

CHAPTER 6 FLORA AND FAUNA

- **Appendix 6.2 Consultation**

DRAFT



An Roinn
Ealaíon, Oidhreachta agus Gaeltachta
Department of
Arts, Heritage and the Gaeltacht

Our Ref: G Pre00012/2013

Dr Maeve Flynn
Lead Ecologist Grid 25
Programme Management Office
EirGrid
The Ova
160 Shelbourne Rd.
Dublin 4
Maeve.Flynn@Eirgrid.com

13 February 2013

**Re: Pre-Planning Consultation - Eirgrid North South 400 kV
Interconnection Development**

A Chara,

I refer to your correspondence in relation to the above. Outlined below are the comments of the **Department of Arts, Heritage and the Gaeltacht** in relation to nature conservation.

The Department welcomes the modified approach taken for County Meath to the placing of hedgerows in pylons and welcomes the fact that there will be less hedgerows lost as outlined to Dr. Patton at your meeting with her on 18th December 2012. Hedgerows are considered to be ecological corridors as envisaged under Article 10 of the Habitats Directive and policies for their protection are in most County Development Plans for this reason.

Kindly forward any further information to the following address:

The Manager
Development Applications Unit
Department of Arts, Heritage and the Gaeltacht
Newtown Road
Wexford

Alternatively, documentation associated with the above can be referred electronically to the DAU at the following address: manager.dau@ahg.gov.ie

Finally, the above observations and recommendations are based on the papers submitted to this Department on a pre-planning basis and are made without prejudice to any observations the Minister may make in the context of any consultation arising on foot of any development application referred to the Minister, by the planning authority, in his role as statutory consultee under the Planning and Development Act 2000, as amended.

Is mise le meas

Patricia O'Leary

Patricia O'Leary
Development Applications Unit
Tel: (053) 911 7482

DRAFT



An Roinn
Ealaíon, Oidhreachta agus Gaeltachta
Department of
Arts, Heritage and the Gaeltacht

Our Ref: G Pre00012/2013

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10 April 2013

Re: Pre-Planning Consultation - Eirgrid North South 400 kV Interconnection Development.

A Chara,

I refer to your correspondence in relation to the above. Outlined below are the comments of the Department of Arts, Heritage and the Gaeltacht in relation to nature conservation.

Further to our comments of the 13th February 2013, I refer to your meeting with William Cormacan, Divisional Ecologist with the National Parks and Wildlife Service on the 2nd November 2012. The minutes produced are a fair reflection of the discussions and can be considered agreed. The Department is satisfied with the approach being adopted in relation to ecological impact assessment in counties Cavan and Monaghan, and welcomes that there will be less hedgerow loss due to the modified approach. Hedgerows are considered to be ecological corridors as envisaged under Article 10 of the Habitats Directive and policies for their protection are in most County Development Plans for this reason.

Kindly forward any further information to the following address:

The Manager
Development Applications Unit
Department of Arts, Heritage and the Gaeltacht
Newtown Road
Wexford

Alternatively, email manager.dau@ahg.gov.ie In addition, please acknowledge receipt of these observations by return.

Is mise le meas,

Patricia O'Leary
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Tel: (053) 911 7482

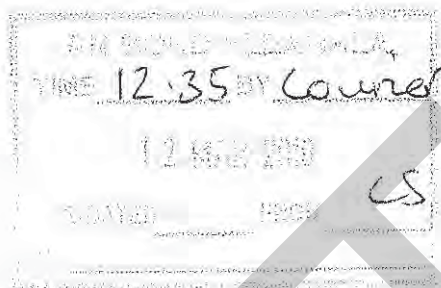


Comhshaol, Oidhreachta agus Rialtas Áitiúil
Environment, Heritage and Local Government



12th March 2010

The Secretary,
An Bord Pleanála
64, Marlborough Street,
Dublin 1



Your Ref: PL02.VA0006
Our Ref: SID -2009-ME-20

Re: Planning Application by EirGrid to An Bord Pleanála in respect of Strategic Infrastructure Development – Meath – Tyrone 400kv Interconnector

A chara,

I refer to the notification received in relation to the Strategic Infrastructure Development application for the above-proposed development. Further to my letter of 9th March outlining the archaeological, architectural heritage and nature conservation comments of this Department, please find below further comments from the National Parks and Wildlife Service (NPWS) of the Department of the Environment, Heritage and Local Government, specifically in relation to the Whooper Swan report produced by Tobin Consulting Engineers for EirGrid PLC. (Appendix 7.4 of the Environmental Impact Statement (EIS)).

