Enoch Hill Wind Farm

Environmental Statement

Volume 3a: Technical Appendices

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Appendix 1.A
Glossary and Abbreviations

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Glossary

***Please Note: Those descriptions marked with an asterisk are identical to the terminology provided in the Guidelines for Landscape and Visual Impact Assessment, (GLVIA3) glossary.**

Aquifer	An aquifer comprises strata that hold an exploitable groundwater resource.
Ancient woodland	Land continuously wooded since AD1600.
Archaeology	The study of past human societies or people through physical evidence of their material culture. In practical terms, and in terms of this assessment, archaeology encompasses sub-surface remains and artefact finds, although can also include visible surface features, such as earthworks. Archaeological evidence can be described as '*in situ*', which means that it has not been significantly disturbed or moved from its original place.
Biodiversity Action Plan	A strategy for conserving and enhancing wild species and wildlife habitats in the UK
Bryophytes	Mosses and liverworts
Catchment	The area drained by a particular stream or river.
Couch	Otter resting site – above ground e.g. in reeds or grasses
Cultural heritage	A term which encompasses all features and remains which are the product of human activity. This includes standing buildings, earthwork monuments, industrial features, sub-surface archaeological remains and artefact scatters. It also includes landscapes and their constituent features which have been shaped by human occupation, from planned features such as historic parks and gardens, field boundaries and plantations to changes in flora and fauna as a result of human activity. A broad definition of cultural heritage also encompasses less tangible cultural aspects, such as traditions, customs, beliefs and language. Taken collectively, the present manifestations of the cultural heritage are referred to as the Historic Environment.
Cumulative effects	'Additional changes caused by a proposed development in conjunction with other similar developments or as a combined effect of a set of developments, taken together' (SNH, 2012)
Cumulative landscape effects:	Effects that 'can impact on either the physical fabric or character of the landscape, or any special values attached to it' (SNH, 2012)
Cumulative visual effects: **In combination** **In succession** **Sequentially**	Effects that can be caused by combined visibility, which 'occurs where the observer is able to see two or more developments from one viewpoint' and/or sequential effects which 'occur when the observer has to move to another viewpoint to see different developments' (SNH 2012) Occurs where the observer is able to see two or more developments from one viewpoint: In combination Where two or more developments are or would be within the observer's arc of vision at the same time without moving his/her head (GLVIA3, 2013 Table 7.1). In succession Where the observer has to turn his/her head to see the various developments – actual and visualised (GLVIA3, 2013 Table 7.1). Sequential cumulative effect Occurs where the observer has to move to another viewpoint to see the same or different developments. Sequential effects may be assessed for travel along regularly used routes such as major roads or popular paths. Frequently sequential Where the features appear regularly and with short time lapses between instances depending on the speed of travel and distance between viewpoints (GLVIA3, 2013 Table 7.1). Occasionally sequential Where longer time lapses between appearances would occur because the observer is moving slowly and/or there are larger distances between the viewpoints (GLVIA3, 2013 Table 7.1).
Degree of change	A combination of the scale, extent and duration of an effect also defined as 'magnitude'.
Designated Landscape*	Areas of landscape identified as being of importance at international, national or local levels, either defined by statue or identified in development plans or other documents.

Development*	Any proposal that results in change to the landscape and/or visual environment.
Development Site	The area enclosed by the red line boundary for the proposed Enoch Hill Wind Farm as shown on ES **Figure 1.2.**
Direct Effects	Effects that occur as a direct result of the Proposed Development.
Elements*	Individual parts which make up the landscape, such as, for example, trees, hedges and buildings.
Enhancement*	Proposals that seek to improve the landscape resource of the site and its wider setting beyond its baseline condition.
Environmental fit	The relationship of a development to identified environmental opportunities and constraints in its setting.
European Site	In the context of **Chapter 11 - Ecology**, defined in the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland) as : (a) a Special Area of Conservation, (b) a site of Community importance which has been placed on the list referred to in the third sub-paragraph of Article 4(2) of the Habitats Directive, (c) a site hosting a priority natural habitat type or priority species in respect of which consultation has been initiated under Article 5(1) of the Habitats Directive, during the consultation period or pending a decision of the Council under Article 5(3), or (d) an area classified pursuant to Article 4(1) or (2) of the Wild Birds Directive.
Feature*	Particularly prominent or eye-catching elements in the landscape such as tree clumps, church towers or wooded skylines OR a particular aspect of the project proposal.
Flush	A patch of wet ground, usually on a hillside, where the water flows diffusely and not in a fixed channel.
Field of View (FoV)	The horizontal angle of the view illustrated in a visualisation.
Geographical Information System (GIS)	A system that captures, stores, analyses, manages and presents data linked to location. It links spatial information to a digital database.
GLVIA	Guidelines for Landscape and Visual Impact Assessment, Third Edition, published jointly by the Landscape Institute and Institute of Environmental Management and Assessment, 2013.
GWDTE	A Groundwater Dependent Terrestrial Ecosystem is an ecosystem, such as a wetland or flush, whose integrity is critically dependent on the level, flow or quality of groundwater.
Habitat	Place where an organism (e.g. human, animal, plant, micro-organism) or population of organisms live, characterised by its surroundings, both living and non-living.
Habitats Regulations	The Conservation (Natural Habitats &c.) Regulations 1994 (as amended).
Herpetofauna	Amphibians and reptiles.
Historic Environment Record (HER)	A county-based record of all known archaeological or cultural heritage sites, maintained by the Local Planning Authority.
Historic Landscape Characterisation (HLC) and Historic Land-use Assessment (HLA)	Historic characterisation is the identification and interpretation of the historic dimension of the present-day landscape or townscape within a given area. HLC is the term used in England and Wales, HLA is the term used in Scotland.
Holt	An underground site used by an otter for shelter or protection.
HGVs	HGVs will be used to transport roadstone and concrete from the site and are defined as goods vehicles exceeding a gross vehicle weight of 7.5 tonnes. For the purposes of this assessment, the buses and coaches that are accounted for in existing background traffic flows are also included within a HGV classification.
Holt	An underground site used by an otter for shelter or protection.
HMP	Habitat Management Plan
Indirect effects*	Effects that result indirectly from the proposed development as a consequence of the direct effects, often occurring away from the site, or as a result of a sequence of interrelationships or a complex pathway. They may be separated by distance or in time from the source of the effects. Also used to describe indirect landscape effects concerning perceptual characteristics and qualities of the landscape and indirect visual effects in relation to issues such as 'setting'.

Iterative design process	The process by which project design is amended and improved by successive stages of refinement which respond to growing understanding of environmental issues.
Key characteristics	Those combinations of elements which are particularly important to the current character of the landscape and help to give an area its particularly distinctive sense of place.
Land cover	The surface cover of the land, usually expressed in terms of vegetation cover or lack of it. Related to but not the same as land use.
Landscape and Visual Impact Assessment (LVIA)	A tool used to identify and assess the likely significance of the effects of change resulting from development both on the landscape as an environmental resource in its own right and on people's views and visual amenity.
Landscape Character Area (LCA)*	These are single unique areas which are the discrete geographical areas of a particular landscape type.
Landscape Character Assessment (LCA)	The process of identifying and describing variation in the character of the landscape, and using this information to assist in managing change in the landscape. It seeks to identify and explain the unique combination of elements and features that make landscapes distinctive. The process results in the production of a Landscape Character Assessment.
Landscape Character Types (LCTs)*	These are distinct types of landscapes that are usually homogenous in character. They are generic in nature in that they may occur in different areas in different parts of the country, but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation and historical land use and settlement pattern, and perceptual and aesthetic attributes. (Topic Paper 6, Countryside Agency and SNH 2004)
Landscape capacity	The degree to which a particular landscape character type or area is able to accommodate change without altering the overall character of the area or its integrity. Capacity is likely to vary according the type and nature of change being proposed and the management or landuse of the site area.
Landscape character*	A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.
Landscape character unit	A small area of distinctive or recognisable character within a wider LCA.
Landscape classification	A process of sorting the landscape into different types using selected criteria but without attaching relative values to different sorts of landscape.
Landscape constraints	Components of the landscape resource such as views or mature trees recognised as constraints to development. Often associated with landscape opportunities.
Landscape effects*	Effects on the landscape as a resource in its own right. An assessment of landscape effects deals with the effects of change and development on landscape as a resource. The concern here is with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character. (GLVIA3 2013, Para 5.1).
Landscape fit	The relationship of a development to identified landscape opportunities and constraints in its setting.
Landscape patterns	Spatial distributions of landscape elements combining to form patterns, which may be distinctive, recognisable and describable e.g. hedgerows and stream patterns.
Landscape quality (condition)*	A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements.
Landscape qualities	A term used to describe the aesthetic or perceptual and intangible characteristics of the landscape such as scenic quality, tranquillity, sense of wildness or remoteness. Cultural and artistic references may also be described here.
Landscape receptors *	Defined aspects of the landscape resource that have the potential to be affected by a proposal.
Landscape resource	The combination of elements that contribute to landscape context, character, and value.
Landscape sensitivity	The sensitivity of a landscape is defined by consideration of factors such as value, quality / condition importance, resilience, susceptibility and capacity of the landscape relative to a particular type of proposed development.
Landscape strategy	The overall vision and objectives for what the landscape should be like in the future, and what is thought to be desirable for a particular landscape type or area as a whole, usually expressed in formally adopted plans and programmes or related documents.
Landscape value*	The relative value that is attached to different landscapes by society. A landscape may be valued by different stakeholders for a whole variety of reasons.

Level of effect	Determined through the combination of sensitivity of the receptor and the proposed magnitude of change brought about by the development.
Legally protected species	Many species of animal and plant receive some degree of legal protection. For the purposes of this study, legal protection refers to: (i) species included on Schedules 2 and 4 of The Conservation (Natural Habitats, &c.) Regulations 1994 (SI 1994 No. 2716) (the 'Habitats Regulations') and Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981, excluding species that are only protected in relation to their sale (see Section 9[5] and 13[2]) reflecting the fact that the Proposed Development does not include any proposals relating to the sale of species; and (ii) badgers, which are protected under the Protection of Badgers Act 1992.
Mitigation	Measures which are proposed to prevent, reduce and where possible offset any significant adverse effects (or to avoid, reduce and if possible remedy identified effects. (GLVIA3, 2013 Para 3.37).
Nationally Scarce	Species recorded from 16-100 10km squares of the UK national grid
Noise	The ratio between the quietest audible sound and the loudest tolerable sound is a million to one in terms of the change in sound pressure. Because of the wide range a logarithmic scale is used in noise level measurement. The scale used is the decibel (dB) scale which extends from 0 to 140 dB corresponding to the intensity of the sound pressure level. It is widely accepted that a change of 3 dB(A) is required for a person to perceive the change in a steady noise level and that an increase or decrease of 10 dB(A) is perceived as being twice or half as loud respectively.
Noise	The ear has the ability to recognise a particular sound depending on the pitch or frequencies found at the source. Microphones cannot differentiate noise in the same way as the ear and to counter this, the noise measuring instrument applies a correction to correspond more closely to the frequency response of the human ear. The correction factor is called 'A Weighting' and the resulting measurements are written as dB(A). The dB(A) is internationally accepted and has been found to correspond well with people's subjective reaction to noise.
Noise	The following indices and descriptors are used when describing noise: • L_W is the sound power level. It is a measure of the total noise energy radiated by a source of noise, and is used to calculate noise levels at a distant location. The L_{WA} is the A-weighted sound power level; • $L_{eq,T}$ is the equivalent continuous sound level, and is the sound level of a steady sound with the same energy as a fluctuating sound over a time period T. It is possible to consider this level as the ambient noise encompassing all noise at a given time. The L_{Aeq} is the A-weighted equivalent continuous sound level; • $L_{90,T}$ index represents the noise level exceeded for 90 percent of the measurement period over a time-period T and is used to indicate quieter times during the measurement period. It is often used to measure the background noise level. The $L_{A90,T}$ is the A-weighted background noise level;
Noise continued	• L_{Amax} is the A-weighted maximum recorded noise level during the measurement period; • Hard Ground (G=1) – a ground cover which includes paving, water, ice, concrete and all other ground surfaces having a low porosity; • Soft Ground (Porous) (G=0) – ground cover which includes ground covered by grass, trees or other vegetation, and all other ground surface suitable for the growth of vegetation, such as farming land; and • Mixed Ground (G=0.5) – the surface consists of both hard and soft (porous) ground.
Noise – Wind Shear	A final non-acoustic descriptor used in this assessment is wind shear. The level of wind shear for a particular site describes how wind speed varies with height, and is assigned a coefficient which can be used to convert the wind speed measured at one height to the wind speed at another height.
OHMP	Outline Habitat Management Plan
Passerine	A bird of the order Passeriformes, sometimes known as perching birds or songbirds.
Percentage Impact Assessment	This considers the proportional increase in traffic as a result of the proposed development.
Perceptual Aspects	A landscape may be valued for its perceptual qualities, notably wildness and/or tranquillity. (GLVIA3, 2013 Box 5.1)
Personal Injury Accidents	For the purposes of assessing the accident rate on the proposed route, personal injury accident data is obtained from the local authority. PIA data is classed by severity.

Phase 1 Habitat Survey	A standard methodology for recording habitats within a site (JNCC , 2010)
Photomontage*	A visualisation which superimposes an image of the proposed development upon a photograph or series of photographs.
Positive or Negative Types of Landscape Effect	The landscape effects may be positive, neutral, or negative. In landscape terms – a positive effect would require development to add to the landscape quality and character of an area. Neutral landscape effects would include low or negligible changes that may be considered as part of the 'normal' landscape processes such as maintenance or harvesting activities. A negative effect may include the loss of landscape elements such as mature trees and hedgerows as part of construction leading to a reduction in the landscape quality and character of an area.
Positive or Negative Types of Visual Effect	The visual effects may be positive, neutral, or negative. In visual terms – positive or negative effects are less easy to define or quantify and require a subjective consideration of a number of factors affecting the view, which may be positive, neutral, or negative. Opinions as to the visual effects of wind energy developments vary widely, however it is not the assumption of this assessment that all change, including substantial levels of change is a negative experience. Rather this assessment has considered factors such as the visual composition of the landscape in the view together with the design and composition, which may or may not be reasonably, accommodated within the scale and character of the landscape as perceived from the receptor location.
Probability of Effect	The probability of a landscape and visual effect occurring as a result of the Proposed Development should be regarded as certain, subject to the stated project design and the continuance of the existing, baseline landscape resource, including known changes such as other permitted wind farm development. The probability of cumulative effects however is variable. Whereas those effects related to existing wind energy development and those under construction are considered as certain, effects related to development with planning consent is only considered as likely. Wind energy development sites for which there is a submitted planning application are considered as uncertain and other wind energy development for which no planning application has been made are considered as uncertain / unknown, as the level of uncertainty would be greater.
Proposed Development	The infrastructure which comprises the proposed Enoch Hill Wind Farm.
Rarity	The presence of rare elements or features in the landscape or the presence of a rare Landscape Character Type. (GLVIA3 2013, Box 5.1)
Receptor	The resources and people that could be affected by the development. For LVIA, the Physical landscape resource, special interest, or viewer group that will experience an effect.
Recreation Value	Evidence that the landscape is valued for recreational activity where experience of the landscape is important. (GLVIA3 2013, Box 5.1)
Red Data Book (RDB) species	National list of endangered, vulnerable and rare species
Representativeness*	Whether the landscape contains a particular character and/or features or elements which are considered particularly important examples.
Residual effects	Potential environmental effects, remaining after mitigation.
Scale Indicators	Landscape elements and features of a known or recognisable scale such as houses, trees, and vehicles that may be compared to other objects, where the scale of height is less familiar, to indicate their true scale.
Scenic quality	Depends upon perception and reflects the particular combination and pattern of elements in the landscape, its aesthetic qualities, its more intangible sense of place or 'genius loci' and other more intangible qualities. (GLVIA3 2013, Box 5.1)
Seascape	Landscapes with views of the coast or seas, and coasts and adjacent marine environments with cultural, historical and archaeological links with each other.
Sett	The burrows of a badger family group
Sense of Place (genius loci)	The essential character and spirit of an area: 'genius loci' literally means 'spirit of the place'.
Sensitivity*	A term applied to specific receptors, combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value associated to that receptor.
Significance	A measure of the importance or gravity of the environmental effect, defined by significance criteria specific to the environmental topic.

Significant Effects	It is a requirement of the EIA Regulations to determine the likely significant effects of the development on the environment which should relate to the level of an effect and the type of effect. Where possible significant effects should be mitigated. The significance of an effect gives an indication as to the degree of importance (based on the magnitude of the effect and the sensitivity of the receptor) that should be attached to the impact described. Whether or not an effect should be considered significant is not absolute and requires the application of professional judgement. Significant – 'noteworthy, of considerable amount or effect or importance, not insignificant or negligible'. The Concise Oxford Dictionary. For the LVIA assessment, these are those levels and types of landscape and visual effect likely to have a major or important / noteworthy or special effect of which a decision maker should take particular note.
Spraints	Otter droppings
SSSI	Site of Special Scientific Interest- a statutory designation for sites of national (Great Britain) nature conservation importance
Susceptibility*	The ability of a defined landscape or visual receptor to accommodate the specific proposed development without undue negative consequences.
Sustainability*	The principle that the environment should be protected in such a condition and to such a degree that ensures new development meets the needs of the present without compromising the ability of future generations to meet their own needs.
Territory	The area defended by an individual or group of animals.
Time depth	Historical layering – the idea of landscape as a 'palimpsest', a much written-over asset of landscape.
Target note (TN)	Target Note - a written record of species/habitats of nature conservation value found in a location that has been surveyed as part of a Phase 1 habitat survey.
Townscape	The character and composition of the built environment including the buildings and the relationships between them, the different types of urban open space, including green spaces, and the relationship between buildings and open spaces.
Type or Nature of effect	Whether an effect is direct or indirect, temporary or permanent, positive (beneficial), neutral or negative (adverse) or cumulative.
Traffic Management Plan	The aim of a TMP is to lay out the requirement and provisions to implement the process of achieving the most efficient and safe movement of vehicles on the public highway around the development site in conjunction with the efficient movement of vehicles to and from the wind farm.
Two-way development traffic	This comprises the incoming delivery vehicle movements and consequent outgoing vehicle movement following drop-off of the load. The assessment assumes the worst case scenario, that the delivery vehicles exit the site without loading residue material.
UK BAP	United Kingdom Biodiversity Action Plan
Valued	Some assessment criteria used in the Environmental Statement, e.g. in the biodiversity and cultural heritage assessments consider objectively the 'value' of a particular receptor.
Viewpoints	Selected for illustration of the visual effects fall broadly into three groups: Representative Viewpoints: selected to represent the experience of different types of visual receptor, where larger numbers of viewpoints cannot all be included individually and where the significant effects are unlikely to differ – for example certain points may be chosen to represent the view of users of particular public footpaths and bridleways; Specific Viewpoints: chosen because they are key and sometimes promoted viewpoints within the landscape, including for example specific local visitor attractions, such as landscapes with statutory landscape designations or viewpoints with particular cultural landscape associations. Illustrative Viewpoints: chosen specifically to demonstrate a particular effect or specific issues, which might, for example, be the restricted visibility at certain locations. (GLVIA3 2013, Para 6.19).
Visual amenity*	The overall pleasantness of the views people enjoy of their surroundings, which provide an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.

Visual dominance	A visual effect often referred to in respect of residential properties that in relation to development would be subject to blocking of views, or reduction of light / shadowing, and high levels of visual intrusion.
Visual effect*	Effects on specific views and on the general visual amenity experienced by people.
Visual Receptors*	Individuals and/or defined groups of people who have the potential to be affected by a proposal.
Visual sensitivity	The sensitivity of visual receptors such as residents, relative to their location and context, to visual change proposed by development.
Visualisation	Computer visualisation, photomontage, or other technique to illustrate the appearance of the development from a known location.
Wireline or Wireframe	A computer generated line drawing of the DTM (digital terrain model) and the Proposed Development from a known location.
Zone of Theoretical Visibility (ZTV)*	A map, usually digitally produced, showing areas of land within which a development is theoretical visible.

Abbreviations

AADT	Annual Average Daily Traffic
ACoW	Archaeological Clerk of Works
AEP	Annual Exceedance Probability
AGLV	Area of Great Landscape Value
AGST	Above Ground Storage Tank
AHLV	Area of High Landscape Value
AIA	Aviation Impact Assessment
AIS	Aeronautical Information Service
AM	Aerodynamic or Amplitude Modulation
AMAAA	Ancient Monuments and Archaeological Areas Act 1979
AMSL	Above Mean Sea Level
ANSP	Air Navigation Service Provider
AOD	Above Ordnance Datum
AOV	Angle of View
ART	Ayrshire Rivers Trust
ASPT	Average Score per Taxon
ASA	Advertising Standards Agency
ASA	Archaeologically Sensitive Areas
ATC	Air Traffic Control
ATCC	Air Traffic Control Centre
ATCO	Air Traffic Controller Officers
ATCs	Automatic Traffic Counts
ATP	Area Tourism Partnership
ATTP	Area Tourism Partnership Plan
AWI	Ancient Woodland Inventory
BAP	Biodiversity Action Plan
BARS	Biodiversity Action Reporting System
BBC	British Broadcasting Corporation
BCT	Bat Conservation Trust
BERR	Department for Business Enterprise and Regulatory Reform
BFI	Baseflow Index
BGS	British Geological Survey
BMWP	Biological Monitoring Working Party
BNL	Basic Noise Levels
BoCC	Birds of Conservation Concern
BPP	Bird Protection Plan
BS	British Standard
BT	British Telecom

BT	Blade Tip
BTO	British Trust for Ornithology
BWEA	British Wind Energy Association
CAA	Civil Aviation Authority
CAR	The Water Environment (Controlled Activities) (Scotland) Amendment Regulations 2011
CAS	Controlled Airspace
CAWL	Core Areas for Wild Land
CBD	Convention on Biological Diversity
CCDP	Climate Change Delivery Plan
CBC	Common Bird Census
CBD	Convention on Biological Diversity
CBS	Cement Bound Sand
CCS	Carbon Capture and Storage
CDM	Construction Design and Management
CEH	Centre for Ecology & Hydrology
CEMP	Construction Environmental Management Plan
CEEQUAL	Civil Engineering and Environmental Quality Assessment and Award Scheme
CFP	Carbon Floor Price
CfD	Contracts for Difference
CIEEM	Chartered Institute of Ecology and Environmental Managements
CIRIA	Construction Industry Research and Information Association
CLVIA	Cumulative Landscape and Visual Impact Assessment
CMS	Construction Method Statement
CNS	Communication, Navigation and Surveillance
CO_2	Carbon Dioxide
CRH	Collision Risk Height
CRTN	Calculation of Road Traffic Noise
CRV	Collision-Risk Volume
CSM	Common Standards Monitoring
CTA	Controlled Area
CVF	Carrick Volcanic Formation
dB	Decibels – The logarithmic measure of sound
dB(A)	Decibels – Weighted to reflect the range of human hearing
DBA	Desk-Based Assessment
DCC	Dalmellington Community Council
DCLG	Department for Communities and Local Government
DD&G	Destination Dumfries & Galloway
DECC	Department for Energy and Climate Change
DEFRA	Department for the Environment, Food and Rural Affairs

DETR	Department of the Environment, Transport and the Regions
DfT	Department for Transport
DGC	Dumfries and Galloway Council
DGC	Defence Geographic Centre
DGERC	Dumfries & Galloway Environmental Resources Centre
DGLA	Dumfries and Galloway Landscape Assessment
DGLCS	Dumfries and Galloway Windfarm Landscape Capacity Study
DIO	Defence Infrastructure Organisation
DMRB	Design Manual for Roads and Bridges
DMP	Drainage Management Plan
DNO	Distribution Network Operator
DTI	Department of Trade and Industry
DWS	Drinking Water Standard
EAC	East Ayrshire Council
EALDP	East Ayrshire Local Development Plan
EALCS	East Ayrshire Landscape Wind Capacity Study
EAM	Excess Amplitude Modulation
EAR	Environmental Appraisal Report
EC	European Commission
EC	Electrical Conductivity
EcIA	Ecological Impact Assessment
ECoW	Environmental / Ecological Clerk of Works
ECDU	Energy Consents and Deployment Unit of the Scottish Government
EE	Everything Everywhere
EHO	Environmental Health Officer
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMS	Environmental Management Systems
EPS	European Protected Species
EPS	Emissions Performance Standard
ES	Environmental Statement
ESA	Environmentally Sensitive Areas
ETSU	Energy Technology Support Unit
EQI	Ecological Quality Index
EQS	Environmental Quality Standards
FC	Forestry Commission
FCE	Forestry Civil Engineering
FCS	Forestry Commission Scotland
FEH	Flood Estimation Handbook

FIR	Flight Information Region
FoV	Field of View
FTEs	Full Time Equivalent Jobs
GAAC	General Aviation Awareness Council
GDLs	Gardens and Designed Landscapes
GES	Government Economic Strategy
GFT	Galloway Fisheries Trust
GHG	Greenhouse Gas
GIS	Geographical Information Systems
GLVIA	Guidelines for Landscape and Visual Impact Assessment, Third Edition, published jointly by the Landscape Institute and Institute of Environmental Management and Assessment, 2013.
GPA	Glasgow Prestwick Airport
GPG	Good Practice Guide
GVA	Gross Value Added
GW	Gigawatts
GWDTE	Groundwater Dependant Terrestrial Ecosystem
ha	hectare
HAP	Habitat Action Plans
HER	Historic Environment Record
HGVs	Heavy Goods Vehicles
HH	Hub Height
HLA	Historic Landuse Assessment
HMP	Habitat Management Plan
HRA	Habitat Regulations Assessment
HS	Historic Scotland
HSE	Health and Safety Executive
ICAO	International Civil Aviation Organisation
IDSA	International Dark-Sky Association
IEEM	Institute of Ecology and Environmental Management
IEA	Institute of Environmental Assessment
IEMA	Institute of Environmental management and Assessment, formerly the Institute of Environmental Assessment (IEA)
IfA	Institute for Archaeologists
IoA	Institute of Acoustics
IPCC	Intergovernmental Panel on Climate Change
IPP	Interim Planning Policy
IUCN	International Union for Conservation of Nature
JNCC	Joint Nature Conservation Committee
JRC	Joint Radio Company
Km	Kilometre

kV	Kilovolts
kWhr	Kilowatt Hours
L_{A90}	The “A weighted” noise level exceeded for 90 per cent of the specified measurement period
L_{aeq}	The equivalent continuous sound level
$L_{W(A)}$	Sound Power Level (A-weighted)
LBAP	Local Biodiversity Action Plan
LCA	Landscape Character Areas
LCM	Lower Coal Measures
LCT	Landscape Character Type
LCU	Landscape Character Unit
LCA	Landscape Character Areas
LDP	Local Development Plan
LFA	Low Flying Area
LNR	Local Nature Reserve
LoS	Line of Sight
LPA	Local Planning Authority
LUPGN	Land Use Planning System Guidance Note
LTS	Local Transport Strategy
LUPGN	Land Use Planning System Guidance Note (SEPA, 2012)
LV	Low Voltage
LVIA	Landscape and Visual Impact Assessment
mAOD	Metres Above Ordnance Datum
MAFF	Ministry for Agriculture Fisheries and Food (now DEFRA)
mAOD	Metres above Ordnance Datum
MBGL	Metres below ground level
MCM	Middle Coal Measures
Ml/d	Mega litres per day
Mil AIP	Military Aeronautical Information Publication
MoD	Ministry of Defence
MOU	Memorandum of Understanding
MS	Marine Scotland
MSS	Marine Scotland Science
MSD	Minimum Separation Distance
MW	Megawatts
MWe -	Megawatt Equivalent
MWhr	Megawatt hours
NATS	National Air Traffic Services
NBN	National Biodiversity Network
NCA	National Character Area

NCR	National Cycle Route
NCN	National Cycle Network
NDC	Nationwide Data Collection
NDSFB	Nith District Salmon Fisheries Board
NERC	Natural Environment Research Council
NGR	National Grid Reference
NHS	National Health Service
NHZ	Natural Heritage Zone
NM	Nautical Miles
NMRS	National Monument Record Scotland
NNR	National Nature Reserves
NPF	National Planning Framework
NPF3	Scotland’s Third National Planning Framework
NRTFs	National Road Traffic Forecasts
NSA	National Scenic Area
NSA	New Statistical Account
NSR	Non-Statutory Register
NTS	Non-Technical Summary
NTR	National Tourist Routes
NVC	National Vegetation Classification
NWG	Noise Working Group
ODPM	Office for the Deputy Prime Minister
OHMP	Outline Habitat Management Plan
ORS	Old Red Sandstone
OS	Ordnance Survey
OSA	Old Statistical Account
PAN	Planning Advice Note
PAC	Pre-Application Consultation
PERD	Post-Excavation and Research Design
PIA	Personal Injury Accidents
PIRP	Pollution Incident Response Plan
PMP	Peat Management Plan
PPG	Pollution Prevention Guidance (issued by SEPA)
PPP	Pollution Prevention Plan
PRoW	Public Right of Way
PSHRA	Peat Slide Hazard Risk Assessment
PSR	Primary Surveillance Radar
PWS	Private Water Supply
QSRMC	Quality Scheme for Ready Mixed Concrete

RAP	Renewables Action Plan
RBD	River Basin District
RBBP	Rare Breeding Birds Panel
RBMP	River Basin Management Plan
RCAHMS	Royal Commission on the Ancient and Historical Monuments of Scotland
RD	Rotor Diameter
RDP	Restoration and Decommissioning Plan
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations
RIVPACS	River Invertebrate Prediction and Classification System
RO	Renewables Obligation
ROC	Renewables Obligation Certificates
ROS	Renewables Obligation (Scotland)
RPM	Revolutions Per Minute
RPP1	Report on Proposals and Policies
RSA	Regional Scenic Area
RSG	Raptor Study Group
RSPB	Royal Society for the Protection of Birds
RUK	RenewableUK
SAAR	Standard Average Annual Rainfall
SAC	Special Area of Conservation
SAP	Species Action Plan
SAWL	Search Areas for Wild Land
SBL	Scottish Biodiversity List
ScACC	Scottish Area Control Centre
SCADA	Supervisory Control and Data Acquisition
SD	Secure Digital
SEPA	Scottish Environment Protection Agency
SFCC	Scottish Fisheries Co-Ordination Centre
SGt	Scottish Government
SHEP	Scottish Historic Environment Policy
SIMD	Scottish Index of Multiple Deprivation
SINC	Sites of Importance for Nature Conservation
SLCA	Sensitive Landscape Character Area
SLM	Sound Level Meter
SMP	Species Management Plan
SMP	Stakeholder Management Plan
SMR	Sites and Monuments Record
SNAWI	Semi Natural Ancient Woodland Inventory
SNH	Scottish Natural Heritage

SNIFFER	Scotland and Northern Ireland Forum for Environmental Research
SP	ScottishPower
SPA	Special Protection Area
SPA	Swept Path Analysis
SPEN	Scottish Power Energy Networks
SPT	Scottish Power Transmission
SPG	Supplementary Planning Guidance
SPP	Scottish Planning Policy
SPZ	Source Protection Zone
SPR	Standard Percentage Runoff
SPT	Scottish Power Transmission
SPZ	Source Protection Zone
SRMS	Scottish Raptor Monitoring Scheme
SR	Scottish Renewables
SRO	Scottish Renewable Obligation
SROC	Scottish Renewables Obligation Certificates
SSRSG	South Strathclyde Raptor Study Group
SSSI	Site of Special Scientific Interest
STEP	Scottish Trip End Program
SuDS	Sustainable Urban Drainage Systems
SUW	Southern Upland Way
SWMP	Site Waste Management Plan
SWS RASG	South West Scotland Regional Aviation Solution Group
SWT	Scottish Wildlife Trust
TA	Transport Assessment
TGN	Technical Guidance Note
TMA	Terminal Control Area
TMP	Traffic Management Plan
TN	Target Note
TNO	Transmission Network Operator
TOPA	Technical and Operational Assessment
TSO	Transmission System Operator
TTA	Tactical Training Areas
UCM	Upper Coal Measures
UHF	Ultra High Frequencies
UIR	Upper Information Region
UK BAP	UK Biodiversity Action Plan
UKCP09	United Kingdom Climate Projections, 2009
UKIAIP	UK Integrated Aeronautical Information Package

UKLFS	United Kingdom Low Flying System
UKTAG	UK Technical Advisory Group for the Water Framework Directive
ULF	Upper Limestone Formation
UNFCCC	United Nations Framework Convention on Climate Change
VERs	Valued Ecological Receptors
VFR	Visual Flight Rules
VP	Vantage point
WANE	Wildlife and Natural Environment (Scotland) Act
W&CA	Wildlife and Countryside Act
WFD	Water Framework Directive
WLA	Wild Land Area
WoSAS	West of Scotland Archaeology Service
ZTV	Zone of Theoretical Visibility
ZoC	Zone of Contribution

Appendix 2.A
Scoping Report

Enoch Hill Wind Farm

Scoping Report

November 2012

amec

Report for

Simon Lejeune

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E.ON Climate and Renewables

Enoch Hill Wind Farm

Scoping Report

November 2012

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Document Revisions

No.	Details	Date
1	First Draft Report	November 2012
2	Final Report	November 2012

Executive Summary

Purpose of this Report

The proposed Enoch Hill Wind Farm scheme by E.ON Climate and Renewables UK Developments Ltd (EC&R) is anticipated to have an installed capacity of over 50MW. This would fall under Section 36 of the Electricity Act (1989). The purpose of this report is to serve as a formal request to the Scottish Ministers to provide a scoping opinion under Regulation 7 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000.

The scoping request has been prepared by AMEC Environment and Infrastructure UK Ltd (AMEC) on behalf EC&R.

This report sets out the proposed scope of the Environmental Impact Assessment (EIA), the findings of which will be presented in the Environmental Statement (ES) that will accompany the subsequent Section 36 application for the proposed wind farm development at Enoch Hill. The Scottish Ministers and consultees are invited to make comments and suggestions on this scope and to highlight any pertinent information that they hold and can make available to EC&R for the assessment.

Contents

1. Introduction

1.1 Introduction

E. ON Climate and Renewables UK Development Ltd (herein referred to as EC&R) has identified a potential opportunity to develop a commercial scale wind farm at Enoch Hill, located between New Cumnock and Dalmellington in East Ayrshire.

The proposed site is located approximately 5km to the south west of New Cumnock and approximately 7km north east of Dalmellington, just to the north of the border with Dumfries and Galloway Council. The proposed site is situated in a clearing within the Southern Uplands Forest area. The national grid reference for the proposed site centre is E 257 360, N 608 630.

- **Figure 1** shows a site location map in the wider landscape.
- **Figure 2** shows the proposed site boundary, together with proposed developable area for turbines.

For the purposes of this scoping request, the wind farm would consist of up to 23 turbines with a potential generating capacity of 69MW, together with access tracks, crane hard standings, an electricity sub-station, permanent anemometer masts and a temporary construction compound. An initial proposed site layout does not form part of this Scoping Request, but will be developed to inform the preliminary environmental assessments. For the purpose of identifying scope a maximum tip height of 150m has been considered.

Under Section 36 of the Electricity Act 1989, consent is required from the Scottish Ministers for the construction and operation of all power generating plant that would have an installed capacity of more than 50MW. The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (the EIA Regulations) apply to Section 36 applications.

The development falls under Schedule 2 of the EIA Regulations (a generating station, the construction of which (or the operation of which) will require a Section 36 consent but which is not Schedule 1 development). A Schedule 2 development constitute EIA development if the application is supported by an ES or the development is likely to have significant effects on the environment by virtue of factors such as its nature, size or location as set out in Section 3 of the EIA Regulations.

EC&R recognises that due to the size of the development, the proposal has the potential to result in significant effects on the environment. Therefore EC&R proposes to undertake an EIA to accompany the application submission.

AMEC Environment and Infrastructure UK Ltd (AMEC) have been commissioned to prepare this report requesting a '*Scoping Opinion*' from the Scottish Ministers in relation to the proposed Enoch Hill Wind Farm as per Regulation 7 of the EIA Regulations.

We have assumed that an EIA will be required in this instance, and we therefore request formal confirmation of this from the Scottish Ministers within the Scoping Opinion.

1.1.1 The Developer

EC&R is one of the world's largest power and gas companies. In the UK, EC&R supplies energy to more than 5 million customers and generates enough electricity for around 8 million homes. E.ON Climate & Renewables was set up in 2007 as a global business that's responsible for developing, constructing and operating all E.ON's renewable energy projects.

In the UK, EC&R focuses on developing onshore and offshore wind, biomass and marine energy technologies. At the moment, EC&R owns and operates 17 onshore and 3 offshore wind farms. Together, these have an installed capacity of more than 400 megawatts (MW).

1.2 Report Structure

To keep the scoping report clear and to follow a logical process, the following structure has been used:

- Development proposal overview including site context, design process, development elements;
- Approach to EIA and Consultation;
- Identification of applicable legislation, policy and guidance;
- Identification of relevant environmental issues and proposed EIA scope: Ecology (4) to Other Issues (13); and
- A summary of the proposed scope of the EIA based drawing upon **Chapters 4** to **13**.

1.3 Proposed Development

1.3.1 Site Context

The nearest settlements to the proposed site are New Cumnock located 5km to the north east and Dalmellington located 7km to the south west. The nearest residential property to the proposed site is located at Maneight (approximately 310m from the proposed site). The proposed site is located in East Ayrshire Council directly north of the border with Dumfries and Galloway Council and the former Stewartry District.

The B741 is located directly to the north and the Carsphairn Forest surrounds the proposed site to the west, south and east. The Carsphaim Forest is largely coniferous. The Southern Upland Way (SUW) is located approximately 12.5km to the east.

The elevation of the proposed site ranges from 210m to 569m above ordnance datum (AOD). The proposed site covers an area of 1518ha, the majority of which is grazing land. Vegetation across the site is grassland with no tree cover and is used as sheep pasture. The terrain is relatively undulating and steep in some places. The landform to the south of the proposed site comprises Enoch Hill, falling eastward to form High Chang Hill. The northern landform comprises Barbeys Hill, Chang Hill, Rigg Hill and Peat Hill. Benty Cowan Hill is located in the eastern part of the proposed site. There are a number of small water courses crossing the proposed site.

The proposed site is located within the ‘Southern Upland’ Landscape Character Area. The Southern Upland is identified as a landscape character area of medium to low sensitivity in the Ayrshire and Clyde Valley Wind Farm Landscape Capacity Study (2004). The characteristics of the Southern Uplands LCA are large smooth domed or slightly conical shaped hills. The hills often have steep sides and glens, many of which have been enlarged by glacial erosion. The landscape is large with a remote quality. The landscape type of the Southern Uplands with Forest is similar to that of the Southern Uplands, however the characteristic is very different due to the dominant forest cover (Sitka Spruce). The East Ayrshire Scenic Landscape Area appears to overlap with the proposed site.

The Muirkirk and North Lowther Uplands Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI) is located approximately 11km to the north of the proposed site and is designated for the breeding season in terms of short eared owls, hen harrier, merlin, peregrine falcon and golden plover, and during the winter season for hen harrier.

The proposed site as per the Guidance on the Location of Windfarms within Ayrshire (Addendum to the Ayrshire Joint Structure Plan Technical Report TR03/2006) is covered by the ‘Areas of Potential Constraint’ classifications.

1.3.2 Development Elements

An overview of the main development elements which will form the basis for the EIA are outlined in **Table 1.1**.

Table 1.1 Overview of Development Elements

Elements	Overview
Turbines	There are a number of three bladed vertical axis turbine makes and models which are expected to be suitable for this proposed site. The final choice of the turbines that would be installed will be subject to a competitive tendering procedure. A set of parameters will however be established to create the scheme on which the environmental assessment is undertaken and with which the final turbine selection will need to comply. The turbines are expected to be installed on reinforced concrete foundations, established on load bearing strata or bedrock (following excavation) though pilings may be required depending on ground conditions. These concrete foundations would be backfilled with the excavated soil so only the turbine base is exposed (typically a 4-5m diameter). The final choice of foundation design will be based on the turbine selection, most efficient use of materials, water table and local ground conditions.

Elements	Overview
Access Tracks	Access tracks will need to be constructed onsite to link turbines and other infrastructure and to connect the proposed site to the public highway network. Some tracks already exist on-site and these may be upgraded though new tracks will also need to be established. These are likely to be constructed by scraping back surface material to bedrock or suitable load bearing strata followed by placement of geogrid and crushed stone capping. Stone for such tracks can sometimes be won from borrow pits opened on-site, provided suitable sources of material can be identified. If off-site materials are required then these would be sourced as locally as is reasonably practicable. A number of quarries are known to be located locally, and it is anticipated that one or more of these would be used to supply stone to the proposed site if off-site stone is required.
Associated Infrastructure	Wind turbine generators require transformers to convert generated electricity to a voltage suitable for the distribution grid. These transformers could be housed within the tower structure or may be housed in external kiosks (typically 4m x 3m x 3m). Underground cables will link the transformers at each of the turbines to an on-site control building. Detailed construction and trenching specifications will depend on the ground conditions encountered at the time, but typically cables will be laid in a trench 1100mm deep and 600mm wide. To minimise ground disturbance, cables will be routed along the side of the access tracks wherever practicable. The grid connection for the development would be via a new control building in an on-site location yet to be determined. Metering and switchgear will be contained in this building.
Construction Process	The construction period for the wind turbines is expected to last approximately 18 months, depending upon the final form of the scheme put forward, weather conditions and ground conditions encountered during the construction period. The construction process will consist of the following principal activities: • Extraction of aggregates from borrow pits or import of this material from an adjacent off-site source for access track and turbine base construction; • Construction of on-site access roads inter-linking the turbine locations and control building incorporating relevant works to maintain site hydrology and manage surface water run-off from the roads; • Construction of temporary hard standing and temporary site office facilities; • Construction of turbine foundations; • Construction of control building (and substation compound if required); • Excavation of trenches and cable laying adjacent to site roads; • Connection of electrical distribution and signal cables; • Delivery to site and erection of wind turbines; • Commissioning of site equipment; and • Site restoration. Many of these operations will be carried out concurrently, although predominantly in the order identified. Site restoration will be programmed and carried out to allow restoration of disturbed areas as early as possible and in a progressive manner.
Grid Connection	The connection between the proposed site and the wider grid is the responsibility of the Distributed Network Operator (DNO) and would be subject to a separate consent procedure and will therefore not be considered within the ES. However it is likely the point of connection will be the proposed 400kV substation planned for construction at Meikle Hill to the west.

Elements	Overview
Decommissioning	The development will be designed with an operational life of 25 years. At the end of this life a number of options exist: • The proposed site will be decommissioned and turbines removed; • An application could be made to extend the operational life of the proposed site using the existing equipment; or • An application could be made to replace the existing equipment with new equipment. It is the former option that will be covered by the EIA and planning application submission and will include the removal of all above ground structures and equipment, cables cut off below ground but otherwise left in situ, base of turbines cut off below ground level and covered with topsoil to encourage regeneration. Roads would either be left for use by the proposed site occupier/landowner, or where appropriate material is available, may be covered with topsoil to allow regeneration. The environmental effects of this approach to decommissioning are considered to be less than those arising from the break up and removal of road and turbine bases from the proposed site.

2. EIA and Consultation

2.1 EIA Overview

EIA is a systematic procedure that must be followed for certain categories of project before they can be consented. It aims to assess a project's likely significant environmental effects. This helps to ensure that the predicted significant effects and the scope for reducing them are properly understood by the public, consultees and in this instance, the Scottish Ministers before it makes its decision.

The EIA process should be systematic, analytical, impartial, consultative and iterative and is presented in an ES. Typically, a number of design iterations take place in response to environmental constraints identified during the EIA process (in effect, incorporating mitigation measures to avoid, reduce or compensate for identified adverse effects). Schedule 4 of the EIA Regulations specifies that the ES should describe those:

> *"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."*

Establishing which aspects of the environment and associated issues are relevant for a particular project is captured in the EIA scoping process. Scoping is the process of identifying those aspects of the environment and associated issues that need to be considered when assessing the potential effects of a particular development proposal. This recognises that there may be some environmental elements where there will be no significant issues or likely effects resulting from the development and hence where there is no need for further investigation to be undertaken. The proposed scope of this EIA is set out in the subsequent Chapters and summarised in **Chapter 14**.

Following the identification of the scope of the EIA, individual environmental topics are subject to survey, investigation and assessment, and individual topic chapters are prepared for the ES. The assessment methodologies are based on recognised good practice and guidelines specific to each topic area as outlined within this report, **Chapter 4** to **13**.

2.2 Consultation

Consultation is an essential element of the EIA process and will be reported on within the ES and potentially supplementary documentation.

EC&R is committed to promoting dialogue with statutory and non-statutory consultees and the local community throughout the development process, and acknowledges that the development of wind turbines and other renewable energy technologies can be controversial. Given that a significant amount of information is required to support any meaningful assessment of a wind farm project, it is a challenge to communicate such developments to a diverse range of people.

