

7 Environmental Impact Assessment Process and Methodology

EIA Process

- 7.1 Environmental Impact Assessment (EIA) is a process that identifies the potential environmental effects¹ (both positive and negative) of a proposed development and aims to prevent, reduce and mitigate any adverse environmental effects. Proposed developments to which EIA is applied are those that 'are likely to have significant effects on the environment by virtue of factors such as their nature, size or location'. The EIA process has a number of key characteristics:
- It is systematic, comprising a sequence of tasks defined both by regulation and by practice;
 - It is consultative, with provision being made for obtaining feedback from interested parties including statutory agencies and the community;
 - It relies on the most up-to-date information on the nature and sensitivity of the environment;
 - It is predictive, using techniques and professional judgement to estimate the potential nature, size and significance of environmental change;
 - It is transparent; the information and assumptions upon which assessments are made are set out clearly, as are limits to knowledge and to the capability of the predictive tools employed in the assessment process; and
 - It is iterative, allowing opportunities for environmental concerns to be addressed during the planning and design of a project.
- 7.2 The process and outcomes of the assessment are presented in a single document, known as the Environmental Statement (ES). The ES should be a clear and concise summary of the proposed development and its potential environmental effects, including primary, secondary, direct, indirect and cumulative effects, on the natural, built and human environments. The ES is submitted to a competent authority, in this case Dumfries and Galloway Council (DGC), in support of an application for development consent, and provides the competent authority, statutory consultees and the wider community with sufficient information to make an objective judgement as to its acceptability within the context of national, regional and local planning and environmental policy.
- 7.3 Legislation on EIA was implemented in the UK following the adoption of the 1985 EC Directive (No. 85/337/EEC) 'on the assessment of the effects of certain public and private projects on the environment'. New legislation was then introduced following the adoption of the amended 1997 EC Directive (No. 97/11/EEC). For Town and Country Planning projects in Scotland, the 1997 Directive was transposed into law through the Environmental Impact Assessment (Scotland) Regulations 1999 ('the 1999 Regulations'). These have been amended, repealed and updated by the current Town

and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 (hereafter referred to as the 'EIA Regulations'). These set out the statutory process and minimum requirements for environmental assessment for those projects that are required to undergo such an assessment. Specifically, they prohibit the granting of planning permission for EIA developments unless environmental information on potentially significant environmental effects is considered by the competent authority in reaching its decision on the application. Environmental information includes the ES, which is the applicant's own assessment, together with any further information provided by the applicant and any representations provided by consultees and the public about the proposal's environmental effects.

Screening

- 7.4 Screening is the term in the EIA Regulations used to describe the process in which the need for EIA is considered. Applicants can formally request a Screening Opinion from the competent authority prior to submitting an application but are under no obligation to do so.
- 7.5 The applicant has considered the proposed wind farm in light of the EIA Regulations and concluded that, due to the nature and scale of the proposed wind farm and the potential for significant environmental effects, there is a requirement for EIA as set out in Table 3(i) of Schedule 2 to the EIA Regulations. Under the EIA Regulations, if there are likely significant environmental effects, EIA is required for an installation for the harnessing of wind power for energy production (wind farms) if the development involves the installation of more than 2 turbines; or the hub height of any turbine or height of any other structure exceeds 15 metres.

Scoping and Consultation

Scoping

- 7.6 An applicant can request a 'Scoping Opinion' from the competent authority on the information to be provided in an ES. The purpose of scoping is to "focus the EIA on the environmental issues and potential effects which need the most thorough attention; identify those which are unlikely to need detailed study; and provide a means to discuss methods of impact assessment and reach agreement on the most appropriate". (PAN 58: Environmental Assessment, 1998)
- 7.7 As part of the EIA process for the original application, the applicant, in accordance with Regulation 10 of the 1999 Regulations, sought a Scoping Opinion for the proposed wind farm from DGC in October 2005 and again in January 2009. This request was accompanied by a Scoping Report, prepared by the applicant, which set out a summary of the proposed wind farm, identified the issues proposed to be included in the ES, and proposed an approach to the assessment of effects in each case. The Scoping Report was simultaneously issued to a list of statutory and non-statutory consultees. A Scoping Opinion was received from DGC in December 2005. Key consultation responses are summarised in Table 7.1. A full copy of the 2009 Scoping responses can be found in **Appendix 7.1**. Detail on the response to specific issues raised, including any recent correspondence with consultees, is provided within the individual technical chapters (**Chapters 8 - 17**).

¹¹ Section 11.2 of the Institute of Environmental Management and Assessment *Guidelines for Environmental Impact Assessment* (2004) states that whilst distinguishing between the characteristics of an 'impact' and the significance of the 'effect' can be helpful, the distinction between 'impact' and 'effect' may not necessarily be appreciated by the public and requires a high level of rigour to ensure that the two terms are used in a consistent fashion. For simplicity, the term 'effect' has been used throughout this ES.

- 7.8 The original Solwaybank Wind Farm planning application was subsequently submitted in June 2009 but following feedback from consultees, the decision was taken to withdraw the application to allow a redesign to take place. The key issues that led to the decision to redesign included consultee responses from the Ministry of Defence (MOD) regarding military low flying and from DGC and Scottish Natural Heritage (SNH) regarding landscape effects.
- 7.9 Following the withdrawal of the application, a number of meetings were held with key consultees to ensure the updated EIA would meet their requirements. Meetings were held with DGC Planning Department and SNH to agree the scope of additional or updated survey work where required and consultation processes as part of the resubmission process. DGC Roads and Environmental Health Departments were also contacted to discuss their requirements.
- 7.10 Consultation with telecommunication and aviation consultees was repeated to ensure any changes to the baseline situation were captured and taken into consideration. Consultation responses are discussed in **Chapter 14: Electromagnetic Interference and Aviation**.
- 7.11 DGC, SNH, Scottish Borders Council, Cumbria County Council and Carlisle County Council were also consulted on viewpoints for the landscape and visual assessments. A summary of the responses and viewpoint selection process is provided in **Appendix 8.1: Viewpoint Selection**.

Community Consultation

- 7.12 At the centre of our community consultation is the Solwaybank Community Liaison Group (CLG). The group consists of representatives of 11 nearby Community Councils and has met four times including the inaugural meeting in August 2010. The CLG is designed to allow RES to convey

information about the proposed wind farm to local communities and also to provide an opportunity for local community members to raise concerns.

- 7.13 Public exhibitions were held 26 - 28 June 2011 in nearby Waterbeck, Eaglesfield and Lockerbie. Just over 100 people attended over the three days. Prior to the exhibitions, a project newsletter was also distributed to nearly 9,000 homes giving details of the public exhibition dates and locations as well as information about the wind farm itself.
- 7.14 Full details of the community consultation undertaken can be found in the Pre-Application Consultation Report (PAC Report) which has been submitted along with the wind farm planning application.