The report describes the use of the study area around the proposed development of the EIS by populations of Whooper Swan in County Meath. The Whooper Swan is a species which is listed on Annex 1 to the Birds Directive (79/409/EEC). This directive informs Member States that these Annex 1 listed bird species shall be the subject of special conservation measures. Ireland has classified several wetland sites as Special Protection Areas (SPAs) for this species. In the study area outlined in the aforementioned report the proposed development does not cross any Whooper Swan SPA. However surveys of the River Boyne and associated rivers are planned for this breeding season with a view to assessing its suitability for such a designation primarily for its Kingfisher interests.

It should be noted that the directive also states that, outside of these SPAs, Ireland shall strive to avoid pollution or the deterioration of habitats and furthermore Member States are to take the requisite measures to maintain the population levels of birds occurring naturally in the wild state.

The EirGrid development may potentially impact on Whooper Swans arising out of direct loss of life through collisions. The risk of individual Whooper Swans colliding with such a development is likely to arise out of an interaction with some or all of the following factors: the age/experience of the individual swan; the degree of toxic contamination of the individual influencing its flight co-ordination; and the visibility of the line during low light conditions and/or poor weather.

It is unlikely that that the neither the national population of Whooper Swan nor any Special Protection Area will be impacted by the development of the proposed powerline within the study area. However



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the aforementioned report highlights the fact that, with regard to the preferred route option 3b, Whooper Swan flightlines were identified at two locations (the roost at Tara Mines tailings pond to feeding grounds along the Blackwater Valley; and from the roost at Whitewood Lough to the feeding area at Cruicetown) and a third possible flightline was suspected around Clooney Lough. Such a development may impact on Whooper Swan population at the local level.

Mitigation of adverse impacts to this Annex 1 listed species by avoidance is the preferred method. Although route option 3a is located close to the historical swan sites at Carlanstown and Emlagh no swan use was recorded at these sites during the study period. If route option 3a was chosen over route option 3b then the flightline between Cruicetown and Whitewood Lough would not be crossed thus significantly reducing the likelihood of these swans colliding with the powerline.

Mitigation by reduction is also required irrespective of the choice of route option 3a or 3b. The mitigation by line marking as outlined by the consultants (including the precautionary line marking) in the aforementioned report should be carried out in full.

Marking lines with various types of markers can decrease but not eliminate bird collision events. The effectiveness of markers most likely varies with target species and location. On account of this the post construction monitoring to determine the efficacy of such mitigation is welcomed. The developer should enter into a commitment to maintain, adapt or improve said mitigation measures if needs be on foot of the results of the post construction monitoring programme though consultation with the relevant NPWS staff.

Kindly forward a copy of your decision, or any further information received, to the following address as soon as it issues:

The Manager,
Development Applications Unit,
The Department of Environment, Heritage and Local Government,
Dun Sceine
Harcourt Lane
Dublin 2

Is mise le meas,



Paul McMahon
Development Applications Unit
Heritage Policy and Architectural Protection
01 8883113
Paul.McMahon@environ.ie

Kieran Doherty,
Executive Officer,
An Bord Pleanála,
64 Marlborough Street,
Dublin 1.

26th September, 2013

Re: North-South 400kV Interconnector

Dear Mr Doherty,

We refer to your letter dated the 3rd September last relating to the above-mentioned proposed development.

Inland Fisheries Ireland (IFI) is a Statutory Body established on the 1st July, 2010. Under Section 7(1) of the Inland fisheries Act 2010 (No. 10 of 2010) the principal function of IFI is the protection, management and conservation of the inland fisheries resource.

Having examined the Preferred Project Solution Report we have the following comments to make.

The preferred route crosses a number of river catchments (Table 1) and has the potential to impact on a wide range of important fisheries waters including areas designated as SACs, angling waters, adult holding areas, nursery and spawning areas, etc., forming parts of the Eastern, Neagh Bann and North-Western International River Basin Districts. The potential impacts of the proposed development on fisheries relate largely to the construction of access roads and the towers. Many of the proposed tower sites are located adjacent to smaller watercourses, which act primarily as contributories to downstream habitat for juvenile salmonids, lamprey and other species as well as macrophytes, algae and macroinvertebrates, which as drift form a significant part of the food supply to the downstream fisheries. All of the waters referred to have, in the context of the proposed development, the potential to convey deleterious matter from the works such as silt, concrete, fuel, lubricating fuels and oils from construction plant and equipment downstream unless proper safeguards are in place.