EC&R are seeking to engage with all those with an interest in the development in order to inform the evolution of the proposal and to ensure that their concerns and ideas are identified and considered. Contact will be made through the EIA process with those who hold information that may inform the design of the development and the assessment process; including a range of statutory and non-statutory consultees. A number of public exhibitions and drop-in events will be arranged to allow ample opportunity for the public, local councillors and other interested parties to comment and engage with EC&R about our wind farm proposals.

Early discussions have taken place with the Scottish Ministers, East Ayrshire Council, Scottish Natural Heritage (SNH), Historic Scotland and the Royal Society for the Protection of Birds (RSPB).

3. Legislation, Policy & Guidance

3.1 Introduction

The EIA will be progressed taking account of applicable legislation, policy and guidance. This chapter firstly outlines the planning policy framework followed by an overview of further legislation, policy and guidance applicable to the various technical subject areas outlined in chapter 4 and onwards.

3.2 Energy and Planning Policy Framework

Under the provisions of Section 25 of the Town and Country Planning (Scotland) Act of 1997 as amended by the Planning etc (Scotland) Act 2006, there is a requirement placed on the decision-maker dealing with applications whereby the decision has to be made in accordance with the development plan, unless material considerations indicate otherwise. Emerging development plans are examples of material considerations, as is national planning and energy policy issued by the Scottish Government.

This section briefly outlines the applicable energy and planning policy framework which will inform the EIA.

3.2.1 National Policy Context

Energy and Climate Policy

The following legislation and policy are applicable:

- Climate Change (Scotland) Act 2009;
- The Climate Change Delivery Plan 2009;
- The Scottish Government Renewables Action Plan June 2009 and 2011; and
- Draft Electricity Generation Policy Statement 2010.

National Planning Policy & Guidance

- The National Planning Framework 2 (NPF2);
- The Scottish Planning Policy (SPP); and
- Relevant guidance is included in **Table 3.1** below.

Table 3.1 Key National Planning Advice

National Planning Advice
Specific Advice Sheet (updated August 2012) Onshore Wind Turbines
PAN 1 /2011 (March 2011) Planning and Noise
PAN 2 /2011 (July 2011) Planning and Archaeology
PAN 3 /2010 (August 2010) Community Engagement
PAN 51 (Revised 2006) Planning, Environmental Protection and Regulation
PAN58 (September 1999) Environmental Impact Assessment
PAN60 (updated January 2008) Planning for Natural Heritage
PAN61 (July 2001) Planning and Sustainable Urban Drainage Systems
PAN75 (August 2005) Planning for Transport
PAN79 (September 2006) Water and Drainage
PAN 81 Community Engagements

3.2.2 The Development Plan

The applicable Development Plan comprises the approved Ayrshire Joint Structure Plan (2007) and the adopted East Ayrshire Local Plan (2010). It should be noted that the Development Plan is anticipated to be replaced with a New Local Development Plan. The Main Issues Report was approved by East Ayrshire Council's Cabinet on 24th October 2012 and a formal consultation will run from 12th November 2012 until 25th January 2013. The Council expects that the new Local Development Plan will be submitted to Scottish Ministers in December 2014 with a view to having the Proposed Plan adopted by the Council in December 2015.

Relevant policies against which the development will be assessed are set out in **Table 3.2** below.

Table 3.2 Relevant Development Plan Policies

Relevant Development Plan Policies	
The Ayrshire Joint Structure Plan 2007	Policy ECON 6 Renewable Energy
	Policy ECON 7 – Wind Farms
	Policy ENV1 Landscape Quality
	Policy ENV2 – Landscape Protection
	Policy ENV6 – Protection of the Built Heritage
	Policy ENV7 – Natural Heritage Designations

Relevant Development Plan Policies	
The East Ayrshire Local Plan 2010	*Policy SD1 – General Strategy Policy* *Policy CS12 – Renewable Energy Developments* Policy CS14 - Wind Energy Development Policy CS15 – Renewable energy fund Policy CS16 – removal of turbine requirement Policy CS17 – cumulative effects of wind farms Policy ENV 1 – Strategic Environmental Policy – Cultural Heritage Policy ENV 2 – Strategic Environmental Policy - Ecology *Policy ENV3 – Sensitive Landscape Areas* *Policy ENV4 – Listed Buildings* *Policy ENV6 – Scheduled Ancient Monuments* Policy ENV 8 – Historic Gardens and Designated Landscapes *Policy ENV10 – Design Standards* *Policy ENV15 – Landscape and Environment* *Policy ENV16 - Landscape and Environment* *Policy ENV17 – Land in Rural Areas*

3.2.3 Emerging Development Plan and Supplementary Planning Guidance

Guidance on the Location of Wind Farms within Ayrshire

The Addendum to the Ayrshire Joint Structure Plan Technical Report TR03/2006 document provides guidance in support of policy ECON 6 Renewable Energy and ECON 7 Wind farms in the Ayrshire Joint Structure Plan. In brief, it sets out the methodology and findings of the analysis which led to the designation of the 'Areas of Search' for wind energy development. The proposed site is located within both the 'broad area of search' and the 'Areas of Potential Constraint'. It must be noted that being within the 'Areas of Potential Constraint' does not preclude development but the constraints will be required to be fully investigated and mitigation proposed as part of the overall proposal.

Local Development Plan

The Main Issues Report was approved by the Council's Cabinet on 24th October 2012 and a formal consultation will take place from 12th November 2012 to 25th January 2013. The Main Issues Report asks whether the Council should identify a new area of search for wind farms. A landscape capacity study is currently being prepared by East Ayrshire Council, South and North Ayrshire Councils and SNH. The landscape capacity study will not be available until the end of 2012/early 2013.

Ayrshire and Clyde Valley Wind Farm Landscape Capacity Study

The study published in 2004 was commissioned by SNH and involved the development and application of a methodology for assessing the capacity of the landscape to accommodate wind energy based on landscape character. The proposed site is located within the Southern Upland Landscape Character Area of medium to low sensitivity.

3.2.4 Other relevant Development Plans

Given the proposed site's proximity to Dumfries and Galloway Council relevant development plan policies, comprising the Dumfries and Galloway Structure Plan (1999) and the Stewartry Local Plan 2006 from this area will also be considered in the EIA process. In addition, supplementary planning guidance including the Dumfries and Galloway Wind Energy Interim Planning Policy (2012) and the Dumfries and Galloway Wind Farm Landscape Study (January 2011) are noted.

The Dumfries and Galloway Wind Energy Interim Planning Policy designates the area directly south of the proposed development as an area of search which corresponds with The Addendum to the Ayrshire Joint Structure Plan Technical Report TR03/2006.

3.3 Further Technical Legislation and Guidance

The following legislation and guidance will inform applicable technical sections of the EIA as outlined in Chapter 5 and onwards. Land Use Consultants (2004). Ayrshire and Clyde Valley windfarm landscape capacity study. Scottish Natural Heritage Commissioned Report No. 065 (ROAME No. F01AA309c).

Scotland's Transport Strategy 2006

- East Ayrshire Council's Local Transport Strategy (LTS) Integrated Impact Assessment Framework
- East Ayrshire Council's Integrated Impact Assessment Framework
- South Western Transport Partnership (SwestTrans) 2008
- Institute of Environmental Assessment (IEA) publication Guidance Notes No. 1: Guidelines for the Environmental Assessment of Road Traffic (1993)
- The Highways Agency et al – Design manual for roads and bridges, Volume 11: Environmental Assessment (1993)
- Scottish Executive – Transport Assessment for development proposals (2002) 12.8.1 (2006) Development Control: Planning for Air Quality)
- ETSU-R-97 *The Assessment and Rating of Noise from Wind Farms* (ETSU 1996)
- Acoustics Bulletin, volume 34, number 2, March/April 2009
- Institute of Acoustics 'Discussion Document' on the 'Good Practice Guide to the Application of ETSU-R-97 for Wind Turbine Noise Assessment'

- The Water Framework Directive / Water Environment and Water Services (Scotland) Act 2003
- River Basin Management Planning
- Controlled Activities Regulations
- The EU Floods Directive / Flood Risk Management Act (Scotland) 2009
- Institute of Ecology and Environmental Management guidelines (IEEM 2006)
- Scottish Historic Environmental Policy
- Managing change in the historic environment guidance.
- Guidelines for Landscape and Visual Impact Assessment, Second Edition, Landscape Institute and IEMA (2002).
- Siting and Designing Windfarms in the Landscape, SNH (2009) and Guidelines on the Environmental Impacts of Wind Farms and Small Scale Hydroelectric Schemes, Scottish Natural Heritage (SNH) (2001).
- Guidance: Cumulative Effects of Wind Farms, Version 2 revised 13/04/05, SNH (2005).
- Visual Representation of Wind farms: Good Practice Guidance for SNH, The Scottish Renewables Forum and the Scottish Society of Directors of Planning, Horner & Maclennan and Envision (2006).
- Visual Assessment of Windfarms: Best Practice, University of Newcastle for Scottish Natural Heritage (2002); Commissioned Report F01AA303A.
- Council Directive 2009/147/EC on the conservation of wild birds (the Birds Directive);
- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) as translated into UK law by the Conservation (Natural Habitats) Regulations 1994 (as amended);
- The Wildlife & Countryside Act 1981 (as amended);
- The Nature Conservation (Scotland) Act (2004);
- The Wildlife and Natural Environment (Scotland) Act 2011;
- Survey methods for use in the assessment of the impacts of onshore wind farms on bird communities (SNH 2010[1]);

[1] Scottish Natural Heritage (2010). Survey methods for use in the assessment of the impacts of onshore wind farms on bird communities.

- Assessing significance of impacts of onshore wind farms on birds outwith designated areas (SNH 2006[2]);
- Assessing the cumulative impact of onshore wind energy developments (SNH 2012[3]);
- Guidelines for Ecological Impact Assessment in the UK (IEEM 2006); and
- Ayrshire Local Biodiversity Action Plan (LBAP).
- Institute of Ecology and Environmental Management guidelines (IEEM 2006)[4]

[2] Scottish Natural Heritage (2006). Assessing significance of impacts of onshore wind farms on birds outwith designated areas.

[3] Scottish Natural Heritage (2012). Assessing the cumulative impacts of onshore wind energy developments.

[4] The IEEEM EcIA Guidelines (Terrestrial, Freshwater and Coastal, 2006) are currently under review. Until such time as a revised version is published, the 2006 version remains current.

4. Ecology

4.1 Introduction

The Ecology chapter of the Environmental Statement will identify the baseline ecology of the site and the surrounding area and will then assess the potential effects on identified ecological features which may arise during the different stages of the proposed Wind Farm development. Policies, guidance and strategies outlined in **Chapter 3** will be taken into account in the ecological impact assessment.

4.2 Proposed Scope of Assessment

A key consideration in assessing the effects of any development on ecology and nature conservation interests is to define the areas of land cover and the species and habitats that need to be considered in the assessment. The importance of this lies in two inter-related considerations:

- A development can affect habitats and species directly (e.g. the land-take required) and indirectly (e.g. disturbance), the impacts potentially extending beyond the proposed site boundaries; and
- It is impractical for an ecological assessment to consider every individual species and habitat that may potentially be affected, rather it should focus on species and habitats that are valued in some way (e.g. designated nature conservation sites, habitats or species identified as having priority value in biodiversity terms, species protected by specific legislation or species which have economic value) and which could potentially be affected by the proposed development.

It is against this background that the scope of this assessment has been defined and will evolve throughout the assessment process. The ES chapter will detail the findings of the desk study together with the results of the ecological surveys undertaken. These will form the baseline against which the potential impacts of the development will be assessed, based in both the ‘value’ of the receptor (using an evaluation methodology adapted from IEEM Guidelines) and the nature and magnitude of the effect that the development will have on it.

A range of environmental measures will be incorporated as part of the proposed Enoch Hill Wind Farm where appropriate, to avoid significant effects at the construction, operation and decommissioning phases. These measures are anticipated to include the identification of any ecological constraints that will be accounted for in the layout design (‘mitigation through design’), though may also include controls during construction to reduce/avoid ecological impacts and enhancement measures as appropriate.

The ES chapter will report the significance of predicted residual impacts on sensitive ecological receptors, assuming the incorporation of the environmental measures which will form part of the scheme.

4.2.1 Baseline Overview

The proposed site is open and extensive with a number of high steep hills. The habitats on site are comprised predominantly of flush, grassland and rush habitats. There are also small areas of broadleaved woodland and conifer plantation woodland. The habitats appear to be more agriculturally improved to in the north of the proposed site. All areas appear to be grazed by sheep and cattle. A number of watercourses are present, most of which have steep rocky embankments. There are large expanses of conifer plantation in the surrounding area to the west and south.

4.2.2 Statutory and Non-Statutory Designated Sites

Consultation with relevant environmental bodies, local wildlife organisations and completion of a desk-based study have identified that there are no statutory designated sites of nature conservation importance within 2km of the proposed site boundary.

There is a small area of Ancient Woodland located within the proposed site boundary along Dalleagles Burn and there are three additional areas of Ancient Woodland located within 2km of the proposed site boundary to the north and north east. Ancient woodlands are areas listed as being continuously wooded since the 17th Century. These are non-statutory designations but are often notable in terms of the species they support.

4.2.3 Field Surveys

An Extended Phase 1 Habitat survey was undertaken by AECOM during 2012. This found that the area supports some extremely wet areas composed of a high number of grasses, *Sphagnum* and rush species. In the north-east of the proposed site there are small areas of broadleaved woodland and conifer woodland, and an area of agriculturally improved grassland, dominated by perennial rye grass.

The Extended Phase 1 Habitat survey also recorded suitable habitat for otter (*Lutra lutra*), water vole (*Arvicola amphibius*), badger (*Meles meles*) and bats.

A National Vegetation Classification (NVC) [5] survey and protected species surveys were also undertaken by AECOM during 2012. Summaries of the results of these surveys are presented below:

- NVC survey: The proposed site is dominated by upland vegetation types which reflect the altitude of between 300-569m. A total of 22 NVC types, intermediates and mosaics were recorded. Overall, the proposed site supports blanket bog vegetation, localised soligenous mire and a range of grassland communities (including, marshy grassland, acid grassland, rush pasture and localised mesotrophic grassland at the lowest elevations).

[5] Joint Nature Conservation Committee (2006) – National Vegetation Classification Users' Handbook. Available at: http://jncc.defra.gov.uk/page-3724

- Otter (*Lutra lutra*) survey[6]: Otter activity was confirmed on site by the presence of a holt and spraints.
- Water vole (*Arvicola amphibius*) survey[7]: The southern sections of the proposed site are considered to have suitable water vole habitat; however, no sign of this species was recorded during the surveys.
- Badger (*Meles meles*) survey[8]: No evidence of badger activity was recorded during the survey and no suitable habitat within the proposed site was noted.
- Bats[9]: No bats were recorded during any of the transect surveys or during the use of any of the 10 static detectors (SM2s) which were placed out on site on three occasions for five consecutive nights during June, August and October 2012. However, Ayrshire Bat Group stated that there is a known Daubenton's bat swarm and roost site at Craigdulyert Limestone Mine located less than 10km north east of the site.

4.2.4 Additional Baseline Information and Collection Methods

It is not anticipated that additional habitat or vegetation surveys will be required.

A wintering bat survey is underway (2012/2013) to establish the potential importance of the proposed site to the Craigdulyert Limestone Mine.

Reptile species receive limited legal protection in Scotland being protected against intentional or reckless killing or injury and against trade. Although the habitat present on site is considered to be suitable for reptiles it is considered that a range of standard mitigation measures can be incorporated into the scheme to adequately protect reptiles.

It is anticipated that the minor watercourses within the survey area may be suitable for salmonids (e.g. Dalleagles Burn, Blarene Burn and Crocradie Burn). As such, the Ayrshire Rivers Trust will be consulted regarding their potential importance for fish. It is anticipated at this stage that such surveys are not going to be necessary on the basis that any development at Enoch Hill will incorporate measures to protect the water environment, including adherence to best practice and SEPA pollution prevention guidance.

4.3 Assessment Methodology/Approach

The EIA will focus on assessing the potential impact of the development on any relevant designated sites and any species/habitats of nature conservation value on the proposed site and

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[6] Chanin P (2003) Ecology of the European Otter, *Lutra lutra*, *Conserving Natura 2000 Rivers, Ecology Series Non. 10. English Nature, Peterborough.*

[7] Strachan, R, (1998). The water vole conservation handbook. Environment Agency, English Nature & WildCRU, Oxford.

[8] Cresswell P. Harris S., and Jefferies D.J. (1990). The History, Distribution, Status and Habitat Requirements of the Badger in Britain. Peterborough: Nature Conservancy Council.

[9] Bat workers manual 3rd Edition Joint Nature Conservation Committee

surrounding area that have been identified as having the potential to be affected. Where necessary, mitigation and enhancement measures will be explored.

The construction phase may have potential indirect impacts on those designated sites, species and habitats of ecological value that have been identified within the proposed site and adjacent to its boundary. The following bullet points outline the potentially significant ecological effects that have been identified at this stage:

- Temporary and permanent habitat loss associated with on-site access tracks, borrow pits, wind turbine foundations/ the construction compound and other associated infrastructure;

- Habitat damage of areas surrounding construction sites through changes in the hydrological regime and pollution with dust, silt or chemical contaminants (this includes potential effects on Groundwater Dependent Terrestrial Ecosystems (GWDTEs) and Loch Doon SSSI);

- Effects on areas of deep peat resulting in potential peat slide risk;

- The disturbance and/or damage to watercourses and potential injury, death or disturbance of their associated fauna (e.g. otter) through the construction of infrastructure with close proximity to the bank sides or at water crossings; and

- Potential for significant beneficial effects as a result of the implementation of enhancement measures to be set out in a Habitat Management Plan (HMP).

Once the development is operational, there will be minimal disturbance and/or impact on ecological receptors. One potential issue relates to killing/injury of foraging or commuting bats as a result of blade strike. However, relevant guidance will be taken into account, with regard to stand-off distances of turbines from features known to be used by bats, thereby reducing the potential for adverse effects to occur.

Occasional visits may be made to the proposed site in order to undertake maintenance works. The vehicles used for these visits are likely to be a 4x4 vehicle and there may be a need for a HGV to access the proposed site for maintenance and repairs. It is considered that the impact of operational traffic on ecological features would be minimal.

The ecology baseline may be different to the current ecology baseline conditions on the proposed site as decommissioning is likely to be undertaken after 25 years operation. The impacts are likely to be similar in nature, however considerably less significant, than those relating to the construction phase, for example, access roads will already be in place. However, as the condition of the ecological baseline cannot yet be predicted it is not possible to determine the scope of works required for the decommissioning phase at this stage. Nonetheless, appropriate mitigation to be implemented during decommissioning will be considered in the EIA.

A cumulative impact assessment will also be undertaken, including other wind farms in the vicinity which have the potential to impact on valued ecological receptors.

The ecological impact assessment will take into account the recognised Institute of Ecology and Environmental Management guidelines (IEEM, 2006)[10].

[10] The IEEM EcIA Guidelines (Terrestrial, Freshwater and Coastal, 2006) are currently under review. Until such time as a revised version is published, the 2006 version remains current.

5. Ornithology

5.1 Introduction

Ornithological impact assessment commonly forms one of the key components of wind farm EIAs which has led to the publication of a number of bird/wind farm guidance documents. The ornithological impact assessment will be prepared in accordance with legislation, policy and a number of 'best practice' documents, included in **Chapter 3** and in particular, the following publications and guidelines:

- Survey methods for use in assessment of the impact of proposed onshore windfarms on bird communities (SNH 2010);
- Assessing significance of impacts from onshore Wind Farms on birds outwith designated areas (SNH 2006); and
- Developing field and analytical methods to assess avian collision risk at wind farms (Band *et al* 2007).

5.2 Proposed Scope of Assessment

5.2.1 Baseline Overview

Desk Study[11]

The presence of Special Protection Areas (SPAs), Ramsar sites and Sites of Special Scientific Interest (SSSIs) within 15km of Enoch Hill for which birds were a principal reason for notification or designation was determined by reference to the Multi-Agency Geographic Information for the Countryside (MAGIC)[12] and SNH SiteLink[13] websites.

The Muirkirk and North Lowther Uplands SPA is located approximately 11 km to the north and is designated for its' breeding populations of short-eared owl, hen harrier, merlin, peregrine falcon and golden plover; and overwintering hen harrier. Bogton Loch SSSI is situated 8.5km to the south-west and is a wetland site noted for its' nationally important breeding bird community; and the Muirkirk Uplands SSSI (approximately 7.5 km north east of the proposed site) which is noted for its nationally important breeding bird assemblage (part of the Muirkirk SPA).

[11] Summary of desk study completed by Aecom.

[12] http://magic.defra.gov.uk/

[13] http://gateway.snh.gov.uk/sitelink/

The key objective of the desk study and breeding bird surveys at Enoch Hill was to establish whether any species or populations of nature conservation importance were likely to make regular use of the proposed site and adjacent areas, or the airspace above it. This included collecting bird flight-line data suitable for modeling the potential collision-risk with the development.

The following consultees were contacted by AECOM:

- SNH and the RSPB (including discussion of the survey scope and methodologies undertaken throughout the wintering survey period at the proposed site; site-specific information or existing knowledge of the ornithological interests of the proposed site and its surroundings were also requested, including roosts or nesting sites of sensitive species and any known flyways or migratory routes that cross the proposed site);
- The Scottish Wildlife Trust was also contacted to establish their interest in being consulted on the proposals; as well as
- Dumfries and Galloway Environmental Record Centre;
- Scottish Ornithologists Club;
- Scottish Wildlife Trust; and
- Strathclyde Raptor Study Group.

Field Surveys

Initial desk study indicated that the proposed development area was likely to support a typical range of species associated with grass dominated moorland but with the potential for presence of conservation notable species such as black grouse, protected raptors and passage waders.

A survey programme was initiated in autumn 2011 by AECOM and encompassed a range of breeding and wintering bird surveys based on SNH 2010[14] guidance. Survey work is being progressed for the 2012/13 winter season. A scheme of ornithological surveys based on SNH 2010[15] guidance is being carried out by AMEC for the winter season 2012/13.

[14] Scottish Natural Heritage (2010) Survey methods for use in the assessment of the impacts of onshore wind farms on bird communities.

[15] Scottish Natural Heritage (2010) Survey methods for use in the assessment of the impacts of onshore wind farms on bird communities.

Table 5.1 Survey Programme

Surveys	Survey Activity
2012 Breeding Season (Completed)	• Vantage point surveys – 36 hours per VP (five VPs) between April and July; • Common Bird Census (CBC) survey of the Site – three visits (April-July); • Species-specific black grouse survey – single visit to appropriate habitat in May; • Species-specific barn owl survey – inspection of suitable nesting habitat at Brockloch Farm. May-July inclusive, occasional barn owl walkovers and watches took place.
2011/2012 Winter Season (Completed)	• Vantage point surveys – 42 hours per VP (five VPs) between September 2011 and March 2012; • Winter walkover survey (extending to 600m from the proposed site where access is available) – monthly visits, September-March.
2012/13 Winter Season	• Vantage point surveys – 42 hours per VP (five VPs) between September 2011 and March 2012; • Winter walkover survey (extending to 1km from the Site boundary where access is available) – monthly visits, September-March.

Summary of Results

Notable findings of the surveys to date can be summarised as follows:

- Regular activity of golden plover on passage, with a total of 32 flights concentrated on upper slopes of site and particularly near Enoch Hill comprising 14,832 seconds of flight time of which 48% was recorded at collision risk height. Further golden plover flocks were observed during winter walkovers in 2011-12 and during a site visit walkover in September 2012, where 100 individuals were recorded;

- Occasional activity of goshawk during the winter season 2011-12. The most interesting observation came in March 2012 when a male was observed circling above Maneight Hill plantation. This observation suggests that there may be a territorial male or a breeding pair of goshawk within the immediate area.

- Occasional flights of merlin, with two low-level flights recorded in winter 2011-12 and a further two flights recorded during an autumn site visit in 2012, whereby an individual was hunting golden plover on-site. This species has the potential to breed in the plantations adjacent to the site.

- One pair of barn owls nested at Brockloch Farm. At least two juveniles were heard at the nest. Watches of the nest building indicated that the birds tend not fly up in the direction of the wind farm site to forage. Surveys did not identify any other breeding territories.

- Black grouse were also recorded during winter walkovers in 2011-12 and breeding season 2012 data supports the fact that they utilise the on-site habitats as a lekking and foraging resource. There is one confirmed lek with two males on the site in the north-west section. There is rather a broad area where lekking birds have been recorded and over which it is felt they are likely to lek at random points. Droppings of this species were also recorded during an autumn site visit in 2012, away from the lek and within the site boundary.

- One pair of barn owls nested at Brockloch Farm. At least two juveniles were heard at the nest. Watches of the nest building indicated that the birds tend not fly up in the direction of the proposed site to forage. Surveys did not identify any other breeding territories.
- Regular crossbill activity in the adjacent plantation forest.

Additional Baseline Information and Collection Methods

An updated desk study will be produced, whilst consultation with SNH, RSPB and other relevant local groups, including the local raptor study group and the Forestry Commission, will be undertaken. Additional desk study data on conservation notable species in the wider area will be collected from such relevant local groups.

Surveys as detailed above will be undertaken over the course of the 2012/13 non-breeding season.

5.3 Assessment Methods/Approach

In general the main issues relating to birds and wind farms are considered to be:

- The effects of direct habitat loss due to land take by wind turbine bases, tracks and other infrastructure;
- The effects of indirect habitat loss resulting from the displacement of birds from the proximity of wind turbines. Such disturbance may occur as a consequence of construction work, or due to the presence of the wind farm close to nesting or feeding sites, or on regular flight paths; and
- The effects of collisions with turbine blades, overhead wires and guy lines (i.e. killing or injury to birds) which is of particular relevance for sites regularly used by certain species of raptor and/or large concentrations of wildfowl.

The EIA will focus on assessing the potential impact of the development on any relevant designated sites and any bird species of nature conservation value on the site and surrounding area that have been identified as having the potential to be affected. This will include an assessment of collision risk[16] to birds of high nature conservation importance where appropriate and, where necessary, mitigation and enhancement measures will be explored. A cumulative impact assessment will also be undertaken, including other wind farms or other developments in

[16] The predicted rate of bird collisions with wind turbines will be calculated using the model developed by W. Band (Band et al. 2007), as recommended by SNH (2010). Avoidance rates will be obtained from SNH guidance note 2010.

the vicinity which have the potential to impact on ornithological receptor populations in accordance with SNH advice[17].

Consideration will be given to potential impacts during the phases of construction, operation and decommissioning.

[17] Scottish Natural heritage (2012). Assessing the cumulative impacts of onshore wind energy developments.

6. Geology, Hydrogeology and Hydrology

6.1 Introduction

Impacts on hydrology and hydrogeology can occur during wind farm construction, operation and decommissioning. Due to the number of turbines proposed and the proximity of the wind farm infrastructure to the water receptors, it is considered that effects on the water environment from the development would be likely without suitable mitigation.

Applicable policy, guidance and strategies set out in Chapter 34 will be taken into account in the EIA assessment of geology, hydrology and hydrogeology. The Geology, Hydrology and Hydrogeology chapter of the ES will assess the baseline water environment within the proposed site, and will then assess the impact on identified features, including tributaries to the River Nith and Water of Deugh from the various different stages of the development.

A preliminary assessment of the proposed site from OS mapping indicates that the main potential receptors of development construction activity impacts are all of the on-site watercourses that drain into the River Nith to the north and Water of Deugh to the south.

Private water supplies are also potential receptors that must be addressed during the assessment. Although not indicated on OS mapping, the presence, or otherwise, of wells at the properties at Brockloch, Burnfoot, Straid Farm, Dalleagles, Marshallmark and Knockburnie should be investigated within the EIA, and consultation will be undertaken with SEPA and local authorities to identify private water supplies.

There is presence of peat in the southern section of the proposed site. In terms of assessing impact from wind farm activities on peat, if the NVC survey indicates the presence of species that have some groundwater dependency, then there will be a requirement to assess groundwater dependant terrestrial ecosystems (GWDTEs) as potential receptors.

6.2 Proposed Scope of the Assessment

The scope of assessment will involve collating of data to determine the sensitivity of the surface water and groundwater environment. Geological data will also be used to inform this process. The potential significant impacts on the identified hydrological and hydrogeological receptors from the development will be considered and assessed. Impacts on the underlying geology is not considered to be a key issue but will be covered and further informed by future site investigation work prior to construction that will review the geotechnical issues.

The main potential hydrological/hydrogeological impacts associated with the development relate to the construction phase. These include potential impacts from tracks and watercourse crossings. The assessment will identify the location and the nature of the impact from these construction activities, in particular the potential for the generation of silt-laden runoff. It will then prescribe measures to be adopted during construction to mitigate against such potential negative impacts on the water environment.

Other activities include the construction of wind turbine foundations and crane pads, the control building and potential substation. The impacts from these activities, such as the leaching of concrete residues to the water environment and changes in the runoff/recharge characteristics, will be addressed in the assessment. Again, mitigation measures will be outlined that would reduce negative impacts from these activities.

The possibility for borrow pits will be explored in the EIA. Should the proposed site be suitable for borrow pits, the impacts these would have on the water environment will also be addressed. Appropriate mitigation measures would need to be prescribed to reduce any negative impacts on the water environment from borrow pits. Alternatively, stone/aggregate could be imported from a suitable off-site location.

Once the development is operational, impacts on hydrology/hydrogeology would be minimal and addressed through appropriate site design. Occasional maintenance works may be undertaken at the proposed site, and a potential impact from this could be from chemical spillages during maintenance operations or from on-site storage. However, similar potential impacts would already have been assessed and mitigated during the construction phase and it is therefore proposed that consideration of operational effects is scoped out of the EIA.

Potential residual impacts during decommissioning are likely to be similar to those during the construction phase, but would depend on the exact nature of the decommissioning activities that take place. However, it is likely that the ground disturbance would be less. The most likely impacts would be from spillages and leaks associated with plant and machinery. Mitigation similar to that implemented during the construction and operations phases (updated to reflect changes in legislation/guidance) would help ensure that the significance of such impacts is minimised.

6.3 Assessment Methodology/Approach

The geology, hydrology, hydrogeology of the proposed site will be assessed through a desk-based study to understand the baseline environment in relation to geology, hydrology and hydrogeology and to subsequently determine, in detail, the presence of sensitive receptors. Consultations with SEPA, Council and the water supply undertaker will be carried out to obtain more local detailed information of the area. The data collation exercise will be supplemented by a site visit to develop a conceptual understanding of the proposed site.

The assessment will be based on the design of mitigation measures, which will be fed into the method statement for the development covering: the control of drainage runoff from excavations and access tracks; watercourse crossings; and, the control of concrete pouring. Drainage control will involve treatment and discharge into surrounding vegetation so that no increase in runoff into the watercourse would be experienced. These measures will reflect current best practice in the industry and will serve to prevent increase in flood risk. Standard construction practices adopted on wind farm developments would be assessed, and modified where necessary, to ensure that predicted impacts and effects could be controlled. Guidance on the protection of the water environment will also be used to assist with the development of mitigation. Such guidance will be based on SEPA and CIRIA guidance. It is anticipated that no residual significant effects will remain following adoption of the proposed mitigation, but this will be explored within the ES.

7. Cultural Heritage

7.1 Introduction

Cultural heritage is represented by features, or assets, resulting from past use of the landscape, including buildings, archaeological remains and artefact scatters. Some heritage assets have been designated as Scheduled Monuments[18], Listed Buildings or Conservation Areas[19], Historic Gardens and Designed Landscapes and Historic Battlefields[20]. These and non-designated assets are managed in the planning process in accordance with national and local policy and guidance set out in **Chapter 3**. Baseline data was obtained from the PastMap[21] and the West of Scotland Archaeology Service (WoSAS)[22] online spatial database for the proposed site and immediate vicinity and from HLAMap[23] and Historic Scotland spatial datasets of designated heritage assets for a study area up to 10km from the proposed site.

7.2 Proposed Scope of Assessment

7.2.1 Baseline Overview

The proposed site is located within an area of upland moor on the fringes of areas of commercial forestry plantation. The historic landscape can be characterised as having been subject to extensive and far-reaching change in the 20th century with the establishment of Carsphairn Forest and related forestry plantation during the 1970s to the south-west of the proposed site, with the more settled rural valley floor landscape around the town of New Cumnock to the north and east of the proposed site, which also includes active surface mines.

There are no Historic Battlefields or World Heritage Sites within 10km of the proposed site. There are 84 listed buildings (six of which are within 5km of the site) nine scheduled monuments, three Conservation Areas and two designated Gardens and Designed Landscapes within 10km of the proposed site. These designated heritage assets reflect occupation of the area from the prehistoric period onwards and represent a wide variety of heritage assets which generally do not have settings which would be considered spatially extensive or from which views to the proposed site are effectively screened by the underlying topography, planting and/or built environment.

[18] Ancient Monuments and Archaeological Areas Act 1979
[19] Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997
[20] Historic Environment (Amendment) Act (Scotland) 2011
[21] http://www.rcahms.gov.uk/pastmap.html
[22] http://www.wosas.net/search.php
[23] http://hla.rcahms.gov.uk/

7.2.2 Direct Effects

Direct effects primarily occur during the construction phase and are permanent and irreversible, but are restricted to the footprint of the development.

Direct effects will arise only from physical disturbance caused by the construction of the development. Therefore effects on known heritage assets will be considered only where these are located within the footprint of the development. Direct effects on heritage assets outside the footprint of the development will not be considered and are scoped out.

Archaeological features, primarily related to agricultural use in the post-medieval and modern period, are present within proposed site boundary, particularly at Peat Hill; some are known only from historic mapping, and may no longer be present in a recognisable form.

There is a potential for previously unrecorded heritage assets to be directly affected by the development. Such effects will be considered with reference to a characterisation of the potential presence of such heritage assets developed from historic landscape context, and reference to appropriate cartographic and documentary sources. Measures to avoid known assets, including any identified during the assessment, and to identify and record any assets where disturbance cannot be avoided, will be set out to ensure that adverse direct effects can be effectively mitigated.

Information on known non- designated heritage assets within a study area extending up to 500m from the proposed site will be used to identify the archaeological potential of the proposed site, although relevant contextual information will be taken into account. All work will be completed in accordance with existing best practice. The following sources of information will be consulted during the assessment:

- Sites and monuments records and other relevant sources held by the WoSAS SMR and the RCAHMS;
- Historic Landuse Assessment (HLA) data;
- Relevant cartographic and documentary sources held by the National Archives of Scotland and National Library of Scotland where this is available for study;
- Relevant published sources and internet sources; and
- Aerial photography held at the RCAHMS.

A site walkover will also be undertaken, with the aim of identifying any visible heritage assets within the proposed site, checking available records and noting general ground conditions. Ongoing consultation will also be undertaken with Historic Scotland and the local planning authority as appropriate.

7.2.3 Indirect Effects

Indirect effects arise where the construction of the development harms heritage assets without causing direct disturbance and primarily arise from change to the setting of heritage assets. These effects principally relate to the operational phase of the development and in this case can be considered entirely reversible on the decommissioning of the development.

The closest designated heritage assets to the proposed site are located within New Cumnock these assets have settings which are defined by their immediate surroundings and to which longer views make a minimal contribution. Other designated heritage assets are located over 5km from the proposed site boundary, at which distance it is generally only the most sensitive and significant heritage assets that have the potential to be significantly affected. Significant effects in these cases are only likely to occur where the proposed turbines intervene in specific views that make a substantial contribution to the significance of an asset. No such assets were identified. In addition, no non-designated heritage assets which have the potential to be affected to the degree that a discernible indirect effect might arise have been identified. Further consideration of indirect effects on known heritage assets during the operation of the turbine development are therefore scoped out.

7.3 Assessment Methodology/Approach

The EIA would include a description of the research undertaken and results obtained, as well as an assessment of the nature and significance of the likely effects of the development. Consideration would be given to any necessary mitigation, following consultation with the developer and consultees. All work will be completed in accordance with the Institute for Archaeologists Code of Conduct and Standard and Guidance for Archaeological Desk-Based Assessments.

8. Landscape and Visual

8.1 Introduction

The Landscape and Visual Impact Assessment (LVIA) section of the EIA will be undertaken with reference to a number of best practice documents. The objective of the LVIA will be to assess the effects of the proposed development on the following range of landscape and visual receptors.

- Landscape Effects: Assessment of the effects on areas of landscape character including key characteristics, elements, landscape qualities and the effects on designated landscapes.
- Visual Effects: Assessment of the effects on the views and visual amenity experienced by residents, tourists / visitors, recreational users, and road user receptors.

The study area for the project will be based on a 35km radius circle from the outermost turbines once the project design work on final proposed turbine locations has been completed. This study area is based on guidance from SNH in relation to turbine size. **Figure 4** illustrates the proposed site location and study area, including a provisional ZTV and suggested viewpoint locations.

8.2 Proposed Scope of Assessment

8.2.1 Baseline Overview

The LVIA chapter will include two related assessments which will look at the effects on the landscape as a whole, as well as those of potential visual receptors located in the vicinity of the proposed site. An inventory of the baseline landscape and visual receptors to be included in the LVIA and the cumulative assessment will be developed as part of the assessment process. An outline of this is provided as follows.

- Baseline Conditions: Landscape Receptors
  - Landscape Character as defined by the Ayrshire Landscape Character Assessment (SNH Review No.111) and Dumfries & Galloway Landscape Character Assessment (SNH Review No.94) Reports plus the SNH designated Area of Search for Wild Land at the Merrick Uplands.
  - The Southern Uplands LCA (the 'host' landscape) including the key component landscape characteristics, qualities and elements.

- Local Landscape Character at the Enoch Hill site and in the surrounding local areas including the key component landscape characteristics, qualities and elements within a detailed study area of 10km.
- Designated Landscapes within the study area (35km) including the Terregles Ridge, Thornhill Uplands and Galloway Hills Regional Scenic Areas (RSAs), the South Ayrshire Scenic Area and a number of Historic Gardens & Designed Landscapes, (the closest of which includes those at the Craigengillen Estate and Dumfries House).

• Baseline Conditions: Visual Receptors

- Residential Receptors: within 2km and settlements within a detailed study area of 10km radius and within the ZTV.
- Road Users: on main transport routes including the A713, A76, A77 and A70 within 35km as well as selected B and minor roads within 10km.
- Recreational Routes: including local routes (core paths and promoted local footpaths, cycle ways and riding routes within 5km) and national routes, (footpaths, cycleways and riding routes within the wider 35km study area).
- Outdoor Recreational Destinations: including mapped or promoted features of local landscape interest such as hill summits, rivers and lochs, and organised recreational areas including parks / public open space and golf courses within 10km.
- Outdoor Tourist Destinations within the study area (35km): including mapped or promoted destinations of local landscape interest including the Galloway Forest Park, (awarded Dark Sky Park status by the international Dark Sky Association), the Galloway and Southern Ayrshire Biosphere Reserve designated by UNESCO, Gardens and Designed Landscapes open to the public such as those at the Craigengillen Estate, and the Royal Troon Golf Club.

Consultees are encouraged to suggest other landscape or visual receptors that should be considered in the assessment.

8.2.2 ZTV and Viewpoint Analysis

A preliminary Zone of Theoretical Visibility (ZTV), illustrated in **Figure 4** has been produced based on an initial 23 turbine layout and calculated to blade tip (up to 150m) and accounts for 30.4% of the total study area. It should be noted that the ZTV does not take into account the effect of screening provided by areas of woodland / plantation within the study zone which will be considered as part of the visual assessment. The proposed viewpoints are set out in the **Table 8.1** below:

Table 8.1 Suggested Viewpoints

Viewpoint		Receptor Type and Comment	Distance (km)*
1)	B741 SW of New Cumnock	B Road running between New Cumnock and Dalmellington	2.2
2)	Glen Afton Leisure Park	Camp site	2.6
3)	B741 NE of Dalmellington	B Road running between New Cumnock and Dalmellington	2.7
4)	Laight Farm	Settlement	3.5
5)	Dalgig	Settlement	3.7
6)	Core Path 448/449	Dumfries and Galloway core path, recreational route	4.8
7)	Blackcraig Hill (700m)	High point , potential recreation destination	6
8)	A76 NW of Cumnock (near Lochside House Hotel)	A Road running between Kilmarnock and Dumfries, close to hotel	6.9
9)	A713 NW of Dalmellington	A Road running between Prestwick and Castle Douglas	8.8
10)	Craigengillen Estate	Registered designed landscape	9.9
11)	A713 at Waterside	A Road running between Prestwick and Castle Douglas	10.4
12)	Loch Doon	Recreation destination	11.4
13)	A713 at Patna	A Road running between Prestwick and Castle Douglas	13.3
14)	A76 at Auchinleck	A Road running between Kilmarnock and Lanark	13.6
15)	A70 between Cumnock and Prestwick	A Road running between Ayr and Lanark	13.7
16)	A70 NE of Cumnock	A Road running between Ayr and Lanark	14
17)	A76 SE of Mauchline	A Road running between Kilmarnock and Lanark	17.6
18)	Tarlessock High Point (768m)	High point, potential recreation destination	21.8
19)	Tarbolton	Settlement	22
20)	A77 at Maybole	A Road running between Turnberry and Prestwick	25.2
21)	Lowther Hill (782m)	High point, potential recreation destination	30
22)	Troon	Golf Course	32.7
*Distances shown represent the approximate distance from the viewpoint to the nearest visible turbine.			

The total number of viewpoint illustrated proposed in the LVIA will be approximately 22. Illustrative material to support the visual assessment will include ZTV maps, photographs, wireframes, and photomontages. These will be produced in accordance with the guidance contained in SNH's *Visual Representation of Windfarms: Good Practice Guidance* (2006).

Where there is a strong case to do so, consultees are encouraged to suggest alternative viewpoint assessment locations that should be considered in the assessment.

8.2.3 Landscape Effects

Landscape effects are defined by the Landscape Institute as *"Change in the elements, characteristics, character, and qualities of the landscape as a result of development. These effects can be positive or negative."* Development may have a direct (physical) effect on the landscape as well as an indirect effect perceived from outside the 'host' landscape character or character unit (type or area) within which it is located. The potential landscape effects, occurring during the construction, decommissioning, and operation phases, may therefore include, but are not restricted to, the following.

- Changes to landscape elements: the addition of new elements or the removal of trees, vegetation, and buildings and other characteristic elements of the landscape character;
- Changes to landscape qualities and characteristics: change to the condition of the landscape and / or the landscapes qualities and characteristics (including elements, patterns, and perceptual characteristics) particularly those which are considered as 'key' or defining characteristics.
- Changes to landscape character: the magnitude of change is sufficient to alter a notable part of the overall landscape character of a particular area.
- Cumulative landscape effects: where cumulative development change, in this case more than one wind farm, may lead to a potential landscape effect.

It is considered that the development is likely to have an effect on part of the undesignated Southern Uplands LCA and associated local landscape subdivisions, and potentially an indirect effect (concerning landscape qualities related to perceptual or visual characteristics) on undesignated landscape character within the wider Dumfries & Galloway area.

8.2.4 Visual Effects

Visual effects are concerned wholly with the effect of development on views, and the general visual amenity. The visual effects are identified for different receptors (people) who would experience the view at their places of residence, during recreational activities, at work, or when travelling through the area. The potential visual effects, occurring during the construction, decommissioning, and operation phases, may therefore include, but are not restricted to, the following.

- Visual effect: a change to an existing view, views or wider visual amenity as a result of development; and
- Cumulative visual effects: the cumulative visibility of development change and in particular the cumulative visibility of more than one wind farm, which may combine to have a cumulative visual effect.

8.2.5 Cumulative Effects

A 70km search area for other wind energy development will be identified in the Cumulative LVIA (CLVIA). This will include existing and approved wind farms and those currently at planning application stage at a cut off date that will be identified in the ES (usually at the point of layout design freeze when the assessment begins in earnest).

Cumulative viewpoints showing 360° wireframes and cumulative ZTV's will be included in the CLVIA in order to identify areas of simultaneous, successive and sequential visibility.

Information on turbines between 25-50m in height and within 10km of the Enoch Hill Wind Farm proposal will also be identified to establish the condition of the base line landscape. It is anticipated that the height of most of these would be within or below tree height and are likely to be excluded from the CLVIA for this reason. Any micro generation schemes smaller than 25m will not be considered in the assessment. Sites which may be at the scoping stages will be mapped within the search area, but are likely to be excluded from further assessment in accordance with national guidance and on the basis that sufficient detail is seldom available (on location and size of turbines) to allow assessment. Sites which may be at the scoping stages will be mapped within the search area, but are likely to be excluded from further assessment in accordance with national guidance and on the basis that sufficient detail is seldom available (on location and size of turbines) to allow assessment.

A provisional list of key wind farms (operational, consented or planning application status) to be included in the CLVIA is set out in **Table 8.2** below. This list has been included as a starting point for consultation. The Vattenfall South Kyle proposal is expected to be submitted soon and once submitted this will be included in the CLVIA.

