

# Artfield Forest Wind Farm

## Environmental Impact Assessment Report

Volume 4: Technical Appendices

March 2021



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## **Technical Appendix 1: Introduction**

**TA 1.1: Consultation Register**

**TA 1.2: Technical Team**



## **Technical Appendix 1.1: Consultation Register**



Technical Appendix 1.1: Consultation Register

Consultee Name	Consultation Stage	Date	Topic	Consultation Response	Action/ Response
<b>Statutory Consultees</b>					
Dumfries and Galloway Council	Scoping Response	05/08/2020	Landscape and Visual	Refer to Landscape Architects comments. Particular attention is drawn to: Viewpoints and Aviation Lighting. Requested Capacity Study Landscape Character Types (LCT) to be used instead of Nature Scot LCTs. Provided advice on the turbine typology and sensitivities of the host LCT. Request for cumulative assessment to fully address existing, consented, in-planning and where absolutely necessary, scoping schemes. Mitigation of effects should focus on optimising the design of the wind farm. This must be tested through the LVIA process.	See responses below in the rows discussing Viewpoints and Aviation lighting. The SLVIA take cognisance of the recommendation of the DGWLCS as set out in Paragraphs 5.2.25 and 5.2.30 of Chapter 5: SLVIA (EIAR Volume 2). The advice is noted and effects on LCTs are assessed in Assessment Table in the Technical Appendix 5.2 of the SLVIA (EIAR Volume 4). The SLVIA addresses existing, consented, in-planning and the in-scoping Airies II development since it neighbours the Proposed Development. The design methodology is set out in Chapter 3: Design Evolution and Alternatives of the EIAR (Volume 2). Mitigation is set out in Section 5.6 of Chapter 5: SLVIA (EIAR Volume 2).
				Viewpoints (VPs): Viewpoints at distances of greater than 20 km from the Proposed Development should be represented by a wireline and baseline photograph.	Following receipt of the scoping opinion, further consultation on viewpoints for the SLVIA was carried out. This response is presented further down in this table and supersedes any response to the scoping request.
				Requested additional VPs:	
				Three Lochs Caravan Park	Not included – there are three VPs provided from near to the Proposed Development (VP18 to VP20) which inform the likely impacts on the areas close to the Site and which provide worst case visibility of the Proposed Development.
				Core Path 432 near Fell of Loch Ronald	Included as VP20.
				Eldrig Fell	Included as VP21.
				Tarf Bridge	Included as VP19.
				A75, Barlae	Not included – the ZTV indicates that there is fragmented theoretical visibility on the landform of Barlae. VP6, from Fell End, is closer to the Proposed Development from a similar direction.
				Southern Upland Way (SUW) at Craig Airie Fell	Not included – the summit of the Fell has constrained and restricted theoretical visibility (as per ZTV). VP18 is from the SUW as it passes within approx. 1 km of the Proposed Development.
				SUW Caves of Kilhern	Not included – VP15 is from a approx. 3 km west of here and VP16 is approximately 2 km uphill.
				Torwood House and Bungalow	Not included – ZTV indicates theoretical visibility of three to six turbines around the access road and grounds, and north of the properties there is mature woodland which would screen/substantially limit views of the turbines. VP19 from Tarf Bridge is from approximately 1 km northeast of this location.
				Minor road NE of Drumphail access	Not included – VP13 is just over 2 km southwest of this location.
				SUW, Nith, Rhins Peninsula	Not included – VP11 and VP14 are from the Rhins Peninsula. Given the distance and theoretical visibility it is considered that these two VPs allow for a comprehensive assessment.
				DGC Border, B7023 at Loch Maberry	Not included. VP3 is approx. 4 km southeast and is located outwith forestry areas for a clearer view.
				Residential Viewpoints: Further work is required to look at the local area in detail	A Residential Visual Amenity Assessment (RVAA) has been prepared for Artfield Forest Wind Farm. Refer to Technical Appendix 5.4 (EIAR Volume 4).
				Aviation Lighting: Referred to DGC Supplementary Guidance on Dark Sky Friendly Lighting. Requested Aviation lighting on hubs/ nacelle and towers are shown on all wirelines. Requested aviation lighting ZTVs are provided at an early opportunity.	The turbines with nacelle and mid-level lighting are indicated in the wirelines for each of the assessment viewpoints (refer to the 53.5 degree wireline for each viewpoint – the turbines labelled in blue would be lit and red label indicates the two unit turbines).  Aviation lighting ZTV is provided in Figure 5.8: Lighting Intensity – Cardinal Lights (Volume 3a: Figures).  Night time visualisations have been prepared in accordance with NatureScot visualisation guidance which recommends that only viewpoints that are regularly visited at night or from where there is a particular sensitivity to light be illustrated. For this reason, three of the six viewpoints are provided.
				Full aviation visualisations to be presented for the following	
				Merrick – Wild and Area WLA / Dark Sky Park	Included to illustrate view from Dark Sky Park (EIAR Volume 3b: Figure 5.10h)
				Bruces Stone – Dark Sky Park	Not included since the viewpoint not regularly visited at night, nor is there a particular sensitivity to light.
				Glenvernoch Fell	Included from location where the minor road intersects the SUW (EIAR Volume 3b: Figure 5.11f)
				Three Lochs Caravan Park	Not included since the caravan park is next to mature forest which would limit views.
				Tarf Bridge	Not included as this location is neither regularly visited at night nor is it sensitive to light.
				Fell End minor road	Included as the viewpoint is from a minor road en route to several properties (EIAR Volume 3b: Figure 5.14h).
Other comments					
Requested inclusion of Merrick WLA due to implications of aviation lighting.	A Wild Land Impact Assessment has been prepared for the Merrick Wild land Area– see Technical Appendix 5.5 (EIAR Volume 4).				
Minor roads and tracks added to recreational receptors.	Core Paths within 10 km of the Site are included in the SLVIA – many follow minor roads and tracks.				
Galloway Dark Skies Park included as a sensitive receptor.	This relates to the conservation and legibility of dark skies within the Dark Skies Park.				
Different turbine heights tested as part of design mitigation.	See Chapter 3: Design Evolution and Alternatives (EIAR Volume 2).				
Referred to guidance in the DGC LDP 2, Wind Energy Supplementary Guidance.	Policy informing the design is set out in Chapter 3: Design Evolution and Alternatives (EIAR Volume 2). All guidance used in the SLVIA is set out in Section 5.2 of Chapter 5: SLVIA (EIAR Volume 2). This includes the DGC LDP 2 and all appropriate supplementary guidance.				
Further Viewpoint Comments – DGC Landscape Architect	20/11/2020	Landscape and Visual	The inclusion of three additional representative viewpoints for Tarf Bridge, Loch Ronald and Eldrig Fell is welcomed.	These viewpoints have been included as requested.	
			With respect to the representative viewpoint near Loch Ronald please use the core path 432, near the Fell of Loch Ranald (property) access point.	The requested position was adopted for the purpose of the assessment.	

