methodology and noise limits and that a cumulative assessment should be undertaken. State that it would encourage the use of the lower end of the ETSU limits.	**Chapter 7 - Noise**
	Shadow Flicker Agreed that Shadow Flicker could be scoped out of assessment provided that no residential properties were located within 2.5km of the site[10]	N/A – scoped out as nearest property >4km.

[10] The nearest residential properties to the proposed turbines are Brockloch and Dalleagles Terrace, which are located approximately 4.2km to the north. This is well beyond the area potentially affected by shadow flicker which would be 1,410m (10 x 136m rotor diameter plus 50m micro-siting allowance) and shadow flicker is not considered further this EIA Report.

Consultee(s)	Consultee Response	EIA Report Location
	Aviation Advised continued consultation with MOD, NATS and Glasgow Prestwick Airport. Note Glasgow Prestwick Airport stated that the 2 proposed turbines would be visible on its Primary Radar and object until suitable mitigation is agreed. Noted NATS advised that they would object to the Proposed Development as terrain screening would not adequately attenuate the signal for turbine 1 on Lowther Radar and false primary plots are likely to be generated with unacceptable impacts. Stated a demonstrable, operational mitigation capable of overcoming any aviation impacts would be beneficial. Strongly advise against submitting a planning application where any aviation bodies indicate they would object to the application, unless an agreement has been reached that a suitable technical mitigation solution is in place and can be implemented.	**Chapter 8 - Aviation**
	LVIA Agree that a 35km study area is appropriate for the scale of the Proposed Development. State that an area of 15-20km would be more appropriate for the detailed study area than the 10km area proposed. Welcome the inclusion within the assessment of settlements, transport routes, core paths, rights of way and recreational and tourist destinations. State it expects visualisations would accompany assessments of Galloway Forest Dark Sky Park and Gardens and Designed Landscapes. State development will not be supported where it will have significant adverse impacts on Gardens and Designed Landscapes. State that a Residential Visual Amenity Study assessing individual or groups of residential properties within 2km of any turbine should be provided. Agree with scoping out of the Merrick Wild Land Area. State visualisations from the hill summits of Cairnsmore of Carsphairn, Blackcraig Hill and Windy Standard should be included to assist the assessor in considering the impacts. *Cumulative Schemes* EAC provided several detailed updates to the cumulative table for the following schemes: • Greenburn Wind Farm • Pencloe • Enoch Hill • Lethans • Polquhairn	**Chapter 9 - LVIA**

Consultee(s)	Consultee Response	EIA Report Location
	• Glenmuckloch • Linburn Farm *Methodology* EAC are broadly content with the LVIA methodology and agreed that a night-time lighting assessment can be scoped out. *Viewpoint Locations* EAC are broadly satisfied with the proposed viewpoints ('VPs') within East Ayrshire. It stated that where those listed to be scoped out fall within a neighbouring local authority area, that local authority will need to be contacted to seek its agreement that the viewpoint can be scoped out. Agreed with the list of VPs scoped out; with the exception of the following: • Blackcraig Hill (ref B) • Cairnsmore of Carsphairn (ref C) • A76 North of Auchinleck (ref I) • A76 Mauchline (ref K) • Brockloch Rig Hill Summit (no ref)	
	Cultural Heritage State both inventory and non-inventory Gardens and Designed Landscapes should be assessed. Note Historic Environment Scotland responded to advise it is content with the scope of assessment and recommend the assessment methodology makes reference to its Managing Change guidance on setting alongside its recently updated EIA Handbook. Note no comments have been received from the West of Scotland Archaeological Service ('**WoSAS**'). Advise discussing historic environment matters with WoSAS and take on board its recommendations for inclusion in the EIA.	**Chapter 10 - Historic Environment**
	Ecology Stated that the EIA Report must state whether or not appropriately qualified environmental scientists or ecologists, independent of the wind farm operator, are to be used as Clerk of Works or in other roles during construction to provide specialist advice. Stated details of any ecological enhancement identified should be provided along with full details of what monitoring programmes have been / will be put in place during construction and operation.	**Chapter 11 - Ecology**

Consultee(s)	Consultee Response	EIA Report Location
	Stated much of the main application site area is designated a Local Nature Conservation Site ('LNCS') as Connel Burn / Benty Cowan LNCS, whilst much of the length of Afton Road is also designated a LNCS. Note Afton Uplands LNCS is also located approximately 200m east of the application site. State impacts on these LNCS will need to be considered in the EIA. Stated that the Scottish Wildlife Trust ('SWT') have responded and note the presence of the LNCS, and also raise concerns about impacts on the Connel Burn, though point out that the impact on sediment loads in other watercourses will also need to be considered. It also notes that the removal of forestry on the site may allow for the reinstatement of some areas of deep peat on site. Advised contacting SNH to seek whether the proposed baseline surveys remain up to date or if new surveys will be required. Noted that Nith District Salmon Fisheries Board ('NDSFB') requested that a full fisheries audit of all watercourses draining the site be undertaken and are willing to work with the Applicant. Advised that fish surveys be undertaken so that appropriate mitigation, if necessary, can be detailed.	
	Ornithology Welcome reporting of baseline surveys and collision risk modelling along with any displacement risks and habitat loss. State RSPB agree that provided all ornithological surveys are carried out in accordance with SNH guidance, they have no comments to make, although note that some data appears to be out of date. Recommend further contact with RSPB to ensure that any potential concerns over the robustness of the data set can be overcome. State confirmation from SNH and RSPB that the baseline data remains up to data should be sought and updated if necessary, and agreement reached with SNH on the cumulative methodology.	**Chapter 12 - Ornithology**
	Geology, Hydrology and Hydrogeology Stated that for Private Water Supplies ('PWS') assessment, the source, receptor and pathway taken between the two must be considered when assessing risk to such features, and that the risk to a catchment should be considered. Provide a summary of the Scottish Water Response. Provide information required in relation to Borrow Pits.	**Chapter 13 - Geology, Hydrology and Hydrogeology**