Table 8.2 Provisional List of Wind Farms to be Included in the CLVIA

Existing / Consented wind energy development	Wind Energy subject to Planning Applications
Mark Hill	Kype Muir
Hadyard Hill Wind Farm	Ashmark Hill Wind Farm
Windy Standard	Hare Hill Extension
Wether Hill	Afton
Whiteside Hill	Margree
Hare Hill	Ulzieside
Bankend Rig	Dersalloch Wind Farm
Dongavel Wind Farm	Knowside
Windy Standard Extension	Tralorg Wind Farm
Torrs Hill	Assel Valley Wind Farm
	Galawhistle Wind Farm
	Sanqhuar
	Loch Hill
	Knockman Hill

It is anticipated that EC&R proposed schemes at Lorg and Benbrack, which are at a similar stage of progress as the development, will also be included within the CLVIA.

Consultees are requested to provide further information on any other wind farm development they are aware of that may need to be included in the assessment.

8.3 Assessment Methodology / Approach

With regard to the detailed design of the turbine layout and ancillary elements of the proposal and the development of mitigation proposals, it is intended to adopt a design led approach through collaboration between the landscape consultant, the project engineers and the developer/landowner. Key design principles with regard to turbine layouts will be used to review and guide the layout design process through a number of layout iterations. Environmental and technical constraints will be mapped, and along with aesthetic considerations, these will be used as a template against which layout options will be reviewed to achieve an appropriate 'landscape and visual fit'. Design issues that will be considered will include the selection criteria for the turbines including their height. As part of this process it is envisaged wireframes will be produced from some or all of the visualisation viewpoints. These will allow recommendations for the micro-siting of the turbines to minimise the incidences of potentially adverse design features such as the clustering of turbines; the presence of isolated 'outlier' turbines; the formation of an unbalanced turbine array or excessive amounts of blade overlapping. As the LVIA proceeds, mitigation proposals will also be developed with regard to variables such as the colour of the turbines, location and detail design of ancillary elements such as the control building and access routes and any potential for screen planting close to individual sensitive visual receptors.

The LVIA will clearly set out its methodology in its early sections utilising tables wherever possible to maximise its transparency and replicability. Following on from the methodology section, the LVIA will present the baseline conditions in a comprehensive but succinct manner using a number of sub-headings to provide an overall analysis of the prevailing landscape and visual conditions within the 35km radius study area, again concentrating upon the detailed study area[24]. It will review relevant landscape commentaries and the relevant policies in the relevant development plans. The baseline will be supported by a number of figures on OS plans and annotated photographs of the proposed site and its landscape setting.

As recommended by the GLVIA, the LVIA will consider the potential landscape and visual effects of the development in separate sections.

[24] It should be noted that these radii would be from the nearest proposed turbine as opposed to from the site centre.

9. Noise

9.1 Introduction

Noise from turbine development can take place during construction, operation and decommissioning. Due to the number of turbines proposed, the proximity of sensitive receptors to the proposed site and the existence of other wind farm sites in the local area, it is considered likely that some properties may experience noise from the proposed wind farm development. Applicable policies, guidance and strategies outlined in **Chapter 3** will be taken into account in the EIA assessment of noise.

9.2 Proposed Scope of the Assessment

The main objective of the noise assessment is to compare current noise levels in the site area to those that would pertain should the development proceed and to determine acceptability for relevant receptors. In this case relevant receptors are considered to be restricted to those living in residential property close to elements of the development.

The ES Chapter will present a review of relevant policy and how it guides the assessment, the results of noise measurements, and finally the assessment of the noise predictions against the noise limits. It is pertinent to note that noise impacts could arise from the two main phases of the development: during construction; and the operation and these will be assessed in the ES. In terms of noise impacts during decommissioning, the effects on any sensitive receptors are likely to be similar in nature but of lower magnitude than those during the construction phase. As a result, it is not proposed to assess the decommissioning phase of the development in addition to that of the construction phase. Therefore the decommissioning element has been scoped out. Furthermore, it is also proposed that traffic noise during the operation of the development is scoped out as the amount of traffic associated with development operation would be minimal.

Cumulative noise effects from other wind farms in the area may impact on sensitive receptors within the study area when assessed in combination with the development. A cumulative noise assessment will therefore also be included within the EIA. This assessment will identify other wind turbine development (operational, consented or subject to application) in the area that may impact on sensitive receptors together with the Enoch Hill Wind farm site. A cut off date for the assessment will be identified in the ES and a list of wind turbine developments identified for the cumulative assessment.

9.3 Assessment Methodology/Approach

In order to undertake construction noise calculations, details of the construction programme, phasing of the works and types and numbers of plant are required. Such data would only become available once the contract(s) to construct the proposed development have been finalised. Notwithstanding the above, a worst-case scenario for construction noise assessment, based upon experience of similar projects, will be presented in the ES.

Depending upon the outcome of the Traffic and Transport Assessment (see chapter 10), the impact of traffic along the site access route and the interim access track will be assessed on the basis of either the methodology within BS5228:2009 or the Department of Transport publication *Calculation of Road Traffic Noise* (1988), where appropriate.

In most cases, construction noise (including construction traffic) is controlled through the implementation of mitigation measures (such as limiting hours during which construction can be undertaken) and undertaking construction works in accordance with good practices as described in BS5228 (such as using well maintained and serviced plant, and the appointment of a site contact to whom complaints/queries can be directed).

In terms of operational noise, the aim of a full ETSU-R-97 assessment is to identify suitable noise limits for the proposed development. In order to achieve this, an understanding of the change in background noise levels with wind speed at receptors is required. This is achieved by monitoring background noise levels at sensitive receptors, and simultaneously measuring the variation in wind speed and direction at the wind farm site, using either a >50m met mast with anemometers at dual heights, or by a LiDAR or SoDAR system. Noise and wind speed measurements are taken as a series of simultaneous ten-minute averaged measurements, over a period of at least two weeks. From this data, regression analysis is performed to determine typical background noise levels for each receptor across a range of wind speeds (1m/s-12m/s).

Noise limits are defined separately for day time and night time. During quiet day time periods (18:00 - 23:00 weekdays, 13:00 - 23:00 Saturdays and 07:00 - 23:00 Sundays), noise limits are as follows:

- 5dB above the background noise curve for wind speeds up to 12m/s;
- where background noise levels are below 30-35dB $L_{A90,10min}$, the lower limit should be fixed at 35-40dB; and
- For properties with a financial interest in the scheme, the lower limit is fixed at 45dB.

For night-time periods (23:00 - 07:00 every day), noise limits are as follows:

- 5dB above the background noise curve for wind speeds up to 12m/s;
- the lower limit is fixed at 43dB; and
- For properties with a financial interest in the scheme, the lower limit is fixed at 45dB
- It is acknowledged that ‘financial interest’ noise limits are applicable where the occupant (and not just the owner) of the property receives the financial benefit.

A study area will be identified to carry out the noise monitoring survey work to inform a baseline for the noise assessment. This will identify all those properties located within a 35dB Modelling contour. Initial investigations have identified four representative properties from where noise monitoring is proposed (subject to landowner agreement where this is private property). These properties are considered to be the closest properties to the proposed site and give a good reflection the local area and therefore the back ground noise levels for the local area. The properties are located at:

- Brockloch Farm – assumed to be representative of Laglaff;
- A property located on the B714 – assumed to be representative of properties located on this road, including Dalleagles, Littlemark, Straid Farm, Knockburnie;
- Nith Bridge;
- Maneight; and
- Meiklehill.

Figure 3 sets out the location of the noise monitoring locations. Measurement at the chosen monitoring locations will depend upon arranging access to the properties. We request that these locations are considered by the East Ayrshire Council, Environmental Health Officer and, if necessary, we would welcome the suggestion of alternatives where appropriate.

The Institute of Acoustics (IoA) bulletin article (Acoustics Bulletin, volume 34, number 2, March/April 2009) suggests two methods by which to address wind shear within the full assessment, by effectively correlating the measured background noise levels with hub height wind speeds. This means that the noise limits are derived with reference to the wind speeds which determine the noise emissions of the turbines. It is also proposed to adopt the recommendations of the article in respect of wind shear within the assessment.

The noise chapter of the ES will assess the impact of the operation of the development on the five properties at various different stages of the proposed Wind Farm development on the existing baseline noise levels in the study area and take into account shear and issues regarding low frequency noise, tonality and Amplitude modulation. It is intended to carry out noise predictions in accordance with the modelling parameters specified in the article 'Acoustics Bulletin, volume 34, number 2, March/April 2009'.

Cumulative noise effects from other wind farms in the area may impact on sensitive receptors within the study area when assessed with the Enoch Hill wind farm site.

A cumulative noise assessment will be included within the EIA. This assessment will identify other wind turbine development (operational, consented or subject to an application) in the area that may impact on sensitive receptors together with the development. A cut off date for the assessment will be identified in the ES and a list of wind turbine developments identified for the cumulative assessment.

10. Traffic and Transport

10.1 Introduction

Applicable policies, guidance and strategies set out in **Chapter 3** will be taken into account in the EIA assessment of traffic and transportation. The Traffic and Transport chapter of the ES will assess the impact of the various different stages of the development on the existing road network in the area. The baseline study area for the EIA will include all transport routes associated with the proposed development and will consider the impact of any enabling development, construction works, site operations and decommissioning of the wind farm on the transport routes.

An initial desk top study into access to the proposed site indicates two route options for abnormal load vehicles have been considered. These are 1) to route west on B741 and then onto the A713 which leads to Ayr and the commercial port, or 2) to route east on the B741 heading north on the A76 to Cumnock and then west again on the A70 to Ayr. The A76 also reaches Dumfries or Kilmarnock.

10.2 Proposed Scope of the Assessment

The main transportation impacts will be associated with the movements of commercial heavy goods vehicles (HGVs) travelling to and from the proposed site during the construction phase of the development and this will be considered in the ES. Once the development is operational, it is envisaged that the amount of traffic associated with the scheme would be minimal. Occasional visits may be made to the proposed site for maintenance checks. The vehicles used for these visits are likely to be a Land Rover or similar and there may an occasional need for an HGV to access the proposed site for maintenance and repairs. It is considered that the effects of operational traffic would be negligible and therefore no detailed assessment of the operational phase of the development is proposed in the EIA.

The traffic baseline may be different to the current baseline traffic conditions when decommissioning is undertaken after the 25 year operational phase. However the effects on the road network are likely to be similar in nature though of lower magnitude than that relating to the construction phase as less vehicle movements would be required. As a result, it is not proposed to assess the decommissioning phase of the development in relation to traffic and transport in addition to that of the construction phase of the development.

10.3 Assessment Methodology/Approach

The main transportation impacts associated with a wind farm relate to the construction phase of the development. This would include the movement of HGV traffic travelling to and from a site bringing in material for the construction of the access, tracks, foundations, crane hard standing etc. The assessment will identify the number of HGV movements required for the development. It will identify the most appropriate route to the proposed site and give an explanation as to why the route has been chosen, together with the provision of a swept path analysis.

Other construction impacts relate to the delivery of the turbine components. These components, by their nature are large and require abnormal load delivery. The assessment will identify the number of abnormal loads required for the development. It will identify the most appropriate route from the proposed site and give an explanation as to why the route has been chosen, together with the provision of a swept path analysis and the identification of any enabling works required.

The potential for borrow pits will be explored in the EIA. Should the proposed site be suitable for borrow pits, the impacts on the road network would be significantly reduced. Alternatively, stone/aggregate could be imported from a suitable off-site location (which will be identified during the EIA process if borrow pits cannot be established). To cover both eventualities if the final option is not confirmed at the time of the planning application, the assessment will be carried out for two scenarios, i.e. with and without borrow pits.

Once suitable routes have been identified, the assessment will include the identification of the base line data through relevant survey information for all the roads associated with the different elements of the development. The assessment will identify the:

- existing traffic flows;
- Potential impacts (of changes in traffic flows) on local roads
- Potential impacts (of changes in traffic flows) on users of those roads; and
- Potential impacts (of changes in traffic flows) on land uses and environmental resources fronting those roads, including the relevant occupiers and users.

The assessment will consider the following environmental effects that may be caused by changes in traffic flows as a result of the development.

- Severance;
- Driver delay;
- Pedestrian delay;
- Pedestrian amenity;
- Fear and intimidation; and
- Accidents and safety.

An increase of 30% or more in total movements of HGVs, or a 10% increase where sensitive locations are present such as schools and hospitals would be considered to be potentially significant:

11. Shadow Flicker

Under certain combinations of geographical position and time of day, the sun may pass behind the rotors of a wind turbine and cast a shadow over neighbouring properties. When the blades rotate, the shadow flicks on and off; this effect is known as ‘shadow flicker’. It only occurs inside buildings where the flicker appears through a narrow window opening. Only properties located within a 130 degree segment either side of due north, relative to the turbines, are affected at UK latitudes. Flicker effects have been proven to occur only within ten rotor diameters of a turbine as outlined in Specific Advice Sheet Onshore Wind Turbines (updated August 2012).

All properties located within a 130 degree segment either side of due north, relative to the turbines and within ten rotor diameters of a turbine (as per the guidance) will be assessed for shadow flicker. Properties outwith this area will not be affected by shadow flicker. A review of the initial development layout indicates that there are no properties located within the identified area, but this will be kept under review as the development layout alters during the EIA process. Where properties meet both of the criteria for there to be a potential shadow flicker effect, the seasonal duration of this effect will be calculated from the geometry of the turbine and the latitude of the site, to assess potential impacts upon the amenity of local residents. Mitigation measures will be proposed in the ES should they be necessary.

12. Socio-Economics

12.1 Introduction

SPP in regards to wind farm development sets out a number of assessment criteria. These include consideration of effects on the local and national economy and tourism and recreation interests, in addition to benefits and disbenefits for communities. Relevant development plan policies outlined in **Chapter 3**will be taken into account.

12.2 Proposed Scope of the Assessment

In order to assess the potential socio-economic effects of development, it is necessary to gain a view as to the current position of the local economy. The character of the local economy will therefore be examined as part of the EIA to provide an overview of potential linkages with the development. Tourist and recreational attractions along with any core paths or PRoW within or surrounding the proposed site identified within the LVIA will form part of the assessment. Ways in which benefits such as improved public and recreational access to the proposed site could be delivered will be examined.

The assessment will examine the level of construction activity and job creation and the potential linkages with the wider local economy. This will include an assessment of potential multiplier effects within the local economy and the degree to which local businesses could benefit from involvement with the proposal's development, use and eventual decommissioning. Potential community effects will also be examined and, whilst it is considered unlikely to be significant, the assessment will also qualitatively consider the potential for the development to have an effect on other existing business activity.

Direct effects on existing public access will be considered within the assessment, however effects on the amenity of those using access routes will be considered within the LVIA. Public Safety will be considered with respect to potential accidents or injuries from a wind turbine, through proximity to the proposed installation.

12.3 Assessment Methodology/Approach

There is no standard approach to this element within an EIA, however the general approach will be to outline the areas of the development where there will be the potential for some economic/social effect within the wider area (including tourism, etc.). This will be undertaken with a view to examining the significance of these effects. Where possible (i.e. with quantifiable effects), the significance will be assessed by way of comparison of the factor (e.g. construction jobs) with the variance of related factors within the local economy. Where effects cannot be quantified, the assessment of significance will be undertaken using professional judgement and experience.

13. Other Issues

13.1 Air Quality and Climate

The only potential adverse effects on air quality that may arise from the development are from dust generated by construction activities including construction vehicle movements, excavation and road construction. Any potential effects can be controlled by standard construction practices which are assumed to be imposed as a planning condition.

It is therefore proposed that any further assessment of air quality effects is to be scoped out.

The proposed site incorporates areas of peat bog and in line with the Scottish Government's requirements an assessment of the proposed development's carbon balance will be completed. This will be undertaken using the Scottish Government's published methodology known as Nayak Analysis (Nayak et. al. 2008). An overview of the carbon balance assessment will be incorporated within the introductory chapters of the ES.

13.2 Infrastructure, Telecommunications, Utilities and Air Safeguarding Issues

Specific Advice Sheet Onshore Wind Turbines identifies that wind turbines might impact on infrastructure, telecommunications, utilities and air safeguarding issues. Effects may, for example include disruption of microwave rebroadcast links or local radio communication systems. The quality of television reception may be affected, though to a lesser extent than prior to the switchover to digital transmissions, and viewers may suffer loss of picture quality and acoustic interference. Turbines can also potentially appear as returns on radar systems and potentially interfere with communication networks.

Whilst it is not strictly an EIA issue, it is relevant to note that a range of other investigations are being undertaken to establish the presence of existing air safeguarding and radar issues, infrastructure associated with utilities such as water, gas, electricity, and telecommunications links to establish either the absence of effects or to identify appropriate mitigation to overcome any effects. These matters will be addressed through consultation with the relevant system operators and during the iterative design process of the wind turbine layout and the development of the rest of the proposed site, as necessary.

13.3 Lighting

The potential adverse effects from lighting may arise during construction activities and during the operation and decommissioning of the development. Any potential effects during construction and decommissioning can be controlled by standard construction practices and good site management. Any lighting required during operation would be very small in scale and candella. It is therefore proposed to scope out impacts from lighting.

13.4 Grid Connection

Grid connection will be subject to a separate consenting arrangement and therefore will not be considered within the EIA. Information on the potential grid connection location point together with the underground /above ground cable routing will be made available should this become known before the submission of the ES. Grid Connection has been scoped out of the EIA.

14. Summary of Proposed Scope of Assessment

A summary of the proposed technical scope outlined in **Chapter 4** to **13** is provided in **Table 14.1** below.

Table 14.1 Summary of EIA Scope

Environmental Topic	Summary of Proposed Scope of Assessment	Element proposed to be Scoped Out
Ecology	The Ecology scope will include: • A desktop study including consultation; • Assessment of the potential impact of the proposed development on those designated sites, species and habitats of ecological value that have been identified within the proposed site or adjacent to its boundary.	No species-specific surveys are proposed for reptiles or red squirrel, although a record will be made of any sightings during the completion of other ecological surveys. No further manual bat surveys are proposed.
Ornithology	The Ornithology scope will include: • A desktop study including consultation; and • Ornithological field surveys to a scope agreed with SNH to include vantage point surveys, breeding bird surveys, roost watches, winter walkovers & winter wildfowl surveys.	
Geology, Hydrology and Hydrogeology	Desk study and site visit of hydrological and hydrogeological receptors on the Site and within a 2km search radius and review of their sensitivity in relation to proposed development activities. The development of appropriate mitigation will be included to control potential effects on the receptors identified.	Operational effects minimal and addressed through design at construction stage, therefore propose to scope out operational effects.
Archaeology and cultural heritage	Direct effects on known heritage assets will be considered only where these are located within the footprint of the development	Indirect effects on the settings of stated designated and non-designated heritage assets as outlined in chapter 7.

Environmental Topic	Summary of Proposed Scope of Assessment	Element proposed to be Scoped Out
Landscape and visual amenity	The landscape and visual amenity assessment is in three parts: Landscape effects: • Direct effects upon landscape elements and landscape patterns within and immediately around the proposed site, and upon landscape character (as defined by SNH assessments); and • Indirect effects upon landscape designations within a 35km study area from turbines Visual effects: • Visual effects experienced by residential receptors close to the proposed site within 2km • recreational receptors close to the proposed site within 5km; and • Visual effects experienced by recreational receptors (on footpaths, bridleways, cycle routes, and tracks), by road users; and by visitors to outdoor visitor / tourist facilities. Cumulative effects • Cumulative landscape and visual effects occurring within the 35km radius study area, resulting from the cumulative effect of two or more wind farms within the 70km radius search area. Other wind farms will include existing, consented and those proposals for which a full planning application has been submitted.	Landscape effects - everything over 35km Visual effects everything over 35km, and further limitations incorporated for different visual receptors. Cumulative effects – exclude proposals at the pre-planning application stage, wind turbines below 50m beyond 10km and wind turbine developments below 25m in height. A cut-off date for cumulative information has been set for design freeze to allow the assessment to be carried out.
Noise	Operational noise from the proposed development following the ETSU-R-97 methodology with reference to the recommendations relating to wind farm noise assessment, including wind shear, in the UK Institute of Acoustics Bulletin (Bowdler *et al*, 2009). Consideration will be given to the adoption of standard environmental best practice during construction in accordance with BS5288:2009: Code of Practice for Noise and Vibration Control on Construction and Open Sites.	Detailed predictions of construction noise/vibration or construction traffic noise. Once the proposed development is operational, it is envisaged that the amount of traffic associated with it would be minimal. It is considered that the effects of operational traffic would be negligible and therefore further consideration does not need to be given to noise from operational traffic.

Environmental Topic	Summary of Proposed Scope of Assessment	Element proposed to be Scoped Out
Traffic and Transport	Construction vehicle movements to be established and the need for assessment considered against standard guidance. Potential effects considered: • Severance; • Driver delay; • Pedestrian delay; • Pedestrian amenity; • Fear and intimidation; and • Accidents and safety.	Minimal level of operational traffic and therefore propose to scope out the operational phase. Decommissioning, as traffic baseline can be expected to be very different to current conditions.
Shadow Flicker	Screening for shadow flicker will be done in accordance with the Planning Advice Sheet Onshore Wind Turbines. All properties located within a 130 degree segment either side of due north, relative to the turbines, and within ten rotor diameters of a turbine will be assessed for shadow flicker.	As per guidance, in the event that properties are greater than 10 rotor diameters from a turbine, properties will not require a shadow flicker assessment.
Socio-economic	To examine the baseline economic and social position of the local economy. Identification of potential facets of the proposed development that could have linkages with, and effects upon the local economy (including tourism, recreational pursuits and land use etc.) An assessment of the significance of such effects will be carried out. Direct effects on public access and safety will also be considered.	It should be noted that effects on visual amenity, noise amenity and visual impact etc will be assessed under the most relevant section of the EIA. See the noise and landscape and visual amenity sections of this table for a fuller explanation.
Air Quality & Climate	A carbon balance assessment will be completed following recognised methodology and incorporated within the front-end development description chapters of the ES. Energy and climate policies framework and associated development benefits will be incorporated within the introductory chapters	Dust can be controlled through standard mitigation therefore proposed to be scoped out.
Infrastructure, telecommunication utilities and air safeguarding	The scope will include investigations into establishing the presence of existing infrastructure associated with utilities such as water, gas, electricity, and telecommunications links. The extent of any effects, and necessary mitigation, will be addressed through consultation with the relevant system operators and during the iterative proposed site design process. Aviation issues will be addressed as part of this process.	An assessment including investigations into establishing the presence of existing infrastructure associated with utilities such as water, gas, electricity, and telecommunications links. The extent of any effects, and necessary mitigation, will be addressed through consultation with the relevant system operators and during the iterative site design process. Aviation issues will be addressed as part of this process.

Environmental Topic	Summary of Proposed Scope of Assessment	Element proposed to be Scoped Out
Grid Connection	None	Grid connection will be subject to a separate consenting arrangement and therefore will not be considered within the EIA. Information on the potential grid connection location point together with the underground /above ground cable routing will be made available should this become known before the submission of the ES. Grid Connection has been scoped out of the EIA.
Lighting	None	The potential adverse effects from lighting may arise during construction activities and during the operation and decommissioning of the wind farm. Any potential effects during construction and decommissioning can be controlled by standard construction practices and good site management. Any lighting required during operation would be very small in scale and candella. It is therefore proposed to scope out impacts from lighting.

Appendix A
Figures

Key

Site boundary

Developable area for turbines

0 km 3 km

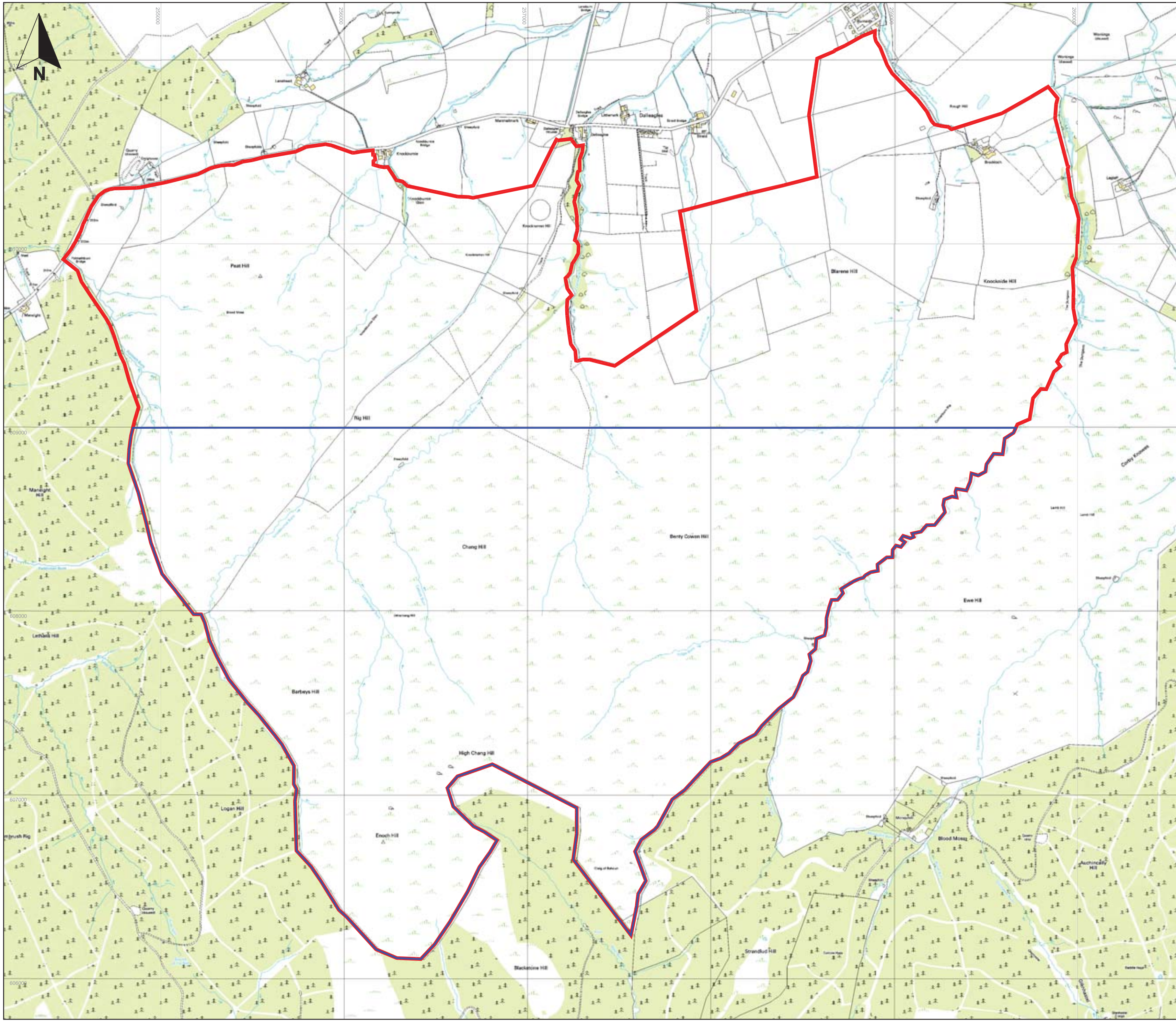
Scale 1:50,000 @ A3

Enoch Hill Wind Farm
Scoping Report

Figure 1
Site Location

October 2012
32965-G10.dwg pattn

amec



Key

Site boundary

Developable area for turbines

0 m 1000 m

Scale 1:20,000 @ A3

Enoch Hill Wind Farm
Scoping Report

Figure 2
Site Plan

November 2012
32965-G11a.dwg pattn

amec

Key

Site boundary

Developable area for turbines

N Proposed noise monitoring location (* exact location to be agreed)

0 km 3 km

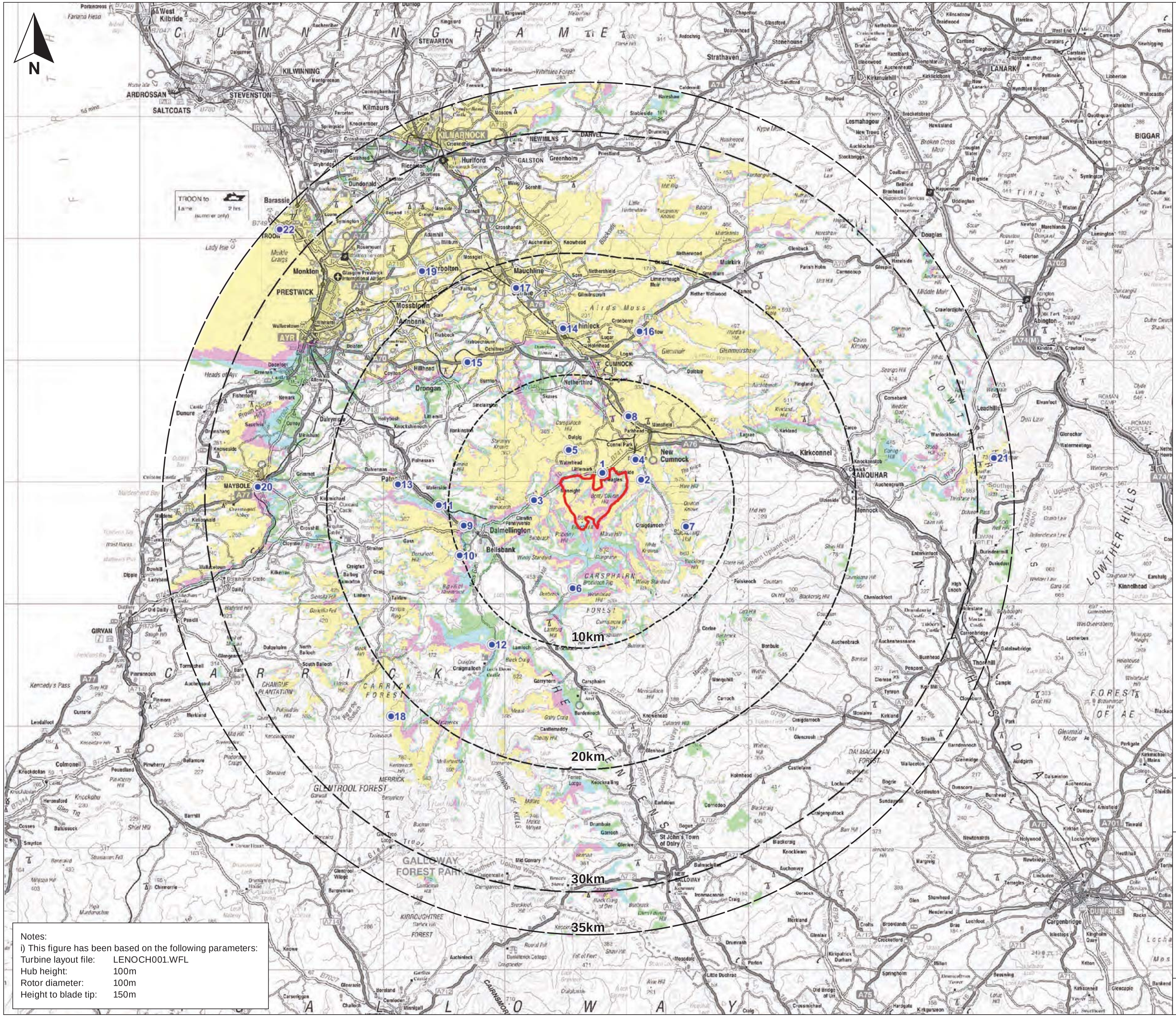
Scale 1:50,000 @ A3

Enoch Hill Wind Farm
Scoping Report

Figure 3
Proposed Noise Monitoring Locations

November 2012
32965-G12.dwg pattn

amec



Key

- Site boundary
- 10km distance indicator from the proposed turbine locations
- 20km distance indicator from the proposed turbine locations
- 30km distance indicator from the proposed turbine locations
- 35km radius indicator from wind farm centre
- 1 - 5 turbines may be visible
- 6 - 11 turbines may be visible
- 12 - 17 turbines may be visible
- 18 - 23 turbines may be visible
- 30.4% covered by ZTV
- Viewpoints

1) B741 south west of New Cumnock
2) Glen Afton Leisure Park
3) B741 NE of Dalmellington
4) Laight Farm
5) Dalgig
6) Core Path 448/449
7) Blackcraig Hill (700m)
8) A76 NW of Cumnock (near Lochside House Hotel)
9) A713 NW of Dalmellington
10) Craigengillen Estate
11) A713 at Waterside
12) Loch Doon
13) A713 at Patna
14) A76 at Auchinleck
15) A70 between Cumnock and Prestwick
16) A70 NE of Cumnock
17) A76 SE of Mauchline
18) Tarlessock High Point (768m)
19) Tarbolton
20) A77 at Maybole
21) Lowther Hill (782m)
22) Troon

0 5km 10km 15km

Scale 1:300,000 @ A3

Enoch Hill Wind Farm
Scoping Report

Figure 4
Zone of Theoretical Visibility (ZTV) to Blade Tip Height with Viewpoints

November 2012
32965-G13a.indd irvic02

amec

Notes:
i) This figure has been based on the following parameters:

Turbine layout file:	LENOCH001.WFL
Hub height:	100m
Rotor diameter:	100m
Height to blade tip:	150m

Appendix 2.B
Scoping Opinion

25 June 2015
Your Ref:
Our Ref: WID7331

Dear Sir/Madam,

RE: PROPOSED ENOCH HILL WIND FARM

Thank you for your letter dated 22/11/2012 regarding this wind farm proposal.

We have studied your wind farm proposal with respect to problems with BT point-to-point microwave radio links.

The turbines could affect the following radio link:

Tx Name	Tx NGR	Rx Name	Rx NGR	Link ID	RARef	Path Length	Freqband
*MAUCHLINE TE	NS5014026960	WINDY STANDARD HILL	NS6095603174	10399	805199	26.13	18GHz

Our position is therefore, we would like further consultation on the location of the turbines on this Wind farm.
BT require ideally 100m minimum clearance from the Blade tip to the link path.

Yours sincerely,
Dale Aitkenhead

BT Network Radio Protection
PP 5M CTE
Newcastle Central TE
Carliol Square
Newcastle Upon Tyne
T&W NE1 1BB

Sian, Lindsay

From: Windfarms@caa.co.uk
Sent: 13 December 2012 13:37
To: Econsents_Admin@scotland.gsi.gov.uk
Subject: RE: Enoch Hill Wind Farm

Dear Sir/Madam

Civil Aviation Authority Screening and Scoping Opinion for Wind Turbine Applications

The CAA regularly gets asked by Planning Authorities and Developers for its opinion on the Screening or Scoping of Wind Turbine Applications under the Environmental Impact regulations. In all cases the advice is the same and in the past the CAA has also advised applicants specifically which aviation stakeholders to consult. With increasing pressure on limited resources within the CAA this customised service is no longer viable. The following guidance is provided to enable applicants to identify the appropriate elements to include within the aviation section of any environmental report and how Local Planning Authorities should assess the information. Only in cases where the CAA is statutorily consulted under the Electricity Act or the Planning Act will it provide a specific response to the application or scoping request.

That said, if a Local Planning Authority (LPA) has **specific** questions relating to an application it is recommended that they contact the CAA using windfarms@caa.co.uk.

Screening Opinion

The CAA has no authority over the conduct of the planning process and hence it is the view of the CAA that the decision as to whether an applicant requires to submit an Environmental Impact Assessment rests solely with the relevant planning authority.

Scoping Opinion

When considering aviation effects, there are typically two aspects to consider; obstacles and electromagnetic impact including radar. Different aviation stake holders will be affected in different ways. Applicants should be made aware that several consultees act on a national basis and, therefore, leaving consultations until just before an application is submitted negates the purpose of the scoping process and will lead to delays.

Sometimes a developer or agent will claim that due to a development's small size, aviation is not an issue. This is not necessarily the case; indeed to date no evidence has been supplied to substantiate these claims and, for example, there are a number of instances where small wind turbines are detected by radar. Research is being undertaken to identify whether there is a set of dimensions and materials that would have no substantial impact.

Identifying Statutory Consultees

Both NATS (which provides En Route Air Traffic Control) and the Ministry of Defence (MoD) are statutory consultees under the Town and Country Planning Act. The impact on their infrastructure should be assessed within the Environmental Impact Assessment. The MoD currently provide a free service although demand is high leading to the need to allow sufficient time to respond, although this should be well within the timescales of other consultation requirements such as ecological or noise surveys. NATS provide a number of paid-for services and free self-assessment tools details of which can be found on their website. Both of these organisations need to be consulted in **all** cases.

There are also a number of officially safeguarded aerodromes which are defined in government circulars (listed at the end of this guidance). These may offer pre-planning services for which there may be a charge. Such aerodromes should have lodged safeguarding maps with LPA identifying the areas in which they need to be consulted. Due to the nature of their operations these areas may be in excess of 50km from the aerodrome.

Local Planning Authorities and applicants must note that if an objection is raised by any of the above, and consent is granted there is a possibility that the decision will be subject to 'call-in' by the Secretary of State or Scottish Ministers.

Identifying Non statutory Consultees

In addition to officially safeguarded Aerodromes there are several hundred other aerodromes in the United Kingdom. These may be Licensed or Unlicensed by the CAA. Associated Aerodrome Licence Holders or operators may have registered safeguarding maps with their LPAs. To verify the presence of aerodromes known to the CAA in any particular area, it is recommended that an aeronautical chart is purchased and the site of the turbine checked to see if it falls within the range of an aerodrome using the distances recommended in CAP 764. It is also recommended that Emergency Service Helicopter Support Units are consulted as they may operate in the area of concern and be affected by the introduction of tall obstacles. For example Police helicopters are permitted to operate down to 75 feet and will routinely follow main roads and motorways during their operations. Both the Police and Air Ambulance may need to land anywhere and will also have specifically designated landing sites.

Consideration of Electromagnetic Effects Including Radar and Radio Impacts

Almost uniquely among land developments wind turbines can be interpreted as moving objects by Air Traffic Control Radar. This can lead to impacts such as increased workload for Air Traffic Controllers, misidentification of tracks or loss of a genuine aircraft track, any of which could have safety implications. It is for this reason that consultation with the statutory consultees is essential in determining whether there is an operational impact on the radar system and if so, whether a mitigation can be agreed.

There may also be impacts upon other radio systems such as Air Ground Air communications and radio navigation beacons.

Consideration of Obstacle Aspects

As wind turbines are tall structures they can become obstacles to aviation. When in the vicinity of an aerodrome this will be assessed by the aerodrome itself. Away from an aerodrome the CAA will assess whether a wind turbine is an obstacle. The key blade tip heights to consider for developments away from an aerodrome are:

- 91.4 metres as there is an international requirement for all obstacles of 300 feet or more in height to be marked on aeronautical charts and listed in the UK Aeronautical Information Publication. This assists pilots to safely plan their flights to take into consideration the locations of tall obstacles. The national database of aeronautical obstacles is maintained by the Defence Geographic Centre.

- 150 metres at which the display of medium intensity aviation warning lights becomes mandatory as specified in Article 219 of the Air Navigation Order. There may also a requirement that the turbine is appropriately marked which would require the upper 2/3 of the turbine to be painted white. NB. Like any structure a wind turbine less than 150m in height might need to be lit / marked if, by virtue of their location and nature, it is considered a significant navigational hazard. If asked for comment, it would be unlikely that the CAA would have any issues associated with an aviation stakeholder (eg a local aerodrome operator or airspace operator) request for lighting / marking of any structure that was considered to be a significant hazard to air navigation.

There may be areas where the CAA will consider turbines of lower heights to be obstacles due to a combination of complex airspace with a low base and high terrain. Currently these areas of special consideration include the Manchester Low level Route and the Scottish Terminal Manoeuvring Area. Other areas may be included as wind turbines proliferate and the design of airspace changes.

Useful Resources for Potential Applicants

CAA Wind Energy web pages	www.caa.co.uk/windfarms
CAA Policy and guidelines on wind turbines	www.caa.co.uk/docs/33/Cap764.pdf
Air Navigation Order	http://www.legislation.gov.uk/uksi/2009/3015/contents/made
List of Stockists of Aeronautical Charts	http://www.nats-uk.ead-it.com/public/index.php%3Foption=com_content&task=blogcategory&id=235&Itemid

Interim Guidelines for the wind industry. (Note: only the MoD is offering a pre planning service)	http://www.bwea.com/pdf/Wind-Energy-and-aviation-interim-guidelines.pdf
DECC Renewable Energy Statistics project (for aviation safeguarding data)	https://restats.decc.gov.uk/cms/aviation-safeguarding-maps/
NATS Ltd Radar Coverage Maps	http://www.nats.co.uk/just-for-you/windfarm-developers/
ODPM Government Circular 1/2003	http://www.dft.gov.uk/pgr/aviation/safety/safeguarding/safeguardingaerodromestechni2988
Annex 3 (list of officially safeguarded aerodromes)	http://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/pgr/aviation/safety/safeguarding/coll_safeg
Scottish Government Circular 2/2003	http://www.scotland.gov.uk/Publications/2003/01/16204/17030
Ministry of Defence safeguarding	http://www.mod.uk/DefenceInternet/MicroSite/DE/WhatWeDo/Operations/ModSafeguarding.htm
Environmental Impact Regulations	http://www.legislation.gov.uk/uksi/1999/293/made
DAP Policy: Lighting of En-Route Obstacles and Onshore Wind Turbines	http://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=detail&id=4494

Yours Faithfully

Kelly Lightowler

K LIGHTOWLER
Squadron Leader (RAF)

Surveillance and Spectrum Management
Directorate of Airspace Policy
Civil Aviation Authority
45-59 Kingsway London WC2B 6TE
Tel: 020 7453 6534 Fax: 020 7453 6565
windfarms@caa.co.uk

From: Econsents_Admin@scotland.gsi.gov.uk [mailto:Econsents_Admin@scotland.gsi.gov.uk]
Sent: 23 November 2012 10:46
To: Craig.Iles@east-ayrshire.gov.uk; michael.thornton@snh.gov.uk; Planning.ek@sepa.org.uk; HSHeritageManagementEIAandSEA@scotland.gsi.gov.uk; Judith.Turnbull@dumgal.gov.uk; enquiries@wosas.glasgow.gov.uk; Sally.Hartley@transportscotland.gsi.gov.uk; planning.scotland@rspb.org.uk; mkeegan@swt.org.uk; brian@rafts.onmicrosoft.com; mail@gallowayfisheriestrust.org; info@ayrshireriverstrust.org; Windfarms; louisa.kemp@thecrownestate.co.uk; DIO-Safeguarding-Wind@mod.uk; windfarms@jrc.co.uk; nerlsafeguarding@nats.co.uk; Glasafeguarding@baa.com; Spectrum.Licensing@ofcom.org.uk; ron@ronpayne.plus.com; iain.mcdonald@visitscotland.com; safeguarding@baa.com; nicholas.shepherd@forestry.gsi.gov.uk; southscotland.cons@forestry.gsi.gov.uk; info@scotways.com; radionetworkprotection@bt.com; fraser.wallace@jmt.org; h.mauchlen@bhs.org.uk; developmentconnections@scottishwater.co.uk; safeguarding@glasgowprestwick.com; david.whyte@btinternet.com; oxygen2man@aol.com; iancrosbie@hotmail.com; david.hay222@btinternet.com; c.forsyth@btinternet.com; sharonrowan@hotmail.co.uk; monthrawprospectsltd@live.co.uk
Subject: Enoch Hill Wind Farm

Dear Consultee

SCOPING OPINION REQUEST FOR THE PROPOSED ENOCH HILL WIND FARM BETWEEN NEW CUMNOCK AND DALMELLINGTON IN EAST AYRSHIRE

AMEC on behalf of E. ON Climate and Renewables UK Development Ltd has formally requested, in accordance with regulation 7 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000, ("the Regulations") a scoping opinion for the proposed Enoch Hill Wind Farm between New Cumnock and Dalmellington in East Ayrshire.

Under regulation 7, Scottish Ministers are required to consult the specified statutory bodies (and other interested parties) as to their views on the information which ought to be provided in the environmental statement.

As the regulations allow three weeks for this consultation I would be grateful for your comments by 18 December 2012. If you require an extension to the consultation period please contact us as soon as possible to arrange a new deadline date for your response.

If we have not received your comments, nor have we received any extension request by 18 December 2012 we will assume you have no comments to make. Please note reminder letters are no longer issued by the Energy Consents and Deployment Unit for any project

Please send your response in **Word format** to econsentsadmin@scotland.gsi.gov.uk.