Consultee Name	Consultation Stage	Date	Topic	Consultation Response	Action/ Response
				A75 Barlae – agree full visualisation not required but please include a wireline to demonstrate that visibility has been addressed in the design of the scheme as stated.	This requested viewpoint was not included. The ZTV indicates that there is fragmented theoretical visibility on the landform of Barlae. VP6 from Fell End is closer to the Proposed Development from a similar direction. Please also note that these comments from the Council were received on 20/11/20 whilst the LVIA was being finalised, and could not be included at this late stage.
				Minor road near Garvilland. DGC disagree that this is similar to VP15 Mains of Larg. Please substitute this for VP13 Whitecairn Caravan park as a worst-case scenario.	VP13 Whitecairn Caravan Park has been used as a worst-case scenario for this location – see Figures 5.21a to 5.21d (EIAR Volume 3b). (As noted above, these comments were received on 20/11/20 when the SLVIA was in the process of being finalised, therefore too late to include in the assessment).
				DGC disagreed with omitting a VP from Craig Airie Fell. Requested inclusion as the outlook south is more open, and provides consistency with representation of other schemes.	VP3 from Glenvernock Fell is close to this and from an open area with clear views. (As noted above, these comments were received on 20/11/20 when the SLVIA was in the process of being finalised, therefore too late to include in the assessment).
				Torwood House Hotel and Bungalow may be covered as a residential viewpoint. Please provide a wireline.	Torwood House is located outwith the 2 km Residential Visual Amenity Study Area. However, a wireline has been provided and is appended to Technical Appendix 5.4: RVAA (EIAR Volume 4).
				DGC was agreed that viewpoints at Caves of Kilhern and the A75 at Barlae were not required. A wireline from A75 at Barlae was requested.	Noted. A wireline from Barlae is not included as the ZTV indicates that there is fragmented theoretical visibility on the landform of Barlae. VP6 from Fell End is closer to the Proposed Development from a similar direction.
				Night-time visualisations and assessment:	A Night-time Lighting Assessment is included in Technical Appendix 5.7 (EIAR Volume 4).
				The inclusion of four representative night-time viewpoints for Merrick, Glenvernock Fell, Fell End, and Whitecairn Caravan Park is welcomed.	As noted in the Aviation Lighting section above, six viewpoints were requested and three are included in accordance with the NatureScot visualisation guidance (see earlier responses above).
				DGC recommended that these be confirmed as practicable and a worst-case scenario is ensured. We have been advised by other consultants that night-time visualisations should be reachable by road for H&S reasons.	The project team considered it practicable in terms of health and safety for these photographs to be taken. Ramboll's photography team is experienced in night-time photography and follows suitable health and safety protocols when out on-site.
				Requested inclusion of VP4 Bruce's Stone car park.	There is no view to the Proposed Development from the car park at Bruce's Stone. The viewpoint taken is from south of the Stone itself and is not representative of this area.
				Referred to previous comments to include VP19 (Tarf Bridge) and VP20 (Loch Ronald) for night-time visualisation.	As previously noted, these two VPs are not at locations from which the Proposed Development would regularly be viewed at night-time, nor are these locations sensitive to light (as per NatureScot guidance referenced above).
				As per SNH scoping advice, DGC request that wirelines from all the representative viewpoints indicate lighting at hub heights.	See above comment – the EIAR confirms that lighting would be provided on all turbines except T3 and T9 unless otherwise agreed, in accordance with the proposed condition set out in EIAR Volume 2: Chapter 12: Aviation and Telecommunications. (Turbine lighting is indicated on wirelines: refer to the 53.5 degree wireline for each viewpoint – the turbines labelled in blue would be lit and red label indicates the two unlit turbines).
				Request that the cumulative assessment focussed on the schemes with which the cumulative interactions are likely to be greatest in terms of in-combination effects, appreciating a wider pattern of schemes will also be represented. Key schemes are: -Operational: Kilgallioch, Artfield and Balmurrie Fells, Aries, Glenchamber, Carscreugh, Barlockart Moor. -In-planning: Kilgallioch Extension. -Scoping / in-planning: Aries II, Wood of Dervaird (for information).	Noted and the cumulative assessment includes the Aries II in-scoping scheme as it would be directly adjacent the Proposed Development. Wood of Dervaird is not included.
	Scoping Response	30/07/2020	Archaeology and Cultural Heritage	Dumfries and Galloway Council Archaeology Service responded as follows: Agreed with the 10 km Study Area and agreed that no significant heritage assets beyond 10 km need be assessed. Indicated that that it was appropriate that detailed assessment should focus on heritage assets of high sensitivity, but suggested that 'regionally significant assets' of regional significance should be assessed to 5 km where these included burial cairns, hill forts, settlements and commemorative monuments. It was also requested that Non-Inventory Designed Landscapes be considered. 'In particular it was noted that detailed assessment must be included for: •Designated monuments within a 10 km boundary; at Wood Cairn(HS ref SM1953), Bennan of Garvilland fort (SM1955), Caves of Kilhern (SM1928), Cairn na Gath (SM1922), Laggangarn standing stones (SM90199), Wells of the Rees (SM2002); •Non-designated assets at Dirvannie (MDG13123), Monandie (MDG2177), High Eldrig (MDG2180), Craigmoddie (MDG2317), Dirvachlie (MDG14483), High Eldrig cairn (MDG2179), White Cairn (MDG2165); •Promoted Sites at Linn's Grave (MDG2327); •East Rhins Archaeological Sensitive Area; and the Non-Inventory Designed Landscape at Torwood (MDG21005).  The Archaeology Service requested that visualisations be agreed with them in due course and that visualisations would be required from Wood Cairn (Site 242); Dirvannie (Site 276); High Eldrig Cairn (Site 328); Caves of Kilhern (Site 229); Laggangarn, standing stone (Site 221) and Bennan of Garvilland fort (Site 225).	Viewpoints and visualisation type were agreed with HES. DGC was contacted but no response has been received.  The visualisations for cultural heritage are presented in EIAR Volume 3b.
				The Archaeology Service requested that a walkover survey be undertaken along with a review of Scottish Government remote sensing data and that these be used to inform the assessment.	A walkover survey was completed for the site.
	Scoping response	08/07/2020	Transport	Transport Scotland should be consulted. The C22w and C3w (part) are identified as consultation routes as part of the Council's agreed forestry access routes. The U89w and U80w are not part of this agreement. Collaborative access work improvements with other wind farm developer should be sought. A detailed AIL route survey should be prepared and include swept path assessments and mitigation details.	Transport Scotland was consulted and their comments are noted. Noted. Noted. An AIL assessment is appended to Technical Appendix 10.1, Transport Assessment (EIAR Volume 4). This outlines the proposed mitigation works.