Table 7.1: Scoping Consultation

Consultee	Response Received / Date	Key Issues Raised	Where in the ES is this addressed?
Dumfries and Galloway Council (General)	Yes 2009	<p>Landscape and Visual</p> <ul style="list-style-type: none"> Comprehensive justification for proposed wind farm on land at Solwaybank/Allfornought Hill. Must have a coherent design strategy to explain the design principles behind the layout. Provide in a way any interested party can understand. Design strategy to include how access to the grid will be achieved. Submission should include masts, control building and electricity substation. Design statement should refer to PAN 68 and should be clear and effective. Provide evidence on how design ideas have been tested against objectives. Site boundary should be clearly defined by the landscape. Refer to SNH guidance 'Cumulative effects of windfarms' April 2005 and incorporate into assessment of cumulative landscape and visual impacts. Pay due regard to all wind farms that have been built, have valid consents and those within planning system. Wind farms at screening and scoping stage should also be included. Agreement of these along with viewpoints and ZTVs should be sought with DGC. <p>Noise</p> <ul style="list-style-type: none"> See DGC Environmental Health response. <p>Ecology</p> <ul style="list-style-type: none"> ES must take due account of relevant wildlife legislation and guidance. Please note advice from RSPB response. Up to date surveys must be carried out and submitted along with any mitigation measures. <p>Traffic</p> <ul style="list-style-type: none"> See DGC Roads Department and JMP responses. 	See Chapter 3: Site Selection, Design Evolution and Alternatives, Chapter 8: Landscape and Visual, Chapter 9 Ecology, Chapter 10 Ornithology, Chapter 11: Cultural Heritage and Archaeology, Chapter 12: Geology, Hydrology and Hydrogeology, Chapter 13: Noise, Chapter 14: Electromagnetic Interference and Aviation, Chapter 15: Access Traffic and Transport, Chapter 16: Socio Economics, Chapter 17: Other Issues, Chapter 18: Potential Grid Connection

Consultee	Response Received / Date	Key Issues Raised	Where in the ES is this addressed?
		<p>Archaeology</p> <ul style="list-style-type: none"> • See DGC Archaeologist response. <p>Geology, Hydrogeology and Hydrology</p> <ul style="list-style-type: none"> • Impacts could include: <ul style="list-style-type: none"> - Location of works in relation to watercourses and drainage routes. - Obstruction to upstream and downstream migration during and after construction. - Disturbance of spawning beds during construction - timing of works critical. - Increases in silt and sediment loads from construction works. - Point source pollution during construction. <p>Drainage Issues.</p> <ul style="list-style-type: none"> • Comments from SEPA must be taken into account in ES. • Consideration should be given to the implications of the development on watercourses, water quality, migratory and other fish species. <p>Electromagnetic Interference and Air Safeguarding</p> <ul style="list-style-type: none"> • See responses from Ofcom, CSS Spectrum Management Services Ltd and Joint Radio Company (JRC). <p>Public Access and Safety</p> <ul style="list-style-type: none"> • ES to assess impact on use of site by public during construction and operation and propose mitigation as appropriate. <p>Socio-Economic Aspects</p> <ul style="list-style-type: none"> • Full assessment on the potential impacts on tourism for the region to be included. • Include details of benefits. <p>Air Quality</p> <ul style="list-style-type: none"> • Potential air pollution should be assessed and mitigation measures provided in consultation with DGC Environmental Standards. <p>Reinstatement</p> <ul style="list-style-type: none"> • Plans for reinstatement need to be detailed in the ES. <p>Peatslide</p> <ul style="list-style-type: none"> • Council recommends undertaking a peat study assessment. <p>Non- Technical Summary</p> <ul style="list-style-type: none"> • Should be specific to the project and be concise and written in plain English. <p>Planning Statement</p> <ul style="list-style-type: none"> • Anticipated that this document will address Government policies, Council development plan policies including Structure Plan and Annandale and Eskdale Local Plan policies. 	
Dumfries and Galloway Council (Roads)	Yes 2009	<ul style="list-style-type: none"> • Reference should be made to Scottish Executive's 'Transport Assessment and Implementation: A Guide' to determine if an assessment is required. • Developer should provide details of <ul style="list-style-type: none"> - Proposed access arrangements. - Anticipated traffic generation and distribution. - Assessment of likely impact of additional traffic on local road network. • These should include normal construction traffic, extraordinary traffic, operational phase and decommissioning phase. • It is recommended that access be taken from Lockerbie-Langholm Road (B7068) particularly for regular construction traffic however alternative access arrangements may be required for extraordinary traffic. • Recognise that the minor roads to south (C63, C70, U235 and U239) are severely restricted in terms of width, strength and alignment and cannot in present form accommodate additional traffic without major road improvement works. • Road network to be used will require surveying and any improvement works agreed with local roads authority. • A traffic management plan/emergency access arrangements should be included as part of formal submission. 	See Chapter 15: Access, Traffic and Transport