If you have not received a copy of the scoping report from the developer please let me know by e-mailing econsentsadmin@scotland.gsi.gov.uk

Regards

Joyce Melrose

Scottish Government

Energy Consents and Deployment Unit

0300 244 1247

DALMELLINGTON COMMUNITY COUNCIL

12th December 2012

By e-mail: econsentsadmin@scotland.gsi.gov.uk

Dear Sir / Madam

RE: SCOPING OPINION REQUEST FOR THE PROPOSED ENOCH HILL WIND FARM BETWEEN NEW CUMNOCK AND DALMELLINGTON IN EAST AYRSHIRE

Dalmellington Community Council wish to object to the above proposal for the following reasons:-

We are concerned about the effect a wind farm would have on the recently opened Scottish Dark Sky Observatory, a unique asset for Scotland and for south-west Scotland in particular. It is within the Galloway Forest Dark Sky Park, the only 'gold' standard Dark Sky Park in Britain and one of only five of such a standard in the entire world. It has almost unlimited potential for education, research and tourism.

Building on the success of the Galloway Forest Dark Sky Park, the observatory is projected to attract up to 100,000 visitors each year by 2017. It is therefore a very significant tourism asset for East Ayrshire. Visitors will create many employment and business opportunities. Nothing must be done which would in any way limit the potential of this marvellous asset for south-west Scotland.

The proposed wind farm would seriously harm the Observatory because we see from the MoD's consultation response that the wind turbines would, understandably, need to be lit at night, either conventionally or by infrared. While infrared is invisible to the naked eye, it shows up like daylight in the imaging equipment of The Scottish Dark Sky Observatory. Imaging is an extremely important element of the work of the Observatory.

The proposed wind farm would be very close to and would be visible from the Galloway Forest Dark Sky Park, one of East Ayrshire Council's prime tourism assets. As the Main Issues Report just published states, ***"The Dark Sky Project is unique in the UK and presents real opportunities to develop the tourist economy". "Proposals that would have a significant adverse impact on the Dark Sky Park will be resisted***." The Scottish Dark Sky Observatory serves the Dark Sky Park. Adverse impact on the observatory also represents an adverse impact on the Dark Sky Park.

The proposed wind farm is contrary to the following sections of the East Ayrshire Local Plan:-

TOUR1, PROP2, PROP3, ENV3, ENV8, ENV14, ENV16, ENV17, PROP24, CS12 and CS14 (E(1).(2),(3) and (4).

The Ayrshire Joint Structure Plan requires the protection of the landscape character of the area and to give prime consideration to the protection and enhancement of the landscape in Sensitive Landscape Areas. The proposed development is not compatible with this duty (7.3).

The Local Plan reflects the Structure Plan. The proposed wind farm is contrary to the key objectives of the Structure Plan and to specific policies STRAT1, ECON6, ECON7, ECON12, ENV1, ENV2 and ENV7.

Any approval would be contrary to all policies relating to the encouragement of tourism and the care of landscapes and the natural environment in our area.

We hope that our position will be given due weight.

Yours sincerely

Sharon Smith

<u>Secretary – Dalmellington Community Council</u>

Chairperson: Rae Murphy, 8 Armour Wynd, Dalmellington, KA6 7EF, Tel: (01292) 550 675
Secretary: Sharon Smith, 32 Ayr Road, Dalmellington, KA6 7SJ, Tel: (01292) 551 940

Steve Rogers – Head of Planning & Building Standards Services
Kirkbank, English Street, Dumfries, DG1 2HS
Telephone (01387) 260199 - Direct Dial Fax (01387) 260188

Delegated Report

REQUEST FOR SCOPING OPINION (UNDER ENVIRONMENTAL IMPACT ASSESSMENT (SCOTLAND) REGULATIONS 2011) FOR PROPOSED SECTION 36 APPLICATION FOR PROPOSED WIND FARM COMPRISING UP TO 23 TURBINES WITH A MAXIMUM BLADE TIP HEIGHT OF 150m, FORMATION OF ACCESS TRACKS, BORROW PITS, CONSTRUCTION COMPOUND AND ASSOCIATED INFRASTRUCTURE
AT ENOCH HILL WIND FARM, BETWEEN NEW CUMNOCK AND DALMELLINGTON, EAST AYRSHIRE

Application Type: Scoping opinion

1. The scoping request from the Scottish Government on behalf of EON Climate and Renewables relates to a proposed wind farm of an installed capacity exceeding 50MW.

2. The Planning Authority consulted the following Departments of Dumfries and Galloway Council: Archaeology, Environmental Standards, Flood Risk Management, Roads Authority and the Landscape Architect. **To date, no response has been received from the Roads Authority (any comments subsequently forthcoming will be forwarded).**

3. **Archaeology and Cultural Heritage**

The proposal will have no direct effects on historic environment assets within Dumfries and Galloway.

No features have been identified within Dumfries and Galloway, where there are likely to be significant adverse effects on settings.

4. **Noise**

The Council's Environmental Standards Section has no objection in principal. However until a site specific noise impact study has been carried out following the principles detailed in the Assessment & Rating of Noise from Wind Farms ETSU-R-97, 1996 they are unable to comment fully as to the expected impacts.

The site specific assessment should be carried out following the principles detailed in the Assessment & Rating of Noise from Wind Farms ETSU Report ETSU-R-97, 1996.

It is also suggested that the proposal should be designed to meet the lower noise limits as specified in the ETSU-R-97 document, but where lower limits cannot be achieved the detailed reasons as to why this cannot be accomplished should be detailed in the ETSU-R-97 report within the Environmental Impact Assessment.

We additionally suggest that a method statement for the construction project should be provided within the EIA for approval by Dumfries & Galloway Council. This should include an assessment of potentially noisy operations and outline the noise mitigation measures proposed. This will also include a programme and phases for each stage of work. Guidance as to construction noise prediction methodology may be found within BS5228:2009.

Department of Neighbourhood Services
Planning & Economic Development Service

Head of Planning & Economic Development: A Neish DipTP

If phoning or calling, please ask for: **Craig Iles (01563) 576772**

East Ayrshire COUNCIL

Our Ref: 12/1961/PENQ

Date: 31 January 2013

To: Karen Gallagher
Energy Consents and Deployment Unit
The Scottish Government
4th Floor
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

Dear Ms Gallacher,

THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2000

SCOPING OPINION FOR THE PROPOSED WIND FARM AT ENOCH HILL NEAR DALMELLINGTON, EAST AYRSHIRE

I refer to your consultation request from the Council in terms of Regulation (4) of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 on a scoping opinion required from Scottish Ministers in relation to the above mentioned wind farm.

The purpose of this document is to provide advice and guidance to you which has been collated from consultees whom the Planning Authority has consulted and comments directly by the Planning Authority based on its knowledge of the site and the surrounding area. This enables the applicant to consider the issues they have identified and address these in the EIA process and the Environmental Statement associated with the Section 36 application.

You should be aware that the consultation undertaken by the Council was very selective as the onus, in this case, is on the Energy Consents and Deployment Unit to undertake statutory consultations and non-statutory consultations. As part of the applicant's ongoing consultation and iterative design programme, consultation should be undertaken with other consultees as well as those consulted at this stage by the Planning Authority. I include at appendix 2 a list of further consultees that I would expect you to engage with as part of this process. Please be aware that any lack of inclusion on this list of a particular party or organisation in no way indicates that the Planning Authority considers that consultation would not be beneficial.

The sections below highlight the comments of the Planning Authority on a number of matters. Much of this information will be the same or similar to that of other consultees.

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www.east-ayrshire.gov.uk

Non-Technical Summary

This should be written in simple non-technical terms to describe the various options for the proposed development and the mitigation measures against the potential adverse impacts which could result.

Land Use Planning/Policy

Consideration and reference within the Environmental Statement should be made to the Development Plan which includes the approved Ayrshire Joint Structure Plan, the East Ayrshire Local Plan 2010 and the Addendum to the Ayrshire Joint Structure Plan Technical Report TR03/ 2006: Guidance on the Location of Windfarms within Ayrshire. Furthermore, the National Planning Framework, Scottish Planning Policy and other relevant planning documents including Planning Advice Notes, Circulars and Guidance and other material planning policy considerations should be addressed. The Main Issues Report of the emerging East Ayrshire Local Development Plan has been published and representations require to be submitted by January 2013.

Carbon emissions

A statement of expected carbon savings over the lifetime of the wind farm should be included within the Environmental Assessment. The statement should include an assessment of the carbon emissions (and any savings) associated with all elements of the development. Consideration of peat resource should be undertaken in this regard also and relevant details and measures proposed within the ES that will help to form the basis of a detailed peat management scheme that would be required through planning condition.

Design, Landscape and Visual Impact

The appearance of wind farms is of particular interest and the need for a coherent design strategy to be considered at scoping stage and to be prepared before submission of the Environmental Statement. The strategy should explain the design principles behind the layout plan in a rational way that can be easily understood.

Wind farms are prominent features in the landscape and hence a full assessment of the effects on landscape and visual amenity is important, particularly given the proximity of settlements, rural properties, other visual receptors and the landscape designations of the area.

The viewpoints from which the photographs are taken should be agreed with the Planning Authority and SNH. Best practice should be followed in the selection of viewpoint locations and in the preparation of the photomontage/panoramic images.
In terms of any landscape and visual impact on communities or residential properties, the Council requests that a Residential Visual Assessment is provided for every property located within 2 kilometres of the wind farm. This assessment should include wirelines and photomontages of the proposal itself and cumulative wirelines and photomontages.

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Cumulative Impacts

The cumulative impacts arising from wind farm developments are becoming increasingly important considerations in the assessment of such proposals, given the number of existing operational wind farms in the area, wind farms with permission and wind farm developments at application, scoping and pre-scoping stages. The relationship of the Enoch Hill Wind Farm proposal to operational, consented, undetermined s36 and planning applications and scoping stage wind farms should be assessed.

Particular account should be taken of the views of Scottish Natural Heritage and East Ayrshire Council on the cumulative landscape and visual impact of the EnochHill wind farm proposal. It is important that any cumulative assessment should not only address inter visibility and the visibility of multiple windfarms from key viewpoints, but should also address the consequences of travelling through the landscape and sequential views.

Zones of Theoretical Visibility (ZTVs)

It is desirable that individual and cumulative ZTVs are prepared early on in the assessment process and in this respect a minimum of 35km ZTV is recommended which should include a provisional list of views, with an indication of distance and the evaluation and justification for their inclusion or omission (e.g. sequential road view/ fixed view from distant hill/ key skyline views; views on approach to/ impact on the landscape setting of settlements and built and cultural heritage features; locally important views/ landmarks; views from rights of way/ walking routes/ residents views/ popular recreation areas).

These should be used to influence the site layout process, and the zone should include wind farm projects known to be at application or decision stage within 35km distance from the proposed development at EnochHill.

Designing Principles

The layout of the site should be designed so as to minimise the impact of the development upon key environmental features, significant views and sites designated for their ecological, historical, cultural or scenic qualities, including gardens and designated landscapes. The principles to be adopted in the design process should be made explicit, and could take the form of a Design Statement as advocated in PAN 68.

Protected Species

The ES should include a survey and assessment of the short and long term impacts of the development upon species of flora and fauna, protected under EC Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (the “Habitats Directive”) or the Wildlife and Countryside Act 1981. The ES should state the significance of the site for protected species, both in terms of the abundance and distributions of populations, frequency of use, and identification and significance of important sites.

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Ornithology

The ES should include a detailed ornithological assessment, which should address a range of likely target species: the presence on, or around, the site of hen harrier, golden eagle, short eared owl, barn owl, merlin, peregrine falcon, golden plover and black and red throated diver, all of which are listed on either Annex 1 of EU Birds Directive 1979 or Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). The ES should assess the likely impact of the construction and operational phases of the development on these species and their habitat.

Ecological Assessment

The ecological assessment of the proposals should include a vegetation survey to National Vegetation Classification level, an analysis of habitat loss and mitigation and enhancement measures in respect of identified adverse consequences for nature conservation interests. Designated habitats should be assessed in detail, including a full peat depth analysis and peat slide risk assessment, and the results used to inform the location of turbines, other structures, access tracks and the route of grid connections. Sites designated for their nature conservation importance, both within and around the application site, such as SSSIs, will require special consideration. Mitigation measures should address opportunities for the restructuring of those areas of forestry which would be retained and planting or other measures on or off the site which could increase the habitat value of the site and surroundings.

The ES should also state whether or not appropriately qualified environmental scientists or ecologists are to be used as Clerk of Works or in other roles during construction to provide specialist advice.

The ES should provide a comprehensive account of the habitats present on the proposed development site. It should identify rare and threatened habitats, and those protected by European or UK legislation, or identified in national or local Biodiversity Action Plans. Habitat enhancement and mitigation measures should be detailed, particularly in respect to blanket bog, in the contexts of both biodiversity conservation and the inherent risk of peat slide. Details of any habitat enhancement programme for the proposed wind farm site should be provided.

Short-term Impacts

The consequence of construction works should be assessed and addressed by means of a method statement, environmental management plan, mitigation programme, reinstatement measures and monitoring regime. These techniques should deal with the timing of works in relation to ornithological interests, the long-term management of areas to be cleared of forestry and site restoration proposals following decommissioning. There will be a need to protect all watercourses, tributaries and river catchments. The effects of construction activities on water quality should be assessed, to avoid in particular, sedimentation and accidental spillages. This will apply to turbine base formation, access road construction and borrow pit extraction operations. Consideration should be given to the need for silt traps and possibly a settlement lagoon and, dependent on effluent quality, a discharge consent from SEPA may be required.

Any private water supplies should be protected during and after construction. The development should maximise the use of secondary aggregates or recycled materials and the production of waste materials should be minimised.

Built and Cultural Heritage Resources

The ES should assess the direct and indirect impacts of the proposed development (individually and in association with other existing and proposed wind farms) upon heritage resources and their settings within the zone of visual influence of the development, including scheduled monuments, unscheduled archaeological sites, listed buildings, conservation areas and gardens and designated landscapes such as Craigengillan.

Tourism/ Recreation and Public Access Resources

The ES should address the consequences of the development for users of the countryside and its direct and indirect impacts on tourism and recreational interests and resources in the vicinity. If any re-routing of paths is required alternative routes should be highlighted for consideration. Strategies for long term public access to the site for recreational uses during its operational phase should be considered.

Amenity Issues

The consequences of the proposed wind farm for occupiers of properties within the vicinity of the development, as well as countryside users, should be assessed, in terms of impact on views from properties and access routes; noise from the construction and operational phases of the development; dust from the construction phase of the development; noise, fumes and vibration from HGV traffic movements generated by the development; and shadow flicker.

Traffic and Transportation Issues

The ES should assess the impact of the construction and operational phases of the proposed development on the public road network in terms of the effects of the additional vehicular traffic generated, particularly heavy good vehicles and abnormal loads comprising turbine components, on traffic management, road safety, road layout and road condition. It is recommended that early contact be made with the Councils Roads Division Officers to discuss these matters further.

Communications

The impact of the proposed development on domestic television, radio and mobile phone reception in the area and on any civil or military broadcast linkages traversing the site should be assessed and any necessary mitigation measures identified.

Decommissioning

The planning application and supporting environmental statement should include a programme of work complete with outline plans and specifications for the decommissioning and reinstatement of the site. Information should be provided on the anticipated working life of the development and after use site reinstatement.

Noise

In terms of potential noise impacts the applicant should conduct an appropriate noise assessment taking account of the

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requirements of ETSU, BS 4142 and the WHO guidelines and in this regard the Council does not require to agree any background noise monitoring locations with the applicant. A noise assessment methodology should be submitted in respect of both the construction and operational phases of the development.

I hope this information is of assistance however should you require further clarification on any matter please contact Craig Iles 01563 576768.

Yours sincerely,

Craig Iles
PLANNING TEAM LEADER

EAST AYRSHIRE COUNCIL
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Appendix 1

Recommended further consultation:

East Ayrshire Council Roads Division

East Ayrshire Council Outdoor Access Officers

Local Community Councils within a 10km radius of the application site

EAST AYRSHIRE COUNCIL
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SCOTTISH GOVERNMENT
ENERGY CONSENTS AND DEPLOYMENT UNIT

ENOCH HILL WIND FARM

SCOPING OPINION

Contents

THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2000

SCOPING OPINION FOR THE PROPOSED ENOCH HILL WIND FARM BETWEEN NEW CUMNOCK AND DALMELLINGTON, EAST AYRSHIRE

1. Introduction

Any proposal to construct or operate a power generation scheme with a capacity in **excess of 50 megawatts** requires Scottish Ministers' consent under Section 36 of the Electricity Act 1989.

Schedule 9 of the Act places on the applicant a duty to "have regard to the desirability of preserving the natural beauty of the countryside, of conserving flora, fauna and geological and physiological features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest". In addition, the applicant is required to give consideration to National Planning Framework 2, Scottish Planning Policy, Planning Advice Notes, the relevant planning authority's Development Plans and any relevant supplementary guidance.

Under the Electricity Works (Environmental Impact Assessment) (Scotland)(EIA) Regulations 2000, the Scottish Ministers are required to consider whether any proposal for a wind farm is likely to have a significant effect on the environment. In terms of these Regulations, we must consult the planning authority, Scottish Natural Heritage and the Scottish Environment Protection Agency and other relevant consultees.

2. Aim Of This Scoping Opinion

Scottish Ministers are obliged under the EIA regulations to respond to requests from applicants for a scoping opinion on outline design proposals.

The purpose of this document is to provide advice and guidance to applicants which has been collated from expert consultees whom the Scottish Government has consulted. It should provide clear advice from consultees and enable applicants to address the issues they have identified and address these in the EIA process and the Environmental Statement associated with the application for Section 36 consent.

3. Land Use Planning

The Scottish Government's planning policies are set out in the National Planning Framework, Scottish Planning Policy, Designing Places and Circulars.

The National Planning Framework is the Scottish Government's Strategy for Scotland's long term spatial development.

Scottish Planning Policy (SPP) is a statement of Scottish Government policy on land use planning and contains:

- The Scottish Government's view of the purpose of planning,
- The core principles for the operation of the system and the objectives for key parts of the system,
- Statutory guidance on sustainable development and planning under Section 3E of the Planning etc. (Scotland) Act 2006,
- Concise subject planning policies, including the implications for development planning and development management, and
- The Scottish Government's expectations of the intended outcomes of the planning system.

Online renewables planning advice for onshore wind, preparing spatial frameworks and wind farm developments on peat land is available at http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/themes/renewables, including advice on spatial planning, typical planning considerations, detailed siting matters and useful references. This is regularly updated to reflect emerging best practice.

Other land use planning documents which may be relevant to this proposal can be found at http://www.scotland.gov.uk/Topics/Built-Environment/planning

The ES should also include full reference to the relevant development plan.

4. Natural Heritage

Scottish Natural Heritage (SNH) has produced a service level statement (SLS) for renewable energy consultation. This statement provides information regarding the level of input that can be expected from SNH at various stages of the EIA process. Annex A of the SLS details a list of references, which should be fully considered as part of the EIA process. A copy of the SLS and other vital information can be found on the renewable energy section of their website – http://www.snh.org.uk.

5. General Issues

5.1 Aviation

In the wake of recent consultation with the aviation organisations such as NATS, BAA, CAA, MOD etc, it is clear that large scale wind farm proposals can impact significantly on primary, secondary or weather radar stations and thus affect operational safety. Applicants are encouraged to engage with these organisations and airport operators at an early stage in the design process, to establish the potential impacts and agree acceptable technical solutions. Where actual or potential conflicts exist, it is important that a solution is identified and that the relevant consultee agrees to that solution being realised within a suitable timescale.

A link to relevant aviation guidance is available at the following website link, however it should be note that this guidance is being reviewed; http://www.berr.gov.uk/files/file17828.pdf

NATS En Route Plc ("NERL") is responsible for the safe and expeditious movement in the en-route phase of flight for aircraft operating in controlled airspace in the UK. To undertake this responsibility NERL has a comprehensive infrastructure of radars, communication systems and navigational aids throughout the UK, all of which could be compromised by the establishment of a wind farm. In this respect NERL is responsible for safeguarding this infrastructure to ensure its integrity to provide the required services to Air Traffic Control (ATC). In order to discharge this responsibility NERL assess the potential impact of every wind farm development in the UK which have applied for planning approval.

NERL offer services to assist in pre-planning for wind farm developments. Details of these services are available on http://www.bwea.com/aviation/nats.html or by contacting NERL directly on NATSSafeguarding@nats.co.uk or writing to:

NERL Safeguarding – Mailbox 27
NATS - CTC
4000 Parkway
Solent Business Park
Whiteley
Hampshire
PO15 7FL

NATS are unable to evaluate the proposal until the ground to blade tip height and OS Grid Reference for each individual wind turbine (eastings and northings) is received.

The Wind Energy Team at the Defence Infrastructure Organisation (DIO) is the focal point for all wind farm proposals in the Ministry Of Defence (MOD). The team seeks to work with industry at the earliest stages of proposed development to minimise the impact on Defence, to ensure public safety is not compromised, and maximise the likelihood of planning success. Some of the main concerns the MOD have are interference with Air Defence Radar and Air Traffic Control Radar, plus the creation of obstacles in Low Flying Areas, which negate the usefulness of the training undertaken there. Aviation safety lighting should also be considered through consultation with the aviation authorities and the relevant planning authority.

The pre-planning consultation form found at http://www.bwea.com/aviation/proforma.html should be completed and e-mailed to DIO at DIO-Safeguarding-Wind@mod.uk.

Civil Aviation Authority Directorate of Airspace Policy (DAP) is the civil aviation regulatory focal point for all wind farm proposals. DAP seeks to work with industry at the earliest stages of proposed development to establish potential civil aviation issues associated with any particular wind turbine proposal. The best means by which to initiate the aviation related consultation process is via the **completion and submission of an associated aviation pre-planning proforma** in line with the process described within the DTI/BERR guidance document 'Wind Energy and Aviation Interests – Interim Guidelines'. Generic CAA policy and guidance on wind turbines is set out within Civil Air Publication 764, available at http://www.caa.co.uk/docs/33/Cap764.pdf.

Furthermore, applicants should demonstrate that a solution to potential aviation issues is either agreed or well advanced, **prior to** submission of the application.

5.2 Economic Benefit

The Government Economic Strategy (2011) establishes a new Strategic Priority – Transition to a Low Carbon Economy – to reflect the excellent opportunity we have to secure investment and jobs from this growing sector and ensure that the benefits of this transformational change are shared across the economy and our communities. The concept of economic benefit as a material consideration is explicitly confirmed in the SPP. Further details of the Government's approach to realising its ambitions for renewables are set out in the "2020 Routemap for Renewable Energy in Scotland", which highlights the manufacturing potential of the renewables sector and opportunities for communities to share in the rewards of our next energy revolution.

The application should include relevant economic information connected with the project, including the potential number of jobs, and economic activity associated with the procurement, construction operation and decommissioning of the development.

5.3 Local Planning Agreements

There are two main tests in determining whether a consideration is material and relevant. These are:

- it should serve or be related to the purpose of planning – it should therefore relate to the development and use of land; and

- it should fairly and reasonably relate to the particular application.

Only those issues that meet the above tests can be taken into account when considering applications. Where relevant, applicants should identify such issues in their application, including evidence to support compliance with these tests.

6. Contents Of The Environmental Statement (ES)

We recommend the contents of the ES should be structured as follows below:

6.1 Format

High resolution and low resolution PDF versions should be provided. A description of the methodology used in assessing all impacts should be included.

It is considered good practice to set out within the ES the qualifications and experience of all those involved in collating, assessing or presenting technical Information.

6.2 Non Technical Summary

This should be written in simple non-technical terms to describe the various options for the proposed development and the mitigation measures against the potential adverse impacts which could result.

6.3 Site Selection And Alternatives

The applicant should set out the alternatives sites considered and the rationale and methods used to select the chosen site. The applicant should demonstrate that a fairly wide set of environmental and economic parameters have been used to narrow down choice of sites and how this choice takes account of the spatial framework set out in the SPP. Secondly, there should be a detailed examination on these parameters to minimise the impact of the proposal by sensitive design and layout.

Wind potential and access to the grid are key to initial sieve-mapping exercises for site selection, but environmental constraints other than landscape character should also be included in this initial site selection process. For example, areas of deep peat, watercourse crossings, wetlands and locations of protected species would be other examples of additional environmental constraints to be considered both from the outset and in the detailed design and layout.

Architecture+Design Scotland (A+DS) suggest that a planning and design strategy should first look at the proposed location and address whether this is a sensible location in relation to wind, access to the grid and to the character of the landscape.

6.4 Description Of The Development

The description of the proposed development in the Environmental Statement should comprise information on the site boundary, design layout, and scale of the development.

Where it is required to assess environmental effects of the development (see EIA regulation 4 (1)(b), the Environmental Statement should include;

(a) a description of the physical characteristics of the whole development and the land use requirements during the construction, operation, decommissioning and restoration phases;

(b) a description of the main characteristics of the production processes and nature and quality of the materials used; and

(c) an estimate by type and quantity of expected residues and emissions resulting from the operation of the proposed development.

6.5 Track Construction

The applicant should set out the alternative access routes considered and the rationale and methods used to select the chosen access routes. Applicants should set out the intended use of access routes i.e.: for transportation of turbine components, delivery of construction materials, every day operational use etc. Applicants should specify which access routes/ roads are temporary and which are required for the operational duration of the development. Considered design details will be required for all aspects of site work that might have an impact upon the environment, containing further preventative action and mitigation to limit impacts.

The applicant should be aware of useful guidance on, among other things, minimising the impact from construction of the type of access roads used in wind farms. Such guidance can be found in "Forests and Water Guidelines" Fifth Edition (2011) which can be obtained from the Forestry Commission via http://www.forestry.gov.uk/forestry/infd-8bvgx9 and "Control of water pollution from linear construction projects" (CIRIA C648, 2006) which can be obtained from CIRIA. However, given that tracks in some cases will be located on peat and will carry very heavy loads, evidence will be necessary of additional consideration of specific measures required in similar schemes elsewhere to deliver best practice. Additional guidance is also available in 'Constructed tracks in the Scottish Uplands' (2006) published by SNH and available at http://www.snh.org.uk/pdfs/publications/heritagemanagement/constructedtracks.pdf

6.6 Decommissioning

The subsequent application and supporting environmental statement should include a programme of work complete with outline plans and specifications for the decommissioning and reinstatement of the site. Information should be provided on the anticipated working life of the development and after use site reinstatement.

6.7 Grid Connection Details

The impacts of constructing, installing and operating the following infrastructure components should be considered and assessed by applicants, if known;

- Substation.
- Cabling (Underground).
- Cabling (Overhead).
- Monitoring and control centre.

7. Baseline Assessment And Mitigation

Under each section below applicants are asked to consider:

- Aspects of the environment likely to be affected by the proposals.
- Environmental impacts of the proposals.
- Methods to offset adverse environmental effects.
- Effects of the phases of the development; Construction, Operation, Decommissioning and Restoration.

This section should clearly set out a description of the environmental features of the proposed wind farm site, the likely impacts of the wind farm on these features, and the measures envisaged to prevent, mitigate and where possible remedy or offset any significant effects on the environment. It should incorporate details of the arrangements and the methodologies to be used in monitoring such potential impacts, including arrangements for parallel monitoring of control sites, timing and arrangements for reporting the monitoring results. It should be noted that there is a danger that these measures could themselves have secondary or indirect impacts on the environment.

7.1 Air And Climate Emissions

The Environmental Statement should fully describe the likely significant effects of the development on the environment, including direct effects and any indirect, secondary, cumulative, short, medium and long term, permanent and temporary e.g. construction related impacts, positive and negative effects of the development which result from:

(a) the existence of the development.
(b) the use of natural resources.
(c) the emission of pollutants, the creation of nuisances and the elimination of waste.

7.2 Carbon Emissions

To assist Scottish Ministers in making a determination on the application, applicants must produce a statement of expected carbon savings over the lifetime of the wind farm. The statement should include an assessment of the carbon emissions associated with track preparation, foundations, steel, and transport; any carbon losses from tree felling (and offsetting from tree planting); and any carbon losses from loss or degradation of peaty soils. Reference can be made to the technical note "Calculating Potential Carbon Losses and Savings from Wind Farms on Scottish Peatlands" (Scottish Government, 2011). The spreadsheet tool it refers to should be used for developments on peat but can also be used for sites that will be drained, are located on carbon rich soils or require a significant amount of deforestation.

It is important to ensure that the carbon balance of renewable energy projects is not adversely affected by management of peat resource. There need to be measures in place to ensure that the development does not lead to significant drying or oxidation of peat through, for example, development of access tracks and other infrastructure, drainage channels, or "landscaping" of excavated peat. The basis for these measures should be set out within the ES, on which a detailed peat management scheme, required through planning condition, can subsequently be designed to ensure that the carbon balance benefits of the scheme are maximised.

Applicants are required to submit full details of the potential carbon losses and savings of the wind farm, and demonstrate how the scheme has been designed to minimise the payback figure.

The ES should include a dedicated chapter on carbon assessment which has printed copies of all worksheets along with an explanation of how the data entered is derived, referring to the relevant section of the ES as appropriate. An electronic version of the spreadsheet should be emailed to econsentsadmin@scotland.gsi.gov.uk and SEPA.

References must be given to the data sources used as inputs to the tool and the rationale behind their use must be made clear, especially where sources outside the data presented elsewhere in the ES are used. Where assumptions or estimates have been made these should be explained and justified.

Guidance on the above technical note, planning policy, site surveys and assessments for developments on peatland, re-use of peat and minimisation of waste, as well as the supporting research and spreadsheet tools are all available from the Scottish Government "Wind Farms and Carbon" website at www.scotland.gov.uk/WindFarmsAndCarbon. Prior to submission of the application, applicants should make a final check that they have used the most up to date version of the tool. This will always be available from the link above.

7.3 Design, Landscape And The Built Environment

Scottish Ministers place particular importance on the layout design of wind farms and considers there is a need for a coherent, structured and quality driven approach to wind farm development. The appearance of wind farms is of particular interest and the need for a coherent design strategy to be considered at scoping stage and to be prepared before submission of the Environmental Statement. The strategy should explain the design principles behind the layout plan in a rational way that can be easily understood. The design strategy for the wind farm should be expressed through a design statement. The Design Statement should describe a clear strategy for meeting these objectives, a justification for the resulting layout and evidence that the design ideas have been tested against the objectives.

Wind farms are prominent features in the landscape and hence a full assessment of the effects on landscape and visual amenity is important. The assessment methodology should follow the approach promoted by the Landscape Institute and Institute of Environmental Management and Assessment ('Guidelines for Landscape and Visual Impact Assessment', second edition, Spon 2002). General guidance on the range of issues to be considered in assessment of wind farms is set out, in the form of a scoping checklist, at Appendix 1 of ‘Hydroelectric schemes and the natural heritage (SNH 2010)

As regards the portrayal of visual and landscape impacts within Environmental Statements, guidance has also been developed, jointly by SNH and the Scottish Renewables Forum, on ‘Visual Representation of Wind Farms – Good Practice Guidance’ (SNH 2007), published at: http://www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind.

Visual information should be presented in a way which communicates as realistically as possible the actual visual impact of the proposal. The format of the images and the focal length of the lens will have to be taken into consideration.

All visualisation images should be accompanied by a description of how to view the image so that it best replicates what will be seen if the proposal is constructed. This should include the required viewing distance between the eye and the image, and whether it is a single frame image or a composite panoramic image. If a composite image, it is desirable either to curve the edges of panoramic images so that peripheral parts of the image are viewed at the same intended viewing distance, or to 'pan' across the image with the eye remaining at the recommended viewing distance. This is not required for single frame images.

The viewpoints from which the photographs are taken should be agreed with the planning authority and SNH. The horizontal field of view should be shown on a map so that the images can be used accurately on site.

The ES should include a description of the landscape character of the area and how that character will be affected by the impact on any landscapes designated for their landscape or scenic value, including National Parks, National Scenic Areas, or local landscape designations such as Area of Great Landscape Value or Regional Scenic Area (the terminology is varied) and the impact on any area which is a recognised focus for recreational enjoyment of the countryside, eg a Regional Park or Country Park.

7.4 Construction And Operation

The ES should contain site-specific information on all aspects of site work that might have an impact upon the environment, containing further preventative action and mitigation to limit impacts. Elements should include: fuel transport and storage management; concrete production (including if batching plants are proposed and measures to prevent discharges to watercourses); stockpile storage; storage of weather sensitive materials at lay-down areas; haul routes and access roads (and if temporary or permanent); earthworks to provide landscaping; mechanical digging of new or existing drainage channels; vehicle access over watercourses; construction of watercourse crossings and digging of excavations (particularly regarding management of water ingress); temporary and long-term welfare arrangements for workers during construction ; maintenance of vehicles and plant; pollution control measures during turbine gearbox oil changes; bunding or roofing of transformer areas;

use of oil-cooled power cables and related contingency measures; and dewatering of turbine base excavations. With regards to oil, it is imperative that there is a detailed contingency plan to deal with large oil spills that cannot be dealt with at a local level. The ES should identify if there are particularly sensitive receptors of pollution (e.g. salmonid rivers, rivers with freshwater pearl mussels etc.).

Such information is necessary in order to assess the environmental impact of the proposals prior to determination and provide the basis for more detailed construction method statements which may be requested as planning conditions (it is recommended that the relevant Planning Authorities, SNH and SEPA are provided with the opportunity to view these method statements in draft form, prior to them being finalised should development take place).

The applicant should be aware of information provided by SEPA that may be of use such as rainfall and hydrological data. The need to plan the works in order to avoid construction of roads, dewatering of pits and other potentially polluting activities during periods of high rainfall is important. The ES needs to demonstrate which periods of the year would be best practice for construction for the site, taking into account the need to avoid pollution risks and other environmental sensitivities affecting operational timing, such as fish spawning and bird nesting.

The impact of the proposed development on public footpaths and rights of way should be clearly indicated. If any re-routing of paths under a Right of Way is required alternative routes should be highlighted for consideration. Further guidance can also be found within the Scottish Outdoor Access Code at http://www.outdooraccess-scotland.com.

The ES should set out mechanisms to ensure that workers on site, including sub-contractors, are aware of environmental risks, and are well controlled in this context. The ES should state whether or not appropriately qualified environmental scientists or ecologists are to be used as Clerk of Works or in other roles during construction to provide specialist advice. Details of emergency procedures to be provided should be identified in the ES.

The process whereby a method statement is consulted upon before commencement of work is satisfactory at many sites where sensitivities are non-critical. However for environmentally sensitive sites it is recommend that, following consultation, method statements be approved by the planning authority in consultation with SNH, prior to the commencement of construction work.

Scottish Natural Heritage would normally only wish to comment on Construction Method Statements where there are relevant and significant natural heritage interests involved. Applicants should avoid submitting multiple versions of the Construction Method Statement to SNH.

8. Ecology, Biodiversity And Nature Conservation

Scottish Government suggests that all ecological survey methods conform to the best available standard methods for each habitat and species, and follow guidance published by SNH where this is available. Where standard methodologies do not exist, applicants should propose and agree an appropriate methodology with SNH specialist advisers. SG also requires that all ecological survey data collected during ES survey work should be made available by the applicant to SG and SNH, in a form which would enable them to make future analysis of the effects of wind farms if appropriate.

8.1 Designated Sites

The ES should address the likely impacts on the nature conservation interests of all the designated sites in the vicinity of the proposed development. It should provide proposals for any mitigation that is required to avoid these impacts or to reduce them to a level where they are not significant. Information on designated sites and the law protecting them can be found on the SNH website. Maps of the boundaries of all natural heritage designated sites and information on what they are designated for are also publicly available via SiteLink in the SNHi section of the SNH website http://www.snh.org.uk/snhi/. The applicant is referred to this resource to ensure that they have the correct information on designated sites within the locality that may be affected by the proposed development. The potential impact of the development proposals on other designated areas such as NSA, LSA, SSI or Regional/National Parks etc should be carefully and thoroughly considered and appropriate mitigation measures outlined in the ES. Early consultation and agreement with SNH, the relevant planning authority and other stakeholders is imperative in these circumstances.

For developments with a potential to affect Natura sites, applicants must provide in the ES sufficient information to make clear how the tests in the Habitats Regulations will be met, as described in the June 2000 Scottish Government guidance. The information in the ES should enable the assessments required by the legislation to be completed by the Scottish Government. Specific guidance on the Habitats and Birds Directive regarding the appropriate impact assessments and associated alternative solution and IROPI tests is available on the following website link http://www.scotland.gov.uk/library3/nature/habd-00.asp

Within the Regulations, the first test is whether the proposal is necessary for the management of the site: this will not be the case for wind farm applications. The next step is to ask whether the proposal (alone or in combination with other proposals) is likely to have a significant effect on the site. If so, the Scottish Government as the Competent Authority under the Habitats Directive will draw up an 'appropriate assessment' as to the implications of the development for the site, in view of that site's conservation objectives.

The scoping report should aim to present sufficient information to enable a conclusion to be drawn on this test, i.e. as to whether there is likely to be a significant effect on the site. If that information is provided, SNH will be able to advise, when consulted upon the scoping request, whether an appropriate assessment will be necessary. In the event that detailed survey or analysis is required in order to reach a view, the survey and analysis should be regarded as information contributing to that assessment. Note that such information should be provided for the wind farm itself together with any ancillary works such as grid connections and vehicle tracks, and cumulatively in combination with any other wind farm consented or formally proposed in the vicinity.

8.2 Habitats

Surveys should be carried out at appropriate times or periods of the year by appropriately qualified and experienced personnel, and suitability of the timing needs to be considered within the ES.

The ES should provide a comprehensive account of the habitats present on the proposed development site. It should identify rare and threatened habitats, and those protected by European or UK legislation, or identified in national or local Biodiversity Action Plans. Habitat enhancement and mitigation measures should be detailed, particularly in respect to blanket bog, in the contexts of both biodiversity conservation and the inherent risk of peat slide. Details of any habitat enhancement programme (such as native- tree planting, stock exclusion, etc) for the proposed wind farm site should be provided. It is expected that the ES will address whether or not the development could assist or impede delivery of elements of relevant Biodiversity Action Plans.

Particular attention should be paid to the effects of the proposals on any priority habitats, as listed in Annex 1 of the EU Habitats Directive, on the site. SEPA emphasises that the ES should demonstrate that turbine locations have been determined on the basis of habitats on the site, especially with regard to any areas of deep peat and intact hydrological units of mire vegetation. Turbines therefore need to be located in the light of vegetation survey work. Similarly, the ES needs to demonstrate that roads have been located to minimise impact on vegetation communities, peat habitats and peat depth. Measures to avoid pH impact on peatland from use of cement/concrete (e.g. use of blinding cement on roadways, wash-out during construction, integrity of shuttering) should be set out.

8.3 Habitat Management

SNH and RSPB may wish to see a Habitat Management Plan for the area of the wind farm and any area managed in mitigation or compensation for the potential impacts of the wind farm. A commitment to maintain and/or enhance the biodiversity of the overall area is expected. Monitoring of any specific potential impacts of the development, and of the outcome of any habitat management measures, should form part of the ES proposals. Applicants may also want to consult other interested parties in preparation of the HMP information or relevant studies/surveys.

The ES should also outline provisions made regarding public access, having regard for the requirements of the Land Reform (Scotland) Act 2003 and the Scottish Outdoor Access Code at http://www.outdooraccess-scotland.com, clarifying the extent of any access restrictions proposed, if any, during construction or operation, and indicating any new facilities for access to be provided on or off site.

8.4 Species: Plants And Animals

The ES needs to show that the applicants have taken account of the relevant wildlife legislation and guidance, for example but not limited to, Council Directives on The Conservation of Natural Habitats and of Wild Flora and Fauna, and on Conservation of Wild Birds (commonly known as the Habitats and Birds Directives), the Wildlife & Countryside Act 1981, the Nature Conservation (Scotland) Act 2004, the Protection of Badgers Act 1992, the 1994 Conservation Regulations, Scottish Government Interim Guidance on European Protected Species, Development Sites and the Planning System and the Scottish Biodiversity Strategy and associated Implementation Plans. In terms of the SG Interim Guidance, applicants must give serious consideration to/recognition of meeting the three fundamental tests set out in this Guidance. **It may be worthwhile for applicants to give consideration to this immediately after the completion of the scoping exercise.**

It needs to be categorically established which species are present on the site, and where, before the application is considered for consent. The presence of legally protected species and habitats, for example bird species listed in Annex 1 of the EU Birds Directive, Schedules 5 (animals) and 8 (plants) of the Wildlife & Countryside Act 1981, (as amended in Scotland), must be included and considered as part of the application process, not as an issue which can be considered at a later stage. Any consent given without due consideration to these species may breach European Directives with the possibility of consequential delays or the project being halted by the EC. Likewise the presence of species on Schedules 5 (animals) and 8 (plants) of the Wildlife & Countryside Act 1981 should be considered where there is a potential need for a licence under Section 16 of that Act.

Plants

A baseline survey of the plants present on the site should be undertaken, and field and existing data on the location of plants should be used to determine the presence of any rare or threatened species of vascular and no-vascular plants and fungi.

Birds

The ES should provide an assessment of the impact of the wind farm on birds. The assessment should follow the available guidance on the SNH website at http://www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind/. A baseline survey of the species and number of birds present on the site throughout the year should be undertaken. Particular attention should be paid to specially protected and/or vulnerable species. All ornithological survey work should conform to the SNH guidance at the above link..

Survey work should include assessments of the flight lines of breeding birds and birds whose migrations or other seasonal distributions traverse or are in close proximity to the site. Collision risk analyses will be necessary for species which regularly pass through the site at any time of year. The analysis should follow the principles set out in the SNH guidance at the above link.

In the interests of all stakeholders involved in the consultation exercise, the presence of protected species must be included and considered as part of the Section 36 application process. Submitting this information as an addendum at a later date will require further publicity and consultation which will delay the overall determination.

> An Annex of Environmentally Sensitive Information may be required to provide information on nest locations or other environmentally sensitive information related to specially protected species, the information should follow the principles set out in the SNH guidance "Environmental Statements and Annexes of Environmentally Sensitive Bird Information" (September 2009) at http://www.snh.gov.uk/docs/A285693.pdf. However, the annex should not include any information that is not confidential, or if it does this information should be contained elsewhere within the text of the environmental statement.

Mammals

A baseline survey of the species and number of mammals present on the site should be undertaken. Particular attention should be paid to specially protected and/or vulnerable species, especially European Protected Mammals. Consideration should also be given to indirect impacts on species outwith the site.

Reptiles And Amphibians

A baseline survey of the species and number of reptiles and amphibians present on the site should be undertaken. Particular attention should be paid to specially protected and/or vulnerable species, especially European Protected species, and those potentially affected by the development.

Fish And Other Freshwater Aquatic Species

Fish populations and other freshwater aquatic species can be impacted by subtle changes in water quality and quantity and changes in channel morphology that influence suitability of habitat and consequently performance and production. Further impacts can occur if issues of habitat continuity are not adequately considered when planning site drainage and river crossings. A baseline survey should be undertaken to demonstrate the species and abundance of fish present in the still and running water bodies on and around the site throughout the year. This should extend to watercourses which may be affected by run-off from the site during construction, operation or decommissioning.

Particular attention should be paid to specially protected and/or vulnerable species, especially European Protected species, and those potentially affected by the development. However, fish and fisheries should be given due consideration regardless of conservation designation.

Applicants should be aware that wind farm developments have considerable construction implications which should not be conducted without proper regard or understanding of their potential impacts on watercourses and water quality, and on fish and aquatic invertebrate populations.

The applicant should ensure that the implications of changing water quality, quantity, channel morphology and habitat continuity are addressed specifically with reference to potential impacts on fish and that mitigation addresses these issues. Where this information is provided elsewhere in the document, it should be specifically highlighted.

Where a development has the potential to impact on local fish populations the applicant will be asked to develop an integrated fish and water quality monitoring programme with baseline, development and post-development sampling. Details of any proposed monitoring should be detailed.

Applicants are encouraged to submit fish information in a collective document or with the relevant cross references to other areas of the ES. (i.e. hydrology, hydro-geology, water quality and hydro-morphology)

Terrestrial And Aquatic Invertebrates

A baseline survey of invertebrates present on the site and in the water bodies and watercourses on and around the site throughout the year should be undertaken. This should be guided by existing information on the presence, distribution and abundance of notable invertebrates. Sampling of aquatic invertebrates should extend to watercourses which may be affected by run-off from the site during construction, operation or decommissioning. Particular attention should be paid to specially protected and/or vulnerable species, especially European Protected species, and those potentially affected by the development.

8.5 Archaeology And Cultural Heritage

General Principles

The ES should address the predicted impacts on the historic environment and describe the mitigation proposed to avoid or reduce impacts to a level where they are not significant. Historic environment issues should be taken into consideration from the start of the site selection process and as part of the alternatives considered.

National policy for the historic environment is set out in:

- Scottish Planning Policy *Planning and the Historic Environment at:* http://www.scotland.gov.uk/topics/built-environment/planning/National-planning-policy/themes/historic
- The Scottish Historic Environment Policy (SHEP) sets out Scottish Ministers strategic policies for the historic environment and can be found at:

http://www.historic-scotland.gov.uk/index/heritage/policy/shep.htm

Amongst other things, SPP paragraph 110–112, Historic Environment, stresses that scheduled monuments should be preserved *in situ* and within an appropriate setting and confirms that developments must be managed carefully to preserve listed buildings and their settings to retain and enhance any features of special architectural or historic interest which they possess. Consequently, both direct impacts on the resource itself and indirect impact on its setting must be addressed in any Environmental Impact Assessment (EIA) undertaken for this proposed development. Further information on setting can be found in the following document: Managing Change in the Historic Environment http://www.historic-scotland.gov.uk/managing-change-consultation-setting.pdf.