Consultee Name	Consultation Stage	Date	Topic	Consultation Response	Action/ Response
				A Construction Traffic Management Plan (CTMP) will be required with details of the proposed movements.	The Transport Assessment (EIAR Volume 4: Technical Appendix 10.1) sets out a month by month traffic profile. The TA and this Chapter 10: Traffic, Transport and Access outline further TMP measures that can be secured and delivered by a CTMP to be enabled via a planning condition.
				Co-ordination phasing of traffic may be required.	Agreed. The mitigation includes co-ordination with the South of Scotland Timber Officer and other stakeholders.
				A Wear and Tear agreement will be required and repairs must be at the developer's expense.	Noted. A Wear and Tear agreement is noted in the mitigation section.
				A review of structures will be required and upgrades may be required.	Noted. The AIL assessment (appended to Technical Appendix 10.1, Transport Assessment (EIAR Volume 4)) contains a weight review for the proposed access routes.
				A worst case scenario of 100% of aggregate imported to the site should be undertaken.	This is an overly robust assumption as the nearby forestry road network has been constructed using stone won within the boundary of the Site. As multiple borrow pits are to be provided to supply the Site and the quality of material has been historically tested, it is not considered reasonable to assume 100% of material will be imported, when the actual import will be circa 10% (to allow access to the proposed borrow pits). To provide a compromise assessment that is robust, the Transport Assessment has assumed that 60% of all track and hardstand materials is imported to the site from the nearby quarry at Glenluce.
				The grid connection will result in possible traffic impacts on the study area.	The grid connection works form part of a separate planning application and would be addressed at that stage with either a full Transport Assessment or a CTMP. As this is to be delivered by a separate application we are unable to provide any further details.
	Other-Methodology	25/06/2020	Noise	Ramboll sent a letter to DGC to agree proposed methodology including the approach to determining baseline data and to setting noise limits but no response was received in relation to this letter.	Full methodology adopted can be seen in EIAR Volume 2: Chapter 11: Noise and Vibration.
	Scoping Response	07/08/2020	Noise	'Environmental Health has advised that until a site-specific impact assessment has been carried out with regard to noise ...they are unable to comment fully as to the expected impacts at this stage.'	None.
	Scoping Response	14/06/2020	Flooding	The area proposed for development intersects sections of the Medium Likelihood (0.5% Annual Exceedance Probability) Fluvial floodplain. Developer needs to manage surface runoff from the site during and after construction. Runoff should mimic that of existing conditions and not be increased. Developer should consider the rate of runoff into the watercourses which are located within the site. Any significant increase may increase the flood risk downstream. Developer is advised to have measures in place regarding future maintenance of drains and culverts.	All site infrastructure to be located outwith areas of potential flood risk. Watercourse crossing design would be to the 1 in 200 (0.5%) AEP design standard, and flow calculation shall be carried out by the contractor in detailed design. The implementation of SuDS measures and drainage best practice measures shall ensure run-off rates do not exceed current rates. Technical Appendix 7.3: Outline Habitat Management Plan (EIAR Volume 4), identifies the potential to restore some areas which are currently cultivated for forestry to support peatland habitats. In doing so, artificial drainage would be blocked, enhancing the flood storage potential of the site across an area over an area of up to 30 ha.
			PWS	The applicant is required to ensure that the development does not have an adverse effect on any private water supplies, or the quality of water provided there from. The Developer shall compile a list of all private water supplies in the vicinity of the development and quantify any risk of the development having an adverse effect on those private water supplies. Where an adverse effect is identified the developer shall propose a programme of works to mitigate against the effects of the development regarding those supplies.	One PWS (Artfield Wind Farm) is located within 250 m of the Site (EIAR Volume 3a: Figure 9.4) but more than 250 m from proposed infrastructure. No excavation or infrastructure is proposed in the vicinity of the upstream watercourse source. Therefore, there will be no requirement for a separate detailed risk assessment for PWS abstractions (in line with SEPA LUPS guidance 4 and 31).
Scottish Ministers	Scoping Response	Aug-20	PWS	Scottish Ministers request that the Company investigates the presence of any private water supplies which may be impacted by the development. The EIA report should include details of any supplies identified by this investigation, and if any supplies are identified, the Company should provide an assessment of the potential impacts, risks, and any mitigation which would be provided.	One PWS (Artfield Farm) is located within 250 m of the Site (EIAR Volume 3a: Figure 9.4) but more than 250 m from proposed infrastructure and excavations and no infrastructure is proposed in the vicinity of the upstream watercourse source. Therefore, there will be no requirement for a separate detailed risk assessment for PWS abstractions (in line with SEPA LUPS guidance 4 and 31).
			Peat	Scottish Ministers consider that where there is a demonstrable requirement for peat landslide hazard and risk assessment (PLHRA), the assessment should be undertaken as part of the EIA process to provide Ministers with a clear understanding of whether the risks are acceptable and capable of being controlled by mitigation measures. The PLHRA: Best Practice Guide for Proposed Electricity Generation Developments (Second Edition) should be followed in the preparation of the EIA report, which should contain such an assessment and details of mitigation measures.	A Peat Landslide Hazard Risk Assessment is provided as Technical Appendix 2.5 (EIAR Volume 4).
SEPA	Scoping Response	04/06/2020	General	Stated key issues that would need to be addressed as: Map and assessment of impacts upon Groundwater Dependent Terrestrial Ecosystems (GWDE) 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; and Borrow Pit Site Management Plan of pollution prevention measures.	GWDEs assessed during National Vegetation classification (NVC) survey, as detailed in Technical Appendix 7.1: Habitats and Vegetation. An assessment potential groundwater dependency is provided in Chapter 9: Hydrology, Hydrogeology and Geology. Peat information (on depth and re-use) is provided in Technical Appendix 2.3 and 2.4. Information regarding forestry removal is provided in Chapter 14: Forestry. Details of pollution prevention measures, site management plans and associated mitigation is presented in Technical Appendix 2.1: CEMP.
			Ecology	SEPA confirmed that habitat survey information is not required for areas which are heavily forested or recently felled.	Noted.
			Hydrology	The EIA must include a 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.	All proposed infrastructure superimposed over watercourse mapping and a 50m surface water feature buffer is provided in Figure 9.1 (EIAR Volume 3a). Technical Appendix 9.2: Watercourse Crossing Assessment (EIAR Volume 4) provides outline details of typical watercourse crossing design. The Applicant confirms that the detailed design of watercourse crossings will include a consideration of flood conveyance to accommodate a 1 in 200, 0.5% AEP plus climate change design standard. The relevant permissions under CAR will be made for all relevant watercourse crossings at the pre-construction (post-consent) phase.