Consultee(s)	Consultee Response	EIA Report Location
	State that the Ayrshire Roads Alliance Flooding section has commented that there is a risk of flooding along the delivery route on Afton Road at the Burnfoot Bridge (Carcow Burn) but do not raise any concerns regarding that. State baseline site surveys should be undertaken to supplement desk studies and consultations to help form an informed baseline and subsequently better-informed EIA Report[11].	
	Traffic and Transport Advise early contact with the Ayrshire Roads Alliance (ARA) is advised. State any other development, not limited to wind farm development, which is likely to add to cumulative traffic volumes on the proposed delivery and access route network should be considered within the EIA Report. The EIA Report should include an outline Traffic Management Plan as a technical appendix. State a condition which requires the Developer to seek the Planning Authority's written approval that their construction traffic using the Afton Road, in combination with other similar traffic associated with other nearby sites, is acceptable would be considered on any subsequent consent, if granted, for Enoch Hill 2 to minimise cumulative traffic impacts on the Afton Road. State that even if borrow pits are to be proposed, a 'worst case scenario' of traffic volume where all stone would require to be imported from quarries off site should be assessed. State that the EIA Report should identify potential sources of materials (e.g., stone quarries) if these are off site and consider the impacts of these routes, including on communities along those routes, including cumulative impacts. State the site access details should be included as an integral part of the project and be within the application site boundary, incorporating appropriate visibility sightlines.	**Chapter 14 - Traffic and Transport**

[11] *Appropriate baseline site information to inform Chapter 13 Geology, Hydrology and Hydrogeology was drawn from ecological surveys. Additionally, water sampling has been recently undertaken for the Enoch Hill main site and these results were used to inform this EIA Report Chapter.*

Consultee(s)	Consultee Response	EIA Report Location
	Socio-economics State direct and indirect impacts on users of the countryside, tourism and recreational interests and resources should be assessed. State strategies for long term public access to the site for recreational uses during its operational phase should be considered including any options for connections to be made with surrounding land and uses. State management of public access to the site during the construction, operational and decommissioning periods of the application site should be detailed. State the EIA Report should also address the economic aspects of the project including any community benefit or other benefits accruing locally, regionally and nationally by way of jobs and investment.	**Chapter 15 - Socio-economics**
	Infrastructure, Telecommunications and Safety Stated all relevant service providers and operators of such infrastructure within and in close proximity to the application site should be consulted to see whether any of their infrastructure is likely to face potential impacts as a result of the proposed turbines or whether they are likely to cause broadcast interference on any receivers throughout the area. State mitigation shall be detailed within the EIA Report if the Proposed Development has the potential to impact on any such aspects.	**Chapter 16 - Infrastructure and other issues**
	Population and Human Health Welcome the proposal to include a summary table clearly identifying the potential effects from each chapter (either as an appendix or separate chapter).	**Chapter 16 - Infrastructure and other issues**
	Climate Welcome the inclusion of a Peat Slide Risk Assessment, a draft Peat Management Plan and a carbon balance calculation is welcomed.	**Chapter 6 - Carbon Balance and Peat Management**
	Sustainable Resource Use Contents of Scoping Report noted.	**Chapter 16 - Infrastructure and other issues**
	Major Accidents and Disasters Consider the list of proposed matters to be dealt with in the relevant section of the EIA Report reasonable.	**Chapter 16 - Infrastructure and other issues**

Consultee(s)	Consultee Response	EIA Report Location
	Forestry State a Forestry chapter would be expected within the EIA Report which should detail the area of trees to be felled, the species composition, potential impacts on wildlife as a result of proposed felling and details of the level of compensatory planting proposed (area and species). State RSPB noted within its consultation response that compensatory planting should be sympathetic to the biodiversity and recommend native broadleaves and Scots pine be used as compensatory species. Notes RSPB also advised against encroaching onto valuable open habitats. Stated details of the compensatory planting should be included within the Forestry chapter.	**Appendix 3A - Forestry Assessment.**
	Decommissioning and Restoration Stated an assessment of the likely impacts of decommissioning of the Proposed Development on all the environmental topics should form part of the EIA Report, where it is judged that such works have the potential to impact on those topic areas. Stated an estimate of the costings required for the decommissioning, restoration and aftercare of the Proposed Development would be required which would be based on the observations made within the EIA Report regarding decommissioning. Stated the EIA Report should include a programme of work, complete with outline plans and specifications for the decommissioning and reinstatement of the site. The Council would require a financial guarantee for the decommissioning, restoration and aftercare of the site and this would require to be secured via a Section 75 legal agreement. Stated the complete removal of the Proposed Development, including access tracks and all ancillary infrastructure, as part of the decommissioning and restoration process is the preferred approach unless a better alternative (taking account of all relevant environmental, social and economic issues) can otherwise be demonstrated by the Applicant. It requires that applicants provide financial estimates and costings for decommissioning and restoring sites to their former condition and how such works would be financed. This could be out-with the EIA Report but should accompany the planning application although assumptions and costs on decommissioning are likely to be derived from the approach set out within the EIA Report.	
	Planning Monitoring Officer Stated it promotes the use of a Planning Monitoring Officer ('PMO') to be appointed by the Council to assist in the assessment of detailed environmental planning conditions and to	N/A

