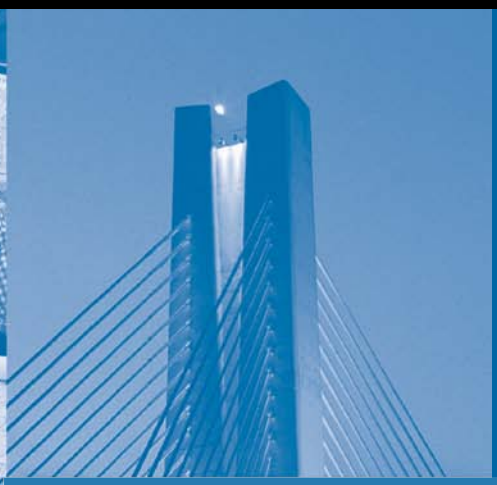
EIRGRID



North-South 400kV Interconnection Development

An Bord Pleanála Reference: PCI001

Concept for Public Participation

APPENDICES

July 2014

Part Funded by the EU-TEN-E Initiative

ESB International
ESBI Energy Innovation

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TOBIN
Consulting Engineers

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DELIVERING IRELAND'S ELECTRICITY FUTURE

LIST OF APPENDICES

APPENDIX A

INFORMATION BROCHURE PUBLISHED IN OCTOBER 2007

CAVAN-TYRONE 400KV POWER LINE

New North-South Interconnector

Proposed Route Corridor Options, Public Consultation

October 2007

Part funded by
EU TEN-E Initiative

Who is EirGrid?

EirGrid plc, a state owned company, is the independent electricity Transmission System Operator in Ireland and the Market Operator in the wholesale electricity trading system. EirGrid's role is to deliver quality connection, transmission and market services to generators, suppliers and customers utilising the high voltage electricity system, and to put in place the grid infrastructure required to support the development of Ireland's economy. EirGrid develops, maintains and operates a safe, secure, reliable, economical and efficient transmission system. EirGrid is playing a key role in establishment of the new All-Island Market for Electricity, as well as developing a second North-South Interconnector.

What's Happening?

EirGrid is planning two projects to facilitate cross-border sharing of electricity, promote better competition and to ensure a future secure supply of electricity throughout the North East. The 2 projects are:

- 80km long Cavan Tyrone 400kV Power Line – the new North-South Interconnector
- 58km Woodland (Co Meath) to Kingscourt (Co Cavan) 400kV Power Line.

A new 80km long 400kV Interconnector between Cavan and Tyrone will more than double the current power transfer capacity between the North and the South, 35km approximately will be in Northern Ireland and the remaining 45km approximately will be in the Republic of Ireland, routed from a proposed new substation near Kingscourt in Co Cavan, through Co Monaghan to a proposed new substation in Co Tyrone. This project is being undertaken in co-operation with Northern Ireland Electricity (NIE).

Following extensive studies, route corridor options have been developed and are presented overleaf.

Benefits

- Support growth and development
- Boost existing industry in Cavan, Monaghan and N. Ireland when competing for business and inward development in the area.
- Ensure security of supply for the future
- Comply with European Union policy which states that links between electricity systems are a key way of ensuring secure and competitively priced electricity markets into the future.
- Facilitate the Single Electricity Market due to come into effect in Ireland later this year.
- Promote competition and better sharing of generation resources between North and South
- Fuel savings
- Fewer emissions
- Facilitate integration of wind generated energy
- Make more bulk high quality power available for the North East

How were the route corridors decided upon?

Seven key criteria were taken into account by the consultants when choosing possible route corridors for the power lines:

Visual Impact: An assessment of the of the visual impact of the proposal on the environment was carried out in order to minimise the impact

Community: an assessment of the local villages and communities was undertaken to reduce the proximity of the power lines to them and ensure minimal impact on lifestyles of those living and working in nearby communities.

Ecology: A review of conservation designated areas, including Special Areas of Conservation (SACs), Special Protection Area (SPAs) and Natural Heritage Areas (NHAs) was completed.

Cultural Heritage: Architectural and archaeological heritage sites, including recorded archaeological monuments and places, protected structures, and national monuments, were assessed in an attempt to minimise any impact.

Landscape: A review of County Development Plans was undertaken in order to assess the numbers of scenic views, scenic routes, and vulnerable landscapes in the area.

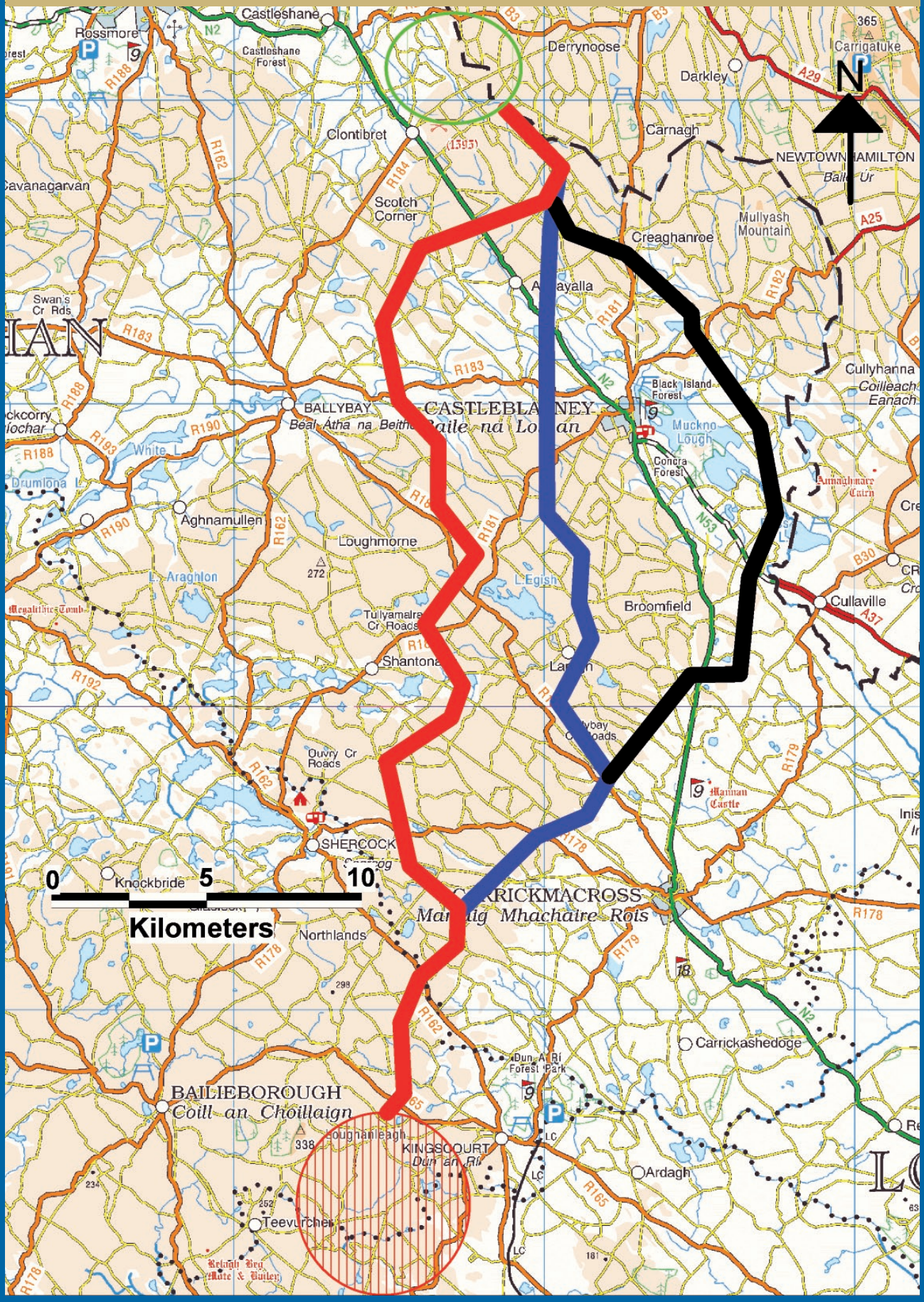
Geology: Soil, subsoil and bedrock was used to determine significant types and their benefits and drawbacks.

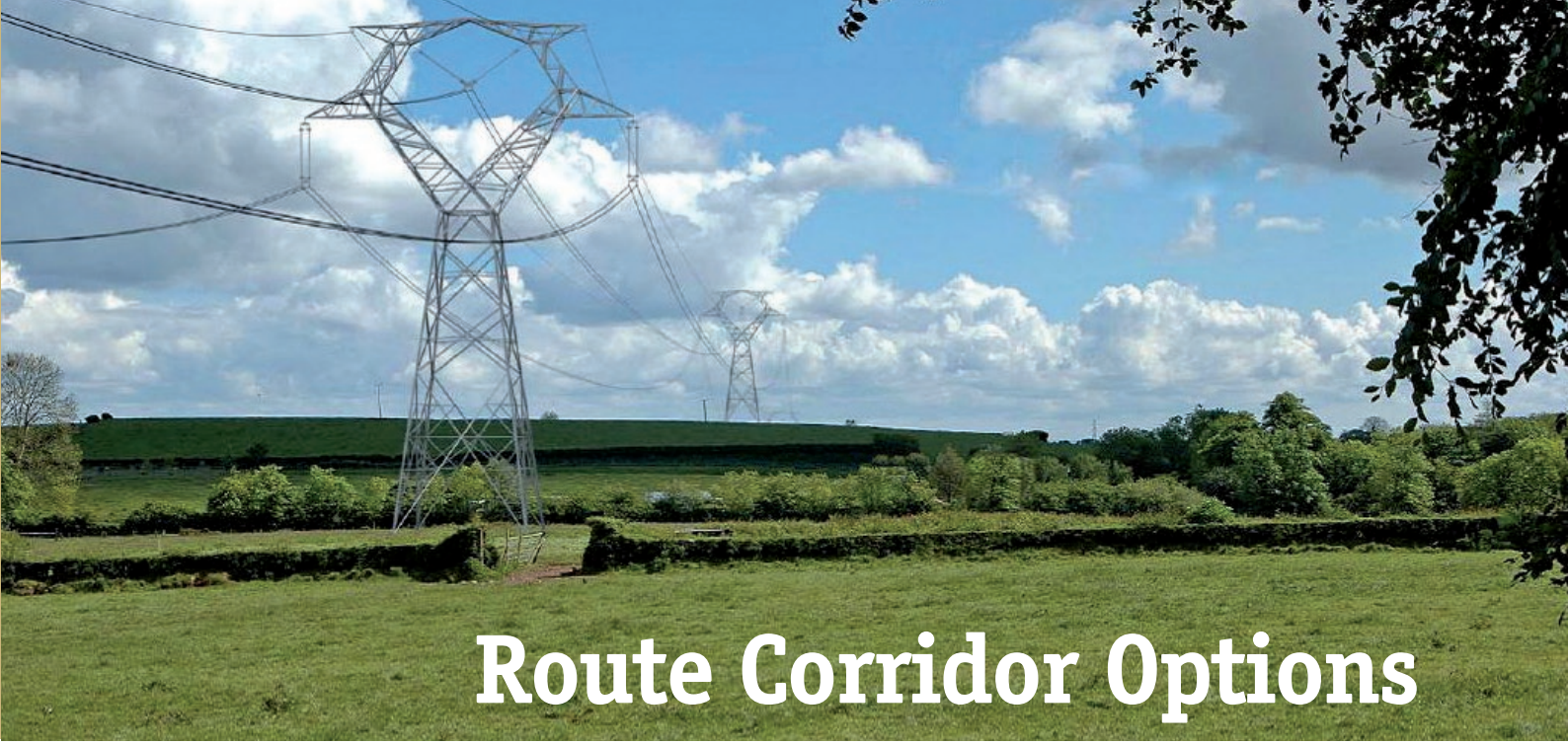
Water: The surface water features were reviewed, as lakes are to be avoided and river crossings minimised.

All of the above constraints were taken into account in order to ensure that the route options were sited in the best possible location.

Proposed Route Corridor Options for Cavan Tyrone 400kV Power Line

new North-South Interconnector





Route Corridor Options

Cavan - Tyrone Route Corridor A

- Route corridor option A connects with the NIE proposal east of Clontibret
- From this point it crosses the N2 north of Annayalla and proceeds to cross the R183 west of the village of Doohamlet
- It continues in a south-easterly direction and crosses the R180 northwest of Lough Egish
- It then crosses the R181 between Lough Egish and Shantonagh to circumvent Shantonagh Lough
- It crosses the R178 approximately 3 kilometers east of Shercock to navigate around the lakes at Northlands and to cross the Cavan County Boundary
- Once it crosses the County Boundary along the R162, it travels in a southerly direction to finally cross the R165 and navigate towards the proposed 400kV substation to the west of Kingscourt Co. Cavan.

Route Corridor B

- Route corridor option B travels in a north-south direction crossing the N2 to meander around Laragh Lough
- It proceeds in a southerly direction to cross the R183 and R161 approximately 3km west of Castleblayney
- It then passes to the east of Lough Egish ,Laragh and west of Lisdoonan.
- It crosses the R180 approximately 4 km from Carrickmacross and travels southwesterly to cross the R178 to reconnect with the proposed route corridor Option A, east of Northlands.

Route Corridor C

This proposed corridor deviates from the proposed route corridor A and B and traverses in the south-easterly direction around Lough Muckno to cross the N53 west of Crossmaglen

It would then cross the N2 before reconnecting with the proposed route corridor B option, south of Lisdoonan

Your views are important to us

We welcome all suggestions and queries. All submissions made and feedback collected during the public consultation on route selection will be used by the technical project teams to inform their decision on selecting the most appropriate route. All queries and submissions made will be dealt with in a confidential manner.

Please study the maps and tell us your views on the proposed route corridor options—you may use the enclosed feedback form or additional pages if you wish. All correspondence will be dealt with confidentially.

What Happens Next?

- Following public consultation in October 2007, submissions made by the public, businesses and other organisations will be taken into account, and along with further technical and other studies, will help to determine a Preferred Route.
- It is hoped that a Preferred Route will be ready for presentation to the public in early 2008, after which it will likely undergo further studies before a planning application is prepared.
- The planning application will include preparing an Environmental Impact Statement (EIS) and consultation with landowners and the local community. The Environmental Impact Assessments (EIA) will assess the impact of the project on the local areas as it is a process for anticipating and, possibly, preventing, negative effects on the environment that may be caused by a proposed development or project.

Keep informed

EirGrid is committed to ensuring that all members of the public are fully aware of the project and encourage you to participate in public consultation. If you would like to discuss the project or to meet with a member of the project team, please contact us by either telephone or email. Otherwise, keep an eye on the website for regular updates.

www.eirgrid.com
Tel: 1890 25 26 90
email: CavanTyroneInterconnector@eirgrid.com

Feedback

Name

Address

Telephone

Email

The Project Manager
Cavan-Tyrone 400kV Power Line
EirGrid
27 Lower Fitzwilliam St
Dublin 2, Ireland

What are your views?


EIRGRID

APPENDIX B

COMMUNITY UPDATE BROCHURE, MAY 2011

EIRGRID

North-South 400 kV Interconnection Development

Community Update May 2011

Part Funded by the EU TEN–E Initiative

GRID25
DELIVERING IRELAND'S ELECTRICITY FUTURE

EirGrid Commences Non Statutory Consultation

The Re-Evaluation Process

Background and Context

EirGrid and Northern Ireland Electricity (NIE) are jointly planning a cross-border project to facilitate sharing of electricity and to promote better competition. In addition EirGrid is seeking to improve the security of electricity supply throughout the north-east area.

EirGrid submitted an application to An Bord Pleanála (ABP) for the section of this project in the Republic of Ireland at the end of 2009 however that application was withdrawn in June 2010.

Since then, EirGrid has entered a process of re-evaluation in which the project has been thoroughly re-examined. This includes issues raised by stakeholders and the general public during the previous application process.

What is Happening Now?

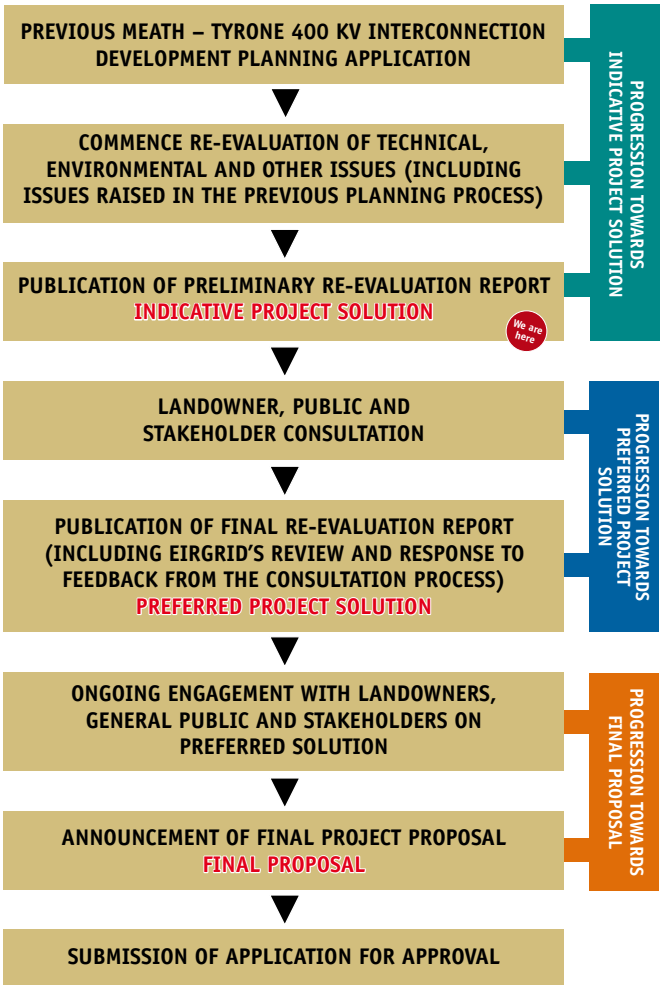
EirGrid has now published a Preliminary Re-Evaluation Report and is engaging in a six week period of non-statutory consultation providing all interested stakeholders with an opportunity to give feedback on the indicative project solution, before submitting a fresh application for planning approval to An Bord Pleanála.

EirGrid would like to hear your views

Please submit your views on the report or development to the Project Team by 17th June 2011. Consultation questions and a feedback form can be found in this brochure. The Preliminary Re-evaluation Report is available on **www.eirgrid.com** or by contacting the Project Team.

Towards a New Planning Application

The diagram below illustrates the current re-evaluation process that will ultimately lead to the submission of a new application to ABP.



Project Roadmap Definitions

Indicative Project Solution
This project has a history of almost four years and a significant amount of research and public consultation has been carried out. This allows EirGrid to bring forward an indicative project solution which, unlike other projects, has the significant benefit of the information gathered and learnings from the previous planning process.

Landowner, Public and other Stakeholder Consultation
EirGrid is holding a six week consultation, seeking feedback on the conclusions contained in the Preliminary Re-Evaluation Report, as well as any new insights on the project that interested stakeholders may have. This is an opportunity to make submissions or observations to EirGrid regarding the nature and location of the project.

Preferred Project Solution
EirGrid will examine the feedback from the Landowner, Public and Stakeholder consultation and make a decision on whether to adopt (with any modifications) the 'Indicative Project Solution' as the 'Preferred' solution, or whether new information has come to light that requires additional technical and environmental evaluation.

...definitions continued

Ongoing Engagement with Affected Landowners, General Public and Other Stakeholders on Preferred Project Solution
The terms of reference for the engagement with stakeholders will focus on the refinement of the 'Preferred' solution having regard to localised constraints and other criteria.

Final Proposal
Following all of the environmental studies and stakeholder engagement, EirGrid will publish the final project proposal, which will form the basis for a new application to An Bord Pleanála.

Report Findings

The Preliminary Re-evaluation Report documents the reassessment of high level issues that form the basis of this project. The report contains the following preliminary findings:

1. There is still a clear and immediate need for enhanced interconnection with Northern Ireland. This will provide significant benefits for the people of Ireland:

- Improve competition in the electricity market;
- Improve security of supply; and
- Support the development of renewable power generation.

2. There remains a need to reinforce the transmission network in the north-east area of the Republic of Ireland.

3. The best technological solution for this project is a 400 kV Overhead Line (OHL), running from the existing Woodland Substation in Meath to the proposed Turleenan Substation in Tyrone.

4. Undergrounding of short sections of the line is feasible but no new areas that would warrant additional undergrounding have been identified to date.

5. The previously planned intermediate substation (in the vicinity of Kingscourt), is not now expected to be required within the next decade. This will therefore be subject to a separate application to An Bord Pleanála when that need arises.

6. Each of the previously identified route corridors remains viable as a routing option for the proposed Development.

7. Route 3B in the Meath Study Area and Route A in the Cavan-Monaghan Study Area remain the corridors that strike the best balance between all criteria. The indicative line route is broadly similar to the line proposed in the previous application (see map insert).

Project Evolution

What changes have been made to the project as a result of the Preliminary Re-evaluation Process?

The Preliminary Re-evaluation Report has reconfirmed most of the original conclusions for this project. However, some modifications have been made, which include:

- Removal of the previously proposed Moyhill Substation near Kingscourt and certain modifications associated with this;
- Local modification to avoid new houses.

We Welcome Your Feedback

EirGrid is seeking feedback from all interested stakeholders on the findings of the Preliminary Re-evaluation Report, which is available at www.eirgrid.com and the project information centres (See details of location at the back of this brochure).

If you have any feedback on the findings in this report, EirGrid would like to hear your views. EirGrid is keen to learn of any new insights on aspects of the project before a new application for planning approval is submitted. Submissions will be recorded and considered by the project team as the project moves forward. The assessment and response to feedback received as part of this process will be published with the Final Re-evaluation Report.

We would greatly appreciate your comments and views on the following key questions:

1. Has EirGrid considered all relevant criteria in determining that the optimum technical solution for this project is an overhead line? If not, what additional information should EirGrid consider or what viable, cost-effective, technically appropriate and environmentally-sensitive alternative would you suggest?

2. Have all environmental criteria been appropriately considered? Is there anything else that you think should be looked at?

3. Are there any other key issues that EirGrid should consider before submitting a new application to ABP.

There is a tear-off feedback form on the last page of this brochure. You can also provide feedback through email, on the phone line, or by meeting with a member of the project team.

A six week non-statutory consultation process will now commence; please submit your views to the Project Team by 17th June 2011.

Contact Us

Email: **northsouth@eirgrid.com**

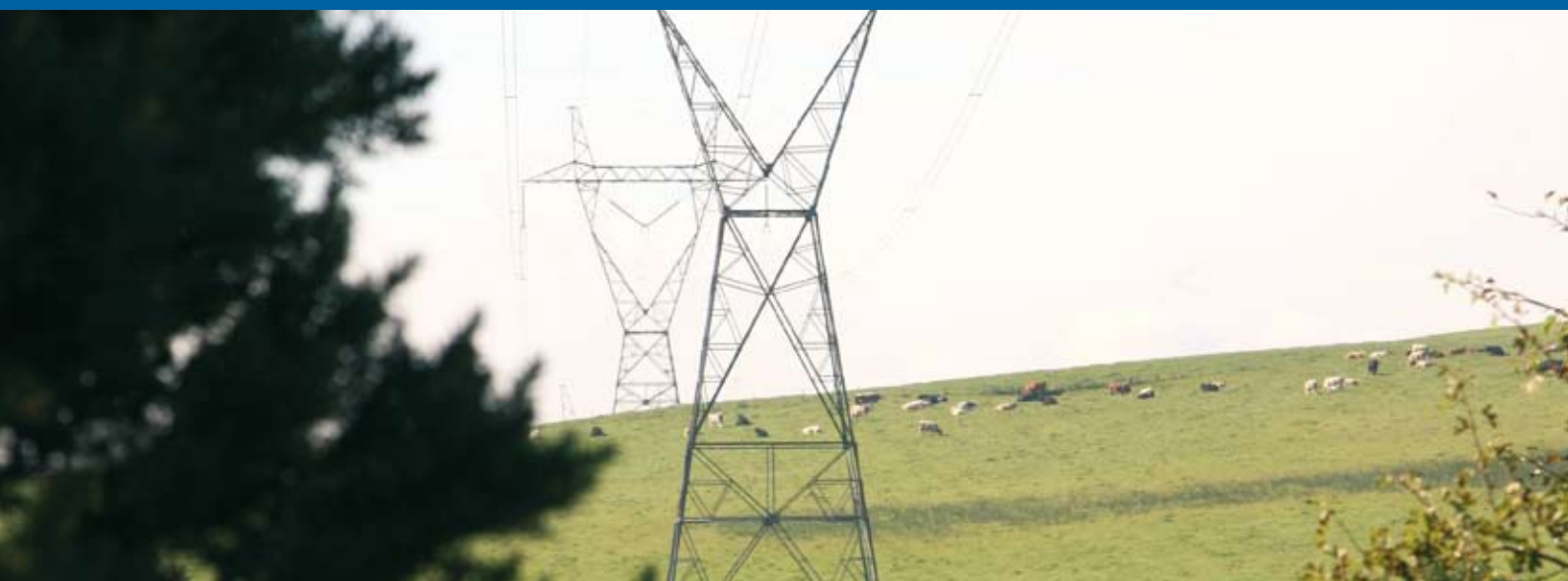
Phone: **Lo-Call 1890 25 26 90**
(9:00 am to 5:00 pm, Monday to Friday)

Visit:
Navan Information Centre
10a Kennedy House,
Kennedy Road,
Navan,
Co. Meath
(Please note our new address)
Open Tuesdays, 1:00 – 7:00 pm or by appointment

Carrickmacross Information Centre
Carrickmacross Workhouse,
Shercock Road,
Carrickmacross,
Co. Monaghan
Open Wednesdays, 1:00 – 7:00 pm or by appointment

Web: **www.eirgrid.com**

Post:
C/O EirGrid NS Project Manager
West Pier Business Campus,
Dún Laoghaire,
Co. Dublin,
Ireland



Feedback

Name

Address

Telephone

Email

Return to:
C/O EirGrid NS Project Manager,
West Pier Business Campus,
Dún Laoghaire,
Co. Dublin,
Ireland

What are your views?

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EIRGRID

Email: **northsouth@eirgrid.com**

Phone: **Lo-Call 1890 25 26 90**
(9:00 am to 5:00 pm, Monday to Friday)

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www.eirgrid.com

APPENDIX C

COMMUNITY UPDATE BROCHURE, APRIL 2013

EIRGRID

North-South 400kV Interconnection Development

Community Update

April 2013

Part Funded by the EU-TEN-E Initiative

GRID25
DELIVERING IRELAND'S ELECTRICITY FUTURE

Re-evaluation of the North-South 400kV Interconnection Development concludes with the publication of the Final Re-evaluation Report

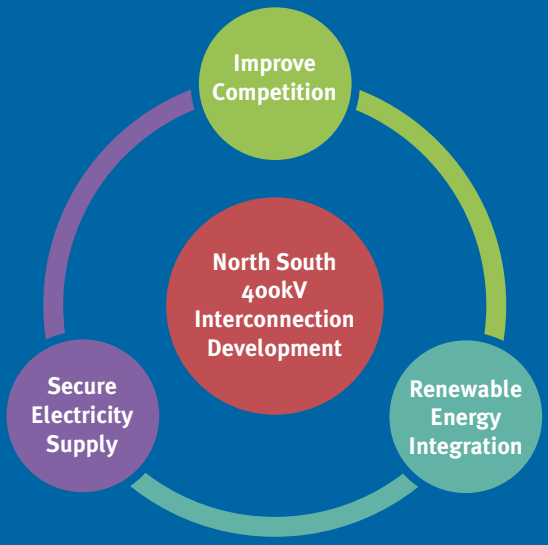
Overview

EirGrid and Northern Ireland Electricity (NIE) are jointly planning a major cross-border electricity scheme. This scheme is a 400kV overhead line linking the existing 400kV substation in Woodland, County Meath with a planned substation in Turleenan, County Tyrone and will provide a second high capacity electricity transmission line between Ireland and Northern Ireland. The scheme consists of two separate but related and complementary projects. EirGrid will in due course apply for planning approval for that part of the scheme located in Ireland called the North-South 400kV Interconnection Development.

Project Drivers

The key drivers for this project are to:

- **Improve competition in the electricity market**
  This project will improve the efficiency of the all-island electricity market
- **Ensure a secure supply of electricity for the island of Ireland**
  This project will enhance the security of the electricity supply throughout the island of Ireland which is essential for economic growth, the creation of jobs and improving the standard of living and quality of life for all
- **Help Ireland meet its 40% renewable electricity target**
  This project will allow more renewable energy to be connected to the network, reducing our production of greenhouse gases and our reliance on imported fossil fuels



While each of these key drivers on their own creates a definite need for the project, combined they create an overwhelming and urgent need.

What has happened so far?

This project was first launched in autumn 2007 and an application for planning approval was submitted to An Bord Pleanála in December 2009. This application was withdrawn in July 2010.

Since the withdrawal of the application, EirGrid has been engaged in the process of undertaking a comprehensive re-evaluation of the project. This involved, among other things, a thorough re-examination of the previous application, including issues raised during the previous application process. In May 2011, EirGrid published its interim findings as set out in a Preliminary Re-evaluation Report, which was subject to consultation.

The consultation requested feedback on the content and findings of the Preliminary Re-evaluation Report and included engagement with the public and landowners on the indicative line route.

The consultation on the Preliminary Re-evaluation Report included:

- The strategic need for the project.
- Technology options for the project.
- Project study area.
- Environmental and other constraints.
- Identification of corridor options.
- Identification of the preferred corridor.
- Identification of an indicative line route within the preferred corridor.

Government Review

A separate review process was undertaken by the Department of Communications, Energy and Natural Resources (DCENR), whereby an International Expert Commission (IEC) reported on the case for, and cost of, undergrounding the North-South 400kV Interconnection Development.

This report was published in January 2012 and recommended the interconnector should not be undergrounded using Alternating Current (AC) cable. However, this report also stated that if undergrounding is to be used, the best technology option currently available is Direct Current (DC). The report estimated that using this technology would cost up to three times more than the standard overhead line solution.

Following a period of consultation, a Government Policy Statement on the Strategic Importance of Transmission and Other Energy Infrastructure was published in July 2012. This policy statement recognised this project as one of a group of projects that are “vital developments for the regions and for the economy and society as a whole”. It also emphasised the importance of early and ongoing consultation to help identify appropriate mitigation measures such as the reconfiguring or rationalising of existing networks, and the development of a community gain programme.

Conclusion of EirGrid's project re-evaluation

EirGrid has completed its re-evaluation process and published the Final Re-evaluation Report. The re-evaluation process has considered and responded to the following:

- Stakeholder feedback from the previous planning application.
- Stakeholder feedback from the Preliminary Re-evaluation Report consultation.
- The outcome of the Government Review.

The key findings of the project re-evaluation are, that there remains an urgent strategic need for the project. Following EirGrid's consideration of the findings in the IEC report, using DC technology would be technically inferior for this project compared to a standard AC overhead line solution and EirGrid agrees with the IEC that this option would be vastly more expensive.

On this basis EirGrid is proposing that the new Interconnector circuit will generally take the form of a single circuit 400kV AC overhead line.

The indicative line route for this overhead line is broadly similar to the previously proposed line route, but incorporates localised modifications as follows:

- Modifications to the line route in order to take account of the construction and granting of permission for new houses occurring since the preparation and submission of the previous application in December 2009.
- Modification arising as a result of the decision not to proceed with an intermediate substation (in the area to the west of Kingscourt) as part of this forthcoming application for approval of the Interconnection Development.
- Modifications arising from technical and environmental considerations during the re-evaluation process.

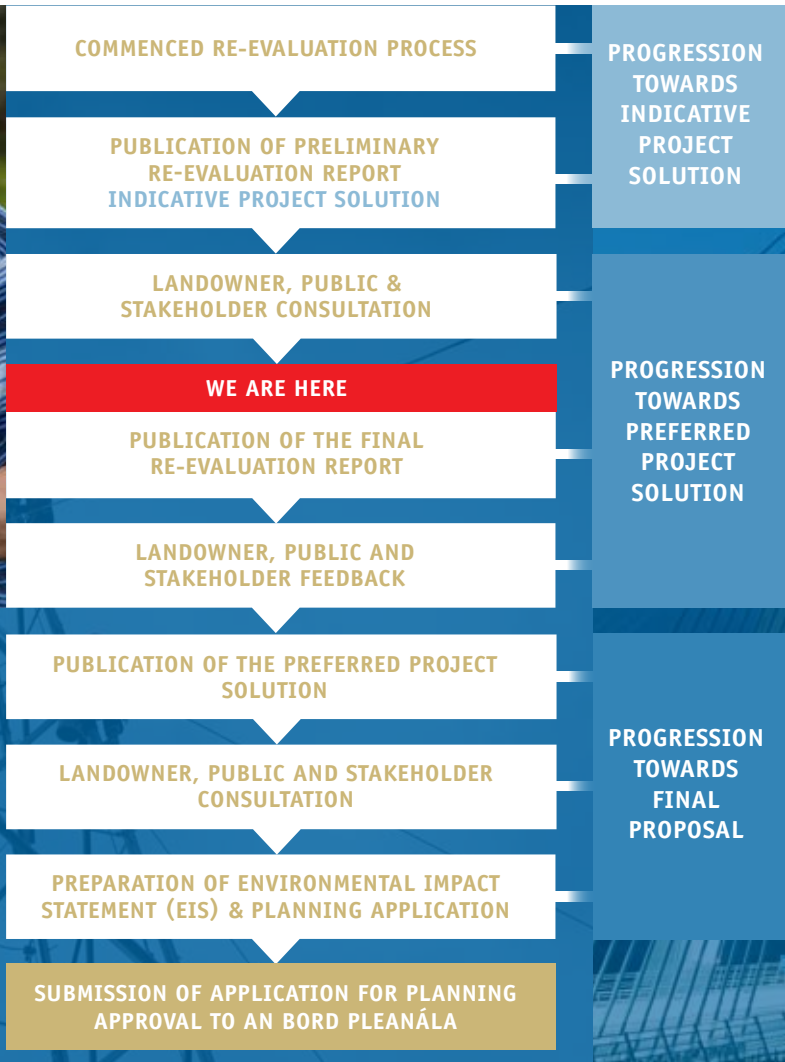
EirGrid welcomes your views

EirGrid is fully committed to engaging extensively with landowners, members of the public and other interested parties on all aspects of the project at any time. It is vital that everyone has an opportunity to provide feedback on the information presented and decisions that are made as the project progresses towards a planning application.

We encourage you to participate by writing to us, calling us, dropping into one of our information centres

Progression towards a new application for statutory approval

The diagram opposite illustrates the process that will ultimately lead to the submission of a new application for planning approval of the project to An Bord Pleanála.



or attending a project open day in Meath, Cavan or Monaghan. We welcome your comments on the Final Re-evaluation Report and your views on whether all issues have been considered as part of the re-evaluation process. If not what other issues do you think EirGrid should consider?

All feedback and submissions will be reviewed and considered by the project team and where appropriate will be incorporated into later stages of the project. To enable this, all feedback should be received by Monday, May 27th 2013.