Consultee Name	Consultation Stage	Date	Topic	Consultation Response	Action/ Response
				A Controlled Activities Regulations (CAR) construction site licence will be required for management of surface water run-off from a construction site, including access tracks.	As above, appropriate CAR licenses would be applied for, in consultation with SEPA, by the appointed contractor. It is likely that the appointed principal contractor will assume the role as "Responsible Person" for the purposes of the Construction Site Licence.
				The EIA must include map of proposed water abstractions including details of the proposed operating regime.	Given the nature and location of the Proposed Development it is envisaged that there will be a potential need for temporary private water supply during construction for site welfare and concrete batching. A low volume permanent private water supply is likely to be required for the operational site welfare facilities. Potential locations for site welfare during construction and operation are provided as part of the development description in Chapter 2 (EIA Volume 2). At this stage it is not known whether the water supply would be a surface or groundwater abstraction, or the volume of abstraction required. Further details on the precise location and type of supply would be determined following consent and would be subject to further ground investigation and feasibility analysis. Further consideration to the requirements under the CAR would be made post-consent.
				The EIA must include schedule of mitigation including pollution prevention measures.	Mitigation measures are provided in EIA Volume 2: Chapter 9: Hydrology, Hydrogeology and Geology (refer to Section 9.4 and Section 9.8).
				The EIA must include Borrow Pit Site Management Plan of pollution prevention measures.	Mitigation measures are provided in section 9.4 and summarised in Section 9.8 of EIA Volume 2: Chapter 9: Hydrology, Hydrogeology and Geology, with potential residual impacts identified. A Borrow Pit Assessment is provided in Technical Appendix 2.2 (EIA Volume 4).
				The EIA must include map of proposed waste water drainage layout (if applicable) and map of proposed surface water drainage layout.	Given the nature and location of the Proposed Development, operational waste water would be limited to that arising from the occasional use of site welfare facilities and would be likely to be managed through the use of a septic tank, onsite filtration and discharge to ground. The Applicant would anticipate providing a detailed design and appropriate drawings in support of a future application, where further detail would be provided to satisfy CAR post-consent. Indicative details for surface water drainage are provided as part of the development description in Chapter 2 (EIA Volume 2).
			GWDTE	The EIA must include Map and assessment of impacts upon Groundwater Dependent Terrestrial Ecosystems and buffers.	GWDTEs assessed during National Vegetation classification (NVC) survey, as detailed in Technical Appendix 7.1: Habitats and Vegetation. An assessment of potential groundwater dependency is provided in Chapter 9: Hydrology, Hydrogeology and Geology (EIA Volume 2) and in Technical Appendix 9.3 (EIA Volume 4).
			Peat	The EIA must include peat depth survey, detailed map of peat depths, and table detailing re-use proposals.	Peat depth survey provided in Technical Appendix 2.3 (Peat Survey Results) and Technical Appendix 2.4 (Peat Management Plan) (Volume 4).
				We expect the application to be supported by a comprehensive peat survey and site specific Peat Management Plan. It will be necessary to undertake a comprehensive peat survey and develop a site specific Peat Management Plan.	Provided in Technical Appendix 2.3 (Peat Survey Results) and Technical Appendix 2.4 (Peat Management Plan) (EIA Volume 4).
				Authorisation is required under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) to carry out engineering works in or in the vicinity of inland surface waters.	Appropriate CAR licenses would be applied for, in consultation with SEPA, by the appointed contractor.
				Management of surplus peat or soils may require an exemption under The Waste Management Licensing (Scotland) Regulations 2011. Proposed crushing or screening will require a permit under The Pollution Prevention and Control (Scotland) Regulations 2012.	Provided in Technical Appendix 2.2 (Borrow Pit Assessment) and Technical Appendix 2.4 (Peat Management Plan) (EIA Volume 4).
Forestry	Key hole felling must be used wherever possible as large scale felling can result in large amounts of waste material and in a peak release of nutrients which can affect local water quality. The supporting information should refer to the current Forest Plan if one exists and measures should comply with the Plan where possible.	Key hole felling is considered within the forestry assessment (Chapter 14: Forestry (EIA Volume 2)). Felling design will be in accordance with the UK Forestry Standard.			
	Clear felling may be acceptable only in cases where planting took place on deep peat and it is proposed through a Habitat Management Plan to reinstate peat-forming habitats. To include: a)A map demarcating the areas subject to be subject to different felling techniques. b)Photography of general timber condition in each of these areas. c)A table of approximate volumes of timber which will be removed from site and volumes, sizes of chips or brash and depths that will be re-used on site. d)A plan showing how and where any timber residues will be re-used for ecological benefit within that area.	The forestry assessment considers the current planting on deep peat guidance and includes recommendations for reinstatement of peat-forming habitats where appropriate. Plans, photographs and tables are included within the forestry assessment which is presented in Chapter 14: Forestry (EIA Volume 2).			
NatureScot	Other-Survey Scoping	25/06/2019	Ecology and Ornithology	NatureScot was approached to discuss the approach to Ecological and Ornithological survey effort in August 2019.	Surveys were undertaken in accordance with the advice provided (EIA Volume 4: Technical Appendix 7.1: Habitats and Vegetation, Technical Appendix 7.2: Protected Species, Technical Appendix 8.1: Ornithology).
	Scoping Response	18/06/2020	Landscape and Visual	NatureScot advise that turbine lighting could result in adverse impacts on the wild land qualities of the Merrick WLA, as well as adverse impacts on views from and within the core area of the Galloway Forest Dark Sky Park.	A WLA is presented in Technical Appendix 5.5 (EIA Volume 4), which addresses the potential impacts on Wild Land.
				NatureScot requested an assessment of the impact of the development proposal on the WLA, which should be informed by an assessment of the effects of its turbine lighting.	A WLA is presented in Technical Appendix 5.5 and the Night-time Lighting Assessment is provided in Technical Appendix 5.7 (EIA Volume 4).