Consultee	Response Received / Date	Key Issues Raised	Where in the ES is this addressed?
Dumfries and Galloway Council- Environmental Health	Yes 2009	<ul style="list-style-type: none"> • Objections in principle, site specific noise impact assessment should be carried out using the principles of ETSU -R-97. • The proposal should be designed to meet the lower limits suggested in ETSU-R-97. Where that is not possible detailed reasons as to why should be included in EIA. • A detailed method statement for the construction period should be provided with the EIA for Dumfries and Galloway Council to approve. In this report should be an assessment of potentially noisy operations and an outline of the proposed noise mitigation measures. Guidance should be taken from 'BS5228: 1997: Part 1: Noise and Vibration Control on Construction and Open sites'. 	See Chapter 13: Noise
Dumfries and Galloway Council Archaeologist	Yes 2009	<ul style="list-style-type: none"> • Zone of Theoretical Visibility (ZTV) should inform outer distance for assessment of setting impacts. • Burnswark complex has been identified as an Archaeologically Sensitive Area. Structure Plan Policy E13 and Local Plan Policy GP55 apply to safeguard the character and archaeological interest of these areas. • Hadrian's Wall World Heritage Site is outwith the outer visual envelop defined by policy LA34. • Burnswark and Hadrian's wall have been selected as viewpoints for visual impacts. Assessment should also look at heritage interest of these locations. • Visitor destinations should be included in assessment of indirect effects including:- <ul style="list-style-type: none"> - Burnswark, - Birrens Roman Fort complex - Merkland Cross - Arched House - Ecclefechan - Hoddam Castle - Repentance Tower 	See Chapter 11: Cultural Heritage and Archaeology
Carlisle City Council	Yes	<ul style="list-style-type: none"> • Provided comments on the proposed viewpoints selected for the assessment. 	See Chapter 8: Landscape and Visual and Appendix 8.1: Viewpoint Selection.
SNH	Additional consultation meeting 2011	<p>Requested that the resubmission include</p> <p>Ecology</p> <ul style="list-style-type: none"> • Habitat Condition Assessment - Upland heath habitat condition (ULNESS method). SNH expects RES to microsite turbines away from prime upland heath habitat. • Prefer to have Construction Method statements submitted in advance. • New bat survey work required in-line with new Natural England bat survey guidelines. Methodology to be agreed. • No additional badger survey work required but increase the proposed pre-construction survey area from 50m to 200m. • Would like to see an outline Habitat Management Plan and dedicated chapter on Forestry. <p>Recreation</p> <ul style="list-style-type: none"> • No additional consideration of recreation issues required. <p>Ornithology</p> <ul style="list-style-type: none"> • A further year of avian ecology survey data including breeding and wintering bird surveys and 2 sets of VP watches required for 36 hours each. This is due to age of existing survey data and new survey techniques, to address concerns relating to previous data and fluctuations in population figures of several species in D&G. <p>Landscape</p> <ul style="list-style-type: none"> • Recommend the proposals take into account tip height and layout at Minsca • Requested RES meet with SNH landscape architect to present new layout, ZTV and wirelines. 	See Chapter 3: Site Selection, Design Evolution and Alternatives, Chapter 8: Landscape and Visual, Chapter 9 Ecology, Chapter 10 Ornithology, Chapter 18: Potential Grid Connection
SNH	Yes 2009	<p>Key issues to be addressed in the EIA include</p> <ul style="list-style-type: none"> • Ecological impacts including direct and indirect impacts upon protected species and habitats. • Landscape and visual impacts. 	See Chapter 3: Site Selection, Design Evolution and Alternatives, Chapter 8: Landscape and Visual, Chapter 9 Ecology, Chapter 10 Ornithology, Chapter 12: Geology, Hydrology

Consultee	Response Received / Date	Key Issues Raised	Where in the ES is this addressed?
		<ul style="list-style-type: none"> • Recreational impacts - positive and negative. • Cumulative impacts of the above with other wind farm proposals. <p>SNH have a number of concerns regarding wind farm development in this location. These relate to cumulative landscape and visual and cumulative ecological impacts and as such these should be fully considered in the EIA.</p> <p>Scoping exercise should identify areas of impact relating to access, construction and decommissioning phase, grid connections and associated works and phases.</p> <p>Ecological Interests</p> <ul style="list-style-type: none"> • No international, national or local designations within proposed site. • Within 10 km are <ul style="list-style-type: none"> - Langholm/Newcastleton Hills SPA - Raeburn Flow SAC - Langholm/Newcastleton Hills SSSI - Bells Flow SSSI - Raeburn Glow SSSI - Bigholms Burn SSSI - Riverk Esk, Glecartholm SSSI • Surveys should be carried out for European Protected Species - bats and otter. Also survey for great crested newt if it is encountered • Surveys for protected species should include water vole (April - Oct), red squirrel and badger. <p>Ornithology</p> <ul style="list-style-type: none"> • Site may be used by a number of bird species. • Recommend initial desk study to determine potential impact and if vulnerable species are found more fieldwork will be necessary. • Assessment of potential impacts should include displacement, death through collision and habitat loss. • A cumulative assessment should be carried out considering other wind farms with consent or seeking consent in the Natural Heritage Zone 20, Border Hills. Assessment to include direct and indirect impacts assessing likelihood and significance. • Recommend employing suitably qualified ornithologist. <p>Habitats</p> <ul style="list-style-type: none"> • EIA to consider habitats and species included in the D&G Local Biodiversity Action Plan. • Assessment of development impacts should be undertaken. • Recommended a minimum Phase 1 habitat survey is undertaken and if that survey identifies habitats or species of note then a further NVC survey should be undertaken along with outline mitigation. • Areas of peatland must be clearly mapped (depth, nature, hydrology and condition) to inform routeing of tracks and siting of turbines. Areas of deep peat should be avoided. • ES to identify areas of potential erosion through risk analysis. <p>Freshwater Habitats and Species</p> <ul style="list-style-type: none"> • Salmon, brown trout and sea trout are present in adjacent catchments of River Kirtle, Sark and Esk. • Development has potential to affect Atlantic salmon particularly during construction including increases in concentration of solids. These impacts and mitigation should be adequately assessed. • Lamprey are likely to occur in wider catchment. Prudent to carry out a survey for these fish and assess accordingly. <p>Landscape</p> <ul style="list-style-type: none"> • Development area does not lie in any landscape designations and is in Zone 1 (lowest sensitivity) in the SNH Strategic Locational Guidance for Onshore Wind Farms. May be local designations that may be affected. • Site lies in Foothills and Upland Fringe character types with turbines also creating visual impact on other landscape types in D&G and Cumbria. • Cumulative impacts and sequential impacts on specific viewpoints and routes (M74, West Coast main railway line) should be carried out. Further information to be provided once ZTVs are available. 	<p>and Hydrogeology, Chapter 16: Socio Economics, Chapter 18: Potential Grid Connection</p>