Consultee(s)	Consultee Response	EIA Report Location
	monitor and report on the construction works. It asks that developers fund the cost of the PMO and that it is secured by a Section 75 legal agreement.[12] Stated the use of the PMO need not necessarily be an integral part of the EIA Report, however, the approach should be given consideration as part of the wider suite of monitoring and environmental best practice considered by the EIA Report.	
Dumfries and Galloway Council (DGC) (March 2020)	Stated that owing to its location out-with the Council's administrative area, it will not be providing a formal response.	N/A
Defence Infrastructure Organisation (DIO) - MoD (Scoping Response April 2020)	The DIO stated that it has concerns as the Proposed Development would occupy Low Flying Area TTA 20T and would cause a potential obstruction hazard to military low flying training activities. To address these effects, it stated that the Proposed Development should be fitted with MOD accredited 25 candela omni-directional red lighting with an optimised flash pattern of 60 flashes per minute of 200ms to 500ms duration or equivalent infrared lighting on individual turbines. It stated that MOD Safeguarding wishes to be consulted and notified of the progression of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.	**Chapter 8 - Aviation**
EAC Access Officer (Scoping Response April 2020)	Noted that the management of public access is not mentioned within the scoping report, and an Outdoor Access Management Plan has not been submitted. Recommended that an Outdoor Access Management Plan is produced and submitted as part of the EIA[13].	**Chapter 15 - Socio-economics**
Glasgow Prestwick Airport (GPA) (Scoping Response March 2020)	State that its Line-of-Sight Analysis ('LOS') indicates both turbines will be visible to its Primary Radar and consequently it must object until a suitable mitigation is agreed for the life of the Wind Farm. State it is willing to engage with the Developer in an effort to establish if mitigation can be achieved and maintained for the life of the wind farm.	**Chapter 8 - Aviation**

[12] Section 75 of the Town and Country Planning (Scotland) Act 1997.

[13] An Outdoor Access Management Plan will be undertaken post-consent as required by planning conditions.

Consultee(s)	Consultee Response	EIA Report Location
Historic Environment Scotland (Scoping Response March 2020)	State that the EAC archaeological and cultural heritage advisors will also be able to offer advice on the scope of the cultural heritage assessment, which may include heritage assets not covered by its interests, such as unscheduled archaeology, and category B- and C-listed buildings. State that it is content with the scope of assessment identified for its interests. Recommend that the assessment methodology makes reference to its Managing Change guidance note on Setting and the recently updated EIA Handbook.	**Chapter 10 - Historic Environment**
National Air Traffic Services (NATS) (Scoping Response March 2020)	Stated that it objects to the Proposed Development on the basis that it will be visible to the Lowther Hill Radar.	**Chapter 8 - Aviation**
Nith District Salmon Fisheries Board (Scoping Response March 2020)	State that fish reside in the River Nith catchment within the vicinity of the Proposed Development and therefore fish surveys will be required for the board to demonstrate their statutory duty of care to migrating fish.	**Chapter 11 - Ecology**
RSPB (Scoping Response March 2020)	State that providing that all ornithological surveys have been carried out as per SNH guidance, it has no comments to make regarding the ornithological chapter. State it reserves full judgement on the findings until we have seen the EIA. Wish to see any compensatory planting for the forest that is lost and would recommend that native broadleaved trees and Scots pine are used and that encroachment onto valuable open habitats is avoided where possible.	**Chapter 12 - Ornithology**
Scottish Water (Scoping Response March 2020)	State that it has no objection to the planning application, but this does not confirm that the Proposed Development can currently be serviced and would advise the following: State that according to its records there is no public Scottish Water, water supply or waste-water infrastructure within the vicinity of the Proposed Development therefore it would advise applicant to investigate private options. State that it is unable to reserve capacity at its water supply and waste-water treatment works for the Proposed Development. Note that the Proposed Development falls partly within a drinking water catchment where a Scottish Water abstraction is located. Carsfad supplies the Lochinvar Water Treatment Works,	**Chapter 13 - Geology, Hydrology and Hydrogeology**

Consultee(s)	Consultee Response	EIA Report Location
	and it is essential that water quality and water quantity are protected and that it should be notified in the event of an incident occurring. Note that it is a relatively large catchment, and the activity is in the upper reaches of the catchment; therefore, the activity is likely to be low risk.	
SEPA (Scoping Response April 2020)	Provided list of information which should be provided with the application as follows: ● Map and assessment of all engineering activities in or impacting on the water environment including proposed buffers, details of any flood risk assessment and details of any related CAR applications. ● Map and assessment of impacts upon Groundwater Dependent Terrestrial Ecosystems ('GWDTEs') and buffers. ● Map and assessment of impacts upon groundwater abstractions and buffers. ● Peat depth survey and table detailing re-use proposals. ● Map and table detailing forest removal. ● Map and site layout of borrow pits. ● Schedule of mitigation including pollution prevention measures. ● Borrow Pit Site Management Plan of pollution prevention measures. ● Map of proposed water abstractions including details of the proposed operating regime. ● Decommissioning statement. State that it seems unlikely that any development will take place within 250 m of a groundwater supply source; if so, would be helpful if the Environmental Report provides evidence to confirm this. State that provided watercourse crossings are designed to accommodate the 1 in 200 year event and other infrastructure is located well away from watercourses, do not foresee from current information a need for detailed information on flood risk.	**Chapter 13 - Geology, Hydrology and Hydrogeology** **Appendix 3A - Forestry Assessment**