Consultee Name	Consultation Stage	Date	Topic	Consultation Response	Action/ Response
				<p>NatureScot provided more detailed advice in Annex 1:</p> <p>An assessment of the impact of the development proposal on the WLA and the Dark Skies Park should be provided, informed by an assessment of the effects of its turbine lighting.</p> <p>The effects of lighting from the lower-lying interior of the WLA may also be intensified by channelled views down the unlit Glen Trool. The proposal could introduce eye-catching and prominent lights into an area important for its dark skies.</p> <p>A lighting assessment should include a night-time visualisation from the Merrick summit. We also recommend that the assessment includes a new additional viewpoint located at an appropriately selected location within the lower-lying part of the WLA further to the south (e.g. on one of the rugged hills close to Loch Enoch).</p> <p>The turbine lighting assessment should consider the cumulative effects of lights from other consented or application stage schemes.</p> <p>If directional lighting is to be employed as a form of mitigation, then it would also be useful to include a lighting intensity ZTV within the assessment.</p> <p>We welcome that the applicant is considering mitigation for lighting at this stage. We recognise that a range of mitigation options may be available and would encourage the applicant to explore these prior to application.</p>	<p>An assessment of the effect of proposed aviation lighting on turbines Lighting is provided in Technical Appendix 5.7 (EIAR Volume 4) and the lighting strategy is set out in Chapter 12: Aviation and Telecommunications (EIAR Volume 2), which notes that the Proposed Development is surrounded on three sides by other existing operational wind farm developments with different lighting configurations. Further, the Proposed Development is located in close proximity to two other proposed wind farm developments with potentially different (again) lighting configurations (Kilgallioch Extension (in planning) and Airies II (scoping)). To comply with Article 222 of the Air Navigation Order (2016), the lighting design, as specified in Chapter 2: Development Description (EIAR Volume 2), will have all turbines except T3 and T9 lit at medium intensity (2000 cd) at the nacelle height and low intensity (32 cd) half way between the ground and the nacelle. The lights will be capable of being dimmed to 10% of their peak intensity when a sensor at the wind farm detects that the visibility exceeds 5 km.</p> <p>The status and specification of lighting on existing operational developments (e.g. Artfield Fell, Balmurrie Fell, Airies, Glenchamber and Kilgallioch) and proposed developments (e.g. Kilgallioch Extension and Airies II) may alter the ability of the lighting scheme on the Proposed Development to define the perimeter of the cumulative area of wind turbines, thus undermining the purpose of the lighting. As such, it is proposed to draft a lighting condition that allows for re-design of the lighting scheme, prior to construction, which may take into account the lighting status of adjacent developments and continue to provide warning to airspace users of the perimeter of the cumulative area of wind turbines.</p> <p>It is also anticipated that a technical mitigation solution, for example, in the form of transponder or radar activated lighting might become available during the application process or the lifetime of a consent. This would mean that lighting would be rarely required given the level of aviation activity in the area. This point too can be addressed in a planning condition.</p> <p>Turbine Lighting would be provided on all turbines except turbines 3 and 9.</p>
			Ecology	<p>With the exception of fisheries and terrestrial mammals, NatureScot agreed with the scope of proposed ecological assessments and surveys (see above).</p> <p>NatureScot agree that the calculation project size and habitat risk is correct and in accordance with their guidance in relation to bats (SNH, 2019).</p> <p>Further walkover survey for protected mammal species was requested.</p> <p>In relation to the River Bladnoch Special Area of Conservation (SAC), NatureScot confirmed that an HRA, including Appropriate Assessment (AA) was required.</p> <p>The AA should be informed by an updated Fish Habitat Survey and existing baseline information from the Gass Wind Farm electrofishing surveys.</p> <p>NatureScot were in agreement that likely effects could be addressed by the submission of an adequate CEMP / Pollution Prevention Plan (PPP) and through the appropriate design of any watercourse crossings.</p> <p>The CEMP / PPP should be in accordance with SEPA guidance .</p>	<p>In accordance with NatureScot advice, updated Fish Habitat and Terrestrial Mammal surveys were undertaken in September 2020 (EIAR Volume 4: Technical Appendix 7.2: Protected Species).</p> <p>Information to inform a HRA is presented in EIAR Volume 4: Technical Appendix 7.4: HRA and includes data from updated 2020 fish habitat surveys and existing desk study information, in accordance with the advice (EIAR Volume 4: Technical Appendix 7.2: Protected Species).</p> <p>An outline CEMP is provided in EIAR Volume 4, Technical Appendix 2.1: CEMP.</p>
			Ornithology	<p>NatureScot accepted approach to baseline data gathering and assessment. Recommended consultation with the RSPB and Dumfries and Galloway Raptor Group (DGRSG) to obtain any appropriate records.</p>	<p>In accordance with NatureScot advice, existing ornithological records were requested and obtained from the RSPB and the DGRSG.</p>
			Hydrology	<p>The Tarf Water, which intersects the proposed development site, is part of the River Bladnoch Special Area of Conservation (SAC). There is potential for construction or other activities to release silt or other pollutants into the SAC and this could damage the qualifying feature (Atlantic salmon). The potential requirement for the construction of new crossings over the Tarf Water could result in direct and indirect effects on the SAC.</p> <p>We agree it is likely that effects could be addressed by the submission of an adequate CEMP /Pollution Prevention Plan (PPP) and through the appropriate design of any watercourse crossings.</p> <p>The CEMP /PPP should be in accordance with SEPA guidance and include site specific measures to avoid the risk of impacts on the species for which the site is designated. These measures should ensure there is minimal direct disturbance of the qualifying feature, and protect against adverse indirect impacts on important ecological requirements such as on water quality, water flow and/or river channel substrate.</p>	<p>This chapter includes the preparation of a CEMP and PPP as a committed mitigation measure (outline provided as Technical Appendix 2.1 - EIAR Volume 4).</p> <p>This chapter includes the implementation of a water quality monitoring programme to during construction phase as a committed mitigation measure.</p>

Consultee Name	Consultation Stage	Date	Topic	Consultation Response	Action/ Response
Historic Environment Scotland (HES)	Pre-Application Consultation prior to Scoping	18/05/2020	Archaeology and Cultural Heritage	<p>HES consider that the following designated assets may be subject to adverse impacts to their setting from the Proposed Development:</p> <ul style="list-style-type: none"> <li>•Wood Cairn, cairn, Eldrig Fell (SM1953; Site 242).</li> <li>•Cairn na Gath, long cairn, Balmurrie Fell (SM1922; Site 226).</li> <li>•Laggangarn, standing stones (SM90199; Property in Care; Site 221).</li> <li>•Wells of Rees, wells 500mNNe of Kilgallioch (SM2002; Site 222).</li> </ul> <p>HES welcome intention to include photomontages taken from Wood Cairn (Site 242) and from the north of Wood Cairn with the cairn in the foreground. They also recommend a visualisations from Wood Cairn looking towards Cairn na Gath (Site 226) should be considered.</p> <p>HES recommend that particular attention is given to the assessment of cumulative impacts upon the setting of Wood Cairn (Site 242).</p> <p>With regard to Cairn na Gath (Site 226) HES request that assessment is supported by wireframes and photomontages. Assessment should include consideration of the potential for the Proposed Development to impact upon the relationship between Cairn na Gath (Site 226) and Wood Cairn (Site 242) and consideration should be given to cumulative impacts.</p> <p>With regard to Laggangarn, standing stones (Site 221), HES request that the assessment is supported by wireframes and photomontages and that consideration be given to cumulative impacts.</p> <p>With regard to Wells of Rees (Site 222) HES request that the assessment is supported by wireframes and that cumulative impacts are considered.</p> <p>HES recommend further consultation with them during the design process and request sight of visualisations in advance of any EIA Report and planning application.</p>	Consideration given to HES' recommendations and these are presented in Chapter 6: Archaeology and Cultural Heritage (EIAR Volume 2) and the agreed visualisations are presented in EIAR Volume 3b.
	Scoping response	02/06/2020		HES's Scoping Response reiterated the points made in their pre-application advice of the 18th May 2020 and further noted that would be happy to provide advice on the proposed EIA methodology prior to an application being made.	No action required.
	Direct Consultation	25/09/2020		<p>HES indicated that they were content with the visualisation proposals for Wood Cairn (Site 242), Laggangarn, standing stone (Site 221), Bennan of Garvilland, for (Site 225), Wells of Rees (Site 222) and Caves of Kilhern, chambered Cairn (Site 229).</p> <p>HES noted that a wireline was proposed for Cairn na Gath (Site 226) and recommended that photomontage also be produced.</p> <p>HES requested further information with regard to constraints which had informed the design chill layout.</p>	HES's recommendation that a photomontage be produced for Cairn na Gath (Site 226) alongside the proposed wireline was noted - refer to EIAR Volume 3b: Figure 6.15.
	Direct Consultation	05/11/2020		HES indicated they were largely content that the methodology proposed for this project was appropriate. HES suggested some minor alterations to the wording of the magnitude of impact table.	The proposed changes were incorporated into Chapter 6: Archaeology and Cultural Heritage (EIAR Volume 2).
Internal Scottish Government Advisors					
Transport Scotland (TS)	Scoping response	01/06/2020	Transport	IEMA assessment proposals are acceptable.	Noted
				Use of historic data is acceptable.	Noted
				An Abnormal Indivisible Load (AIL) Assessment should be prepared.	An AIL assessment is appended to Technical Appendix 10.1, Transport Assessment (EIAR Volume 4).
Marine Scotland Science	Scoping Response	03/06/2020	Fisheries & Water Quality	Recommended contacting GFT and Bladnoch District Fisheries Board (BDFB) for information on local fish populations.	Requests were sent to GFT and BDFB for any records they held. GFT confirmed they held electrofishing survey results for a nearby section of the Tarf Water but have not provided the records following two requests.
				<p>Recommended fish population surveys in watercourses potentially impacted by the development. Recommended that the assessment includes:</p> <p>Potential effects on the River Bladnoch SAC and qualifying interest species Atlantic salmon <i>Salmo salar</i>.</p> <p>Acidification through clear-felling on water environments;</p> <p>Cumulative impacts on water quality and fish populations.</p>	<p>Fish habitat surveys were undertaken in September 2020, as detailed within Technical Appendix 7.2: Protected Species (EIAR Volume 4).</p> <p>Fish population surveys have not been undertaken to inform the assessment as embedded mitigation is considered to be adequate to avoid potentially significant effects, as agreed with NatureScot (above). Baseline is further informed by desk study information from recently completed surveys for the Kilgallioch Extension Wind Farm. See also GFT response, below.</p> <p>Water quality monitoring is proposed within the CEMP (EIAR Volume 4: Technical Appendix 2.1: CEMP).</p> <p>EIAR Chapter 9: Hydrology, Hydrogeology and Geology (Volume 2) considers likely significant effects associated with potential exacerbation of the existing high degree of acidification in the Tarf Water. The chapter also includes the implementation of a water quality monitoring programme during construction phase as a committed mitigation measure.</p> <p>The scale of felling in relation to the catchment size is addressed in Chapter 14: Forestry (EIAR Volume 2).</p> <p>Potential for nutrient enrichment and/ or acidification is addressed in this chapter.</p> <p>Potential indirect/secondary effects on fish associated with impacts on water quality are addressed in Chapter 7: Ecology (EIAR Volume 2).</p>
Scottish Forestry	Scoping response	20/06/2020	Forestry	Scottish Government's Control of Woodland Removal Policy and other relevant guidance: there is a strong presumption in favour of protecting Scotland's woodland resources.	The Proposed Development has been designed to minimise the amount of permanent woodland loss.
				The Proposed development falls within the category of woodland removal with a need for compensatory planting.	Compensatory planting has been considered in the forestry assessment presented in Chapter 14: Forestry (EIAR Volume 2).

