

Introduction

More than 35,000 submissions were received during the recent, third public consultation on the Grid Link Project. We would like to thank all of the communities, organisations, groups and individuals who have engaged with us.

The sheer volume and detail of feedback has meant it has taken time to process the content of submissions and set about responding to each and every person, organisation and community group who has engaged with us. We would like to thank you for your patience.

The information provided through public consultations has informed our understanding of the project study area and the issues arising in respect of the planned development of new electricity transmission infrastructure.

This will assist us in the ongoing process of project development, including our current work of identifying the least constrained corridor for an overhead line, as well as identifying an underground option.

From the beginning, EirGrid has been determined to ensure that everyone who makes a submission will receive a response and that individuals who raise specific queries will get answers to those questions.

All submissions are examined by the project team. This consists of qualified and experienced project managers, engineers, landscape experts, planners, line routing specialists, ecologists, agronomists, archaeologists, hydrogeologists and consultation specialists.

There has been criticism of the public consultation in some submissions. As outlined in more detail further on in this document (see page 21), a thorough and external review of our consultation process is being carried out.

This will ensure there is full transparency in the consultation process and complies with international best practice.

The purpose of this document is to respond to some of the key concerns that emerged during the consultation. A detailed report on the third public consultation will be published on the project website before the project proceeds to the next stage.¹

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¹ The project website can be found here: www.eirgridprojects.com/projects/gridlink

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Project update – Grid25 Initiatives

On 28th January 2014, EirGrid announced a range of initiatives in response to public concerns expressed about some of the major projects proposed as part of the Grid25 strategy to develop and upgrade Ireland’s electricity transmission network.²

It is important that we listen and respond to these concerns in a meaningful way and that is why we set out a number of initiatives, which include:

- A comprehensive analysis of undergrounding for the Grid Link and Grid West projects, which will be reviewed by the independent expert panel appointed by the Government;
- A commitment to adopt any new recommendations from the Department of the Environment’s expert review of Electric and Magnetic Fields and public health;
- Community gain funds for localities and a proximity allowance for residences located close to new pylons and substations;
- A commitment to address major issues that have arisen such as tourism, agriculture and equine concerns; and
- A commitment to review our consultation process to enhance future engagement.

To provide the public with assurance that the undergrounding analysis referred to above is carried out in a fair and objective manner, then Minister for Communications, Energy and Natural Resources, Mr. Pat Rabbitte T.D., appointed an independent panel of experts, chaired by former Supreme Court Justice Catherine McGuinness, to conduct an independent review of the overhead and underground options.

The intention of this work is to ensure a transparent, ‘side-by-side’ comparison of overhead and underground options, which will be assessed and analysed against technical, environmental and economic criteria.

This independent panel has recently published its terms of reference and EirGrid has committed to carrying out our analysis of an underground option according to the requirements and standards set by the panel.³

More details on the other Grid25 Initiatives can be found throughout this document.

However, as the work on identifying an underground route option proceeds, we must continue to work to identify the least constrained corridor for an overhead line so that the two options can be properly compared.

As part of this, we have responded to the key themes raised in the third consultation as outlined in this document.

² Further details of the “Grid25 Initiatives” are available here:
<http://www.eirgrid.com/media/Grid25Initiatives.pdf>

³ The panel’s terms of reference can be found here:
<http://www.dcenr.gov.ie/Press+Releases/2014/Statement+by+the+Independent+Expert+Panel+considering+the+EirGrid+Grid+West+and+Grid+Link+projects.htm>

Need for the Grid Link Project

EirGrid carried out extensive detailed technical analyses of the Irish transmission system for a number of years with the latest information before deciding to initiate the Grid Link Project. These studies indicated that, if left as is, the existing transmission system in the south and east of Ireland would not be sufficient to meet either Ireland's, or the region's, future electricity requirements.

The need and the development of solution options were described in detail in the Lead Consultant's Stage 1 report, which was published in September 2013.⁴

There are three key reasons that the Grid Link Project is necessary:

i. Security of supply for the south and east: Despite the recent recession, and drop in electricity demand, there remains a concern about the emerging risk to the security of supply in the south and east of the country, brought about largely by heavy power flows through the network.

The development of strategic electricity transmission infrastructure must take a long-term view, and the Grid Link Project remains entirely necessary to ensure a secure electricity supply in the south and east regions of Ireland – for homes, businesses and communities – not just for today, but in the years and even decades to come.

ii. Integrating renewable energy: Ireland has a legally binding target, set by the EU Commission, to source 16% of our total energy needs from renewables by 2020. To achieve this, the Irish Government has set a target of providing 40% of our electricity from renewables by that year.