EirGrid is also seeking your feedback on how best to adopt community gain within transmission project developments and the Grid25 programme in general. You can give your views on community gain by contacting the project information service or using the dedicated feedback form attached to this brochure.

What's happening now?

EirGrid is holding a series of information days on the project. We invite all interested members of the public and other stakeholders to attend these open days to meet with the project team, learn more about the project and give your feedback.

Date	Time	Location
Tuesday April 23rd 2013	1pm – 8pm	**Town Hall** Cavan Town Co. Cavan
Wednesday April 24th 2013	1pm – 8pm	**Town Hall** Cavan Town Co. Cavan
Thursday April 25th 2013	1pm – 8pm	**The Workhouse** Shercock Road Carrickmacross Co. Monaghan
Friday April 26th 2013	1pm – 8pm	**The Workhouse** Shercock Road Carrickmacross Co. Monaghan
Monday April 29th 2013	1pm – 8pm	**Navan Education Centre** Athlumney, Navan Co. Meath
Wednesday May 1st 2013	1pm – 8pm	**Navan Education Centre** Athlumney, Navan Co. Meath

What happens next?

Following the completion of this period of consultation, EirGrid will consider all feedback received before finalising its preferred project solution. The preferred project solution will be published in the coming months, which will be the subject of a further period of public consultation.

This consultation will focus on the:

- Preferred line design, this will include the line route, preferred structure and tower locations.
- Methodology for siting and construction of towers.
- Environmental issues to be addressed in the Environmental Impact Statement (EIS).

Feedback - Community Gain

The **Government Policy Statement on the Strategic Importance of Transmission and Other Energy Infrastructure** published in July 2012 "underlines the imperative [...] and the appropriateness of building community gain consideration into project planning and budgeting and as an intrinsic part of the ongoing consultation with local communities and local authorities."

EirGrid is currently considering how best to adopt community gain within transmission project development and the Grid25 programme in general. EirGrid is seeking your views on the following:

Who Who should receive community gain?

Who should be included in the "community" on transmission projects?

What What initiatives should be eligible for community gain support ie. sports, arts, education?

What do you define as "gain" for your community e.g. mitigation measures such as compensatory undergrounding* or a fund for local community groups?

When At what point in a project should community gain be considered?

At what point in a project should community gain be available?

How How should community gain be managed?

How should community gain be distributed, what criteria should be used and who should define that criterion?

Submit Your Views

You are welcome to submit your views on additional pages.

Return to : c/o **Grid25 Manager**, Block 2, Floor 2, West Pier Business Campus, Dún Laoghaire, Co. Dublin.

* Compensatory undergrounding is the undergrounding of lower voltage lines in an area where an overhead high voltage circuit is planned.

About EirGrid

EirGrid, a state-owned company, is the national operator of the electricity transmission grid.

The national transmission grid is an interconnected network of high voltage power lines and cables, comparable to the motorways, dual carriage ways and main roads of the national road network. It is operated at three voltage levels; 400kV, 220kV and 110kV and is approximately 6,400km in overall length within Ireland.

It is the backbone of Ireland's electricity system and is vital to ensuring that all industrial, commercial and residential customers from both rural and urban areas have a safe, secure, reliable, economic and efficient electricity supply.

Contact Details

Write: c/o EirGrid NS Project Manager,
Block 2, Floor 2, West Pier Business Campus,
Dún Laoghaire, Co. Dublin, Ireland.
Phone: Lo-call **1890 25 26 90**
(9am to 5pm Monday to Friday)

Email: northsouth@eirgrid.com

Website: http://www.eirgridprojects.com/projects/northsouth400kvinterconnectiondevelopment

Visit Information Centres:

Navan
Every Tuesday from 12 noon to 7pm
10a Kennedy House, Kennedy Road, Navan, Co. Meath.

Carrickmacross
Every Wednesday from 12 noon to 7pm
Carrickmacross Workhouse, Shercock Road, Carrickmacross, Co. Monaghan.

Kingscourt
Every Thursday from 12 noon to 7pm
Dun A Ri House Hotel, Station Road, Kingscourt, Co. Cavan.

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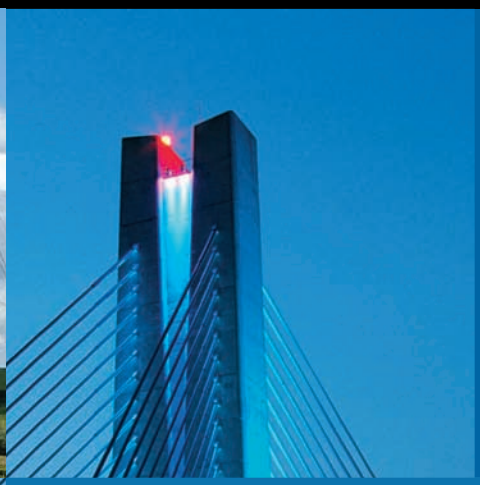
www.eirgridprojects.com

Grid25 is EirGrid's ongoing development plan to deliver a sustainable, competitive and secure electricity supply to homes, business and industries. Grid25 will also help us meet our target of 40% of our energy supply coming from sustainable Irish sources.

APPENDIX D

COMMUNITY UPDATE BROCHURE, JULY 2013

EIRGRID



North-South 400kV Interconnection Development

Community Update

July 2013

Part Funded by the EU-TEN-E Initiative

GRID25
DELIVERING IRELAND'S ELECTRICITY FUTURE

EirGrid Publishes Preferred Project Solution Report for Stage 3 Consultation

The Project

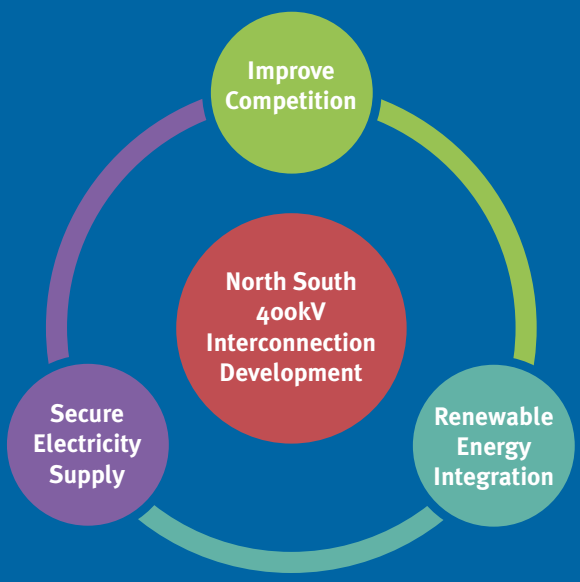
EirGrid and Northern Ireland Electricity (NIE) are jointly planning a major cross-border electricity transmission scheme.

This scheme is a 400kV overhead line linking the existing 400kV substation in Woodland, County Meath with a planned substation in Turleenan, County Tyrone and will provide a second high capacity electricity transmission line between Ireland and Northern Ireland. EirGrid will in due course apply for planning approval for that part of the scheme located in Ireland called the North-South 400kV Interconnection Development.

Project Drivers

The key drivers for this project are to:

- **Improve competition**
  This project will improve the efficiency of the all-island electricity market
- **Ensure a secure supply of electricity**
  This project will enhance the security of the electricity supply throughout the island of Ireland which is essential for economic growth, the creation of jobs and improving the standard of living and quality of life for all
- **Help Ireland meet its 40% renewable electricity target**
  This project will allow more renewable energy to be connected to the network, reducing our production of greenhouse gases and our reliance on imported fossil fuels



NIE has already applied to the competent authority in Northern Ireland for approval for the part located in Northern Ireland.

What has happened recently?

In April 2013, EirGrid published a Final Re-evaluation Report, which provided a comprehensive review of the project and was the subject of a six-week period of public engagement. Stakeholders, including members of the public and landowners, were invited to provide feedback on the content and findings of the report.

Stakeholders provided feedback on the Final Re-evaluation Report at nine open days in Meath, Cavan and Monaghan. Further feedback was received, through the project information service, which included telephone, email, post and face to face meetings with the project team during April and May 2013. This feedback has been considered and responded to by the project team and forms part of a new publication called the Preferred Project Solution Report.

What is happening now?

The Preferred Project Solution Report for the North-South 400kV Interconnection Development documents the line design process and provides detailed information on the line route. An eight-week public consultation on the Report is underway from Tuesday 16th July to Monday 9th September 2013.

This is the final formal consultation period prior to the submission of an application for planning approval to An Bord Pleanála.

The preferred project solution is a 400kV overhead power line linking the existing 400kV substation in Woodland, County Meath with a planned substation in Turleenan, County Tyrone.

The Report provides detailed information on the line route, including

- Maps showing the preferred line route for the project and the proposed locations of the towers.
- Description of the methodologies for siting and constructing towers.
- An outline of the environmental issues to be addressed in the Environmental Impact Statement (EIS) which will accompany a future application for planning approval.

In developing the line design for this project, previously received landowner and stakeholder feedback has been considered.

EirGrid will not seek permission in its application to An Bord Pleanála to move tower positions post-planning. This was previously referred to as “micro-siting”.

EirGrid's Project Development & Consultation Roadmap

The North-South 400kV Interconnection Development has entered Stage Three: Confirm Design phase of the EirGrid Project Development & Consultation Roadmap.

The roadmap is a structured framework of project development that provides a clear and transparent process to all stakeholders.

During this phase feedback from stakeholders informs decisions made by EirGrid with regard to the specific nature, extent and location of the project.

EirGrid will seek to engage with landowners on the proposed route in order to ensure that any concerns or matters regarding siting of the proposed towers are addressed.

Following the close of this 8-week consultation period, EirGrid will review and consider all stakeholder and landowner information received.

During this time, EirGrid will also undertake technical and environmental studies which will also inform the final project proposal.

EirGrid will then prepare a planning application, including EIS, for the proposed development, which will then be submitted to An Bord Pleanála for EIA and planning approval.

We are Here

Public

Public and stakeholder consultation on study area and constraints

Public and stakeholder consultation on findings of **Stage 1 Report**

Public

Public and stakeholder consultation on findings of **Stage 2 Report**

Public

Ongoing public information

Public

Ongoing public information

Once application submitted, public can make submissions to An Bord Pleanála including at an oral hearing, if held

Public

Ongoing public information

Evaluation of Public Consultation process

We are Here

EIRGRID WELCOMES YOUR VIEWS

EirGrid is seeking your views on the topics covered in the Preferred Project Solution Report, particularly on the following:

- Preferred line design.
- Construction methodology.
- Topics to be considered and/or addressed in the EIS.
- Any other feedback or comments on other issues relating to the project.

You can make a submission through the feedback form on the last page of this brochure, at the project open days or information centres, or through the project information service.

All feedback and submissions will be reviewed and considered by the project team and, where appropriate, will be incorporated into the proposed development which will be the subject of an application for planning approval to An Bord Pleanála. To facilitate this process all feedback should be received by 5pm on Monday 9th September 2013.

Meet the Project Team

EirGrid extends an invitation to all interested members of the public and other stakeholders to attend information days on the project to meet the project team, learn more about the project and give feedback.

Information days

Location	Date	Time
Co Meath: Education Centre Athlumney Navan	Tuesday 30th July 2013	1pm – 8pm
Co. Monaghan: The Workhouse Shercock Road Carrickmacross	Wednesday 31st July 2013	1pm – 8pm
Co. Cavan: Murtaghs Function Room, Main Street Kingscourt	Thursday 1st August 2013	1pm – 8pm

The Environmental Impact Statement

KEY ENVIRONMENTAL ISSUES THAT WILL BE CONSIDERED IN THE EIS

An Environmental Impact Assessment (EIA) will be conducted by An Bord Pleanála that will identify, describe and assess the direct and indirect effects of the proposed North-South 400kV Interconnection Development on the environment.

A key element of this EIA process will include the submission by EirGrid of an EIS with the application, for review by An Bord Pleanála.

Legislation and relevant guidelines require the potential impacts on the following environmental topics to be addressed in an EIS:

- Human Beings & Population.
- Flora & Fauna.
- Soil (Geology).
- Air.
- Water.
- Climatic factors.
- Landscape.
- Material Assets, including architectural, archaeological and cultural heritage.
- The inter-relationship between the above factors.

If you would like to identify issues and environmental topics that you feel should be addressed during this process, please participate in this consultation.

IN DETERMINING THE ISSUES TO BE ADDRESSED IN THE EIS, CONSIDERATION WILL BE GIVEN TO THE FOLLOWING:

- Legislative (EU and Irish) requirements and relevant guidelines.
- Issues of concern to the public and other stakeholders.
- Baseline studies and surveys.
- Alternatives considered.
- Likely significant impacts, e.g. visual impact of overhead power lines.

Feedback Form

Name

Address

Telephone

Email

Return to:
C/O **EirGrid NS Project Manager,**
Block 2, Floor 2,
West Pier Business Campus,
Dún Laoghaire,
Co. Dublin,
Ireland.

What are your views?

GRID25
DELIVERING IRELAND'S ELECTRICITY FUTURE

About EirGrid

EirGrid, a state-owned company, is the national operator of the electricity transmission grid.

The national transmission grid is an interconnected network of high voltage power lines and cables, comparable to the motorways, dual carriageways and main roads of the national road network. It is operated at three voltage levels; 400kV, 220kV and 110kV and is approximately 6,400km in overall length within Ireland.

It is the backbone of Ireland's electricity system and is vital to ensuring that all industrial, commercial and residential customers from both rural and urban areas have a safe, secure, reliable, economic and efficient electricity supply.

Contact Details

Write: C/O **EirGrid NS Project Manager,** Block 2, Floor 2, West Pier Business Campus, Dún Laoghaire, Co. Dublin, Ireland.

Phone: Lo-call **1890 25 26 90** (9am to 5pm Monday to Friday)

Email: **northsouth@eirgrid.com**

Website: http://www.eirgridprojects.com/projects/northsouth400kvinterconnectiondevelopment

Visitor Information Centres open as follows until 5th September 2013 or by appointment:

Navan
Every Tuesday from 12 noon to 7pm
10a Kennedy House, Kennedy Road, Navan, Co. Meath.

Carrickmacross
Every Wednesday from 12 noon to 7pm
Carrickmacross Workhouse, Shercock Road, Carrickmacross, Co. Monaghan.

Kingscourt
Every Thursday from 12 noon to 7pm
Dun A Ri House Hotel, Station Road, Kingscourt, Co. Cavan.

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www.eirgridprojects.com

Grid25 is EirGrid's ongoing development plan to deliver a sustainable, competitive and secure electricity supply to homes, business and industries. Grid25 will also help us meet our target of 40% of our energy supply coming from sustainable Irish sources.

APPENDIX E

COMMUNITY UPDATE BROCHURE, DECEMBER 2013

North-South 400kV Interconnection Development Community Update Newsletter – December 2013

The Project

EirGrid and Northern Ireland Electricity (NIE) are jointly planning a major cross-border electricity transmission scheme. This scheme is a 400kV overhead line linking the 400kV substation in Woodland, County Meath with a planned substation in Turleenan, County Tyrone and will provide a second high-capacity electricity transmission line between Ireland and Northern Ireland. EirGrid will shortly apply for planning approval for that part of the scheme located in Ireland called the North-South 400kV Interconnection Development.

What has happened recently?

In July 2013 EirGrid published its "Preferred Project Solution Report". This was then followed by an eight-week period of public consultation during which time EirGrid invited stakeholders to provide feedback on the topics covered in the report and for their views on issues and environmental topics to be addressed in the Environmental Impact Statement (EIS) that will accompany the application for planning approval.

Numerous requests were received from stakeholders, mostly from landowners, for changes to the line design. These have been assessed in accordance with the criteria set out in the "Preferred Project Solution Report" and many have been accommodated. Where appropriate, this has resulted in a change to the line design.

What is happening now?

EirGrid has now published its proposed final line route which alignment will form the basis of an application for planning approval which will be submitted to An Bord Pleanála. This takes account of the changes arising from the modifications requests. Landowners will receive maps showing how the proposal affects their landholdings.

Maps showing the proposed final line route are also available for viewing by all stakeholders on the project website at **www.eirgridprojects.com/projects/NorthSouth400kVInterconnectionDevelopment**

EirGrid has asked An Bord Pleanála to provide a scoping opinion on what topics should be addressed in the EIS. This is a formal process which requires An Bord Pleanála to review the proposal as set out in the Preferred Project Solution Report and to seek input from relevant prescribed bodies on what should be included in the EIS.

It is expected that following receipt of the EIS scoping opinion from An Bord Pleanála EirGrid will be in a position to submit the EIS and the application for planning approval in early 2014.

Before the application is submitted EirGrid will place planning notices in national and local newspapers to inform the public of its intention to do so. These notices will also advise of the locations and times when the application can be inspected. Members of the public and landowners may make submissions directly to An Bord Pleanála during this same period.

An Bord Pleanála is the competent authority that will complete the Environmental Impact Assessment and determine the outcome of the planning application.

For further information on the project, you may contact us in the following ways:

Write: c/o EirGrid NS Project Manager, Block 2, Floor, 2, West Pier Business Campus, Dun Laoghaire, Co. Dublin, Ireland

Phone: Lo-call 1890 25 26 90 **Email:** northsouth@eirgrid.com

Website: http://www.eirgridprojects.com/projects/northsouth400kVinterconnectiondevelopment

Make an appointment to visit us at our local information centres which are available by appointment:

Navan

10a Kennedy House, Kennedy Road, Navan, Co. Meath.

Carrickmacross

Carrickmacross Workhouse, Shercock Road, Carrickmacross, Co. Monaghan.

Kingscourt

Dun A Ri House Hotel, Station Road, Kingscourt, Co. Cavan.

APPENDIX F

COMMUNITY UPDATE BROCHURE, JULY 2014

EIRGRID

North-South 400kV Interconnection Development

Community Update

July 2014

Part Funded by the EU-TEN-E Initiative

GRID25

DELIVERING IRELAND'S ELECTRICITY FUTURE

Update on recent developments and next steps for the project

Overview

EirGrid and System Operator Northern Ireland (SONI) are jointly planning a major cross-border electricity transmission development. EirGrid is preparing a planning application for An Bord Pleanála (ABP) for the portion of the overall development within Ireland, which runs from a substation at Woodland, Meath to the border at Lemgare, Monaghan. The planning of that portion of the proposed interconnector within Northern Ireland was originally undertaken by Northern Ireland Electricity (NIE). The NIE planning function has since been transferred to SONI.

Project Drivers

Improve competition
This project will improve the efficiency of the all-island electricity market.

Ensure a secure supply of electricity
This project will enhance the security of the electricity supply throughout the island of Ireland which is essential for economic growth, the creation of jobs and improving the standard of living and quality of life for all.

Help Ireland meet its 40% renewable electricity target
This project will allow more renewable energy to be connected to the network, reducing our production of greenhouse gasses and our reliance on imported fossil fuels.

Project Update

An Bord Pleanála (ABP)
In August 2013, EirGrid requested ABP to provide a scoping opinion on the Environmental Impact Statement (EIS) for the development. ABP consulted with various parties, including the local and prescribed authorities, as well as statutory agencies in Northern Ireland, before providing its scoping opinion to EirGrid on 11th December 2013 - see http://www.pleanala.ie/casenum/VS0002.htm

Following meetings between EirGrid and ABP to determine whether the project is or is not strategic development, ABP published its decision on the 6th February 2014, finding that:

- the proposed development constitutes strategic infrastructure development,
- an EIS is required to accompany the application, and
- significant effects are likely on the environment in a trans-boundary state (Northern Ireland).

Project of Common Interest
In October 2013, the European Commission designated the overall cross-border development as a Project of Common Interest (PCI). The project is now subject to a new EU regulation that is designed, among other things, to facilitate a faster and more efficient permit granting process. ABP has been designated as the competent authority for managing the PCI process in Ireland and will draw up a schedule for the permit granting process in accordance with the regulation. The pre-application procedure associated with the PCI process commenced on July 2nd 2014 and EirGrid will in due course submit an application for planning approval to ABP.

The Environmental Impact Statement (EIS)
EirGrid is now preparing an EIS. This involves a large number of specialists evaluating how the proposed development would interact with the human and natural environment, including any issues of a cross-border nature. As part of this process, potential impacts across a wide range of environmental areas are identified.

The evaluation requires that in the case of each of the identified areas, the baseline conditions be recorded, potential impacts assessed and, where possible, mitigated against using best international practice. For example, the routing of any infrastructure is guided by the principle of mitigation by avoidance. The EIS is being prepared in accordance with the scoping opinion that was provided by ABP. It will also be informed by the feedback received during the public consultation of July to September 2013.

Independent Expert Panel
In January 2014 the Government appointed an Independent Expert Panel to review EirGrid's evaluation of underground routes for the Grid West and Grid Link projects. In addition, the panel was asked to provide an opinion on "the compatibility of the methodologies to be employed on the Grid Link and Grid West projects with what has already been done on the North South Transmission Line project." In July 2014 the panel provided its opinion which is that the work completed to date on the North-South 400kV Interconnection Development is compatible with the methodologies now being employed on the Grid West and Grid Link projects.

EirGrid's Project Development & Consultation Roadmap

The North-South 400kV Interconnection Development is currently in Stage Four: Prepare Planning Application phase of the EirGrid roadmap.

We are Here

STAGE 1

Information Gathering

Identify Project Study Area

Identify environmental & other constraints

Identify feasible options (corridor/sites)

Publication of **Stage 1 Report**

Pre-application consultation with An Bord Pleanála

Public

Public and stakeholder consultation on study area and constraints

Public and stakeholder consultation on findings of **Stage 1 Report**

STAGE 2

Options

Consideration of all feedback from **Stage 1**

Identification of EirGrid's emerging preferred option (route corridor/site)

Identification of indicative line within corridor or site boundary

Identify and meet landowners of indicative line/site; initial survey

Publication of **Stage 2 Report**

Pre-application consultation with An Bord Pleanála

Public

Public and stakeholder consultation on findings of **Stage 2 Report**

STAGE 3

Confirm Design

Consideration of all feedback from **Stage 2**

Conduct environmental studies and surveys

Confirmation of design of line/site proposal including construction methodology

Ongoing engagement with landowners on preferred line route or site

Pre-application consultation with An Bord Pleanála

Public

Ongoing public information

STAGE 4

Prepare Planning Application

Complete reports and prepare planning application

Preparation of Environmental Impact Statement (EIS) or Environmental Report as required

Conclusion of Pre-application consultation with An Bord Pleanála

Submit application to An Bord Pleanála

Public

Ongoing public information

Once application submitted, public can make submissions to An Bord Pleanála including at an oral hearing, if held

STAGE 5

Wayleaving and Construction

Preparation of construction plans

Serve wayleave notice to landowners and agree access for construction

Commence construction

Public

Ongoing public information

Evaluation of Public Consultation process

We are Here

GRID25

DELIVERING IRELAND'S ELECTRICITY FUTURE

GRID25

DELIVERING IRELAND'S ELECTRICITY FUTURE

Grid25 – Overview of the National Grid Development Strategy

Grid25 is EirGrid's strategy to develop Ireland's electricity transmission system. The strategy aims to support economic growth and job creation.

It facilitates a reliable supply of electricity for all consumers, providing the infrastructure to enable Ireland to realise its renewable potential and achieve the challenging target of delivering 40% of electricity generated from renewable sources by 2020.

The Government policy statement on the *Strategic Importance of Transmission and Other Energy Infrastructure 2012* specifically endorses and supports the Grid25 development strategy. It reaffirms that Grid25 is Government policy and in the national interest.

The Development

The proposed interconnector is a 400kV overhead line linking a substation in Woodland, County Meath with a planned substation in Turleenan, County Tyrone. Given its location across two jurisdictions, the proposed interconnector consists of two related and complementary developments:

1) The SONI proposal for that portion of the project located in Northern Ireland
2) A development being proposed by EirGrid for that portion of the project located in Ireland.

In Ireland the development comprises

- A new single-circuit 400kV overhead transmission line in Monaghan, Cavan and Meath
- A new 400kV circuit along the unused northern side of the existing Oldstreet to Woodland 400kV double circuit line
- Associated works in and adjacent to the Woodland substation in Meath
- An associated temporary construction material storage yard in County Monaghan
- Associated permanent and temporary construction and excavation works

GRID25

DELIVERING IRELAND'S ELECTRICITY FUTURE

Alternative Routes Considered

In December 2013 EirGrid published its final line route for the project that will form the basis of a planning application that will be submitted to ABP. The final route took account of requests from stakeholders - mostly landowners - for localised changes to the line design. These were evaluated in accordance with the criteria set out in the Preferred Project Solution Report, published in July 2013, and many were accommodated.

This was the final instalment in a process dating back to 2007, when EirGrid first published a number of route corridor options. Two years later, in April 2009, following a review of all project documentation, including consultants' studies, reports, and consultation feedback, EirGrid nominated one preferred route corridor for further study.

The preferred route corridor struck the best balance between the competing priorities of community concerns, environmental issues and the technical aspects of the project. The indicative line route in the preferred route corridor was then taken forward to the next phase of project development, involving discussions with landowners, further studies and stakeholder engagement.

Following the withdrawal of an earlier planning application in 2010, EirGrid commenced a comprehensive review of the project. The preliminary findings of the review were published in May 2011 in a Preliminary Re-Evaluation Report. The report included a review of key project documentation, including consultants' studies, reports and feedback from earlier public consultation - including submissions made to ABP.
It identified an indicative project solution, which substantially followed the route which formed the basis of the original application.

Underground Options
Since the project commenced numerous studies have been undertaken regarding options for overhead lines and underground cables, including an International Expert Commission, appointed by the Government.

- Ecofys Study (2008)
- TEPCO Technical Study (2009)
- PB Power Report (2009)
- TransGrid Study (2009)
- International Expert Commission Report (2012)
- PB Power Technology and Costs Update Report (2013)

In July 2014, a Government-appointed Independent Expert Panel provided its opinion on whether EirGrid had adequately examined an underground option for the interconnector. The panel compared the work to date on the project with its recently formulated terms of reference for EirGrid's Grid West and Grid Link projects. It found that, in all material respects, the studies and work undertaken on the interconnector project is compatible with the methodologies now being employed on the Grid West and Grid Link projects.

About EirGrid

EirGrid is a state-owned company and is the national operator of the electricity grid. The national grid is an interconnected network of high-voltage power lines and cables, comparable to the motorways, dual carriageways and main roads of the national road network. It is operated at three voltage levels; 400kV, 220kV and 110kV and is approximately 6,400km in overall length.
It is the backbone of Ireland's power system and is vital to ensuring that all customers; industrial, commercial and residential from both rural and urban areas have a safe, secure, reliable, affordable and efficient electricity supply. EirGrid and SONI (System Operator for Northern Ireland) are jointly proposing this new high capacity electricity interconnector between the electricity networks of Ireland and Northern Ireland. Currently there is only a single such interconnector between the two networks and a second interconnector is now proposed.

EirGrid also owns SONI Limited (SONI), the System Operator of Northern Ireland. SONI is the applicant for planning approval for that part of the proposed interconnector within Northern Ireland. The Single Electricity Market Operator (SEMO) is the market operator of the all-island wholesale electricity trading system. SEMO is a joint venture between EirGrid and SONI. EirGrid operates and develops the national electricity grid power system, providing services to all users of the electricity transmission system. This includes all generators, suppliers, and high voltage customers.

Contact Details

For further information on the project, you may contact us in the following ways:

Write: c/o EirGrid NS Project Manager, Block 2, Floor, 2, West Pier Business Campus, Dun Laoghaire, Co. Dublin, Ireland

Phone: Lo-call 1890 25 26 90
(9am to 5pm Monday to Friday)

Email: northsouth@eirgrid.com

Website: http://www.eirgridprojects.com/projects/northsouth400kVinterconnectiondevelopment

Make an appointment to visit our information centres:

Navan: 10a Kennedy House, Kennedy Road, Navan, Co. Meath

Carrickmacross: Carrickmacross Workhouse, Shercock Road, Carrickmacross, Co. Monaghan

Kingscourt: Dun a Ri House Hotel. Station Road, Kingscourt, Co. Cavan

Information on the PCI Process

An Bord Pleanála, the competent authority for managing the PCI process in Ireland, has published a Manual of Permit Granting Process Procedures which can be viewed at http://www.pleanala.ie/publications/index.htm
The EU Commission PCI website can be accessed at http://ec.europa.eu/energy/infrastructure/pci/pci_en.htm.

For information on the Regional Group Meetings please go to https://circabc.europa.eu. Then select (in sequence) Browse Categories, Energy, 13 Regional Group Meetings and Library.

Part Funded by the EU-TEN-E Initiative

GRID25
DELIVERING IRELAND'S ELECTRICITY FUTURE

www.eirgridprojects.com

Grid25 is EirGrid's ongoing development strategy to deliver a sustainable, competitive and secure electricity supply to homes, business and industries. Grid25 will also help us meet our target of 40% of our energy supply coming from sustainable Irish sources.

APPENDIX G

LANDOWNER BROCHURE, JULY 2013

EIRGRID

North-South 400kV Interconnection Development

Landowner Information Brochure

July 2013

GRID25

DELIVERING IRELAND'S ELECTRICITY FUTURE

Phase 2 of Landowner Consultation is now commencing

EirGrid and Northern Ireland Electricity are jointly planning a major cross-border electricity transmission scheme.

This scheme is a 400kV overhead line linking the existing 400kV substation in Woodland, County Meath with a planned substation in Turleenan, County Tyrone and will provide a second high capacity electricity transmission line between Ireland and Northern Ireland. EirGrid will in due course apply for planning approval for that part of the scheme located in Ireland called the North-South 400kV Interconnection Development.

Landowner Engagement

EirGrid is committed to providing an accessible, meaningful and accountable consultation process. The engagement process has three phases:

Phase 1- Indicative Route (Completed)

Phase 1 of the landowner engagement process took place from May to July 2011. In this phase, all landowners were issued with maps showing the **Indicative Route** of the line as then envisaged on their property. EirGrid agents also sought to meet with each landowner to obtain feedback, confirm ownership, discuss the possible positioning of towers and gain access for environmental and/or technical surveys, where applicable.

EirGrid is commencing the second phase of its landowner engagement strategy

INDICATIVE

LANDOWNER LETTER WITH MAPS

PHASE 1

LANDOWNER SURVEY VISITS

PHASE 1

PREFERRED (Current Phase)

TOWER LOCATIONS

PHASE 2

FINAL PROPOSAL

FINAL LINE ROUTE AND SUBMIT APPLICATION

PHASE 3

Phase 2 - Preferred Line Route (Current Phase)

The second phase of landowner consultation is now commencing on the **Preferred Line Route, proposed tower locations, construction access routes,** and other matters related to the project. All affected landowners, have been issued with updated maps outlining the above information and they will have an opportunity to comment and suggest changes to certain aspects of the proposal.

The consultation period will run for a period of eight weeks, from Tuesday, 16th July 2013 to Monday, 9th September 2013. This is the final formal consultation period prior to the submission of an application for planning approval to An Bord Pleanála.

There are several ways for you to engage with EirGrid:

- Contact your dedicated landowner agent (contact details are provided in your landowner letter).
- A **Change Request Form** is provided with this brochure, see page seven for further details.
- EirGrid is hosting a series of **Open Days** for the general public and landowners to provide their feedback on the project. For details of the Open Days planned in your area, please refer to the Community Update Brochure.
- Our **Navan Information Centre** is open every Tuesday from 12 noon to 7pm, our **Carrickmacross Information Centre** every Wednesday from 12 noon to 7pm and our **Kingscourt Information Centre** every Thursday from 12 noon to 7pm.
- Feedback can also be provided by post to: C/O EirGrid NS Project Manager, West Pier Business Campus, Dún Laoghaire, Co. Dublin, by email to northsouth@eirgrid.com or by phone to **1890 25 26 90** (Mon-Friday 9am to 5pm).

EirGrid will assess all feedback received during Phase 2 and, where possible, incorporate feedback into the proposal to be submitted to An Bord Pleanála for planning approval.

Note: EirGrid will not be seeking permission in its application to move tower positions post-planning (previously referred to as "micro-siting").

Phase 3 - Final Proposal

In Phase 3 landowners will be informed of the final proposal that EirGrid is submitting to An Bord Pleanála for approval. Landowners will receive maps and information confirming the route and tower locations included in the application for approval as well as information on the statutory consultation phase.

Compensation

In the event that the proposed development receives planning approval and proceeds to construction, losses incurred by the owner of lands on which the line is constructed will be compensated by means of a statutory compensation process, where appropriate.

Preferred Project Solution

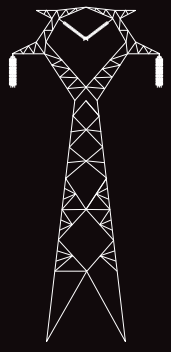
EirGrid has now published the Preferred Project Solution Report for the project. The report is available on the project website: **www.eirgridprojects.com** or alternatively by contacting any member of the project team. Contact details are provided on the back page of this brochure.

Overhead Line Design

As stated in the Preferred Project Solution Report, the new interconnector circuit shall generally take the form of a single circuit 400kV AC (alternating current) overhead line (OHL). An overhead transmission line is made up of a number of elements, including conductors (wires), shieldwires, insulators and supporting structures.
There are three types of towers proposed for this project. The height and footprint of each tower is dependent upon the tower type and the terrain over which the line passes. If you would like additional information on the size of the towers, if any, currently proposed for your land, please contact your dedicated landowner agent.

At 400kV, the conductors are required to be a minimum of 9 metres above ground. The distance between towers is known as the "span", and the length of the span is dependent on the terrain over which the line is to cross. The average span will be about 350 metres.

The preferred line route will also utilise nine existing double circuit towers on the approach to Woodland substation. These towers can carry two separate circuits and one side is currently unused and available for the North-South 400kV Interconnection Development.

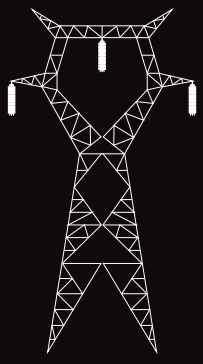


Intermediate or Suspension Tower

These support the conductors (wires) on straight sections of the line route.

Typical Height: **27 - 43m**

Footprint Range: **6.4 x 6.4m to 11 x 11m**

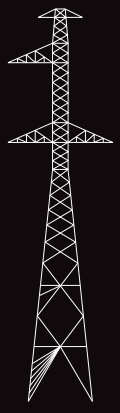


Angle/Tension Tower

These are used where the line route changes direction.

Typical Height: **24 - 37m**

Footprint Range: **7.4 x 7.4m to 12 x 12m**



Transposition Tower

Only two of these are proposed. They are required in order to improve the operating performance of the line.

Typical Height: **37 - 56m**

Footprint Range: **5.5 x 5.5m to 8.5 x 8.5m**

Guidelines for Overhead Line Design and Tower Positioning

The current preferred line route is designed in accordance with national and international standards and best practice.

In designing the preferred line route, landowner considerations, as well as technical and environmental constraints, have been considered. The guiding principles for positioning the towers are explained in detail in the Preferred Project Solution Report. Some of the considerations are outlined below. As part of this phase of landowner consultation, EirGrid is seeking your feedback on the line route and proposed tower locations.