Consultee Name	Consultation Stage	Date	Topic	Consultation Response	Action/ Response
				The Proposed Development area includes an area of Wet Woodland, as identified in the Native Woodland Survey of Scotland (NWSS). As a UK Biodiversity Action Plan Priority Habitat, Scottish Government's policy on control of woodland removal places a particularly strong presumption against its removal.	The areas of Wet Woodland have been identified and are in the forestry assessment presented in Chapter 14: Forestry (EIAR Volume 2).
				Detailed information on all types and areas of forestry to be felled. Detailed information on compensatory planting proposals should be provided. All felling, restocking and compensatory planting proposals must be compliant with the UK Forestry Standard.	All felling proposals, replanting on-site and off-site compensatory planting proposals have been tabulated within forestry assessment presented in Chapter 14: Forestry (EIAR Volume 2).
<b>Non Statutory Consultees</b>					
BT	Scoping Response	26/05/2020	Telecommunications	The Project indicated should not cause interference to BT's current and presently planned radio network.	No action required.
Defence Infrastructure Organisation/ MOD	Scoping Response	16/06/2020	Aviation and Radar	The MoD have no concerns about the proposal.	No action required.
Galloway Fisheries Trust (GFT)	Scoping Response	07/06/2020	Fisheries & Hydrology	GFT requested updated fish habitat and electrofishing surveys on watercourses subject to impact within the Site.	An updated Fish Habitat survey was undertaken in September 2020 by GFT (EIAR Volume 4: Technical Appendix 7.2: Protected Species). Survey methodology was agreed with GFT. Electrofishing surveys have not been undertaken to inform the baseline, as agreed with NatureScot (above).
				The development area all drains into the Tarf Water, which is designated as part of the River Bladnoch Special Area of Conservation (SAC) (designated for Atlantic salmon). Watercourse crossing designs will be important to ensure there are no fish impacts. It is important to know, through updated fish surveys, what fish species are present at each location to ensure suitable designs are used.	Chapter 9: Hydrology, Hydrogeology and Geology (EIAR Volume 2) includes the implementation of a water quality monitoring programme during construction phase as a committed mitigation measure. Potential indirect/secondary effects on fish associated with impacts on water quality are addressed in Chapter 7: Ecology (EIAR Volume 2).
			Peat	It is essential that a detailed accurate map of peat depths is part of the EIA for the whole site, including within the forestry plantation areas.	Figure 9.7: Peat Depths (EIA Volume 3a: Figures) is provided to provide a characterisation of peat depth across the Site. Further detail on peat management and potential instability risk is provided in Technical Appendix 2.2 and Technical Appendix 2.3 (EIAR Volume 4).
			Forestry	It is important to recognise that large scale felling of conifers, which is required for this development, often causes water quality and fisheries impacts especially where planting has occurred on peat. This will need to be considered fully in the EIA and a robust water quality monitoring programme put into place.	The scale of felling in relation to the catchment size is addressed in Chapter 14: Forestry (EIAR Volume 2). Potential for nutrient enrichment and/ or acidification is addressed in this chapter.
				It is important to recognise that large scale felling of conifers often causes water quality and fisheries impacts especially where planting has occurred on peat.	Felling to meet the UK Forestry Standard Guidelines: Forests and Water within the UKFS guidelines with particular attention to section 6 recognising the factors affecting water and will follow the practices within Forest Research Practice Guide "Managing forest operations to protect the water environment".
				Compensatory planting – there would be an opportunity to improve the River Bladnoch SAC through riparian deciduous tree planting both within the development area and in other parts of the catchment.	Compensatory planting and replanting on site are considered within the forestry assessment (EIAR Volume 2: Chapter 14: Forestry).
Joint Radio Company	Scoping response	26/05/2020	Telecommunications	In the case of this proposed wind energy development, JRC does not foresee any potential problems based on known interference scenarios and the data you have provided.	No action required.
NATS Safeguarding	Scoping response	22/05/2020	Aviation and Radar	The proposed development has been examined from a technical safeguarding aspect and does not conflict with our safeguarding criteria. Accordingly, NATS (En Route) Public Limited Company ("NERL") has no safeguarding objection to the proposal.	No action required.
Vodafone	Pre-Application Consultation prior to Scoping		Telecommunications	Microwave radio link supporting the SSE Artfield Fell Wind Farm crosses the development area of the site. It will be in operation until 2022/23.	Potential effects assessed in this Chapter 12: Aviation and Telecommunications.
RSPB Scotland	Data Request	19/12/2018	Ornithology	Information request for existing ornithological records within approximately 2 km of the Site. Records were received in 2018.	Information provided used to inform the requirement and approach to baseline ornithological surveys, notably in relation to breeding raptors. Record details considered sensitive are restricted to Confidential Figure 8.A (EIAR Volume 5).
	Scoping Response	05/06/2020	Ornithology	Agreement of survey methodologies undertaken and identification of target species. RSPB requested that connectivity to the Glen App and Galloway Moors Species Protection Area (SPA) is considered within the assessment.	Survey methodology and impact assessment follows process agreed. Potential connectivity to the Glen App and Galloway Moor SPA is considered under in Chapter 8: Ornithology and is scoped-out (EIAR Volume 2).
Scottish Rights of Way and Access Society (ScotWays)	Scoping Response	02/06/2020	Access	ScotWays confirmed that there are no Public Rights of Way identified within the site. The consultation response notes that DW88 would be crossed by the proposed route for construction traffic accessing the site. The response also notes the presence of the promoted 'Military Road to Glenluce' in the wider surrounding area.	The potential for construction traffic to result in significant effects on other road users is addressed in Chapter 10: Traffic, Transport and Access (EIAR Volume 2).
Glasgow Prestwick Airport (GPA)	Scoping Response	11/06/2020	Aviation and Radar	As the proposed wind farm is within the instrumented range of both of our primary radars, we would expect the EIA to consider this, and undertake line of sight (LOS) analysis to confirm or otherwise that the windfarm is terrain shielded from the primary radars at Glasgow Prestwick Airport.	Illustrative radar line of sight profiles, showing no line of sight, provided to GPA 16 June 2020. GPA confirmed no requirement for further assessment.
British Horse Society	Scoping	N/A		No response received to the Scoping Report.	N/A
Civil Aviation Authority - Airspace	Scoping	N/A		No response received to the Scoping Report.	N/A
Fisheries Management Scotland	Scoping	N/A		No response received to the Scoping Report.	N/A
John Muir Trust	Scoping	N/A		No response received to the Scoping Report.	N/A
Mountaineering Scotland	Scoping	N/A		No response received to the Scoping Report.	N/A
Scottish Wildlife Trust	Scoping	N/A		No response received to the Scoping Report.	N/A
Scottish Wild Land Group (SWLG)	Scoping	N/A		No response received to the Scoping Report.	N/A
Visit Scotland	Scoping	N/A		No response received to the Scoping Report.	N/A
BAA Aerodrome Safeguarding (Edinburgh)	Scoping	N/A		No response received to the Scoping Report.	N/A
Dumfries and Galloway Raptor Group (DGRSG)	Data Request	04/03/2020	Ornithology	Information request for existing ornithological records. Email correspondence from DGRSG in 2020 confirmed no records held.	This response have been taken into consideration within the desk study section of Technical Appendix 8.1: Ornithology. Records have been used to inform and review the requirement for baseline ornithology surveys and have been considered as part of this assessment.