Consultee(s)	Consultee Response	EIA Report Location
	Note that that a National Vegetation Classification ('NVC') survey was undertaken in 2017 and that whilst this indicated the presence of species that have some groundwater dependency an assessment of the GWDTEs based on their topography, geology and hydrogeology indicated that there are no truly groundwater dependent habitats present. It, however, recommends that conditions at the location of the two turbine bases, the construction compound, access track and any borrow pits are assessed for GWDTEs. Regardless of whether wetland habitats are groundwater fed, surface fed, or subsurface fed, mitigation will be required to ensure hydrological connectivity post development. Recommend that that the site is walked over post felling, and any areas of springs or flushes identified are marked and avoided. Note that it is intended to submit a Peat Management Plan. The proposed clear-felling of the site needs to be justified. Forestry therefore needs to be scoped into the Environmental Report.	
Scottish Wildlife Trust (Scoping Response March 2020)	State that the Scoping Report does not mention that the Development Site overlaps with the Connel Burn/Benty Cowan Local Nature Conservation Site ('LNCS'). This is in the area around Strandlud Hill and towards the Craig of Bahoun. State there is no information on where the turbines will be placed so at this stage it is unclear what, if any, impact there will be to the wildlife on the site. State further surveys should be carried out to assess any likely impact, in particular on any of the very steep ledges and crags where there may be some interesting plants. Are concerned about impacts on the Connel Burn in particular as it flows into the Trust's Knockshinnoch Reserve but the impact on sediment loads in the other watercourses would also need to be considered. Recognise that the majority of the area is currently under forestry and likely to be of little wildlife interest but that there may be the opportunity to reinstate some of the areas of deep peat when the trees are removed.	**Chapter 11 - Ecology**
SNH (NatureScot) (Scoping Response March 2020 – L&V)	Provide a link to its "*general pre-application/scoping advice to developers of onshore wind farms*". Provide guidance on collecting and presenting information.	**Chapter 9 - LVIA**

Consultee(s)	Consultee Response	EIA Report Location
	Are not able to comment on the landscape and visual impacts of the Proposed Development. It is currently providing detailed landscape and visual advice in only the highest priority circumstances, where the effects of proposals approach or surpass levels that raise issues of national interest or where they affect place-based priorities for SNH. Its advice is that this proposal does not raise landscape issues of national interest in terms of: • Significant adverse effects on the integrity and objectives of designation of a National Scenic Area; • Significant adverse effects on Special Landscape Qualities of a National Park; • Significant adverse effects on the qualities of a Wild Land Area; or • Landscape issues in the wider countryside. Provide links to guidance that should be consulted.	
SNH (Scoping Response March 2020 - Ecology)	Stated that the Muirkirk and North Lowther Uplands SPA, Muirkirk Uplands Sites of Special Scientific Interest ('SSSI') and North Lowther Uplands SSSI can be scoped out of assessment. State that protected species surveys should have been completed no more than 18 months prior to submission of the application. Provide guidance on presentation of survey results. Are not able to offer advice on protected species surveys carried out for this proposal, and state that standing advice notes should be referred to. Recommend that habitat surveys should include: Phase 1 survey for all terrestrial habitats likely to be affected by the Proposed Development. This should include an appropriate area beyond the footprint of the Development Site to assess more distant effects and to inform any redesign or micro-siting. NVC survey of habitats listed on Annex 1 of the Habitats Directive and UK Biodiversity Action Plan ('UKBAP') Priority Habitats, accompanied by supporting quadrat information. Records of any rare and scarce plant species. Provide guidance in relation to Peat Surveys. State an assessment of impacts of hydrological changes (particularly related to groundwater) on habitats should also be included. Access tracks are the elements that will result in the	**Chapter 11 - Ecology**

Consultee(s)	Consultee Response	EIA Report Location
	greatest land take, habitat fragmentation, and potentially hydrological disruption. It is therefore important that the track construction methods are clearly described in the EIA Report, along with the rationale for their type and location, and all direct and indirect impacts assessed. State that survey results should be used to inform the design and layout process, so that the Proposed Development avoids, where possible, fragile and priority habitats and other sensitive areas e.g. blanket bog and peat. Where this is not possible, suitable restoration and/or compensation measures should be presented in the EIA Report in the form of a draft Habitat Management Plan ('HMP'). HMPs should follow its guidance.	
SNH (Scoping Response March 2020 - Ornithology)	In respect of ornithology, state that the Proposed Development would be out-with the core foraging range for all Special Protection Area ('SPA') species from the Muirkirk and North Lowther Uplands SPA and an appropriate assessment is therefore not required. It considers that Muirkirk and North Lowther Uplands SPA can be scoped out of the EIA, as can the Muirkirk Uplands SSSI and the North Lowther Uplands SSSI. State that ground or vegetation clearance works should be undertaken out-with the main bird nesting season (March-August inclusive). If this is not possible, provide information on mitigation measures that should be followed.	**Chapter 12 - Ornithology**
Transport Scotland (Scoping Response March 2020)	State that Transport Scotland will no longer respond to EIA consultations in a statutory capacity, however, will respond to the planning application consultation in due course.	N/A

4.4.2 Topic specific refinements, following additional post-scoping report consultation and receipt of the EIA Scoping Opinion, are summarised in **Table 4.2**.