Landowner Considerations

- Minimise disturbance to current land use, farm and land management practices.

Technical Considerations

- Meet the line design requirements and technical limits of the proposed tower, such as span length and clearance height.
- Avoid sharp changes in direction in the line and minimise the number of angle towers required where possible.

Environmental Considerations

- Avoid known ecologically sensitive areas where possible. (e.g. SAC/cSAC/pNHA/NHA/SPAs).
- Cause least disturbance and minimise impacts to natural heritage interests (including watercourses) and cultural heritage interests.
- Avoid sites of potential ecological importance, e.g. hedgerows and wetlands. Only site towers on hedgerows if the impact can be assessed by survey and appropriate mitigation measures identified.
- Integrate the line into the landscape where possible.
- Where possible, achieve a lateral clearance of 50m from the centre line to nearest dwelling and, on the grounds of general amenity, avoid routing close to residential areas.

Construction

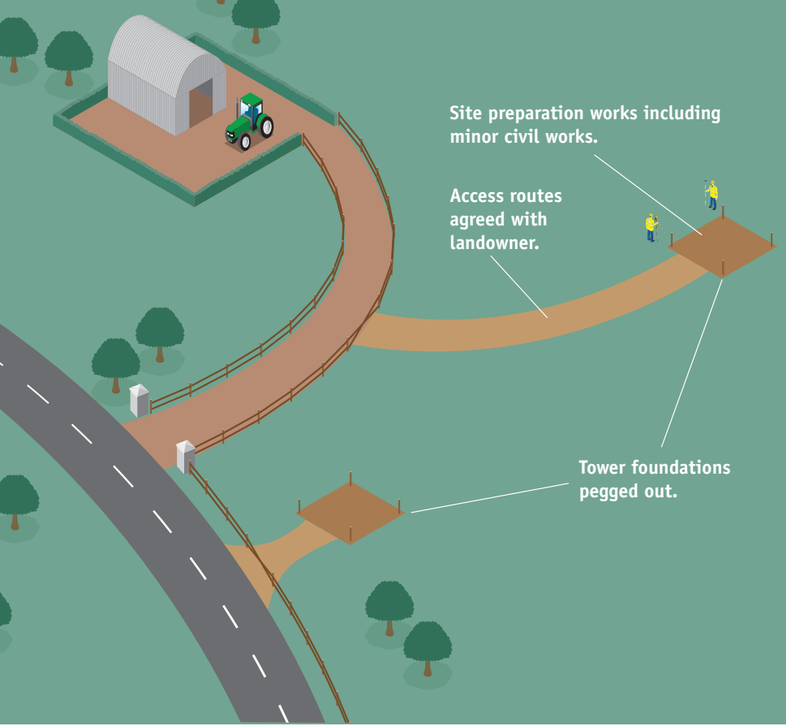
(For illustrative purposes only)

It should be noted that the construction methodology outlined below is indicative only and is based on EirGrid's and ESB Networks' experience of similar transmission line projects. Where there are site specific issues, for example poor ground conditions or unique planning conditions, then alternative methodologies are likely to be required.

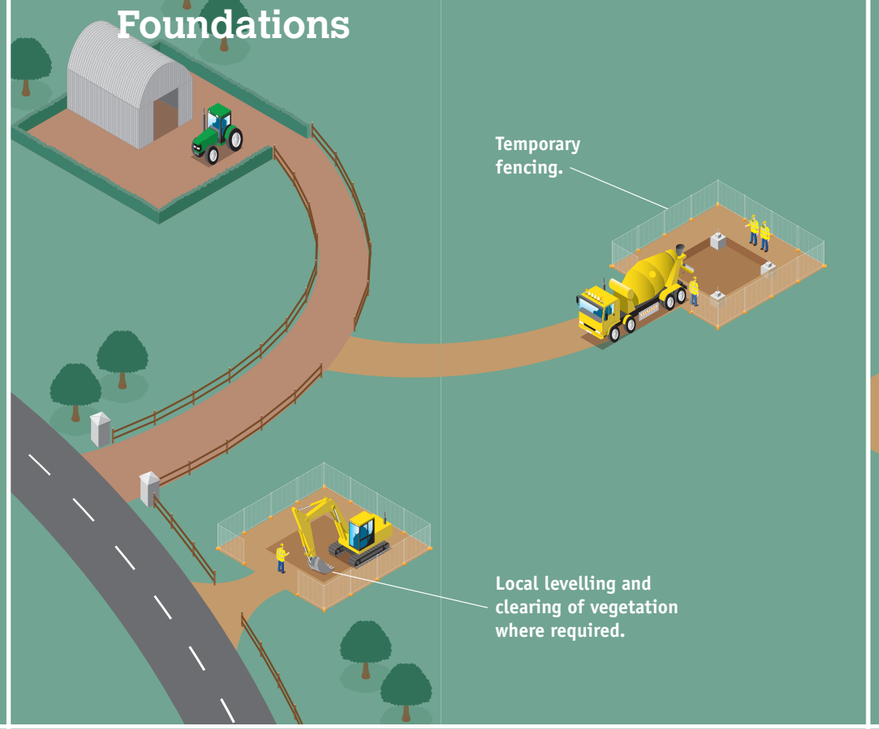
In all cases, EirGrid will work with landowners to agree access routes and to minimise disruption.

Individual tower sites will be separated by an average of 350m and access to the sites will be required for short periods during each phase of construction.

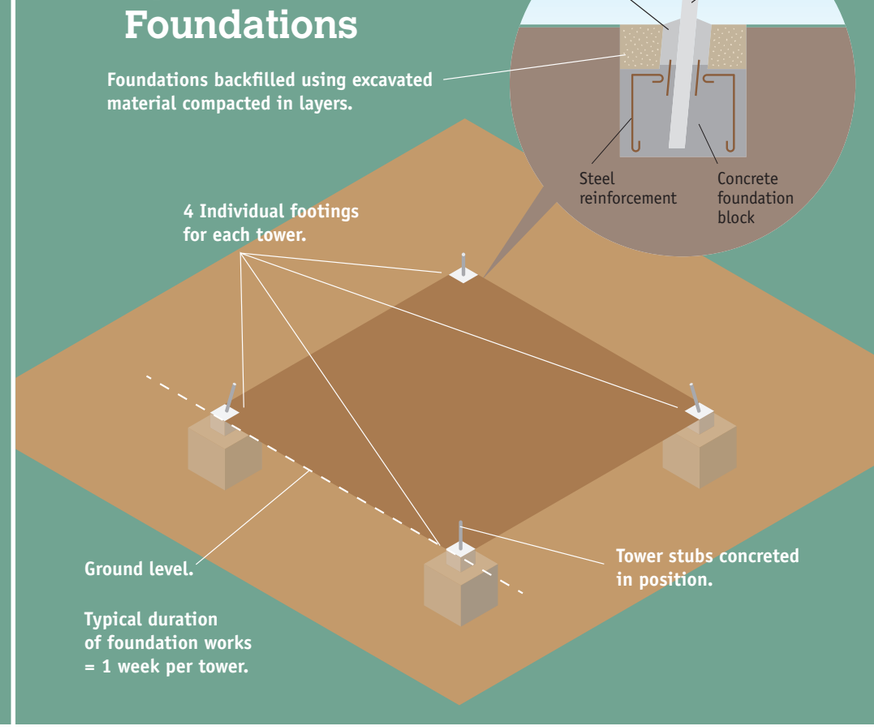
1 Setting Out/Access Routes



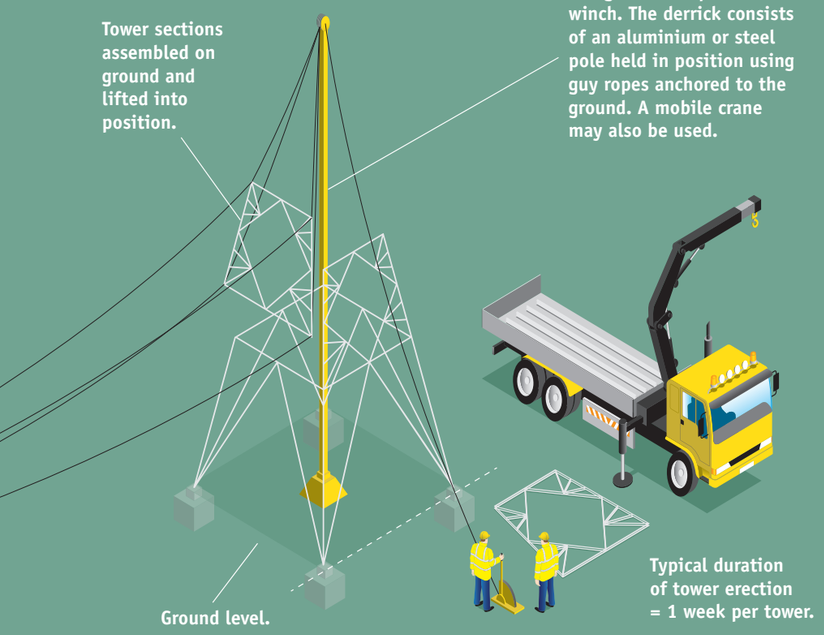
2 Tower Foundations



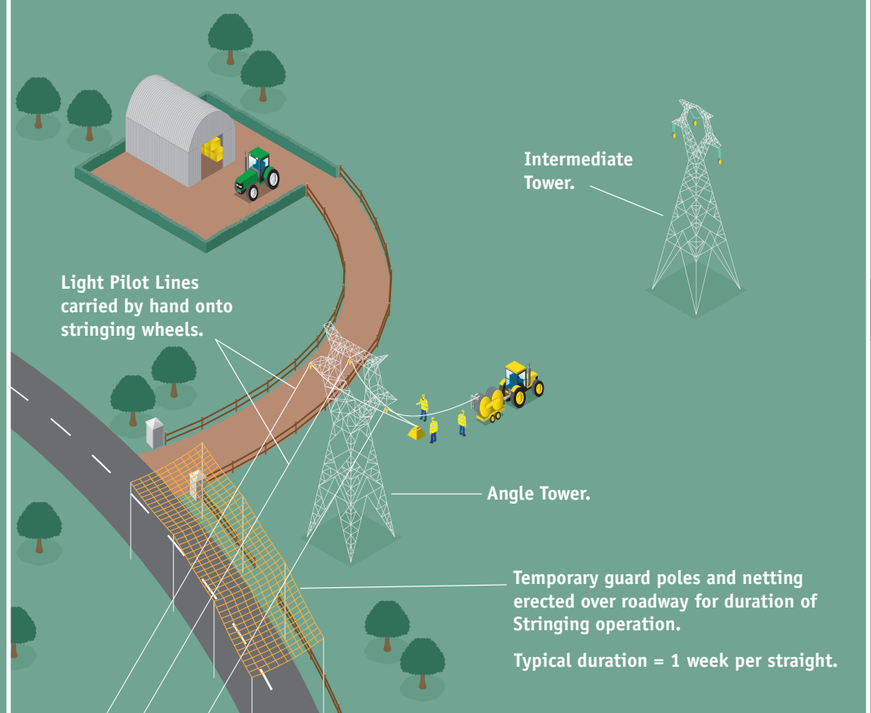
3 Typical Tower Foundations



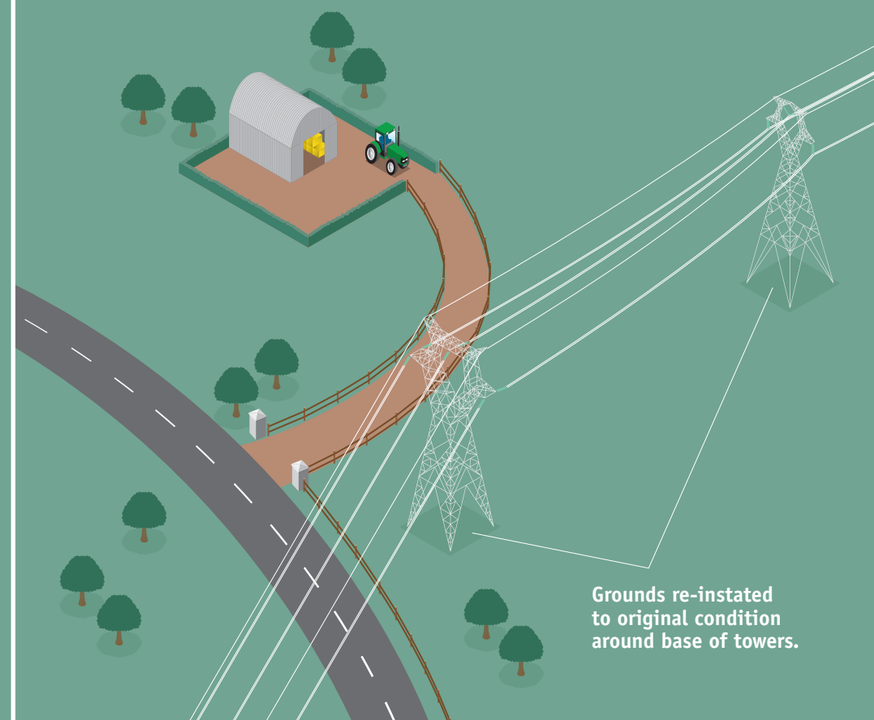
4 Tower Erection



5 Stringing



6 Re-Instatement & Completion



Guidelines for Identifying Construction Access Routes

In identifying indicative construction access routes EirGrid seeks to minimise the environmental impact and the impact on farm and land management practices. These indicative temporary access routes will be approximately 4 metres in width to cater for the construction vehicles. Where possible, landowner preferences will be accommodated and existing access routes will be utilised.

The guiding principles used in the identification of access routes are explained in detail in the **Preferred Project Solution Report** and a summary is provided below.

Landowner Considerations

- Minimise disturbance to current land use and farm and land management practices.
- Take appropriate precautions to protect animal welfare and crop fertility by avoiding the spreading of diseases and noxious and invasive plants between farms.

Technical Considerations

- Maximise use of existing farm entrances, farm tracks/ roads and bridges, where possible.
- The use of private accesses to residential properties should be avoided wherever possible for safety and amenity reasons.

Environmental Considerations

- Avoid sensitive areas where possible (e.g. SAC/cSAC/pNHA/NHA/SPAs).
- Cause least disturbance, and minimise impacts, to natural heritage interests (including watercourses) and cultural heritage interests.
- Minimise the amount of new temporary entrances, and access tracks/roads, where possible.
- Minimise intrusion and disturbance to the surrounding area and local communities.

Where applicable, an aerial map(s) detailing the proposed indicative access routes for construction purposes are included in your landowner pack. As part of this phase of landowner consultation we are seeking your feedback on the suitability of these indicative access routes.

How You Can Influence the Line Design

EirGrid is seeking to minimise disturbance to current land use and farm management practices and is seeking your feedback. You can provide feedback to your designated landowner agent or by contacting our dedicated project information service or in writing using the Change Request Form provided on page seven of this brochure.

In addition, if you would like an agricultural advisor to meet with you in order to carry out an assessment of the impact that the proposal may have on your farm practice, please advise through one of the methods listed above.

In order for your proposed modification to be adopted it must:

- Meet general line design requirements.
- Not create greater impact for adjoining dwellings/ sensitive receptors, and
- Tower and line movements should be confined to the landowner property, where possible unless otherwise agreed with adjoining landowners.

All reasonable line route and tower movement requests will be considered and assessed. A balanced judgement will be made, based on technical and environmental considerations and the results of this assessment will be communicated to you.

Approved change requests will be incorporated into the final proposed development which will be submitted for planning approval to An Bord Pleanála. As indicated previously EirGrid will not be seeking flexibility in the application to move tower positions post-planning.

Please submit your feedback to the Project Team by 9th September 2013.

Landowner Change Request Form

Reference Number: (As Issued by EirGrid)

Name:

Address:

Telephone: Email:

Preferred Method of Contact: a) post b) phone

c) email d) visit

1. Is the extent of your land holding (along the preferred line route) correct on the maps you have received?

Yes ☐ No ☐ (If No, please provide details in the space provided for feedback below)

2. Would you like to meet directly with EirGrid?

Yes ☐ No ☐

3. Would you like an agricultural advisor to carry out an assessment of the impact the proposal may have on your farm practices?

Yes ☐ No ☐

4. Would you allow access for an environmental field survey of your property so that EirGrid can assess any change request made?

Yes ☐ No ☐

5. Do you have any feedback on the proposed line route, tower locations or indicative access routes detailed on the map?

Yes ☐ (Please provide details in the space provided below)

No ☐

Feedback/Details of Proposed Change(s):*

Reason(s) for Requested Change(s):

* (Note – If you wish, please return the landowner map included with your pack, marked with your proposed modification. A copy of the map will be reissued to you upon receipt)

Return to : C/O EirGrid NS Project Manager, Block 2, Floor 2, West Pier Business Campus, Dún Laoghaire, Co. Dublin.

About EirGrid

EirGrid, a state-owned company, is the national operator of the electricity transmission grid.

The national transmission grid is an interconnected network of high voltage power lines and cables, comparable to the motorways, dual carriageways and main roads of the national road network. It is operated at three voltage levels; 400kV, 220kV and 110kV and is approximately 6,400km in overall length within Ireland.

It is the backbone of Ireland's electricity system and is vital to ensuring that all industrial, commercial and residential customers from both rural and urban areas have a safe, secure, reliable, economic and efficient electricity supply.

Contact Details

Write: C/O **EirGrid NS Project Manager**, Block 2, Floor 2, West Pier Business Campus, Dún Laoghaire, Co. Dublin, Ireland.

Phone: Lo-call **1890 25 26 90** (9am to 5pm Monday to Friday)

Email: **northsouth@eirgrid.com**

Website: http://www.eirgridprojects.com/projects/northsouth400kvinterconnectiondevelopment

Visitor Information Centres open as follows until 5th September 2013 or by appointment:

Navan
Every Tuesday from 12 noon to 7pm
10a Kennedy House, Kennedy Road, Navan, Co. Meath.

Carrickmacross
Every Wednesday from 12 noon to 7pm
Carrickmacross Workhouse, Shercock Road, Carrickmacross, Co. Monaghan.

Kingscourt
Every Thursday from 12 noon to 7pm
Dun A Ri House Hotel, Station Road, Kingscourt, Co. Cavan.

Part Funded by the EU-TEN-E Initiative

GRID25
DELIVERING IRELAND'S ELECTRICITY FUTURE

www.eirgridprojects.com

Grid25 is EirGrid's ongoing development plan to deliver a sustainable, competitive and secure electricity supply to homes, business and industries. Grid25 will also help us meet our target of 40% of our energy supply coming from sustainable Irish sources.

APPENDIX H

BROCHURES AND FAQS 2007 - 2010

MEATH-CAVAN 400KV POWER LINE

Proposed Route Corridor Options, Public Consultation

October 2007

Part funded by
EU TEN-E Initiative

Who is EirGrid?

EirGrid plc, a state owned company, is the independent electricity Transmission System Operator in Ireland and the Market Operator in the wholesale electricity trading system. EirGrid's role is to deliver quality connection, transmission and market services to generators, suppliers and customers utilising the high voltage electricity system, and to put in place the grid infrastructure required to support the development of Ireland's economy. EirGrid develops, maintains and operates a safe, secure, reliable, economical and efficient transmission system. EirGrid is playing a key role in establishment of the new All-Island Market for Electricity, as well as developing a second North-South Interconnector.

What's Happening?

EirGrid is planning two projects to facilitate cross-border sharing of electricity, promoting better competition and to ensure a future secure supply of electricity throughout the North East. The 2 projects are:

- 80km long 400kV Interconnector between Cavan and Tyrone
- 58km Woodland (Co Meath) to Kingscourt (Co Cavan) 400kV Power Line.

The 58km Woodland, Co Meath to Kingscourt, Co Cavan 400kV Power Line is necessary to strengthen the existing power supply in the North East due to recent increased development in the region. This project will connect the existing sub-station in Woodland, Co Meath to a proposed new sub-station near Kingscourt in Co Cavan.

Following extensive studies, route corridor options have been developed and are presented overleaf.

Benefits

- Provide high quality bulk power supply for the North East
- Support growth in the region and ensure continuing reliability of supply.
- Boost existing industry in the North East when competing for business and inward development in the area.
- Guarantee security of supply for future decades - if nothing is done now, by 2012/13 there is likely to be insufficient network capacity required to supply demand in the North East
- Increase competition and therefore reduce the cost of electricity to customers.
- Increase reliability for the local network in the North East and for all electricity customers.

How were the route corridors decided upon?

Seven key criteria were taken into account by the consultants when choosing possible route corridors for the power lines:

Visual Impact: An assessment of the of the visual impact of the proposal on the environment was carried out in order to minimise the impact

Community: an assessment of the local villages and communities was undertaken to reduce the proximity of the power lines to them and ensure minimal impact on lifestyles of those living and working in nearby communities.

Ecology: A review of conservation designated areas, including Special Areas of Conservation (SACs), Special Protection Area (SPAs) and Natural Heritage Areas (NHAs) was completed.

Cultural Heritage: Architectural and archaeological heritage sites, including recorded archaeological monuments and places, protected structures, and national monuments, were assessed in an attempt to minimise any impact.

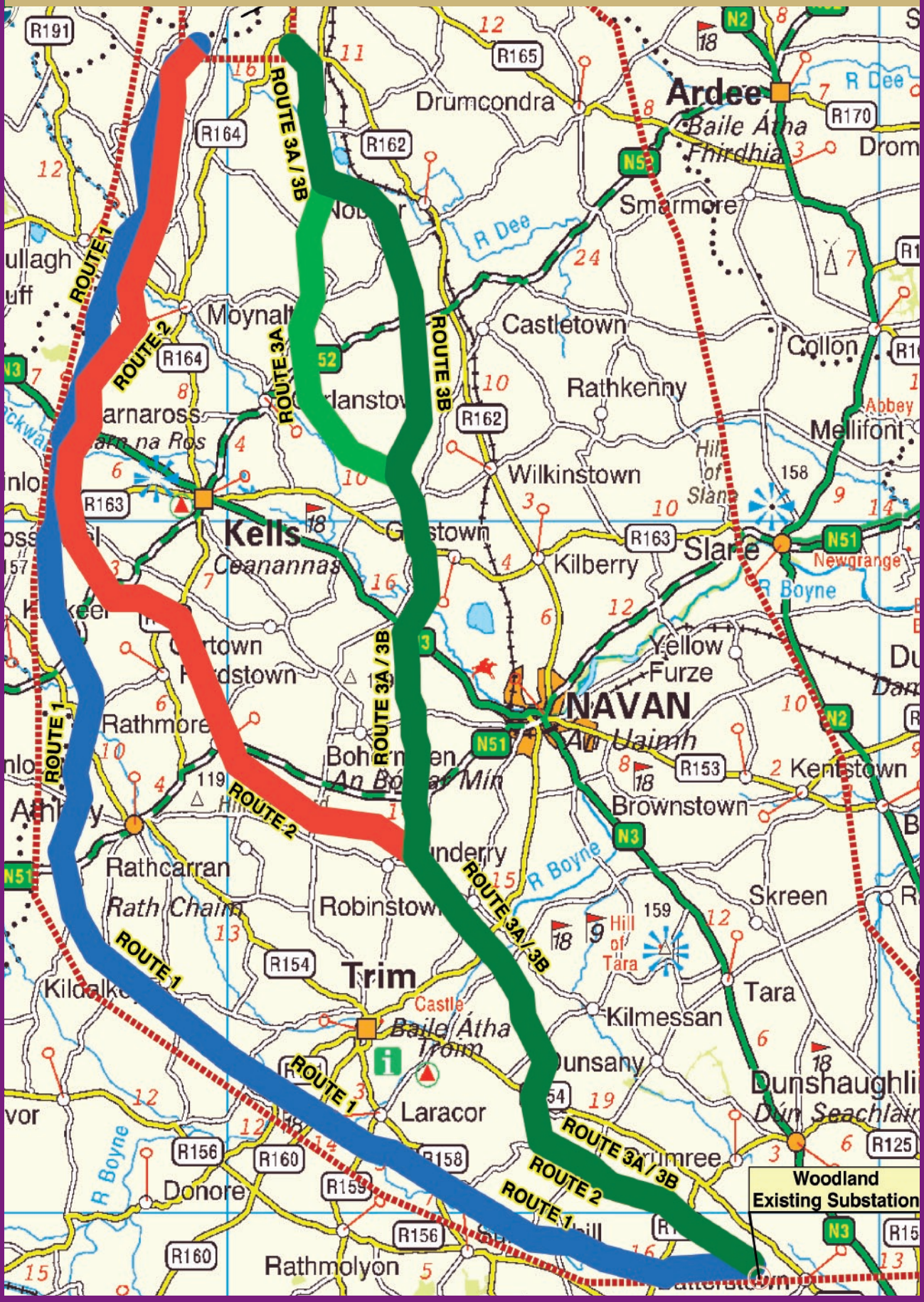
Landscape: A review of County Development Plans was undertaken in order to assess the numbers of scenic views, scenic routes, and vulnerable landscapes in the area.

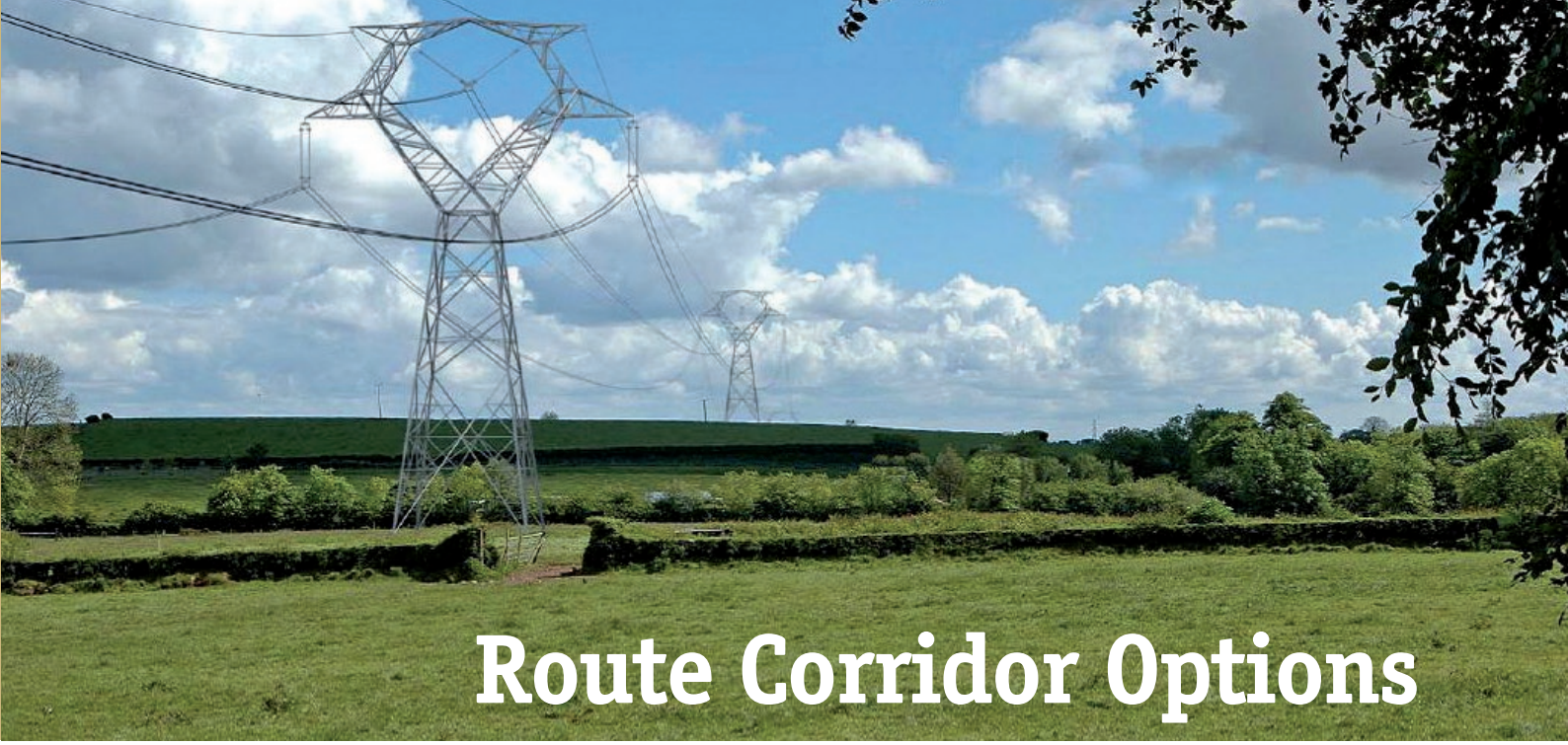
Geology: Soil, subsoil and bedrock was used to determine significant types and their benefits and drawbacks.

Water: The surface water features were reviewed, as lakes are to be avoided and river crossings minimised.

All of the above constraints were taken into account in order to ensure that the route options were sited in the best possible location.

Proposed Route Corridor Options for Meath – Cavan 400 kV Power Line





Route Corridor Options

Meath-Cavan

Route Option 1

Route Option 1 runs to the western part of the study area, staying to the west of the towns of Trim, Athboy and Kells and approximately 5km north of the town of Ballivor and approximately 1km east of the town of Mullagh.

Route Option 2

Route Option 2 runs between the central and western section of the study area, staying to the east of the town of Trim and Athboy, west of the town of Kells and then runs parallel to Route Option 1, running approximately 2.5km to the east of the town of Mullagh

Route Option 3

Route Option 3 follows Route Option 2 initially before running in a due north direction, running to the west of the town of Navan and to the east of the town of Kells. Approximately 6km north of the N3, this route option splits into two options 3A and 3B, before joining together west of Whitewood Lough.

Your views are important to us

We welcome all suggestions and queries. All submissions made and feedback collected during the public consultation on route selection will be used by the technical project teams to inform their decision on selecting the most appropriate route. All queries and submissions made will be dealt with in a confidential manner.

Please study the maps and tell us your views on the proposed route corridor options—you may use the enclosed feedback form or additional pages if you wish. All correspondence will be dealt with confidentially.

What Happens Next?

- Following public consultation in October 2007, submissions made by the public, businesses and other organisations will be taken into account, and along with further technical and other studies, will help to determine a Preferred Route.
- It is hoped that a Preferred Route will be ready for presentation to the public in early 2008, after which it will likely undergo further studies before a planning application is prepared.
- The planning application will include preparing an Environmental Impact Statement (EIS) and consultation with landowners and the local community. The Environmental Impact Assessments (EIA) will assess the impact of the project on the local areas as it is a process for anticipating and, possibly, preventing, negative effects on the environment that may be caused by a proposed development or project.

Keep informed

EirGrid is committed to ensuring that all members of the public are fully aware of the project and encourage you to participate in public consultation. If you would like to discuss the project or to meet with a member of the project team, please contact us by either telephone or email. Otherwise, keep an eye on the website for regular updates.

www.eirgrid.com
Tel: 1890 25 26 90
email: meathcavanpower@eirgrid.com

Feedback

Name

Address

Telephone

Email

The Project Manager
Meath-Cavan 400kV Power Line
EirGrid
27 Lower Fitzwilliam St
Dublin 2, Ireland

What are your views?


EIRGRID

EIRGRID UPDATE

January 2008

frequently asked questions

CAVAN - TYRONE 400kV POWERLINE - New North-South Interconnector
MEATH - CAVAN 400kV POWERLINE

NEED FOR THE PROJECT & COST

What's happening?

EirGrid is planning two projects to facilitate cross-Border sharing of electricity, promote better competition and to ensure a future secure supply of electricity throughout the North East. The two projects are:

- The Cavan-Tyrone 400kV Power Line - the new North-South Interconnector, approximately 80km in length.
- The Woodland (Co Meath) to Kingscourt (Co Cavan) 400kV Power Line, approximately 58km in length.

Why are these new Power lines needed?

- To increase the security and reliability of electricity supply to all households, businesses and other customers throughout the island of Ireland. To support growth and boost existing industry in the region and ensure continuing reliability of supply.
- To facilitate the use of even more renewable energy such as from wind farms, wave, tidal and biomass, to connect to the electricity network. The Irish government has set out an ambitious target of 33% renewable generation by 2020.
- The North-South Interconnector (Cavan-Tyrone 400kV line) will allow the new all-island wholesale electricity market to work efficiently. This will allow for increased competition in electricity supply thereby offering consumers choice and competitive prices.
- The Meath-Cavan 400kV Power Line is necessary to strengthen the existing power supply in the North East due to recent increased development in the region, and to ensure there is enough capacity to transmit bulk supplies of power in order to meet energy demand in the coming years. Demand is growing on average 4% per year so if nothing is done in the next number of years there will not be enough high voltage infrastructure to bring power to these areas.

NEED FOR THE PROJECT & COST (Continued)

How much will these projects cost?

1) The Cavan-Tyrone Interconnector will cost approximately €180 million.
2) The Meath-Cavan Power Line will cost approximately €100 million.

These approximate figures are initial estimates for the total project.

Who pays for the project?

1) The European Union Trans-European Network for Energy has funded 50% of the stage 1 phase (i.e. to Planning) for both the Meath-Cavan Power Line and the Cavan-Tyrone Interconnector.
2) The remainder of the cost of the stage 1 phase for the Meath-Cavan Power Line will be funded by EirGrid and is ultimately funded by the electricity consumer.
3) The remainder of the cost of the stage 1 phase for the Cavan-Tyrone Interconnector will be funded jointly by EirGrid and Northern Ireland Electricity and is ultimately funded by the electricity consumer in both jurisdictions.

ESB is the Transmission Asset Owner (TAO), while EirGrid is responsible for the development of the transmission system. These activities are funded ultimately by all electricity customers through transmission use of system charges to generators and suppliers. The amount that EirGrid and ESB (TAO) can recover is regulated by the Commission for Energy Regulation (CER) through five yearly price controls that determine appropriate levels of capital and operating expenditure.

What is EirGrid's role?

EirGrid plc, a state owned company, is the independent electricity Transmission System Operator in Ireland and the Market Operator in the wholesale electricity trading system.

- EirGrid's role is to deliver quality connection, transmission and market services to those who generate electricity, suppliers and customers utilising the high voltage electricity system, and to put in place the grid infrastructure required to support the development of Ireland's economy.
- EirGrid develops, maintains and operates a safe, secure, reliable, economic and efficient system to transmit electricity.
- EirGrid is playing a key role in establishing the new All-Island Market for Electricity, as well as developing a second North-South Interconnector.

ROUTE CORRIDOR OPTIONS

How were route corridors decided upon?

Seven key criteria were taken into account when choosing possible route corridors for the power lines:

- *Visual Impact:* An assessment of the visual impact of the proposal on the environment was carried out in order to minimise the impact
- *Community:* an assessment of the local villages and communities was undertaken to reduce the proximity of the power lines to them to ensure minimal impact on the lifestyles of those living and working in nearby communities
- *Ecology:* A review of conservation designated areas, including Special Areas of Conservation (SACs), Special Protection Areas (SPAs), and Natural Heritage Areas (NHAs) was completed
- *Cultural Heritage:* Architectural and archaeological heritage sites, including recorded archaeological monuments and places, protected structures, and national monuments, were assessed in order to minimise any impact

- *Landscape:* A review of County Development Plans was undertaken in order to assess the numbers of scenic views, scenic routes, and vulnerable landscapes in the area
- *Geology:* Soil, subsoil, and bedrock were used to determine significant types and their benefits and drawbacks
- *Water:* The surface water features were reviewed, as lakes are to be avoided and river crossings minimised

What is the preferred route?