Tower Numbers	RBD	Catchment	River
103-109	Neagh Bann	Monaghan Blackwater	Cor/Clontibret
110-130		Fane	Upper Fane
131-200	North West	Erne	Dromore
			Knappagh
201-224	Neagh Bann	Glyde	Main channel and tributaries
225-274	Neagh Bann	Dee	Tributaries
275-397	Eastern	Boyne	Main channel and tributaries
398-409	Eastern	Tolka	Tributaries

Table 1. Catchments crossed in proposed development.

All of the above listed catchments contain valuable fishery habitat with stocks of salmonid and coarse fish. Some of these catchments contain species protected under the Habitats Directive including Atlantic Salmon and Lamprey. The River Boyne and the Kells Blackwater are proposed SACs with populations of Atlantic Salmon and lamprey.

All natural watercourses which have to be traversed during site development and road construction works should be effectively bridged prior to commencement. If temporary crossing structures are required; IFI approval will be necessary as regards specification and timing of installation. There is sometimes a misconception that in installing temporary crossing structures, the only issue is keeping water flowing from above a temporary crossing to below it. Design and choice of temporary crossing structures must provide for passage of fish and macroinvertebrates, the requirement to protect important fish habitats e.g. spawning and over-wintering areas, as well as preventing erosion and sedimentation.

No crossing (temporary or permanent) on any watercourse shall be installed without the approval of IFI as regards sizing, location, duration and timing. The preferred option is for clear span 'bridge type' structures on fisheries waters. The crossing of watercourses at natural fords is not permitted because of the amount of uncontrolled sedimentation that can be generated. The creation of fords on streams and rivers through the introduction of stone is prohibited.

There are significant variations in the timing and duration of spawning activity throughout the Republic of Ireland. To minimise adverse impacts on the fisheries resource works in rivers, streams and watercourses should normally (except in exceptional circumstances and with the agreement of IFI) be carried out during the period July -September. The appropriate 'window' for instream works can vary depending on the nature of the fishery resource concerned and the existence of other factors such as catchment or sub catchment specific Bye Laws and Regulations.

In terms of stability both during the construction and operational phases it is essential that the soil type and structure at the proposed tower locations and along the route of any proposed access track(s)/road(s) including areas where temporary or permanent stockpiling of excavated material takes place are assessed and critically reviewed. This is particularly important if the areas concerned contain peat soils.

One of the potential impacts of the proposed development is the discharge of silt-laden waters to fisheries streams from newly developed sites at which earth moving and excavation works are ongoing. Silt can clog salmonid spawning beds, and juvenile salmonids are particularly sensitive to siltation of gill structures. Similarly plant and macroinvertebrate communities can be blanketed over, and this can lead to loss or degradation of valuable habitat. It is important to incorporate best practices into construction methods and strategies to minimise discharges of silt/suspended solids to waters.

Uncured concrete can kill fish and macroinvertebrates by altering the pH of the water. Pre-cast concrete should be used whenever possible, to eliminate the risk to all forms of aquatic life. When cast-in-place concrete is required, all work must be done in the dry and effectively isolated from any water that may enter the drainage network for a period sufficient to cure the concrete. Concrete delivery vehicles should be precluded from washing out at locations which would result in a discharge to surface waters. Specific controlled and environmentally safe vehicle washout areas must be provided. If cement is stored on site during construction work, it should be held in a dry secure area when not in use.

All oils and fuels should be stored in secure bunded areas and particular care and attention should be taken during refuelling and maintenance operations on plant and equipment. Bunding should be

designed to recommended standards. All plant and equipment should carry oil fuel spill kits. Where temporary diesel or petrol driven pumps are required, they should be sited within portable temporary bunded units. Where site works involve the discharge of drainage water to receiving rivers and streams, temporary oil interceptor facilities should be installed and maintained.

No instream works shall be carried out without the written approval of Inland Fisheries Ireland.

In the event of the project proceeding it is the responsibility of the developer and the contractors to ensure that works will not give rise to a discharge of deleterious or polluting matter to waters.

At all times the precautionary principle should be applied throughout for the entire development.

Particular attention should be paid to the various environmental directives including the Water Framework Directive, the Habitat and Birds Directives, the Fisheries Acts in particular, and the Local Government (Water Pollution) Acts. Other environmental legislation should be considered as appropriate.

Yours faithfully,



Michaela Kirrane
Senior Fisheries Environmental Officer

CC Cormac Goulding (NWIRBD)
Noel McGloin, Gretta Hannigan & Brian Beckett (ERBD)



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06th November 2013

Submission on Eirgrid studies: Gridlink, GridWest and N/S interconnector

Dear Sir/Madam,

BirdWatch Ireland makes this submission in relation to concerns over the potential threat posed by these 3 major infrastructural projects and recommend that best practice guidelines should be implemented at all stages.