Historic Scotland recommend that the applicant engages a suitably qualified archaeological/historic environment consultants to advise on, and undertake the detailed assessment of impacts on the historic environment and advise on appropriate mitigation strategies.

Baseline Information

Information on the location of all archaeological/historic sites held in the National Monuments Record of Scotland, including the locations and, where appropriate, the extent of scheduled monuments, listed buildings and gardens and designed landscapes can be obtained from http://www.pastmap.org.uk.

Data on scheduled monuments, listed buildings and properties in the care of Scottish Ministers can also be downloaded from Historic Scotland's Spatial Data Warehouse at http://data.historic-scotland.gov.uk. For any further information on those data sets and for spatial information on gardens and designed landscapes and World Heritage Sites which are not currently included in Historic Scotland's Spatial Data Warehouse please contact hsgimanager@scotland.gsi.gov.uk. Historic Scotland would also be happy to provide any further information on all such sites.

9. Water Environment

Applicants are strongly advised at an early stage to consult Scottish Environment Protection Agency (SEPA) as the regulatory body responsible for the implementation of the Controlled Activities (Scotland) Regulations 2005 (CAR), to identify 1) if a CAR license is necessary and 2) clarify the extent of the information required by SEPA to fully assess any license application. Energy Consents will identify a requirement for flood prevention comments from SEPA.

All applications (including those made prior to 1 April 2006) made to Scottish Ministers for consent under Section 36 of the Electricity Act 1989 to construct and operate a electricity generating scheme will require to comply with CAR . In this regard, we will be advised by SEPA concerning the requirements of these Regulations on the proposed development and will have regard to this advice in considering any consent under Section 36 of the Electricity Act 1989.

SEPA produces a series of Pollution Prevention Guidelines, several of which should be usefully utilised in preparation of an ES and during development. These include SEPA's guidance note PPG6: Working at Construction and Demolition Sites, PPG5: Works in, near or liable to affect Watercourses, PPG2 Above ground storage tanks, and others, all of which are available on SEPA's website at:
http://www.sepa.org.uk/about_us/publications/guidance/ppgs.aspx

SEPA would look to see specific principles contained within PPG notes to be incorporated within mitigation measures identified within the ES rather than general reference to adherence to the notes.

Prevention and clean-up measures should also be considered for each of the following stages of the development;

- Construction.
- Operational.
- Decommissioning.

Construction contractors are often unaware of the potential for impacts such as these but, when proper consultation with the local District Salmon Fishery Board (who have a statutory responsibility to protect salmon stocks) and Fishery Trust is encouraged at an early stage, many of these problems can be averted or overcome.

- Increases in silt and sediment loads resulting from construction works.
- Point source pollution incidents during construction.
- Obstruction to upstream and downstream migration both during and after construction.
- Disturbance of spawning beds during construction – timing of works is critical.
- Drainage issues.
- Alteration to hydrological regime and water quality
- Impacts on stream morphology

The ES should identify location of and protective/mitigation measures in relation to all private water supplies within the catchments impacted by the scheme, including modifications to site design and layout.

Applicants should also be aware of available CIRIA guidance on the control of water pollution from construction sites and environmental good practice (http://www.ciria.org). Design guidance is also available on river crossings and migratory fish (SE consultation paper, 2000) at
http://www.scotland.gov.uk/consultations/transport/rcmf-00.asp.

9.1 Hydrology And Hydrogeology

The ES should contain detailed statements of the nature of the hydrology and hydrogeology of the site, and of the potential effects the development on these. Applicants should be aware that wind farm developments will have considerable construction implications and these should not be conducted without proper regard or understanding of the potential impacts on hydrology, water courses, water quality, water quantity and on aquatic flora and fauna. The assessment should include statements on the effects of the proposed development at all stages on;

- Hydrology
- Water Quality and quantity
- Flood Risk

The high rainfall often experienced at proposed wind farm sites means that run-off, high flow in watercourses, and other hydrological and hydrogeological matters require proper consideration within the ES.

Hydrological and hydrogeological issues should be addressed within the ES, and the following hydrological baseline information should be included.

- Long term average monthly rainfall figures.

Where the project includes significant watercourse engineering works, then SEPA would expect the following information to be included within the ES for at least a typical watercourse within the development area:

- Flood flow statistics - the flows for the Mean Annual Flood, 1:100 and 1:200 year return period.

- From a flow duration curve, the mean daily flow and Q95 flow.

- Methods used to calculate these must be identified; if non-standard methods are used, these should be described in detail with rationale for use.

Impacts on watercourses, lochs, groundwater, other water features and sensitive receptors, such as water supplies, need to be assessed. Measures to prevent erosion, sedimentation or discolouration will be required, along with monitoring proposals and contingency plans.

The applicant should refer to SEPA policy on groundwater which can be found at: http://www.sepa.org.uk/planning/groundwater.aspx which will assist in identifying potential risks. It should also be noted that 1:625000 groundwater vulnerability map of Scotland often referred to in Environmental Statements has been superseded by the digital groundwater vulnerability map of Scotland (2003) and the digital aquifer map of Scotland (2004) and it is the information used on these newer maps, available on request from SEPA, that should be used in any assessment.

If culverting should be proposed, either in relation to new or upgraded tracks, then it should be noted that SEPA has a policy against unnecessary culverting of watercourses. **Schemes should be designed to avoid by preference crossing watercourses, and to bridge watercourses which cannot be avoided. Culverting is the least desirable option.**

The ES must identify all water crossings and include <u>a systematic table of watercourse crossings or channelising</u>, with detailed justification for any such elements and design to minimise impact. The table should be accompanied by photography of each watercourse affected and include dimensions of the watercourse. It may be useful for the applicant to demonstrate choice of watercourse crossing by means of a decision tree, taking into account factors including catchment size (resultant flows), natural habitat and environmental concerns.

Culverts are a frequent cause of local flooding, particularly if the design or maintenance is inadequate. The size of culverts needs to be large enough to cope with sustained heavy precipitation, and allow for the impact of climate change. This must be taken into account by applicants and planning authorities. SPP and PAN69 provide more information on this aspect.

Measures to avoid erosion of the hillside associated with discharge from road culverting need to be set out in the ES.

All culverts must be designed with full regard to natural habitat and environmental concerns. Where migratory fish may be present (such as trout, salmon or eels) the river crossing should be designed in accordance with the Scottish Government guidance on River Crossings and Migratory Fish. This guidance can be found on the Scottish Government website at: http://www.scotland.gov.uk/consultations/transport/rcmf-06.asp.

Where the watercourse is used as a pathway by otters and other small mammals, the design of culverts will need to be modified to accommodate this.

The need for, and information on, abstractions of water supplies for concrete works or other operations should also be identified in the ES.

SEPA requests that evidence should also be provided to demonstrate that the proposals have been designed to minimise engineering works within the water environment, including crossing watercourses. Further to this, SEPA wishes to highlight the following Scottish National Policy, and legislative aims.

Environment, including crossing watercourses. Further to this, SEPA wishes to highlight the following Scottish Planning Policy and legislative aims.

Scottish Planning Policy (paragraph 130) states ‘Lochs, ponds, watercourses and wetlands also form valuable landscape features, recreational resources and wildlife habitats and should be protected and enhanced wherever possible both as part of developments and green networks.’

In addition, where water abstraction is proposed, SEPA requests that the ES assesses whether a public or private source is to be utilised. If a private source is to be utilised, the following information should be included within the ES to determine the environmental acceptability of the proposals.

- Source i.e. ground water or surface water;
- Location i.e. grid ref and description of site;
- Volume i.e. quantity of water to be extracted;
- Timing of abstraction i.e. will there be a continuous abstraction?;
- Nature of abstraction i.e. sump or impoundment?;
- Proposed operating regime i.e. details of abstraction limits and hands off flow;
- Survey of existing water environment including any existing water features;
- Impacts of proposed abstraction upon the surrounding water environment.

Although it is appreciated that many of the issues highlighted above will be scoped out during the EIA process they are important to consider. Equally, the applicant should be aware that the drilling activity does not fall under Water Environment (Controlled Activities) Regulations (CAR) and therefore would not require authorisation from SEPA as the proposal is within coastal waters.

9.2 Geology And Soils

The Environmental Statement should fully describe the likely significant effects of the development on the environment including direct effects and any indirect, secondary, cumulative, short, medium and long term, permanent and temporary e.g. construction related impacts, positive and negative effects of the development which result from:

- The existence of the development.
- The use of natural resources (including borrow pits, the need for which and impact of which, including dust, blasting and pollution of the water environment, should be appraised as part of the overall impact of the scheme)
- The emission of pollutants, the creation of nuisances and the elimination of waste.

The ES should identify the intended source of any rock or fill material to be used for tracks or foundations, and should describe the environmental impacts associated with any new quarries or borrow pits or road or track cuttings.

SEPA seeks in relation to substantial new development, that applicants demonstrate that the development includes construction practices to minimise the use of raw materials and maximise the use of secondary aggregates and recycled or renewable materials. Further information is available from AggRegain (http://www.aggregain.org.uk);

Where borrow pits are proposed, the ES should include information regarding the location, size and nature of these borrow pits including information on the depth of the borrow pit floor and the borrow pit final reinstated profile.

The impact of such facilities (including dust, blasting and impact on water) should be appraised as part of the overall impact of the scheme. Information should cover, in relation to water, at least the information set out within Planning Advice Note 50: Controlling the Environmental Effects of Surface Mineral Workings in relation to surface water (pages 24-25) and, where relevant, in relation to groundwater (pages 22-23). Information on the proposed depth of the excavation compared to the actual topography, the proposed restoration profile, proposed drainage and settlement traps, turf and overburden removal and storage for reinstatement should be submitted.

9.3 Assessment Of Peat Slide Risk

If the proposed development is to take place on peatland habitats, the Environmental Statement should incorporate a comprehensive peat slide risk assessment in accordance with the Scottish Government Best Practice Guide for Developers, published at:
http://www.scotland.gov.uk/Publications/2006/12/21162303/0

Particular attention should be paid to the risks of engineering instability relating to presence to peat on the site. Turbines locations should be identified in the light of survey work on peat depth and nature, and roads will need to be carefully aligned and designed with regard to peat habitats and depth. It is recommended that both engineers and ecologists are involved in the assessment and management of the risk of peat slide.

The peat slide risk assessment should also address pollution risks to and environmental sensitivities of the water environment. It should include a detailed map of peat depth and evidence that the scheme minimises impact on areas of deep peat. The ES should include outline construction method statements or the site-specific principles on which such construction method statements would be based for engineering works in peat land areas, including access roads, turbine bases and hard standing areas, and these should include particular reference to drainage impacts, dewatering and disposal of excavated peat.

9.4 Forestry / Woodlands

Internationally there is now a strong presumption against deforestation (which accounts for 18% of the world's greenhouse gas emissions). Reflecting this, Scottish Ministers have now approved a policy on Control of Woodland Removal published at http://www.forestry.gov.uk/forestry/infd-7hyhwe (refer Scottish Planning Policy paragraph 148) which seeks to protect the existing forest resource in Scotland, and supports woodland removal only where it would achieve significant and clearly defined additional public benefits. In some cases, including those associated with development, a proposal for compensatory planting may form part of this balance.

The criteria for determining the acceptability of woodland removal and further information on the implementation of the policy is explained in the Control of Woodland Removal Policy. These should be taken into account when preparing the development plans for this wind farm proposal. The applicant should also be aware of the *National Planning Framework 2* (published at http://www.scotland.gov.uk/Publications/2008/12/12093953/0) and specifically paragraph 93 which reiterates Scottish Government determination to decrease the loss of existing woodland and aspiration for further expansion.

The ES should indicate proposed areas of woodland for felling to accommodate new turbines and other infrastructure such as roads. Details of the area to be cleared around those structures should also be provided, along with evidence to support the proposed scale and sequence of felling. The ES should also detail any trees or woodland areas likely to be indirectly affected by the proposed development (e.g. through changes in hydrology, loss of neighbouring plantation causing instability, etc) and provide full details of alternatives and/or protection and mitigation measures in the ES.

The applicant should consider the wildlife implications of any tree felling in the relevant sections of the ES. The ES should also consider any impacts of forestry activities on the water environment, with particular attention paid to acidification and nutrient leaching. The applicant should make full use of the *Forests and Water Guidelines* in proposing forestry activity and mitigation procedures.

If timber is to be disposed of on site, details of the methodology for this should be submitted. Areas of retained forestry or tree groups should be clearly indicated and methods for their protection during construction clearly described.

If areas of woodland are to be temporarily removed but then replanted shortly afterwards (typically within 1-5 years) this should be indicated in the ES, and details of the replanting plan provided.

Where there is a change in land use (e.g. to non-woodland habitats) the woodland should be described in sufficient detail (e.g. including details of the age of the trees; the species type and mix; the soil types; any particular natural heritage designations or protected species present in the woodland; and the landscape and historical environment context) to enable its intrinsic public benefit value to be assessed. This will facilitate decisions on whether woodland removal is acceptable and if so, whether compensatory planting will be required.

The applicant should refer to guidance documents[1] issued by the Forestry Commission in relation to good forestry practice and associated environmental issues.

In summary, the applicant should consider their response to the Control of Woodland Removal Policy, including the consequences of such removal on carbon sequestration and mitigating the potential effects of climate change.

Forestry Commission Scotland can advise on all aspects of woodlands and forestry associated with developments and early consultation with them to

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[1] The UK Forestry Standard and its suite of associated guidelines are available at: http://www.forestry.gov.uk/forestry/INFD-6J2JBS. Further guidance is available at: http://www.forestry.gov.uk/forestry/INFD-5XFLS7.

clarify proposals and any particular restrictions or conditions on woodland removal that may apply to the area is recommended. Contact details of the nearest Forestry Commission Conservancy office can be accessed at: http://www.forestry.gov.uk or from fcscotland@forestry.gsi.gov.uk.

Forest and woodland ecology

The *Scottish Forestry Strategy* (SFS) (2006) and *Scottish Biodiversity Strategy* (both of which have Ministerial endorsement) and *Nature Conservation (Scotland) Act 2004* should be essential documents that the applicant should be aware of.

The SFS recognises the importance of native woodlands, especially those that are of ancient and semi-natural origin. It also incorporates targets for priority habitats and species, sets priorities for action in terms of improving the management of semi-natural woodlands, and extending and enhancing native woodlands by developing forest habitat networks (page 48).

The SFS also recognises the potential for well designed productive forests to contribute environmental benefits through the restructuring process and future management systems, such as habitat and landscape value from increased open space (page 48).

The SFS also identifies and promotes the importance of sustainable forest management as an essential contributor to the conservation of soils, the quality of water and air (page 44), and the general contribution that forests and woodlands can make to tackle climate change.

The *Scottish Biodiversity Strategy* contains delivery of targets for priority habitats and species as key aims as well as enhanced management of whole landscapes for biodiversity, including reducing fragmentation of habitats. This strategy has been designated by Ministers under the terms of the *Nature Conservation (Scotland) Act 2004*, to confirm that all public bodies have a duty to further biodiversity where consistent with their functions, in ways which are guided by the strategy.

This would suggest that the applicant should be obliged to carry out an assessment of the implications of the wind farm proposals on biodiversity.
This should be in both general terms of effects on the biodiversity strategy aims, and specifically the impacts on priority habitats and species; i.e. those with national targets (*HAPs* and *SAPs* identified in the *Biodiversity Action Plan*).

It would also suggest that the applicant should be obliged to carry out an assessment of the implications of the wind farm proposals on water, soil and air resources, and an appreciation of the potential consequences of the loss of woodland cover with regards climate change, specifically carbon sequestration.

Consultation with the local Forestry Commission Scotland Conservancy should also be undertaken during the development of proposals for the planned restructuring and/or woodland removal to accommodate the wind farm proposals.

Regards the FC *Forest and Water Guidelines* please note that this publication is now in its 4th Edition, published 2004.

Landscape and visual assessment

The *UK Forestry Standard*, FC *Forest Landscape Guidelines* and *Lowland Design Guidelines,* FC Forestry Practice Guide: *Forest Design Planning – A Guide to Good Practice*, The *Scottish Forestry Strategy 2006* and SNH suite of *Landscape Character Assessments* should all be on the list of documents that the applicant should be aware of.

The *Scottish Forestry Strategy* identifies that forests and woodlands contribute to Scotland's diverse and attractive landscape. It promotes the benefits of well designed and managed woodlands that reflect local landscape character, and that their contribution to the wider landscape should help Scotland meet the undertakings of the *European Landscape Convention* (page 44).

The Scoping Report should promote a full assessment by the applicant of all the landscape and visual issues. This should include a full description of the general landscape character within which the applicant proposes to introduce the wind farm, and a statement of the landscape and visual sensitivities that may be potentially affected by that development.

It should also include an assessment of the cumulative landscape and visual impacts affecting the wind farm proposal, and identify relevant criteria that may have a bearing on that assessment.

The *UK Forestry Standard* sets out the criteria and standards for the sustainable management of all forests and woodlands in the UK. Landscape is a specific *Criteria for Sustainable Forest Management* (page 18) and the two *Forest Management Unit Indicators* as evidence that landscape quality is enhanced are:

- Landscape principles of forest design are used;
- Cultural and historical character of countryside is taken into account when…making changes to existing woods.

The first point refers to the FC *Forest Landscape Guidelines* and *Lowland Design Guidelines* (both extracted from the FC book *The Design of Forest Landscapes* (Oliver W.R. Lucas; pub. Oxford University Press 1991)).

The second point on the appraisal of the landscape with regard to appreciating its local character is similarly covered in the aforementioned Guidelines and *The Design of Forest Landscapes*. Further, the *Scottish Forestry Strategy* specifically advocates the use of Scottish Natural Heritage's suite of *Landscape Character Assessments*, which provide valuable descriptive information about the landscape of Scotland. The potential removal of the existing woodlands within the wind farm proposal area may create significant areas of open ground (that is, ground without woodland cover).

The principles and process of restructuring an existing forest are described in the aforementioned FC Forestry Practice Guide: *Forest Design Planning – A Guide to Good Practice*. Not only should such a plan consider how best to clear fell the forest for the wind farm development, but also describe how the remaining woodland elements beyond the scheme boundary can be best integrated with the development site. Such integration could be achieved, for example, by the selective restocking of strategic areas within the wind farm site area.

We would advise that when forest landscape design is being considered as part of the forest management associated with such a development, a chartered Landscape Architect with a comprehensive knowledge of forestry should be commissioned.

Historic environment of forests and woodlands

The applicant should recognise the wider aspects of the wind farm proposals on historic environment policies. In terms of forests and woodlands, besides the legacy of the past to be found within woodlands, the cultural heritage of ancient woodlands and veteran trees are particularly important. The value of the historic environment in woodlands is recognised in the *UK Forestry Standard* the *Scottish Forestry Strategy* (SFS) (page 45) and FCS Policy Statement *Scotland's Woodlands and the Historic Environment*.

The SFS not only identifies the duty to safeguard evidence of the historic environment but also encourages their active management, enhancement and interpretation. Reference should also be made to the FC *Forests & Archaeology Guidelines*.

Management Plan

With regards both ecological and landscape considerations for the site and immediate environs, we would advocate the preparation of a long-term management plan.

This should be carried out in consultation with FCS, Local Authority, SNH, landowners and other interested parties. Essentially what is required is an integrated land-use and management plan that fosters optimising the ecological and landscape benefits of both the wind farm site and neighbouring land uses.

10. Other Material Issues

10.1 Waste

Potential requirement for waste management licences or licensing exemptions in relation to waste disposed to or from borrow pits should be discussed at an early stage with SEPA as decisions on waste management are likely to affect site design and layout.

The ES should identify all of the waste streams (such as peat and other materials excavated in relation to infrastructure) associated with the works. It should demonstrate a) how the development can include construction practices to minimise the use of raw materials and maximise the use of secondary aggregates and recycled or renewable materials and b) how waste material generated by the proposal is to be reduced and re-used or recycled where appropriate on site (for example in landscaping not resulting in excessive earth moulding and mounding).

Further to the above advice, SEPA would like to highlight the use of site waste management plans which SEPA are now seeking on all large scale construction projects and which the applicant should consider during the formulation of the ES. In SEPA's experience, waste management is becoming an increasing issue on large scale projects.

Coherent consideration should be given to the handling, use, short term storage and final disposal of surplus material, including peat and soils, and to waste minimisation and management. Should it be proposed that peat should be used at depth to restore excavations such as borrow pits, the applicant would need to demonstrate that this could be done without the release of carbon through oxidisation, and without risk to people and the environment. Please note that waste peat or soil from excavations spread on this land would not necessarily be to ecological benefit; if excavated peat or soil is to be used in landscaping the site, then this should be included in the plans, and not dealt with in an ad-hoc fashion as it arises.

SEPA therefore requests that the ES gives consideration to a full site specific Site Waste Management Plan (SWMP). The SWMP should detail the measures for managing and minimising waste produced during construction. Further information on the preparation of these plans can be obtained from the Zero Waste Scotland web site which may be found at http://www.zerowastescotland.org.uk/category/service/business-support.

The SWMP should also include a soils balance carried out to demonstrate need for importation/export of materials including any backfill of excavations. Given experience on other sites, clarification is sought specifically on whether or not waste materials are to be imported. Clarification of the amount of surplus materials to be permanently deposited on mounds and scale of these mounds should also be included.

SEPA encourages the recovery and reuse of controlled waste, provided that it is in accordance with the Waste Management Licensing Regulations 1994. The applicant should note the regulatory advice below. The applicant should note that SEPA has produced guidance to assist in the consideration as to whether any particular material is waste, which is available on SEPA's website at http://www.sepa.org.uk/waste/waste_regulation/is_it_waste.aspx.

10.2 Telecommunications

British Telecom will offer advice in respect of EMC and related problems, BT point to point microwave links and satellite. Any information on the likely interference to BT's current and presently planned radio networks should be enclosed.

Ofcom only comment in respect of microwave fixed links and does not include broadcast transmissions or scanning telemetry links that may be affected by the proposals. Ofcom will have sent a copy of the scoping request to:

CSS Spectrum Management Services Ltd. David Tripp 01458 273 789 david.tripp@css.gb.com (for Scanning Telemetry)

Joint Radio Company (JRC). David Priestley 020 7953 7015 david.priestley@jrc.co.uk (for Scanning Telemetry)

With regard to assessing the affects to TV reception, the BBC now have an online tool available on their website, at http://www.bbc.co.uk/reception/info/windfarm_tool.shtml. Ofcom will no longer be forwarding enquiries received to the BBC or carrying out assessments. Applicants are advised to access the online tool.

Ofcom only comment in respect of fixed microwave links managed by Ofcom, in addition the applicant is obliged to do further checks of the proposals with the CAA, NATS, and the MOD. Further details may be obtained on the British Wind Energy Association (BWEA) website at http://www.bwea.com.

10.3 Noise

Wind farms have the potential to create noise through aerodynamic noise and mechanically generated noise. Noise predictions should be carried out to evaluate the likely impacts of airborne noise from the wind turbines and associated construction activities including noise from blasting or piling activities which may affect local residents, during construction, operational and decommissioning stages of the project. Advice should be sought from the relevant Council planning and/or environmental health departments in respect to the potential impacts on the local community.

The applicant should be aware of the guidance produced by ETSU on behalf of the DTI titled "The Assessment and Rating of Noise from Wind Farms". This publication provides applicants with best practice noise monitoring and reporting techniques. Cumulative noise effects should also be considered in assessing the specific circumstances prevailing at the development site. Applicants may also want refer to PAN 1/2011 in this respect.

10.4 Shadow Flicker

Information on the impact of shadow flicker on the local community should be enclosed within the ES. Information on this can be found at:

10.5 Traffic Management

The Environmental Statement should provide information relating to the preferred route options for delivering the turbines etc. via the trunk road network. The Environmental Impact Assessment should also address access issues, particularly those impacting upon the trunk road network, in particular, potential stress points at junctions, approach roads, borrow pits, bridges, site compound and batching areas etc.

Where potential environmental impacts have been fully investigated but found to be of little or no significance, it is sufficient to validate that part of the assessment by stating in the report:

- the work has been undertaken, e.g. transport assessment;
- what this has shown i.e. what impact if any has been identified, and
- why it is not significant.

10.6 Cumulative Impacts

Where a wind farm development might have cumulative impacts with other existing, approved or current wind farm applications, then the assessment of environmental impacts should include consideration of these cumulative effects. Visual or landscape cumulative effects may arise where more than one wind farm is visible from certain viewpoints, or along a journey by road or other route. Ecological cumulative effects may arise where more than one wind farm impacts upon a bird population, or on the hydrology of a wetland or peatland habitat.

SPP introduces new requirements in relation to considering cumulative impacts through the development plan process. Where relevant, proposals should identify how they comply with development plans. We also refer to the SNH guidance note 'Cumulative Effect of Wind Farms' (version 2 revised 13.4.05) for further guidance. A cumulative assessment should include other existing wind farms in the vicinity of the proposal, any wind farms which have been consented but are still to be constructed, and any which are the subject of undetermined consent applications. Inclusion within a cumulative assessment of other proposed wind farms which have not yet reached application stage is not required, unless in exceptional circumstances we advise otherwise.

http://www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind/

10.7 Other Planning Or Environmental Impact Issues Unique To The Application

The ES should include information on any other potential impacts connected with the project.

11. General ES Issues

In the application for consent the applicant should confirm whether any proposals made within the Environmental Statement, eg for construction methods, mitigation, or decommissioning, form part of the application for consent.

11.1 Consultation

Applicants should be aware that the ES should be submitted in a user-friendly PDF format. Applicants are asked to issue ESs directly to all consultees. An up to date consultee list can be obtained from the Energy Consents and Deployment Unit. The Energy Consents and Deployment Unit also requires **1 hard copy and 2 CDs**.

Where the applicant has provided Scottish Ministers with an environmental statement, the applicant must publish their proposals in accordance with part 4 of the Environmental Impact Assessment (Scotland) Regulations 2000. Energy consents information and guidance, including the specific details of the adverts to be placed in the press can be obtained from the Energy Consents website; http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Energy-Consents

11.2 Gaelic Language

Where Section 36 applications are located in areas where Gaelic is spoken, applicants are encouraged to adopt best practice by publicising the project details in both English and Gaelic (see also Energy consents website above).

11.3 OS Mapping Records

Applicants are requested at application stage to submit a detailed Ordinance Survey plan showing the site boundary and all turbines, anemometer masts, access tracks and supporting infrastructure in a format compatible with the Scottish Government's Spatial Data Management Environment (SDME), along with appropriate metadata. The SDME is based around Oracle RDBMS and ESRI ArcSDE and all incoming data should be supplied in ESRI shapefile format. The SDME also contains a metadata recording system based on the ISO template within ESRI ArcCatalog (agreed standard used by the Scottish Government), all metadata should be provided in this format.

11.4 Difficulties In Compiling Additional Information

Applicants are encouraged to outline their experiences or practical difficulties encountered when collating/recording additional information supporting the application. An explanation of any necessary information not included in the Environmental Statement should be provided, complete with an indication of when an addendum will be submitted.

11.5 Application And Environmental Statement

A checklist is enclosed with this report to help applicants fully consider and collate the relevant ES information to support their application. In advance of publicising the application, applicants should be aware this checklist will be used by government officials when considering acceptance of formal applications.

11.6 Consent Timescale And Application Quality

In December 2007, Scottish Ministers announced an aspirational target to process new Section 36 applications within a 9 month period, provided a Public Local Inquiry (PLI) is not held. This scoping opinion is specifically designed to improve the quality of advice provided to applicants and thus reduce the risk of additional information being requested and subject to further publicity and consultation cycles.

Applicants are advised to consider all aspects of the scoping opinion when preparing a formal application, to reduce the need to submit information in support of the application. The consultee comments presented in the scoping opinion are designed to offer an opportunity to considered all material issues relating to the development proposals.

In assessing the quality and suitability of applications, Government officials will use the enclosed checklist and scoping opinion to scrutinise the application. Applicants are encouraged to seek advice on the contents of ESs prior to applications being submitted, although this process does not involve a full analysis of the proposals. In the event of an application being void of essential information, officials reserve the right not to accept the application. Applicants are advised not to publicise applications in the local or national press, until their application has been checked and accepted by SG officials.

Applicants are advised to refer to the Energy Consents website at http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Energy-Consents

11.7 Judicial Review

All cases may be subject to judicial review. A judicial review statement should be made available to the public.

Annex 1

Consultee Comments relating specifically to Enoch Hill Wind Farm

Statutory Consultees

1. East Ayrshire Council - The Planning Authority
2. Dumfries & Galloway Council – Neighbouring Planning Authority
3. SEPA
4. SNH

Scottish Government Internal Consultees

5. Forestry Commission Scotland
6. Historic Scotland
7. Marine Scotland
8. Transport Scotland

Non Statutory External Consultees

9. Association of Salmon Fishery Boards
10. BT
11. CAA Airspace
12. The Crown Estate
13. Defence Infrastructure Organisation
14. Joint Radio Company
15. Mountaineering Council of Scotland
16. NATS
17. OFCOM
18. RSPB Scotland
19. Scottish Water
20. Visit Scotland
21. BAA - Glasgow Airport
22. Glasgow Prestwick Airport
23. Scottish Rights of Way and Access Society (Scotways)
24. Dalmellington Community Council
25. Galloway Fisheries Trust

CONSULTEE COMMENTS

1. EAST AYRSHIRE COUNCIL

The purpose of this document is to provide advice and guidance to you which has been collated from consultees whom the Planning Authority has consulted and comments directly by the Planning Authority based on its knowledge of the site and the surrounding area. This enables the applicant to consider the issues they have identified and address these in the EIA process and the Environmental Statement associated with the Section 36 application.

You should be aware that the consultation undertaken by the Council was very selective as the onus, in this case, is on the Energy Consents and Deployment Unit to undertake statutory consultations and non-statutory consultations. As part of the applicant's ongoing consultation and iterative design programme, consultation should be undertaken with other consultees as well as those consulted at this stage by the Planning Authority. I include at appendix 2 a list of further consultees that I would expect you to engage with as part of this process. Please be aware that any lack of inclusion on this list of a particular party or organisation in no way indicates that the Planning Authority considers that consultation would not be beneficial.

The sections below highlight the comments of the Planning Authority on a number of matters. Much of this information will be the same or similar to that of other consultees.

Non-Technical Summary

This should be written in simple non-technical terms to describe the various options for the proposed development and the mitigation measures against the potential adverse impacts which could result.

Land Use Planning/Policy

Consideration and reference within the Environmental Statement should be made to the Development Plan which includes the approved Ayrshire Joint Structure Plan, the East Ayrshire Local Plan 2010 and the Addendum to the Ayrshire Joint Structure Plan Technical Report TR03/ 2006: Guidance on the Location of Windfarms within Ayrshire. Furthermore, the National Planning Framework, Scottish Planning Policy and other relevant planning documents including Planning Advice Notes, Circulars and Guidance and other material planning policy considerations should be addressed. The Main Issues Report of the emerging East Ayrshire Local Development Plan has been published and representations require to be submitted by January 2013.

Carbon emissions

A statement of expected carbon savings over the lifetime of the wind farm should be included within the Environmental Assessment. The statement should include an assessment of the carbon emissions (and any savings) associated with all elements of the development. Consideration of peat resource should be undertaken in this regard also and relevant details and measures proposed within the ES that will help to form the basis of a detailed peat management scheme that would be required through planning condition.

Design, Landscape and Visual Impact

The appearance of wind farms is of particular interest and the need for a coherent design strategy to be considered at scoping stage and to be prepared before submission of the Environmental Statement. The strategy should explain the design principles behind the layout plan in a rational way that can be easily understood.

Wind farms are prominent features in the landscape and hence a full assessment of the effects on landscape and visual amenity is important, particularly given the proximity of settlements, rural properties, other visual receptors and the landscape designations of the area.

The viewpoints from which the photographs are taken should be agreed with the Planning Authority and SNH. Best practice should be followed in the selection of viewpoint locations and in the preparation of the photomontage/panoramic images. In terms of any landscape and visual impact on communities or residential properties, the Council requests that a Residential Visual Assessment is provided for every property located within 2 kilometres of the wind farm. This assessment should include wirelines and photomontages of the proposal itself and cumulative wirelines and photomontages.

Cumulative Impacts

The cumulative impacts arising from wind farm developments are becoming increasingly important considerations in the assessment of such proposals, given the number of existing operational wind farms in the area, wind farms with permission and wind farm developments at application, scoping and pre-scoping stages. The relationship of the Enoch Hill Wind Farm proposal to operational, consented, undetermined s36 and planning applications and scoping stage wind farms should be assessed.

Particular account should be taken of the views of Scottish Natural Heritage and East Ayrshire Council on the cumulative landscape and visual impact of the EnochHill wind farm proposal. It is important that any cumulative assessment should not only address inter visibility and the visibility of multiple windfarms from key viewpoints, but should also address the consequences of travelling through the landscape and sequential views.

Zones of Theoretical Visibility (ZTVs)

It is desirable that individual and cumulative ZTVs are prepared early on in the assessment process and in this respect a minimum of 35km ZTV is recommended which should include a provisional list of views, with an indication of distance and the evaluation and justification for their inclusion or omission (e.g. sequential road view/ fixed view from distant hill/ key skyline views; views on approach to/ impact on the landscape setting of settlements and built and cultural heritage features; locally important views/ landmarks; views from rights of way/ walking routes/ residents views/ popular recreation areas).

These should be used to influence the site layout process, and the zone should include wind farm projects known to be at application or decision stage within 35km distance from the proposed development at Enoch Hill.

Designing Principles

The layout of the site should be designed so as to minimise the impact of the development upon key environmental features, significant views and sites designated for their ecological, historical, cultural or scenic qualities, including gardens and designated landscapes. The principles to be adopted in the design process should be made explicit, and could take the form of a Design Statement as advocated in PAN 68.

Protected Species

The ES should include a survey and assessment of the short and long term impacts of the development upon species of flora and fauna, protected under EC Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (the “Habitats Directive”) or the Wildlife and Countryside Act 1981. The ES should state the significance of the site for protected species, both in terms of the abundance and distributions of populations, frequency of use, and identification and significance of important sites.

Ornithology

The ES should include a detailed ornithological assessment, which should address a range of likely target species: the presence on, or around, the site of hen harrier, golden eagle, short eared owl, barn owl, merlin, peregrine falcon, golden plover and black and red throated diver, all of which are listed on either Annex 1 of EU Birds Directive 1979 or Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). The ES should assess the likely impact of the construction and operational phases of the development on these species and their habitat.

Ecological Assessment

The ecological assessment of the proposals should include a vegetation survey to National Vegetation Classification level, an analysis of habitat loss and mitigation and enhancement measures in respect of identified adverse consequences for nature conservation interests. Designated habitats should be assessed in detail, including a full peat depth analysis and peat slide risk assessment, and the results used to inform the location of turbines, other structures, access tracks and the route of grid connections. Sites designated for their nature conservation importance, both within and around the application site, such as SSSIs, will require special consideration. Mitigation measures should address opportunities for the restructuring of those areas of forestry which would be retained and planting or other measures on or off the site which could increase the habitat value of the site and surroundings.

The ES should also state whether or not appropriately qualified environmental scientists or ecologists are to be used as Clerk of Works or in other roles during construction to provide specialist advice.

The ES should provide a comprehensive account of the habitats present on the proposed development site. It should identify rare and threatened habitats, and those protected by European or UK legislation, or identified in national or local Biodiversity Action Plans. Habitat enhancement and mitigation measures should be detailed, particularly in respect to blanket bog, in the contexts of both biodiversity conservation and the inherent risk of peat slide. Details of any habitat enhancement programme for the proposed wind farm site should be provided.

Short-term Impacts

The consequence of construction works should be assessed and addressed by means of a method statement, environmental management plan, mitigation programme, reinstatement measures and monitoring regime. These techniques should deal with the timing of works in relation to ornithological interests, the long-term management of areas to be cleared of forestry and site restoration proposals following decommissioning. There will be a need to protect all watercourses, tributaries and river catchments. The effects of construction activities on water quality should be assessed, to avoid in particular, sedimentation and accidental spillages. This will apply to turbine base formation, access road construction and borrow pit extraction operations. Consideration should be given to the need for silt traps and possibly a settlement lagoon and, dependent on effluent quality, a discharge consent from SEPA may be required.

Any private water supplies should be protected during and after construction. The development should maximise the use of secondary aggregates or recycled materials and the production of waste materials should be minimised.

Built and Cultural Heritage Resources

The ES should assess the direct and indirect impacts of the proposed development (individually and in association with other existing and proposed wind farms) upon heritage resources and their settings within the zone of visual influence of the development, including scheduled monuments, unscheduled archaeological sites, listed buildings, conservation areas and gardens and designated landscapes such as Craigengillan.

Tourism/ Recreation and Public Access Resources

The ES should address the consequences of the development for users of the countryside and its direct and indirect impacts on tourism and recreational interests and resources in the vicinity. If any re-routing of paths is required alternative routes should be highlighted for consideration. Strategies for long term public access to the site for recreational uses during its operational phase should be considered.

Amenity Issues

The consequences of the proposed wind farm for occupiers of properties within the vicinity of the development, as well as countryside users, should be assessed, in terms of impact on views from properties and access routes; noise from the construction and operational phases of the development; dust from the construction phase of the development; noise, fumes and vibration from HGV traffic movements generated by the development; and shadow flicker.

Traffic and Transportation Issues

The ES should assess the impact of the construction and operational phases of the proposed development on the public road network in terms of the effects of the additional vehicular traffic generated, particularly heavy good vehicles and abnormal loads comprising turbine components, on traffic management, road safety, road layout and road condition. It is recommended that early contact be made with the Councils Roads Division Officers to discuss these matters further.

Communications

The impact of the proposed development on domestic television, radio and mobile phone reception in the area and on any civil or military broadcast linkages traversing the site should be assessed and any necessary mitigation measures identified.

Decommissioning

The planning application and supporting environmental statement should include a programme of work complete with outline plans and specifications for the decommissioning and reinstatement of the site. Information should be provided on the anticipated working life of the development and after use site reinstatement.

Noise

In terms of potential noise impacts the applicant should conduct an appropriate noise assessment taking account of the requirements of ETSU, BS 4142 and the WHO guidelines and in this regard the Council does not require to agree any background noise monitoring locations with the applicant. A noise assessment methodology should be submitted in respect of both the construction and operational phases of the development.

Appendix 1

Recommended further consultation:

East Ayrshire Council Roads Division
East Ayrshire Council Outdoor Access Officers
Local Community Councils within a 10km radius of the application site

2. DUMFRIES AND GALLOWAY COUNCIL

The Planning Authority consulted the following Departments of Dumfries and Galloway Council: Archaeology, Environmental Standards, Flood Risk Management, Roads Authority and the Landscape Architect. **To date, no response has been received from the Roads Authority (any comments subsequently forthcoming will be forwarded).**

Archaeology and Cultural Heritage

The proposal will have no direct effects on historic environment assets within Dumfries and Galloway.

No features have been identified within Dumfries and Galloway, where there are likely to be significant adverse effects on settings.

Noise

The Council's Environmental Standards Section has no objection in principal. However until a site specific noise impact study has been carried out following the principles detailed in the Assessment & Rating of Noise from Wind Farms ETSU-R-97, 1996 they are unable to comment fully as to the expected impacts.

The site specific assessment should be carried out following the principles detailed in the Assessment & Rating of Noise from Wind Farms ETSU Report ETSU-R-97, 1996.

It is also suggested that the proposal should be designed to meet the lower noise limits as specified in the ETSU-R-97 document, but where lower limits cannot be achieved the detailed reasons as to why this cannot be accomplished should be detailed in the ETSU-R-97 report within the Environmental Impact Assessment.

We additionally suggest that a method statement for the construction project should be provided within the EIA for approval by Dumfries & Galloway Council. This should include an assessment of potentially noisy operations and outline the noise mitigation measures proposed. This will also include a programme and phases for each stage of work. Guidance as to construction noise prediction methodology may be found within BS5228:2009.

3. SEPA

We would welcome meeting with the applicant at an early stage to discuss any of the issues raised in this letter. We consider that the following key issues should be addressed in the EIA process:

We consider the following key issues should be addressed in the EIA process: carbon balance, disruption to wetlands including peatlands, disturbance and reuse of excavated peat, existing groundwater abstractions, engineering activities in the water environment, water abstraction, pollution prevention and environmental management, borrow pits, air quality and flood risk.

While all of the issues below should be addressed in the Environmental Statement (ES), there may be opportunities for several of these to be scoped out of detailed consideration. The justification for this approach in relation to specific issues should be set out within the ES.

In addition we would refer you to *Good Practice During Windfarm Construction* prepared by SNH, SEPA and the windfarm industry and our *Regulatory Position Statement – Developments on Peat*

Carbon balance

Scottish Planning Policy (SPP) recognises that "the disturbance of some soils, particularly peat, may lead to the release of stored carbon, contributing to carbon emissions" (Paragraph 133). In line with SPP and government guidance, we recommend that the ES or planning submission contains a section systematically assessing carbon balance. This assessment should quantify the gains over the life of the project against the release of carbon dioxide during construction. It should include all elements of the proposal, including borrow pits, construction of roads/tracks and other infrastructure and loss of peat bog. Please refer to the Scottish Government guidance Calculating carbon savings from windfarms on Scottish peat lands - A New Approach, which provides a revised methodology for estimating the impacts of this type of development on carbon dynamics of peat lands. We will validate carbon balance assessments for Section 36 windfarm applications that use this revised version of the tool. In order to validate such assessments, all input data, assumptions and workings need to be provided within one dedicated section of the ES. In addition we will provide comment on drainage and waste management aspects of the peat management scheme to ensure that the carbon balance benefits of the scheme are maximised.

Disruption to wetlands including peatlands

If there are wetlands or peatland systems present, the ES or planning submission should demonstrate how the layout and design of the proposal, including any associated borrow pits, hard standing and roads, avoid impact on such areas.

A Phase 1 habitat survey should be carried out for the whole site and the guidance A Functional Wetland Typology for Scotland should be used to help identify all wetland areas. National Vegetation Classification should be completed for any wetlands identified. Results of these findings should be submitted, including a map with all the proposed infrastructure overlain on the vegetation maps to clearly show which areas will be impacted and avoided.

Groundwater dependent terrestrial ecosystems, which are types of wetland, are specifically protected under the Water Framework Directive. The results of the National Vegetation Classification survey and Appendix 2 (which is also applicable to other types of developments) of our Planning guidance on windfarm developments should be used to identify if wetlands are groundwater dependent terrestrial ecosystems.

The route of roads, tracks or trenches within 100 m of groundwater dependent terrestrial ecosystems (identified in Appendix 2) should be reconsidered. Similarly, the locations of borrow pits or foundations within 250 m of such ecosystems should be reconsidered. If infrastructure cannot be relocated outwith the buffer zones of these ecosystems then the likely impact on them will require further assessment. This assessment should be carried out if these ecosystems occur within or outwith the site boundary so that the full impacts on the proposals are assessed. The results of this assessment and necessary mitigation measures should be included in the ES.

For areas where avoidance is impossible, details of how impacts upon wetlands including peatlands are minimised and mitigated should be provided within the ES or planning submission. In particular impacts that should be considered include those from drainage, pollution and waste management. This should include preventative/mitigation measures to avoid significant drying or oxidation of peat through, for example, the construction of access tracks, dewatering, excavations, drainage channels, cable trenches, or the storage and re-use of excavated peat. Detailed information on waste management is required as detailed below. Any mitigation proposals should also be detailed within the Construction Environmental Management Document, as detailed below.

Disturbance and re-use of excavated peat

Where the proposed infrastructure will impact upon peatlands, a detailed map of peat depths (this must be to full depth) should be submitted. The peat depth survey should include details of the basic peatland characteristics.

By adopting an approach of minimising disruption to peatland, the volume of excavated peat can be minimised and the commonly experienced difficulties in dealing with surplus peat reduced. The generation of surplus peat is a difficult area which needs to be addressed from the outset given the limited scope for re-use.

The ES or planning submission should detail the likely volumes of surplus peat that will be generated, including quantification of catotelmic and acrotelmic peat, and the principles of how the surplus peat will be reused or disposed of.

There are important waste management implications of measures to deal with surplus peat as set out within our Regulatory Position Statement - Developments on Peat. Landscaping with surplus peat (or soil) may not be of ecological benefit and consequently a waste management exemption may not apply. In addition we consider disposal of significant depth of peat as being landfilled waste, and this again may not be consentable under our regulatory regimes. Experience has shown that peat used as cover can suffer from significant drying and oxidation, and that peat redeposited at depth can lose structure and create a hazard when the stability of the material deteriorates. This creates a risk to people who may enter such areas or through the possibility of peat slide and we are aware that barbed-wire fencing has been erected around some sites in response to such risks.