All of the route corridors that have been prepared are possibilities. EirGrid will announce the preferred routes early in 2008 and the public will have further opportunities to consider and comment on them.

What is the length of the Meath-Cavan 400kV Powerline?

The route from Kingscourt to Woodland is approximately 58km; the line connects an existing substation at Woodland to a proposed new substation at Kingscourt.

What will happen at the new substation in Kingscourt?

The main purpose of a substation is to connect together various transmission lines. This includes converting (transforming) voltage from the powerlines into a lower voltage that ultimately is supplied, via other substations, to customers' homes, businesses, etc.

What is the length of the North-South Interconnector?

The route length from Kingscourt to the Border crossing point near Clontibret, Co. Monaghan, is approximately 45km in the Republic of Ireland.

Where will the substation be located?

A substation will be located near Kingscourt, Co. Cavan close to the existing Flagford-Louth 220kV line. EirGrid is presently trying to acquire a site is this area. The station size will be approximately 240m x 220m (approximately 13 acres) in size and additional lands will be used for access and landscaping purposes.

What impact will these projects have on the environment?

An Environmental Impact Assessment will be undertaken by EirGrid and this is an essential requirement of planning law and must accompany the application for planning permission.

There will be some impact on the environment but EirGrid will keep this to a minimum through a careful route selection process which takes into account all of the environmental and technical constraints.

HIGH VOLTAGE TRANSMISSION LINES

What is the function of the overhead powerlines?

The power lines carry electricity from the generators (such as Moneypoint, Poolbeg, Huntstown, wind farms etc.) into a substation where the electricity is transformed into a lower voltage that ultimately is supplied to customers' homes, businesses, etc. The power lines are supported by pylons.

How were route corridors decided upon?

- The high voltage transmission system in Ireland is composed of 110kV, 220kV and 400kV lines, cables and substations.
- There are approximately 6,000km of high voltage lines in Ireland at present.
- It is proposed that the new transmission lines for these projects in the North East will be operated at a voltage of 400kV.
- There are currently 439km of 400kV lines in Ireland, running from Moneypoint in Co. Clare to Woodland in Co Meath and Dunstown in Co. Kildare.
- There are four existing 400kV substations - Moneypoint, Oldstreet, Dunstown and Woodland.

Why use 400kV transmission lines?

These projects will link into the existing 400kV system. Demand for electricity is growing at 4% per annum and so significant additional electricity transmission capacity is needed to meet this demand. Given the required volume of power transfer required, a 400kV line was chosen because it:

- Can carry large quantities of power and so is more efficient than lower voltage lines
- Has strategic benefits and the ability to best meet technical and economic criteria
- Provides additional capacity that can be exploited at a later date by other users, thus avoiding the need for further expansion in future planning horizons
- Shows potential developers and industrialists that there is room for generator capacity in this area, which will enable and encourage further local development
- Will maximise power transfer in the Dublin to Louth corridor and therefore fully leverage interconnection with Northern Ireland, increasing the amount of power that can be accessed by either system operator on both sides of the border
- Opens up the network to competition, allowing producers in Northern Ireland and the UK to access to the Irish electricity supply market

Where will the power come from?

The power ultimately comes from the generators i.e. the power generation stations and renewable energy sources such as wind, wave, biomass, etc. Generators are located throughout the island of Ireland such as in Poolbeg and Moneypoint.

Will powerlines and pylons be built over my house?

No, power lines will not be built over houses. The pylons will be kept as far as possible from houses for amenity reasons i.e

- Visual Impact
- Community
- Ecology
- Cultural Heritage
- Landscape
- Geology
- Water.

What are the standards for pylon/line distances from towns, villages, schools, etc?

One of the main constraints in route selection of overhead lines is avoiding existing residential developments such as houses, schools and hospitals, especially in light of extensive recent development. EirGrid aims to build the powerlines a minimum distance of 50 to 60 metres from existing dwellings to the centre of the line. In the vast majority of cases a much greater distance than 50-60 metres is achieved.

What type of support structures are being used to carry the power lines?

EirGrid is looking at using a variety of new steel lattice pylons with a view of choosing one which has a low visual impact on the environment. They will range from 28-43 metres high.

What size is a pylon?

The pylons have a foot print (ground area) of about 10m x 10m up to 16m x 16m and range from 28 - 43 metres high.

How far apart are the pylons spaced?

The maximum distance between 400kV pylons is 500 metres. On average 400kV lines are spaced an average of 350 metres from each other.

What is the clearance above ground of the lines?

- Generally speaking the clearance (smallest distance) between the line and the ground is more than 11 metres.
- In the very worst case the clearance between the line and the ground is no more than 9 metres, and no more than 10 metres over major roads/railways, based on the maximum line operating temperature of 80 degrees Celsius coinciding with the least favourable weather case.

Is there any noise from the lines?

There will be some noise from the line; however for the most part the noise will be below the existing level of background noise even in houses near the line. Projected noise levels will be included in the Environmental Impact Statement (EIS) being prepared for the planning application.

OVERHEAD V UNDERGROUND

Why not build underground lines for these projects?

Undergrounding all or part of a Transmission Network presents problems for the secure and reliable operation of that network. The location and repair of faults on underground cables can take a number of weeks, depending on the type of fault and its location. For such an integral part of the transmission system, such a compromise to the security of supply would be unacceptable.

Industries are attracted to a region for many reasons, one of them being a dependable supply of electricity. New industries locating in Ireland discuss with EirGrid the terms, conditions, security of supply and the quality of the power being delivered. A Transmission System based on circuits of underground cable would not provide the continuity or quality of supply necessary to attract the high quality type of industry being sought by the local development agencies such as the IDA.

Are there any underground lines in Ireland?

In line with utilities worldwide, Ireland's transmission system is predominantly based on overhead lines. At present, the transmission system in Ireland is an AC (alternating current) system and comprises about 6,000km of overhead line and 100km of underground cable (of short individual lengths).

OVERHEAD V UNDERGROUND (Continued)

Why are the majority of powerlines in Ireland overhead?

There are a number of reasons why the transmission system is predominantly based on overhead lines. These include:

- An overhead line has several advantages compared with an underground cable, as an overhead line is faster and easier to maintain and repair plus it is not subject to damage from digging activities.
- Underground cable circuits are also more vulnerable to outside construction activities such as local building/road works and farming activities, which can result in excavation damage.
- An underground cable fault can take significantly longer to repair. Firstly, if the fault is not caused by a third party - or the third party has left the scene - the location of the fault has to be identified. An underground cable fault can therefore take weeks to repair as it can be difficult to locate the position of the fault and the repair process itself is slow. Such a situation could not be tolerated on major high voltage systems.
- If cables are laid under agricultural land or cross-country, the trench for the cables has an environmental and agricultural impact. Farming activities would be impeded and habitats across which the cable was laid would be disrupted. It would also be necessary to maintain permanent year round access for the heavy machinery needed to facilitate emergency fault repair. Even so access would be difficult when cables are under waterlogged fields in wintertime and this would further increase the repair time.
- There are two methods of connecting an overhead line section to an underground AC (alternating current) cable section - interface compounds or direct mounting on special interface towers.

  Interface compounds would consist of large fenced compounds, with a ground-mounted electrical plant, such as cable sealing ends, surge arresters, high-frequency line traps and communications coupling equipment. Large portal structures would also be required to take the connections from the overhead line end masts. These compounds would be far more visually intrusive than an overhead line mast.
- In certain cases it is possible to mount all of the cable interface hardware as described above on the overhead line pylon itself. Nonetheless, this still leads to a greater visual impact than the normal overhead line structures.
- If underground cables are laid along existing roadways instead of cross-country, traffic delays can occur due to construction during the trenching process and afterwards if repairs are required. After installation, high voltage underground cables cannot be disturbed and this could make it more difficult for road widening or other works.
- Underground high voltage AC (alternating current) cables are typically many times more expensive than the equivalent overhead line and electrically they present many technical difficulties. Maintenance costs are higher for an underground cable than an overhead line. Large amounts of AC underground cable would require reactive compensation to be installed to prevent excessive system voltages.

What are the implications for the system of using underground cables?

Industrial and domestic customers require that the transmission system operates to very high levels of availability. One of the ways that EirGrid achieves this on our overhead line networks is by High Speed Auto Reclosing.

What is High Speed Auto Re-closing?

- In case of overhead lines, the majority of faults (over 90%) are of a transient nature usually caused by lightning. In the event of a lightning strike, protection schemes at both ends of the line detect the fault and open the switches (breakers) to clear the fault. The breakers are then re-closed and the circuit switched back into service. All of this takes place in less than half a second and is called High Speed Auto Re-closing.

- If the fault remains when the circuit is re-closed then the switches open again and stay open until the line is patrolled and the cause of the fault is identified and repaired.
- With underground cables all faults are permanent and the majority of faults are caused by third party activity usually somebody digging into the cable.
- Therefore when a fault is detected on an underground cable, the breakers open the circuit as in the case of overhead lines but do not re-close i.e. no attempt is made to return the cable to service. This is to prevent further damage and for safety reasons - EirGrid do not want to apply full voltage to somebody who may be in contact with the cable.
- Therefore in the case of any underground cable fault, EirGrid switch out the circuit and do not switch it back again until the circuit has been patrolled, the cause of the fault identified and repairs carried out.

In Dublin there are a number of 220kV underground transmission cables connecting the generation stations on the Poolbeg peninsula to the rest of the system. Reclosing as described above is not allowed on these circuits and if a fault does occur the circuit stays out of service until the fault has been found and repaired. Repairs to underground transmission system cables are highly specialised work and it is not uncommon for faulted circuits to be unavailable for several weeks. Similar situations apply in Cork.

When and why are underground cables installed?

EirGrid uses underground cables where there is no other option e.g. in built-up areas or where it is the only practical option, for example on the proposed East-West (Ireland-Wales) undersea connection.

Under certain conditions EirGrid permit short underground cable sections at the end of an overhead transmission line, such as when one end of the underground cable must terminate in a transmission station. While this does have an impact on the circuit availability, the impact is limited because if the underground cable is at one end and a fault occurs on the circuit (the connection between transmission substations), modern protection equipment can be programmed to discriminate whether the fault is on the line or on the underground cable section. For a fault on the overhead line section reclosing is permitted while if it is on the underground cable section reclosing is blocked.

Is there an EU Directive banning overhead lines of this nature due for introduction in 2008?

No plans for any EU Directive banning overhead line construction have been announced or proposed by the European Commission. The reason why an overhead line is proposed here is because it will deliver the most reliable and economic method of transporting power for electricity customers. Overhead lines are the method used for 97 per cent of on-shore high voltage electricity transmission lines in Europe.

What is the Ireland-Wales East-West project?

It is a link between two separate power systems, from Ireland to Wales under the Irish Sea using DC (direct current) technology. This will involve very expensive pieces of infrastructure, called converter stations, at both ends as well as the use of submarine cables.

Why is EirGrid planning AC Overhead lines for the North East projects?

The proposed Meath-Cavan and Cavan-Tyrone 400kV projects will be integral to the All Ireland transmission system. Overhead line AC technology is used everywhere in the world. AC underground is not technically feasible for the length of 400kV line proposed for these projects and would cost many times more.

Direct Current technology would not appropriate for these projects because it doesn't fulfil the function required; DC technology is not suitable for future system development and is expensive.

Given that the costs of completing theses projects is ultimately borne by the consumers, EirGrid is responsible for ensuring that these projects are implemented in the most technical, economical, and reliable means possible taking into account the criteria mentioned detailed elsewhere in this document (see Route Corridors Options section).

HEALTH & EMF

What is EirGrid's position on health and power lines?

A debate about the possible effect on human and animal health of electric and magnetic fields (EMF) has continued since the 1970s. Since then, many thousands of studies have been undertaken all over the world to assess any potentially harmful effects from power lines, electrical appliances and domestic wiring.

EirGrid is satisfied from the totality of studies and the views of international authoritative agencies that the balance of evidence is that extremely low frequency (ELF) electromagnetic fields (EMF) do not have any adverse effect on health. The Irish network is in full compliance with the most up-to-date international and EU guidelines and recommendations relating to public and staff EMF exposure. The proposed new lines will also be in full compliance.

What independent research has been carried out about EMF?

- Extensive worldwide research (at a cost of over €44om) has found no conclusive evidence to date proving that electric and magnetic fields from power lines [i.e. extremely low frequency (ELF) EMF] are harmful.
- A study carried out by the World Health Organisation (WHO) EMF Task Group concluded in 2007 that there are no substantive health issues related to Extremely Low Frequency (ELF) Electro Magnetic Fields (EMFs) at levels generally encountered by members of the public.
- The Irish Department of Communications reported independently on this issue and its conclusions were consistent with the above independent bodies.

Are the guidelines used by WHO ten years old and therefore out of date?

The guidelines by WHO are reviewed regularly by that organisation's International Committee on Non-Ionising Radiation and no change has been made to the guidelines. See www.who.int for further information. All Irish power lines comply with the WHO levels and, in fact, the levels of EMF from power lines in Ireland are far lower than those levels from appliances commonly used in homes throughout the country.

The Draper Report is being quoted as conclusive proof that electromagnetic fields cause serious health risk. Is this true?

International research reviewed by the World Health Organisation, EU and Irish Government has shown that the levels of EMF which anyone in Ireland could be exposed to are safe. The researchers who produced the Draper Study in England and Wales stated that their results indicating a higher risk of childhood leukaemia were not supported by convincing laboratory data or any accepted biological mechanisms. No change in international EMF limits has been implemented as a result of the Draper Report.

What is EirGrid doing about EMF?

EirGrid recognises that some individuals are genuinely concerned about issues regarding EMF and health and we are committed to addressing these concerns by continuing to:

- Design and operate the transmission system in accordance with the most up-to-date recommendations and guidelines of the various expert and independent international bodies.
- Closely monitor engineering and scientific research in this area.
- Provide advice and information to staff and the general public on this issue.

Where can I find out more about EMF?

For more information you can download our brochure 'Information on Electric and Magnetic Fields' from www.eirgrid.com.

THE PLANNING PROCESS

Who will EirGrid apply to for planning permission for these projects?

Applications for planning approval for both projects with accompanying Environmental Impact Statements will be made directly to An Bord Pleanála in 2008, under the Strategic Infrastructure Act 2006.

Everybody, including state and semi-state bodies, seeking permission for strategic infrastructure projects of national importance must first apply to the Strategic Infrastructure Division of An Bord Pleanála for a decision on whether the particular project is of strategic importance. EirGrid has already held pre-application consultations with the Strategic Infrastructure Division of An Bord Pleanála in respect of these projects and they have confirmed that they are of strategic importance and fall under the remit of the Strategic Infrastructure Act. Therefore EirGrid will apply to An Bord Pleanála for this approval.

Will the public be consulted before a planning application is made?

The public, the local authorities and interested stakeholders are being consulted and their views will be taken into account in respect of the application that is submitted.

A preferred route for each project will be chosen in early 2008. Public consultation will continue on these projects until planning applications are made later in 2008 to the independent planning authorities who will in turn examine all issues.

Has EirGrid already applied for planning permission to build these overhead lines?

We will not be applying for planning permission until later in 2008, so all concerned people will have information to enable them to make submissions or objections as a part of the independent planning permission process.

Can the public make submissions to the planning authorities?

Members of the public have seven weeks to make submissions to the planning authority from the date of the application. More information on the planning process is available on www.pleanala.ie or at www.eirgrid.com.

What is the Strategic Infrastructure Act?

The Strategic Infrastructure Act 2006 amended the Planning and Development Act 2000 to provide for the introduction of a 'strategic consent process' for strategic infrastructure of national importance provided by statutory bodies and private promoters. The Act provides a service for all stakeholders, infrastructure providers, state bodies and general public through:

- a single stage process of approval of projects
- a rigorous assessment of all projects including their environmental input
- full public consultation

The application must be made by way of the full completion of the application form to An Bord Pleanála. The sequencing of the application process and the content of the public notice as set out at section 182A of the Planning and Development Act 2000 and article 214 of the Planning and Development Regulations, 2006.

Will the public be able to make submissions to An Bord Pleanala?

- An Bord Pleanála requires as a minimum that the public notice of the application would be in two newspapers circulating in the area to which the proposed development relates.
- The documentation relating to the application is to be available for public inspection at the offices of the relevant public authority, the offices of An Bord Pleanála and the offices of the applicant.

THE PLANNING PROCESS (Continued)

- An Bord Pleanála also requires the prospective applicant (EirGrid) to provide a stand alone website containing all of the application documentation. The documentation on the website should be in a read only format whereby members of the public can download/view information in relation to the application.
- The time period for making submissions by the public is to be at least seven weeks from the date the documents become available for inspection. An Bord Pleanála requires that the public notice must indicate the time and date deadline for making submissions to them

Where can I find out more information about the planning process?

More information on the planning process is available on www.pleanala.ie

What permission does EirGrid need to enter land?

As agreed for transmission system reinforcements, ESB carries out the construction works in accordance with the planning approval obtained by EirGrid. ESB's entry onto lands is covered by the Irish Electricity Supply Acts (1927 and subsequent amendments). These acts contain a legal right for ESB to enter onto lands to erect overhead lines subject to a requirement to inform the landowner in advance of construction by a statutory wayleave notice giving ESB's intention to erect an overhead line across their lands. The right of landowners for compensation and access to the Property Arbitration Court was confirmed in the 1985 amendment.

What process will be followed if the proposed route goes through my land?

- In practice, landowners are made aware of the proposed line during the consultative/planning process and the survey/design stage.
- Wayleave notices and a six inch map of the area showing structure locations are formally issued to landowners following receipt of a final grant of planning approval for the overhead line project.
- The wayleave notice must be served on every landowner and on every occupier of land crossed by the proposed line, even if there is no structure on their land.

What compensation will I receive?

Compensation is paid to landowners on whose property the overhead line is erected. This is done in accordance with long established agreements with the Irish Farmers Association.

All agreements with landowners are negotiated individually since the effect of the transmission line on each landowners' property will vary from landowner to landowner. EirGrid will endeavour to complete negotiations with each landowner prior to construction.

PUBLIC CONSULTATION PROCESS

EirGrid would not be making an overhead line proposal for these projects if it was not convinced that this method was the best way to ensure supplies of safe, reliable, secure and economic power for many years ahead in the North East. The proposal is subject to public consultation and the final decision on the project will be made - not by EirGrid - but by independent planning authorities who will examine all issues.

There are many ways for any interested individual or group to raise their concerns and EirGrid is committed to ensuring that all members of the public are fully aware of the project. We encourage everyone to participate in public consultation. There are a number of methods available:

Website

Up-to-date information on both projects is available on EirGrid's website, www.eirgrid.com. This site will be updated regularly to keep everyone informed of the progress of the project.

Email & Phone

Dedicated email addresses (meathcavanpower@eirgrid.com and cavantyroneinterconnector@eirgrid.com) and a phone line (1890.25.26.90) have been set up to deal with any queries or issues people may have.

Feedback Form

Fill out the feedback form (available at the Open Days or at www.eirgrid.com) and return it, highlighting your queries / concerns.

Meetings

If you would like to talk directly to the project team regarding either project, we would be happy to arrange such a meeting. Please use any of the above communication methods to make such an appointment.

Elected Members Meetings

EirGrid has made a series of presentations with the elected members of Meath, Cavan, and Monaghan. This was an opportunity for the local representatives to be made fully aware of the project, after which they were able to advise their local stakeholders on the benefits and drawbacks of the projects.

We are keeping in regular contact with Elected Members are providing briefings and information/materials to them as required.

Planning Process

A preferred route for each project will be chosen in early 2008. Public consultation will continue on these projects until planning applications are made later in 2008 to the independent planning authorities who will in turn examine all issues. Subject to planning permission, construction would not take place until 2009. Members of the public have seven weeks to make submissions to the planning authority from the date of the application. More information of the planning process is available on page 9 of this leaflet or visit www.pleanala.ie

Meath-Cavan and Cavan-Tyrone 400kV Power Line Projects

Community Update

EirGrid progresses 400kV power line projects to next phase

Following a review of all project documentation, including consultants' studies, reports, and consultation feedback, EirGrid has nominated one preferred route corridor for each 400kV power line project for further study.

The preferred route corridors are:

Route Corridor 3B for the Meath-Cavan project

Route Corridor A for the Cavan-Tyrone project

The preferred route corridors strike the best balance between the often competing priorities of community concerns, environmental issues and the technical aspects of the projects.

To get to this point, EirGrid carried out studies to assess the feasibility of an indicative line route within each route corridor. The indicative line routes in the preferred route corridors will now be taken forward to the next phase of project development, involving discussions with landowners as a priority, further studies and stakeholder engagement.

No decisions can be made on the final line routes until this has been completed. EirGrid remains open to reviewing its position regarding the best solutions for the projects, based on the outcome of this work.

Once all relevant studies, including the Environmental Impact Statement, are complete, EirGrid will bring the final line routes to the Strategic Infrastructure Board in An Bord Pleanála. An Bord Pleanála is the independent statutory body that will ultimately decide if the project can go forward.

Inside

Project co-financed by the European Union from the trans-European transport budget

Route Corridor selection process

The selection process which has led to EirGrid identifying its preferred route corridors is outlined below. All reports relating to the key phases of the project can be found at www.eirgrid.com.

Technical and Environmental Analysis

To determine the most suitable location for the power lines, the consultants on these projects started by conducting a detailed strategic technical and environmental analysis on the entire study area. A number of initial route corridors were mapped and a desktop study was undertaken to determine the key community, physical, environmental and heritage-related constraints which would have a bearing on the route corridors.

Key constraints which were considered in identifying potential route corridors included:

- location of dwellings and buildings
- areas designated for nature conservation
- architectural and archaeological heritage sites
- landscapes sensitive to visual impact
- soil type

These constraints were mapped and, from this, three potential route corridor options were refined for both the Meath-Cavan and the Cavan-Tyrone projects.

Further assessment, corridor route drives and site visits were conducted on these possible route corridors to supplement existing desktop information. This activity led to further modification of the corridors and the identification of an indicative line route within each of the corridors.

Consultation

EirGrid has been consulting with the local community, as well as statutory and non-statutory stakeholders in the area and beyond. The primary purpose of this consultation has been to address the public's concerns and issues and to obtain feedback on the project, the various route corridor options, and the consultants' reports. Verbal and written feedback has been recorded during meetings and Open Days, and in correspondence via email, letter and phone.

Information received through consultation has been investigated by EirGrid and, together with information from desktop and site studies, has informed the route corridor evaluation process. All relevant issues raised by the community have either been addressed now or will be addressed at a more appropriate stage of the project when more detailed environmental assessments are carried out.

Why are Route Corridors 3B and A the preferred route corridors?

The preferred route corridors strike the best balance between the often competing priorities of community concerns, environmental issues and the technical aspects of these projects.

The following criteria were used in evaluating all corridor options:

Community Criteria:

- Planning and land use
- Community severance
- Number of dwellings within the 1km wide corridor
- Number of dwellings and other residential accommodation near indicative line routes
- Potential impact on public amenities (such as schools)

Technical Criteria:

- Safety
- Construction / operation
- Design (including line route length)
- Other technical considerations

Environmental Criteria:

- Water
- Flora & fauna
- Visual amenity and landscape
- Archaeology, culture and local heritage
- Electrical and magnetic fields
- Air quality

Other Criteria:

- Compliance with current planning and development policy guidelines
- Project programme and delivery
- Economic feasibility
- Compliance with best international practice
- Adaptability for future development

The potential route corridor options for each of the projects were assessed in respect to these selection criteria. For many criteria, in particular technical criteria and others, such as planning and land use, there was little differentiation between the route corridor options. However Corridors 3B and A emerged as having the lowest overall impact when all selection criteria were taken into account.

Why Route Corridor 3B (Meath-Cavan):

Community Criteria

- Least number of homes / occupied buildings and schools near the indicative line route to lower possible impacts on communities

Environmental Criteria

- Least impact on visual amenity and the surrounding landscape
- Low impact on protected and designated habitats
- Low impact on Recorded Monuments and Places (RNPs), and national monuments

Technical Criteria

- Shortest line route

Why Corridor A (Cavan-Tyrone):

Community Criteria

- Least number of dwellings and occupied buildings within the corridor and within proximity of the indicative line route to lower possible impacts on communities

Environmental Criteria

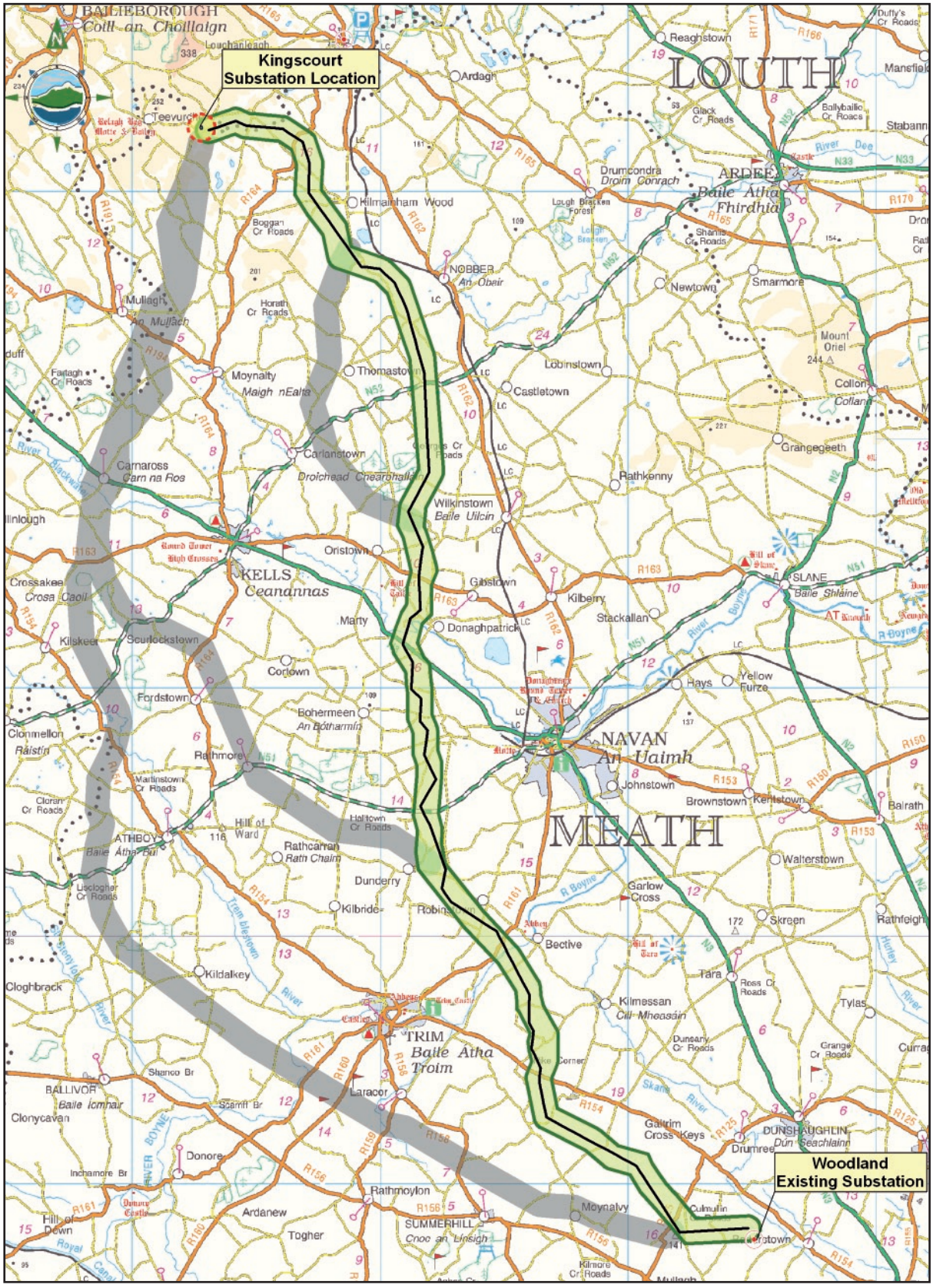
- Least visual amenity and landscape impact
- Largely avoids designated areas
- Avoids sensitive rivers

Technical Criteria

- No outstanding differences between each of the route corridor options

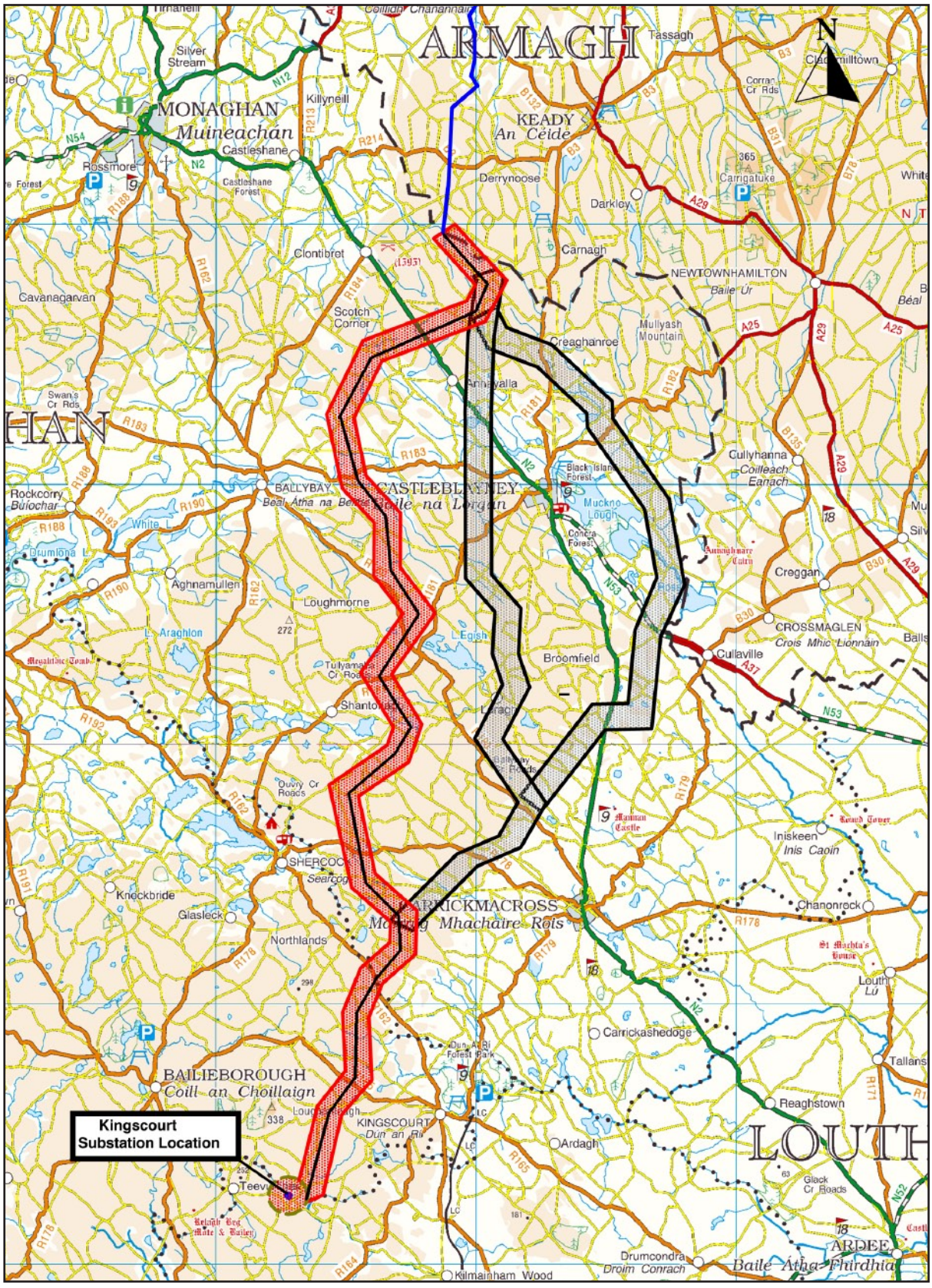
Meath – Cavan: Route Corridor 3B

Route Corridor 3B is outlined in green in the below map. The indicative line route, marked in black, is approximately 58 kilometres in length. It extends from the planned substation in the vicinity of Kingscourt, Co. Cavan to the existing substation at Woodland, near Batterstown, Dunshaughlin, Co. Meath. To view more detailed maps please contact your local information centre.



Cavan – Tyrone: Route Corridor A

Route Corridor A is outlined in red in the below map. The indicative line route, marked in black, is approximately 45 kilometres long. Crossing the border at a point northeast of Clontibret, Co. Monaghan, it runs south to a proposed new substation near Kingscourt, Co. Cavan. To view more detailed maps please contact your local information centre.



Preferred Route Corridors - Conclusions

Landscape / visual impacts and community impacts (including proximity of infrastructure to dwellings and amenities) can be managed through careful route corridor selection. Route Corridors A and 3B are considered the best corridors in this regard. Potential impacts associated with ecology, water and cultural heritage can be successfully mitigated when selecting the actual line route the power lines take within the preferred route corridors. Further site investigations on the indicative line routes and consultation will help determine the best line routes.

What next?

Progression to Phases Three and Four

Discussions with landowners will help EirGrid and landowners understand the issues and benefits that relate to the projects. These discussions will enable the landowners to suggest possible mitigation options that may be available.

For More Information:

See: www.eirgrid.com
Lo-call: 1890.25.26.90
Email: meathcavanpower@eirgrid.com or cavantyroneinterconnector@eirgrid.com

Arrange a meeting in our Information Centres:

Navan Information Centre

Number 1, Newbridge, Athlumley, Navan, Co. Meath.

Open Mondays and Tuesdays, 10:00 am to 5:00 pm or upon request.

Ring us at 1890.25.26.90 to make an appointment.

Carrickmacross Information Centre

Carrickmacross Workhouse, Shercock Road, Carrickmacross, Co. Monaghan.

Open Wednesdays and Thursdays, 10:00 am to 5:00 pm or upon request.

Ring us at 1890.25.26.90 to make an appointment.

Indicative Project Roadmap

Phase 1 Objective:
This set out the strategic need for the project and created an understanding of the environmental and technical constraints as well as identified a number of emerging route corridors. Public consultation formed a major part of Phase One and all information raised by the public fed into the decision-making process.

Public Consultation

Phase 1 Reports include:
EirGrid's Policy on the Use of Overhead Line and / or Underground Cable
EirGrid's Position on the Use of Overhead Line and / or Underground Cable for these Projects
Meath-Cavan Constraints Reports
Cavan - Tyrone Constraints Reports
Strategic Roadmap
Strategic Planning Context
Public Consultation Report

Phase 1 completed May 2008

Phase 2 Objective:
This phase involved the evaluation of the route corridors; the identification of an indicative line route within each of the route corridor options; and the selection of a preferred route corridor for each project. Other issues were examined in detail including comparisons between overground and underground options. Public consultation fed into all aspects of the studies.