Consultee Name	Consultation Stage	Date	Topic	Consultation Response	Action/ Response
South West Scotland Environmental Information Centre (SWSEIC)	Data Request	October 2020	Ecology	Ecological records provided.	Included in Technical Appendix 7.1: Habitats and Vegetation and Technical Appendix 7.2: Protected Species.
			Ornithology	Ornithological records provided.	Included in Technical Appendix 8.1: Ornithology (EIAR Volume 4).
<b>Relevant Community Councils, Village Councils, Village Groups</b>					
New Luce	Scoping Response	10/08/2020	Site Layout	The response raised a concern that information on the number and location of turbines was not provided to the community council or the wider public.	Presentations and layouts have been provided to the public through various forums throughout the consultation period. Site layout is discussed in detail in Chapter 2: Development Description (EIAR Volume 2) and final site layout can be seen in Figure 2.1 (EIAR Volume 3a).
			Archaeology and Cultural Heritage	The response notes that the area directly to the north of the site covered by the Kilgallioch Extension Windfarm Proposal is known to be archaeologically rich and suggests that there is more archaeology in the proposed site than currently recognised. The response encourages the use of LIDAR surveys to detect potential previously unknown archaeological sites within the proposed site. The response also raises concerns that the northernmost turbines are located close to this archaeological area, particularly the Monandie sites.	Publicly available LIDAR data only provides partial coverage of the Site and areas that are covered are largely out with the Proposed Development footprint. The exception to this is an area covering the construction compound and the upgrading of an existing track at the southern extent of the Site and an area in the east of the Site near the proposed location of Borrow Pit 3. No previously unrecorded features of archaeological interest were identified via LIDAR in these potential areas of impact.  The potential for impacts upon archaeological remains within the development area not currently covered by Lidar has been assessed through review of known heritage assets (as recorded by DGC Historic Environment Record and the National Record of the Historic Environment), map regression and a walkover survey. Where possible known remains have been avoided by the Proposed Development. Where this has not been possible mitigation measures have been put forward to ensure minimisation of impact or to ensure that assets will be preserved by record in line with best practice guidelines. Given the potential for hitherto unknown remains, particularly of a post-medieval date, to survive on Site, mitigation including an Archaeological Watching Brief will also aim to identify any such remains and to ensure that impact is avoided, minimised or offset by ensuring preservation by record. Details of mitigation would be agreed with DGC in consultation through a Written Scheme of Investigation. Further details on archaeological sites within the developable area are discussed in Chapter 6: Archaeology and Cultural Heritage (EIAR Volume 2).
			Landscape and Visual	The response requested that consideration be given to maintaining the gap between the proposed development, Kilgallioch Windfarm and the Kilgallioch Windfarm Extension Proposal to the north of the proposed development. The response suggests that closing the aforementioned gap could adversely affect the landscape character of the area.	There has been a drive to move the scheme north, away from the residential and more settled areas to the south. By moving the turbines to the north of the site, it reduces the visual and noise impacts on residential properties and ensures the total cumulative noise limits derived in accordance with best practice guidance would not be exceeded. The turbine array also consolidates the emergent pattern of development, 'infilling' between Kilgallioch (and Kilgallioch Extension), Airies (and Airies II). This addresses the main feedback from communities around cumulative impact while developing a coherent scheme. Chapter 3: Design Evolution and Alternatives (EIAR Volume 2) discusses the process above in further detail.
			Landscape and Visual	The response requested that consideration be given to maintaining the gap between the proposed development, Artfield Fell Windfarm and Glenchamber Windfarm to the south of the proposed development. The response suggests that turbines 18,19 and 20 could reduce this gap when seen from the west and southwest.	Turbines 18,19 and 20 have been dropped from the initial layout and therefore this gap is maintained. Chapter 3: Design Evolution and Alternatives (EIAR Volume 2) discusses the reasoning for turbines 18,19 and 20 being dropped.
Kirkcowan	Scoping	N/A		No response received to the Scoping Report.	N/A
Old Luce	Scoping	N/A		No response received to the Scoping Report.	N/A
Cree Valley	Scoping	N/A		No response received to the Scoping Report.	N/A

## **Technical Appendix 1.2: Technical Team**





## Technical Appendix 1.2: Technical Team

### 1.1 Introduction

1.1.1 In accordance with regulation 5(5) of the EIA Regulations, the EIAR has been prepared by 'competent experts'. EIAR Volume 2: Chapter 1, Table 1.2 presents the project team and Table 1.2.1 below presents the technical leads within the project team and their relevant qualifications and experience.