Consultee	Response Received / Date	Key Issues Raised	Where in the ES is this addressed?
		<ul style="list-style-type: none"> • Full landscape and visual impact assessment should be undertaken. • Assessments should take into account SNH guidelines and D&G planning policies. • ZTV to be assessed out to 35 km radius in consultation with SNH and DGC. • Cumulative impacts are particularly applicable to this proposal and should be fully considered in EIA process. <p>Recreation and Access</p> <ul style="list-style-type: none"> • Identify current recreational activities within study area and ascertain significance of impacts. • Impacts on recreational facilities around wind farm should be considered in terms of setting and experience. <p>Infrastructure and Grid Connection</p> <ul style="list-style-type: none"> • Assessments to include wind farm components; <ul style="list-style-type: none"> - Substation - Onsite access tracks • Potential Langholm/Newcastleton Hills SPA; <ul style="list-style-type: none"> - Changes to public roads - Cabling (underground and overground) - Monitoring and control centre. • ES should confirm connection from turbines to control building will be by underground cables. • ES should identify the route corridor for grid connection. • SNH recommends that sections of overhead line be undergrounded to avoid skyline views. <p>Hydrology Geology and Soils</p> <p>Baseline surveys should include;</p> <ul style="list-style-type: none"> • Underlying geology. • Soil type and characteristics. • Current process affecting soil. • Hydro-geological regime. • Groundwater vulnerability. • Surface catchment mapping. • Hydrology regime. • Water quality characteristics. • Water resource usage. • Sensitivity and status of soil and water. • ES must consider direct and indirect effects during construction and operational phases. • Specific attention should be given to minimising adverse impacts on tributaries flowing into the River Sark, Kirtle Water and the Wauchope Water. Mobilisation of sediment or nutrients. <p>Peat Slide Risk Assessment</p> <p>As peat is onsite, as good practice, SNH recommends a peat slide risk assessment is undertaken.</p>	
Royal Society for the Protection of Birds (RSPB)	Yes 2009	<ul style="list-style-type: none"> • Endorse SNH ornithological survey recommendations. • Breeding goshawks and wintering hen harriers are identified within the area and it is recommended to have year round vantage point survey covering potential nesting woods and open country within the proposed site area. Once this is performed a full collision risk analysis can be performed regarding the potential impact of collisions on these and other key species. 	See Chapter 10: Ornithology
Historic Scotland	Yes 2009	<ul style="list-style-type: none"> • Developer should engage suitably qualified archaeologist to assess the site. • Baseline information should identify the site and setting of the historic environment asset within boundary and within ZTV. This will include: <ul style="list-style-type: none"> - Scheduled Monuments - Archaeological sites and landscapes 	See Chapter 11: Cultural Heritage and Archaeology, Chapter 8: Landscape and Visual

Consultee	Response Received / Date	Key Issues Raised	Where in the ES is this addressed?
		<ul style="list-style-type: none"> - Listed Buildings - Gardens and Designated landscapes - Conservation Areas. • Field walkover survey will augment desk based information. • National Policy is set out in SPP23 Planning and the Historic Environment, Scottish Historic Environment Policy, and Memorandum of Guidance on Listed Buildings and Conservation Areas. • SPP23 stresses that Scheduled Monuments should be preserved in situ and that developments must be managed to preserve Listed Buildings and their setting to retain and enhance features of special architectural or historic interest. • Both direct impacts on the resource and indirect impacts on its setting must be addressed. Setting may be more than the immediate surroundings. • An appropriate mitigation strategy should be devised to reduce or avoid impacts. • Confirm no Scheduled Monuments, Listed Buildings or Gardens and designated landscapes are found within the search area. • Information on location of historic features can be found on PASTMAP. • Sites closest to the development area include; <p><u>Scheduled Monuments</u></p> <ul style="list-style-type: none"> - Callisterhall Farmstead - Callisterhall cairn 1100 m NE - Bloch Farm enclosure - Cleuchfood farmstead - Gibbs Hill, unenclosed settlement palisade settlements and houses - Callisterhall Cairn 2550 m NNE - Cokgair Hill settlement - Birrens Hill, fort - Timpanheck Cottages, cursus - Kirkconnel old church and graveyard - Blacket House Tower - Chalkyhill Wood, settlement - Crawthat Cottage, fort - Newhall Hill, enclosures - Scots' Dike boundary earthworks, Scotsdike Plantation - Old Irvine, settlement <p><u>Category A Listed Buildings</u></p> <ul style="list-style-type: none"> - Springkell House - Tarrasfood Tile Works - Hollows or Gilnockie Tower • At Scoping stage, HS have concerns for the potential of the proposed development to have an adverse impact on the setting of Scheduled Monuments in the vicinity. • ES should contain appropriate photomontage and wireframe views of the development. • 	
SEPA(General)	Yes 2009	<p>SEPA's principle concern is centred on construction activities and the creation of access roads.</p> <p>Pollution Prevention</p> <ul style="list-style-type: none"> • ES to address pollution issues with a preference for a dedicated pollution prevention section. • All potential pollution risks to be identified along with prevention and mitigation measures. • Include proposed discharges with dilution data provided. 	See Chapter 4: Development Description, Chapter 5: Construction and Decommissioning, and Chapter 12: Geology, Hydrology and Hydrogeology, Chapter 13: Noise

Consultee	Response Received / Date	Key Issues Raised	Where in the ES is this addressed?
		<ul style="list-style-type: none"> • Sensitive users (including abstractions) to be identified and assessed. • Identify private water supplies within catchment and detail protective/mitigation measures. • ES should propose steps to ensure emergency measures should oil, mud, silt, aggregate or concrete be washed away for any reason. • Ensure protection of water environment from particulate or chemical contamination. • Must comply with Controlled Activities Regulations (CAR). • Principles contained in PPGs should be incorporated into assessments and not just referenced. <p>Site Drainage</p> <ul style="list-style-type: none"> • Applicant to supply site drainage strategy, including collection, containment, treatment and disposal of contaminated arisings and surface water run-off. • Requirements of CAR and PPGs should be integrated into drainage strategy. <p>Foul Drainage</p> <ul style="list-style-type: none"> • ES to include temporary and long term welfare arrangements for workers. • Foul drainage to receive appropriate treatment prior to discharge. • Surface water to be excluded from foul system. • Refer to PPG4 for guidance. <p>Chemical / Oil Storage and Use</p> <ul style="list-style-type: none"> • ES to cover fuel transport and storage management. • Any fuel or other substances stored on site to have suitable bunding and containment to prevent spills and leakage. <p>Construction Method Statements (CMS)</p> <ul style="list-style-type: none"> • CMS for all aspects of site work to be produced prior to commencing work at site. <p>Environmental Management</p> <ul style="list-style-type: none"> • Identify mechanisms to ensure subcontractors are aware of environmental issues and sensitivities. • Consideration of requirement for qualified environmental scientist during construction. • Details of emergency procedures to be identified. <p>Borrow Pits & Concrete Batching</p> <ul style="list-style-type: none"> • Need for borrow pits should be outlined in ES including location and size. • Impacts relating to borrow pits to be appraised as part of overall impact of the scheme. • Potential requirement for waste management licences if waste disposed of to borrow pits. • Consider surface water drainage and dewatering (provide details to SEPA). • Any water discharges to comply with CAR. • Any concrete batching plant will require to be permitted under PPC regulations. <p>Earthworks and stockpiling soils</p> <ul style="list-style-type: none"> • Avoid vicinity of surface water bodies or water logged areas. • Details relating to management of run-off to be integrated into drainage strategy. <p>Roads and Crane Hardstandings</p> <ul style="list-style-type: none"> • Useful guidance can be found in the Forestry Commission's 'Forests and Water Guidelines' 4th Edition • Avoid road construction works during periods of heavy rainfall. <p>Nuisance and Air Quality</p> <ul style="list-style-type: none"> • ES should have regard for potential nuisances to adjacent land users from dust and noise emissions during construction and decommissioning phases. • EMP and CMS should include mitigation measures such as sheeting storage piles and reducing vehicle speeds. <p>Waste Management</p>	