Power lines can pose a major threat to the conservation of birds through electrocution, collision and habitat loss. These proposed OHPL projects are covering a huge area of the county and may have a direct or indirect impact on birds and other species either through collision, displacement or fragmentation of habitat. Therefore these potential impacts need to be fully assessed.

- The Gridlink project, which will link Leinster and Munster, passes through 12 different countries and has over 20 SPA's, 43 SAC's and 200 NHA's and pNHA's.
- The Grid West project will link North Mayo to Roscommon. There are 74 SAC's, 18 SPA's, 24 NHA's and 179 pNHA's within the study area of this project.
- The North-South 400 kV interconnection development will link the substation in Woodland, Co.Meath with a planned substation in Turleenan, Co.Tyrone.

Background/Obligations

In 2005 the Bern Convention recognised the threats power lines pose to birds and made a recommendation (R110) on minimising adverse effects of above ground electricity transmission facilities on birds¹. Similar recognition has been given to the issue by the Convention on Migratory Species (Bonn Convention) which adopted Resolution 7.4 in 2002 calling to curb the increasing electrocution risk from medium voltage transmission lines to migratory birds and to minimise the risk in the long term². An international conference on 'Power lines and bird mortality in Europe' took place in Budapest in 2011. This conference brought together governments, the European Commission,



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representatives of the energy sector and conservation groups. It identified several action points on power lines and bird safety, which was adopted in the form of the Budapest Declaration.

In 2011 the Renewable-Grid-Initiative brought together a coalition of 24 organisations in signing the ‘European Grid Declaration on Electricity Network Development and Nature Conservation’³. This declaration sets out principles for environmentally sensitive grid development planning and reducing the impacts of existing power lines on biodiversity.

The protection afforded wild birds in Ireland is not restricted to designated sites or to areas identified for designation under the EU Birds Directive. There is a responsibility under national, European and international legislation to protect bird species within the wider countryside, outside of the designated areas.

Implementing best practice guidelines to reduce the impact of power lines on bird species have been recognised⁴ and include:

- The design and configuration of power lines is an important factor in determining the importance of collision mortality. For example, a transmission line with a double circuit stack configuration, with lattice steel towers designs have several inherent positive and negative features. A number of risk reduction options for new power lines have been identified and recommended.
- The use of underground power lines instead of overhead power lines would in many cases be the optimum solution.
- If overhead power lines have to be used, then it is important that line placement and orientation are considered. The position and location of the line should take migratory patterns and high bird use areas into account. Where possible, a buffer zone should be placed around SPA’s or important bird areas to reduce the potential for collision. The placement should also avoid and limit fragmentation of habitat. The orientation of the line should consider biological and environmental factors such as bird flight paths, prevailing winds and topographical features.
- It is generally accepted that the earthwire is the part of the power line that causes the greatest risk to birds in flight. Therefore a number of studies have focused on this. The presence of flight diverters has shown to be associated with a decrease in bird collisions. The results of a study in central Spain confirm the overall effectiveness of wire marking as a way to reduce bird collisions with power lines. There was a small (9.6%)



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but significant decrease in the number of casualties after line marking compared to before line marking⁵.

Bird deflectors should be placed at all the potential whooper swan crossing points along the route.

- Construction activity should be avoided at certain times of year to limit the impact on breeding birds and wintering waterbirds.

Potential impacts on birds:

Birds are at a risk of **collision with power lines**. However the degree of risk depends on a number of factors; the species and their behaviour, the environmental factors and type and design of the power lines themselves. In most cases the physical impact of collision leads to immediate death or to fatal injuries and mutilation, although some birds may recover.

The majority of bird collisions appear to be associated with earth wires, which are normally installed above the conductors and are less visible than the conductors. The earth wire can in certain situations appear almost invisible because of background or lighting conditions, and bird collisions result⁶. Birds may attempt to avoid the towers and conductors by increasing flight height, resulting in collision with the earth wire.

Species that are particularly at risk are **birds flying at night**, **birds flying in flocks**, large and heavy birds with high wing loading and of **low manoeuvrability** and birds that fly low and fast such as wintering geese and Whooper Swans. Migrating birds flying at heights between 20m and 50m are at a considerable risk of collision⁷, and species that congregate in large flocks are more vulnerable to collisions than solitary species. Flocking behaviour means that individual birds in dense flocks have reduced visibility and therefore less time and space to undertake avoidance action of obstacles such as power lines. Risk may also be increased during certain behaviours e.g. feeding frenzies or disturbance and extreme weather events.