Public Consultation

Phase 2 Reports include:
Response to Submissions Received
Whooper Swan Reports
Strategic Issues Review
Grid 25 Strategy
PB Power Underground Report
Progression towards Phases 3 & 4
Corridor Evaluation Document

Phase 2 Completed March 2009

Phases 3 and 4 Objective:
These phases will run in tandem. Both phases will involve a detailed assessment of the indicative line routes and landowner consultation, as well as the preparation of planning applications.

Phase 3

Consult with Landowners

Decide Final Line Routes

Public Consultation

Phase 4

Scope EIS
Carry out baseline studies
Complete EIS
Prepare Application

Phases 3 and 4: Submit Planning Application

Project Background

EirGrid is planning two projects to facilitate cross-border sharing of electricity, promoting better competition and to ensure a future secure supply of electricity throughout the North East. The two projects are:

- Approximately 80km long 400kV Interconnector between Co. Cavan and Co. Tyrone; and
- Approximately 58km Woodland (Co. Meath) to Kingscourt (Co. Cavan) 400kV Power Line.

Need for Project

- Provide high quality bulk power supply for the North East.
- Support growth in the region and ensure continuing reliability of supply.
- Boost existing industry in the North East when competing for business and inward development in the area.
- Guarantee security of supply for future decades - if nothing is done now, by 2012/13 there is likely to be insufficient network capacity to supply demand in the North East.
- Increase competition and therefore reduce the cost of electricity to customers.
- Increase reliability for the local network in the North East and for all electricity customers.
- Allow more renewable energy (mostly wind generation) to be connected to the electricity network, reducing our dependency on fossil fuels.

Overhead and Underground Technologies

» EirGrid and Northern Ireland Electricity commissioned a comprehensive, site-specific study on the feasibility of undergrounding by independent experts, PB Power.

» Published in February 2009, PB Power's report established there would be significant technical issues involved in putting these projects underground. Underground cables of this capacity and this length have never been used anywhere else in the world.

» The estimated costs for underground cables would be seven times more expensive than going overhead - €588 million, compared with €81million. Electricity customers will have to pay for the power lines through their bills. Underground cables are also more expensive to run.

» The Ecofys Report, commissioned by the Department of Communications, Energy and Natural Resources, also found that overhead technology was the best solution for these projects.

» EirGrid concludes that overhead lines would provide customers with the best value for money and also give residents of the North East a high quality supply of electricity that will promote the continued growth and development of the region.

North East 400kV Power Line Projects

Community Update, July 2009

EirGrid is moving towards the final preparation of the planning application.

The North East power line projects will:

- facilitate cross-border sharing of electricity
- promote better competition
- ensure a future secure supply of electricity throughout the North East

Inside

In April 2009, following a rigorous route selection process, EirGrid progressed the Meath-Cavan and Cavan-Tyrone power line projects to the next phase and announced two preferred route corridors for further study. These corridors are:

Route Corridor 3B for the Meath-Cavan Project

Route Corridor A for the Cavan-Tyrone Project

Following this announcement, EirGrid and its consultants, Tobin Consulting Engineers and ESBI, began non-statutory consultation with landowners on the indicative line routes. Consultation with all other stakeholders also continued as normal through the Information Centres, phone line, written and email services.

Many people have taken the opportunity to meet with the EirGrid Project Team and have provided useful feedback. All of this feedback has been carefully considered and, where possible, these suggestions will be accommodated in the final line route that is submitted to An Bord Pleanála.

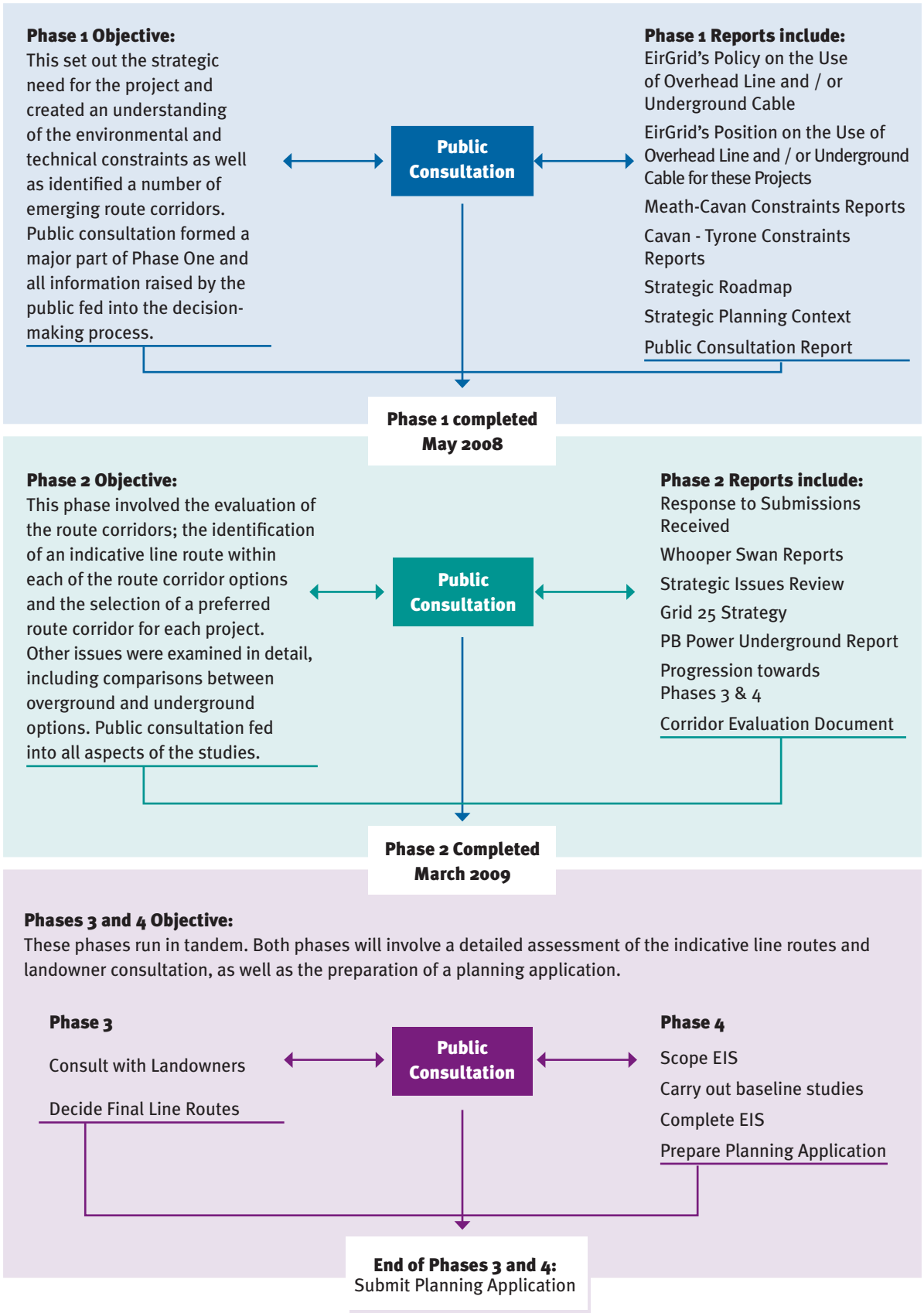
The current consultation is voluntary and does not prevent people from making a planning submission with respect to any aspect of the project during the formal planning process. Engaging with EirGrid at this point means that issues voiced during consultation can be considered and accommodated where feasible, before the line is determined for the purposes of making a planning application.

EirGrid is now close to determining the line route and will be completing the Environmental Impact Statement and planning application shortly for submission to An Bórd Pleanála. We encourage you to engage with us prior to the finalisation of the planning application. The EirGrid Project Team can be contacted at our local Information Centres in Navan and Carrickmacross, via phone (1890.25.26.90) or email *(meathcavanpower@eirgrid.com / cavantyroneinterconnector@eirgrid.com)*. Please see the back page of this brochure for full contact details.

Project co-financed by the European Union from the trans-European transport budget

Indicative Project Road Map

Below is the Indicative Project Road Map, which demonstrates where the project has been and where it will go next. EirGrid is currently near the end of Phases 3 and 4 and is moving towards the submission of a planning application.



Frequently Asked Questions

EirGrid has received a number of questions from landowners and members of the public in relation to the power lines. Some of these are answered below, the remainder can be found at *www.eirgrid.com*. If you have more questions, we encourage you to meet with EirGrid. Please see the final page for contact details.

Planning Process

What stage is the project at now?

The project is proceeding along the sequential development timeline. We are currently in Phases 3 and 4, which involve landowner consultation, leading to the determination of the line and the preparation of an Environmental Impact Statement (EIS) and planning application.

The planning application for this project will be submitted shortly to An Bord Pleanála, the independent national board responsible for planning applications and appeals in Ireland. The application to An Bord Pleanála is specifically governed by the Planning and Development (Strategic Infrastructure) Act 2006.

How can I have my say in the formal planning process?

A submission can be made to An Bord Pleanála within the period specified in the planning notice (minimum 6 weeks). Notice of planning will be placed in local newspapers and on the EirGrid website. A submission typically outlines the implications of a proposed development on the environment, planning and sustainable development of an area. An Bord Pleanála charges a fee of €50 for making an initial submission.

What is an Environmental Impact Statement (EIS)?

Electricity transmission projects such as these require an Environmental Impact Statement (EIS) to be included as part of the planning application. An EIS is a document that sets out the possible impact that a proposed development may have on an area. An EIS firstly assesses the current situation in the area with regard to health, noise, ecology, visual amenity, air quality, flora, and fauna. It will then examine the possible impacts a proposed development might have on each of these and put forward design or other measures that can be taken to avoid or to reduce these effects to acceptable levels.

Where do I view the planning application and EIS?

In line with statutory requirements, EirGrid will make the application and the EIS available for inspection and for purchase for a period of at least six weeks. The documents will be available to view at the Navan and Carrickmacross Information Centres and in the Meath, Monaghan, and Cavan Local Authority offices. They will also be on view at the An Bord Pleanála Head Offices. EirGrid will publish notice of the proposed application in local newspapers before submitting the application to An Bord Pleanála.

Will there be an Oral Hearing?

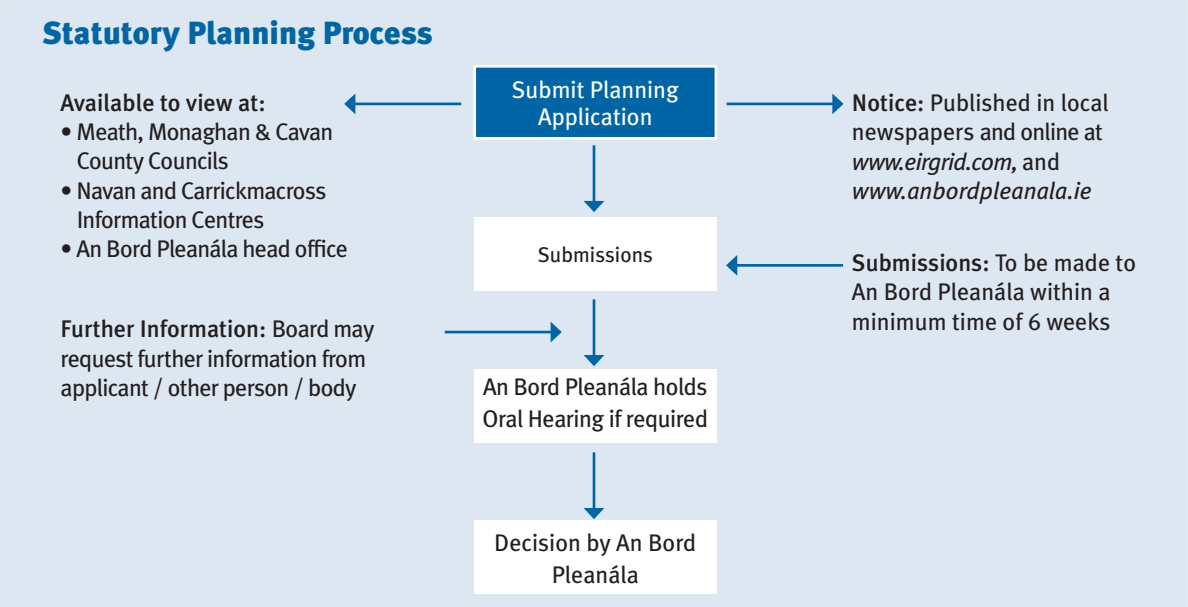
If An Bord Pleanála decides to hold an Oral Hearing, both the applicant and those who have made submissions or observations will be alerted and will be given the chance to put their case before the Board during the Oral Hearing process. Generally, an Oral Hearing is held when it will help the understanding of a case that is particularly complex or where there are significant national or local issues involved.

How will I know when a decision has been made on the planning application?

Once a decision has been made, An Bord Pleanála will notify all those who participated in the formal planning process by post.

Can a person appeal the Board's decision?

The Planning Acts state that the Board's decision cannot be questioned other than by way of application to the High Court for judicial review (generally within eight weeks from when the decision was made). A judicial review can only be made on procedural or legal grounds. The Court will not revisit the planning aspects of the case; it will simply review the way in which the decision was made to ensure it was not unconstitutional.



Undergrounding

I heard that EirGrid has drafted a Response to Askon Report; what did it say?

EirGrid's *Response to Askon Report* identifies a number of inaccurate fundamental assumptions made in the Askon Study that resulted in flawed calculations and conclusions. The key errors identified were on the following topics:

- Power losses calculation
- Financial analysis
- Safety issues
- Operating and reliability standards
- Environmental impacts
- Underground cable reliability

EirGrid, with the assistance of its team of international experts, carried out a comprehensive review of the Askon report and also spent two days with the authors of the report. Based on this, EirGrid concluded that a) Askon does not make a valid case in favour of the use of underground cable; and b) for these projects an overhead line is appropriate and consistent with EirGrid's mandate to provide Ireland with a 'safe, reliable, secure and cost effective transmission system, while having due regard for the environment'. The full report is available from *www.eirgrid.com* or by request from the Project Team.

What is the situation in Denmark? Is it true that they are putting all lines underground?

EirGrid has consulted with its counterpart in Denmark and can confirm that this is incorrect. The strategy for the future development of Denmark's 400kV network has been misunderstood and misrepresented by people outside of Denmark, who are opposed to the construction of 400kV overhead lines in their own countries.

Denmark needs to strengthen the 'backbone' of its 400kV network and proposes to do this by constructing a new double circuit 400kV overhead line. This project is expected to be completed by 2020. Beyond that, they have expressed an aspiration that 'non-backbone' 400kV power lines be placed underground and, to investigate the feasibility of this, have commissioned a 10-year research and development programme, in association with Danish universities, to investigate the feasibility of this. The proposed power lines for the North East of Ireland can be considered 'backbone' infrastructure. Full details of the strategy for the expansion and undergrounding of the Danish electricity transmission grid can be found on the website of the Danish transmission system owner: *www.energinet.dk*.

Why did PB Power not look at the railway corridor for a possible underground cable?

One of the aims of the PB Power report was to find an underground cable route that is technically and environmentally feasible, at the least cost. This was done for the purpose of establishing a realistic cost and environment impact comparison between an underground cable alternative and the proposed overhead line. Following a review of various criteria, including the Meath County Development Plan and Transport 21, it was found that railway lines, either in-service or disused, would not constitute the optimum route option for the underground alternative.

Why is the East-West Interconnector from Rush to Woodlands being placed underground?

The proposed Meath-Cavan-Tyrone 400kV circuits are required to provide further interconnection between the transmission grids of Northern Ireland and the Republic of Ireland. These transmission grids already operate as a single 'synchronous' HVAC (high voltage, alternating current) system. HVAC is the most appropriate technology for such circuits. The proposed East-West Interconnector is required to provide further interconnection between the transmission system on the island of Ireland and that on the island of Great Britain. These two transmission systems are required to operate independently of each other and are therefore two 'asynchronous'HVAC systems. HVDC (as is used for the existing Moyle Interconnector) is most appropriate technology for providing interconnection between asynchronous systems.

EirGrid's long-standing policy and practice for the use of HV underground cable (UGC) and overhead line (OHL) guides the decision on whether to use OHL or UGC whenever a new project is proposed. It is EirGrid's policy that UGC will only be used if all of the following four conditions apply:

a) An OHL is not feasible

b) A technically and environmentally acceptable route for UGC can be found.

c) The effect that the electrical characteristics of UGC have on the transmission network is acceptable and the relatively poorer 'availability' of underground cable is tolerable.

d) The relatively high cost of the UGC can be justified.

In the case of the proposed 400kV North East Power Lines, EirGrid is of the opinion that OHL is environmentally, technically and economically feasible. As a result EirGrid is obliged to proceed with an OHL proposal for these circuits. In the case of the East-West Interconnector, all of the above four conditions apply and UGC is therefore the appropriate solution.

Indemnification and Compensation

I have heard rumours about possible health effects from the power lines; will EirGrid indemnify my family, guests and me against these possible effects?

EirGrid and ESB are companies, owned by the State. They jointly design, construct, operate and maintain the electricity transmission network. They do this in compliance with all national and international guidelines and in accordance with 'best practice'. They are jointly satisfied from the totality of studies and the views of international authoritative agencies that the balance of evidence is that overhead transmission lines proposed for use do not have any adverse effect on public health. Accordingly, the issue of indemnification in respect of perceived health effects does not arise in the context of the proposed lines.

Will EirGrid be willing to compensate farmers for health effects on their livestock? If so, what will be the basis for calculating such compensation?

As per above, EirGrid and ESB are jointly satisfied from the totality of studies and the views of international authoritative agencies that the balance of evidence is that overhead transmission lines proposed for use do not have any adverse effect on animal health. Accordingly, the issue of compensating for perceived animal health effects does not arise in the context of the proposed lines.

ESB Networks will take every care during the erection and subsequent work on the line to ensure that farmers' operations, including livestock operations, are not impacted. ESB Networks, after consultation with the landowner, shall take all necessary precautions to prevent the straying of livestock and shall compensate the landowner for all loss, damage or claims arising from the loss of such animals and pay compensation for injury or death or loss of the animals where such straying is clearly due to any act or omission on the part of the Board. The Board shall ensure that the local District Veterinary Officer is informed of the entry of ESB vehicles onto a farm with a disease problem and that the Epidemiology Unit of the Department of Agriculture is made aware of ESB activities in TB affected areas.

Property

I am concerned that my house may lose value as a result of the new power lines. How will EirGrid measure property devaluation?

EirGrid will ensure that every reasonable effort is made to minimise the impact of the 400kV overhead lines on adjacent householders, whether in relation to visual amenity or any perceived environmental emissions. In the case of visual impact this will include, among other things:

- the use of a less visually intrusive pylon design than was used in the past;
- the careful positioning of pylons in agreement with landowners where possible
- the implementation of any other reasonable mitigation measures that are agreed with potentially affected property owners.

In circumstances where these potential impacts will be mitigated, EirGrid does not perceive that there will be any significant depreciation in the value of property in the vicinity of the proposed overhead lines, over and above the depreciation in the property market generally. Where land or wayleaves are required in order to facilitate the construction and operation of the proposed overhead line, a scheme of compensation has been put in place for the assessment of any loss in the value of lands affected.

What are EirGrid's powers in relation to entering property, prior to submitting plans to An Bord Pleanála? Cite any relevant legislation or Court decisions.

Without prejudice to such rights, EirGrid is not proposing to rely on statutory powers to enter land 'prior to submitting plans to An Bord Pleanála'. Rather, entry onto lands is being approached on a voluntary basis. While EirGrid is endeavouring to meet landowners prior to the application, this is primarily to hear landowner views to ascertain whether and how the proposed overhead line might impact upon them. Talking with landowners at this stage will enable mitigation measures to be appropriately identified and, where possible, included in the planning application.

Construction

What are the average, minimum, and maximum distances between each pylon tower?

The placement of pylons across the landscape is dependent on many factors, some of which are:

- Terrain
- Design constraints
- Landowner input into location
- Environmental considerations

The draft design for the Cavan-Tyrone 400kV power line has a maximum distance between pylon towers of 498m, a minimum of 206m, and an average of 365m. The corresponding distances between pylon towers for the Meath-Cavan 400kV power line are 450m, 200m, and 330m respectively.

Who is responsible for a ring fence to be placed around the base of each tower?

ESB Networks will be responsible for the construction of the overhead line. During the construction period it may be necessary, from time to time, to place temporary fencing around a pylon site for safety reasons. The erection, maintenance and removal of this fencing will be the responsibility of ESB Networks.

Once construction is complete and the line is in service, it is not normal practice to have permanent fencing around pylons. Farm animals can, and do, graze in between the legs of pylons. On occasion however, particularly where pylons are located in stud farms, a landowner has requested that a fence be placed around a specific pylon and EirGrid and ESB Networks have accommodated such requests. Such a fence is erected by ESB Networks, while the landowner is responsible for its subsequent maintenance.

Has my land been assessed physically and evaluated as suitable land for towers?

EirGrid's consultants, ESBI and Tobin Consulting Engineers, have utilised a variety of techniques to assess the land, including aerial photography, drive-by land reviews, submissions from the public and site visits. Every effort is made to ensure that landowners have agreed in advance to a site visit.

Contact Us

EirGrid is committed to engaging with the local community and all interested stakeholders at every stage in the project's development. Please get in touch if you would like to meet with the project team or have any further queries.

Information Centres:

Navan Information Centre
Number 1, Newbridge, Athlumney,
Navan, Co. Meath.

Open: Tuesdays, 1 pm to 7 pm or
outside these hours upon request.

Drop in, or call 1890.25.26.90 to
make an appointment.

Carrickmacross Information Centre
Carrickmacross Workhouse, Shercock Road,
Carrickmacross, Co. Monaghan.

Open: Wednesdays 1pm to 7pm or
outside these hours upon request.

Drop in, or call 1890.25.26.90 to
make an appointment.

See: www.eirgrid.com
Lo-call: 1890.25.26.90
Email: meathcavanpower@eirgrid.com or
cavantyroneinterconnector@eirgrid.com

EIRGRID

North East Power Line Projects

Frequently Asked Questions
July 2009

This document outlines answers to questions sent to EirGrid by landowners and the local community in relation to the North-East Power Line Projects.

Most of the questions have been received since the preferred route corridor announcement in April 2009 and relate to such issues as route selection, undergrounding, compensation, construction, power line design, and environmental impact.

1. Why are EirGrid not consulting with householders directly impacted by the proposed overhead lines and pylons route?

EirGrid welcomes the opportunity to consult with any stakeholder who wishes to input into the projects.

EirGrid's consultants, ESBI and Tobin Consulting Engineers, have been visiting, and consulting with, the landowners on whose property the proposed 400kV overhead line will be built. In the case of all other landowners, householders and residents it is not possible to know intuitively which of them considers themselves to be, or not to be, 'impacted by the proposed overhead lines and pylons route'. As a result EirGrid advertised its intentions extensively in the media and invited all interested parties to consultation. To date this has resulted in over 11,000 people contacting EirGrid. EirGrid has also consulted extensively with community groups, such as NEPP, who claim to represent over 45,000 residents.

The invitation to consultation, to all persons who consider themselves to be impacted by EirGrid's proposals, remains open. Any stakeholder who wishes to consult with EirGrid on these projects can do so in any of the following ways:

A) Meeting
EirGrid is hosting meetings at our local information centres. These meetings provide stakeholders with an opportunity to talk with EirGrid's experts about general project issues. Please call 1890.25.26.90 if you would like to attend one of these meetings.

B) Information Centre
EirGrid have public Information Centres in both Navan and Carrickmacross. These have been open since August 2008, and are there to facilitate engagement with the local community. Please drop into one of these centres, or call us to make an appointment at the below contact details:

Navan Information Centre	*Carrickmacross Information Centre*
Number 1, Newbridge,	Carrickmacross Workhouse,
Athlumney,	Shercock Road,
Navan,	Carrickmacross,
Co. Meath.	Co. Monaghan.
Open: Tuesday, 1:00 to 7:00 P.M.	Open: Wednesday, 1:00 to 7:00 P.M.
Ph: 046.902.7855, or 1890.25.26.90	Ph: 046.969.0000 or 1890.25.26.90

C) Lo-Call phone line
The EirGrid Project Team can be contacted on 1890.25.26.90, Mondays to Fridays from 9 am to 5 pm.

D) Written Communication
If you wish to engage in written correspondence, please direct your queries to Tomás Mahony at our Navan Information Centre address, or email: meathcavanpower@eirgrid.com.

2. I cannot get insurance against EMF damage to my health, will EirGrid provide me with this as I will be living within close proximity to the proposed lines?

EirGrid and ESB jointly design, construct, operate and maintain the electricity transmission network. They do this in compliance with all national and international guidelines and in accordance with 'best practice'. They are jointly satisfied from the totality of studies and the views of international authoritative agencies (including the World Health Organisations) that the balance of evidence is that the EMF, emanating from overhead transmission lines, does not have any adverse effect on public health. Accordingly, the issue of insurance in respect of EMFs does not arise in the context of the proposed lines.

3. My house is so close to the pylons that I will probably never be able to sell it. How will EirGrid measure property devaluation and how do I claim?

Reliable, secure and economic supplies of electricity are vital to all of us in our daily lives, as householders, in agriculture, industry and employment. It is no coincidence that areas with strong overhead electricity networks have proven to be economically successful, attracting and retaining essential high technology industries. Where lands or wayleaves are required in order to facilitate the construction and operation of the proposed overhead line, a scheme of compensation has been put in place for the assessment of any loss in the value of lands affected. See answer to Question 7 for further detail.

4. What are EirGrid going to do about the noise from the pylons for anyone living beside these monstrous specimens?

Appropriate materials and construction practices will be utilised to minimise the 'noise' that can occur during periods of high humidity. It should be noted that projected noise levels, along with mitigation measures will be studied as part of the EIS, which will be submitted alongside the planning application.

5. Why did EirGrid choose the route with the most dwellings and the most people living in close proximity to the lines?

EirGrid has not yet, as of July 2009, finalised a route within the preferred corridors. It should also be noted that neither of EirGrid's preferred corridors contains the "*most dwellings and the most people living in close proximity to the lines*".

In February 2009 EirGrid announced its preferred candidate corridors (Corridor A in the case of Cavan-Tyrone and Corridor 3b in the case of Cavan-Meath) within which a route can be found. At that time EirGrid published a Corridor Evaluation Document (available for viewing on the project pages of EirGrid's website at www.eirgrid.com). In this document the methodology applied to the evaluation of the various route corridor options is described. The methodology involved a qualitative evaluation of the corridor options against twenty two different criteria (two of which considered the issue of proximity to dwellings) and from this a conclusion was drawn as to which option should become the preferred candidate corridor.

The Corridor Evaluation Document concluded that while the evaluation process found that each option had pros and cons the preferred candidate corridors announced by EirGrid *"constitute the most appropriate balance between the various technical, environmental and community evaluation criteria, notwithstanding the fact that potential constraints are identified for all corridors"*.

The Corridor Evaluation Document explains that Phase 2 of the route identification process concluded with the announcement of the preferred corridors. While Phase 3 of the process (which is currently underway) involves *"more detailed technical and environmental studies, and ongoing Statutory, non-Statutory and public consultation, with the purpose of identifying a preferred route for the overall transmission infrastructure project within the identified preferred corridor*".

6. Why did EirGrid not consider putting the proposed infrastructure along either the M3 or the proposed rail line? Were there meetings held with the NRA and Iarnród Eireann to consider such a proposal?

EirGrid has consulted with both the NRA and Iarnród Éireann regarding these projects.

As both EirGrid, and its environmental consultants, recognise the merits of utilising shared infrastructure corridors for linear developments (such as roads, railways, canals, pipelines and power lines etc.) the possibility of locating the proposed development alongside the new motorway and the disused railway line was considered as follows -

Overhead line along the M3 motorway
Locating the proposed overhead line alongside the motorway was ruled out because, in the opinion of the environmental consultant, to do so, would not be environmentally sustainable. This opinion was based on, among other things, the stated intention of the planning authority to protect "*landscapes of exceptional value and sensitivity and in particular to protect the rural character, setting, amenity and archaeological heritage of Brú na Bóinne and the Hill of Tara, and of the surrounding areas including the area in the vicinity of the proposed M3 motorway and its related interchanges*".

Underground Cable along the M3 motorway
Locating a 400kV underground cable within the reserve of the motorway was ruled out primarily because in EirGrid's opinion it would not be appropriate to use 400kV underground cable in place of 400kV overhead line, for this project, as this would not be in compliance with EirGrid's mandate to provide Ireland with a safe, reliable and cost effective transmission network while having due regard for the environment. This conclusion is supported by the findings of the PB Power Report (commissioned by EirGrid and NIE) and the ECOFYS Report (commissioned by the Department of Communications, Energy and Natural Resources).

In addition the NRA has advised that a 400kV underground cable would only be permitted within the motorway reserve if "indemnities regarding damage, disruption, costs, etc" acceptable to both NRA and the PPP (public-private partnership) company, that will construct and operate the motorway, were received. In EirGrid's opinion, even if underground cable was a viable option, this requirement introduces such complexity, uncertainty and risk that it would render this route, a less favourable underground cable route than a direct cross county route, such as that identified in the PB Power Report.

Overhead line along the route of the disused railway lines
Locating the proposed overhead line alongside the route of the disused railway lines was ruled out because it would direct the development into areas of population, in particular Navan Town, but also a number of villages and hamlets along the route. In the opinion of the routeing experts there were better and less constrained route options available elsewhere.

Underground cable along the route of the disused railway lines
Locating a 400kV underground cable within the reserve of the disused railway was ruled out primarily because in EirGrid's opinion it would not be appropriate to use 400kV underground cable, instead of the proposed 400kV overhead line, for this project as this would not be in compliance with EirGrid's mandate to provide Ireland with a safe, reliable and cost effective transmission network while having due regard for the environment. This conclusion is supported by the findings of the PB Power Report and the ECOFYS Report.

In addition PB Power was requested, for their report, to find a route corridor within which a technically and environmentally feasible route for underground cable (UGC) could be found. This was to be done for the purpose of establishing a realistic cost and environmental impact comparison between an underground cable option and the proposed overhead line option. Prior to carrying out the study, PB Power and EirGrid/NIE, agreed a set of 'Strategic Cable Routeing Criteria' to be applied by PB Power's cable routeing experts in their quest for a suitable UGC route. During these discussions it was concluded that there would be no advantage to routeing the UGC via the disused rail lines, while taking a more direct route across country would result in a shorter route and involve less uncertainty and risk. It was therefore agreed that the 'Strategic Routeing Criteria' should identify the railway lines, both in service and disused, under the category 'Avoid if Possible'. NOTE – further elaboration on this issue can be found in the answer to Question 29.

7. Will I as an adjacent householder whose land/property is not traversed be compensated for the proposed unsightly infrastructure and its emissions?

EirGrid will ensure that every reasonable effort is made to minimise the impact of the 400kV overhead line on adjacent householders, whether in relation to visual amenity or any perceived environmental emissions. In the case of visual impact this will include, among other things –

- the use of a less visually intrusive pylon design than was used in the past.
- the careful positioning, where possible in agreement with landowners, of the pylons.
- the implementation of any other reasonable mitigation measures that are agreed with potentially affected property owners.

In the case of potential 'emissions' minimisation of any impact will include, among other things –

- compliance with EU Guidelines on the exposure of persons to electric and magnetic fields.
- use of appropriate materials and construction practices to minimise the 'noise' that can occur during periods of high humidity.

In circumstances where these potential impacts will be mitigated, EirGrid does not perceive that there will be any significant depreciation in the value of property in the vicinity of the proposed overhead line over and above the depreciation in the property market generally.

8. Will I be indemnified by potential claims by visitors to my property?

Landowners, including persons present on their land with their permission are indemnified by the Electricity Supply Board (ESB). The full details of this cover are detailed in the "ESB/I FA Code of Practice for Survey, Construction Maintenance of Overhead Lines in relation to the Rights of Landowners" (October 1985) states the following:-

"The Board shall indemnify and keep indemnified the landowner, his servants, agents, licensees and invitees against all sums in respect of loss or damage, claims, demands, costs and expenses which the landowner shall become legally liable to pay as compensation for any illness or accidental bodily injury or accidental loss of or damage to property where such injury or damage is caused by, arises from, is traceable or connected with the works or equipment other than in consequence of any malicious act or omission on part of the landowner. The Board shall pay compensation to the landowner, his servants, agents, licensees and invitees in respect of any illness or bodily injury or loss or damage to material property suffered by him or them (together with all consequential loss arising there from) where that same is caused by, arises from, is traceable to or connected with the works, or equipment other than in consequence of any malicious or criminally reckless act or omission of the landowner and except insofar as the same has been made good by the Board without loss to the landowner. The above is without prejudice to the Board's and Landowners' Statutory and Common Law rights. Illness in this context is understood to mean damage to the personal health and well being of the landowner or his animals or his agents, servants, licensees and invitees. It is noted and agreed that the ESB will issue, to any individual landowner requiring same, a letter of acknowledgement that the Board's wayleave over his land is subject to the provisions of the code of practice, including specifically the indemnity clause."

9. What is the minimum distance committed by EirGrid that the 400kV lines or pylons will be placed nearest to a dwelling?

There is no specified 'minimum distance' other than that required to ensure safety from electrocution. The Electricity Supply Act however requires that any person intending to construct a building within 25 yards (approximately 23 metres) of an existing overhead line must notify ESB in advance. This is required so that ESB Networks can ensure that the works can be carried out safely and that the future safe operation and maintenance of the overhead line, and the proposed building, is ensured.

For the proposed 400kV lines EirGrid expects to achieve a minimum clearance distance that is much greater than 23 metres. The actual distance however will not be known until the design is finalised.

10. Will my family or their offspring be indemnified for any potential ill health effects?

EirGrid and ESB are companies, owned by the State. They jointly design, construct, operate and maintain the electricity transmission network. They do this in compliance with all national and international guidelines and in accordance with 'best practice'. They are jointly satisfied from the totality of studies and the views of international authoritative agencies that the balance of evidence is that overhead transmission lines proposed for use do not have any adverse effect on public health. Accordingly, the issue of indemnification in respect of perceived health effects does not arise in the context of the proposed lines.

11. What are EirGrid's powers in relation to entering property prior to submitting plans to An Bord Pleanála? Cite any relevant legislation or Court decisions.

Without prejudice to such rights, EirGrid is not proposing to rely on statutory powers to enter land 'prior to submitting plans to An Bord Pleanála'. Rather, entry onto lands is being approached on a voluntary basis. While EirGrid is endeavouring to meet landowners prior to application, this is primarily to hear landowner views at this early stage so that mitigation measures can be appropriately identified and included in the planning application. Through landowner site visits, EirGrid wishes to ascertain whether and how the proposed overhead line might impact upon landowners.

12. What permission, if any, does EirGrid need to enter on land to complete their Environmental Impact Study? Cite any relevant legislation or Court decisions.