Table 4.2 Summary of Consultation Following Issue of the EIA Scoping Opinion

Consultee(s)	Response	Chapter where considered in this EIA Report
Dumfries and Galloway Council (April 2020)	Agreed that the following Viewpoints ('VPs') could be scoped out of the LVIA: VP 3. Core Path 667 Water of Deugh (4.5km distance to south); VP 19. Meikle Millyea (23.7km distance to south); VP 20. Kirriereoch Hill (23.9km distance to south-west); VP 21. Merrick (24.7km distance to south-west); and VP 22. East Mount Lowther (29.8km distance to east).	**Chapter 9 - LVIA**

4.5 Overview of Assessment Methodology

Introduction

4.5.1 All the topic assessments presented in the EIA Report have been undertaken on the basis of a common understanding of the nature of the project, as described in **Chapter 3 - Description of the Proposed Development** of the EIA Report.

4.5.2 For those topics considered in this EIA Report, the assessment of effects has been undertaken by competent experts with relevant specialist skills, drawing on their experience of working on other development projects, good practice in EIA and on relevant published information. A list of these experts, their qualifications and competencies has been provided in **Appendix 1A**.

4.5.3 For some topics, use has been made of modelling or other methodologies, as appropriate.

4.5.4 For each topic considered in this EIA Report, the chapters use the following common format:

- Introduction;
- Limitations of this assessment;
- Legislative and policy context;
- Data gathering methodology;
- Overall baseline (where appropriate), with the detailed baseline being set out within **Section 9**;
- Scope of the assessment;
- Environmental measures embedded into the scheme;

- Assessment methodology;
- Assessment of effects - this sub-section excludes cumulative effects and deals separately with each receptor or category of receptors that could be significantly affected. The assessment is made against the predicted future baseline (see **Section 4.6** below);
- Assessment of cumulative effects;
- Additional mitigation;
- Conclusions of significance evaluation;
- Implementation of environmental measures; and
- References.

4.6 Identification of Baseline Conditions

4.6.1 To determine the baseline conditions that should be used for the assessment of the likely significant effects of the Proposed Development, it is necessary to define the current baseline conditions and then to decide whether these conditions are likely to change by the 'assessment years' that are selected for the construction and operation of the Proposed Development. If this future baseline is more likely to occur than the current baseline, the future baseline is used for the assessment of effects. However, in many cases it will be concluded that the current baseline is just as likely, or even more likely, to occur in the assessment years than would be the case with any future baseline conditions. In this case, the current baseline is used for the assessment.

4.6.2 As the various elements of the Proposed Development would be built over a period of approximately 18 months, from a start date yet to be determined, and then operated for 35 years, it cannot be assumed that the baseline conditions would be the same as the current baseline at the time of construction or during operation. Where relevant, technical chapters therefore provide a description of the potential changes to the baseline in the absence of the project. The baseline is determined for the *'Study Area'* for each environmental topic by a combination of desk-based research, including consultation with the relevant statutory and non-statutory authorities, together with field survey work (where required). In its simplest form, the Study Area comprises the Development Site. However, as for most developments, the Study Area also includes land outside this, especially where effects are likely to extend beyond such geographical limits. Zones of influence (ZoIs), where the Proposed Development could affect off-site areas, are therefore considered for each technical topic considered in the EIA.

4.6.3 Details of the relevant ZoIs are discussed in the baseline section of each environmental topic chapter considered. These chapters also explain the basis for defining the future baseline conditions, where this is appropriate. This is based on the following:

- Changes to the baseline that can be predicted based on reasonable assumptions and modelling calculations, e.g., the application of traffic growth factors based on relevant guidance;
- Information relating to other likely and predictable changes, e.g., climate change, which could affect current prevailing environmental conditions; and
- Information about other relevant developments, including the nature of the development proposals, their likely timing and their location relative to the Proposed Development.

4.7 Overview to Approach to Significance Evaluation Methodology

Introduction

4.7.1 One of the requirements of an EIA Report is to set out the conclusions that have been reached about the likely significant environmental effects that it is predicted would result from a proposed development. Reaching a conclusion about which effects, if any, are likely to be significant is the culmination of an iterative process that involves the following stages:

- Identifying those effects that could potentially be significant (see **Section 4.3** on scoping);
- Assessing the effects of a proposed development against the baseline conditions; and
- Concluding whether these are likely to be significant.

4.7.2 **Chapters 6 to 16** describe the approaches that have been used, in relation to the stages outlined in the bullet points above, for each of the environmental topics that are considered in this EIA Report.

Identification of Likely Significant Effects

4.7.3 The technical assessments have been based on key features and information of the Proposed Development, as summarised in **Chapter 3 – Description of the Proposed Development** of this EIA Report.

4.7.4 The technical assessments undertaken in **Chapters 6 to 16** of this EIA Report describe how environmental changes resulting from the Proposed Development are assessed to determine the significance of effects, together with the topic-specific approaches that have been used to identify the receptors that could be significantly affected by the Proposed Development.