Birds flying regularly **between feeding, roosting and nesting** areas are particularly at risk and hazards occur when power lines cut across their migration routes or their wintering areas.

Overhead power lines can lead to **displacement** and the loss of feeding areas. For example feeding artic-breeding geese have been observed to avoid the close vicinity of power lines in their wintering areas. There is a possibility of a loss of breeding and roosting sites.



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Power lines should be diverted from areas where large numbers of birds fly through regularly and also from protected areas (IBA'S/SPA's) that contain species highly susceptible to suffer from electrocution and collision against cables.

Required actions

1. Survey and monitoring is needed to obtain this data on potential impacts on wild birds. It is extremely important to identify flock behaviours, find flight lines and information on bird movements in the areas considered. Survey work should be carried out through all seasons and over a number of years to fully understand flight patterns and behaviour of concerned species.
2. Investigations are also needed that cover bird movements by day, night and through the different seasons and extreme weather events. Collision risk is lowest in calm weather and increases in fog, mist, rain or high winds. Data needs to be obtained for varied wind conditions. The winter period is particularly associated with large concentrations of water birds on standing open waters and as a result higher levels of risk where power lines occur in the vicinity.
3. To determine the usage of flight routes of species of concern such as the Whooper Swan, tagging or radio tracking of large known populations would be beneficial. Reading of rings should be a priority in identifying flocks and determining their usage of different locations. We have mentioned this in a previous submission in 2010, yet there is no evidence of this action being considered or implemented.
4. The impact on individual species is quite well studied; however the impact on populations is still unknown. Therefore survey work, monitoring and assessment should take this (local, regional and national context) into consideration.
5. The cumulative impact of these projects over such a large area needs to be fully assessed and considered. These impacts need to be assessed for each stage of the project; construction, operation, maintenance and decommissioning. The cumulative impacts of all the towers and lines to migratory birds on both a local and regional level needs to be considered. The cumulative effects of existing or planned landscape scale developments, such as transmission systems and windfarms, within the study areas should be evaluated.



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6. We have recommended in previous submissions that an Avian Protection Plan should be developed at a site, regional and national level to ensure migratory birds are protected. This is a utility specific document which aims to reduce the avian risks that results from avian interactions with electric utility facilities⁸.
7. Post construction monitoring is also important. This monitoring needs to enable both the short and long term effects and impacts to be distinguished and satisfactorily addressed. This is required at both a local and national level.

Yours Sincerely,

Claire Dunphy,
Casework Officer,
Policy and Advocacy Team.

References:

1. <https://wcd.coe.int/ViewDoc.jsp?id=847305&BackColorInternet=9999CC&BackColorIntranet=FFBB55&BackColorLogged=FFAC75>
2. http://www.cms.int/bodies/COP/cop7/proceedings/pdf/en/part_1/Res_Rec/RES_7_04_Electrocution.pdf
3. <http://renewables-grid.eu/documents/eu-grid-declaration.html>
4. Avian Power Line Interaction Committee (APLIC) 2012, *Reducing Avian Collisions with Power Lines: The State of the Art in 2012*. Edison Electric Institute and APLIC, Washington, D.C.
5. Barrientos R., Ponce C., Palacín C, Martín C.A., Martín B., et al. (2012) *Wire Marking Results in a small but significant reduction in avian mortality at power lines; A BACI designated Study*. PLoS ONE 7(3): e32569. doi:10.1371/journal.pone.0032569
6. Avian Power Line Interaction Committee (APLIC) 1994, *Mitigating bird collisions with power lines: the state of the art in 1994*. Edison Electric Institute, Washington, D.C.
7. Hass D., Nipkow M., Fiedler G., Schneider R., Haas W., Schürenberg B., (NABU – German Society for Nature Conservation, bird life in Germany) *Protecting birds from powerlines*. Nature and environment, No.140.
8. *Avian Protection Plan (APP) Guidelines*. A joint document prepared by the Edison Electric Institute's Avian Power Line Interaction Committee (APLIC) and U.S. Fish and Wildlife Service (USFWS) April 2005.

Your Ref:



Des Cox
EirGrid PLC.
The Oval
160 Shelbourne Road
Ballsbridge
Dublin 4

11th December 2013

Re: North - South 400kV Interconnector

Dear Sir,

In response to your request please now be advised that the following constitutes An Bord Pleanála's written opinion on the information to be contained in the environmental impact statement to be prepared in respect of the above-mentioned proposed development.