Clearly, it will be of benefit to landowners and EirGrid alike if as much access is given as possible so that all landowner concerns and specific issues that will affect the project can be identified as early as possible and fed into the process of preparing the EIS. To the extent that access is refused and cannot otherwise be obtained, the EIS will record this together with alternative measures adopted to ensure that the EIS is as comprehensive as possible.

13. If a landowner does not grant permission to EirGrid to enter lands, does it mean that EirGrid cannot proceed through my property with overhead lines and Pylon towers?

In circumstances where planning permission is granted for the proposed lines, EirGrid/ESB Networks shall endeavour to agree access arrangements with individual landowners. In the event that such arrangements cannot be agreed, then in order to implement the construction of structures and installation of lines so permitted, and only where necessary, EirGrid/ESB Networks shall rely upon statutory powers of entry in this regard.

It should be noted, however, that while EirGrid does not generally use statutory powers, EirGrid reserves its statutory rights in this regard in individual cases where a need to enter upon lands is necessary and a landowner is not willing to facilitate EirGrid in this regard.

14. Will EirGrid be willing to compensate farmers for health effects on their livestock? If so, what will be the basis for calculating such compensation?

EirGrid and ESB are companies owned by the State. They jointly design, construct, operate and maintain the electricity transmission network. They do this in compliance with all national and international guidelines and in accordance with 'best practice'. They are jointly satisfied from the totality of studies and the views of international authoritative agencies that the balance of evidence is that overhead transmission lines proposed for use do not have any adverse effect on animal health. Accordingly, the issue of compensating for perceived animal health effects does not arise in the context of the proposed lines.

ESB Networks will take every care during the erection and subsequent work on the line to ensure that farmers' operations, including livestock operations, are not impacted. ESB Networks, after consultation with the landowner shall take all necessary precautions to prevent the straying of livestock and shall compensate the landowner of such livestock for all loss, damage or claims arising from the loss of such animals and pay compensation for injury or death or loss of the animals where such straying is clearly due to any act or omission on the part of the Board. The Board shall ensure that the local District Veterinary Officer is informed of the entry of ESB vehicles onto a farm with a disease problem and that the Epidemiology Unit of the Department of Agriculture is made aware of ESB activities in TB affected areas.

15. Will EirGrid be legally responsible for any ill-health effects to farming families/farming employees who would constantly be exposed to EMFs while attending to stock?

EirGrid and ESB are companies owned by the State. They jointly design, construct, operate and maintain the electricity transmission network. They do this in compliance with all national and international guidelines and in accordance with 'best practice'. They are jointly satisfied from the totality of studies and the views of international authoritative agencies that the balance of evidence is that overhead transmission lines proposed for use do not have any adverse effect on human health. Accordingly, the issue of compensating for perceived human health effects does not arise in the context of the proposed lines.

16. Can you give me details of EirGrid's insurance and indemnity policy for claims against the company or a landowner arising from ill health effects of EMF?

EirGrid and ESB jointly design, construct, operate and maintain the electricity transmission network. They do this in compliance with all national and international guidelines and in accordance with 'best practice'. They are jointly satisfied from the totality of studies and the views of international authoritative agencies that the balance of evidence is that the EMF, emanating from overhead transmission lines, does not have any adverse effect on public health. Accordingly, the issue of insurance or indemnification in respect of EMFs, or any perceived health effects arising from EMFs, does not arise in the context of the proposed lines.

17. How will EirGrid indemnify me against third party claims both for property devaluation and health damages?

EirGrid will ensure that every reasonable effort is made to minimise the impact of the 400kV overhead line on adjacent properties. In circumstances where any potential impacts on property will be mitigated, it is not envisaged that there will be any significant depreciation in the value of property in the vicinity of the proposed overhead line over and above the depreciation in the property market generally. Accordingly, it is not anticipated that any "third party" claims will arise.

EirGrid and ESB are jointly satisfied from the totality of studies and the views of international authoritative agencies (including the World Health Organisation) that the balance of evidence is that the overhead transmission lines proposed for use do not have any adverse effect on public health. Accordingly, the issue of indemnification in respect of perceived health effects does not arise in the context of the proposed lines. Therefore, it is not anticipated that any valid "third party" claims will arise in this regard.

18. Why has EirGrid not factored in an underground cable route as part of the original proposed route corridors?

EirGrid always considers the use of underground cables when proposing a new high voltage transmission circuit but does so in accordance with its policy on the matter. In the case of the Cavan-Meath and Cavan-Tyrone 400kV projects the extent of this consideration is described in the document 'EirGrid's Position on the use of Overhead Line and/or Underground Cable for these Projects', a copy of which can be viewed on project pages of EirGrid's website at www.eirgrid.com.

In addition to the above EirGrid is required to prepare an EIS (Environmental Impact Statement) in support of its application for Planning Permission. The EIS must contain a section that describes the applicant's consideration of alternatives. In this section of the EIS EirGrid will fully describe its consideration of alternative solutions, including technical alternatives such as the use of underground cable.

19. Can you confirm that all new transmission lines in Denmark will be undergrounded?

EirGrid has consulted with its counterpart in Denmark and can confirm that this is not correct. The strategy for the future development of Denmark's 400kV network has been misunderstood and misrepresented by persons, outside of Denmark, who are opposed to the construction of 400kV overhead lines in their own countries.

Denmark needs to strengthen the 'backbone' of its 400kV network and proposes to do this by constructing a new double circuit 400kV overhead line (replacing an existing single circuit 400kV overhead line) down through the centre of Jutland and across the border into Germany. This project will be carried out in three phases and is expected to be completed by 2020. Beyond that they have expressed an aspiration that all 'non-backbone' 400kV circuits be achieved using underground cable. This will however require the installation of some long lengths of underground cable and they are uncertain as to whether this is technically possible. As a result they have instituted a research and development programme, in cooperation with Danish universities. The programme consists of a number of PhD research projects and, depending on the results, may involve the installation of a long (greater than 60kM) underground cable as a test case. They hope to complete the research and development programme within the next ten years and if successful will then proceed with plans to underground all existing and future 'non-backbone' 400kV circuits.

Full details of the strategy for the expansion and undergrounding of the Danish electricity transmission grid can be found on the website of the Energinet.dk, the Danish transmission system owner, at www.energinet.dk.

20. Why is EirGrid not putting all proposed new 110kV lines underground, as this is technically feasible?

"Putting all proposed new 110kV lines underground" would not be in compliance with EirGrid's statutory obligation to provide Ireland with a 'safe, reliable and cost effective electricity transmission system while having due regard for the environment'. This position is fully explained in EirGrid's 'Policy on the use of Overhead Line and/or Underground Cable' a copy of which can be seen on this Project's web-pages on EirGrid's website at www.eirgrid.com.

21. Does EirGrid have an existing and specific code of practice with the Irish Farmer's Association (IFA) for 400kV lines being placed on their member's lands?

No but ESB, in its role as the Transmission Asset Owner, is responsible for the construction of overhead transmission lines and has such an agreement with the IFA for all overhead lines of '110kV and above'.

22. Does EirGrid have an existing and specific code of practice with the Irish Creamery Milk Suppliers' Association (ICMSA) for 400kV transmission lines being placed on their member's lands?

No.

23. Why has EirGrid taken such an intransigent approach to undergrounding, by stating that overhead lines are its "absolute preference"?

The words "absolute preference" are from EirGrid's Corridor Evaluation Document that was published in February 2009. The words are used in the following context - as addressed in more detail in the Strategic Issues Review, it is EirGrid's policy for the use of overhead line infrastructure in carrying out rural linear transmission projects such as is planned in this instance, in absolute preference to underground cable systems.

The Corridor Evaluation Document goes on to state that this policy is consistent with the conclusions of the Ecofys *Study on the Comparative Merits of Overhead Electricity Transmission Lines Versus Underground Cables*, of May 2008 prepared by order of the Department of Communications, Energy and Natural Resources, which notes that:- *"Until now, 400 kV to 500 kV AC cables for transmission are nearly exclusively used in short sections in urban areas and only rarely in open country"* (p.38), and that *"Up to now, construction and operation of an EHV UGC in Ireland with a length of up to 100 km would not be backed by any experience worldwide"* (p.44). The Study concludes that *"With more than 50 years of experience OHL are state-of-the-art and are the reference technology for transporting large amounts of electric power over distances of several hundreds of kilometres"* (p.53).

NOTE – The Strategic Issues Review and the Corridor Evaluation Document are both available for viewing on this Project's web-pages at www.eirgrid.com.

24. Why has EirGrid rejected without foundation the findings of the ASKON Reports? Can you forward me a copy of the ASKON Reports?

EirGrid welcomed the Askon Report and acknowledged its contribution to the consultation process. EirGrid, with the assistance of its team of international experts, carried out a comprehensive review of the Report and published the findings of this review in the document 'EirGrid Position on NEPP Askon Study'.

In summary EirGrid agrees with the following findings in the Askon Report –

- There have been significant developments in HV UGC (underground cable) technology in the past twenty years.
- HVDC (high voltage direct current) technology is not appropriate for these projects.

- Two UGC circuits would be required to replace the proposed single 400kV OHL (overhead line).

- The installation of two independent UGC circuits would alleviate some of the disadvantages associated with HV UGC circuits.

- It would not be appropriate to install an UGC circuit, of the magnitude required for these projects, under the public roads of Meath, Cavan, Monaghan, Armagh and Tyrone.

- There are no UGC circuits, anywhere in the world, of the type and length that would be required for these projects.

- The capital cost of an HV UGC circuit is many times that of the cost of an equivalent OHL circuit.

- Both UGC and OHL circuits emit magnetic fields. UGC circuits do not emit electric fields.

Some of the more remarkable errors of assumption, errors of understanding and errors of calculation in the Askon Report are as follows –

- There is no basis for the assertions that UGC circuits are safer than OHL circuits. Both technologies are used by EirGrid and both are designed and operated so as to meet all relevant national and international safety criteria. **UGC and OHL circuits are equally safe**.

- Askon has greatly over estimated the quantity of electrical power (in megawatt hours) that will flow through the overhead line during its lifetime. This is a fundamental error and invalidates Askon calculations of electrical losses and assumptions on 'whole of life' operating costs. The laws of physics determine that a lightly loaded UGC will have higher electrical losses than an equivalent lightly loaded OHL while a heavily loaded UGC will have lower losses than a heavily loaded OHL. In its role as operator of the transmission network EirGrid knows that the proposed 400kV circuits will operate relatively 'lightly loaded', in the region of 35% capacity, throughout their life. It should be noted that the proposed circuits are required to have a large spare capacity as a contingency in case of short duration emergencies.

- Askon has acknowledged that the capital cost of UGC is considerably more than that of OHL. But then tried to make a financial case for UGC on the basis that the UGC would have a lower 'whole of life' operating cost than that of the OHL. As stated in the previous bullet point this is based on an error of assumption and the reverse is in fact the case. Askon's conclusion that a UGC circuit *"could well work out the lower coast option over the whole life cycle"* is simply not correct.

- Askon's comparison of the environmental impacts is inadequate. It is not enough to just point out the obvious advantages that UGC has over OHL. A balanced approach is required. Comparing OHL with UGC circuits across the full range of environmental criteria shows overhead lines perform better under many of the categories. This was the conclusion of the ECOFYS Report commissioned by the Department of Energy.

- Askon's UGC cost estimates were prepared by a team with no apparent local knowledge and no practical experience of installing HV underground cables. The civil engineering estimates were based on information received from a "*German power supplier*". This has resulted in errors of omission and errors of under estimation that together add up to an under estimation of over €80 million in their estimate for a 56km 400kV UGC circuit in County Meath. To

put the extent of this error in perspective, it is twice the magnitude of Askon's estimate for the total cost of an equivalent 400kV OHL.

- There are many 'system wide' technical problems that would arise with the installation of such long HV UGC circuits on Ireland's relatively small and isolated transmission grid. Askon failed to consider these and only looked at this from a 'localised' grid perspective. EirGrid has to consider the impact on the system as a whole.

EirGrid circulated the report to three separate teams of experts for review over a number of months and also spent two days with the authors of the reports. Based on all of the foregoing EirGrid concluded (i) that Askon has not made a valid case in favour of the use of underground cable and (ii) that for these 400kV projects an overhead line solution is appropriate and consistent with EirGrid's mandate to provide Ireland with a 'safe, reliable, secure and cost effective transmission system while having due regard for the environment'.

Regarding your request for a copy of the Askon Reports - EirGrid cannot provide these as the study was commissioned by NEPP and the resulting reports are copyright protected. Copies should be requested from NEPP.

25. Was a tender process carried out in relation to the recently published underground cable study eventually carried out by PB Power?

The PB Power Report was commissioned jointly by EirGrid and Northern Ireland Electricity and was done so in compliance with all European Union and national laws and regulations.

26. When was PB Power awarded the contract for this study?

November 2007.

27. What were the terms of reference given to PB Power for the study?

The full report, including the terms of reference, can be found on www.eirgrid.com.

28. What was the cost of the PB Power study?

This information is commercially sensitive and subject to contractual duties of confidentiality.

29. Did EirGrid instruct PB Power not to examine the existing rail line as a corridor option? If not, then why was the rail line option not analysed by PB Power?

No, PB Power was requested to find a route corridor within which a technically and environmentally feasible route for underground cable (UGC) could be found. This was to be done for the purpose of establishing a realistic cost and environmental impact comparison between an underground cable option and the proposed overhead line option.

Prior to carrying out the study, PB Power and EirGrid/NIE, agreed a set of 'Strategic Cable Routeing Criteria' to be applied by PB Power's cable routeing experts in their quest for an optimum and least cost UGC route which is technically and environmentally feasible (see Section 7.3 of the PB Power Report). During the discussions on the routeing criteria the following points, regarding the use of the disused railway lines, were raised –

- It is government policy (Transport 21) to re-establish a rail link from Dublin to Navan and this will most likely follow, substantially, the route of the disused railway line from Clonsilla to Navan. This had previously been a single track line but a double track would be required for the new service. The initial service would operate using light diesel powered trains (Arrow type) but provision would be made for future electrification (DART type). An extensive redevelopment of the existing railway reserve, consisting of its widening and construction of new bridges and underpasses would therefore be required. Construction will commence, at the earliest, in 2012, with a three year construction period.

- The Meath County Development Plan states an objective of maintaining "*the reservation of the former Dublin-Navan rail line free from development*".

- If the two sets of 400kV underground cables that would be required for this project were to be installed within the reserve of the disused section of the Dublin-Navan rail line, or even outside but adjacent, prior to its redevelopment it would inhibit the extensive works required to bring the railway back into service. This situation would also apply to the disused Navan-Kingscourt line and any other disused rail line.

- If 400kV UGC was installed within the rail way reserve after the rail line was brought back into service then it would have to be done in such a way that its operation would not interfere with the safe operation of the rail service and vice versa. Permanent vehicular access would be required along the entire length of the UGC. The railway could not be used for this as that would disrupt the service therefore a road would have to be constructed alongside the railway for its entire length. This would also require that both sets of cables be placed on the same side of the rail tracks so that the road would provide access to both sets of cables and avoid the need to have vehicles crossing the rail tracks. Iarnród Éireann does not require this access road and would therefore not be expecting to make space provision for one. The UGC would also have to be set back far enough from the rail line to enable mechanical excavators, cranes, cable laying equipment and concrete trucks to operate safely without interfering with the train service. Space provision must also be made for excavated spoil. There are also technical difficulties that must be considered, such as the shielding of the railway signalling system from interference from the HV UGC. Future major works by Iarnród Éireann on the rail route, such as the works required for the proposed electrification and works required for the construction of any new railway stations along the route would be impeded by the presence of the cables. This would be particularly the case if the two sets of cables were placed on either site of the rail tracks.

- The disused rail line passes through the centre of Navan town. Following the route of the old railway line with 400kV UGC would therefore bring this development into a congested urban area.

- Even if it was decided that the disused rail lines were never to be brought back into service, and Iarnród Éireann was prepared to relinquish its rights, it is noted that the routes are not entirely intact and there has been encroachment of development in places. The railway reserve is also too narrow in many places for the two sets of UGC and the required haul road.

Additional land take would therefore be required at these locations. It is not known whether the required additional lands could be obtained. Particular difficulties are likely to arise where the rail line passes through Navan Town and the villages and hamlets along the route.

Based on these discussions it was concluded that there would be no advantage to routeing the UGC via the disused rail lines. While taking a more direct route across country would result in a shorter route and involve less uncertainty and risk. It was therefore agreed that the 'Strategic Routeing Criteria' should identify the railway lines, both in service and disused, under the category 'Avoid if Possible'.

30. PB Power estimate an overhead lines capital cost of €81 million for the project, compared with a €280 million projected cost by EirGrid. Can you explain the major cost conflicts between EirGrid and PB Power?

The Eirgrid/NIE estimate of €280 million is for the entire project and includes provision for the 140kM of 400kV overhead line as well as the substations, 220kV overhead lines, land acquisition, landowner compensation etc.

The purpose of the PB Power Report was to establish a realistic cost and environmental impact comparison between an underground cable option and the proposed overhead line option. In preparing their costs estimates it was therefore not necessary for PB Power, to make provision for items that are common to both options in order to establish the cost difference between the two options.

PB Power estimated that the 400kV overhead line would cost €81 million while the underground cable would cost €588 million. The important conclusion to be drawn from this is that, if underground cable is used instead of overhead line, the project will cost an additional €507 million.

31. If a landowner does not grant permission to EirGrid to enter lands, does it mean that EirGrid cannot proceed through my property with overhead lines and pylon towers?

In circumstances where planning permission is granted for the proposed lines, EirGrid/ESB Networks shall endeavour to agree access arrangements with individual landowners. In the event that such arrangements cannot be agreed, then in order to implement the construction of structures and installation of lines so permitted, and only where necessary, EirGrid/ESB Networks shall rely upon statutory powers of entry in this regard.

32. What statutory or other legal provisions is EirGrid relying on to allow them or their agents to enter my property?

EirGrid is not relying on statutory powers to enter land during the pre-planning stage. Rather, entry onto lands is being approached on a voluntary basis. While EirGrid is endeavouring to meet landowners prior to application, this is primarily to hear landowner views at this early stage so that mitigation measures can be appropriately identified and included in the planning application. Through landowner site visits, EirGrid wishes to ascertain whether and how the proposed overhead line might impact upon landowners.

It should be noted, however, that while EirGrid does not generally use statutory powers, EirGrid reserves its statutory rights in this regard in individual cases where a need to enter upon lands is necessary and a landowner is not willing to facilitate EirGrid in this regard.

33. Will EirGrid indemnify landowners against civil claims by employees and/or visitors to the lands in respect of adverse health effects from being present on the land?

EirGrid and ESB jointly design, construct, operate and maintain the electricity transmission network. They do this in compliance with all national and international guidelines and in accordance with 'best practice'. They are jointly satisfied from the totality of studies and the views of international authoritative agencies that the balance of evidence is that the overhead transmission lines do not have any adverse effect on public health. Accordingly, the issue of indemnification in respect of civil claims by employees and/or visitors does not arise in the context of the proposed lines.

34. What is EirGrid's position if farmers cannot get health insurance, public liability insurance, or employer's liability insurance due to proximity of living and working close to EMFs?

EirGrid and ESB jointly design, construct, operate and maintain the electricity transmission network. They do this in compliance with all national and international guidelines and in accordance with 'best practice'. They are jointly satisfied from the totality of studies and the views of international authoritative agencies that the balance of evidence is that the EMFs emanating from overhead transmission lines do not have any adverse effect on public health. Accordingly, the issue of health insurance, public liability insurance or employer's liability insurance does not arise in the context of the proposed lines

35. Does EirGrid accept that high voltage transmission lines negatively affect land and property values?

In circumstances where any potential impacts from HV transmission lines will be mitigated, EirGrid does not perceive that there will be any significant depreciation in the value of property in the vicinity of the proposed overhead line over and above the depreciation in the property market generally.

36. Has EirGrid factored in a cost for such devaluations into their Grid25 transmission system planned costings? What baseline criteria has it used for such evaluations?

GRID 25 is a strategy for the development of Ireland's electricity transmission system between now and 2025, rather than a detailed plan. The quoted estimates of capital investment for each region should therefore not be considered as 'planned costings'. They are instead high-level, top-down, estimates that were calculated by applying 'typical rates' to an estimate of the extent of the works required in each region. The 'typical rates' were determined from the actual cost of similar type projects that have been completed in the recent past with the addition of a provision for contingency and inflation. The actual cost of a recently completed overhead line project would include the cost of any landowner compensation payments in respect of wayleave acquisition that were made during the course of that project.

37. What standard operating procedures and decision criteria are used by EirGrid for deploying taxpayers' money in relation to landowners' compensation offers for pylons placed on their property? Can you forward the specific procedures in the interests of transparency?

Although EirGrid is a company wholly owned by the State, neither it nor its activities are funded directly by 'taxpayers' money'. EirGrid, in its role as Ireland's TSO (Transmission System Operator), has a statutory obligation to provide Ireland with a safe, reliable and cost effective electricity transmission system while having due regard for the environment. Its activities in this regard are regulated by the Commission for Energy Regulation and are primarily, and ultimately, funded by the electricity consumers of Ireland. It is within this regulated environment that EirGrid will negotiate levels of compensation with landowners. NOTE - the current phase of the Meath-Cavan-Tyrone 400kV projects is also partially funded by an EU grant.

Compensation is paid to landowners on whose property the overhead line is erected. This is done in accordance with long established agreements with the Irish Farmers Association. All agreements with landowners are negotiated individually since the effect of the transmission line on each landowners' property will vary from landowner to landowner. EirGrid will endeavour to complete negotiations with each landowner prior to construction

A landowner or rights holder who is dissatisfied with the amount of compensation offered has the statutory right to have the compensation amount assessed by an independent arbitrator.

38. Will EirGrid compensate landowners for the long term effects such as crop damage, low milk yields, etc. and, if so, how will such compensation be calculated?

EirGrid design and operate the network in compliance with all national and international guidelines. We are satisfied from the totality of studies and the views of international authoritative agencies that the balance of evidence is that Electric and Magnetic Field (EMF) do not have any adverse, long-term effect on public or animal health.

The ESB will take every care during the erection and subsequent work on the line to ensure that farmers' operations are not impacted. Compensation will be paid for crop loss and physical disturbance to lands during construction, by individual agreement with landowners, following the IFA code of practice. ESB, after consultation with the landowner shall take all necessary precautions to prevent the straying of livestock and shall compensate the landowner of such livestock for all loss, damage or claims arising from the loss of such animals and pay compensation for injury or death of/loss of the animals where such straying is clearly due to any act or omission on the part of the Board. The Board shall ensure that the local District Veterinary Officer is informed of the entry of ESB vehicles on farm with a disease problem and that the Epidemiology Unit of the Department of Agriculture is made aware of ESB activities in TB affected areas. It is not accepted that there will be any issue in relation to lower milk yields as a result of the operation of the proposed lines.

39. Why is the East-West Interconnector from Rush to Woodlands being placed underground?

The Meath-Cavan-Tyrone 400kV Circuits must use HVAC Technology
The proposed Cavan-Tyrone 400kV circuit is required to provide further interconnection between the transmission grids of Northern Ireland and the Republic of Ireland. These transmission grids already operate as a single or 'synchronous' HVAC (high voltage, alternating current) system. The proposed Meath-Cavan 400kV

circuit has two objectives, to provide capacity support to north-south power flows and to reinforce the existing HVAC electricity supply to the North-East Region of the Republic. As a result the most appropriate technology for the proposed Meath-Cavan-Tyrone 400kV circuits is HVAC.

The East-West Interconnector must use HVDC Technology
The proposed East-West Interconnector is required to provide further interconnection between the transmission system on the island of Ireland and that on the island of Great Britain. These two transmission systems are required to operate independently of each other and are therefore two 'asynchronous' HVAC systems. The existing island-to-island interconnector, that is the Moyle Interconnector, utilises HVDC (high voltage, direct current) technology. This technology is the most appropriate for providing interconnection between asynchronous systems. The proposed second island-to-island interconnector, that is, the East-West Interconnector must therefore also use HVDC technology.

EirGrid's Policy on the use of UGC and/or OHL
EirGrid is statutorily obliged to provide Ireland with a safe, reliable and cost effective electricity system while having due regard for the environment. As a consequence of this obligation EirGrid has developed a long standing policy and practice for the use of HV underground cable (UGC) and overhead line (OHL) in Ireland. Whenever a new HV circuit is proposed this policy guides the decision on whether to use OHL or UGC.

In terms of the policy an UGC will only be used if all of the following four conditions apply -

a) An OHL is not feasible.
b) A technically and environmentally acceptable route for UGC can be found.
c) The effect that the electrical characteristics of UGC have on the transmission network is acceptable and the relatively poorer 'availability' of underground cable is tolerable.
d) The relatively high cost of the UGC can be justified.

In the case of the Meath-Cavan-Tyrone 400kV circuits EirGrid is of the opinion that OHL is environmentally, technically and economically feasible. As a result EirGrid is obliged to proceed with an OHL proposal for these circuits.

It should be noted that although EirGrid's policy on the use of HV UGC and HV OHL was drawn up with HVAC circuits in mind it can also be applied to HVDC circuits. In the case of the East-West Interconnector an underground cable is proposed for that part of the HVDC circuit between Rush and Woodland, and is being proposed because all four conditions of the policy, where applicable, are satisfied, as explained below –

a) Obviously the sea crossing from Wales to Ireland cannot be an overhead line and must be an insulated undersea cable. There are numerous environmental and development constraints on the overland route between Rush and the existing Woodland substation that would prevent the construction of an HV overhead line. Although there are sections of the 45km overland route where OHL would be possible, on balance it would not be advantageous to have a number of short sections of OHL in, what is primarily, a long (260km) UGC circuit. This is because (i) a mini-compound, requiring additional land take, would be required at each UGC/OHL interface, (ii) a hybrid UGC/OHL circuit requires more complex protection systems than an entirely UGC circuit and (iii) for this project the cost advantage of installing these short sections of OHL would be too small to negate the disadvantages of points (i) and (ii).

b) A technically and environmentally acceptable route for the HVDC UGC was found, details of which can be found on the EWIC project website at www.interconnector.ie.

c) This 'condition' of the policy does not fully apply to the East-West Interconnector. The electrical characteristics of a HVDC UGC are very different to those of a HVAC UGC. Long HVDC UGC circuits, unlike long HVAC UGC circuits, do not have a significant impact on the electrical characteristics of the HVAC transmission network as a whole.

   As discussed above only a very limited part of the 260km HVDC circuit route can accommodate OHL. Installing HVDC UGC in these sections would have a statistically insignificant impact on the overall circuit 'availability'.

d) It is clear that HVDC technology must be used for the East-West Interconnector. Two DC to AC converter stations are required, one at each end of the HVDC circuit. These converter stations are expensive and account for an unavoidably large percentage of the overall project cost. Because of obvious route constraints most of the HVDC circuit connecting the two converter stations must be via UGC. Installing UGC in those sections of the route that can accommodate OHL results in a relatively small increase in overall project cost. It should also be noted that HVDC cable, on a metre for metre basis, is much cheaper to install than an equivalent HVAC cable.

40. Why is the East-West Interconnector being placed alongside roads instead of over land? Why does the PB Power study propose the North-South project going over land instead of alongside roads of rail lines?

The East-West Interconnector Project – HVDC UGC under and along roads
The HVDC underground cable for the East-West Interconnector will consist of two separate cables, laid side by side, in a trench approximately 1m wide by 1.2m deep. Accommodating this development under and alongside the roads of north County Dublin and south County Meath is feasible and practical. Further details on the works associated with the installation of the HVDC cable can be found on the East-West Interconnector's project website at www.interconnector.ie.

The North-South Projects – HVAC UGC under and along roads
In the case of the Meath-Cavan-Tyrone 400kV Projects PB Power found that if HVAC underground cable is to be used in place of the proposed 400kV overhead lines it would require six separate cables, laid in two sets of three, in two trenches, each trench being approximately 1.8m wide by 1.3m deep, with a 5 metre spacing between the trenches. The regional roads of Meath, Cavan, Monaghan, Armagh and Tyrone are simply not wide enough to accommodate such a development. While the national roads in these five counties may be sufficiently wide, in places, the extent of the works would be such that it would require an effective demolition and rebuild of the entire road. The disruption to the local communities during these works is unlikely to be acceptable. Based on this it was concluded that if an underground cable circuit, of this magnitude, is to be installed in a rural area, the most optimum route from a cost and ease of installation perspective, would be a direct cross country route rather than following public roads.

The North-South Projects – HVAC UGC under and along rail lines
This is addressed in the answer to Question 29.

41. Should EirGrid be successful in obtaining planning approval from the Strategic Infrastructure Board are there any statutory or other legal provisions you may rely on to enter property? Cite relevant legislation or Court decisions.

In circumstances where planning permission is granted for the proposed lines, EirGrid/ESB Networks shall endeavour to agree access arrangements with individual landowners. In the event that such arrangements cannot be agreed, then in order to implement the construction of structures and installation of lines so permitted, and only to the extent necessary, EirGrid/ESB Networks shall rely upon statutory powers of entry in this regard.

42. Does EirGrid acknowledge that it has no legal right to enter on lands for any purpose without the landowner's agreement and that there is no legal provision that requires a landowner to give such permission?

EirGrid is not relying on statutory powers to enter land at the pre-planning stage. Rather, entry onto lands is being approached on a voluntary basis. While EirGrid is endeavouring to meet landowners prior to application, this is primarily to hear landowner views at this early stage so that mitigation measures can be appropriately identified and included in the planning application. Through landowner site visits, EirGrid wishes to ascertain whether and how the proposed overhead line might impact upon landowners.

It should be noted, however, that while EirGrid does not generally use statutory powers, EirGrid reserves its statutory rights in this regard in individual cases where a need to enter upon lands is necessary and a landowner is not willing to facilitate EirGrid in this regard.

In circumstances where planning permission is granted for the proposed lines, EirGrid/ESB Networks shall endeavour to agree access arrangements with individual landowners. However, EirGrid/ESB Networks may avail of statutory powers of entry. In the event that access arrangements cannot be agreed, then to the extent necessary, EirGrid/ESB Networks shall rely upon those statutory powers of entry.

43. Can EirGrid guarantee that 50m is the absolute closest distance from dwellings that the proposed overhead lines route will pass? If not, what is the minimum distance that EirGrid will guarantee?

EirGrid cannot give such a guarantee at this stage as the design has not yet been finalised. See answer to Question 9 for further information.

44. Does EirGrid accept that only much wider distances are allowed in other European countries?

Some countries, or as is more likely the case, regions within countries, may have adopted regulations which specify a minimum distance between dwellings and overhead transmission lines. Most of the countries of the EU however have, like Ireland, adopted EU Council Recommendation 1999/519/EC. Overhead transmission lines come in many shapes and sizes, with different voltage levels, different power carrying capacities and different configurations. The EU Guidelines recognise this and instead of specifying a minimum clearance distance the Guidelines specify 'Basic Restriction Levels' for the exposure of the general public to electric and magnetic fields. As the strength of the EMF is at its highest in the immediate vicinity of the live wire and decreases rapidly with growing distance from the overhead line a minimum clearance distance that satisfies the Guidelines can be derived for every type and size of HVAC overhead line.

In the case of the Meath-Cavan-Tyrone 400kV overhead lines EirGrid can guarantee that the overhead line will be sufficiently far enough away from dwellings to ensure that the resulting EMFs will be lower than the restriction levels specified in the EU Guidelines. In fact it can be expected that for those existing dwellings that are closest to the proposed overhead line the resulting EMF levels will be comparable with the 'background' levels already existing in those dwellings. The 'background' levels are caused by the electrical wiring installed in the building as well as the types of electrical appliances in use in that building.

45. Does EirGrid accept that other European countries apply voluntary EMF thresholds ranging up to 250 times lower than EirGrid's threshold of 100 microtesla?

There is much misinterpretation and misunderstanding about this 'threshold of 100 microtesla'. The guidelines on this matter were developed by ICNIRP (the International Commission on Non-Ionizing Radiation Protection) and have been endorsed by the World Health Organisation and the EU Commission. The ICNIRP Guidelines specify a 'basic restriction level' for the exposure of the public to time-varying electric, magnetic and electromagnetic fields. In the case of magnetic fields the 'basic restriction level' is 360 microtesla. The figure of 100 microtesla is ICNIRP's threshold, below which compliance with the Guidelines can be assumed. A calculated value above 100 microtesla does not mean non-compliance but rather that further investigation is required. The ICNIRP Guidelines form the basis of EU Council Recommendation 1999/519/EC which has been accepted by Ireland and therefore by EirGrid.

It is correct that some countries, or as is more often the case, regions within countries, have adopted a lower threshold than that of ICNIRP. The ECOFYS Report (commissioned by the Department of Communications, Energy and Natural Resources) mentions a level of 0.2 microtesla for the Tuscany Region of Italy. Such low levels however are not based on scientific logic as they are lower than the background levels that would typically exist in a building with low voltage mains electricity. They are also significantly lower than the 'background' levels that typically arise in city streets and in many high-rise buildings due to the close proximity of heavily loaded HV cables.

46. Will EirGrid agree to independent, ongoing monitoring of EMF levels?

There are two components to EMF, namely the electric field and the magnetic field. The strengths of these are at their highest in the immediate vicinity of the live wire and decrease rapidly with growing distance. Continuous monitoring is however not necessary as the maximum possible value of both components, at any given position relative to an overhead line, can be calculated if one knows the maximum voltage, the maximum electric current that can flow through the wires and the spatial arrangement of the live wires. These three characteristics, maximum voltage, maximum current carrying capacity and spatial arrangement are key criteria for the design of the overhead line and are fixed once the design is finalised.

In the case of the proposed 400kV overhead lines the maximum design voltage is 420kV, the maximum current is 2,165 amps (based on 1,500 MVA at 400kV) and the spatial arrangement of the wires is fixed by the physical dimensions of the pylons. The EIS (Environmental Impact Statement) that will accompany the application for planning permission will contain graphs that show the maximum calculated value of the electric field and the maximum calculated value of the magnetic field between a distance of zero and 50 metres from the centre line of the overhead line. The overhead line however will not operate continuously at maximum voltage and maximum load therefore these maximum calculated values must only be considered as 'short duration' values. The actual 'long duration' values will be lower, and in the case of the magnetic field significantly lower, than these.

In the case of the Meath-Cavan-Tyrone 400kV overhead lines EirGrid can guarantee that the overhead line will be sufficiently far enough away from existing dwellings to ensure that even the maximum or 'short duration' EMF will be significantly lower than the restriction levels specified in the EU Guidelines. In fact it can be expected that for those existing dwellings that are closest to the proposed overhead line the resulting 'long duration' EMF levels will be comparable with 'background' levels already existing in those dwellings. The 'background' levels result from the electrical wiring installed in the building walls as well as the types of appliances in use.

Notwithstanding the above, in the interests of openness and good neighbourliness, any occupant of an existing dwelling that will be less than 100 metres from the 400kV overhead line can, during the consultation process, request that 'before' and 'after' measurements of the EMF be taken at their dwelling. EirGrid will arrange for these measurements to be carried by an independent contractor.