This target is captured in the Government's Energy Policy which provides the context for EirGrid's forecasts and development plans. While there has been some discussion around EU targets for 2030, the target for 2020 remains the same.

To achieve these targets, significant levels of renewable generation will be connected to the electricity grid in the south and east of Ireland. These renewable generation projects will be developed by third parties to which EirGrid, or ESB Networks Ltd as the Distribution System Operator, are obliged to give access.

The transmission system should be able to facilitate the flow of electricity to ensure that the cheapest generation sources (e.g. renewable generation when available) can be used to meet Ireland's electricity needs.

Renewable generation is mainly located in remote areas, particularly in the west, south-west and south-east of Ireland, far from some of the highest concentrations of demand.

This renewable generation, in combination with the existing conventional generation in the south, like the gas powered generators in Cork harbour for example, gives rise to very large power flows from the south and west towards the east coast, which exceed the capacity of the existing grid. This means there is a need to strengthen Ireland's electricity grid.

The consequence of doing nothing in this circumstance would put security of supply in the south and east of Ireland at risk. In meeting its obligations to ensure the system is secure,

⁴ A copy of the Stage One Report can be found online here:
<http://www.eirgridprojects.com/projects/gridlink/stage1report/>

EirGrid proposed the Grid Link Project to strengthen the grid and fulfil the requirements in the south-east.

In doing so, it will help Ireland to achieve the Government's 2020 targets, reduce Ireland's dependence on imported fossil fuels and play an important part in tackling climate change.

iii. The facilitation of possible future interconnections with either Great Britain or France:

EirGrid has a licence obligation to explore and develop opportunities for interconnecting with other electricity systems in line with European policy.

At present, the island of Ireland is electrically connected to Great Britain via two High-Voltage Direct Current (HVDC) interconnectors, namely the Moyle Interconnector and the East – West Interconnector (EWIC). Both interconnectors can import and export electricity depending on market conditions.

The existing East – West Interconnector, which connects Ireland to Wales, has a capacity of 500 MW which equates to approximately 10 per cent of the country's peak demand. In its first ten months of operations it contributed to a 9 per cent decrease in the wholesale price of electricity by importing cheaper electricity from Britain.

EirGrid, with its counterpart Transmission System Operator (TSO) in France, Réseau de Transport d'Électricité (RTE), is currently exploring the feasibility for an interconnector with France. Such an interconnector would give Ireland direct access to a mainland European electricity market, strengthening our security of supply and creating opportunities to import and export electricity.

It is important to stress that consideration of such a project is at a very early stage of feasibility analysis. No decision will be made for some time about whether to proceed.

Importing and Exporting of Electricity

EirGrid's Grid25 projects are internal to the Irish system. They are planned to reinforce the Irish transmission network and to continue to ensure security of supply for all electricity users.

Grid25 projects will facilitate wind powered generators connecting directly to the Irish grid to meet Ireland's domestic renewable energy targets.

These projects, including the Grid Link Project, are not related to recent proposals by private developers to export renewable energy to Britain via new links connecting directly to the British grid.

One of these proposals is the midlands energy export project. In April 2014 then Minister for Communications, Energy and Natural Resources, Mr. Pat Rabbitte T.D. announced that this project would not now go ahead.

As mentioned earlier, the East – West Interconnector linking Wales and Ireland currently facilitates the import and export of electricity between the Irish and British markets.

During 2013, we imported 2.11 million MWh of electricity and exported 66.8 thousand MWh. Access to the British energy market allows us to import cheaper electricity, contributing to a 9 per cent reduction in wholesale electricity prices since the interconnector began operations.

Impact on the Local Economy

One of the key purposes of the Grid Link Project is to ensure a secure supply of electricity for the future, for homes, businesses, farms, factories and communities in the region.

This will provide a platform for job creation and facilitate economic recovery in the south and east of Ireland. This will include direct jobs during construction but many more will be created indirectly during operation as a result of improved, secure supply to these regions.

Research carried out by Indecon Consultants suggested that EirGrid's Grid25 programme, of which the Grid Link Project is the largest part, will support nearly 3,000 full-time equivalent jobs between 2012 and 2025.

A majority (83%) of leading companies surveyed for Indecon's report judged that additional available capacity on the grid was important or very important to their expansion plans.

The same study found that 90 per cent of those surveyed believed access to Ireland's electricity transmission network was a very important or important factor in attracting additional foreign direct investment to Ireland.

The IDA has stated that they consider access to a high quality power grid to be very important in attracting new investment, highlighting the ICT and high-tech manufacturing sectors in particular.