1. Introduction

The environmental impact statement for the project must contain the information specified in Paragraph 1 of Schedule 6 of the Planning and Development Regulations 2001 - 2013, and the information specified in Paragraph 2 of Schedule 6 to the extent that this information is relevant to the nature of the development in question and to the environmental features likely to be affected. This shall include details of the environmental impacts during the construction and operational phases of the development and provide precise, clear and unambiguous mitigation measures where such are proposed, including an indication as to who has responsibility for the implementation of such measures, and for the monitoring of the impacts of the development.

The environmental impact statement must contain a summary, in non-technical language of the information contained in the environmental impact statement. The summary should contain an objective statement of the environmental effects of the development and all significant effects and mitigation measures should be referred to therein. The description of the development to be contained in the non-technical summary should explain the proposals clearly and unambiguously in terms of their nature, scale and extent in order to allow the public to understand the EIA process and to make submissions in relation to the development.

Regard should be had to the guidance given for Type 20 projects outlined in the EPA document, Advice Notes on Current Practice in the preparation of Environmental Impact Statements. The environmental impact statement in this case should, in particular, contain information on, and address the issues referred to below. Contributors to the EIS should be identified while any difficulties encountered in compiling the statement should be set out.

The Board notes the previous application for a similar development under An Bord Pleanála ref. PL02.VA0006, which was the subject of an EIS. The applicants may wish to have regard to submissions made in relation to that application in preparing the subject EIS, insofar as they are relevant to effects on the environment.

2. Description of Development

- A full and detailed description of the nature, scale and extent of all aspects of the development, including development within Northern Ireland comprising part of this overall project.

- The description shall be provided in written form as well as by the provision of full and detailed scaled drawings, photographs and photomontages.
- The national / regional / local purpose or need for the proposed development should be identified, in conjunction with any relevant European, national, regional or local policies and/or objectives.
- The location of all proposed development between Woodlands, Co. Meath and Lemgare, Co. Monaghan should be clearly identified.
- The description of the construction phase should include a schedule of works, including timescales, and a construction methodology identifying any special work practices or application of specialised machinery/ equipment. This should also address decommissioning works.

3. Alternatives

An outline of the alternatives considered prior to the selection of the preferred development option. This should extend to each aspect of development, ranging from alternatives considered at national and regional levels, to design details at a local level, and should include:

- Alternative interconnection/ network reinforcement options.
- Alternative technologies, including the use of underground cables or partial undergrounding of the route.
- Alternative corridor options at national, regional and local level, including the most direct route option.
- Alternatives in terms of the design and scale of development/ structures.
- The requirement for the inclusion of a substation(s) along the route.
- Alternative construction methodologies.

The EIS should provide a justification for the preferred route corridor, taking into account the effects on the environment, including the criteria applied in assessing the various alternatives considered. In this context, the likely significant effects on the environment of the various alternative options shall be considered.

If reference is to be made to previous reports not forming part of the EIS, the findings should be summarised and these documents provided as an appendix to the statement.

4. Receiving Environment

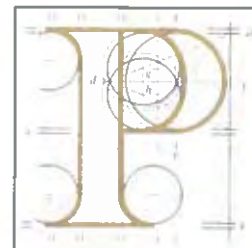
The receiving environment shall be defined to include all areas that would be impacted directly or indirectly by the proposed development. The information contained in the EIS should be based on comprehensive surveys of the area providing a thorough baseline assessment of the existing environment. The extent of baseline surveys undertaken should be identified, including the methodologies and practices applied.

5. Subject Areas

The following is not intended to be an exhaustive schedule of the information required to be contained within the EIS in accordance with the requirements of the Act. It highlights a range of issues that are considered necessary to be addressed to allow for the comprehensive assessment of the proposed development. The EIS should, in particular, cover the matters raised below:

5.1 Humans

- The identification of potential impacts on settlement patterns along the route, including the identification of existing dwellings, community facilities or other public buildings such as schools, health care facilities etc., and any extant planning permissions for such development.
- An assessment of the impact on residential amenities arising from the construction and siting of support structures and overhead lines.



- The identification and assessment of likely operational impacts on residential amenity and human health, including impacts from noise and electromagnetic fields, based on recognised international standards. The assessment should have regard to the most recent epidemiological studies carried out internationally.
- Assess and compare the effects of above and below ground development alternatives.
- An assessment of the likely impacts on the linguistic or cultural heritage of the Gaeltacht area through which the route passes, or on the promotion of Irish as the community language.
- Any implications for, or impacts on, the local, regional or national economy.