Types of Effects

4.7.5 Paragraph 5 of Schedule 4 of the EIA Regulations states that *"The description of the likely significant effects on the factors specified in regulation 4(3) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development."* Where appropriate, this EIA Report considers all these types of effects where they are relevant to different environmental topic chapters, with the exception of cumulative effects, which are dealt with separately in **Section 4.8.**

Direct Effects

4.7.6 Direct effects are those that result directly from a proposed development. For example, where a machine compresses an area of habitat, this physical activity results in a change to this receptor.

Indirect and Secondary Effects

4.7.7 Indirect and secondary effects are those that result from consequential change caused by a proposed development. As such they would normally occur on a different receptor, later in time or at locations farther away than direct effects. An example would be where an

area of habitat disturbed by machinery results in loss of vegetation and soil compaction which increases silted run-off rates into nearby watercourses, smothering gravel beds downstream used by spawning salmon.

Local, Regional, National and Transboundary Effects

4.7.8 Consideration is given to potential local, regional, national and transboundary (as appropriate) effects in the EIA Report. Transboundary effects are those that would affect the environment in another state within the European Economic Area ('EEA').

Temporal Effects

4.7.9 As discussed in **Section 4.2**, temporal effects are typically defined as being permanent or temporary as follows:

- Permanent - these are effects that will remain even when a proposed development is complete, although these effects may be caused by environmental changes that are permanent or temporary. For example, an excavator that is driven over an area of valuable habitat could cause so much damage that the effect on this vegetation would be permanent.
- Temporary – these are effects that are related to environmental changes associated with a particular activity and that will cease when that activity finishes. For example, an increase in noise levels during construction may affect nearby residential receptors, but any effects would cease on completion of this phase of a proposed development. Where effects are temporary, they may be defined as short-, medium- or long-term, the duration of which may depend on the receptor in question and would therefore be defined in technical chapters as appropriate.

Significance Evaluation

Overview

4.7.10 The receptors that could be significantly affected by the Proposed Development are identified within each topic chapter. The approach that is adopted to determine whether the effects on these receptors are significant is to apply a combination of professional judgement and a topic-specific significance evaluation methodology that draws on the results of the assessment work that has been carried out.

4.7.11 In order to achieve the desired level of consistency, each environmental topic lead has been guided in their decision-making about likely significance by the *'significance test'* that informed the preparation of the EIA Scoping Report (see **Section 4.3**), as well as the relevant topic-specific significance evaluation methodology. .

4.7.12 There is a degree of flexibility within the EIA Report when reporting significance of effects in terms of the EIA Regulations. This is determined using professional judgement, with reference to the project description, and available information about the magnitude and other characteristics of the potential changes that are expected to be caused by the Proposed Development, the receptors' sensitivity to these changes, and the effects of these changes on relevant receptors.

4.7.13 In some cases, use of the 'significance test' alone will enable a conclusion to be reached in the 'Scope of the assessment' section of the topic chapter, without the need for more detailed work to assess whether or not a potential effect is likely to be significant. However, in other cases, effects identified in the 'Scope of the assessment' section are taken forward for further assessment in the subsequent section(s) of each topic chapter.

4.7.14 For some of these effects, relatively little assessment work may be required to reach a conclusion that an effect is not significant, whereas in other cases, more extensive assessment work is required. Sometimes the application of the 'significance test' is sufficient to support this conclusion, while in other cases, the relevant topic-specific evaluation methodology is used to inform the evaluation of significance (to determine whether an effect is or is not significant).

4.7.15 For some of the topics that are assessed in the EIA Report, there is published guidance available about significance evaluation. Where such guidance exists, it has been used to inform the development of the significance evaluation methodologies that are used in this EIA Report. For other topics, it has been necessary to develop methodologies without the benefit of guidance. This has involved technical specialists drawing on their previous experience of significance evaluation in EIA. Having applied the relevant topic-specific significance evaluation methodology, the topic specialists assess the conclusions against the significance test.

4.7.16 While there may be variation depending on the technical topic being considered, significance evaluation generally involves combining information about the sensitivity, importance or value of a receptor, and the magnitude and other characteristics of the changes that affect the receptor. The approach to using this information for significance evaluation is outlined below.

Receptor Sensitivity, Importance, or Value

4.7.17 The sensitivity or value of a receptor is largely a product of its importance, as informed by legislation and policy, and as qualified by professional judgement. For example, receptors for landscape, biodiversity or the historic environment may be defined as being of international or national importance. Lower value receptors may be defined as being sensitive or important at a county or district level.

4.7.18 The use of a location or physical element that may be representative of receptors, e.g. people, would also play a part in its classification in terms of sensitivity, importance, or value. For example, when considering effects on the amenity of people, a location used for recreational purposes may be considered more sensitive to change or be valued more than a place of work.

4.7.19 The sensitivity, importance or value of receptor that may be affected by the Proposed Development would be identified on a scale from very low to very high. For each environmental topic, it is necessary to provide a detailed rationale that explains how the categories of sensitivity/importance/value detailed in **Table 4.3** have been used.

Magnitude of Change

4.7.20 The magnitude of change affecting a receptor as a result of the Proposed Development would be identified on a scale from very low to very high. As with receptor sensitivity and value, a rationale is provided in each topic chapter that explains how the categories of environmental change are defined. For certain topics, the magnitude of change would be related to guidance on what levels of change are acceptable (e.g. for air quality or noise), and be based on numerical parameters. For other changes, it will be a matter of professional judgement to determine the magnitude of change detailed in **Table 4.3**, using descriptive terms.