Company Name	Roles & Responsibility	Team Lead	Qualifications & Professional Memberships	Experience
Ramboll UK Limited	EIA Project Director	Peter Bruce	<ul style="list-style-type: none"> <li>MSc Environmental Protection and Management</li> <li>BSc (Hons) Geography</li> <li>Institute of Environmental Management and Assessment (MIEMA)</li> <li>Society of the Environment</li> <li>Chartered Environmentalist (CEnv)</li> </ul>	Peter Bruce is a Chartered Environmentalist with over 13 years' experience in environmental consultancy. Peter has taken a lead role in the co-ordination and management of numerous complex environmental impact assessments (EIA) in the power, renewables, transmission, offshore decommissioning and urban development sectors. Peter has extensive experience of facilitating design workshops, liaising and leading discussions with statutory bodies including the Scottish Government, NatureScot (previously known as SNH), Scottish Environment Protection Agency (SEPA), planning authorities and other community and non-governmental organisation (NGO) stakeholders, and in engaging with local communities through public consultation events.
	Chapters: Socioeconomics, Shadow Flicker, Climate			
	Landscape and Visual Impact assessment	Sitara Keppie	<ul style="list-style-type: none"> <li>Post Graduate Diploma in Landscape Architecture</li> <li>BA in Landscape Architecture</li> <li>Chartered Member of the Landscape Institute</li> </ul>	Sitara is a Chartered Landscape Architect with over 20 years' experience, has worked across a wide range of sectors including renewable energy, infrastructure and utilities, mixed use development, leisure, commercial and residential. She has been responsible for delivering a variety of landscape inputs from landscape / townscape and visual assessments to masterplanning and detailed design and project administration. Sitara also has experience with Planning Appeals and has been involved in the preparation of material for several Local Public Inquiries and Hearings. Sitara has appeared as an Expert Witness for Wind Farms, Retail and Housing Projects.
	Hydrology, Hydrogeology and Geology	Christopher Day	<ul style="list-style-type: none"> <li>BSc (Hons) Marine Geography</li> <li>MSc Flood Risk</li> </ul>	Chris has over 12 years' experience in environmental consultancy with particular expertise in hydrological impact assessment of renewable energy and transmission infrastructure projects, flood risk assessment, hydraulic modelling, and conceptual surface water drainage design. Also experienced in the use of geographical information systems (GIS) and remote sensing, statistics, river and coastal hydraulics.
David Bell Planning Ltd	Planning Policy	David Bell	<ul style="list-style-type: none"> <li>BSc (Hons) Town &amp; Country Planning</li> <li>Diploma in Urban Design</li> <li>Chartered Town Planner, Corporate Member of the Royal Town Planning Institute</li> <li>Chartered member of the Institute of Highways &amp; Transportation.</li> </ul>	David has 30 years' experience of planning and development practice in the private sector, advising on a range of developments in the UK and overseas. David is a recognised leading expert in energy planning, in particular with regard to onshore wind – providing advice on development projects throughout the UK. He advises on feasibility studies, planning and section 36 applications and planning Appeals and frequently acts in the capacity of expert witness in Public Inquiries. David's experience covers practice in Scotland, England and Wales, and in various locations overseas.
AOC Archaeology Group	Cultural Heritage	Victoria Oleksy	<ul style="list-style-type: none"> <li>BA (Hons) Archaeology &amp; History</li> <li>MA (Commendation) Historical Archaeology</li> <li>Member of Chartered Institute for Archaeologists</li> </ul>	Victoria is Assistant Director at AOC Archaeology Group and has over 14 years' of experience. Victoria's work has included a wide range of consultancy projects throughout Scotland and England. This work has included preparing Environmental Impact Assessments, Desk-based Assessments and Conservation Management Plans, advising clients and consulting with a variety of other professionals. In the last six years Victoria has undertaken a good deal of work related to public inquiries; preparing Further Environmental Information, evidence and other documentation and giving evidence at hearing and inquiry sessions. Victoria has appeared as an expert witness on the hearing for the called-in planning application for Hyndford Quarry Extension, Lanark.
Avian Ecology	Ecology and Ornithology	Howard Fearn	<ul style="list-style-type: none"> <li>MSc Ecology and Environmental Management</li> <li>Full member of the Chartered Institute of Ecology and Environmental Management</li> </ul>	Howard is director at Avian Ecology and has over 15 years' professional experience. He is a specialist in EIA and Nationally Significant Infrastructure energy projects. His project portfolio includes multiple successful large scale wind energy developments. Howard possesses a detailed knowledge of the UK planning process and environmental legislation, and is conversant in all aspects of the EIA process. Areas of expertise include

<b>Table 1.2.1: Technical Team Experience</b>				
<b>Company Name</b>	<b>Roles &amp; Responsibility</b>	<b>Team Lead</b>	<b>Qualifications &amp; Professional Memberships</b>	<b>Experience</b>
				Habitats Regulations Assessment (HRA), project management the provision or review of succinct and legally robust technical reports and impact assessments. Howard is an experienced Expert Witness and has particular expertise in ornithology, bats and renewable energy. He has also completed HRAs for Local Authorities, acting on their behalf in an expert capacity.
Pell Frischmann	Traffic and Transport Assessment	Gordon Buchan	<ul style="list-style-type: none"> <li>▪ B.Eng. (Hons) Civil &amp; Transport Engineering</li> <li>▪ MSc Transport Engineering &amp; Planning</li> <li>▪ CMILT</li> <li>▪ MCIHT</li> </ul>	Gordon is a Divisional Director in the Transport Planning team and has over 24 years' experience and has provided abnormal load route survey, Transport Assessment and traffic impact review advice on over 500 wind farm sites across the UK, Ireland and Scandinavia.
TNEI Services Ltd	Noise Assessment	James Mackay	<ul style="list-style-type: none"> <li>▪ BSc (Hons) Environmental Science</li> <li>▪ Full Member of the Institute of Acoustics and holds the Diploma in Acoustics and Noise Control</li> </ul>	James is the Director of Environment & Engineering at TNEI. He has over 13 years' experience undertaking noise assessments for wind farm developments.
Aviatica	Aviation and Telecommunications	Malcolm Spaven	<ul style="list-style-type: none"> <li>▪ MSc Rural &amp; Regional Resources Planning</li> <li>▪ MA (Hons) Politics</li> </ul>	Malcolm has more than 24 years experience of aviation and telecommunications consultancy in the wind industry with in-depth technical and operational knowledge of the aviation industry. Malcolm has worked on the development of solutions through sound analysis and negotiation with stakeholders and has a wide range of competencies in supporting planning applications, from pre-planning feasibility studies to expert witness at inquiries.
McKay Forestry	Forestry	Neil McKay	<ul style="list-style-type: none"> <li>▪ National Diploma in Forestry</li> <li>▪ NEBOSH National Diploma in Occupational Safety and Health (2002)</li> <li>▪ Institute of Chartered Foresters, Professional Member (MICFor 1994) and South Scotland Regional Chair (2007 to present)</li> </ul>	Neil is a chartered forester based in South West Scotland, with more than 35 years' forest management and forestry and ecology related activity. Currently involved in the planning, and in some cases through to construction, of several onshore wind and hydro projects including new grid connections by the provision of EIA Forestry Chapters,