47. Will EirGrid agree to have an independent base line study conducted of the health profile of the population along the proposed route and further agree to have a full re-evaluation annually?

The carrying out of such an epidemiological study would not be the basis of best practice because the population density in the region is too small to provide data with appropriate statistical significance. Similar type studies have however been carried out, and continue to be carried out, in other more densely populated parts of the world.

The results of these studies, and all other EMF related studies, are continually monitored and assessed by agencies such as the World Health Organisation and ICNIRP (the International Commission on Non-Ionizing Radiation Protection). It is from the totality of these studies that ICNIRP developed its 'Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic field (up to 300GHz)'. Both the World Health Organisation and the European Commission have endorsed these guidelines. They form the basis of EU Council Recommendation 1999/519/EC which describes the EU Guidelines. EirGrid designs and operates the Irish transmission network in accordance with the EU Guidelines.

48. In EirGrid's opinion, what will be the safe distance within which I conduct farming operations near pylon towers?

ESB Networks will own the overhead line. In its role as the TAO (Transmission Asset Owner) ESB Networks produces an excellent booklet that deals with all aspects of safety from electricity hazards on the farm. It includes a section that deals with the care that should be taken in relation to overhead lines. The booklet *'Farm Well… Farm Safely'* can be downloaded from the ESB Networks website at www.esb.ie/esbnetworks.

49. What are the average, minimum, and maximum distances between each pylon tower?

The placement of pylons across the landscape is dependant on many factors, some of which are:

- Terrain
- Design constraints
- Landowner input into location
- Environmental considerations

The draft design for the Cavan – Tyrone 400kV overhead line has a maximum span of 498m, a minimum span of 206m and an average of 365m while the corresponding figures for the Meath-Cavan overhead line are 450m, 200m and 330m respectively.

50. What is the noise output in decibels from 400kV overhead transmission lines?

It is not possible to answer this question without knowing the distance between the proposed overhead line and your reference location, the extent of the screening between the reference location and the overhead line as well as the level of background noise at the reference location. It should be noted however that projected noise levels, along with mitigation measures will be studied as part of the EIS, which will be submitted alongside the planning application.

51. Why are EirGrid visiting landowners and not contacting adjacent property owners to discuss their concerns and fears?

EirGrid welcomes the opportunity to consult with any stakeholder who wishes to input into the projects.

EirGrid's consultants, ESBI and Tobin Consulting Engineers, have been visiting, and consulting with, the landowners on whose property the proposed 400kV overhead line will be built. In the case of all other stakeholders it is not possible to know intuitively who has "concerns and fears". As a result EirGrid advertised its intentions extensively in the media and invited all interested parties to consultation. To date this has resulted in over 11,000 people contacting EirGrid. EirGrid has also consulted extensively with community groups, such as NEPP, who claim to represent over 45,000 residents.

The invitation to consultation, to all persons who have "concerns and fears" due to EirGrid's proposals, remains open. Any stakeholder who wishes to consult with EirGrid on these projects can do so in any of the following ways:

A) Meeting
EirGrid is hosting meetings at our local information centres. These meetings will provide stakeholders with an opportunity to talk with EirGrid's experts about general project issues. Please call 1890.25.26.90 if you would like to attend one of these meetings.

B) Information Centre
EirGrid have public Information Centres in both Navan and Carrickmacross. These have been open since August 2008, and are there to facilitate engagement with the local community. Please drop into one of these centres, or call us to make an appointment at the below contact details:

Navan Information Centre
Number 1, Newbridge,
Athlumney,
Navan,
Co. Meath.

Open: Tuesday, 1:00 to 7:00 P.M.
Ph: 046.902.7855, or 1890.25.26.90

Carrickmacross Information Centre
Carrickmacross Workhouse,
Shercock Road,
Carrickmacross,
Co. Monaghan.

Open: Wednesday, 1:00 to 7:00 P.M.
Ph: 046.969.0000 or 1890.25.26.90

C) Lo-Call phone line
The EirGrid Project Team can be contacted on 1890.25.26.90, Mondays to Fridays from 9 am to 5 pm.

D) Written Communication
If you wish to engage in written correspondence, please direct your queries to Tomás Mahony at our Navan Information Centre address, or email: meathcavanpower@eirgrid.com.

52. Does EirGrid need the agreement of all landowners on the proposed route prior to submitting plans to the Strategic Infrastructure Board?

No. EirGrid however is currently endeavouring to meet with all landowners on the indicative route line prior to submitting plans to An Bord Pleanála. This is primarily to understand landowner views at this early stage, in order that any necessary mitigation measures can be appropriately identified and included in the planning application.

53. Does EirGrid have to submit individual site and pylon specific plans to the Strategic Infrastructure Board?

It is the intention of EirGrid to identify the proposed locations of each structure in the EIS. Of course, whether due to discussions with landowners or otherwise, EirGrid reserves its position in relation to minor alterations in respect of the exact location of any proposed structure.

54. What is EirGrid's position in relation to the safe erection and operation of the pylon towers, including children climbing up these towers and being involved in an accident, and will you be prepared to give written guarantees and indemnities?

ESB Networks will be responsible for the construction of the overhead line. In fulfilling this responsibility, ESB Networks will comply with all health and safety legislation and with all regulations governing safety on construction sites.

Where there is a risk at any given location (e.g., school or playing field) of children climbing the pylons, anti-climbing barriers can be installed. However, it is not envisaged that such barriers would be placed on all pylons as there may be a potential impact on visual amenity at certain locations. Any landowner or resident who has a particular concern in this regard can raise it with EirGrid during the pre-construction consultation and EirGrid can then give due consideration to the issue with ESB Networks.

In addition to the above ESB Networks, in its role as the TAO (Transmission Asset Owner) routinely conducts educational campaigns in the media highlighting the dangers of electricity and the dangers of climbing pylons. Similar campaigns, aimed specifically at children, are run, from time to time, through the school system, for further information on this see the 'Education' section of ESB Networks' website at www.esb.ie/esbnetworks.

55. Who is responsible for a ring fence to be placed around each base of pylon towers for safety reasons?

ESB Networks will be responsible for the construction of the overhead line. During the construction period it may be necessary, from time to time, to place temporary fencing around a pylon site for safety reasons. The erection, maintenance and removal of this fencing will be the responsibility of ESB Networks.

Once construction is complete and the line is in service it is not normal practice to have permanent fencing around pylons. Farm animals can, and do, graze in between the legs of pylons. On occasion however, particularly where pylons are located in stud farms, a landowner has requested that a fence be placed around a specific pylon and EirGrid and ESB Networks have accommodated such requests. Such a fence is erected by ESB Networks while the landowner is responsible for its subsequent maintenance.

Any landowner or resident who has a particular concern in this regard can raise it with EirGrid during the pre-construction consultation and EirGrid can then give due consideration to the issue with ESB Networks.

56. Why has my land been chosen to be traversed by high voltage wires and have pylons placed upon it?

EirGrid has published a Corridor Evaluation Document (available for viewing on the project pages of EirGrid's website at www.eirgrid.com). In this document the methodology applied to the evaluation of the various route corridor options is described and from this a conclusion is drawn as to which option should become the preferred candidate corridor. The methodology involved a qualitative evaluation of the corridor options against twenty two different criteria.

The Corridor Evaluation Document concluded that while the evaluation process found that each option had pros and cons the preferred candidate corridors announced by EirGrid (Corridor A in the case of Cavan-Tyrone and Corridor 3b in the case of Cavan-Meath) *"constitute the most appropriate balance between the various technical, environmental and community evaluation criteria, notwithstanding the fact that potential constraints are identified for all corridors"*.

The Corridor Evaluation Document explains that Phase 2 of the route identification process concluded with the announcement of the preferred corridors. While Phase 3 of the process (which is currently underway) involves *"more detailed technical and environmental studies, and ongoing Statutory, non-Statutory and public consultation, with the purpose of identifying a preferred route for the overall transmission infrastructure project within the identified preferred corridor*".

57. List in detail the specific criteria that have been used in choosing my land.

A number of environmental, technical and community criteria were used in the selection of the preferred route corridor options for the power lines. The criteria used in the comparative evaluation of the potential route corridor options are detailed in Corridor Evaluation Document (available for viewing on the project pages of EirGrid's website at www.eirgrid.com).

They are summarised here as follows -

Technical

- Safety
- Construction / operation
- Design
- Other technical considerations

Environmental

- Human beings
- EMF
- Flora and Fauna
- Visual amenity and landscape
- Archaeology, culture and local heritage
- Water
- Air quality

Community Criteria

- Planning and land use
- Community
- Number of dwellings within 1km wide corridor
- Number of dwellings and other residential accommodation within 100 metres of indicative routes
- Landowner consent
- Potential impact on public amenities

Other

- Compliance with current planning and development policy and guidelines
- Project programme and deliverability
- Economic feasibility
- Compliance with international practice
- Adaptability for future development

58. Has my land been assessed physically – walked through and evaluated as suitable land for pylons? If so, who carried out this evaluation and under what authority?

EirGrid's consultants, ESBI and Tobin Consulting Engineers, have utilised a variety of techniques to assess the land, including aerial photography, drive-by land reviews, submissions from the public, and, site visits. Every effort is made to ensure that landowners have agreed in advance to a site visit.

59. Why was I not made aware of such activities and/or visits that potentially assess my land for the above?

See answer to Question 58.

60. What power has EirGrid got to evaluate my land for such proposed infrastructure on my land, prior to EirGrid contacting me?

EirGrid's role as Ireland's independent electricity Transmission System Operator is to operate and develop the national grid. The North East region has been identified as an area for development. In order to complete this development, the land must be evaluated. EirGrid's consultants, ESBI and Tobin Consulting Engineers, have utilised a variety of techniques to assess the land, including aerial photography, drive-by land reviews, submissions from the public, and, site visits. Every effort is made to ensure that landowners have agreed in advance to a site visit.

Meath-Tyrone 400kV Interconnection Development

Community Update Brochure, December 2009

EirGrid Submits Planning Application to An Bord Pleanála.

What's Happening?

EirGrid is submitting the planning application and Environmental Impact Statement (EIS) to An Bord Pleanála, which is the independent authority responsible for planning applications governed by the Planning and Development (Strategic Infrastructure) Act, 2006. The planning application is accompanied by an EIS, which sets out the possible impact that the proposed development may have on the area.

As the application is being submitted so close to Christmas, EirGrid has proposed that the period for public consultation be extended to ten weeks, commencing in the New Year. The application and EIS will be on view at An Bord Pleanála's Head Offices, the Meath, Cavan, and Monaghan Local Authority Offices, as well as online and at EirGrid's Navan and Carrickmacross Information Centres.

The public consultation period will begin on 4 January 2010 and runs for ten weeks, until 12 March 2010, during which time members of the public and organisations can make submission to An Bord Pleanála for consideration.

This brochure gives you a summary of the planning process and documents EirGrid is submitting to An Bord Pleanála. If you wish to make a submission in relation to this phase of the project, you may contact An Bord Pleanála directly. You can do so in the following ways:

Post: 64 Marlborough Street, Dublin 1

Telephone: 1890.275.175

Email: bord@pleanala.ie

Get Your Copy of the Application and EIS

1. Download for free at www.eirgridnortheastprojects.com.
2. Meet the Project Team and have them explain the EIS at the Navan and Carrickmacross Information Centres.
3. Visit An Bord Pleanála's Head Offices or the Meath, Cavan, or Monaghan Local Authority Offices to view the EIS.

Project co-financed by the European Union from the trans-European transport budget

Volume 1

Volume 1 of the EIS is an overview of the complete project, from Co. Meath to Co. Tyrone.

Volume 1 of the EIS is broken down as follows:

Chapter 1: General Introduction

Chapter 2: The Strategic Need for the Project

Chapter 3: Public Consultation

Chapter 4: Transmission and Technology Alternatives

Chapter 5: Route and Substation Alternatives

Chapter 6: Overview of Impacts

Chapter 1, the General Introduction, provides the overall context to the Interconnection Development Project, while Chapter 2, the Strategic Need for the Project, reviews the European, National, and Regional policies that have long-recognised the need for improved interconnection and transmission infrastructure such as that provided by the proposed Meath-Tyrone 400kV Interconnection Project.

Chapter 3 details the Public Consultation that EirGrid has engaged in since September 2007. EirGrid remains committed to listening to the concerns of the interested stakeholders, answering any queries that arise, and ensuring that relevant project information is provided to the public when it becomes available.

Throughout the project's development, EirGrid has remained committed to exploring all realistic alternatives in order to arrive at the best conclusion for where and how the needs of the North East can be met. Chapters 4 and 5, the Transmission and Technology Alternatives and Route and Substation Alternatives, detail the various options explored by EirGrid prior to finalising the planning application and EIS.

Finally, in Chapter 6, an overview of all potential impacts is explained.

Volume 2: Part A

Woodland, Co. Meath to Moyhill, Co. Meath

Part A of Volume 2 reviews the technical and environmental aspects of the project that have allowed the consultants to arrive at the proposed line route that has been submitted to An Bord Pleanála. Socoin / Tobin Consulting Engineers were the appointed consultants for the portion of the line that runs from Woodland, Co. Meath to the proposed new substation at Moyhill, Co. Meath.

The key focus of Part A, is to review the main environmental topics, findings, and mitigation measures. The key issues investigated include:

- Human Beings
- Flora and Fauna
- EMF
- Geology and Soils
- Water
- Climate and Air
- Noise
- Traffic
- Landscape
- Cultural Heritage

Navan Information Centre
Number 1, Newbridge, Athlumney,
Navan, Co. Meath.

See: www.eirgridnortheastprojects.com
Lo-call: 1890.25.26.90
Email: *meathcavanpower@eirgrid.com*

Volume 2: Part B

Moyhill, Co. Meath to Lemgare, Co. Monaghan (Border)

Similarly to Part A of this Volume, Part B reviews the technical and environmental aspects of the project that have allowed the consultants to arrive at the proposed line route that has been submitted to An Bord Pleanála. ESBI were the appointed consultants for the portion of the line that runs from the proposed new substation at Moyhill, Co. Meath to the Border with Northern Ireland at Lemgare, Co. Monaghan.

The key focus of Part B is to review the main environmental topics, findings, and mitigation measures that were identified, which included:

- Human Beings
- Flora and Fauna
- EMF
- Geology and Soils
- Water
- Climate and Air
- Noise
- Traffic
- Landscape
- Cultural Heritage

Carrickmacross Information Centre
Carrickmacross Workhouse, Shercock Road,
Carrickmacross, Co. Monaghan.

See: www.eirgridnortheastprojects.com
Lo-call: 1890.25.26.90
Email: *cavantyroneinterconnector@eirgrid.com*

EIS Structure

This Brochure summarises and clarifies the key points of the EIS document.

The EIS is laid out as follows:

Volume 1
Meath – Tyrone 400kV Interconnection Development
Common Chapters

Volume 2 Part A
Woodland – Moyhill 400kV Transmission Line
Main EIS Text

Volume 2 Part B
Moyhill – Border (Lemgare) 400kV Transmission Line
Main EIS Text

Volume 3 Part A
Woodland – Moyhill 400kV Transmission Line
Figures

Volume 3 Part B
Moyhill – Border (Lemgare) 400kV Transmission Line
Figures

Volume 4 Part A
Woodland – Moyhill 400kV Transmission Line
Appendices

Volume 4 Part B
Moyhill – Border (Lemgare) 400kV Transmission Line
Appendices

Volume 5 Part A
Woodland – Moyhill 400kV Transmission Line
Non-Technical Summary

Volume 5 Part B
Moyhill – Border (Lemgare) 400kV Transmission Line
Non-Technical Summary

Volume 6
Meath – Tyrone 400kV Interconnection Development
Non-Technical Summary

Volume 1 is an overview of the complete project. Part A of all Volumes is in relation to the Woodland, Co. Meath to Moyhill, Co. Meath section of the Project, while Part B in all Volumes relates to the Moyhill, Co. Meath to Lemgare, Co. Monaghan (Border) portion of the Project. Volume 6 is a non-technical summary of the full EirGrid EIS.

All portions of the Project in Northern Ireland are detailed in the Northern Ireland Electricity (NIE) EIS. Details of this report can be found on the NIE website at www.nie.co.uk.

Project Background

EirGrid, in association with NIE, is planning a joint project to facilitate cross-border sharing of electricity, promote better competition, and to reinforce the electricity supply to the North East region.

The project is:

- An approximately 140 kilometre long 400kV overhead electricity interconnection development.
- It will run from a proposed new substation at Turleenan, Co. Tyrone, all the way to the existing Woodland 400kV substation, near Batterstown, Co. Meath.
- The proposed development includes a new substation in the vicinity of Kingscourt, Co. Cavan (specifically at Moyhill, Co. Meath) and the diversion of the nearby 220kV overhead line into this new substation.

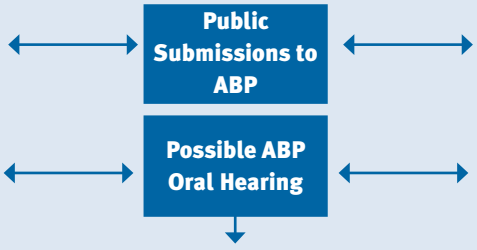
The application is being made under the title *the Meath-Tyrone 400kV Interconnection Development*, going from Woodland, Co. Meath to Turleenan, Co. Tyrone.

The Benefits of the Project

The proposed project will bring a variety of benefits to the North East, including:

- Facilitating cross-border sharing of electricity.
- Providing high quality bulk power supply for the region.
- Supporting growth in the region and ensuring continued reliability of supply.
- Boosting existing industry in the North East when competing for business and inward development.
- Guaranteeing security of supply for future decades.
- Increasing competition and, therefore, reducing the cost of electricity to customers.
- Increasing reliability for the local network in the North East and for all electricity customers.
- Allowing more renewable energy to be connected to the electricity network, thereby reducing Ireland's dependency on fossil fuels.

Objective
This phase of the project commenced with the lodgement of the planning application to An Bord Pleanála (ABP) and will end with the announcement of the planning decision.



Opportunities to Input
Members of the public will have an opportunity to make submissions in respect of the project directly to ABP. The period during which submissions will be accepted by ABP will begin on 4 January 2010 and will run for ten weeks.

ABP also has the option to conduct a public oral hearing during which members of the public may make submissions with regard to the project.

EIRGRID

See: www.eirgridnortheastprojects.com
Lo-call: 1890.25.26.90

Email: *meathcavanpower@eirgrid.com* or *cavantyroneinterconnector@eirgrid.com*

North East Power Line Projects

Frequently Asked Questions
January 2010

This document outlines answers to questions sent to EirGrid by landowners and the local community in relation to the North-East Power Line Projects.

The questions have been received in response to a Frequently Asked Questions document that was issued by EirGrid in July 2009. The original document contained sixty questions with answers. The new questions in this document are ‘follow-up-questions’ that seek clarification on some of the answers given in July 2009. For clarity the original question and answer is included here along with its relevant ‘follow-up-question’.

1. **Original Question - Why are EirGrid not consulting with householders directly impacted by the proposed overhead lines and pylons route?**

EirGrid welcomes the opportunity to consult with any stakeholder who wishes to input into the projects.

EirGrid's consultants, ESBI and Tobin Consulting Engineers, have been visiting, and consulting with, the landowners on whose property the proposed 400kV overhead line will be built. In the case of all other landowners, householders and residents it is not possible to know intuitively which of them considers themselves to be, or not to be, 'impacted by the proposed overhead lines and pylons route'. As a result EirGrid advertised its intentions extensively in the media and invited all interested parties to consultation. To date this has resulted in over 11,000 people contacting EirGrid. EirGrid has also consulted extensively with community groups, such as NEPP, who claim to represent over 45,000 residents.

The invitation to consultation, to all persons who consider themselves to be impacted by EirGrid's proposals, remains open. Any stakeholder who wishes to consult with EirGrid on these projects can do so in any of the following ways:

A) Meeting
EirGrid is hosting meetings at our local information centres. These meetings provide stakeholders with an opportunity to talk with EirGrid's experts about general project issues. Please call 1890.25.26.90 if you would like to attend one of these meetings.

B) Information Centre
EirGrid have public Information Centres in both Navan and Carrickmacross. These have been open since August 2008, and are there to facilitate engagement with the local community. Please drop into one of these centres, or call us to make an appointment at the below contact details:

Navan Information Centre	*Carrickmacross Information Centre*
Number 1, Newbridge, Athlumney, Navan, Co. Meath.	Carrickmacross Workhouse, Shercock Road, Carrickmacross, Co. Monaghan.
Open: Tuesday, 1:00 to 7:00 P.M. Ph: 046.902.7855, or 1890.25.26.90	Open: Wednesday, 1:00 to 7:00 P.M. Ph: 046.969.0000 or 1890.25.26.90

C) Lo-Call phone line
The EirGrid Project Team can be contacted on 1890.25.26.90, Mondays to Fridays from 9 am to 5 pm.

D) Written Communication
If you wish to engage in written correspondence, please direct your queries to Tomás Mahony at our Navan Information Centre address, or email: meathcavanpower@eirgrid.com.

Follow Up Questions - With reference to the statement that over 11,000 people contacted EirGrid can you tell me how many of these were:

- **Requests for information**
- **Objections to the pylons proposal**

EirGrid has submitted its planning application and associated EIS (Environmental Impact Statement) to An Bord Pleanála. Please refer to Chapter 3, Volume 1 of the EIS for details of the pre-application public consultation process.

The Application and EIS are publically available –

- On the project website at www.eirgridnortheastprojects.com
- At the Navan and Carrickmacross Information Centres (details above)
- At the offices of An Bord Pleanála and
- At the offices of the Meath, Cavan and Monaghan Local Authorities.

2. Original Question - I cannot get insurance against EMF damage to my health, will EirGrid provide me with this as I will be living within close proximity to the proposed lines?

EirGrid and ESB jointly design, construct, operate and maintain the electricity transmission network. They do this in compliance with all national and international guidelines and in accordance with 'best practice'. They are jointly satisfied from the totality of studies and the views of international authoritative agencies (including the World Health Organisations) that the balance of evidence is that the EMF, emanating from overhead transmission lines, does not have any adverse effect on public health. Accordingly, the issue of insurance in respect of EMFs does not arise in the context of the proposed lines.

Follow Up Question - This response refers to 'EirGrid and ESB Jointly'. Please state exactly what is the role and responsibility of the ESB in relation to the two proposed Projects, namely the Meath –Cavan powerline and Cavan-Tyrone interconnector?

EirGrid is the operator of the transmission system while ESB is the owner of the transmission system. Their respective roles, in this regard, are defined in Statutory Instrument 445 of 2000 as follows –

Section 8, paragraph 1 states that the role of the Transmission System Operator (that is EirGrid) is "*to operate and ensure the maintenance of and, if necessary, develop a safe, secure, reliable, economical, and efficient electricity transmission system and to explore and develop opportunities for interconnection of its system with other systems, in all cases with a view to ensuring that all reasonable demands for electricity are met and having due regard for the environment*".

Section 19 (a) states that the transmission system owner (that is ESB Networks) *"shall as asset owner, maintain the transmission system and carry out construction work in accordance with the transmission system operator's"* (that is EirGrid's) development plan.

In the case of this Development therefore ESB Networks will be responsible for the construction of the overhead line while EirGrid will be responsible for obtaining the consents required for the construction. These 'consents' consist of, among other things, the planning permission and any required landowner consents.

Follow Up Question - Why has ESB not been in contact with me in relation to this?

ESB Networks has no involvement in the project during the pre-planning stage and has therefore no reason to contact any landowners on these matters prior to the receipt of planning permission.

Follow Up Question - Will ESB be in contact with me in relation to these proposed projects?

After receipt of planning permission ESB Networks may need to contact a landowner on whose land it intends to carry out work however such contact will be in partnership with EirGrid as it is EirGrid's responsibility to obtain the required landowner consents.

Follow Up Question - If ESB are involved in the project, how can their subsidiary ESBIE be a consultant to EirGrid and NIE on the project? Is this not a conflict of interest?

ESB Networks is a member of the ESB Group of companies and as stated previously has no involvement in the project at this stage. ESBI (ESB International) is also a member of the ESB Group. ESBI is tasked with managing the non-regulated businesses of the ESB Group both nationally and internationally. It is in this role that ESBI provides consultancy services to EirGrid. This does not constitute a conflict of interest.

Follow Up Question - Are EirGrid and ESB prepared to recommend to the government that they implement in full their Expert Group on EMF Report from March 2007 prior to making an application for planning approval?

EirGrid is aware of the Government's intention to amend the statutory powers of the Radiological Protection Institute of Ireland (RPII) to include responsibility for matters relating to non-ionising radiation including EMF and its intention to establish a national research programme to undertake further scientific research in Ireland on the health effects of exposure to EMF. EirGrid however does not advise the Government on these matters.

3. **Original Question - My house is so close to the pylons that I will probably never be able to sell it. How will EirGrid measure property devaluation and how do I claim?**

Reliable, secure and economic supplies of electricity are vital to all of us in our daily lives, as householders, in agriculture, industry and employment. It is no coincidence that areas with strong overhead electricity networks have proven to be economically successful, attracting and retaining essential high technology industries. Where lands or wayleaves are required in order to facilitate the construction and operation of the proposed overhead line, a scheme of compensation has been put in place for the assessment of any loss in the value of lands affected. See answer to Question 7 for further detail.

Follow Up Questions - Please furnish me with a copy of the *'Scheme of compensation'* that *'has been put in place' 'for the assessment of any loss in the value of lands effected'* where lands or way leaves are required in order to facilitate the construction and operation of the proposed overhead line.

Does this response refer to 1985 ESB/IFA Code of Practice (COP)?

Arising from the statement regarding *'the assessment of any loss in the value of lands affected' in the 1985 ESB /IFA COP* do you acknowledge that a scheme of compensation covers loss of agricultural output as well as loss in the value of lands?
How should any such loss of output or loss in the value of lands be assessed? By and independent board of assessors?

The original response is referring to the ESB/IFA Code of Practice. This document, along with other associated documents, is available for viewing on the IFA website at www.ifa.ie/CrossSectors/infrastructure and these address the issues raised in your follow up questions.

4. **Original Question - What are EirGrid going to do about the noise from the pylons for anyone living beside these monstrous specimens?**

Appropriate materials and construction practices will be utilised to minimise the 'noise' that can occur during periods of high humidity. It should be noted that projected noise levels, along with mitigation measures will be studied as part of the EIS, which will be submitted alongside the planning application.

Follow Up Questions - What are the existing international, EU and Irish standards in relation to noise levels from overhead lines?

Will you commit to supporting the immediate introduction of an Irish standard for noise emissions from overhead power lines?

Will you agree to regular ongoing monitoring of noise levels over the lifetime of the project?

In Ireland, there are no statutory guidelines relating to noise limits for the construction or operation of overhead lines. However, the "Guidance Note for Noise in relation to Scheduled Activities", 2nd edition, EPA 2006, is used as a guideline to assess the predicted and measured noise levels during the construction and operation phases of the development. Chapter 11, Volume 2 of the EIS deals with this issue in detail.

"Ongoing monitoring of noise levels over the lifetime of the project" is neither necessary nor practical. There are over 6,600 km of transmission lines, as well as over 5,500 km of 38kV overhead lines, in Ireland, all of which has the potential to emit noise. ESB therefore relies on the public to point out locations where noise is causing annoyance. Although many tens of thousands of people live in proximity (within 500 metres) to these overhead lines complaints due to noise are rare. When complaints are received they are investigated by the asset owner, which is ESB Networks. When found to be genuine there is usually an underlying cause which can be rectified and the annoyance eliminated.

5. Original Question - Why did EirGrid choose the route with the most dwellings and the most people living in close proximity to the lines?

EirGrid has not yet, as of July 2009, finalised a route within the preferred corridors. It should also be noted that neither of EirGrid's preferred corridors contains the "*most dwellings and the most people living in close proximity to the lines*".

In February 2009 EirGrid announced its preferred candidate corridors (Corridor A in the case of Cavan-Tyrone and Corridor 3b in the case of Cavan-Meath) within which a route can be found. At that time EirGrid published a Corridor Evaluation Document (available for viewing on the project pages of EirGrid's website at www.eirgrid.com). In this document the methodology applied to the evaluation of the various route corridor options is described. The methodology involved a qualitative evaluation of the corridor options against twenty two different criteria (two of which considered the issue of proximity to dwellings) and from this a conclusion was drawn as to which option should become the preferred candidate corridor.

The Corridor Evaluation Document concluded that while the evaluation process found that each option had pros and cons the preferred candidate corridors announced by EirGrid *"constitute the most appropriate balance between the various technical, environmental and community evaluation criteria, notwithstanding the fact that potential constraints are identified for all corridors"*.

The Corridor Evaluation Document explains that Phase 2 of the route identification process concluded with the announcement of the preferred corridors. While Phase 3 of the process (which is currently underway) involves *"more detailed technical and environmental studies, and ongoing Statutory, non-Statutory and public consultation, with the purpose of identifying a preferred route for the overall transmission infrastructure project within the identified preferred corridor*".

Follow Up Questions - You state that *'EirGrid has not yet, as of July 2009, finalised a route within the preferred corridors.'* When exactly does EirGrid propose to announce a finalised route and submit a planning application? Have you carried out an EIS for all three route corridor options?

EirGrid submitted its planning application and associated EIS (Environmental Impact Statement) to An Bord Pleanála on 18th December 2009.

6. Original Question - Why did EirGrid not consider putting the proposed infrastructure along either the M3 or the proposed rail line? Were there meetings held with the NRA and Iarnród Eireann to consider such a proposal?

EirGrid has consulted with both the NRA and Iarnród Éireann regarding these projects.

As both EirGrid, and its environmental consultants, recognise the merits of utilising shared infrastructure corridors for linear developments (such as roads, railways, canals, pipelines and power lines etc.) the possibility of locating the proposed development alongside the new motorway and the disused railway line was considered as follows -

Overhead line along the M3 motorway
Locating the proposed overhead line alongside the motorway was ruled out because, in the opinion of the environmental consultant, to do so, would not be environmentally sustainable. This opinion was based on, among other things, the stated intention of the planning authority to protect "*landscapes of exceptional value and sensitivity and in particular to protect the rural character, setting, amenity and archaeological heritage of Brú na Bóinne and the Hill of Tara, and of the surrounding areas including the area in the vicinity of the proposed M3 motorway and its related interchanges*".

Underground Cable along the M3 motorway
Locating a 400kV underground cable within the reserve of the motorway was ruled out primarily because in EirGrid's opinion it would not be appropriate to use 400kV underground cable in place of 400kV overhead line, for this project, as this would not be in compliance with EirGrid's mandate to provide Ireland with a safe, reliable and cost effective transmission network while having due regard for the environment. This conclusion is supported by the findings of the PB Power Report (commissioned by EirGrid and NIE) and the ECOFYS Report (commissioned by the Department of Communications, Energy and Natural Resources).

In addition the NRA has advised that a 400kV underground cable would only be permitted within the motorway reserve if "indemnities regarding damage, disruption, costs, etc" acceptable to both NRA and the PPP (public-private partnership) company, that will construct and operate the motorway, were received. In EirGrid's opinion, even if underground cable was a viable option, this requirement introduces such complexity, uncertainty and risk that it would render this route, a less favourable underground cable route than a direct cross county route, such as that identified in the PB Power Report.

Overhead line along the route of the disused railway lines
Locating the proposed overhead line alongside the route of the disused railway lines was ruled out because it would direct the development into areas of population, in particular Navan Town, but also a number of villages and hamlets along the route. In the opinion of the routeing experts there were better and less constrained route options available elsewhere.
Underground cable along the route of the disused railway lines
Locating a 400kV underground cable within the reserve of the disused railway was ruled out primarily because in EirGrid's opinion it would not be appropriate to use 400kV underground cable, instead of the proposed 400kV overhead line, for this project as this would not be in compliance with EirGrid's mandate to provide Ireland with a safe, reliable and cost effective transmission network while having due regard for the environment. This conclusion is supported by the findings of the PB Power Report and the ECOFYS Report.

In addition PB Power was requested, for their report, to find a route corridor within which a technically and environmentally feasible route for underground cable (UGC) could be found. This was to be done for the purpose of establishing a realistic cost and environmental impact comparison between an underground cable option and the proposed overhead line option. Prior to carrying out the study, PB Power and EirGrid/NIE, agreed a set of 'Strategic Cable Routeing Criteria' to be applied by PB Power's cable routeing experts in their quest for a suitable UGC route. During these discussions it was concluded that there would be no advantage to routeing the UGC via the disused rail lines, while taking a more direct route across country would result in a shorter route and involve less uncertainty and risk. It was therefore agreed that the 'Strategic Routeing Criteria' should identify the railway lines, both in service and disused, under the category 'Avoid if Possible'. NOTE – further elaboration on this issue can be found in the answer to Question 29.

Follow Up Questions - With reference to contacts with both Iarnród Éireann and NRA, state the following in respect of each of those companies:

- **How many meetings took place?**
- **On what dates?**
- **Who attended from each company?**
- **Was a record kept of each meeting?**
- **Was there any exchange of correspondence?**
- **Were any technical or feasibility studies conducted?**
- **Will EirGrid publish the correspondence, written records and documents emanating from these contacts or provide them to NEPP and public representatives?**

Why would the EU commission recommend in favour of collinear development of this type of infrastructure if there are supposed to be difficulties over indemnities?

Details of the pre-planning consultation with prescribed Statutory Bodies, such as Iarnród Éireann and NRA, is included in Chapter 3, Volume 1 of the EIS which accompanies the planning application. The consideration of the M3 corridor and disused railway lines as route alternatives is dealt with in Chapter 5 of Volume 1.

In this case the issue of collinear development and 'indemnities' has nothing to do with either the EU Commission or EirGrid. It arises as a result of the agreement between the NRA and the PPP that will construct and operate the M3 motorway. When the EU Commission proposed the concept of collinear development it was with particular reference to the trans-European telecommunications network. The conclusions of the Commission's report 'Trans-European networks: Towards an integrated approach' relates to telecommunications networks and not to the undergrounding of electricity transmission lines, which although mentioned as an idea, is not given any priority. Indeed it states in this regard that these "*suggestions do not replace the immediate need to interconnect the national high-voltage networks, but are a proposal for finer meshing of the national electricity systems over a longer time span matching the time it takes to complete the major infrastructure projects.*"

EirGrid agrees with the concept of collinear development but recognises that each situation has to be considered on its own merit. In the case of the Meath-Tyrone 400kV Interconnection Development project; EirGrid can find no advantage of collinear development with ongoing, or planned, road or rail projects.

7. **Original Question - Will I as an adjacent householder whose land/property is not traversed be compensated for the proposed unsightly infrastructure and its emissions?**

EirGrid will ensure that every reasonable effort is made to minimise the impact of the 400kV overhead line on adjacent householders, whether in relation to visual amenity or any perceived environmental emissions. In the case of visual impact this will include, among other things –

- the use of a less visually intrusive pylon design than was used in the past.
- the careful positioning, where possible in agreement with landowners, of the pylons.
- the implementation of any other reasonable mitigation measures that are agreed with potentially affected property owners.