Determination of Significance

4.7.21 The significance of effects is determined with reference to information about the nature of the development, the receptors that could be affected and their sensitivity, importance or value, together with the magnitudes of environmental change that are likely to occur.

4.7.22 Significance evaluation of the effects of the Proposed Development for many environmental topics can be guided by the use of matrices that combine sensitivity/importance/value and the magnitude of environmental changes as shown in the example in **Table 4.3**. In addition, professional judgement is applied because, for certain environmental topics, the lines between the sensitivities or magnitudes of change may not be clearly defined and the resulting assessment conclusions may need clarifying. It should be noted that as directed by topic-specific guidelines issued by institutions governing a particular discipline, certain environmental topics (such as ecology) avoid the use of matrices to access significance.

Table 4.3 Significance Evaluation Matrix

		Magnitude of change				
		Very high	**High**	**Medium**	**Low**	**Very low**
Sensitivity/importance/value	Very high	Major (Significant)	Major (Significant)	Major (Significant)	Major (Significant)	Moderate (Probably significant)
	High	Major (Significant)	Major (Significant)	Major (Significant)	Moderate (Probably significant)	Minor (Not significant)
	Medium	Major (Significant)	Major (Significant)	Moderate (Probably significant)	Minor (Not significant)	Negligible (Not significant)
	Low	Major (Significant)	Moderate (Probably significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)
	Very Low	Moderate (Probably significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)	Negligible (Not significant)

4.7.23 Within this matrix that is used in most significance evaluation exercises, reference is made to:

- Major effects, which will always be determined as being significant in EIA terms;
- Moderate effects, which are likely to be significant, although there may be circumstances where such effects are considered not significant based on professional judgement; and
- Minor or negligible effects, which will always be determined as not significant.

4.7.24 Variations to this approach, which may be applicable to specific environmental topics, will be detailed in the relevant 'Significance evaluation methodology' sub-section contained in each environmental topic chapter.

4.7.25 Definitions of how the categories that are used in the matrix are derived for each topic are also set out in each environmental topic chapter, along with the relevant explanation and descriptions of receptor sensitivity, magnitude of change and levels of effect that are considered significant under the EIA Regulations.

4.8 Assessment of Cumulative Effects

4.8.1 For each environmental topic that is dealt with in this EIA Report, an assessment is undertaken within each technical chapter of how the environmental effects resulting from the Proposed Development, could combine with the same topic-related effects generated by other developments to affect a common receptor. To do this, it is important to first identify which other developments need to be included in the cumulative effects assessment ('CEA') under each environmental topic assessment undertaken. The starting point for this is to determine for each environmental topic considered the ZoIs of the Proposed Development for each receptor that could be significantly affected.

4.8.2 Identifying the other developments that should be considered in the CEA involves first acknowledging that the availability of information necessary to conduct this will partly depend on the prevailing status of the other relevant developments.

4.8.3 In the context of the Proposed Development, paragraph 5 of Schedule 4 of the EIA Regulations states *"the cumulation of effects with other existing and/or approved projects* […]". In addition, the relevant SNH guidance[14] states that the CEA should be undertaken only for operational and consented wind energy development and other planning applications for wind energy development. Therefore, such developments, where they are located within the ZoI for a given environmental topic, have been subject to CEA. These developments are discussed, as appropriate, in the sub-section of each environmental topic chapter that deals with the assessment of cumulative effects. Types of development other than wind farms have been considered, but none were identified that needed to be included in the CEA.

4.8.4 In particular, the cumulative landscape and visual impact assessment ('CLVIA'), provided in **Chapter 9 – Landscape and Visual Impact Assessment** of this EIA Report, includes the identification of wind energy developments within a 35km Search Area from the Development Site. In line with SNH guidance (Assessing the Cumulative Landscape and Visual Impacts of Onshore Wind Energy (March 2021)), the CLVIA considers the potential for cumulative effects with other operational, consented and planning application stage wind farm developments, as detailed in **Table 9.4** of **Chapter 9 – Landscape and Visual Impact Assessment** of this EIA Report.

4.8.5 A cumulative search was undertaken on 7th Feb 2023 using data available from relevant planning authority websites and the sites considered for inclusion in the CEA are listed in **Table 4.4** below. Within the individual technical chapters, only schemes which are relevant to that topic are included.

[14] *Assessing the Cumulative Impact of Onshore Wind Energy Developments*, SNH (2012)

Table 4.4 Cumulative Wind Energy Developments (as of 7th Feb 2023)

Reference	Name	Distance (from Proposed Development) (m)	Number of turbines	Height to blade tip (m)	Current Status (as of 7th Feb 2023)
E01	South Kyle	878	50	149.5	Existing
E02	Brockloch Rig Extension	1,372	30	120	Existing
E03	Afton	3,223	25	100/120	Existing
E04	Brockloch Rig	3,842	36	52	Existing
E05	Windy Rig	6,499	12	125	Existing
E06	High Park Farm	6,765	1	75	Existing
E07	Hare Hill	7,063	20	63.5	Existing
E08	Hare Hill Extension	7,595	35	70/75/81/86/91	Existing
E09	Mansfield Mains *	9,635	1	44.85	Existing
E10	Sanquhar	10,366	9	130	Existing
E11	Sandy Knowe	10,760	24	125	Existing
E12	Whiteside Hill	12,546	10	121.2	Existing
E13	Dersalloch	14,884	23	125	Existing
E14	Wether Hill	16,040	14	91	Existing
E15	Sunnyside	19,262	2	62	Existing
E16	Twentyshilling Hill	19,779	9	125	Existing
E17	Kennoxhead	23,978	19	180	Existing
E18	Blackcraig	25,135	23	110	Existing
E19	Bankend Rig	27,578	11	76	Existing
E20	Hadyard Hill	29,056	52	100	Existing
E21	Galawhistle	29,335	22	110.2/121.2	Existing
E22	Cumberhead	30,183	14	149.9 / 180	Existing