5.2 Flora and Fauna

- Baseline data should include an ecological survey of all works sites at an appropriate time of the year. Where ex-situ impacts are possible survey work may be required outside of the development sites.
- Assess the impacts on flora, fauna and habitats with particular regard to:
 - Natura 2000 sites and other (proposed) designated sites;
 - Habitats and species listed on Annexes I, II and IV of the Habitats Directive;
 - Birds listed on Annex I of the Birds Directive and important habitats for birds including nesting, feeding / wintering areas and flight corridors;
 - Habitats that can be considered to be corridors or stepping stones for the purpose of article 10 of the Habitats Directive;
 - Other species protected under the Wildlife Acts, Red Data Book species; and biodiversity in general;
 - The assessment should include the indirect effects of construction activity, including construction access, as well as long-term impacts in terms of fragmentation and severance.
- An assessment of potential impacts on the aquatic environment during construction and operation, including impacts on water table levels or groundwater flow which may impact on wetland sites some distance away.
- Any proposed mitigation measures should be identified in a construction management plan which must be included as part of the EIS / NIS.
- The EIS should address the issue of invasive alien plant and animal species, and methods to ensure they are not introduced or spread.
- An assessment of the extent and cumulative impact of hedgerow removal or linear woodland loss along the route. Mitigation should include suitable planting of native species and timing of works outside the nesting season.
- Identify any requirement for licenses or derogations arising.

5.3 Soil

- An assessment of potential soil erosion, particularly where it affects priority habitats, designated conservation areas, and in the vicinity of surface waterbodies.
- Submission of a construction method statement, identifying areas of particular sensitivity which require specific construction mitigation measures, including areas of peat.

- Identification and assessment of potential impacts on sites of geological heritage interest, including Altmush Stream and Galtrim Moraine.

5.4 Water

- Identification and assessment of the potential water quality impacts of excavation and construction activities proximate to or across watercourses along the route corridor, inclusive of the effects of nutrient release from site clearance or vegetation decomposition.
- An assessment of the potential hydrogeological impacts, including potential impacts on wetlands and drinking water sources.
- Submission of a construction method statement and management plan addressing potential impacts on water quality, including measures to protect water quality when diverting field drains or pumping groundwater which may impact on watercourses some distance away.

5.5 Air and Climate

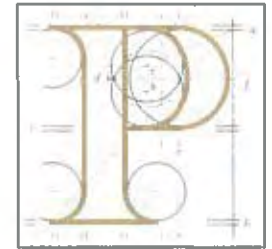
- Air and Climate: Minor issues not requiring significant studies.
- Noise: Description and assessment of the noise environment at construction and operational phases, clearly measurable against the existing ambient noise environment.

5.6 Landscape

- An overview of defined landscape character areas affected, having regard to the landscape character assessments which inform the development plans for each county through which the route passes.
- Identify the area of visual influence of the development.
- Assess impacts on landscape character and visual amenities, having particular regard to designated landscapes and views of amenity value including protected views / scenic routes and on the setting of the main tourism assets.
- Regard should be had to the impacts of the development on the character and setting of sites of cultural and historic interest and on historic landscapes, including for example Bective Abbey, Donaghpatrick, Teltown.
- Identify historic demesne landscapes along the route and assess potential impacts thereon.
- The visual impacts of the development should be demonstrated by the submission of a series of scaled and accurate photomontages of all elements of the proposal, to include impacts on protected views / scenic routes.
- The potential for alternative routing or partial undergrounding in sensitive landscape areas should be addressed.
- Where separation between towers is reduced below average with resulting visual impacts, the rationale for the route / design approach adopted should be identified.
- Regard should be had to the cumulative visual and landscape impacts of the development with the existing and proposed 110kV and 220kV network in the area and other existing and permitted developments as appropriate.

5.7 Material Assets

- Identify the enhancements to existing electricity network infrastructure.
- Identify and assess public road crossings, including the construction methodology. Particular regard should be had to the relationship with the national primary and secondary road network and with the proposed Leinster Orbital Route, to include issues of clearance and separation.



- Information on the likely effects on public utilities and services along the route corridor, and in particular any proposed re-routing of overhead electricity lines.
- A construction traffic management plan will be required, which should address stringing operations, road closures / detours and impacts on railway infrastructure.
- Identify the means of access for construction and on-going maintenance and the treatment of new or widened construction entrances.
- Assess the likely land use impacts, including restrictions on existing uses such as agriculture or commercial forestry.
- An assessment of the likely effects on the amenity / tourism value of the area, including designated tourist routes (e.g. the Monaghan Way) and possible impacts on fishing and fisheries tourism.
- Address impacts on the potential future use of disused railways.
- Assessment of potential impacts on aviation transport, including impacts on Trim airfield.