Consultee	Response Received / Date	Key Issues Raised	Where in the ES is this addressed?
		<ul style="list-style-type: none"> • Encourage development of site specific method statements to identify all waste streams. • Encourage recovery and reuse of waste onsite. • Development should use practices that minimise use of raw materials and maximise use of recycled or renewable materials. • ES should address quantities of waste peat likely to arise from activities. Proposal to minimise removal of peat and waste peat to be used wherever practicable for beneficial use. <p>Forest Felling</p> <ul style="list-style-type: none"> • Expect applicant to have discussion with Forestry Commission about proposed felling operations. • Assess accurately quantities of waste wood likely to arise from tree felling operations inc identify a disposal route. • Minimise removal of immature trees where timber has limited beneficial use. • Wood arisings should be used wherever practicable for energy recover of other beneficial use. <p>Hydrology and Hydrogeology</p> <ul style="list-style-type: none"> • Potential impacts on hydrology and hydrogeology should be fully assessed in the ES. • Survey of all water interests in area to be undertaken including surface and groundwaters, potable water supplies, wells, boreholes, springs etc which could be at risk from development. • ES should take into consideration requirements of the Water Framework Directive, CAR regulations and Groundwater directive. • Have regard for SEPA Policy 19 - Groundwater Protection Policy for Scotland. • Abstractions must be in accordance with CAR. <p>Site Tracks</p> <ul style="list-style-type: none"> • Demonstrate floating roads will be 'fit for purpose' or ensure assessment of alternatives.. • Possible failure of floating roads to be considered in the ES. • Applicant may wish to seek advice from local authority roads department. <p>River Engineering and Culverting</p> <ul style="list-style-type: none"> • ES to provide full details of any proposed engineering works on watercourses (i.e. crossings, existing culverts, diversions etc). • SEPA Policy #26 has presumption against culverting of watercrossings. • Engineering works on watercourses likely to require formal authorisation from SEPA under CAR. • Any proposed river engineering to be discussed with SEPA at early stage of the development process. <p>Info held by SEPA</p> <ul style="list-style-type: none"> • A list of available data and guidance documents was provided 	
Dumfries and Galloway Constabulary	Yes 2009	Trial runs with abnormal loads should be performed to establish the ability of the road network to support abnormal loads.	See Chapter 15: Access, Traffic and Transport
Scottish Government (Climate Change and Water Industry Directorate)	Yes 2009	Refer to Schedule 4 Part I and II of the EIA (Scotland) Regulations 1999 for advice on type of information required in ES.	See Table 7.3 of this chapter.
Health and Safety Executive	Yes 2009	<ul style="list-style-type: none"> • All works conducted should not contravene policy and law as outlined in under the Health and Safety at Work etc Act 1974. • Site identified as potentially falling within consultation distance of Transco pipelines 2180 and 2178. 	See Chapter 17: Other Issues
JMP Consultants Ltd	Yes 2009	<ul style="list-style-type: none"> • The ES should provide information relating to the preferred route options for movement of heavy loads and anticipated staff construction movements via the trunk road network during the construction period. Information should be supplied identifying the potential impacts on the trunk road network when the development is operational and the proposed mitigation measures. • Trunk road related environmental impacts such as transportation, noise, pollution and air quality assessments. 	See Chapter 15: Access, Traffic and Transport
Civil Aviation Authority	Yes 2008	<ul style="list-style-type: none"> • The development may affect operator of Carlisle Airport. Recommends RES contacts direct to consult. • Possible need for aviation lighting on some or all of the towers. • The colour of the turbines need to take into regard aviation advice. 	See Chapter 14: Electromagnetic Interference and Aviation

Consultee	Response Received / Date	Key Issues Raised	Where in the ES is this addressed?
Carlisle Airport	Yes 2011	No objection.	See Chapter 14: Electromagnetic Interference and Aviation.
NERL	Yes 2009	Preliminary assessment finds development conflicts with safeguarding criteria in relation to Lowther Hill Radar.	See Chapter 14: Electromagnetic Interference and Aviation.
Defence Estates	Yes 2010	<ul style="list-style-type: none"> No low flying objection to the revised turbine layout. Please note this layout has changed slightly since and we await confirmation that DE maintain their no objection. All turbines should be fitted with 25 candela omni-directional red lighting or infrared lighting with an optimised flash pattern of one flash per second. Object to project on grounds of impacts on Eskdalemuir seismic monitoring station. 	See Chapter 14: Electromagnetic Interference and Aviation.
Arqiva	Yes 2011	<ul style="list-style-type: none"> BBC and ITV Re-Broadcast Links unlikely to be affected. Arquiva microwave links not affected. 	See Chapter 14: Electromagnetic Interference and Aviation.
OfCom	Yes 2011	Fixed Links identified: <ul style="list-style-type: none"> 0505251/1 Vodafone Limited. 0505922/1 Vodafone Limited. 0825147/1 Cable & Wireless Worldwide PLC. 0825202/1 Cable & Wireless Worldwide PLC. 0490169/3 Orange PLC. 	See Chapter 14: Electromagnetic Interference and Aviation.
Atkins Global	Yes 2011	No objection.	
BT	Yes 2011	No objection.	
Cable & Wireless	Yes 2011	Cable & Wireless Worldwide require a clearance of 100m between any radio line and the blade tip of any turbine.	
Joint Radio Company (JRC)	Yes 2011	No objection.	
O2	Yes 2011	No objection.	
Orange	Yes 2011	No objection.	
T-Mobile & 3G	Yes 2011	No objection.	
Vodafone	Yes 2011	<ul style="list-style-type: none"> Two links - one across site and one at edge. Vodafone specify a 100m minimum separation from turbine to link. 	
CSS	Yes 2009	<ul style="list-style-type: none"> No objection. 	
Transco/Scotland Gas Networks	Yes 2000	<ul style="list-style-type: none"> Advised that a high pressure gas mains crosses the site at Allfornought Hill. Crossing points will require protection such as concrete pads. Advise a site meeting to accurately determine route of pipeline. 	Chapter 17: Other Issues.