It is therefore essential that the scope for minimising the extraction of peat is explored and alternative options identified that minimise risk in terms of carbon release, human health and environmental impact. Early discussion of proposals with us is essential, and an overall approach of minimisation of peatland disruption should be adopted. If it is proposed to use some excavated peat within borrow pits or bunding then details of the proposals, including depth of peat and how the hydrology of the peat will be maintained, should be outlined in the ES or planning submission.

Our Planning and Energy webpage provides links to current best practice guidance on peat survey, excavation and management.

Existing groundwater abstractions

Roads, foundations and other construction works associated with large scale developments can disrupt groundwater flow and impact on groundwater abstractions. To address this risk a list of groundwater abstractions both within and outwith the site boundary, within a radius of i)100 m from roads, tracks and trenches and ii) 250 m from borrow pits and foundations) should be provided.

If groundwater abstractions are identified within the 100 m radius of roads, tracks and trenches or 250 m radius from borrow pits and foundations, then either the applicant should ensure that the route or location of engineering operations avoid this buffer area or further information and investigations will be required to show that impacts on abstractions are acceptable. Further details can be found in Appendix 2 (which is also applicable to other types of developments) of our Planning guidance on windfarm developments.

Engineering activities in the water environment

In order to meet the objectives of the Water Framework Directive of preventing any deterioration and improving the water environment, developments should be designed to avoid engineering activities in the water environment wherever possible. The water environment includes burns, rivers, lochs, wetlands, groundwater and reservoirs. We require it to be demonstrated that every effort has been made to leave the water environment in its natural state. Engineering activities such as culverts, bridges, watercourse diversions, bank modifications or dams should be avoided unless there is no practicable alternative. Paragraph 211 of SPP deters unnecessary culverting. Where a watercourse crossing cannot be avoided, bridging solutions or bottomless or arched culverts which do not affect the bed and banks of the watercourse should be used. Further guidance on the design and implementation of crossings can be found in our Construction of River Crossings Good Practice Guide. Other best practice guidance is also available within the water engineering section of our website.

If the engineering works proposed are likely to result in increased flood risk to people or property then a flood risk assessment should be submitted in support of the planning application and we should be consulted as detailed below.

A site survey of existing water features and a map of the location of all proposed engineering activities in the water environment should be included in the ES or planning submission. A systematic table detailing the justification for the activity and how any adverse impact will be mitigated should also be included. The table should be accompanied by a photograph of each affected water body along with its dimensions. Justification for the location of any proposed activity is a key issue for us to assess at the planning stage.

Where developments cover a large area, there will usually be opportunities to incorporate improvements in the water environment required by the Water Framework Directive within and/or immediately adjacent to the site either as part of mitigation measures for proposed works or as compensation for environmental impact. We encourage applicants to seek such opportunities to avoid or offset environmental impacts. Improvements which might be considered could include the removal of redundant weirs, the creation of buffer strips and provision of fencing along watercourses. Fencing off watercourses and creating buffer strips both helps reduce the risk of diffuse water pollution and affords protection to the riparian habitat.

Water abstraction

Where water abstraction is proposed we request that the ES, or planning submission, details if a public or private source will be used. If a private source is to be used the information below should be included. Whilst we regulate water abstractions under The Water Environment (Controlled Activities) (Scotland) Regulations 2011, the following information is required at the planning stage to advise on the acceptability of the abstraction at this location:

- Source e.g. ground water or surface water;
- Location e.g. grid reference and description of site;
- Volume e.g. quantity of water to be extracted;
- Timing of abstraction e.g. will there be a continuous abstraction;
- Nature of abstraction e.g. sump or impoundment;
- Proposed operating regime e.g. details of abstraction limits and hands off flow;
- Survey of existing water environment including any existing water features;
- Impacts of the proposed abstraction upon the surrounding water environment.

If other development projects are present or proposed within the same water catchment then we advise that the applicant considers whether the cumulative impact upon the water environment needs to be assessed. The ES or planning submission should also contain a justification for the approach taken.

Pollution prevention and environmental management

One of our key interests in relation to major developments is pollution prevention measures during the periods of construction, operation, maintenance, demolition and restoration. The construction phase includes construction of access roads, borrow pits and any other site infrastructure.

We advise that the applicant should, through the EIA process or planning submission, systematically identify all aspects of site work that might impact upon the environment, potential pollution risks associated with the proposals and identify the principles of preventative measures and mitigation. This will establish a robust environmental management process for the development. A draft Schedule of Mitigation should be produced as part of this process. This should cover all the environmental sensitivities, pollution prevention and mitigation measures identified to avoid or minimise environmental effects. Details of the specific issues that we expect to be addressed are available on the Pollution Prevention and Environmental Management section of our website.

A Construction Environmental Management Document is a key management tool to implement the Schedule of Mitigation. We recommend that the principles of this document are set out in the ES outlining how the draft Schedule of Mitigation will be implemented. This document should form the basis of more detailed site specific Construction Environmental Management Plans which, along with detailed method statements, may be required by planning condition or, in certain cases, through environmental regulation. This approach provides a useful link between the principles of development which need to be outlined at the early stages of the project and the method statements which are usually produced following award of contract (just before development commences).

We would refer you to best practice advice prepared by SNH, SEPA and the windfarm industry Good Practice During Windfarm Construction. Additionally, the Highland Council (in conjunction with industry and other key agencies) has developed a guidance note Construction Environmental Management Process for Large Scale Projects.

Borrow pits

Detailed investigations in relation to the need for and impact of such facilities should be contained in the ES or planning submission. Where borrow pits are proposed, information should be provided regarding their location, size and nature. In particular, details of the proposed depth of the excavation compared to the actual topography and water table should be submitted. In addition details of the proposed restoration profile, proposed drainage and settlement traps, turf and overburden removal and storage for reinstatement should be submitted.

The impact of such facilities (including dust, blasting and impact on water) should be appraised as part of the overall impact of the scheme. Information should cover, in relation to water; at least the information set out in Planning Advice Note PAN 50 Controlling the Environmental Effects of Surface Mineral Workings (Paragraph 53). In relation to groundwater, information (Paragraph 52 of PAN 50) only needs to be provided where there is an abstraction or groundwater dependent terrestrial ecosystem within 250 m of the borrow pit. Additional information on groundwater is provided above.

Air quality

The local authority is the responsible authority for local air quality management under the Environment Act 1995 and therefore we recommend that Environmental Health within the local authority be consulted.

They can advise on the need for this development proposal to be assessed alongside other developments that could contribute to an increase in road traffic. They can also advise on potential impacts such as exacerbation of local air pollution, noise and nuisance issues and cumulative impacts of all development in the local area. Further guidance regarding these issues is provided in NSCA guidance (2006) entitled Development Control: Planning for Air Quality.

Flood risk

The site should be assessed for flood risk from all sources in line with Scottish Planning Policy (Paragraphs 196-211). Our Indicative River & Coastal Flood Map (Scotland) is available to view online and further information and advice can be sought from your local authority technical or engineering services department and from our website.

If a flood risk is identified then a Flood Risk Assessment should be carried out following the guidance set out in the Annex to the SEPA-Planning Authority flood risk protocol. Our Technical flood risk guidance for stakeholders outlines the information we require to be submitted as part of a Flood Risk Assessment, and methodologies that may be appropriate for hydrological and hydraulic modelling.

Regulatory advice for the applicant

Details of regulatory requirements and good practice advice for the applicant can be found on our website at www.sepa.org.uk/planning.aspx. If you are unable to find the advice you need for a specific regulatory matter, please contact a member of the operations team in your local SEPA office at:

Rivers House,
Irongray Road,
Dumfries,
DG2 0JE

4. SNH

Ecology

Most of the desk based studies and field work for habitats and species has been completed with the exception of bats and watercourses. We are content with surveys undertaken to date and note further survey for bats is planned for the winter period 2012/13 and that the Ayrshire Rivers Trust will be consulted regarding the suitability of watercourses for salmonids. We note the intention of the Environmental Statement (ES) to assess the impact on any habitats and species potentially affected by this development and propose any necessary mitigation to protect these. At this point therefore there is nothing further to comment on so far as ecology is concerned.

Ornithology

As with the other aspects of ecology survey work is largely complete with the exception of further vantage point surveys for the 2012/13 winter period. It appears that survey methodologies have followed our guidance and therefore at this point there is nothing further on which to comment.

Geology, hydrogeology and hydrology

Appropriate field surveys should be undertaken to determine the extent of peat deposits as part of the Environmental Impact Assessment (EIA) process and to inform site design and layout. If peat is found to be present on site, we would expect the applicant to carry out a peat stability assessment. It is important that Peat Depth Surveys and Peat Slide Risk Assessments are as extensive as necessary to capture and assess all relevant areas. The assessment should include turbine, infrastructure and laydown locations, plus the access tracks and any borrow pits. We also strongly recommend early engagement with SEPA with regard to excavated peat reuse and disposal.

Landscape and visual

An assessment of the likely **effects on the landscape resource** includes consideration of likely changes to:

- individual elements – trees, hedges, buildings;
- characteristics – elements or combinations of elements (physical as well as perceptual) which make a particular contribution to the character of an area;
- character – distinct and recognisable pattern of elements (key characteristics) which create a particular sense of place; and
- landscape value – as described by statutory landscape designations, locally valued landscapes; condition and rarity of landscape elements.

An assessment of **visual effects** describes:

- likely changes in the available views resulting from the development; and
- changes in the visual amenity of the visual receptors.

The design process and design iterations should be clearly explained in a design statement or chapter in the submitted ES.

Available guidance

The following guidance (most of which is available from our website) presents good practice for the design and siting of wind farm development, and for carrying out a Landscape and Visual Impact Assessment (LVIA).

– Ayrshire Landscape Assessment (ASH Consulting Group, 1999)
– Dumfries and Galloway Landscape Capacity Study (January 2011)
– Visual Representation of Windfarms Good Practice Guidance (2006)
– Assessing the Cumulative Impact of Onshore Wind Energy Developments (SNH March 2012)
– Siting and Designing Windfarms in the Landscape (SNH Version 1 December 2009)
– Scottish Government web-based renewables advice (supercedes PAN 45)
– PAN 68 – Design Statements

Specific issues for the LVIA to address

We highlight the following landscape and visual matters as requiring particular attention in respect of the LVIA for this proposal.

– the off-site impacts of improving the public roads to allow access i.e. the landscape and visual impacts of any road straightening, widening, levelling, tree and hedgerow removal and the upgrading of junctions;
– access tracks and borrow pits should be included in relevant visualisations less than 10km from site;
– the options for any felling requirements;
– should there be a need to install aviation obstruction lighting to some or all of the wind turbines, its visual impact at night will have to be assessed in the ES.

We also recommend that you take particular cognisance of the following landscape and visual receptors which may be affected by the proposal:

– Local landscape designations: East Ayrshire's Sensitive Landscape Character Areas, and the South Ayrshire Scenic Area;
– The nearby towns of New Cumnock, Cumnock and Dalmellington;
– Landscape Character with reference to the Ayrshire Landscape Character Assessment Land Use Consultants 1998);
– The Southern Upland Way;
– The Merrick Search Area for Wild Land;
– The Galloway Hills Regional Scenic Area to the south in Dumfries and Galloway.

Impacts on Inventory Gardens and Designed Landscapes are dealt with by Historic Scotland. The effects of a previous, nearby, larger proposal on Craigengillan inventory site were of concern, and Dumfries House inventory site may well be affected in this case. It will be important for the current proposal to assess these.

Study area

A study area of 35km is appropriate for the LVIA for this proposal.

Our guidance *Assessing the Cumulative Impact of Onshore Wind Energy Developments (SNH March 2012)* advises that a cumulative assessment should be based on a 30/60km study area.

Viewpoints for visual impact assessment

We note that the list of viewpoints has been amended to take account of our previous comments. Regardless of the above, SNH reserves its position on the initial choice of viewpoints until the production of detailed ZTVs at 1:100,000, and welcomes the opportunity to contribute to further discussion on the selection of key viewpoints.

The LVIA submitted as part of the EIA should present wirelines for all selected viewpoints and photomontages for all viewpoints that are within 15km of the proposed development site.

We consider that any viewpoint with a view of the proposed wind farm and another wind farm(s) should also be assessed as a cumulative viewpoint.

Cumulative effects

Consideration of cumulative effects will be an important aspect of the LVIA for this proposal. This proposal is located in close proximity to a number of other wind farm developments / proposals and sensitive receptors that experience a number of other wind farm developments / proposals. See Appendix D of SNH's guidance on the *Cumulative Impact of Onshore Wind Energy Developments (SNH March 2012)* for our recommended approach to considering likely cumulative effects upon landscape and upon views and visual amenity.

The cumulative LVIA should consider the impact of the additional contribution of the proposed development to the baseline of other existing, consented and application wind farms. It should include, and specifically should distinguish between the following, as defined in the guidance:

- cumulative landscape effects;
- cumulative visual effects;
- static combined effects;
- static successive effects;
- sequential effects - routes to be assessed should be selected and verified following consideration of the cumulative ZTVs.

The cumulative landscape assessment should consider the impact of an additional wind farm scheme upon landscape character. The cumulative visual assessment should consider how various wind farm developments would be seen together from key viewpoints.

It will be very important for the proposal to be planned and designed in the context of existing / consented development. Every additional proposal within an area makes the overall pattern of wind farm development more complicated and the developers have an increasingly difficult task to make a project 'fit' with other development. Our guidance *Siting and Designing Wind* *farms in the Landscape(Version1, December 2009)* should be consulted and followed in this respect.

Cumulative baseline schemes

The relevant planning authorities should be contacted for a current list of all known wind farms that are in the public domain, which are within the cumulative study area (which may include authorities out with the East Ayrshire area) to prepare a cumulative base plan of other wind farm schemes. We can provide more detailed advice on the wind farms that it may be most important to consider in terms of their cumulative effects once an up-to-date and accurate cumulative base plan based on data collected from the relevant planning authorities is submitted.

For reference, to help provide a national overview of wind farm development in Scotland, SNH produces a quarterly wind farm footprint map. Recent versions of the map are available from: www.snh.gov.uk/planning-and-development/renewable-energy/research-data-and-trends/trendsandstats/windfarm-footprint-maps/
Please note that the wind farm footprint map provides a strategic national overview only; we endeavour to keep the map as up-to-date as possible but please be aware of the caveats detailed on our website.

Cumulative viewpoints and ZTVs

The choice of cumulative viewpoints for the illustration of these effects should be based upon the Zone of Theoretical Visibility (ZTV) produced for the proposal in combination with other key wind farms.

Please note that paired/cumulative ZTVs should show for the whole study area (and ideally to the edge of the map sheet presented):

a. theoretical visibility of wind farm A only;
b. theoretical visibility of wind farm B only; and
c. theoretical visibility of wind farm A plus wind farm B.

These ZTVs should be coloured logically – e.g. blue (a), yellow (b) and green (c).

5. FORESTRY COMMISSION SCOTLAND

I note that the site has modest forestry interests and it is unclear at this stage as to what the developers approach will be with regard to these limited areas. Clearly I would expect that any activities relating to these would be outlined within an appropriate section of the ES and that any works would seek to comply with the Scottish Governments policy on the Control of Woodland Removal.

6. HISTORIC SCOTLAND

This response contains our comments for our historic environment remit. That is scheduled monuments and their setting, category A listed buildings and their setting and gardens and designed landscapes (GDL) and battlefields on their respective Inventories.

You should seek information and advice from the relevant planning authority archaeologist and conservation advisor for matters including unscheduled archaeology and impacts on Band C listed buildings. The West of Scotland Archaeology Service can be contacted at Charing Cross Complex, India Street, Glasgow G2 4PF.

I understand that the proposed development would consist of up to 23 wind turbines with a maximum height of 150 metres and associated development. I welcome the inclusion of a Zone of Theoretical Visibility (ZTV) diagram with the scoping report and note the content of chapter 7, cultural heritage.

Potential impacts to be considered

Direct Impacts

From the information provided, a proposed development in this location appears unlikely to have a direct impact on any sites within our remit, as identified above. However the development may have an impact on the setting of those sites which lie outside the site boundary.

Indirect impacts

I note the statement in section 7.2 of the scoping report which indicates that significant effects on heritage assets are considered unlikely beyond 5km. I would urge caution with this approach since such effects may be possible beyond this distance. In light of this we offer the following comments.

Craigengillan House (HB18793) & Craigengillan Stable Block (HB18794) and Craigengillan GDL

The structure is an eighteenth- and nineteenth-century house with extensive panoramic views over the surrounding gardens and designed landscape and towards the hills to the east and south. The ZTV indicates that most or all of the proposed turbines would be visible from the vicinity of the house, and in particular from the front elevation looking towards the proposed development.

We recommend that the proposed visualisations should include both a photomontage and a wireframe and should be taken from a viewpoint as close as possible to the house.

We would expect that any assessment would also report how impacts on other nationally important sites in the area have been taken into account. Any assessment should consider the significance of any cumulative impacts.

Our guidance on setting can be found on our website: http://www.historicscotland. gov.uk/setting-2.pdf

Further information on our role in the EIA process can also be found on our website: http://www.historic-Scotland.gov.uk/index/heritage/policy/environmental-assessment/eiafaqs.htm

7. MARINE SCOTLAND

Marine Scotland Science Freshwater Laboratory (MSS-FL) provides scientific advice on migratory and freshwater fish in Scotland to allow the Scottish Government to protect and promote the development of sustainable fisheries. We are a Scottish Government internal consultee providing fisheries advice to the Energy Consents and Deployment Unit (ECDU).

Wind farm and transmission line proposals which are considered under Section 36 and 37 of the Electricity Act may adversely affect water quality and fish populations through a number of mechanisms. These include: increased sediment transport and deposition; pollution incidents; altered hydrological pathways; removal or degradation of fish habitat, including spawning areas; reduction in food supply and obstruction to upstream and downstream migration of fish, all of which should be fully addressed in the Environmental Statement (ES).

Atlantic salmon, trout (sea trout and brown trout) and European eel are of particular interest to MSS-FL. Fish and fisheries issues will also be of concern to the local District Salmon Fishery Boards (DSFBs), which have a statutory responsibility to protect salmon populations. As such this organisation should also be contacted at the outset of any development. In addition to the DSFBs, local Fisheries Trusts have information regarding local fish populations. The following web sites have lists of all DSFBs and Fisheries Trusts in Scotland:

http://www.asfb.org.uk
http://www.rafts.org.uk

The developer should also note that fish and fisheries issues are also likely to be of concern to Scottish Natural Heritage (SNH) when species of conservation interest are involved (see http://www.snh.gov.uk/about-scotlands-nature/species/fish/freshwater-fish/) and to the Scottish Environment Protection Agency (SEPA) due to their role in ensuring compliance with the requirements of the Water Framework Directive.

Environmental Statement

In preparation of the ES careful consideration should be given to the following activities which can have an impact on fisheries: turbine foundations, excavation of borrow pits, road construction/upgrading, cable laying, water abstraction and discharge.

Water bodies and stream crossings

It is recommended that construction avoids water bodies wherever possible. If construction is to be carried out near watercourses, a buffer zone of at least 50m should be established. Where river crossings are proposed the Scottish Executive guidance "River Crossings and Migratory Fish" (2000) http://www.scotland.gov.uk/Topics/marine/science/Publications/publicationslatest/rivercrossings should be consulted in addition to SEPA's "Engineering in the Water Environment Good Practice Guide Construction of River Crossings" (http://www.sepa.org.uk/water/water_regulation/guidance/engineering.aspx).

Peat stability

Peat slides can have a direct impact on fisheries and peat disturbance can have indirect effects on water quality, therefore all construction should avoid areas of deep peat, where this is not possible appropriate mitigation measures should be put in place. Natural peat drainage channels should be preserved throughout the development; excavated material should not be stock piled in areas of unstable peat; concentrated water flows onto peat slopes should also be avoided.

Abstraction and discharge of water

SEPA, through The Water Framework Directive, regulates abstraction from and discharge of polluting matter to all wetlands, surface waters and groundwaters. (SEPA-The Water Environmental (Controlled Activities) (Scotland) Regulations 2005 A Practical Guide http://www.sepa.org.uk/water/water_regulation.aspx*).* Where water abstraction is proposed, the developer should ensure that they comply with The Salmon (Fish Passes and Screens) (Scotland) Regulation 1994 which states that screens, at the point of water abstraction, should serve to prevent the entry and injury of salmon:
http://www.legislation.gov.uk/uksi/1994/2524/regulation/6/made.

Surface water run-off must be discharged in such a way to minimise the risk of pollution of the water environment.

Pollution

The Water Framework Directive requires any activity that is liable to cause water pollution to be authorised by SEPA. This includes point source pollution (eg sewage and trade effluent) and diffuse pollution (fuel, concrete spills, sediment discharge) all of which can be detrimental to the survival of fish see SEPA Pollution Prevention Guidelines:
http://www.netregs.gov.uk/netregs/links/107968.aspx

Acidification

Particular attention should be paid to acidification issues if they are known to be a problem in the area. Anthropogenic acidification of freshwaters is largely caused by the input of sulphur and nitrogen compounds, derived from the combustion of fossil fuels, exceeding the buffering capacity of the soils and underlying rocks through which the streams flow. Peat deposits and marine derived sulphates can also contribute to acidity. Salmonid fish are particularly sensitive to acid water, particularly due to the increased mobility of labile aluminium in acid conditions which is toxic to aquatic organisms.

Forestry

The developer should be aware of the potential impacts of tree felling on the aquatic environment including nutrient release, increased acidification risk, loss of habitat, impacts on hydrology, increased fine sediment transport and deposition, all of which can have a detrimental impact on fish populations and should therefore be addressed in the ES. “The Forest and Water Guidelines” should be consulted for further information:
http://www.forestry.gov.uk/forestry/INFD-88VGX9

Monitoring Programmes

In order that MSS- FL can assess the potential impact of developments the developer should provide information on all species and abundance of fish within the development area. MSS- FL may not have local knowledge of the site and consequently the onus is on the developer to provide adequate information on which to base an assessment of risk.

Where local salmonid and eel populations are present and the development has the potential to have an impact on the freshwater environment MSS FL requests that a baseline study be carried out at least one year prior to construction to assess all species and abundance of fish and water quality in standing and running waters likely to be affected by the proposed development. Particular attention should be paid to species of high economic and/or conservation value as outlined below:

Atlantic salmon, sea lamprey, river lamprey and brook lamprey are listed under the European Habitat Directive. Atlantic salmon, trout (ancestral forms and sea trout), European eel, river lamprey, sea lamprey and Arctic charr are UK Biodiversity Action Plan (UKBAP) species-listed as priorities for conservation. European eel is also protected by EU regulation (EC No 1100/2007). The following links provide further information regarding the protection of fish species and water bodies in Scotland.

http://www.jncc.gov.uk/ProtectedSites/SACselection/SAC_species.asp
http://www.jncc.gov.uk/ProtectedSites/SACselection/SAC_list.asp?Country=S
http://www.jncc.gov.uk/page-5164
http://www.nasco.int/pdf/far_habitat/HabitatFAR_Scotland.pdf

Although MSS-FL will be primarily concerned with species of fisheries interest (e.g. salmon, trout and eels), other consultees will have an interest in other species.

Adherence to best available techniques is expected throughout the development. Site specific mitigation measures and/or enhancement programmes to protect and/or compensate freshwater habitats should always be included in the ES.

Monitoring throughout the development phase should be carried out to identify impacts and allow remediation at the earliest opportunity for sites where there are thought to be risks to fish populations. The experimental design of the monitoring programme should focus on the risks presented by the development and be clearly justified. Methods of analysis, reporting mechanisms and links to site management should also be clearly identified. The following publication may be helpful in considering fish monitoring programmes:
http://www.scotland.gov.uk/Uploads/Documents/SFRR_67.pdf .

Developers should ensure that all fish work complies with the Animal (Scientific Procedures) Act (1986) and Animal Health and Welfare (Scotland) Act (2006) where required.

The combined effect on water quality and fisheries from all existing and proposed construction developments in the area should be addressed in the ES in addition to angling, as a recreation interest, and the impact that the proposed development may have on it.

Where the development can be clearly demonstrated to be of low risk to fish populations the developer should still draw up **site specific** mitigation plans to minimise any impact to fish and their inhabiting waters. If the developer considers that there will be no significant impact from the development and as such no monitoring will be required this should be clearly presented in the ES with supporting data and information thereby enabling MSS-FL to finalise the decision on monitoring requirements. If this information is not provided, MSS-FL will have no information on which to base an assessment of risk and as such will recommend that the developer carry out a full monitoring survey of fish and water chemistry in addition to appropriate mitigation plans. Due to limited staff resources MSS-FL normally do not attend meetings held in relation to proposed developments.

Summary

- MSS-FL is an internal Scottish Government consultee providing scientific advice on fish and fisheries in Scotland to protect fish populations and promote sustainable fisheries.
- Other organisations including DSFBs, Fishery Trusts, SNH and SEPA also have an interest in fish and fisheries issues.
- Energy developments can impact fish populations through a wide range of mechanisms that need to be considered in the ES.
- It is the responsibility of the developer to provide data on the distribution, species and abundance of fish within and around the development site to allow MSS-FL to assess levels of risk from the proposed development.
- It is the responsibility of the developer to provide a clear and honest assessment of the risks posed to fish populations as a result of the proposed development.

- If there is any reasonable doubt as to the potential impacts a monitoring plan should be put in place to assess impacts and allow remedial action at the earliest opportunity.
- Monitoring plans should be clearly defined and justified and must tie into site management.

Useful links

Good practice during windfarm construction:
http://www.snh.org.uk/pdfs/strategy/renewables/Good%20practice%20during%20windfarm%20construction.pdf

SEPA water publications:
http://www.sepa.org.uk/water/water_publications.aspx

Peat Landslide Hazard and Rish Assessments: Best Practice Guide for proposed Electricity Generation Developments:
http://www.scotland.gov.uk/Publications/2006/12/21162303/0

SFCC electrofishing protocols:
http://www.scotland.gov.uk/Topics/marine/science/sfcc/Protocols/ElectrofishingSurveys

Construction of floating roads:
http://www.roadex.org/uploads/publications/Seminars/Scotland/FCE:SNH%20Floating%20Roads%20on%20Peat%20report.pdf

8. TRANSPORT SCOTLAND

Overall there will be a minimal increase in traffic on the trunk road during the operation of the facility therefore the proposed development is not likely to have a significant impact on the operation of the trunk road network.

However, it is likely that as many of the construction loads may be categorised as abnormal, authorisation from our management organisation Amey be required. It is advisable that they are consulted as to the feasibility of transportation of these items to site. Due to the frequency and number of these loads it is UK policy to restrict these movements via the nearest suitable port.

9. ASSOCIATION OF SALMON FISHERY BOARDS

No response received.

10. BT

We have studied your wind farm proposal with respect to problems with BT point-to-point microwave radio links.

The turbines could affect the following radio link:

TX Name	TX NGR	RX Name	RX NGR	Link ID	RARef	Path length	Freq band
Mauchline TE	NS 5014026960	Windy Standard Hill	NS 6095603174	10399	805199	26.13	18GHz

Our position is therefore, we would like further consultation on the location of the turbines on this wind farm.

BT require ideally 100m minimum clearance from the Blade tip to the link path.

11. CAA AIRSPACE

Civil Aviation Authority Screening and Scoping Opinion for Wind Turbine Applications

The CAA regularly gets asked by Planning Authorities and Developers for its opinion on the Screening or Scoping of Wind Turbine Applications under the Environmental Impact regulations. In all cases the advice is the same and in the past the CAA has also advised applicants specifically which aviation stakeholders to consult. With increasing pressure on limited resources within the CAA this customised service is no longer viable. The following guidance is provided to enable applicants to identify the appropriate elements to include within the aviation section of any environmental report and how Local Planning Authorities should assess the information. Only in cases where the CAA is statutorily consulted under the Electricity Act or the Planning Act will it provide a specific response to the application or scoping request.

That said, if a Local Planning Authority (LPA) has **specific** questions relating to an application it is recommended that they contact the CAA using windfarms@caa.co.uk.

Screening Opinion

The CAA has no authority over the conduct of the planning process and hence it is the view of the CAA that the decision as to whether an applicant requires to submit an Environmental Impact Assessment rests solely with the relevant planning authority.

Scoping Opinion

When considering aviation effects, there are typically two aspects to consider; obstacles and electromagnetic impact including radar. Different aviation stake holders will be affected in different ways. Applicants should be made aware that several consultees act on a national basis and, therefore, leaving consultations until just before an application is submitted negates the purpose of the scoping process and will lead to delays.

Sometimes a developer or agent will claim that due to a development's small size, aviation is not an issue. This is not necessarily the case; indeed to date no evidence has been supplied to substantiate these claims and, for example, there are a number of instances where small wind turbines are detected by radar. Research is being undertaken to identify whether there is a set of dimensions and materials that would have no substantial impact.

Identifying Statutory Consultees

Both NATS (which provides En Route Air Traffic Control) and the Ministry of Defence (MoD) are statutory consultees under the Town and Country Planning Act. The impact on their infrastructure should be assessed within the Environmental Impact Assessment. The MoD currently provide a free service although demand is high leading to the need to allow sufficient time to respond, although this should be well within the timescales of other consultation requirements such as ecological or noise surveys. NATS provide a number of paid-for services and free self-assessment tools details of which can be found on their website. Both of these organisations need to be consulted in **all** cases.

There are also a number of officially safeguarded aerodromes which are defined in government circulars (listed at the end of this guidance). These may offer pre-planning services for which there may be a charge. Such aerodromes should have lodged safeguarding maps with LPA identifying the areas in which they need to be consulted. Due to the nature of their operations these areas may be in excess of 50km from the aerodrome.

Local Planning Authorities and applicants must note that if an objection is raised by any of the above, and consent is granted there is a possibility that the decision will be subject to 'call-in' by the Secretary of State or Scottish Ministers.

Identifying Non statutory Consultees

In addition to officially safeguarded Aerodromes there are several hundred other aerodromes in the United Kingdom. These may be Licensed or Unlicensed by the CAA. Associated Aerodrome Licence Holders or operators may have registered safeguarding maps with their LPAs. To verify the presence of aerodromes known to the CAA in any particular area, it is recommended that an aeronautical chart is purchased and the site of the turbine checked to see if it falls within the range of an aerodrome using the distances recommended in CAP 764. It is also recommended that Emergency Service Helicopter Support Units are consulted as they may operate in the area of concern and be affected by the introduction of tall obstacles. For example Police helicopters are permitted to operate down to 75 feet and will routinely follow main roads and motorways during their operations. Both the Police and Air Ambulance may need to land anywhere and will also have specifically designated landing sites.

Consideration of Electromagnetic Effects Including Radar and Radio Impacts

Almost uniquely among land developments wind turbines can be interpreted as moving objects by Air Traffic Control Radar. This can lead to impacts such as increased workload for Air Traffic Controllers, misidentification of tracks or loss of a genuine aircraft track, any of which could have safety implications. It is for this reason that consultation with the statutory consultees is essential in determining whether there is an operational impact on the radar system and if so, whether a mitigation can be agreed.

There may also be impacts upon other radio systems such as Air Ground Air communications and radio navigation beacons.

Consideration of Obstacle Aspects

As wind turbines are tall structures they can become obstacles to aviation. When in the vicinity of an aerodrome this will be assessed by the aerodrome itself. Away from an aerodrome the CAA will assess whether a wind turbine is an obstacle. The key blade tip heights to consider for developments away from an aerodrome are:

- 91.4 metres as there is an international requirement for all obstacles of 300 feet or more in height to be marked on aeronautical charts and listed in the UK Aeronautical Information Publication. This assists pilots to safely plan their flights to take into consideration the locations of tall obstacles. The national database of aeronautical obstacles is maintained by the Defence Geographic Centre.

- 150 metres at which the display of medium intensity aviation warning lights becomes mandatory as specified in Article 219 of the Air Navigation Order. There may also a requirement that the turbine is appropriately marked which would require the upper 2/3 of the turbine to be painted white. NB. Like any structure a wind turbine less than 150m in height might need to be lit / marked if, by virtue of their location and nature, it is considered a significant navigational hazard. If asked for comment, it would be unlikely that the CAA would have any issues associated with an aviation stakeholder (eg a local aerodrome operator or airspace operator) request for lighting / marking of any structure that was considered to be a significant hazard to air navigation.

There may be areas where the CAA will consider turbines of lower heights to be obstacles due to a combination of complex airspace with a low base and high terrain. Currently these areas of special consideration include the Manchester Low level Route and the Scottish Terminal Manoeuvring Area. Other areas may be included as wind turbines proliferate and the design of airspace changes.

Useful Resources for Potential Applicants

CAA Wind Energy web pages	www.caa.co.uk/windfarms
CAA Policy and guidelines on wind turbines	www.caa.co.uk/docs/33/Cap764.pdf
Air Navigation Order	http://www.legislation.gov.uk/uksi/2009/3015/contents/made
List of Stockists of Aeronautical Charts	http://www.nats-uk.ead-it.com/public/index.php%3Foption=com_content&task=blogcategory&id=235&Itemid=355.html
Interim Guidelines for the wind industry. (Note: only the MoD is offering a pre planning service)	http://www.bwea.com/pdf/Wind-Energy-and-aviation-interim-guidelines.pdf
DECC Renewable Energy Statistics project (for aviation safeguarding data)	https://restats.decc.gov.uk/cms/aviation-safeguarding-maps/
NATS Ltd Radar Coverage Maps	http://www.nats.co.uk/just-for-you/windfarm-developers/
ODPM Government Circular 1/2003	http://www.dft.gov.uk/pgr/aviation/safety/safeguarding/safeguardingaerodromestechni2988
Annex 3 (list of officially safeguarded aerodromes)	http://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/pgr/aviation/safety/safeguarding/coll_safeguardingaerodromestechn/atedannex3todftcircular12003.pdf
Scottish Government Circular 2/2003	http://www.scotland.gov.uk/Publications/2003/01/16204/17030
Ministry of Defence safeguarding	http://www.mod.uk/DefenceInternet/MicroSite/DE/WhatWeDo/Operations/ModSafeguarding.htm
Environmental Impact Regulations	http://www.legislation.gov.uk/uksi/1999/293/made
DAP Policy: Lighting of En-Route Obstacles and Onshore Wind Turbines	http://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=detail&id=4494

12. THE CROWN ESTATE

The Crown Estate's interests are not affected the proposed Enoch Hill Wind Farm and as such we have no comments to make.

13. DEFENCE INFRASTRUCTURE ORGANISATION

The MOD objects to the proposal. Our assessment has been carried out on the basis that there will be 23 turbines, 150 metres in height from ground level to blade tip and located at the grid references below as stated in the planning application or provided by the developer:

Turbine	100km Square letter	Easting	Northing
1	NS	56239	08225
2	NS	55698	08069
3	NS	55320	08350
4	NS	55967	07759
5	NS	56867	07676
6	NS	56731	08042
7	NS	56359	07678
8	NS	55940	07313
9	NS	56695	07205
10	NS	56265	06852
11	NS	56654	06762
12	NS	56231	06407
13	NS	57145	07083
14	NS	57220	07535
15	NS	57572	07392
16	NS	57981	07492
17	NS	57522	07986
18	NS	57969	08287
19	NS	57835	07848
20	NS	58344	08177
21	NS	58388	07763
22	NS	58800	08449
23	NS	55542	08817

Low Flying

The turbines will be within low flying area TTA 20 and will unacceptably affect military activities. Low flying areas are tactical training areas made available for military operational low flying training, within which military fast jets and Hercules aircraft may operate to as little as 30 metres separation from the ground and other obstacles. The proliferation of obstacles within this area is not only a safety hazard but also severely impacts on its utilisation for essential low flying training.

If the developer is able to overcome the issues stated above, the MOD will request that all turbines be fitted with 25 candela omni-directional red lighting or infrared lighting with an optimised flash pattern of 60 flashes per minute of 200ms to 500ms duration at the highest practicable point.

MOD Safeguarding wishes to be consulted and notified about the progress of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

I hope this adequately explains our position on the matter. Further information about the effects of wind turbines on MOD interests can be obtained from the following website:

MOD:
http://www.mod.uk/DefenceInternet/MicroSite/DIO/WhatWeDo/Operations/ModSafeguarding.htm

14. JOINT RADIO COMPANY

Site Name: Enoch Hill

Site Centre at NGR: 257360 608630

Development Radius: 3km

Hub Height:90m Rotor Radius:50m

(defaults used if not specified on application)

Cleared with respect to radio link infrastructure operated by:-

Scottish Power and Scotia Gas Networks

JRC analyses proposals for wind farms on behalf of the UK Fuel & Power Industry together with the Water Industry in north-west England. This is to assess their potential to interfere with radio systems operated by utility companies in support of their regulatory operational requirements.

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. However,if any details of the wind farm change, particularly the disposition or scale of any turbine(s), it will be necessary to re-evaluate the proposal.

In making this judgement, JRC has used its best endeavours with the available data, although we recognise that there may be effects which are as yet unknown or inadequately predicted. JRC cannot therefore be held liable if subsequently problems arise that we have not predicted.

It should be noted that this clearance pertains only to the date of its issue. As the use of the spectrum is dynamic, the use of the band is changing on an ongoing basis and consequently, you are advised to seek re-coordination prior to submitting a planning application, as this will negate the possibility of an objection being raised at that time as a consequence of any links assigned between your enquiry and the finalisation of your project.

15. MOUNTAINEERING COUNCIL OF SCOTLAND

We have received an invitation from AMEC to respond to their Scoping Consultation in respect of the above proposal. I can confirm that we shall not be responding to this request.

16. NATS

NATS has no comments on the Scoping Report, however we would like the applicant to be made aware of our self-assessment maps and pre-planning assessments*. These tools can be used to ascertain in principle whether any impact on our infrastructure can be expected. Should the applicant use either of these tools, the results could be a useful addition to any EIA or relevant documentation.

We also provide some generic guidance and information that should assist the applicant.

***attached separately.**

17. OFCOM

Ofcom only deal with Wind turbine/farm requests that are sent in by e-mail (see text in red below for what we require). We are very much hands off in this process. Our policy is not to advise or get involved with any planning applications. When the enquirer e-mails in a request, we will reply with results similar to what you see below.

Fixed Link Report for Windfarm Co-ordination Area:

For a response on all future requests please only provide the following to Spectrum.Licensing@ofcom.org.uk:

- NGR,
- Site/town
- Email address for response
- Search radius (optional)

Please do not post to Ofcom:
Planning application information/scoping requests
Large boxes/packets/parcels in the the post

UK NGR NW 1899 75705 at search radius 500

Links	*Company*	*Contact*	*Telephone*	*Email*
0476477/2	Police Service Of Northern Ireland	Radio Engineer	2890901611	ICSTelecommsPlanning@psni.pnn.police.uk
0818707/1	North West Electronics	Scott McClelland	2871351999	scott@nwewn.com
0796374/1	Eircom UK Limited	Mark Nixon	02890001050/23150	mark.nixon@eircomni.co.uk

These details are provided to Ofcom by Fixed Link operators at the time of their licence application and cannot verified by Ofcom for accuracy or currency and Ofcom makes no guarantees for the currency or accuracy of information or that they are error free. As such, Ofcom cannot accept liability for any inaccuracies or omissions in the data provided, or its currency however so arising. The information is provided without any representation or endorsement made and without warranty of any kind, whether express or implied, including but not limited to the implied warranties of satisfactory quality, fitness for a particular purpose, non-infringement, compatibility, security and accuracy.

Our response to your co-ordination request is only in respect of microwave fixed links managed and assigned by Ofcom within the bands and frequency ranges specified in the table below. The analysis identifies all fixed links with either one link leg in the coordination range or those which intercept with the coordination range. The coordination range is a circle centred on your provided national grid reference. We add an additional 500 metres to the coordination range that you request. Therefore if you have specified 500 metres the coordination range will be 1km.

If you should need further information regarding link deployments and their operation then you will need to contact the fixed link operator(s) identified in the table above directly.

Additional coordination is also necessary with the band managers for the water, electricity and utilities industries which operate in the frequency ranges 457-458 MHz paired with 463-464 MHz band. You should contact both the following:

- Atkins Ltd at windfarms@atkinsglobal.com.

- Joint Radio Company (JRC) at windfarms@jrc.co.uk. Additionally you can call Peter Swan directly on 020 7953 7142.

For self coordinated links operating in the 64-66GHz, 71-76GHz and 81-86GHz bands a list of current links can be found at:
http://www.ofcom.org.uk/radiocomms/ifi/licensing/classes/fixed/

Regarding assessment with respect to TV reception, the BBC has an online tool available on their website:
http://www.bbc.co.uk/reception/info/windfarm_tool.shtml . Ofcom do not forward enquiries to the BBC.

Please note other organisations may require coordination with regard to your request. More information regarding windfarm planning is available on the British Wind Energy Association website www.bwea.com .

Table of assessed fixed links bands and frequency ranges

Band (GHz)	Frequency Range (MHz)
1.4/1.5	1350 -1375 1450 -1452 1492 -1530
1.6	1672 – 1690
1.7	1764 – 1900
2	1900 – 2690
4	3600 – 4200
6	5925 – 7110
7.5	7425 – 7900
11	10700 – 11700
13	12750 – 13250
14	14250 – 14620
15	14650 – 15350
18	17300 – 19700
22	22000 – 23600
25	24500 – 26500
28	27500 – 29500
38	37000 – 39500
50	49200 – 50200
55	55780 – 57000

18. RSPB SCOTLAND

RSPB Scotland has some concerns about the potential impact of this development on upland bird populations and upland habitats within these area, in particular as there is already considerable cumulative pressure from opencast coal mining, windfarms and plantation forestry in this part of East Ayrshire. The EIA process must recognise the value of this remaining open ground habitat within this context, give full consideration to cumulative impacts and identify ways in which measures can be used to mitigate impacts, should this development be consented.

Ornithology

There are no designated sites within 2 km of the proposed windfarm and we are not aware of any bird populations of high conservation importance that we think are likely to be directly and significantly affected by a development at this site.

However, the initial results recorded in the scoping report show that the site provides habitat for a range of upland bird species including some Annex 1 species and a thorough assessed is therefore required as part of the EIA process. We note that surveys are already largely completed and appear to be appropriate to assess interest at the site. However, no methods are provided and details such as vantage point location, timing and duration of surveys are not provided. These must all comply with the latest SNH guidance.

The scoping report notes that one black grouse lek of two males has been recorded on the site and that the habitats are used by lekking birds. As only one visit was made to survey for black grouse in May 2012 <u>we request that additional black grouse surveys using standard methods are completed in 2013</u> to inform the assessment and the design of any mitigation work.

Ecology

We welcome the completion of Phase 1 surveys and NVC surveys to inform the assessment. The scoping report identifies that the site includes blanket bog and mire habitats as well as a range of grassland habitats and rush pasture. In addition to their value as habitats that support a range of breeding and wintering birds, we are concerned by the potential impacts on peat habitats. The impacts from both a habitat and carbon storage perspective must be fully assessed in the ES.

Cumulative impacts

Upland habitats within this area have been subject to significant cumulative loss as a result of opencast coal mining, plantation forestry and windfarm development. Given the conservation importance of many of the upland bird species that depend on these habitats and their widespread decline, this cumulative impact is of serious concern. In addition, peatlands have a value as a store of carbon and their conservation is an important tool in helping to mitigate the impacts of climate change.

An assessment of the cumulative impacts of this proposal alongside other developments in the area, will be required as part of the EIA process.

Mitigation

A detailed consideration of the use of mitigation measures will be required as part of the EIA process. This must include full consideration of impacts on bird populations, habitats and the carbon storage value of the site. Where appropriate this may need to include offsite mitigation measures and these should be included within the ES. We would be happy to provide further input to development of such measures, if appropriate.

19. <u>SCOTTISH WATER</u>

No response received.

20. VISIT SCOTLAND

Our response focuses on the crucial importance of tourism to Scotland's local and national economy, and of the natural landscape for visitors.

Background Information

VisitScotland, as Scotland's National Tourism Organisation, has a strategic role to develop Scottish tourism in order to get the maximum economic benefit for the country. It exists to support the development of the tourism industry in Scotland and to market Scotland as a quality destination.

While VisitScotland understands and appreciates the importance of renewable energy, tourism is crucial to Scotland's economic and cultural well-being. It sustains a great diversity of businesses throughout the country. According to a recent independent report by Deloitte, tourism generates £11 billion for the economy and employs over 200,000 - 9% of the Scottish workforce. Tourism provides jobs in the private sector and stimulates the regeneration of urban and rural areas.

One of the Scottish Government and VisitScotland's key ambitions is to grow tourism revenues and make Scotland one of the world's foremost tourist destinations. This ambition is now common currency in both public and private sectors in Scotland, and the expectations of businesses on the ground have been raised as to how they might contribute to and benefit from such growth.