5.8 Cultural Heritage

- Identification and assessment of potential impacts on archaeological heritage, including an appraisal of all recorded monuments potentially impacted on during construction activities and an assessment of the visual impact on listed sites. This should include impacts on the character and setting of features of interest as well as the relationship between sites.
- Particular areas of social, cultural and historic interest to be considered include Bective Abbey, Donaghpatrick, Teltown Zone of Archaeological Amenity, Muff Crossroads.
- Identify any pre-application archaeological excavations or site investigations undertaken. Describe the rationale for the approach adopted with regard to such pre-application investigations, particularly for areas of known archaeological potential.
- Identification and assessment of the effects on architectural heritage in the vicinity of the route corridor, including potential impacts on historic buildings or structures and their setting, and demesne landscapes. This should include Brittas House, where the line crosses the driveway, and views to and from Whitewood House.
- The indirect effects of construction activity, including construction access / routes, on structures and building should be considered.
- The impact on longer views from sites of national importance and significance should be considered and assessed.

5.9 Transboundary Effects

This written opinion refers to the scoping request submitted to the Board on 20th August 2013 in relation to that part of the overall project occurring within the Republic of Ireland.

The nature of the project, however, gives rise to a requirement to consider the issue of potential transboundary impacts. Regard should therefore be had to the provisions of the European Commission document, "Guidance on the Application of the Environmental Impact Assessment Procedure for Large-scale Transboundary Projects" (2013). In particular the prospective applicants are advised that while they are required to comply with national EIA requirements for each jurisdiction, they should also prepare a joint environmental report that covers the whole project and assesses its overall effects.

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in particular cumulative and significant adverse transboundary effects. This joint report should ensure the implementation of a common approach and methodology for the identification and assessment of impacts arising across the overall project.

Many of the comments contained in this written opinion are relevant to the assessment of the impacts of those sections of the project proposed within the jurisdiction of Northern Ireland. The prospective applicants are, however, advised to consult with the relevant authorities in Northern Ireland with regard to the information to be contained in the EIS. The EIS should identify and assess any relevant projects occurring in Northern Ireland which could give rise to likely cumulative impacts, including that section of the proposed 400kV interconnector which occurs within Northern Ireland.

Notwithstanding the above, the prospective applicants are referred to the attached correspondence from the Department of the Environment (Northern Ireland), with respect to the information to be contained in the environmental impact statement. This includes, in particular,

- The requirement for a comprehensive assessment of potential impacts on the historic environment of Northern Ireland, including impacts on known and previously unrecorded archaeology, and recommendations for mitigation measures.
- The methodology to be employed in the assessment of landscape and visual impacts of the proposed development.

6. Conclusion

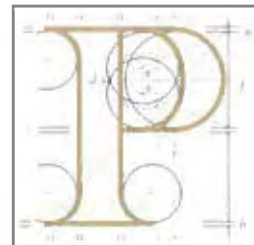
In the event of significant effects on the environment being identified, particularly in relation to the topics referred to above, the EIS should contain a clear description of the measures envisaged in order to avoid, reduce and, if possible, remedy any significant adverse effects identified. Baseline surveys should be undertaken over appropriate periods to provide sufficient information on potential impacts arising from the proposed development.

A summary of all proposed mitigation measures should be prepared, as an appendix to the EIS, which should identify the party responsible for the implementation of each measure. In the event of monitoring being proposed as mitigation, the EIS should identify relevant trigger levels and associated actions to be taken when those levels are exceeded.

The Board notes that, as the Pre-Application Consultations have not concluded to date, other issues may arise at future meetings which may require consideration and which thereby may potentially affect the completeness of the Board's written opinion on the information to be contained in the environmental impact statement, as set out above.

For your information, please find enclosed copies of the submissions that were received by the Board from the following parties in relation to the matter:

- Minister for Arts, Heritage and the Gaeltacht, Development Applications Unit,
- The Environmental Protection Agency,
- Meath County Council,
- Cavan County Council
- Monaghan County Council,
- National Roads Authority,
- Fáilte Ireland,
- An Taisce - the National Trust for Ireland,
- Health Service Executive / Environmental Health Service,
- Inland Fisheries Ireland,
- Department of the Environment (Northern Ireland).



If you have any queries in relation to the matter please contact the undersigned officer of the Board. Please quote the above-mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

Yours faithfully,

Kieran Doherty
Executive Officer
Direct Line: 01-8737248

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