Consultee	Response Received / Date	Key Issues Raised	Where in the ES is this addressed?
Scottish Water	Yes 2009	<ul style="list-style-type: none"> • A detailed method statement and risk assessment should be submitted. • All structures must be a minimum distance of 10 m from the nearest water main. • No stationary plant, equipment, scaffolding, construction or excavated material should be placed over or close to any Scottish Water assets. • Special care should be taken not to avoid covering or filling Scottish Water assets. • Arrangements for altering the levels of any chambers must be made in agreement with Scottish Water and constructed in accordance with their specifications. • Excavation or pumping should not be carried out in the proximity of a water main without due notice having been given to Scottish Water. Special care should be taken to prevent the removal of ground supports systems at the outside of bends on any of our pipe work. If they are exposed during excavation work, they must be supported and recovered according to the requirements of Scottish Water. • In the event of any Scottish Water assets being damaged, full details should be passed to the local operations team. • Adequate notice should be provided for piling or other construction methods that may create vibrations in pipelines or ancillary apparatus. Any work carried out in this manner should conform to the accepted Scottish Water standards. • If construction plant is crossing over Scottish Water existing apparatus, temporary protection should be employed to spread the weight on the water pipes and sewers to within safe working limits. • The flow of water mains should not be interrupted. • Access must be allowed at all times to assets belonging to Scottish Water. There should be no interference with the free discharge of scours from the water mains. • If a connection to the water mains is required, a separate application to Scottish Water Planning and Development Services section for permission to connect should be made. 	Chapter 17: Other Issues.
British Telecom	Yes 2001	<p>Provided details of assets in the area. To avoid damage it is recommended that mechanical excavators or borers are not used within 600 mm of BT plant. Do not enclose or block BT equipment with scaffolding. Plant/vehicles crossing BT apparatus should either be re-sited or BT contacted for budget estimate.</p>	Chapter 17: Other Issues.
Forestry Commission	Yes 2009	<ul style="list-style-type: none"> • Draw attention to the Scottish Government's Policy on Control of Woodland Removal and guidance to wind farm developers which includes section on forestry. • Clarifies that Forestry Commission Scotland is the competent authority for felling approvals. 	Chapter 6: Forestry
Royal Commission of the Ancient and Historical Monuments of Scotland (RCAHMS)	Yes 2000	Commission is purely a record of finds, sites and monuments and is unable to comment or pass opinion of specific development proposals.	Chapter 11: Cultural Heritage and Archaeology

Potentially Significant Issues

7.15 Following consultation, the following key environmental issues associated with the Proposed Development are addressed in the EIA:

- Landscape and Visual;
- Ecology;
- Ornithology;
- Cultural Heritage and Archaeology;
- Geology, Hydrology and Hydrogeology;
- Noise;
- Electromagnetic Interference and Aviation;
- Forestry;
- Access, Traffic and Transport;
- Socio-Economics; and
- Potential Grid Connection.

Non-Significant Issues

7.16 It was not considered necessary to carry out an air quality assessment in relation to air emissions during construction due to the very limited nature of the emissions and the absence of nearby receptors. However, mitigation measures to be used during the construction phase which will serve to minimise air emissions are described in **Chapter 17: Other Issues**.

EIA Methodology

7.17 Good practice in EIA is defined in a number of sources (Hakes P et al, 2007²; Carroll B et al, 2003³; DCLG, 2006⁴; IEMA, 2004⁵; European Commission 2001⁶; PAN 58, 1998⁷, Circular 3/2011⁸). The methods followed in this EIA have drawn on these to generate a robust assessment. In line with guidance provided in the EIA Regulations and EIA good practice guides, the EIA process has involved the following:

- Consultation and scoping with statutory consultees, non-statutory consultees and the local community to identify the key issues on which the EIA should focus;
- Establishing baseline environmental conditions through desktop research and site surveys;
- Identifying effects of the proposed development ;

² Hakes P (2007) The Essex Guide to Environmental Impact Assessment

³ Carroll B and T Turpin (2003) Environmental Impact Assessment Handbook: A Practical Guide for Planners, Developers and Communities;

⁴ Department for Communities and Local Government (DCLG) (2006) Amended Circular on Environmental Impact Assessment (Consultation Paper);

⁵ Institute of Environmental Management and Assessment (2004) Guidelines for Environmental Impact Assessment;

⁶ European Commission, (2001) Guidance on EIA, <http://ec.europa.eu/environment/eia/eia-guidelines/g-review-full-text.pdf>

⁷ Scottish Government (1998) Planning Advice Note (PAN) 58: Environmental Impact Assessment;

⁸ Planning Circular 3/2011: Guidance on The Town and Country Planning (EIA) (Scotland) Regulations 2011 <http://www.scotland.gov.uk/Resource/Doc/350238/0117228.pdf>

- Determining how effects will be avoided or reduced through design evolution or additional mitigation measures;
- Assessing the significance of residual environmental effects on the identified receptors against recognised or defined criteria;
- Describing how likely significant future effects will be monitored (through e.g. conditions attached to a planning consent); and
- Reporting the process, results and conclusions of the EIA in an ES.

Consideration of Alternatives

7.18 Both the EIA Directive and the EIA Regulations require that, as part of the information to be provided in an ES, an outline of the main alternatives studied by the developer and an indication of the main reasons for their choice, taking into account the environmental effects, should be provided.

7.19 Good practice on EIA (DCLG, 2006⁹; PAN 58, 1998¹⁰) clarifies this point. It explains that the EIA Regulations do not require applicants to ‘invent’ an alternative where none has been considered, although the lack of alternatives should be explained. It goes on to accept that alternatives will be constrained by economic and operational reasons, and that the competent authority should consider an application on its merits and not on the merits of potential alternatives (although for some applications, the existence or otherwise of feasible alternatives might be a material consideration). **Chapter 3: Alternatives and Design Evolution** therefore summarises the alternatives to the Proposed Development considered by the design team, including the ‘no-development’ alternative, the use of alternative sites and the consideration of alternative designs through design evolution.

Baseline Characterisation

7.20 The purpose of EIA is to predict how environmental conditions may change as a result of a proposed development. This requires that the environmental conditions on the site are established, now and in the future, assuming no development.. These conditions are referred to as the baseline and are usually established through a combination of desk based research, site survey, and empirical studies and projections. Together these describe the current and future character of the site and surroundings, and the value and vulnerability of key environmental resources and receptors.

7.21 Making predictions about how parameters such as land use, landscape, views and the wider community may change in the future relies heavily on assumptions about future development and environmental trends and is at risk of being wholly hypothetical and subjective. For this reason, where development is not proposed in the vicinity for a future baseline to be addressed, the baseline adopted for EIA is normally taken as the current character and condition of the site and surrounds, and the likely significant environmental effects of the development are then assessed in the context of the current conditions alone.