Importance of scenery to tourism

Scenery and the natural environment have become the two most important factors for visitors in recent years when choosing a holiday location.

The importance of this element to tourism in Scotland cannot be underestimated. The character and visual amenity value of Scotland's landscapes is a key driver of our tourism product: a large majority of visitors to Scotland come because of the landscape, scenery and the wider environment, which supports important visitor activities such as walking, cycling wildlife watching and visiting historic sites.

The VisitScotland Visitor Experience Survey (2011) confirms the basis of this argument with its ranking of the key factors influencing visitors when choosing Scotland as a holiday location. In this study, scenery and the natural environment are not only highly rated, but the most important factors for visitors when choosing Scotland as a holiday location, with 58% of visitors citing scenery as their reason for choosing Scotland as a holiday destination. Full details of the Visitor Experience Survey can be found at:

http://www.visitscotland.org/pdf/External%20Visitor%20Survey.pdf

Taking tourism considerations into account

We would suggest that full consideration is also given to the Scottish Government's 2007 research on the impact of wind farms on tourism. In its report, you can find recommendations for planning authorities which could help to minimise any negative effects of wind farms on the tourism industry. The report also notes that planning consideration would be greatly assisted if the developers produced a Tourist Impact Statement as part of the Environmental Impact Analysis, and that planning authorities may wish to consider the following factors to ensure that any adverse local impacts on tourism are minimised:

- The number of tourists travelling past en route elsewhere
- The views from accommodation in the area
- The relative scale of tourism impact i.e. local and national
- The potential positives associated with the development
- The views of tourist organisations, i.e. local tourist businesses or VisitScotland

The full study can be found at
www.scotland.gov.uk/Publications/2008/03/07113507/1

Specific Concerns

Given the proximity of the proposed development to the Dumfries and Galloway area, VisitScotland would recommend that any potential cumulative effect with existing wind farms across the boundary is considered carefully.

The proposed site for the development is close to areas frequented by hill-walkers, and therefore any potential visual impact - from areas such as Cairnsmore of Carsphairn and Windy Standard - should be taken into account. Similarly, the nearby Loch Doon is popular with both visitors and locals alike for walking and fishing, and the area's visual amenity is an important part of this offering.

The new Scottish Dark Sky Observatory on Craigengillan Estate represents a major investment in the area, and the proximity of this development to the estate means that any visual impact on the observatory's activity or remit should be taken into account when making final decisions on turbine height and number.

21. BAA – GLASGOW AIRPORT

The proposed wind farm at Enoch Hill is located outwith our radar consultation zone and will not impact our operation. Glasgow Airport has no comment on this proposal and need not be consulted further.

22. GLASGOW PRESTWICK AIRPORT

I have reviewed the documentation for the proposed erection of 23 wind turbines and associated infrastructure at Enoch hill.

Unfortunately, Glasgow Prestwick Airport would have to lodge a safeguarding objection to this proposal.

Our own initial analysis indicates that these turbines, at 150m to tip, will be visible to our primary surveillance radar and will generate unwanted returns (clutter).

Due to the critical nature of the airspace under which this proposal is located, the clutter that would be generated would be unacceptable to our air traffic control.

23. SCOTWAYS

The National Catalogue of Rights of Way does not show any rights of way affected by the area within the site boundary indicated on the applicant's plan. However, as there is no definitive record of rights of way in Scotland, there may be routes that meet the criteria to be rights of way but have not been recorded because they have not yet come to our notice.

There are rights of way and other recreational routes located in the surrounding area. If required by the applicant to inform their Environmental Impact Assessment, maps of a wider search area are available from the Society upon request.

You will no doubt be aware there may now be general access rights over any property under the terms of the Land Reform (Scotland) Act 2003. It appears that the applicant has already consulted the Core Paths Plans, prepared by local authorities as part of their duties under this Act.

Although I understand that there is very little guidance regarding the siting of turbines in relation to established paths and rights of way, I would like to draw your attention to the following:

Extract from the Welsh Assembly Government's Technical Advice Note onRenewable Energy (TAN 8)Proximity to Highways and Railways
It is advisable to set back all wind turbines a minimum distance, equivalent to the height of the blade tip, from the edge of any public highway (road or other public right of way) or railway line.

Once there are details available of the proposed turbine layout and of any access tracks, we would be grateful if the applicant could forward these to the Society for our further comment.

Neither the Society nor its individual officers carries professional indemnity insurance and in these circumstances any advice that we give, while given in good faith, is always given without recourse.

24. DALMELLINGTON COMMUNITY COUNCIL

Dalmellington Community Council wish to object to the above proposal for the following reasons:-

We are concerned about the effect a wind farm would have on the recently opened Scottish Dark Sky Observatory, a unique asset for Scotland and for south-west Scotland in particular. It is within the Galloway Forest Dark Sky Park, the only 'gold' standard Dark Sky Park in Britain and one of only five of such a standard in the entire world. It has almost unlimited potential for education, research and tourism.

Building on the success of the Galloway Forest Dark Sky Park, the observatory is projected to attract up to 100,000 visitors each year by 2017. It is therefore a very significant tourism asset for East Ayrshire. Visitors will create many employment and business opportunities. Nothing must be done which would in any way limit the potential of this marvellous asset for south-west Scotland.

The proposed wind farm would seriously harm the Observatory because we see from the MoD's consultation response that the wind turbines would, understandably, need to be lit at night, either conventionally or by infrared. While infrared is invisible to the naked eye, it shows up like daylight in the imaging equipment of The Scottish Dark Sky Observatory. Imaging is an extremely important element of the work of the Observatory.

The proposed wind farm would be very close to and would be visible from the Galloway Forest Dark Sky Park, one of East Ayrshire Council's prime tourism assets. As the Main Issues Report just published states, ***"The Dark Sky Project is unique in the UK and presents real opportunities to develop the tourist economy". "Proposals that would have a significant adverse impact on the Dark Sky Park will be resisted***." The Scottish Dark Sky Observatory serves the Dark Sky Park. Adverse impact on the observatory also represents an adverse impact on the Dark Sky Park.

The proposed wind farm is contrary to the following sections of the East Ayrshire Local Plan:-

TOUR1, PROP2, PROP3, ENV3, ENV8, ENV14, ENV16, ENV17, PROP24, CS12 and CS14 (E(1).(2),(3) and (4).

The Ayrshire Joint Structure Plan requires the protection of the landscape character of the area and to give prime consideration to the protection and enhancement of the landscape in Sensitive Landscape Areas. The proposed development is not compatible with this duty (7.3).

The Local Plan reflects the Structure Plan. The proposed wind farm is contrary to the key objectives of the Structure Plan and to specific policies STRAT1, ECON6, ECON7, ECON12, ENV1, ENV2 and ENV7.

Any approval would be contrary to all policies relating to the encouragement of tourism and the care of landscapes and the natural environment in our area.

We hope that our position will be given due weight.

25. GALLOWAY FISHERIES TRUST

The Galloway Fisheries Trust (GFT) is a charitable organisation which was formed in 1988, by a number of neighbouring District Salmon Fishery Boards in Dumfries and Galloway. The aim of the GFT is to undertake research, provide advice and complete practical works to protect and enhance aquatic biodiversity, particularly fish species, living in the freshwaters across Dumfries and Galloway. GFT also works on the Border Esk river and the Water of App catchment in south Ayrshire. At present we employ three full time biologists and every summer employ up to two field surveyors. For further information, our website is www.gallowayfisheriestrust.org.

The GFT has provided input and completed relevant surveys on a number of proposed wind farm developments, including over 40 in Dumfries and Galloway. The GFT is considered expert on the possible impacts of wind farm developments on surrounding fish populations and are regularly approached for advice on these issues. GFT has completed much work on wind farm proposals, including the following: GFT was previously contracted by AMEC Wind Energy to write the fisheries chapter of the Environmental Statement for the proposed Lewis Wind Farm (245 turbines covering 22 different river catchments), completed the migratory fish pre-construction and construction monitoring for Robin Rigg Offshore Wind Farm in the Solway Firth and completed fish and habitat surveys for the Artfield Fell Wind Farm. GFT has also recently undertaken the completion of baseline fisheries surveys for the proposed South Kyle and Mayfield wind farms, Kilgallioch Wind Farm, and the preparation of the Fisheries Monitoring Plan for the Arecleoch Wind Farm.

GFT are also commenting in this instance on behalf of the Kirkcudbrightshire Dee District Salmon Fishery Board (DDSFB), upon whose jurisdictional area this proposed development borders.

Having read through the scoping report I can see that only the southern edge of the proposed red line boundary borders the Kirkcudbrightshire Dee catchment. As such I cannot really comment any further until there is a more developed turbine layout and access track network. If all construction activity remains out with the Kirkcudbrightshire Dee catchment (namely the Prickeny Burn, Strathwiggan Burn and Bitch Burn catchments) then GFT are happy that there is minimal impact on the Kirkcudbrightshire Dee. However if any construction of track upgrading (including watercourse upgrading or installation) falls into the hydrological catchments of the aforementioned burns, then I would like to have opportunity to comment further on the plans for this proposed wind farm. As such I would appreciate if an updated layout could be sent to me when available.

APPLICATION AND ENVIRONMENTAL STATEMENT CHECKLIST

	Enclosed
1. Applicant cover letter and fee cheque	□
2. Copies of ES and associated OS maps	□
3. Copies of Non Technical Summary	□
4. Confidential Bird Annexes	□
5. Draft Adverts	□
6. E Data – CDs, PDFs and SHAPE files	□

Environmental Statement	Enclosed	ES Reference (Section & Page No.)
7. Development Description	□	
8. OS co-ordinates for site and turbine layout	□	
9. Planning Policies, Guidance and Agreements	□	
10. Natural Heritage	□	
11. Economic Benefits	□	
12. Site Selection and Alternatives	□	
13. Construction and Operations (outline methods)	□	
14. Decommissioning	□	
15. Grid Connection details	□	
16. Carbon Assessment (include spreadsheet)	□	
17. Design, Landscape and Visual Amenity	□	
18. Archaeology	□	
19. Ecology, Biodiversity & Nature Conservation	□	
20. Designated Sites	□	
21. Habitat Management	□	
22. Species, Plants and Animals	□	
23. Water Environment - Hydrology	□	
24. Geology - Peat survey data and risk register	□	
25. Forestry	□	
26. Waste	□	
27. Aviation	□	
28. Telecommunications	□	
29. Noise	□	
30. Shadow Flicker	□	
31. Traffic Management	□	
32. Cumulative Impacts	□	

FORMAL SUBMISSION OF APPLICATION AND GATE-CHECKING

Applicants should note that prior to any application being accepted by the Energy Consents and Deployment Unit it will pass through a gate-checking exercise in which the content of the final Environmental Statement will be checked against the above checklist and against the comments made by all consultees in the Scoping Opinion. Applicants should ensure that their final ES pays cognisance to the advice within this Scoping Opinion, and fully addresses all concerns raised.

Applicants should not publicise applications in the local and national press until the application and the corresponding press notices have been checked and confirmed as acceptable by officials.

Enoch Hill Scoping Representations Review

Review only looks at information provided which is different to what we proposed, or may be outside our usual scope of works. If a consultee is not mentioned it is because they either provided no response, or made no comments over what we originally proposed.

BT:

100m minimum clearance from blade tip to Windy Standard Hill radio link

Dalmellington Community Council:

Concerns over Dark Sky Park and Observatory

Also mentions a number of policies relating to tourism, landscape and natural environment

MoD:

low flying area TTA 20

Prestwick Airport:

objection due to clutter on primary surveillance radar

RSPB Scotland:

concerns over cumulative impact from the scheme plus opencast mining, other windfarms and plantation forestry in area.

Additional black grouse surveys needed

SEPA:

standard guidance provided

SNH:

need for peat surveys

We highlight the following landscape and visual matters as requiring particular attention in respect of the LVIA for this proposal.

– the off-site impacts of improving the public roads to allow access i.e. the landscape and visual impacts of any road straightening, widening, levelling, tree and hedgerow removal and the upgrading of junctions;

– access tracks and borrow pits should be included in relevant visualisations less than 10km from site;

– the options for any felling requirements;

– should there be a need to install aviation obstruction lighting to some or all of the wind turbines, its visual impact at night will have to be assessed in the ES.

We also recommend that you take particular cognisance of the following landscape and visual receptors which may be affected by the proposal:

– Local landscape designations: East Ayrshire's Sensitive Landscape Character Areas, and the South Ayrshire Scenic Area;

– The nearby towns of New Cumnock, Cumnock and Dalmellington;

– Landscape Character with reference to the Ayrshire Landscape Character Assessment Land Use Consultants 1998);

– The Southern Upland Way;

– The Merrick Search Area for Wild Land;

– The Galloway Hills Regional Scenic Area to the south in Dumfries and Galloway.

Wirelines from all VPs and montages form those within 15km

Transport Scotland:

Consult them (via Amey) on construction traffic issues

Visit Scotland:

visual impact should be assessed from areas such as Cairnsmore of Carsphairn and Windy Standard and Loch Doon

East Ayrshire Council:

Residential Visual Assessment for every property within 2km

Provide Design Statement (PAN 68)

Ornithology: hen harrier, golden eagle, short eared owl, barn owl, merlin, peregrine falcon, golden plover and black and red throated diver

Noise: take into account ETSU, BS 4142 and WHO guidelines – the Council does not need to agree any background noise monitoring locations

Recommend consultation with: EAC Roads Division, EAC Outdoor Access Officers, Local Community Councils with 10km

Forestry Commission Scotland

Need confirmation of what is proposed with regard to forestry

Historic Scotland

ZTV indicates that 5km study area may need to be widened (e.g. properties such as Craigengillan may need to be considered)

Marine Scotland

Potential need for fisheries baseline work, and ongoing monitoring scheme to be developed (presumably ecology are picking up?)

OFCOM

Provide identification of 3 links and advice to contact Atkins, JRC and websites for other possible links

Galloways Fisheries Trust:

Depends on where construction activity takes place.

Also:

Assoc of Salmon Fisheries Boards, Crown Estate, Mountaineering Council of Scotland, Scottish Water, BAA Glasgow Airport (all no response received)

Sian, Lindsay

From: John.Dougan@forestry.gsi.gov.uk
Sent: 12 December 2012 11:59
To: Econsents_Admin@scotland.gsi.gov.uk
Subject: Proposed Enoch Hill Wind farm - Scoping Consultation

Your Ref: 32965/G030/010

Thank you for your recent scoping request for this project.

I have reviewed the Scoping Report.

I note that the site has modest forestry interests and it is unclear at this stage as to what the developers approach will be with regard to these limited areas. Clearly I would expect that any activities relating to these would be outlined within an appropriate section of the ES and that any works would seek to comply with the Scottish Governments policy on the Control of Woodland Removal.

I hope this clarifies Forestry Commission Scotland view on this proposal at this time.

Regards

John

John Dougan
Conservator
South Scotland Conservancy
55/57 Moffat Road
Dumfries
DG1 1NP

Tel: 01387 272440

Sian, Lindsay

From: mail@gallowayfisheriestrust.org
Sent: 05 February 2013 12:02
To: Joyce.Melrose@scotland.gsi.gov.uk; Lesley.Tosun@scotland.gsi.gov.uk; Econsents_Admin@scotland.gsi.gov.uk
Subject: Enoch Hill scoping report response
Attachments: Dear Scottish Government (Enoch Hill scoping).doc

Dear Lesley/Joyce,

Please find attached our response to the proposed Enoch Hill Wind Farm scoping report.

Best regards,
Jackie

Jackie Graham
Fisheries Biologist
****
Galloway Fisheries Trust
Fisheries House
Station Industrial Estate
Newton Stewart
DG8 6ND
Tel: 01671 403011
Fax: 01671 402248
Web: www.gallowayfisheriestrust.org

A Scottish Registered Charity
No. SC 020751

GALLOWAY FISHERIES TRUST

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E-mail: mail@gallowayfisheriestrust.org

Energy Consents and Deployment Unit
Scottish Government
4th Floor
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

4th February 2013

Dear Sir/Madam,

Scottish Ministers request for a Scoping Opinion for the proposed Enoch Hill Wind Farm

Thank you for providing the Galloway Fisheries Trust with the opportunity to submit a response to the Enoch Hill Wind Farm Scoping Report, submitted by Amec on behalf of E.ON Climate and Renewables.

The Galloway Fisheries Trust (GFT) is a charitable organisation which was formed in 1988, by a number of neighbouring District Salmon Fishery Boards in Dumfries and Galloway. The aim of the GFT is to undertake research, provide advice and complete practical works to protect and enhance aquatic biodiversity, particularly fish species, living in the freshwaters across Dumfries and Galloway. GFT also works on the Border Esk river and the Water of App catchment in south Ayrshire. At present we employ three full time biologists and every summer employ up to two field surveyors. For further information, our website is www.gallowayfisheriestrust.org.

The GFT has provided input and completed relevant surveys on a number of proposed wind farm developments, including over 40 in Dumfries and Galloway. The GFT is considered expert on the possible impacts of wind farm developments on surrounding fish populations and are regularly approached for advice on these issues. GFT has completed much work on wind farm proposals, including the following: GFT was previously contracted by AMEC Wind Energy to write the fisheries chapter of the Environmental Statement for the proposed Lewis Wind Farm (245 turbines covering 22 different river catchments), completed the migratory fish pre-construction and construction monitoring for Robin Rigg Offshore Wind Farm in the Solway Firth and completed fish and habitat surveys for the Artfield Fell Wind Farm. GFT has also recently undertaken the completion of baseline fisheries surveys for the proposed South Kyle and Mayfield wind farms, Kilgallioch Wind Farm, and the preparation of the Fisheries Monitoring Plan for the Arecleoch Wind Farm.

GFT are also commenting in this instance on behalf of the Kirkcudbrightshire Dee District Salmon Fishery Board (DDSFB), upon whose jurisdictional area this proposed development borders.

Having read through the scoping report I can see that only the southern edge of the proposed red line boundary borders the Kirkcudbrightshire Dee catchment. As such I cannot really comment any further until there is a more developed turbine layout and access track network. If all construction activity remains out with the Kirkcudbrightshire Dee catchment (namely the Prickeny Burn, Strathwiggan Burn and Bitch Burn catchments) then GFT are happy that there is minimal impact on the Kirkcudbrightshire Dee. However if any construction of track upgrading (including watercourse upgrading or installation) falls into the hydrological catchments of the aforementioned burns, then I would like to have opportunity to comment further on the plans for this proposed wind farm. As such I would appreciate if an updated layout could be sent to me when available.

If you have any queries or would like clarification on any points raised above, please do not hesitate to contact me.

Yours sincerely

Jackie Graham
Fisheries Biologist

Cc Mrs A. Ingall, Clerk, DDSFB

HISTORIC SCOTLAND
ALBA AOSMHOR

Longmore House
Salisbury Place
Edinburgh
EH9 1SH

Direct Line: 0131 668 8758
Direct Fax: 0131 668 8722
Switchboard: 0131 668 8600
Adele.Shaw@scotland.gsi.gov.uk

Ms Lesley Tosun
Energy Consents Division
Scottish Government
4th Floor, 5 Atlantic Quay
150 Broomielaw
GLASGOW
G2 8LU

By e-mail: econsentsadmin@scotland.gov.uk

Our ref: AMN/16/SP
Our Case ID: 201205548

11 January 2013

Dear Ms Tosun

The Electricity Act 1989
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000
Proposed Enoch Hill wind farm, East Ayrshire

Thank you for your letter seeking Historic Scotland's comments on the accompanying scoping report. This letter contains our comments for our historic environment remit. That is scheduled monuments and their setting, category A listed buildings and their setting and gardens and designed landscapes (GDL) and battlefields on their respective Inventories.

You should seek information and advice from the relevant planning authority archaeologist and conservation advisor for matters including unscheduled archaeology and impacts on B and C listed buildings. The West of Scotland Archaeology Service can be contacted at Charing Cross Complex, India Street, Glasgow G2 4PF.

I understand that the proposed development would consist of up to 23 wind turbines with a maximum height of 150 metres and associated development. I welcome the inclusion of a Zone of Theoretical Visibility (ZTV) diagram with the scoping report and note the content of chapter 7, cultural heritage.

Potential impacts to be considered

Direct Impacts
From the information provided, a proposed development in this location appears unlikely to have a direct impact on any sites within our remit, as identified above. However the development may have an impact on the setting of those sites which lie outside the site boundary.

Indirect impacts
I note the statement in section 7.2 of the scoping report which indicates that significant effects on heritage assets are considered unlikely beyond 5km. I would urge caution with this approach since such effects may be possible beyond this distance. In light of this we offer the following comments.

Craigengillan House (HB18793) & Craigengillan Stable Block (HB18794) and Craigengillan GDL

The structure is an eighteenth- and nineteenth-century house with extensive panoramic views over the surrounding gardens and designed landscape and towards the hills to the east and south. The ZTV indicates that most or all of the proposed turbines would be visible from the vicinity of the house, and in particular from the front elevation looking towards the proposed development.

We recommend that the proposed visualisations should include both a photomontage and a wireframe and should be taken from a viewpoint as close as possible to the house.

We would expect that any assessment would also report how impacts on other nationally important sites in the area have been taken into account. Any assessment should consider the significance of any cumulative impacts.

Our guidance on setting can be found on our website http://www.historic-scotland.gov.uk/setting-2.pdf. Further information on our role in the EIA process can also be found on our website http://www.historic-scotland.gov.uk/index/heritage/policy/environmental-assessment/eiafaqs.htm.

Yours sincerely

Adele Shaw
Heritage Management Team Leader (Environmental Impact Assessment)

Sian, Lindsay

From: windfarms@jrc.co.uk
Sent: 26 November 2012 17:37
To: Econsents_Admin@scotland.gsi.gov.uk
Cc: Thorsdalen, Heidi
Subject: Enoch Hill, Cumnock, East Ayrshire -- Proposed Wind Farm

-------- Original Message --------
Subject: Enoch Hill, Cumnock, East Ayrshire -- Proposed Wind Farm
Date: Mon, 26 Nov 2012 17:22:55 +0000
From: Windfarms Team <windfarms@jrc.co.uk>
Organisation: Joint Radio Company Ltd
To: heidi.thorsdalen@amec.com
CC: tom.gilpin@sppowersystems.com

Dear Sir/Madam,

Site Name: Enoch Hill

Site Centre at NGR: 257360 608630

Development Radius: 3km

Hub Height:90m Rotor Radius:50m

(defaults used if not specified on application)

Cleared with respect to radio link infrastructure operated by:-

Scottish Power and Scotia Gas Networks

JRC analyses proposals for wind farms on behalf of the UK Fuel & Power Industry together with the Water Industry in north-west England.This is to assess their potential to interfere with radio systems operated by utility companies in support of their regulatory operational requirements.

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. However,if any details of the wind farm change, particularly the disposition or scale of any turbine(s), it will be necessary to re-evaluate the proposal.

In making this judgement, JRC has used its best endeavours with the available data, although we recognise that there may be effects which are as yet unknown or inadequately predicted. JRC cannot therefore be held liable if subsequently problems arise that we have not predicted.

It should be noted that this clearance pertains only to the date of its issue. As the use of the spectrum is dynamic, the use of the band is changing on an ongoing basis and consequently, you are advised to seek re-coordination prior to submitting a planning application, as this will negate the possibility of an objection being raised at that time as a consequence of any links assigned between your enquiry and the finalisation of your project.

JRC offers a range of radio planning and analysis services. If you require any assistance, please contact us by phone or email.

Regards

Keith Brogden

Wind Farm Team

The Joint Radio Company Limited
Dean Bradley House,
52 Horseferry Road,
LONDON SW1P 2AF
United Kingdom

DDI: +44 20 7706 5197
TEL: +44 20 7706 5199
Skype: keithb_jrc

<keith.brogden@jrc.co.uk>

MARINE SCOTLAND SCIENCE FRESHWATER LABORATORY

GUIDELINES FOR PROPOSED ON SHORE WIND FARMS and TRANSMISSION LINES UNDER SECTION 36 AND 37 OF THE ELECTRICITY ACT (1989) AND THE ENVIRONMENTAL IMPACT ASSESSMENT (SCOTLAND) REGUALTIONS 2000.

Version: 3
Date: November 2012

Marine Scotland Science Freshwater Laboratory (MSS-FL) provides scientific advice on migratory and freshwater fish in Scotland to allow the Scottish Government to protect and promote the development of sustainable fisheries. We are a Scottish Government internal consultee providing fisheries advice to the Energy Consents and Deployment Unit (ECDU).

Wind farm and transmission line proposals which are considered under Section 36 and 37 of the Electricity Act may adversely affect water quality and fish populations through a number of mechanisms. These include: increased sediment transport and deposition; pollution incidents; altered hydrological pathways; removal or degradation of fish habitat, including spawning areas; reduction in food supply and obstruction to upstream and downstream migration of fish, all of which should be fully addressed in the Environmental Statement (ES).

Atlantic salmon, trout (sea trout and brown trout) and European eel are of particular interest to MSS-FL. Fish and fisheries issues will also be of concern to the local District Salmon Fishery Boards (DSFBs), which have a statutory responsibility to protect salmon populations. As such this organisation should also be contacted at the outset of any development. In addition to the DSFBs, local Fisheries Trusts have information regarding local fish populations. The following web sites have lists of all DSFBs and Fisheries Trusts in Scotland:

http://www.asfb.org.uk
http://www.rafts.org.uk

The developer should also note that fish and fisheries issues are also likely to be of concern to Scottish Natural Heritage (SNH) when species of conservation interest are involved (see http://www.snh.gov.uk/about-scotlands-nature/species/fish/freshwater-fish/) and to the Scottish Environment Protection Agency (SEPA) due to their role in ensuring compliance with the requirements of the Water Framework Directive.

Environmental Statement

In preparation of the ES careful consideration should be given to the following activities which can have an impact on fisheries: turbine foundations, excavation of borrow pits, road construction/upgrading, cable laying, water abstraction and discharge.

Water bodies and stream crossings

It is recommended that construction avoids water bodies wherever possible. If construction is to be carried out near watercourses, a buffer zone of at least 50m should be established. Where river crossings are proposed the Scottish Executive guidance "River Crossings and Migratory Fish" (2000) http://www.scotland.gov.uk/Topics/marine/science/Publications/publicationslatest/rivercrossings should be consulted in addition to SEPA's "Engineering in the Water Environment Good Practice Guide Construction of River Crossings" (http://www.sepa.org.uk/water/water_regulation/guidance/engineering.aspx).

Peat stability

Peat slides can have a direct impact on fisheries and peat disturbance can have indirect effects on water quality, therefore all construction should avoid areas of deep peat, where this is not possible appropriate mitigation measures should be put in place. Natural peat drainage channels should be preserved throughout the development; excavated material should not be stock piled in areas of unstable peat; concentrated water flows onto peat slopes should also be avoided.

Abstraction and discharge of water

SEPA, through The Water Framework Directive, regulates abstraction from and discharge of polluting matter to all wetlands, surface waters and groundwaters. (SEPA-The Water Environmental (Controlled Activities) (Scotland) Regulations 2005 A Practical Guide http://www.sepa.org.uk/water/water_regulation.aspx*)*. Where water abstraction is proposed, the developer should ensure that they comply with The Salmon (Fish Passes and Screens) (Scotland) Regulation 1994 which states that screens, at the point of water abstraction, should serve to prevent the entry and injury of salmon. http://www.legislation.gov.uk/uksi/1994/2524/regulation/6/made. Surface water run-off must be discharged in such a way to minimise the risk of pollution of the water environment.

Pollution

The Water Framework Directive requires any activity that is liable to cause water pollution to be authorised by SEPA. This includes point source pollution (eg sewage and trade effluent) and diffuse pollution (fuel, concrete spills, sediment discharge) all of which can be detrimental to the survival of fish see SEPA Pollution Prevention Guidelines http://www.netregs.gov.uk/netregs/links/107968.aspx

Acidification

Particular attention should be paid to acidification issues if they are known to be a problem in the area. Anthropogenic acidification of freshwaters is largely caused by the input of sulphur and nitrogen compounds, derived from the combustion of fossil fuels, exceeding the buffering capacity of the soils and underlying rocks through which the streams flow. Peat deposits and marine derived sulphates can also contribute to acidity. Salmonid fish are particularly sensitive to acid water, particularly due to the increased mobility of labile aluminium in acid conditions which is toxic to aquatic organisms.

Forestry

The developer should be aware of the potential impacts of tree felling on the aquatic environment including nutrient release, increased acidification risk, loss of habitat, impacts on hydrology, increased fine sediment transport and deposition, all of which can have a detrimental impact on fish populations and should therefore be addressed in the ES. "The Forest and Water Guidelines" should be consulted for further information http://www.forestry.gov.uk/forestry/INFD-88VGX9.

Monitoring Programmes

In order that MSS- FL can assess the potential impact of developments the developer should provide information on all species and abundance of fish within the development area. MSS- FL may not have local knowledge of the site and consequently the onus is on the developer to provide adequate information on which to base an assessment of risk.

Where local salmonid and eel populations are present and the development has the potential to have an impact on the freshwater environment MSS FL requests that a baseline study be carried out at least one year prior to construction to assess all species and abundance of fish and water quality in standing and running waters likely to be affected by the proposed development. Particular attention should be paid to species of high economic and/or conservation value as outlined below:

Atlantic salmon, sea lamprey, river lamprey and brook lamprey are listed under the European Habitat Directive. Atlantic salmon, trout (ancestral forms and sea trout), European eel, river lamprey, sea lamprey and Arctic charr are UK Biodiversity Action Plan (UKBAP) species-listed as priorities for conservation. European eel is also protected by EU regulation (EC No 1100/2007). The following links provide further information regarding the protection of fish species and water bodies in Scotland.

http://www.jncc.gov.uk/ProtectedSites/SACselection/SAC_species.asp
http://www.jncc.gov.uk/ProtectedSites/SACselection/SAC_list.asp?Country=S
http://www.jncc.gov.uk/page-5164
http://www.nasco.int/pdf/far_habitat/HabitatFAR_Scotland.pdf

Although MSS-FL will be primarily concerned with species of fisheries interest (e.g. salmon, trout and eels), other consultees will have an interest in other species.

Adherence to best available techniques is expected throughout the development. Site specific mitigation measures and/or enhancement programmes to protect and/or compensate freshwater habitats should always be included in the ES.

Monitoring throughout the development phase should be carried out to identify impacts and allow remediation at the earliest opportunity for sites where there are thought to be risks to fish populations. The experimental design of the monitoring programme should focus on the risks presented by the development and be clearly justified. Methods of analysis, reporting mechanisms and links to site management should also be clearly identified. The following publication may be helpful in considering fish monitoring programmes;
http://www.scotland.gov.uk/Uploads/Documents/SFRR_67.pdf .

Developers should ensure that all fish work complies with the Animal (Scientific Procedures) Act (1986) and Animal Health and Welfare (Scotland) Act (2006) where required.

The combined effect on water quality and fisheries from all existing and proposed construction developments in the area should be addressed in the ES in addition to angling, as a recreation interest, and the impact that the proposed development may have on it.

Where the development can be clearly demonstrated to be of low risk to fish populations the developer should still draw up **site specific** mitigation plans to minimise any impact to fish and their inhabiting waters. If the developer considers that there will be no significant impact from the development and as such no monitoring will be required this should be clearly presented in the ES with supporting data and information thereby enabling MSS-FL to finalise the decision on monitoring requirements. If this information is not provided, MSS-FL will have no information on which to base an assessment of risk and as such will recommend that the developer carry out a full monitoring survey of fish and water chemistry in addition to appropriate mitigation plans. Due to limited staff resources MSS-FL normally do not attend meetings held in relation to proposed developments.

Summary

- MSS-FL is an internal Scottish Government consultee providing scientific advice on fish and fisheries in Scotland to protect fish populations and promote sustainable fisheries.
- Other organisations including DSFBs, Fishery Trusts, SNH and SEPA also have an interest in fish and fisheries issues.
- Energy developments can impact fish populations through a wide range of mechanisms that need to be considered in the ES.
- It is the responsibility of the developer to provide data on the distribution, species and abundance of fish within and around the development site to allow MSS-FL to assess levels of risk from the proposed development.
- It is the responsibility of the developer to provide a clear and honest assessment of the risks posed to fish populations as a result of the proposed development.
- If there is any reasonable doubt as to the potential impacts a monitoring plan should be put in place to assess impacts and allow remedial action at the earliest opportunity.
- Monitoring plans should be clearly defined and justified and must tie into site management.

<u>Useful links</u>

Good practice during windfarm construction:
http://www.snh.org.uk/pdfs/strategy/renewables/Good%20practice%20during%20windfarm%20construction.pdf

SEPA water publications:
http://www.sepa.org.uk/water/water_publications.aspx

Peat Landslide Hazard and Rish Assessments: Best Practice Guide for proposed Electricity Generation Developments.
http://www.scotland.gov.uk/Publications/2006/12/21162303/0

SFCC electrofishing protocols:
http://www.scotland.gov.uk/Topics/marine/science/sfcc/Protocols/ElectrofishingSurveys

Construction of floating roads: http://www.roadex.org/uploads/publications/Seminars/Scotland/FCE:SNH%20Floating%20Roads%20on%20Peat%20report.pdf

MINISTRY OF DEFENCE

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Ms Joyce Melrose
Scottish Government
Edinburgh
Scotland

26th November 2012

Your Reference: N/A

Dear Ms Melrose

Site Name: Enoch Hill Windfarm

Site Address: Between New Cumnock and Dalmellington, East Ayrshire

Planning Application Number: N/A

Thank you for approaching the Ministry of Defence (MOD) for a scoping opinion on the above proposal.

The principal safeguarding concerns of the MOD with respect to the development of wind turbines relate to their potential to create a physical obstruction to air traffic movements, and cause interference to air traffic control and air defence radar installations.

Air Traffic Control (ATC) Radar & Range Control Radar

Where wind turbines are visible to ATC radars they have been shown to have detrimental effects on radar performance. These effects include the desensitisation of radar in the vicinity of the turbines, and the creation of "false" aircraft returns which air traffic controllers must treat as real. The desensitisation of radar could result in aircraft not being detected by the radar and therefore not presented to air traffic controllers. Controllers use the radar to separate and sequence both military and civilian aircraft, and in busy uncontrolled airspace radar is the only sure way to do this safely. Maintaining situational awareness of all aircraft movements within the airspace is crucial to achieving a safe and efficient air traffic service, and the integrity of radar data is central to this process. The creation of "false" aircraft displayed on the radar leads to increased workload for both controllers and aircrews, and may have a significant operational impact. Furthermore, real aircraft returns can be obscured by the turbine's radar returns, making the tracking of conflicting unknown aircraft (the controllers' own traffic) much more difficult.

Precision Approach Radar (PAR)

The MOD's PAR is a very accurate radar used by air traffic controllers to guide aircraft down in inclement weather (although the procedure is practised in all weather conditions). The accuracy and integrity of this radar is critical as air traffic controllers must control the aircraft in descent and very close to the ground. Wind turbines constructed in line of sight of the PAR can cause localised "track seduction", leading to aircraft disappearing from the radar. A further possible effect is the overload of the radar's processor, in that wind turbines generate "false plots" which use up processing ability.

Once its threshold is reached the radar may be unable to detect smaller targets, which are likely to be aircraft in head-on profile. Technical aspects of the PAR are covered by international arms traffic regulations, and therefore cannot be released by the MOD, but on these grounds the MOD will object to any wind turbine constructed within the PAR's coverage.

Air Defence (AD) radar

Trials carried out in 2005 concluded that wind turbines can have detrimental effects on the operation of radar which include the desensitisation of radar in the vicinity of the turbines, and the creation of "false" aircraft returns. The probability of the radar detecting aircraft flying over or in the vicinity of the turbines would be reduced, and the RAF would be unable to provide a full air surveillance service in the area of the proposed wind farm.

Secondary Surveillance Radar (SSR)

SSR relies on co-operative transmission from aircraft carrying equipment known as transponders. For this reason confusion between returns from aircraft and from other objects is highly unlikely and many of the effects caused to normal radars will not occur. However reflection of transmissions could be caused by wind turbines particularly if they are in close proximity to an SSR site. In this eventuality misidentification or mislocation of aircraft could occur. This could have potential flight safety implications.

Meteorological Office radar

Wind turbines can interfere with Met Office Radars in similar ways to Air Traffic Control Radars as detailed above and impair their ability to detect weather phenomena.

Low Flying

The whole of the UK may be used for military low flying operations. The proliferation of obstacles is not only a safety hazard but also severely impacts on its utilisation for essential low flying training.

The MOD will often request that turbines be fitted with aviation warning lights.

Area Air Traffic Control (ATC) radar

There are 12 National Air Traffic Services (NATS) radars under contract to provide the MOD with airspace monitoring services throughout the UK.

Physical Safeguarding

Turbines constructed within statutory safeguarding zones have the potential to cause physical obstructions which could interfere with the safe operation of defence assets.

Eskdalemuir Seismological Recording Station

This might be applicable to development in the North of England or the South of Scotland.

Following research jointly commissioned by DTI (now the Department of Business, Innovation and Skills), BWEA (now RenewableUK) and MOD, it has been confirmed that wind turbines of current design generate seismic noise which can interfere with the operational functionality of the array. In order to ensure the UK complies with the Comprehensive Nuclear-Test-Ban Treaty, a noise budget based on the findings of the research has been allocated to a Safeguarding Zone around the array. At present the reserved noise budget has been reached, so the MOD must object to further applications if they are not accompanied by a MOD approved mitigation scheme.

The allocated noise can alter on a regular basis as new schemes reach planning and others do not obtain consent. We recommend you contact us regularly to ascertain current allocation levels. Any schemes to which the MOD does not object, which subsequently do not gain planning consent, will have their noise quota added back to the available noise budget.

Calculations are based on current turbine designs. If future technological solutions can be applied to turbines and be scientifically proven to reduce or remove the noise generated, the MOD will reassess its policies.

Threat Radar

This might be applicable to development in the North of England or the South of Scotland.

RAF Spadeadam, in north Cumbria, is home to an Electronic Warfare Tactical Range which provides vital training, using threat radars and targets, to prepare aircrews for operations which they are likely to face in contemporary warfare. This type of military flight training activity is conducted in air space extending across northern England and Southern Scotland interacting with Threat Radar sites which are scattered across the same region. In 2010 MOD conducted a trial that concluded that threat radar systems were subject to degradation from wind turbines.

Long Range Very Low Frequency (VLF) Transmitters

This might be applicable for developments in the vicinity of Carlisle and Penrith.

VLF radio is a very specialised area of electronics, and the effects of wind turbines have been subject to only limited scientific study. However, there are a number of known means by which wind turbines can adversely affect the characteristics of VLF transmission. It is probable that turbine constructed in the vicinity of an VLF transmitter would have a discernable adverse impact on transmission through one of these means. The MOD is currently undertaking various studies to further understand the effects of wind turbines on VLF transmission.

Planning guidance establishes that wind energy developers should assess the affects of their proposed development upon aviation and defence interests and that they should engage in dialogue with the MOD at an early stage to identify concerns and potential mitigation to support of their application.

Accordingly the applicant should take account of MOD aviation and radar operations in completing the EIA particularly in identifying a suitable site for development and the dimensions of the turbines that are to be installed.

We therefore ask that the MOD be consulted about all wind turbine developments with a height of 11m or more or a rotor diameter of 2m or more by the developer at the earliest possible time in the development process in accordance with "Wind Energy & Aviation Interests Interim Guidelines". http://www.bwea.com/pdf/Wind-Energy-and-aviation-interim-guidelines.pdf . This is so that the development can be fully assessed and any MOD concerns be made known to the developer at an early stage of the development process.

We also ask that MOD be consulted by Consenting Authorities regarding all applications for wind turbine developments with a height of 11m or more or a rotor diameter of 2m or more so we can ensure that our concerns are taken into account in the decision making process.

In order to assess a proposed development, we need the following information:

1. Accurate grid coordinates for each turbine to the nearest metre,
2. The height of the turbines to blade tip, hub height and rotor diameter,
3. The number of rotor blades,
4. The wind farm generation capacity,
5. The number of turbines

MOD Safeguarding wishes to be consulted and notified about the progress of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

I hope this adequately explains our position on the matter. If you require further information or would like to discuss this matter further please do not hesitate to contact me.

Further information about the effects of wind turbines on MOD interests can be obtained from the following websites:

MOD: http://www.mod.uk/DefenceInternet/MicroSite/DIO/WhatWeDo/Operations/ModSafeguarding.htm

Yours sincerely

Dominic Martin

Defence Infrastructure Organisation

SAFEGUARDING SOLUTIONS TO DEFENCE NEEDS

Defence Infrastructure Organisation

Dominic Martin
Safeguarding Assistant
Ministry of Defence
Safeguarding – Wind Energy
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West Midlands B75 7RL
United Kingdom

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Facsimile [MOD]: +44 (0)121 311 2218
E-mail: DIOOpsNorth-LMS7a2b1@mod.uk

Your Reference: N/A

Our Reference: DIO/C/SUT/43/10/1/10138

Ms Joyce Melrose
Energy Consents & Deployment Unit
Scottish Government
Edinburgh
Scotland

18th December 2012

Dear Ms Melrose

Please quote in any correspondence: 10138

Site Name: Enohc Hill Windfarm

Planning Application Number: N/A

Site Address: Between New Cumnock & Dalmellington, East Ayrshire

Thank you for consulting the Ministry of Defence (MOD) about the above planning application in your communication dated 23rd November 2012

I am writing to inform you that the MOD objects to the proposal. Our assessment has been carried out on the basis that there will be 23 turbines, 150 metres in height from ground level to blade tip and located at the grid references below as stated in the planning application or provided by the developer:

Turbine	100km Square letter	Easting	Northing
1	NS	56239	08225
2	NS	55698	08069
3	NS	55320	08350
4	NS	55967	07759
5	NS	56867	07676
6	NS	56731	08042
7	NS	56359	07678
8	NS	55940	07313
9	NS	56695	07205
10	NS	56265	06852
11	NS	56654	06762
12	NS	56231	06407
13	NS	57145	07083
14	NS	57220	07535

15	NS	57572	07392
16	NS	57981	07492
17	NS	57522	07986
18	NS	57969	08287
19	NS	57835	07848
20	NS	58344	08177
21	NS	58388	07763
22	NS	58800	08449
23	NS	55542	08817

Low Flying

The turbines will be within low flying area TTA 20 and will unacceptably affect military activities. Low flying areas are tactical training areas made available for military operational low flying training, within which military fast jets and Hercules aircraft may operate to as little as 30 metres separation from the ground and other obstacles. The proliferation of obstacles within this area is not only a safety hazard but also severely impacts on its utilisation for essential low flying training.

If the developer is able to overcome the issues stated above, the MOD will request that all turbines be fitted with 25 candela omni-directional red lighting or infrared lighting with an optimised flash pattern of 60 flashes per minute of 200ms to 500ms duration at the highest practicable point.

MOD Safeguarding wishes to be consulted and notified about the progress of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

I hope this adequately explains our position on the matter. Further information about the effects of wind turbines on MOD interests can be obtained from the following website:

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Yours sincerely

Dominic Martin

Dominic Martin
Safeguarding Assistant – Wind Energy
Defence Infrastructure Organisation

SAFEGUARDING SOLUTIONS TO DEFENCE NEEDS

MINISTRY OF DEFENCE

Defence Infrastructure Organisation

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E-mail: DIO-Safeguarding-Wind@mod.uk

30th November 2012

Heidi Thorsdalen
AMEC
Northumbria House
Regent Centre
Gosforth
Newcastle upon Tyne
NE3 3PX

Your Reference: 32965/G030/010

Dear Ms Thorsdalen

Site Name: Enoch Hill Wind Farm

Site Address: SW of New Cumnock & NE of Dalmellington

Planning Application No: N/A

Thank you for approaching the Ministry of Defence (MOD) for a scoping opinion on the above proposal.

The principal safeguarding concerns of the MOD with respect to the development of wind turbines relate to their potential to create a physical obstruction to air traffic movements, and cause interference to air traffic control and air defence radar installations.

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MOD Safeguarding wishes to be consulted and notified about the progress of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

I hope this adequately explains our position on the matter. If you require further information or would like to discuss this matter further please do not hesitate to contact me.

Further information about the effects of wind turbines on MOD interests can be obtained from the following websites:

MOD: http://www.mod.uk/DefenceInternet/MicroSite/DIO/WhatWeDo/Operations/ModSafeguarding.htm

Yours sincerely

Debi Parker
Safeguarding Assistant – Wind Energy
Defence Infrastructure Organisation

SAFEGUARDING SOLUTIONS TO DEFENCE NEEDS

Information pack for wind turbine applicants

Frequently Asked Questions

1. Who are NATS?

NATS is the company that provides air traffic control (ATC) services in the UK. Our service is provided at 15 of the UK biggest airports and “en-route” i.e. in the airspace above the UK and over the north-eastern part of the Atlantic Ocean.