Reference	Name	Distance (from Proposed Development) (m)	Number of turbines	Height to blade tip (m)	Current Status (as of 7th Feb 2023)
E23	Dungavel	30,706	13	100/120	Existing
E24	Hagshaw Hill Extension	31,039	20	80	Existing
E25	Andershaw	31,536	11	140	Existing
E26	Kype Muir Extension	31,772	15	156 / 176 / 200 / 220	Existing
E27	Middle Muir	31,855	15	136/149.9	Existing
E28	Nutberry	32,176	6	125	Existing
E29	Dalquhandy	33,475	15	131 / 149.9	Existing
E30	Chapelton Farm	33,578	3	67	Existing
E31	Kype Muir	33,956	26	132	Existing
E32	Douglas West	34,120	13	149.9	
E33	Calder Water	34,347	13	144.5	Existing
E34	Whitelee Extension 2	34,509	39	140	Existing
E35	Auchrobert	34,705	12	132	Existing
C01	Pencloe	778	19	125	Consented
C02	Enoch Hill	1,108	16	130	Consented
C03	Brockloch Rig Phase III	2,557	20	125/177.5	Consented
C04	Benbrack	5,709	18	132/135/149.9	Consented
C05	North Kyle	6,528	54	149.9	Consented
C06	Over Hill	8,142	10	149.9	Consented
C07	Sanquhar Six	8,654	6	149.9	Consented
C08	Lorg	11,219	9	130/149.5	Consented
C09	Rigmuir	12,352	3	149.9	Consented
C10	Lethans	13,052	22	176 / 200 / 220	Consented
C11	Polquhairn	13,287	9	100	Consented

Reference	Name	Distance (from Proposed Development) (m)	Number of turbines	Height to blade tip (m)	Current Status (as of 7th Feb 2023)
C12	Glenmuckloch	14,235	8	149.9	Consented
C13	Cornharrow	14,929	7	180	Consented
C14	Knockshinnoch	16,428	2	126.5	Consented
C15	Troston Loch	18,844	14	149.9	Consented
C16	Glenshimmeroch	18,915	10	149.9	Consented
C17	Penbreck	20,323	9	125/145	Consented
C18	Margree	20,389	9	200	Consented
C19	Kennoxhead Extension	22,944	8	180	Consented
C20	Knockman Hill	23,621	5	81	Consented
C21	Fell	25,856	9	180/200	Consented
C22	Bankend Rig II	27,566	3	126.5	Consented
C23	Hare Craig	28,403	8	149.9/200/230	Consented
C24	Cumberhead West	30,324	21	200	Consented
C25	Hagshaw Hill Repowering	30,796	14	200	Consented
C26	Kirk Hill	31,393	8	115.5	Consented
C27	Douglas West Extension	32,487	13	200	Consented
A01	Brockloch Rig Repower	3,061	8	200	Application
A02	Sanquhar II	6,564	44	200 / 149	Application
A03	Lorg Variation	7,270	15	200	Application
A04	Greenburn	7,647	16	149.9	Application
A05	Over Hill Variation	8,142	10	180	Application
A06	Euchanhead	8,340	21	230	Application

Reference	Name	Distance (from Proposed Development) (m)	Number of turbines	Height to blade tip (m)	Current Status (as of 7th Feb 2023)
A07	Sandy Knowe Extension	10,436	6	125 / 149.9	Application
A08	Shepherd's Rig	10,889	19	149.9/125	Application
A09	Knockkippen	13,651	12	149.9 / 180	Application
A10	Sclenteuch	15,526	9	180 / 200	Application
A11	Carrick	20,655	13	200	Application
A12	Knockcronal	20,919	9	180 / 200	Application
A13	Craiginmoddie	25,826	14	200	Application
A14	Mill Rig	28,209	6	250 / 209	Application
A15	Garcrogo	29,238	9	180	Application
A16	Clauchrie	29,782	18	200	Application
A17	Hallsburn Farm	31,232	3	149.9	Application
A18	High Dykes Farm	33,038	2	149.9	Application
A19	Low Drumclog	34,372	3	180	Application

4.9 Mitigation Measures

4.9.1 As specified in Schedule 4, paragraph 7 of the EIA Regulations, appropriate mitigation measures will be identified to eliminate, minimise or manage identified potential significant environmental effects.

4.9.2 The following will be considered:

- Embedded mitigation –which is built-in to the Proposed Development during the design process;
- Any additional mitigation – aimed to eliminate, minimise or manage potentially significant effects and
- Enhancement measures.

4.9.3 A key feature of the EIA approach will be to ensure a robust assessment which will address significant issues and provide workable mitigation.

4.10 Residual Effects

4.10.1 Following the identification of mitigation measures to address significant adverse effects, an assessment of the significance of any residual impacts (i.e., those remaining after the implementation of additional mitigation) will be completed.