Identification of Effects

7.22 Each technical chapter contains a section that identifies the likely significant effects on the environment that may arise as a result of the construction and/or operation of the proposed wind farm. Effects may be direct, indirect/secondary or cumulative. Within these categories, they may

⁹ Department for Communities and Local Government (DCLG) (2006) Amended Circular on Environmental Impact Assessment (Consultation Paper)

¹⁰ Scottish Government (1998) Planning Advice Note (PAN) 58: Environmental Impact Assessment

also be short, medium or long-term, permanent or temporary, positive or negative. Direct (or Primary) effects are changes to the baseline arising directly from activities that form part of the development, for example a localised increase in noise during construction. Indirect (or Secondary) effects are those that arise as a result of a direct impact, for example deterioration of water quality in a watercourse due to a discharge could have secondary effects on aquatic biodiversity. Cumulative effects occur when a receptor is subject to multiple effects, either of the same nature from different developments, or of different types but caused by the same development. Cumulative effects are discussed further below.

Cumulative Effects

- 7.23 In accordance with the EIA Regulations, the types of effects identified “*should cover direct effects and any indirect, secondary, cumulative, short medium and long-term, permanent and temporary, positive and negative effects*”. It is also important to consider the possible effects that the proposed wind farm may have in combination with existing, consented or other proposed developments or activities.
- 7.24 In accordance with the now superceeded PAN 45¹, likely cumulative effects have been defined as the predicted effects that the proposed wind farm may have in combination with other windfarm developments which are at the application stage, consented, under construction or operational. The study area for the wind farms considered as part of the cumulative assessment varies depending on the particular effects of relevance to specific technical chapters. For example, more localised developments are appropriate for the noise assessments whilst the landscape and visual assessment includes an initial search out to 60 km.
- 7.25 Where relevant, consideration has also been given to the likely cumulative effects of the Ewe Hill and Newfield overhead line (OHL) adjacent to the site.

Approach to Mitigation

- 7.26 In the hierarchy of mitigation, likely significant adverse effects should in the first instance be avoided altogether, then reduced and finally where possible offset (IEMA 2004).
- 7.27 Adverse effects are best avoided through design, and the iterative nature of EIA can help to inform the development of the design process. In this case, the EIA and the design processes have been combined. The baseline assessment and responses from consultees informed the layout of the proposed wind farm. Details of the design development are provided in **Chapter 3: Site Selection, Design Evolution and Alternatives** and also within the ‘Wind Farm Layout Considerations’ section of each technical chapter.
- 7.28 Mitigation measures to prevent, reduce and, where possible, offset any significant adverse effects on the environment can also be implemented during the construction phase or once the development is completed. Where the assessment of effects (see below) draws on mitigation that will be implemented in the future, a commitment has been given by the applicant to implement the mitigation measures set out in the relevant technical chapter.

Assessment of Effects

Significance

- 7.29 The assessment of the significance of environmental effects is important in that it informs the determination by the competent authority of the overall acceptability of the proposal. Determining significance is frequently one of the more contentious elements of the EIA process in that it uses not only predictive tools and assessment criteria, but also expert interpretations and value judgements.
- 7.30 The significance of environmental effects in EIA is typically assessed by considering both the character of the change (i.e. the size and duration of the effect) and the value/sensitivity of the environmental resource that experiences this effect (i.e. the receptor).
- 7.31 Each of the technical chapters provides the specific criteria, including sources and justifications, for quantifying the different levels of effect. Where possible, this has been based upon quantitative and accepted criteria together with the use of value judgements and expert interpretations to establish to what extent an effect is environmentally significant. Effects of ‘negligible significance’ include ‘no effect’.

Phasing

- 7.32 In relation to phasing, the likely significant effects arising from construction, operation and decommissioning have been assessed individually in each chapter, where appropriate. **Chapter 5: Construction and Decommissioning** provides a detailed breakdown of project phasing.
- 7.33 A detailed assessment of decommissioning has not been undertaken as part of the EIA as 1) the future baseline conditions (environmental and other developments) cannot be predicted accurately at this stage and 2) the detailed proposals for decommissioning are not known at this stage. **Chapter 5: Construction and Decommissioning** outlines the general principles of the decommissioning process and confirms that a method statement would be prepared and agreed with DGC prior to decommissioning.

Assumptions and Limitations

- 7.34 The principal assumptions that have been made, and any limitations that have been identified, in undertaking the EIA, are set out below. Assumptions specifically relevant to each topic have been set out in the relevant technical chapter.
- The assessments contained within each of the technical chapters are based upon the application drawings and plans submitted as part of the application (refer to **Chapter 4: Development Description** for a list of the relevant drawings);
 - Baseline conditions have been established from a variety of sources, including historical data, but due to the dynamic nature of certain aspects of the environment, conditions may change during the construction and operation of the proposed wind farm;
 - The assessments contained within each of the technical chapters are based upon all of the principal existing land uses adjoining the site remaining substantially unaltered;
 - Construction works across the site will take place in accordance with the description in **Chapter 5: Construction and Decommissioning**;
 - The design, construction and completed development will satisfy environmental standards consistent with contemporary legislation, practice and knowledge as a minimum, but will strive to achieve best practice; and

- To ensure environmental protection, a Construction Method Statement (CMS) will be prepared providing a mechanism to prevent, reduce, and mitigate environmental effects. The draft CMS will be discussed and agreed with DGC and other stakeholders at a later date, if planning consent is granted, and enforced and monitored during all key stages of the works.

The Environmental Statement

Content of the ES

The required content of the ES is set out in Schedule 4 of the EIA Regulations.

7.35 Table 7.2 presents these requirements and indicates where in this ES the requirements have been met.

Table 7.2: Information which is required in an ES (Schedule 4 of the EIA Regulations)

Required Information		Section of ES
Part I		
1	Description of the development, including in particular - <ul style="list-style-type: none"> A description of the physical characteristics of the whole development and the land-use requirements during the construction and operational phases; A description of the main characteristics of the production processes, for instance, nature and quantity of the materials used; An estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc) resulting from the operation of the development. 	Chapter 4: Development Description and Chapter 5: Construction and Decommissioning provide these details.
2	A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors.	Technical Chapters 8 - 18 provide these details, particularly in the Baseline Conditions section.
3	A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect/secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development, resulting from: <ul style="list-style-type: none"> The existence of the development; The use of natural resources; The emission of pollutants, the creation of nuisances and the elimination of waste, and The description by the applicant or appellant of the forecasting methods used to assess the effects on the environment. 	Technical Chapters 8 - 18 provide these details, particularly in the Potential Effects and Residual Effects sections.