In the case of potential 'emissions' minimisation of any impact will include, among other things –

- compliance with EU Guidelines on the exposure of persons to electric and magnetic fields.
- use of appropriate materials and construction practices to minimise the 'noise' that can occur during periods of high humidity.

In circumstances where these potential impacts will be mitigated, EirGrid does not perceive that there will be any significant depreciation in the value of property in the vicinity of the proposed overhead line over and above the depreciation in the property market generally.

Follow Up Questions - You state *that 'EirGrid does not perceive that there will be any significant depreciation in the value of property in the vicinity of the proposed overhead line over and above the depreciation in the property market generally'* Does EirGrid concede that there will be <u>some</u> depreciation even if you don't agree that it is significant?

Who decides what 'significant' depreciation is?

Will EirGrid agree to accept independent assessments and studies on this?

What is your response to the many international reports that link severe devaluation of property to proximity to pylons and overhead lines?

The proposed development is in the statutory phase of the planning process. While EirGrid does not believe that property values are a planning matter EirGrid is of the opinion that reliable, secure, and economic supplies of electricity are vital to all of us in our daily lives, as householders, in agriculture, industry, and employment, and as such, supports the common good. Furthermore it is no coincidence that Regions with strong overhead electricity networks have proven to be economically successful, attracting and retaining important high technology industries. This in turn results in an increase in living standards with corresponding increases in average property values in those regions.

8. Original Question - Will I be indemnified by potential claims by visitors to my property?

Landowners, including persons present on their land with their permission are indemnified by the Electricity Supply Board (ESB). The full details of this cover are detailed in the "ESB/I FA Code of Practice for Survey, Construction Maintenance of Overhead Lines in relation to the Rights of Landowners" (October 1985) states the following:-

"The Board shall indemnify and keep indemnified the landowner, his servants, agents, licensees and invitees against all sums in respect of loss or damage, claims, demands, costs and expenses which the landowner shall become legally liable to pay as compensation for any illness or accidental bodily injury or accidental loss of or damage to property where such injury or damage is caused by, arises from, is traceable or connected with the works or equipment other than in consequence of any malicious act or omission on part of the landowner. The Board shall pay compensation to the landowner, his servants, agents, licensees and invitees in respect of any illness or bodily injury or loss or damage to material property suffered by him or them (together with all consequential loss arising there from) where that same is caused by, arises from, is traceable to or connected with the works, or equipment other than in consequence of any malicious or criminally reckless act or omission of the landowner and except insofar as the same has been made good by the Board without loss to the landowner. The above is without prejudice to the Board's and Landowners' Statutory and Common Law rights. Illness in this context is understood to mean damage to the personal health and well being of the landowner

or his animals or his agents, servants, licensees and invitees. It is noted and agreed that the ESB will issue, to any individual landowner requiring same, a letter of acknowledgement that the Board's wayleave over his land is subject to the provisions of the code of practice, including specifically the indemnity clause."

Follow Up Questions - You refer to *'Landowners, including persons present on their land with their permission, are indemnified by the ESB. The full details of this cover are detailed in the "ESB/IFA Code of Practice.."* Please clarify exactly whose legal responsibility it is to indemnify landowners? Is it EirGrid, ESB or a combination of both?

Have either EirGrid or ESB had contacts with IFA or ICMSA in relation to the indemnities and compensation that would arise from your proposed projects? Does EirGrid (either separately or jointly with ESB) intend to negotiate a new Code of Practice with IFA or ICMSA relating to the North-South projects and / or Grid 25?

This reply quotes extensively from the ESB/ IFA 1985 COP referring to compensation for injury or damage to property arising from the placing of *works or equipment on property*. Do you acknowledge that the term *'works or equipment'* includes pylons or overhead wires placed permanently across the land?

It is the responsibility of the asset owner to indemnify landowners and to maintain appropriate public liability insurance. Under current legislation the proposed power line will be owned by ESB Networks.

EirGrid (formerly ESB National Grid) and ESB Networks have long standing contacts with the IFA on general matters relating to the construction and operation of overhead transmission lines on farm land. Neither party has had contact with the IFA or the ICMSA in relation to indemnities and compensation arising out of this particular project.

EirGrid and ESB Networks do not have any plans, and currently do not anticipate any reason, to negotiate another Code or Practice with the IFA or ICMSA.

The ESB/IFA Code of Practice has regard to all works (survey, construction and maintenance) associated with the placing of overhead lines, with a rating of 110kV or higher, on private land. In the statement of indemnity the term 'works or equipment on property' refers to all activities associated with the overhead line, including those listed above as a well as its operation and eventual decommissioning and to the equipment (masts, conductors etc.) which forms the overhead line. The indemnity is 'held' by the asset owner, which is currently ESB Networks, for the entire life cycle of the asset.

9. Original Question - What is the minimum distance committed by EirGrid that the 400kV lines or pylons will be placed nearest to a dwelling?

There is no specified 'minimum distance' other than that required to ensure safety from electrocution. The Electricity Supply Act however requires that any person intending to construct a building within 25 yards (approximately 23 metres) of an existing overhead line must notify ESB in advance. This is required so that ESB Networks can ensure that the works can be carried out safely and that the future safe operation and maintenance of the overhead line, and the proposed building, is ensured.

For the proposed 400kV lines EirGrid expects to achieve a minimum clearance distance that is much greater than 23 metres. The actual distance however will not be known until the design is finalised.

Follow Up Questions - You state that there is no specified minimum distance from pylons and that you *'expect'* to achieve a minimum clearance distance much greater that 23 metres. Please state definitively the minimum clearance distance you propose for these projects?

What is your response to the many international reports that link proximity to pylons and overhead lines to detrimental effects on human and animal health?

The distance between the line and adjacent dwellings is detailed in the EIS submitted to An Bord Pleanála as part of the planning application.

The issue of EMF is dealt with in detail in Chapter 6, Volume 2 of the EIS.

NOTE: There were no follow up questions related to the original Question 10.

11. Original Question - What are EirGrid's powers in relation to entering property prior to submitting plans to An Bord Pleanála? Cite any relevant legislation or Court decisions.

Without prejudice to such rights, EirGrid is not proposing to rely on statutory powers to enter land 'prior to submitting plans to An Bord Pleanála'. Rather, entry onto lands is being approached on a voluntary basis. While EirGrid is endeavoring to meet landowners prior to application, this is primarily to hear landowner views at this early stage so that mitigation measures can be appropriately identified and included in the planning application. Through landowner site visits, EirGrid wishes to ascertain whether and how the proposed overhead line might impact upon landowners.

Follow Up Questions - Why does EirGrid adopt a different approach to the ESB with regard to entry onto lands? Under their COP with the IFA, ESB agree that they will not seek to enter lands until after they have received planning permission.

Do you acknowledge that there have been circumstances where EirGrid personnel or your agents have entered onto lands despite being unable to get permission from the relevant landowner?

If ESB is prepared to wait the outcome of planning applications before attempting entry onto lands, why will you not do the same? Are you pre-empting the outcome of the planning process and acting already as if the determination is in your favour?
Will you agree to align EirGrid's approach with that of the ESB and cease all attempts at entry onto lands until after the planning process has been exhausted?

As explained in the answer to Question 2 above ESB Networks does not have a role in transmission projects until after planning permission has been received. ESB Networks has therefore no reason, in the case of this project, to enter lands prior to the receipt of planning permission.

In the case of transmission projects it is desirable that a preliminary survey be carried out prior to the submission of the planning application. The ESB/IFA Code of Practice states in this regard that *"During the Preliminary Survey the Board's staff examine the terrain in a general manner to identify obstacles and to find the most suitable route. Contact with landowners is minimal. The Board staff responsible (Engineers or*

Surveyors) shall identify themselves if requested by landowners, who are met in the course of surveying and shall indicate the general nature of their business on the property." Reference to 'Board' in this statement means Electricity Supply Board or more precisely ESB Networks. It should be noted that, in accordance with Statutory Instrument 445 of 2000 and the associated Infrastructure Agreement between EirGrid and ESB, responsibility for carrying out 'Preliminary Surveys' has now passed to EirGrid. In the case of this project EirGrid and/or its agents have entered lands for the purpose of carrying out a Preliminary Survey and have done so in accordance with the Code of Practice. Neither EirGrid nor its agents have however entered lands where prior permission to do so was expressly refused by the relevant land owner.

EirGrid agrees to be bound by the terms of the ESB/IFA Code of Practice in so far as they apply to EirGrid's roles and responsibilities. The alignment however of "EirGrid's approach with that of the ESB" is not possible as both parties have entirely different roles with regard to transmission projects.

12. Original Question - What permission, if any, does EirGrid need to enter on land to complete their Environmental Impact Study? Cite any relevant legislation or Court decisions.

Clearly, it will be of benefit to landowners and EirGrid alike if as much access is given as possible so that all landowner concerns and specific issues that will affect the project can be identified as early as possible and fed into the process of preparing the EIS. To the extent that access is refused and cannot otherwise be obtained, the EIS will record this together with alternative measures adopted to ensure that the EIS is as comprehensive as possible.

Follow Up Questions - Why is it necessary in the EIA to 'record' your failure to enter lands because of the with holding of permission to do so by a landowner?

Is this not a gross disrespect of a landowner's legal right to not allow entry at this stage if that is their wish?

Do you intend to specifically record the names and addresses of landowners who do not agree to your entry on to your land prior to any granting of planning approval?

The guidelines for the preparation of an EIS require that any difficulties encountered in compiling the impact assessment, and any measures applied to mitigate these difficulties, be described. This has occurred in respect of the current EIS; measures which mitigate the need to access lands of the proposed development were available, and these ensured the carrying out of an adequate environmental assessment.

EirGrid fully acknowledges and respects the legal rights of landowners. The methodology of EirGrid and its consultants in carrying out the EIA, including seeking to access the lands of the proposed development, is in accordance with established best practice, and in no way shows "disrespect of landowner's legal rights".

All correspondence that relates to the consultation process for the proposed development will be kept on file. This applies not only to correspondence received form landowners but also correspondence received form An Bord Pleanála, Statutory and non-Statutory Bodies, Planning Authorities and other stakeholders including the general public.

13. **Original Question - If a landowner does not grant permission to EirGrid to enter lands, does it mean that EirGrid cannot proceed through my property with overhead lines and Pylon towers?**

In circumstances where planning permission is granted for the proposed lines, EirGrid/ESB Networks shall endeavour to agree access arrangements with individual landowners. In the event that such arrangements cannot be agreed, then in order to implement the construction of structures and installation of lines so permitted, and only where necessary, EirGrid/ESB Networks shall rely upon statutory powers of entry in this regard.

It should be noted, however, that while EirGrid does not generally use statutory powers, EirGrid reserves its statutory rights in this regard in individual cases where a need to enter upon lands is necessary and a landowner is not willing to facilitate EirGrid in this regard.

Follow Up Questions - I believed up to now that this is an EirGrid Project and planning application, yet you now refer jointly to 'EirGrid/ESB Networks' as a <u>combined</u> entity. In earlier responses on this topic you refer only to EirGrid.

Please clarify exactly the relationships and the legal responsibilities of EirGrid and ESB in relation to these projects?

Please refer to the answer given to the follow up questions associated with Question 2 above.

NOTE: There were no follow up questions related to the original questions numbered 14 to 23.

24. **Original Question - Why has EirGrid rejected without foundation the findings of the ASKON Reports? Can you forward me a copy of the ASKON Reports?**

EirGrid welcomed the Askon Report and acknowledged its contribution to the consultation process. EirGrid, with the assistance of its team of international experts, carried out a comprehensive review of the Report and published the findings of this review in the document 'EirGrid Position on NEPP Askon Study'.

In summary EirGrid agrees with the following findings in the Askon Report –

- There have been significant developments in HV UGC (underground cable) technology in the past twenty years.
- HVDC (high voltage direct current) technology is not appropriate for these projects.
- Two UGC circuits would be required to replace the proposed single 400kV OHL (overhead line).
- The installation of two independent UGC circuits would alleviate some of the disadvantages associated with HV UGC circuits.
- It would not be appropriate to install an UGC circuit, of the magnitude required for these projects, under the public roads of Meath, Cavan, Monaghan, Armagh and Tyrone.

- There are no UGC circuits, anywhere in the world, of the type and length that would be required for these projects.

- The capital cost of an HV UGC circuit is many times that of the cost of an equivalent OHL circuit.

- Both UGC and OHL circuits emit magnetic fields. UGC circuits do not emit electric fields.

Some of the more remarkable errors of assumption, errors of understanding and errors of calculation in the Askon Report are as follows –

- There is no basis for the assertions that UGC circuits are safer than OHL circuits. Both technologies are used by EirGrid and both are designed and operated so as to meet all relevant national and international safety criteria. **UGC and OHL circuits are equally safe**.

- Askon has greatly over estimated the quantity of electrical power (in megawatt hours) that will flow through the overhead line during its lifetime. This is a fundamental error and invalidates Askon calculations of electrical losses and assumptions on 'whole of life' operating costs. The laws of physics determine that a lightly loaded UGC will have higher electrical losses than an equivalent lightly loaded OHL while a heavily loaded UGC will have lower losses than a heavily loaded OHL. In its role as operator of the transmission network EirGrid knows that the proposed 400kV circuits will operate relatively 'lightly loaded', in the region of 35% capacity, throughout their life. It should be noted that the proposed circuits are required to have a large spare capacity as a contingency in case of short duration emergencies.

- Askon has acknowledged that the capital cost of UGC is considerably more than that of OHL. But then tried to make a financial case for UGC on the basis that the UGC would have a lower 'whole of life' operating cost than that of the OHL. As stated in the previous bullet point this is based on an error of assumption and the reverse is in fact the case. Askon's conclusion that a UGC circuit *"could well work out the lower coast option over the whole life cycle"* is simply not correct.

- Askon's comparison of the environmental impacts is inadequate. It is not enough to just point out the obvious advantages that UGC has over OHL. A balanced approach is required. Comparing OHL with UGC circuits across the full range of environmental criteria shows overhead lines perform better under many of the categories. This was the conclusion of the ECOFYS Report commissioned by the Department of Energy.

- Askon's UGC cost estimates were prepared by a team with no apparent local knowledge and no practical experience of installing HV underground cables. The civil engineering estimates were based on information received from a "*German power supplier*". This has resulted in errors of omission and errors of under estimation that together add up to an under estimation of over €80 million in their estimate for a 56km 400kV UGC circuit in County Meath. To put the extent of this error in perspective, it is twice the magnitude of Askon's estimate for the total cost of an equivalent 400kV OHL.

- There are many 'system wide' technical problems that would arise with the installation of such long HV UGC circuits on Ireland's relatively small and isolated transmission grid. Askon failed to consider these and only looked at this from a 'localised' grid perspective. EirGrid has to consider the impact on the system as a whole.

EirGrid circulated the report to three separate teams of experts for review over a number of months and also spent two days with the authors of the reports. Based on all of the foregoing EirGrid concluded (i) that Askon has not made a valid case in favour of the use of underground cable and (ii) that for these 400kV projects an overhead line solution is appropriate and consistent with EirGrid's mandate to provide Ireland with a 'safe, reliable, secure and cost effective transmission system while having due regard for the environment'.

Regarding your request for a copy of the Askon Reports - EirGrid cannot provide these as the study was commissioned by NEPP and the resulting reports are copyright protected. Copies should be requested from NEPP.

Follow Up Questions - Why does EirGrid consider public roads in North County Dublin and south county Meath to be suitable for underground cables, but you will not consider the M3 motorway or similar roads in counties Meath, Cavan and Monaghan? Have you carried out a detailed study of the M3 motorway option?

EirGrid has given consideration to the suitability of the M3 motorway for accommodating 400kV underground cables; see Chapter 5, Volume 1 of the EIS that accompanies the planning application.

NOTE: There were no follow up questions related to the original questions numbered 25 to 35.

36. Original Question - Has EirGrid factored in a cost for such devaluations into their Grid25 transmission system planned costings? What baseline criteria has it used for such evaluations?

GRID 25 is a strategy for the development of Ireland's electricity transmission system between now and 2025, rather than a detailed plan. The quoted estimates of capital investment for each region should therefore not be considered as 'planned costings'. They are instead high-level, top-down, estimates that were calculated by applying 'typical rates' to an estimate of the extent of the works required in each region. The 'typical rates' were determined from the actual cost of similar type projects that have been completed in the recent past with the addition of a provision for contingency and inflation. The actual cost of a recently completed overhead line project would include the cost of any landowner compensation payments in respect of wayleave acquisition that were made during the course of that project.

Follow Up Questions - Arising from your statement that 'The actual cost of a recently completed overhead line project would include the cost of any landowner compensation payments in respect of wayleave acquisition that were made during the course of the project', please state your estimate of the cost of compensation for:

(a) Way leaves,
(b) Loss of agricultural output,
(c) Devaluation of properties?

The budgetary provision for payments to landowners, arising from compensation for which they will be eligible, is commercially sensitive and cannot be released.

37. Original Question - What standard operating procedures and decision criteria are used by EirGrid for deploying taxpayers' money in relation to landowners' compensation offers for pylons placed on their property? Can you forward the specific procedures in the interests of transparency?

Although EirGrid is a company wholly owned by the State, neither it nor its activities are funded directly by 'taxpayers' money'. EirGrid, in its role as Ireland's TSO (Transmission System Operator), has a statutory obligation to provide Ireland with a safe, reliable and cost effective electricity transmission system while having due regard for the environment. Its activities in this regard are regulated by the Commission for Energy Regulation and are primarily, and ultimately, funded by the electricity consumers of Ireland. It is within this regulated environment that EirGrid will negotiate levels of compensation with landowners. NOTE - the current phase of the Meath-Cavan-Tyrone 400kV projects is also partially funded by an EU grant.

Compensation is paid to landowners on whose property the overhead line is erected. This is done in accordance with long established agreements with the Irish Farmers Association. All agreements with landowners are negotiated individually since the effect of the transmission line on each landowners' property will vary from landowner to landowner. EirGrid will endeavour to complete negotiations with each landowner prior to construction

A landowner or rights holder who is dissatisfied with the amount of compensation offered has the statutory right to have the compensation amount assessed by an independent arbitrator.

Follow Up Questions - Arising from your statement that *'All agreements with landowners are negotiated individually…'* does this mean that you do not intend to negotiate another code of practice with IFA or ICMSA?

What procedures will be followed in the conduct of these negotiations with individual landowners?

Since the existing Code of Practice is between ESB and IFA how can it be binding on EirGrid?

As the current code of practice is working well neither EirGrid nor ESB can see any reason for making changes.

EirGrid and ESB staff will adhere to their respective codes of practice in relation to access to land/premises when entering or negotiating entry onto private property. Copies of the Codes of Practice are available for viewing on both the EirGrid and ESB websites.

The ESB/IFA code of practice was established for the mutual benefit of all parties concerned. As EirGrid, and not ESB, is now responsible for obtaining the land owner consents (both before and after planning permission) required for the construction of transmission infrastructure it is appropriate that EirGrid should also comply with the relevant sections of the code of practice.

38. Original Question - Will EirGrid compensate landowners for the long term effects such as crop damage, low milk yields, etc. and, if so, how will such compensation be calculated?

EirGrid design and operate the network in compliance with all national and international guidelines. We are satisfied from the totality of studies and the views of international authoritative agencies that the balance of evidence is that Electric and Magnetic Field (EMF) do not have any adverse, long-term effect on public or animal health.

The ESB will take every care during the erection and subsequent work on the line to ensure that farmers' operations are not impacted. Compensation will be paid for crop loss and physical disturbance to lands during construction, by individual agreement with landowners, following the IFA code of practice. ESB, after consultation with the landowner shall take all necessary precautions to prevent the straying of livestock and shall compensate the landowner of such livestock for all loss, damage or claims arising from the loss of such animals and pay compensation for injury or death of/loss of the animals where such straying is clearly due to any act or omission on the part of the Board. The Board shall ensure that the local District Veterinary Officer is informed of the entry of ESB vehicles on farm with a disease problem and that the Epidemiology Unit of the Department of Agriculture is made aware of ESB activities in TB affected areas. It is not accepted that there will be any issue in relation to lower milk yields as a result of the operation of the proposed lines.

Follow Up Question - Once again, there is complete confusion in this response between the respective roles and responsibilities of EirGrid and ESB. Can you state these clearly?

EirGrid is the operator of the transmission system while ESB is the owner of the transmission system. Their respective roles, in this regard, are defined in Statutory Instrument 445 of 2000 as follows –

Section 8, paragraph 1 states that the role of the Transmission System Operator (that is EirGrid) is "*to operate and ensure the maintenance of and, if necessary, develop a safe, secure, reliable, economical, and efficient electricity transmission system and to explore and develop opportunities for interconnection of its system with other systems, in all cases with a view to ensuring that all reasonable demands for electricity are met and having due regard for the environment*".

Section 19 (a) states that the transmission system owner (that is ESB Networks) *"shall as asset owner, maintain the transmission system and carry out construction work in accordance with the transmission system operator's"* (that is EirGrid's) development plan.

Follow Up Question - Do you intend to adopt the indemnities contained in the ESB / IFA COP or negotiate new ones?

The responsibility for indemnities resides with the transmission system owner. ESB Networks is the transmission system owner.

39. Original Question - Why is the East-West Interconnector from Rush to Woodlands being placed underground?

The Meath-Cavan-Tyrone 400kV Circuits must use HVAC Technology
The proposed Cavan-Tyrone 400kV circuit is required to provide further interconnection between the transmission grids of Northern Ireland and the Republic of Ireland. These transmission grids already operate as a single or 'synchronous' HVAC (high voltage, alternating current) system. The proposed Meath-Cavan 400kV circuit has two objectives, to provide capacity support to north-south power flows and to reinforce the existing HVAC electricity supply to the North-East Region of the Republic. As a result the most appropriate technology for the proposed Meath-Cavan-Tyrone 400kV circuits is HVAC.

The East-West Interconnector must use HVDC Technology
The proposed East-West Interconnector is required to provide further interconnection between the transmission system on the island of Ireland and that on the island of Great Britain. These two transmission systems are required to operate independently of each other and are therefore two 'asynchronous' HVAC systems. The existing island-to-island interconnector, that is the Moyle Interconnector, utilises HVDC (high voltage, direct current) technology. This technology is the most appropriate for providing interconnection between asynchronous systems. The proposed second island-to-island interconnector, that is, the East-West Interconnector must therefore also use HVDC technology.

EirGrid's Policy on the use of UGC and/or OHL
EirGrid is statutorily obliged to provide Ireland with a safe, reliable and cost effective electricity system while having due regard for the environment. As a consequence of this obligation EirGrid has developed a long standing policy and practice for the use of HV underground cable (UGC) and overhead line (OHL) in Ireland. Whenever a new HV circuit is proposed this policy guides the decision on whether to use OHL or UGC.

In terms of the policy an UGC will only be used if <u>all</u> of the following four conditions apply -

a) An OHL is not feasible.
b) A technically and environmentally acceptable route for UGC can be found.
c) The effect that the electrical characteristics of UGC have on the transmission network is acceptable and the relatively poorer 'availability' of underground cable is tolerable.
d) The relatively high cost of the UGC can be justified.

In the case of the Meath-Cavan-Tyrone 400kV circuits EirGrid is of the opinion that OHL is environmentally, technically and economically feasible. As a result EirGrid is obliged to proceed with an OHL proposal for these circuits.

It should be noted that although EirGrid's policy on the use of HV UGC and HV OHL was drawn up with HVAC circuits in mind it can also be applied to HVDC circuits. In the case of the East-West Interconnector an underground cable is proposed for that part of the HVDC circuit between Rush and Woodland, and is being proposed because all four conditions of the policy, where applicable, are satisfied, as explained below –

a) Obviously the sea crossing from Wales to Ireland cannot be an overhead line and must be an insulated undersea cable. There are numerous environmental and development constraints on the overland route between Rush and the existing Woodland substation that would prevent the construction of an HV overhead line. Although there are sections of the 45km overland route where OHL would be possible, on balance it would not be advantageous to have a number of short sections of OHL in, what is

primarily, a long (260km) UGC circuit. This is because (i) a mini-compound, requiring additional land take, would be required at each UGC/OHL interface, (ii) a hybrid UGC/OHL circuit requires more complex protection systems than an entirely UGC circuit and (iii) for this project the cost advantage of installing these short sections of OHL would be too small to negate the disadvantages of points (i) and (ii).

b) A technically and environmentally acceptable route for the HVDC UGC was found, details of which can be found on the EWIC project website at www.interconnector.ie.

c) This 'condition' of the policy does not fully apply to the East-West Interconnector. The electrical characteristics of a HVDC UGC are very different to those of a HVAC UGC. Long HVDC UGC circuits, unlike long HVAC UGC circuits, do not have a significant impact on the electrical characteristics of the HVAC transmission network as a whole.

   As discussed above only a very limited part of the 260km HVDC circuit route can accommodate OHL. Installing HVDC UGC in these sections would have a statistically insignificant impact on the overall circuit 'availability'.

d) It is clear that HVDC technology must be used for the East-West Interconnector. Two DC to AC converter stations are required, one at each end of the HVDC circuit. These converter stations are expensive and account for an unavoidably large percentage of the overall project cost. Because of obvious route constraints most of the HVDC circuit connecting the two converter stations must be via UGC. Installing UGC in those sections of the route that can accommodate OHL results in a relatively small increase in overall project cost. It should also be noted that HVDC cable, on a metre for metre basis, is much cheaper to install than an equivalent HVAC cable.

Follow Up Question - Would your statement that *'numerous environmental and development constraints on the overland route between Rush and the existing Woodland substation that would prevent the construction of an HV overhead line',* not apply with equal force to the proposed routes from Woodland to Turleenan?

An evaluation of the environmental and development constraints along the proposed routes from Woodland to Turleenan was carried out as part of the environmental impact assessment, the details of which can be found in the EIS which accompanies the application for planning permission. The outcome of the evaluation is that these routes are suitable for the construction of the proposed 400kV overhead line.

Follow Up Question - In the light of your comment regarding the comparative cost of HVDC versus HVAC, would you agree to construct the North-South interconnector as an underground HVDC project, consistent with the East-West interconnector?

A HVDC option is not appropriate for this development. This opinion is explained in Chapter 4, Volume 1 of the EIS.

Follow Up Question - In View of the sharply reduced forecasts for electricity consumption for the foreseeable future, would the projected needs be more appropriately met by a combination of the new East-West interconnector and strengthening of the existing 220kV circuits North-South?

The strategic justification and rationale behind the Meath-Tyrone 400kV Interconnection project is presented in Chapter 2, Volume 1 of the EIS. The analysis of the capacity requirements for the proposed development is based on up to date data (September 2009), details of which can be found in Chapter 4, Volume 1 of the EIS.

The existence of an East-West Interconnector in no way lessens the need for a 2nd North-South Interconnector.

NOTE: There were no follow up questions related to the original questions numbered 40 to 43.

44. Original Question - Does EirGrid accept that only much wider distances are allowed in other European countries?

Some countries, or as is more likely the case, regions within countries, may have adopted regulations which specify a minimum distance between dwellings and overhead transmission lines. Most of the countries of the EU however have, like Ireland, adopted EU Council Recommendation 1999/519/EC. Overhead transmission lines come in many shapes and sizes, with different voltage levels, different power carrying capacities and different configurations. The EU Guidelines recognise this and instead of specifying a minimum clearance distance the Guidelines specify 'Basic Restriction Levels' for the exposure of the general public to electric and magnetic fields. As the strength of the EMF is at its highest in the immediate vicinity of the live wire and decreases rapidly with growing distance from the overhead line a minimum clearance distance that satisfies the Guidelines can be derived for every type and size of HVAC overhead line.

In the case of the Meath-Cavan-Tyrone 400kV overhead lines EirGrid can guarantee that the overhead line will be sufficiently far enough away from dwellings to ensure that the resulting EMFs will be lower than the restriction levels specified in the EU Guidelines. In fact it can be expected that for those existing dwellings that are closest to the proposed overhead line the resulting EMF levels will be comparable with the 'background' levels already existing in those dwellings. The 'background' levels are caused by the electrical wiring installed in the building as well as the types of electrical appliances in use in that building.

Follow Up Question - What type of 'guarantee…' will EirGrid provide? Will it be in writing? Will you publish a draft of it for consideration and evaluation?

The assessment of the environmental impact of the EMF is presented in Volume 2 of the EIS that accompanies the application for planning permission. The EIS will be considered by An Bord Pleanála during its decision making process. Should the application be successful compliance with the submitted 'plans and particulars' will be a stated condition of the planning permission.

NOTE: There were no follow up questions related to the original questions numbered 45 and 46.

47. Original Question - Will EirGrid agree to have an independent base line study conducted of the health profile of the population along the proposed route and further agree to have a full re-evaluation annually?

The carrying out of such an epidemiological study would not be the basis of best practice because the population density in the region is too small to provide data with appropriate statistical significance. Similar studies have, however, been carried out, and continue to be carried out, in other more densely populated parts of the world. The results of these studies, and all other EMF related studies, are continually monitored and assessed by agencies such as the World Health Organisation and ICNIRP (the International Commission on Non-Ionizing Radiation Protection). It is from the totality of these studies that ICNIRP developed its 'Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic field (up to 300GHz)'. Both the World Health Organisation and the European Commission have endorsed these guidelines. They form the basis of EU Council Recommendation 1999/519/EC which describes the EU Guidelines. EirGrid designs and operates the Irish transmission network in accordance with the EU Guidelines.

Follow Up Questions - I totally reject your response to Question 47 as having no scientific basis. The North East is where you propose to build these lines, so why not agree an epidemiological study in the precise areas affected?

Would you agree to a base line epidemiological study and ongoing monitoring in the North East to be included in your application for planning approval?

The answer to Question 47 states that "*an epidemiological study would not be the basis of best practice*". It did not state that it would have no scientific basis. Epidemiology uses statistical analysis in its studies. A sufficiently large sample is required for statistical analysis to provide meaningful results. The population density along the route of the overhead line is, on its own, too small for a meaningful epidemiological study.

EirGrid does not carry out epidemiological studies. The Government however has announced its intention to establish a national research programme to undertake scientific research in Ireland on the health effects of exposure to EMF. We will continue to rely on the work of the World Health Organisation and ICNIRP (the International Commission on Non-Ionizing Radiation Protection) for guidance on this issue and continue to comply with the relevant EU Guidelines.

48. Original Question - In EirGrid's opinion, what will be the safe distance within which I conduct farming operations near pylon towers?

ESB Networks will own the overhead line. In its role as the TAO (Transmission Asset Owner) ESB Networks produces an excellent booklet that deals with all aspects of safety from electricity hazards on the farm. It includes a section that deals with the care that should be taken in relation to overhead lines. The booklet *'Farm Well… Farm Safely'* can be downloaded from the ESB Networks website at www.esb.ie/esbnetworks.

Follow Up Questions - You state that *'ESB Networks will own the overhead line'.* What are the operational and legal implications of the current plan by the minister for Energy to transfer ownership of the transmission assets from ESB to EirGrid?

These issues are the subject of analysis and discussion by a committee established by the Minister. As the Committee has not yet completed its work it is not possible to answer this question.

NOTE: There were no follow up questions related to the original questions numbered 49 to 53.

54. Original Question - What is EirGrid's position in relation to the safe erection and operation of the pylon towers, including children climbing up these towers and being involved in an accident, and will you be prepared to give written guarantees and indemnities?

ESB Networks will be responsible for the construction of the overhead line. In fulfilling this responsibility, ESB Networks will comply with all health and safety legislation and with all regulations governing safety on construction sites.

Where there is a risk at any given location (e.g., school or playing field) of children climbing the pylons, anti-climbing barriers can be installed. However, it is not envisaged that such barriers would be placed on all pylons as there may be a potential impact on visual amenity at certain locations. Any landowner or resident who has a particular concern in this regard can raise it with EirGrid during the pre-construction consultation and EirGrid can then give due consideration to the issue with ESB Networks.

In addition to the above ESB Networks, in its role as the TAO (Transmission Asset Owner) routinely conducts educational campaigns in the media highlighting the dangers of electricity and the dangers of climbing pylons. Similar campaigns, aimed specifically at children, are run, from time to time, through the school system, for further information on this see the 'Education' section of ESB Networks' website at www.esb.ie/esbnetworks.

Follow Up Questions - In what way will 'ESB Networks ~~will~~ be responsible for the construction of the overhead line'?

In accordance with current legislation, specifically Statutory Instrument 445 of 2000 and the associated Infrastructure Agreement between EirGrid and ESB, ESB Networks will be responsible for the construction of the overhead line while EirGrid will be responsible for obtaining the consents required for its construction. These required 'consents' consist of, among other things, the planning permission and landowner consents.

Being 'responsible for the construction of the overhead line' means that ESB Networks will be responsible for among other things the detailed design work, procurement of materials, delivery of materials to site, control of work crews on site (whether these are its own staff or contractor's staff) and commissioning. ESB Networks will also be designated as the 'Client' in accordance with the Safety, Health and Welfare at Work (Construction) Regulations.

Follow Up Question - Given that you are in receipt of EU funds for these projects, is it not a requirement that their construction requires a tendering process?

ESB Networks will be responsible for the construction. Regardless of the source of the project funding Clause 18 (3) (b) of Statutory Instrument 445 of 2000 states that when ESB Networks outsources construction work on the transmission system then the *"outsourcing contractors shall be duly selected in accordance with the law relating to public procurement and, without prejudice to such law, shall be on a list agreed between the Board and the transmission system operator."* For the purpose of this clause the 'Board' is ESB and the transmission system operator is EirGrid.

Follow Up Question - You state that '…EirGrid can give due consideration to the issue with ESB Networks'. Who exactly is or will be legally responsible for the safety of pylons and overhead wires?

The asset owner will be legally responsible for issues of heath and safety during the construction phase and during the subsequent operational lifetime of the overhead line. Under current legislation ESB Networks will be the asset owner.

55. Original Question - Who is responsible for a ring fence to be placed around each base of pylon towers for safety reasons?

ESB Networks will be responsible for the construction of the overhead line. During the construction period it may be necessary, from time to time, to place temporary fencing around a pylon site for safety reasons. The erection, maintenance and removal of this fencing will be the responsibility of ESB Networks.

Once construction is complete and the line is in service it is not normal practice to have permanent fencing around pylons. Farm animals can, and do, graze in between the legs of pylons. On occasion however, particularly where pylons are located in stud farms, a landowner has requested that a fence be placed around a specific pylon and EirGrid and ESB Networks have accommodated such requests. Such a fence is erected by ESB Networks while the landowner is responsible for its subsequent maintenance.

Any landowner or resident who has a particular concern in this regard can raise it with EirGrid during the pre-construction consultation and EirGrid can then give due consideration to the issue with ESB Networks.

Follow Up Question - Will you agree to be bound by and to implement fully any recommendations from the investigations into the recent tragedy at a 38kV pylon in County Cork?

In its role as owner of the electricity transmission system, ESB Networks will be responsible for all matters of safety related to the asset. ESB's Safety Policy can be viewed on the 'Safety' pages of the ESB website at www.esb.ie.

NOTE: There were no follow up questions related to the original questions numbered 56 to 60.