2. What is safeguarding?

In order to provide safe air traffic services, both NATS and aircraft rely on a number of ground based radars, navigation aids and communication stations. Radars are used by NATS and other agencies to monitor aircraft traffic, navigation aids are used by aircraft to navigate along their route and to land at airports. Communication stations are used by both ground based agencies (control towers and ATC centres) and aircraft to communicate with each other.

Safety is NATS' first and foremost priority and in order to provide a safe service and to meet the terms of the licence granted by the Civil Aviation Authority, this equipment needs to be continuously in operation and protected by any form of interference or disturbance.

3. What are the problems?

Common examples of interference that affect our infrastructure are:

- effects of wind turbines upon radar (radar shadows, false radar returns)
- degradation of radio and radar signals due to fixed obstructions or turbines

4. How is safeguarding done and how are problems prevented?

Safeguarding is ensured by legislation and processes designed to protect NATS’s infrastructure. For construction and fixed obstructions, all NATS assets are notified via maps lodged with Planning Authorities. The Planning authorities will consult NATS when a planning application that conflicts with safeguarding is received.

For wind turbines, the process is different because of the major impact a wind turbine can have on the NATS infrastructure. As such consultation with NATS is compulsory and planning authorities will consult NATS for all wind turbine planning applications over the whole of the UK territory.

NATS is a statutory consultee for all wind turbine planning applications in the UK.

Civil Aviation Publications CAP764 and CAP670 contain relevant information and are available on the Civil Aviation Authority’s website (www.caa.co.uk).

5. How can I find out if a wind turbine application is likely to be granted or objected to?

With respect to wind turbines, the safeguarded area encompasses the whole of the UK and consultation with NATS is mandatory. Planning authorities will consult NATS during the planning process, but applicants for wind turbines may wish to ascertain whether their application is likely to be objected to or not by NATS in advance of submitting for planning

In this case the options are to carry out a self-assessment (free of charge) or undertake a pre-planning assessment (chargeable).

6. What are the NATS self-assessment and pre-planning assessment?

The **self-assessment** is a process whereby prospective wind turbine planning applicants can get a preliminary idea of whether their proposed application is likely to be granted or not, or whether it is advisable to request a pre-planning assessment. The service is free and relies on theoretical radar coverage maps for different obstacle heights. These are available on our website.

The **pre-planning assessment** is a chargeable service that NATS offers to prospective wind turbine applicants. This provides an opportunity for developers to gain a further insight into whether a proposed installation is likely to be objected to or not by NATS prior to submitting a planning application. In order to reach a decision, NATS carries out a range of studies and investigations to determine whether a wind turbine is likely to cause an impact on air traffic safety or not.

Where the turbine is anticipated to cause an issue, further work may be possible to determine whether any remedial action can be taken in order to grant permission subject to certain conditions being met.

7. Why has my application been turned down when there are other turbines nearby?

In order to consent or object to planned development, NATS has to consider a number of factors, these include but are not limited to:

- geographical position and line of sight shielding between obstruction and NATS equipment (this may vary over a few metres)
- specific equipment at the NATS site
- terrain features
- airspace class and use (distance and density of air traffic)
- signal levels and characteristics
- turbine characteristics

An additional important factor is the cumulative impact, in some cases a number of turbines are deemed to be acceptable but no more. Unfortunately in some cases this will mean that although a number of turbines are located in a specific area, a new application is turned down. This is because the effect is deemed to be tolerable, however an additional turbine would cause further degradation which would not be acceptable.

Another additional factor is the distance between turbines and the way radar processing treats radar returns from turbines that are lined up. In some cases these can be interpreted as a valid aircraft track (i.e. 2 turbines may be tolerable but a third one may cause 3 reflections to appear as an aircraft moving along its route and to bypass radar filtering).

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🖷: 01489 616274
✉: natssafeguarding@nats.co.uk
🌍: http://www.nats.co.uk

Instructions for the use of NATS self assessment maps.

To ascertain whether your development is likely to have an impact or not, you will need to use our self-assessment maps. You will also require a GIS/mapping package to plot your turbines (ARCGIS etc or GOOGLE "Forestry GIS" (fGIS™) which is freeware). All turbine heights are tip heights.

- You should be able to visualise your turbine(s) position(s) on the GIS map. For most packages you can create a text file with the NGR Eastings and Northings, to plot the turbine position.
- Download our self assessment maps free from our website.
- Add the relevant map for the turbine height to the GIS map, i.e. the height equal to the turbine height, or just below it if the exact height is not listed. e.g. 60m map for a 60m turbine, 40m map for a 50m turbine, 80m map for a 90m turbine etc.
- You should now be able to see both the radar coverage map AND the turbine position.
- You can now determine whether your turbine is visible to radar. Ideally a radar will not cover the turbine's position at all, or coverage will be at heights greater than the turbine height.

  For example, if you have a 60m turbine, ideally the radar will not cover that area at 60m.

  i.e. although there may be cover over that position at 100m and 80m, when selecting the 60m map, the cover is reduced leaving the turbine outside radar cover. Conversely if you have a 100m turbine, and the radar can see down to 100m over the turbine location, that turbine is visible to radar.

- By using the different maps, you should then be able to look at radar cover in different areas at different heights. This can be a useful tool for assessing a specific area and in some cases can be used to determine which positions are more likely to be an issue than others. It can also be used to determine a maximum acceptable turbine height.

  e.g. a potential location is visible to radar at 120m and 100m but not 80m hence a 120m and a 100m turbine would be visible to radar (possible objection) whereas an 80m turbine would be acceptable.

Once you've assessed your turbine location against primary radar cover, the same must be done for secondary radar (SSR), navigation aids and radio stations by downloading and adding the SSR, AGA and NAV maps. These have 15km/15nm circles representing safeguarded areas for these assets. When you have carried out your self-assessment, you will have determined whether your proposed turbine(s) falls in an SSR/NAV/AGA safeguarded or radar cover area:

If the turbine is outside all these areas, it is unlikely that NATS would object as there should be no technical impact.

If your proposed development is within a safeguarded or radar cover area, while this does not automatically mean an objection, it is recommended that you take out our pre-planning assessment whereby NATS undertakes further studies and provides you with a formal statement on the turbine's impact.

More generic information can be found on our website together with the details of our pre-planning assessment.

Sian, Lindsay

Subject: FW: Proposed Enoch Hill Wind farm

From: Simon.Mitchell@ofcom.org.uk [mailto:Simon.Mitchell@ofcom.org.uk]
Sent: 26 November 2012 16:38
To: Econsents_Admin@scotland.gsi.gov.uk
Subject: Proposed Enoch Hill Wind farm

Dear Sir/Madam,

Ofcom only deal with Wind turbine/farm requests that are sent in by e-mail (see text in red below for what we require). We are very much hands off in this process. Our policy is not to advise or get involved with any planning applications. When the enquirer e-mails in a request, we will reply with results similar to what you see below.

FIXED LINK REPORT FOR WINDFARM CO-ORDINATION AREA:

Dear Sir/Madame

For a response on all future requests please only provide the following to Spectrum.Licensing@ofcom.org.uk:

- **NGR,**
- **Site/town**
- **Email address for response**
- **Search radius (optional)**

Please do not post to Ofcom:

- **Plannning application information/scoping requests**
- **Large boxes/packets/parcels in the post**

UK NGR NW 1899 75705 at search radius 500

Links	Company	Contact	Telephone	
0476477/2	Police Service Of Northern Ireland	Radio Engineer	2890901611	ICS
0818707/1	North West Electronics	Scott McClelland	2871351999	
0796374/1	Eircom UK Limited	Mark Nixon	02890001050/23150	

These details are provided to Ofcom by Fixed Link operators at the time of their licence application and cannot verified by Ofcom for accuracy or currency and Ofcom makes no guarantees for the currency or accuracy of information or that they are error free. As such, Ofcom cannot accept liability for any inaccuracies or omissions in the data provided, or its currency however so arising. The information is provided without any representation or endorsement made and without warranty of any kind, whether express or implied, including but not limited to the implied warranties of satisfactory quality, fitness for a particular purpose, non-infringement, compatibility, security and accuracy.

Our response to your co-ordination request is only in respect of microwave fixed links managed and assigned by Ofcom within the bands and frequency ranges specified in the table below. The analysis identifies all fixed links with either one link leg in the coordination range or those which intercept with the coordination range. The coordination range is a circle centred on your

If you should need further information regarding link deployments and their operation then you will need to contact the fixed link operator(s) identified in the table above directly.

Additional coordination is also necessary with the band managers for the water, electricity and utilities industries which operate in the frequency ranges 457-458 MHz paired with 463-464 MHz band. You should contact both the following:

Atkins Ltd at .

- Joint Radio Company (JRC) at . Additionally you can call Peter Swan directly on 020 7953 7142.

For self coordinated links operating in the 64-66GHz, 71-76GHz and 81-86GHz bands a list of current links can be found at:

Regarding assessment with respect to TV reception, the BBC has an online tool available on their website: . Ofcom do not forward enquiries to the BBC.

Please note other organisations may require coordination with regard to your request. More information regarding windfarm planning is available on the British Wind Energy Association website .

Table of assessed fixed links bands and frequency ranges

Band (GHz)	Frequency Range (MHz)
1.4/1.5	1350 -1375 1450 -1452 1492 -1530
1.6	1672 – 1690
1.7	1764 – 1900
2	1900 – 2690
4	3600 – 4200
6	5925 – 7110
7.5	7425 – 7900
11	10700 – 11700
13	12750 – 13250
14	14250 – 14620
15	14650 – 15350
18	17300 – 19700
22	22000 – 23600
25	24500 – 26500
28	27500 – 29500
38	37000 – 39500
50	49200 – 50200
55	55780 – 57000

Regards,

Simon Mitchell
Ofcom Licensing Centre
Riverside House
London

Aviation House
Prestwick
KA9 2PL

Date: 28th November 2012

Dear Joyce,

SCOPING OPINION REQUEST FOR THE PROPOSED ENOCH HILL WIND FARM BETWEEN NEW CUMNOCK AND DALMELLINGTON IN EAST AYRSHIRE

I have reviewed the documentation for the proposed erection of 23 wind turbines and associated infrastructure at Enoch hill.

Unfortunately, Glasgow Prestwick Airport would have to lodge a safeguarding objection to this proposal.

Our own initial analysis indicates that these turbines, at 150m to tip, will be visible to our primary surveillance radar and will generate unwanted returns (clutter).

Due to the critical nature of the airspace under which this proposal is located, the clutter that would be generated would be unacceptable to our air traffic control.

Kind Regards,

Jeanette Graham

nature's voice

RSPB SCOTLAND
South and West Scotland Regional Office
10 Park Quadrant
Glasgow G3 6BS
Tel: 0141 331 0993
www.rspb.org.uk/scotland

Joyce Melrose
Energy Consents and Deployment Unit
Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

18 December 2012

Dear Ms Melrose

SCOPING OPINION REQUEST FOR THE PROPOSED ENOCH HILL WIND FARM BETWEEN NEW CUMNOCK AND DALMELLINGTON IN EAST AYRSHIRE

Thank you for consulting RSPB Scotland on the scoping report for the proposed Enoch Hill windfarm. This development is proposed to consist of 23 turbines with a generating capacity of 69 MW on an open upland site, to the south west of New Cumnock.

RSPB Scotland has some concerns about the potential impact of this development on upland bird populations and upland habitats within these area, in particular as there is already considerable cumulative pressure from opencast coal mining, windfarms and plantation forestry in this part of East Ayrshire. The EIA process must recognise the value of this remaining open ground habitat within this context, give full consideration to cumulative impacts and identify ways in which measures can be used to mitigate impacts, should this development be consented.

Ornithology
There are no designated sites within 2 km of the proposed windfarm and we are not aware of any bird populations of high conservation importance that we think are likely to be directly and significantly affected by a development at this site.

However, the initial results recorded in the scoping report show that the site provides habitat for a range of upland bird species including some Annex 1 species and a thorough assessed is therefore required as part of the EIA process. We note that surveys are already largely completed and appear to be appropriate to assess interest at the site. However, no methods are provided and details such as vantage point location, timing and duration of surveys are not provided. These must all comply with the latest SNH guidance.

The scoping report notes that one black grouse lek of two males has been recorded on the site and that the habitats are used by lekking birds. As only one visit was made to survey for black grouse in May 2012 we request that additional black grouse surveys using standard methods are completed in 2013 to inform the assessment and the design of any mitigation work.

Ecology
We welcome the completion of Phase 1 surveys and NVC surveys to inform the assessment. The scoping report identifies that the site includes blanket bog and mire habitats as well as a range of grassland habitats and rush pasture. In addition to their value as habitats that support a range of breeding and wintering birds, we are concerned by the potential impacts on peat habitats. The impacts from both a habitat and carbon storage perspective must be fully assessed in the ES.

Cumulative impacts
Upland habitats within this area have been subject to significant cumulative loss as a result of opencast coal mining, plantation forestry and windfarm development. Given the conservation importance of many of the upland bird species that depend on these habitats and their widespread decline, this cumulative impact is of serious concern. In addition, peatlands have a value as a store of carbon and their conservation is an important tool in helping to mitigate the impacts of climate change.

An assessment of the cumulative impacts of this proposal alongside other developments in the area, will be required as part of the EIA process.

Mitigation
A detailed consideration of the use of mitigation measures will be required as part of the EIA process. This must include full consideration of impacts on bird populations, habitats and the carbon storage value of the site. Where appropriate this may need to include offsite mitigation measures and these should be included within the ES. We would be happy to provide further input to development of such measures, if appropriate.

I hope these comments prove useful but please do not hesitate to contact me with any queries on our response.

Yours sincerely

Zoë Clelland
Senior Conservation Officer

Cc Robin Ghosh, East Ayrshire Council
Dean Clapworthy, Dumfries and Galloway Council

ScotWays® **The Scottish Rights of Way and Access Society**

RECEIVED
14 JAN 2013

Heidi Thorsdalen
Associate Director
AMEC Environment & Infrastructure UK Limited
6/7 Newton Terrace
Glasgow
G3 7PJ

10/01/2013

Dear Ms Thorsdalen,

Re: 32965/G030/010
Proposed Enoch Hill Wind Farm - Scoping Consultation

Thank you for your letter of 22nd November 2012 regarding a Scoping Opinion for the above proposed wind energy development. We have today sent our comments to the Energy Consents and Deployment Unit; enclosed is a copy of our response.

Neither the Society nor its individual officers carries professional indemnity insurance and in these circumstances any advice that we give, while given in good faith, is always given without recourse.

We ask for a voluntary contribution of £75 towards our search expenses, for which I enclose an invoice. As a charity we are reliant on the search income in order to continue to provide this consultation service. Please quote our invoice number when making payment.

You may be interested in our book: *Access Rights and Rights of Way - A Guide to the Law in Scotland* by Prof R Paisley. Copies can be purchased from us for £6.50*, which includes P&P.

I hope the information enclosed is useful to you. If you require further details, or if you have any other queries, please do not hesitate to contact me.

Yours sincerely,

Eleisha Fahy
Access Enquiries Officer

* For a limited period we are offering our book, *Access Rights and Rights of Way - A Guide to the Law in Scotland*, at a discounted rate of £5 (rrp £10) + £1.50 p&p.

The Scottish Rights of Way and Access Society 24 Annandale Street Edinburgh EH7 4AN (Registered Office)
Tel/Fax 0131 558 1222 e-mail: info@scotways.com web: www.scotways.com

ScotWays®
The Scottish Rights of Way and Access Society

econsentsadmin@scotland.gsi.gov.uk

Joyce Melrose
Scottish Government
Energy Consents and Deployment Unit

COPY

10/01/2013

Dear Ms Melrose,

Re: Scoping Opinion Request for the proposed Enoch Hill Wind Farm, Between New Cumnock and Dalmellington in East Ayrshire

Thank you for your e-mailed letter of 23rd November 2012, consulting us on the above proposal. Further to our e-mail correspondence on 13th and 14th December, we gratefully acknowledge the extension granted to the timescale for comments.

The National Catalogue of Rights of Way does not show any rights of way affected by the area within the site boundary indicated on the applicant's plan. However, as there is no definitive record of rights of way in Scotland, there may be routes that meet the criteria to be rights of way but have not been recorded because they have not yet come to our notice.

There are rights of way and other recreational routes located in the surrounding area. If required by the applicant to inform their Environmental Impact Assessment, maps of a wider search area are available from the Society upon request.

You will no doubt be aware there may now be general access rights over any property under the terms of the Land Reform (Scotland) Act 2003. It appears that the applicant has already consulted the Core Paths Plans, prepared by local authorities as part of their duties under this Act.

Although I understand that there is very little guidance regarding the siting of turbines in relation to established paths and rights of way, I would like to draw your attention to the following:

Extract from the Welsh Assembly Government's Technical Advice Note on Renewable Energy (TAN 8)

Proximity to Highways and Railways

2.25 It is advisable to set back all wind turbines a minimum distance, equivalent to the height of the blade tip, from the edge of any public highway (road or other public right of way) or railway line.

Once there are details available of the proposed turbine layout and of any access tracks, we would be grateful if the applicant could forward these to the Society for our further comment.

ScotWays® **The Scottish Rights of Way and Access Society**

FAO Heidi Thorsdalen,
Associate Director
AMEC Environment & Infrastructure UK Limited
6/7 Newton Terrace
Glasgow
G3 7PJ

10/01/2013

Our Invoice No: 2013/01/05 EAF (please quote when making payment)

Re: 32965/G030/010
Proposed Enoch Hill Wind Farm - Scoping Consultation

Contribution toward expenses incurred – rights of way search

TOTAL AMOUNT DUE: £75.00

NOT SUBJECT TO VAT

Cheques payable to: ScotWays
BACS remittances to: 82-62-34 30497453
If paying by BACS, please send us a remittance advice note
Please quote invoice number on all correspondence

The Scottish Rights of Way and Access Society 24 Annandale Street Edinburgh EH7 4AN (Registered Office)
Tel/Fax 0131 558 1222 e-mail: info@scotways.com web: www.scotways.com

Our ref: PCS/123666
Your ref:

Joyce Melrose
The Scottish Government

If telephoning ask for:
Diarmuid O'Connor

By email only to: econsentsadmin@scotland.gsi.gov.uk

29 November 2012

Dear Madam

The Electricity Act 1989
Scoping consultation
SCOPING OPINION REQUEST FOR PROPOSED SECTION 36 APPLICATION FOR THE PROPOSED
ENOCH HILL WIND FARM

Thank you for consulting SEPA on the scoping opinion for the above development proposal by way of your email which we received on 26 November 2012. We would welcome meeting with the applicant at an early stage to discuss any of the issues raised in this letter. We consider that the following key issues should be addressed in the EIA process:

We consider the following key issues should be addressed in the EIA process: carbon balance, disruption to wetlands including peatlands, disturbance and reuse of excavated peat, existing groundwater abstractions, engineering activities in the water environment, water abstraction, pollution prevention and environmental management, borrow pits, air quality and flood risk.

While all of the issues below should be addressed in the Environmental Statement (ES), there may be opportunities for several of these to be scoped out of detailed consideration. The justification for this approach in relation to specific issues should be set out within the ES.

In addition we would refer you to *Good Practice During Windfarm Construction* prepared by SNH, SEPA and the windfarm industry and our *Regulatory Position Statement – Developments on Peat*

1. Carbon balance

1.1 Scottish Planning Policy (SPP) recognises that "the disturbance of some soils, particularly peat, may lead to the release of stored carbon, contributing to carbon emissions" (Paragraph 133). In line with SPP and government guidance, we recommend that the ES or planning submission contains a section systematically assessing carbon balance. This assessment should quantify the gains over the life of the project against the release of carbon dioxide during construction. It should include all elements of the proposal, including borrow pits, construction of roads/tracks and other infrastructure and loss of peat bog. Please refer to the Scottish Government guidance Calculating carbon savings from windfarms on Scottish peat lands - A New Approach, which provides a revised methodology for estimating the impacts of this type of development on carbon dynamics of peat lands. We will validate carbon balance assessments for Section 36 windfarm applications that use this revised version of the tool. In order to validate such assessments, all input data, assumptions and workings need to be provided within one dedicated section of the ES. In addition we will provide comment on drainage and waste management aspects of the peat management scheme to ensure that the carbon balance benefits of the scheme are maximised.

2. Disruption to wetlands including peatlands

2.1 If there are wetlands or peatland systems present, the ES or planning submission should demonstrate how the layout and design of the proposal, including any associated borrow pits, hard standing and roads, avoid impact on such areas.

2.2 A Phase 1 habitat survey should be carried out for the whole site and the guidance A Functional Wetland Typology for Scotland should be used to help identify all wetland areas. National Vegetation Classification should be completed for any wetlands identified. Results of these findings should be submitted, including a map with all the proposed infrastructure overlain on the vegetation maps to clearly show which areas will be impacted and avoided.

2.3 Groundwater dependent terrestrial ecosystems, which are types of wetland, are specifically protected under the Water Framework Directive. The results of the National Vegetation Classification survey and Appendix 2 (which is also applicable to other types of developments) of our Planning guidance on windfarm developments should be used to identify if wetlands are groundwater dependent terrestrial ecosystems.

2.4 The route of roads, tracks or trenches within 100 m of groundwater dependent terrestrial ecosystems (identified in Appendix 2) should be reconsidered. Similarly, the locations of borrow pits or foundations within 250 m of such ecosystems should be reconsidered. If infrastructure cannot be relocated outwith the buffer zones of these ecosystems then the likely impact on them will require further assessment. This assessment should be carried out if these ecosystems occur within or outwith the site boundary so that the full impacts on the proposals are assessed. The results of this assessment and necessary mitigation measures should be included in the ES.

2.5 For areas where avoidance is impossible, details of how impacts upon wetlands including peatlands are minimised and mitigated should be provided within the ES or planning submission. In particular impacts that should be considered include those from drainage, pollution and waste management. This should include preventative/mitigation measures to avoid significant drying or oxidation of peat through, for example, the construction of access tracks, dewatering, excavations, drainage channels, cable trenches, or the storage and re-use of excavated peat. Detailed information on waste management is required as detailed below. Any mitigation proposals should also be detailed within the Construction Environmental Management Document, as detailed below.

3. Disturbance and re-use of excavated peat

3.1 Where the proposed infrastructure will impact upon peatlands, a detailed map of peat depths (this must be to full depth) should be submitted. The peat depth survey should include details of the basic peatland characteristics.

3.2 By adopting an approach of minimising disruption to peatland, the volume of excavated peat can be minimised and the commonly experienced difficulties in dealing with surplus peat reduced. The generation of surplus peat is a difficult area which needs to be addressed from the outset given the limited scope for re-use.

3.3 The ES or planning submission should detail the likely volumes of surplus peat that will be generated, including quantification of catotelmic and acrotelmic peat, and the principles of how the surplus peat will be reused or disposed of.

3.4 There are important waste management implications of measures to deal with surplus peat as set out within our Regulatory Position Statement - Developments on Peat. Landscaping with surplus peat (or soil) may not be of ecological benefit and consequently a waste management exemption may not apply. In addition we consider disposal of significant depth of peat as being landfilled waste, and this again may not be consentable under our regulatory regimes. Experience has shown that peat used as cover can suffer from significant drying and oxidation, and that peat redeposited at depth can lose structure and create a hazard when the stability of the material deteriorates. This creates a risk to people who may enter such areas or through the possibility of peat slide and we are aware that barbed-wire fencing has been erected around some sites in response to such risks.

3.5 It is therefore essential that the scope for minimising the extraction of peat is explored and alternative options identified that minimise risk in terms of carbon release, human health and environmental impact. Early discussion of proposals with us is essential, and an overall approach of minimisation of peatland disruption should be adopted. If it is proposed to use some excavated peat within borrow pits or bunding then details of the proposals, including depth of peat and how the hydrology of the peat will be maintained, should be outlined in the ES or planning submission.

3.6 Our Planning and Energy webpage provides links to current best practice guidance on peat survey, excavation and management.

4. Existing groundwater abstractions

4.1 Roads, foundations and other construction works associated with large scale developments can disrupt groundwater flow and impact on groundwater abstractions. To address this risk a list of groundwater abstractions both within and outwith the site boundary, within a radius of i)100 m from roads, tracks and trenches and ii) 250 m from borrow pits and foundations) should be provided.

4.2 If groundwater abstractions are identified within the 100 m radius of roads, tracks and trenches or 250 m radius from borrow pits and foundations, then either the applicant should ensure that the route or location of engineering operations avoid this buffer area or further information and investigations will be required to show that impacts on abstractions are acceptable. Further details can be found in Appendix 2 (which is also applicable to other types of developments) of our Planning guidance on windfarm developments.

5. Engineering activities in the water environment

5.1 In order to meet the objectives of the Water Framework Directive of preventing any deterioration and improving the water environment, developments should be designed to avoid engineering activities in the water environment wherever possible. The water environment includes burns, rivers, lochs, wetlands, groundwater and reservoirs. We require it to be demonstrated that every effort has been made to leave the water environment in its natural state. Engineering activities such as culverts, bridges, watercourse diversions, bank modifications or dams should be avoided unless there is no practicable alternative. Paragraph 211 of SPP deters unnecessary culverting. Where a watercourse crossing cannot be avoided, bridging solutions or bottomless or arched culverts which do not affect the bed and banks of the watercourse should be used. Further guidance on the design and implementation of crossings can be found in our Construction of River Crossings Good Practice Guide. Other best practice guidance is also available within the water engineering section of our website.

5.2 If the engineering works proposed are likely to result in increased flood risk to people or property then a flood risk assessment should be submitted in support of the planning application and we should be consulted as detailed below.

5.3 A site survey of existing water features and a map of the location of all proposed engineering activities in the water environment should be included in the ES or planning submission. A systematic table detailing the justification for the activity and how any adverse impact will be mitigated should also be included. The table should be accompanied by a photograph of each affected water body along with its dimensions. Justification for the location of any proposed activity is a key issue for us to assess at the planning stage.

5.4 Where developments cover a large area, there will usually be opportunities to incorporate improvements in the water environment required by the Water Framework Directive within and/or immediately adjacent to the site either as part of mitigation measures for proposed works or as compensation for environmental impact. We encourage applicants to seek such opportunities to avoid or offset environmental impacts. Improvements which might be considered could include the removal of redundant weirs, the creation of buffer strips and provision of fencing along watercourses. Fencing off watercourses and creating buffer strips both helps reduce the risk of diffuse water pollution and affords protection to the riparian habitat.

6. Water abstraction

6.1 Where water abstraction is proposed we request that the ES, or planning submission, details if a public or private source will be used. If a private source is to be used the information below should be included. Whilst we regulate water abstractions under The Water Environment (Controlled Activities) (Scotland) Regulations 2011, the following information is required at the planning stage to advise on the acceptability of the abstraction at this location:

- Source e.g. ground water or surface water;
- Location e.g. grid reference and description of site;
- Volume e.g. quantity of water to be extracted;
- Timing of abstraction e.g. will there be a continuous abstraction;
- Nature of abstraction e.g. sump or impoundment;
- Proposed operating regime e.g. details of abstraction limits and hands off flow;
- Survey of existing water environment including any existing water features;
- Impacts of the proposed abstraction upon the surrounding water environment.

6.2 If other development projects are present or proposed within the same water catchment then we advise that the applicant considers whether the cumulative impact upon the water environment needs to be assessed. The ES or planning submission should also contain a justification for the approach taken.

7. Pollution prevention and environmental management

7.1 One of our key interests in relation to major developments is pollution prevention measures during the periods of construction, operation, maintenance, demolition and restoration. The construction phase includes construction of access roads, borrow pits and any other site infrastructure.

7.2 We advise that the applicant should, through the EIA process or planning submission, systematically identify all aspects of site work that might impact upon the environment, potential pollution risks associated with the proposals and identify the principles of preventative measures and mitigation. This will establish a robust environmental management process for the development. A draft Schedule of Mitigation should be produced as part of this process. This should cover all the environmental sensitivities, pollution prevention and mitigation measures identified to avoid or minimise environmental effects. Details of the specific issues that we expect to be addressed are available on the Pollution Prevention and Environmental Management section of our website.

7.3 A Construction Environmental Management Document is a key management tool to implement the Schedule of Mitigation. We recommend that the principles of this document are set out in the ES outlining how the draft Schedule of Mitigation will be implemented. This document should form the basis of more detailed site specific Construction Environmental Management Plans which, along with detailed method statements, may be required by planning condition or, in certain cases, through environmental regulation. This approach provides a useful link between the principles of development which need to be outlined at the early stages of the project and the method statements which are usually produced following award of contract (just before development commences).

7.4 We would refer you to best practice advice prepared by SNH, SEPA and the windfarm industry Good Practice During Windfarm Construction. Additionally, the Highland Council (in conjunction with industry and other key agencies) has developed a guidance note Construction Environmental Management Process for Large Scale Projects.

8. Borrow pits

8.1 Detailed investigations in relation to the need for and impact of such facilities should be contained in the ES or planning submission. Where borrow pits are proposed, information should be provided regarding their location, size and nature. In particular, details of the proposed depth of the excavation compared to the actual topography and water table should be submitted. In addition details of the proposed restoration profile, proposed drainage and settlement traps, turf and overburden removal and storage for reinstatement should be submitted

8.2 The impact of such facilities (including dust, blasting and impact on water) should be appraised as part of the overall impact of the scheme. Information should cover, in relation to water; at least the information set out in Planning Advice Note PAN 50 Controlling the Environmental Effects of Surface Mineral Workings (Paragraph 53). In relation to groundwater, information (Paragraph 52 of PAN 50) only needs to be provided where there is an abstraction or groundwater dependent terrestrial ecosystem within 250 m of the borrow pit. Additional information on groundwater is provided above.

9. Air quality

9.1 The local authority is the responsible authority for local air quality management under the

Environment Act 1995 and therefore we recommend that Environmental Health within the local authority be consulted.

9.2 They can advise on the need for this development proposal to be assessed alongside other developments that could contribute to an increase in road traffic. They can also advise on potential impacts such as exacerbation of local air pollution, noise and nuisance issues and cumulative impacts of all development in the local area. Further guidance regarding these issues is provided in NSCA guidance (2006) entitled Development Control: Planning for Air Quality.

10. Flood risk

10.1 The site should be assessed for flood risk from all sources in line with Scottish Planning Policy (Paragraphs 196-211). Our Indicative River & Coastal Flood Map (Scotland) is available to view online and further information and advice can be sought from your local authority technical or engineering services department and from our website.

10.2 If a flood risk is identified then a Flood Risk Assessment should be carried out following the guidance set out in the Annex to the SEPA-Planning Authority flood risk protocol. Our Technical flood risk guidance for stakeholders outlines the information we require to be submitted as part of a Flood Risk Assessment, and methodologies that may be appropriate for hydrological and hydraulic modelling.

11. Regulatory advice for the applicant

11.1 Details of regulatory requirements and good practice advice for the applicant can be found on our website at www.sepa.org.uk/planning.aspx. If you are unable to find the advice you need for a specific regulatory matter, please contact a member of the operations team in your local SEPA office at:

Rivers House,
Irongray Road,
Dumfries,
DG2 0JE

If you have any queries relating to this letter, please contact me by telephone on 0131-4498554 or e-mail atplanning.ek@sepa.org.uk .

Yours faithfully

Diarmuid O'Connor
Planning Officer
Planning Service

Copy to:

Heidi Thorsdalen
6/7 Newton Terrace
Glasgow
G3 7PJ

Disclaimer

This advice is given without prejudice to any decision made on elements of the proposal regulated by us, as such a decision may take into account factors not considered at the planning stage. We prefer all the technical information required for any SEPA consents to be submitted at the same time as the planning application. However, we consider it to be at the applicant's commercial risk if any significant changes required during the regulatory stage necessitate a further planning application and/or neighbour notification or advertising. We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue. If you did not specifically request advice on flood risk, then advice will not have been provided on this issue. Further information on our consultation arrangements generally can be found in How and when to consult SEPA, and on flood risk specifically in the SEPA-Planning Authority Protocol.

Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad

Energy Consents & Deployment Unit
The Scottish Government
4th Floor
5 Atlantic Quay
150 Broomielaw
GLASGOW
G2 8LU

18 December 2012
Our ref: CNS/REN/WF/CEA119199
Your Ref:

Dear Sirs

Electricity Act 1989
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000
Scoping Opinion request for proposed Section 36 application for the proposed Enoch Hill Wind Farm, Dumfries and Galloway

Thank you for consulting us on the above Scoping Opinion. Please find comments below as they relate to the various sections of the Scoping Report.

Ecology

Most of the desk based studies and field work for habitats and species has been completed with the exception of bats and watercourses. We are content with surveys undertaken to date and note further survey for bats is planned for the winter period 2012/13 and that the Ayrshire Rivers Trust will be consulted regarding the suitability of watercourses for salmonids. We note the intention of the Environmental Statement (ES) to assess the impact on any habitats and species potentially affected by this development and propose any necessary mitigation to protect these. At this point therefore there is nothing further to comment on so far as ecology is concerned.

Ornithology

As with the other aspects of ecology survey work is largely complete with the exception of further vantage point surveys for the 2012/13 winter period. It appears that survey methodologies have followed our guidance and therefore at this point there is nothing further on which to comment.

Geology, hydrogeology and hydrology

Appropriate field surveys should be undertaken to determine the extent of peat deposits as part of the Environmental Impact Assessment (EIA) process and to inform site design and layout. If peat is found to be present on site, we would expect the applicant to carry out a peat stability assessment. It is important that Peat Depth Surveys and Peat Slide Risk Assessments are as extensive as necessary to capture and assess all relevant areas. The assessment should include turbine, infrastructure and laydown locations, plus the access

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tracks and any borrow pits. We also strongly recommend early engagement with SEPA with regard to excavated peat reuse and disposal.

Landscape and visual

An assessment of the likely **effects on the landscape resource** includes consideration of likely changes to:

- individual elements – trees, hedges, buildings;
- characteristics – elements or combinations of elements (physical as well as perceptual) which make a particular contribution to the character of an area;
- character – distinct and recognisable pattern of elements (key characteristics) which create a particular sense of place; and
- landscape value – as described by statutory landscape designations, locally valued landscapes; condition and rarity of landscape elements.

An assessment of **visual effects** describes:

- likely changes in the available views resulting from the development; and
- changes in the visual amenity of the visual receptors.

The design process and design iterations should be clearly explained in a design statement or chapter in the submitted ES.

Available guidance

The following guidance (most of which is available from our website) presents good practice for the design and siting of wind farm development, and for carrying out a Landscape and Visual Impact Assessment (LVIA).

- Ayrshire Landscape Assessment (ASH Consulting Group, 1999)
- Dumfries and Galloway Landscape Capacity Study (January 2011)
- Visual Representation of Windfarms Good Practice Guidance (2006)
- Assessing the Cumulative Impact of Onshore Wind Energy Developments (SNH March 2012)
- Siting and Designing Windfarms in the Landscape (SNH Version 1 December 2009)
- Scottish Government web-based renewables advice (supercedes PAN 45)
- PAN 68 – Design Statements

Specific issues for the LVIA to address

We highlight the following landscape and visual matters as requiring particular attention in respect of the LVIA for this proposal.

- the off-site impacts of improving the public roads to allow access i.e. the landscape and visual impacts of any road straightening, widening, levelling, tree and hedgerow removal and the upgrading of junctions;
- access tracks and borrow pits should be included in relevant visualisations less than 10km from site;
- the options for any felling requirements;
- should there be a need to install aviation obstruction lighting to some or all of the wind turbines, its visual impact at night will have to be assessed in the ES.

We also recommend that you take particular cognisance of the following landscape and visual receptors which may be affected by the proposal:

- Local landscape designations: East Ayrshire's Sensitive Landscape Character Areas, and the South Ayrshire Scenic Area;
- The nearby towns of New Cumnock, Cumnock and Dalmellington;
- Landscape Character with reference to the Ayrshire Landscape Character Assessment Land Use Consultants 1998);
- The Southern Upland Way;
- The Merrick Search Area for Wild Land;
- The Galloway Hills Regional Scenic Area to the south in Dumfries and Galloway.

Impacts on Inventory Gardens and Designed Landscapes are dealt with by Historic Scotland. The effects of a previous, nearby, larger proposal on Craigengillan inventory site were of concern, and Dumfries House inventory site may well be affected in this case. It will be important for the current proposal to assess these.

Study area

A study area of 35km is appropriate for the LVIA for this proposal.

Our guidance *Assessing the Cumulative Impact of Onshore Wind Energy Developments (SNH March 2012)* advises that a cumulative assessment should be based on a 30/60km study area.

Viewpoints for visual impact assessment

We note that the list of viewpoints has been amended to take account of our previous comments. Regardless of the above, SNH reserves its position on the initial choice of viewpoints until the production of detailed ZTVs at 1:100,000, and welcomes the opportunity to contribute to further discussion on the selection of key viewpoints.

The LVIA submitted as part of the EIA should present wirelines for all selected viewpoints and photomontages for all viewpoints that are within 15km of the proposed development site.

We consider that any viewpoint with a view of the proposed wind farm and another wind farm(s) should also be assessed as a cumulative viewpoint.

Cumulative effects

Consideration of cumulative effects will be an important aspect of the LVIA for this proposal. This proposal is located in close proximity to a number of other wind farm developments / proposals and sensitive receptors that experience a number of other wind farm developments / proposals. See Appendix D of SNH's guidance on the *Cumulative Impact of Onshore Wind Energy Developments (SNH March 2012)* for our recommended approach to considering likely cumulative effects upon landscape and upon views and visual amenity.

The cumulative LVIA should consider the impact of the additional contribution of the proposed development to the baseline of other existing, consented and application wind farms. It should include, and specifically should distinguish between the following, as defined in the guidance:

- cumulative landscape effects;
- cumulative visual effects;
- static combined effects;
- static successive effects;
- sequential effects - routes to be assessed should be selected and verified following consideration of the cumulative ZTVs

The cumulative landscape assessment should consider the impact of an additional wind farm scheme upon landscape character. The cumulative visual assessment should consider how various wind farm developments would be seen together from key viewpoints.

It will be very important for the proposal to be planned and designed in the context of existing / consented development. Every additional proposal within an area makes the overall pattern of wind farm development more complicated and the developers have an increasingly difficult task to make a project 'fit' with other development. Our guidance *Siting and Designing Wind farms in the Landscape(Version1, December 2009)* should be consulted and followed in this respect.

Cumulative baseline schemes

The relevant planning authorities should be contacted for a current list of all known wind farms that are in the public domain, which are within the cumulative study area (which may include authorities out with the East Ayrshire area) to prepare a cumulative base plan of other wind farm schemes. We can provide more detailed advice on the wind farms that it may be most important to consider in terms of their cumulative effects once an up-to-date and accurate cumulative base plan based on data collected from the relevant planning authorities is submitted.

For reference, to help provide a national overview of wind farm development in Scotland, SNH produces a quarterly wind farm footprint map. Recent versions of the map are available from: www.snh.gov.uk/planning-and-development/renewable-energy/research-data-and-trends/trendsandstats/windfarm-footprint-maps/
Please note that the wind farm footprint map provides a strategic national overview only; we endeavour to keep the map as up-to-date as possible but please be aware of the caveats detailed on our website.

Cumulative viewpoints and ZTVs

The choice of cumulative viewpoints for the illustration of these effects should be based upon the Zone of Theoretical Visibility (ZTV) produced for the proposal in combination with other key wind farms.

Please note that paired/cumulative ZTVs should show for the whole study area (and ideally to the edge of the map sheet presented):

a. theoretical visibility of wind farm A only;
b. theoretical visibility of wind farm B only; and
c. theoretical visibility of wind farm A plus wind farm B.

These ZTVs should be coloured logically – e.g. blue (a), yellow (b) and green (c)

If you have any questions regarding this response please do not hesitate to contact me at this address.

Yours faithfully

John Gibson
Operations Officer
Southern Scotland
John.gibson@snh.gov.uk

cc. Dean.Clapworthy@dumgal.gov.uk

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CÒMHDHAIL ALBA TRANSPORT SCOTLAND

Your ref:

Our ref:

Date:
29 November 2012

Energy Consents Unit
By e-mail

econsentsadmin@scotland.gsi.gov.uk.

FAO – Joyce Melrose

Dear Joyce

SCOPING OPINION REQUEST FOR THE PROPOSED ENOCH HILL WIND FARM BETWEEN NEW CUMNOCK AND DALMELLINGTON IN EAST AYRSHIRE

I refer to your e-mail of 23 November 2012, and the accompanying report.

Overall there will be a minimal increase in traffic on the trunk road during the operation of the facility therefore the proposed development is not likely to have a significant impact on the operation of the trunk road network.

However, it is likely that as many of the construction loads may be categorised as abnormal, authorisation from our management organisation Amey be required. It is advisable that they are consulted as to the feasibility of transportation of these items to site. Due to the frequency and number of these loads it is UK policy to restrict these movements via the nearest suitable port.

I trust this meets your requirements.

Yours sincerely,

Sally Hartley
Development Management

07 January 2013

Joyce Melrose
Energy Consents and Deployment Unit
Scottish Government
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

Dear Ms. Melrose,

Scoping opinion request for proposed Enoch Hill wind farm between New Cumnock and Dalmellington in East Ayrshire

Thank you for giving VisitScotland the opportunity to comment on the above wind farm development. Our response focuses on the crucial importance of tourism to Scotland's local and national economy, and of the natural landscape for visitors.

Background Information

VisitScotland, as Scotland's National Tourism Organisation, has a strategic role to develop Scottish tourism in order to get the maximum economic benefit for the country. It exists to support the development of the tourism industry in Scotland and to market Scotland as a quality destination.

While VisitScotland understands and appreciates the importance of renewable energy, tourism is crucial to Scotland's economic and cultural well-being. It sustains a great diversity of businesses throughout the country. According to a recent independent report by Deloitte, tourism generates £11 billion for the economy and employs over 200,000 - 9% of the Scottish workforce. Tourism provides jobs in the private sector and stimulates the regeneration of urban and rural areas.

One of the Scottish Government and VisitScotland's key ambitions is to grow tourism revenues and make Scotland one of the world's foremost tourist destinations. This ambition is now common currency in both public and private sectors in Scotland, and the expectations of businesses on the ground have been raised as to how they might contribute to and benefit from such growth.

Importance of scenery to tourism

Scenery and the natural environment have become the two most important factors for visitors in recent years when choosing a holiday location.

The importance of this element to tourism in Scotland cannot be underestimated. The character and visual amenity value of Scotland's landscapes is a key driver of our tourism product: a large majority of visitors to Scotland come because of the landscape, scenery and the wider environment, which supports important visitor activities such as walking, cycling wildlife watching and visiting historic sites.

The VisitScotland Visitor Experience Survey (2011) confirms the basis of this argument with its ranking of the key factors influencing visitors when choosing Scotland as a holiday location. In this study, scenery and the natural environment are not only highly rated, but the most important factors for visitors when choosing Scotland as a holiday location, with 58% of visitors citing scenery as their reason for choosing Scotland as a holiday destination. Full details of the Visitor Experience Survey can be found at:

http://www.visitscotland.org/pdf/External%20Visitor%20Survey.pdf

Taking tourism considerations into account

We would suggest that full consideration is also given to the Scottish Government's 2007 research on the impact of wind farms on tourism. In its report, you can find recommendations for planning authorities which could help to minimise any negative effects of wind farms on the tourism industry. The report also notes that planning consideration would be greatly assisted if the developers produced a Tourist Impact Statement as part of the Environmental Impact Analysis, and that planning authorities may wish to consider the following factors to ensure that any adverse local impacts on tourism are minimised:

- The number of tourists travelling past en route elsewhere
- The views from accommodation in the area
- The relative scale of tourism impact i.e. local and national
- The potential positives associated with the development
- The views of tourist organisations, i.e. local tourist businesses or VisitScotland

The full study can be found at www.scotland.gov.uk/Publications/2008/03/07113507/1

Specific Concerns

Given the proximity of the proposed development to the Dumfries and Galloway area, VisitScotland would recommend that any potential cumulative effect with existing wind farms across the boundary is considered carefully.

The proposed site for the development is close to areas frequented by hill-walkers, and therefore any potential visual impact - from areas such as Cairnsmore of Carsphairn and Windy Standard - should be taken into account. Similarly, the nearby Loch Doon is popular with both visitors and locals alike for walking and fishing, and the area's visual amenity is an important part of this offering.

The new Scottish Dark Sky Observatory on Craigengillan Estate represents a major investment in the area, and the proximity of this development to the estate means that any visual impact on the observatory's activity or remit should be taken into account when making final decisions on turbine height and number.

Conclusion

Given the aforementioned importance of Scottish tourism to the economy, and of Scotland's landscape in attracting visitors to Scotland, VisitScotland would strongly recommend any potential detrimental impact of the proposed development on tourism - whether visually, environmentally and economically - be identified and considered in full. This includes when taking decisions over turbine height and number.

VisitScotland would also urge consideration of the specific concerns raised above relating to the impact any perceived proliferation of developments may have on the local tourism industry, and therefore the local economy.

We hope this response is helpful to you.

Yours sincerely

Iain McDonald
Corporate Affairs Executive
VisitScotland