Required Information		Section of ES
4	A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.	Technical Chapters 8 - 18 provide these details, particularly in the Mitigation section.
5	A Non Technical Summary (NTS) of the information provided under paragraphs 1 to 4 of this Part.	This is published as Volume 1 of the ES.
6	An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant or appellant in compiling the required information.	Technical Chapters 8 - 18 provide this information where relevant.
PART II		
1	A description of the development comprising information on the site, design and size of development.	Chapter 4: Development Description and Chapter 3: Site Selection, Design Evolution and Alternatives.
2	A description of the measures envisaged in order to avoid, reduce, and, if possible remedy significant adverse effects.	Mitigation section in each technical chapter.
3	The data required to identify and assess the main effects which the development is likely to have on the environment.	Methodology section in each technical chapter.
4	An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for this choice, taking into account the environmental effects.	Chapter 3: Site Selection, Design Evolution and Alternatives.

Technical Chapters

7.36 As described in **Chapter 1: Introduction**, a consistent approach to the presentation of EIA findings in the ES has been adopted for each of the technical areas, including:

- an explanation of the information gathering and assessment methodology, including a review of policy and legislative requirements of relevance to the specific technical area;
- a description of the baseline conditions;
- a description of the mitigation measures that have been incorporated into the proposed wind farm through its design and for its construction and operation;
- the identification of the likely significant effects arising during the construction and operation phases of the proposed wind farm; and
- an assessment of likely significant environmental effects and an evaluation of their significance against defined criteria.

7.37 Accordingly, the technical chapters (Chapter 8 - 17) adopt the following structured approach:

- Introduction;
- Legislation and Policy Context;
- Effects Assessed in Full;
- Effects Scoped Out;
- Issues Identified During Consultation;
- Assessment Methodology;
- Baseline Conditions;
- Wind Farm Layout Considerations;
- Potential Effects;
- Mitigation;

- Residual Effects;
- Cumulative Effects (if relevant); and
- Summary.

Good Practice

7.38 As with EIA, good practice in the preparation of the ES is defined in a number of sources, with more specific issues covered by ES review checklists (IEMA¹¹ (2009); N Lee et al¹² (1999); PAN 58¹³ (1998)). Many of these checklists are very detailed and go to some length. In terms of widely applicable and practical guidance, the quality indicator check provided within PAN 58 in particular identifies a number of possible quality indicators for an ES. Table 7.3 reproduces the PAN 58 checklist, along with a description of how these indicators have been met by this ES.

Table 7.3: Quality indicator check from PAN 58

Does the statement report on a systematic approach to the gathering and analysis of information?
The approach adopted for gathering and analysis of information is outlined in Chapter 7. Specific methodology for each discipline is outlined in the 'Methodology' section of each technical chapter.
Does it contain the information specified in Schedule 4 of the Regulations?
Yes, as identified in Table 7.2.
Is the information presented in a clear, comprehensive and objective manner?
The approach to collection of information, modelling and impact assessment is outlined in the 'Methodology' section of each technical chapter. Baseline conditions are summarised in each technical chapter with reference to appropriate sources, and the impact assessment has followed a systematic and transparent approach.
Is there a relatively concise main report which draws on the technical studies and summarises them as necessary?
Volume 2 of the ES is the main report, presenting the most important baseline, mitigation and interpretative assessment results. Raw data and further technical information has been included in Technical Appendices in Volume 3. Volume 4 presents the Figures for the Landscape and Visual Impact Assessment.
Is there sufficient cross referencing for the reader to make the links between the NTS, the main report, appendices, and any separate studies?
The NTS contains references throughout to direct the reader to further information in the main ES report. Similarly, technical chapters in the main ES report refer the reader to supporting data and other technical information where this is available in the Technical Appendices. The ES also cross-refers to other documentation supporting the planning application. Referencing of legislation, guidance and previous studies has been provided throughout the ES.
Is the space devoted to environmental issues commensurate with their potential effects, and are those issues with insignificant effects identified?

A range of likely significant environmental effects has been identified in each technical chapter. These effects are then mitigated through avoidance or reduction, by design or by construction / operational management. The residual effects are then assessed for significance in accordance with the sequence of assessment outlined in the methodology sections of each technical chapter. The residual assessment of effects demonstrates how the conclusion of significance or non significance has been reached. Where a residual effect has been determined as potentially significant, further consideration has been given to describing this effect and additional mitigation that may reduce the effect further.

Are mitigation measures presented as a hierarchy?

PAN 58 identifies a hierarchy of preferred mitigation options, starting with avoidance of effects where possible, followed by reduction of the effect, and then lastly through offsetting the effect. The approach to mitigation adopted in the environmental assessment process is described in Chapter 7 and in more detail in each of the technical chapters. Wherever possible, potentially significant environmental effects have been avoided through design. Where this has not been possible, reduction of the magnitude or duration of the effect has been considered; this has been achieved at both the design stage and through the implementation programme. Off-setting of unavoidable effects has been adopted at the final stages.

Are mitigation (and restoration) measures described in sufficient detail and timetabled?

Mitigation through design is described in detail in each of the ES technical chapters, with references to the timing of implementation where relevant.

Does it state the means by which monitoring will be carried out?

Monitoring proposals are addressed in the mitigation proposals outlined in each of the ES technical chapters where appropriate.

Are the methods by which the analysis was carried out and the ES prepared explained, and are the credentials of the experts involved stated?

Chapter 7 of the ES provides a detailed description of the methodological approach adopted for this EIA. This is further expanded in each of the technical chapters. The EIA project team is presented in Chapter 1 of the ES, and the author of each technical section is stated at the beginning of that chapter.

Is the development plan context for the project set out?

The development plan context is set out in chapter 2 of the ES. There is also further information available in the stand alone Planning Statement, which accompanies the planning application.

Are detailed technical studies contained in appendices?

Detailed technical information is provided in the Technical Appendices Volume (3) of the ES. Sources of information for the environmental assessment and raw data (where appropriate) are summarised in the chapters and the supporting appendices.

Are links to other consent regimes clearly indicated?

Yes. Each ES section summarises applicable regulatory frameworks including regimes for water pollution prevention, wildlife protection, noise control and construction.

Is the 'Non Technical Summary' a summary in every-day language?

The NTS (Volume 1) has been drafted with technical language removed, and defining other terms where appropriate. There is also a glossary of technical terms and abbreviations provided with the ES main report.

¹¹ IEMA ES Review Criteria [http://www.iema.net/download/membership/corporate/Review Criteria.pdf](http://www.iema.net/download/membership/corporate/Review%20Criteria.pdf)

¹² EIS Review; Lee N, R Colley, J Blonde and J Simpson (1999) Reviewing the quality of Environmental Statements and Environmental Appraisals

¹³ Scottish Government (1998) Planning Advice Note (PAN) 58: Environmental Impact Assessment;