Overhead Transmission Infrastructure

Evaluating the Route Corridors and Substation Zones

The criteria that will be used to evaluate and compare the various overhead corridors and proposed substation zones are outlined in Chapter 10 of the Stage 1 Report.⁵

Feedback from the most recent publication consultation, which concluded in January, will help the Grid Link Project team to identify a least constrained corridor within which the new power line would be routed and substation sites.

All submissions received from members of the public will be assessed and evaluated in accordance with the terms of reference of the public consultation process as set out in Chapters 10 and 11 of the Stage 1 Report.

The final decision on a least constrained corridor and substation sites will represent what is considered to constitute the most appropriate balance between the various technical, cost and environmental (including social) criteria.

Once a least constrained overhead route corridor has been identified, EirGrid will begin to contact landowners within the corridor to commence land surveys and to discuss a possible line route, substation and pylon locations.

The least constrained overhead route corridor is expected to be published later this year, alongside an underground route for the project. Both will then go out to public consultation.

Pylon design

No decision has been made as to what pylon design, or combination of pylon designs, will be used for the Grid Link Project should an overhead line be chosen as the preferred project solution.

When planning an indicative line route, our engineers will use pre-approved design standards for pylons in Ireland. However, this does not mean that only pre-approved designs can be considered for the Grid Link Project.

EirGrid regularly reviews available alternatives to the pre-approved designs. As part of this process EirGrid has published for consultation a number of possible alternatives for further investigation and examination by our engineers.⁶

During the refinement of the route alignment, a final set of pylon designs will be selected.

Upgrading Existing Transmission Lines

Some submissions suggested that rather than build new transmission lines, as proposed in the Grid Link Project, the existing 220 kV lines could be upgraded to carry more electricity or perhaps the 220 kV pylons could also carry the proposed 400 kV line to make a double circuit.

EirGrid operates over 6,500km of overhead lines throughout the country. The Grid25 strategy involves the upgrading of 2,000km of the existing grid; this is called uprating and reduces the requirement to build new lines across the regions.

⁵ A copy of the Stage One Report can be found online here:
<http://www.eirgridprojects.com/projects/gridlink/stage1report/>

⁶ Details on the type of pylons being considered are available here:
<http://www.eirgridprojects.com/projects/gridlink/towerdesign/>

Approximately 800km of new lines will need to be built, which includes the Grid Link Project.

Maximising the existing transmission system is one of the principles of the Grid25 strategy.

Upgrades of existing circuits, i.e. changing the conductor to a higher rated conductor, may be justified where analysis has determined that a higher rating on an existing circuit would remove an identified problem or risk.

For these reasons, some of the existing circuits in the south and south east have either been upgraded or are in the process of being upgraded in the next couple of years.

However, certain problems that occur in an electricity system, such as voltage violations or security of supply issues, cannot be mitigated by upgrading circuits. In these circumstances, new additional circuits are required.

The need for the Grid Link project is set out in Chapter 2 of the Lead Consultant's Stage 1 Report, which was published in September 2013:⁷

'Constraints on the transmission network primarily result from the situation where, if any of the existing 220kV circuits between Cork, the south-east and Dublin are put out of service, the power that was flowing on the circuit prior to the outage transfers to the underlying parallel 110kV network. This would result in thermal overloads primarily on the existing 110kV circuits.'

'Even with the assumed completion of upgrades of existing circuits (thereby maximising the potential of the existing network), the transmission network would not have sufficient capacity to cater for the power flow identified above.'

Double circuits

It is technically possible for two different voltages, e.g. 220 kV and 400 kV, to be carried on one pylon.

Double circuits are used on the Irish transmission system where they are needed to mitigate specific constraints or to address congestion concerns where accessing substations. However, the aim is to minimise the risk involved where this method of construction is used.

In other transmission systems (e.g. National Grid, UK) where double circuits are used more extensively, the redundancy and capacity have been designed into the system to allow for their loss.

Redundancy refers to the requirement for an adequate number of independent circuits, such that the loss of any one circuit or double circuit will not put the operation of the network outside standards.

This level of redundancy has not been designed into the Irish system and hence the use of double circuit pylons poses a risk to the reliability of the system.

In designing the Irish transmission system, EirGrid must ensure that the system will provide the requisite level of reliability, usually through the provision of network capacity and redundancy by additional circuits to cater for the unplanned outage of any item of plant on the system.

⁷ A copy of this report is available online at: <http://www.eirgridprojects.com/projects/gridlink/stage1report/>

There is an identified need to reinforce the transmission system with new additional circuits to provide capacity and redundancy.

If the 220 kV pylons carrying the existing circuit(s) in this region were to be replaced with pylons carrying two circuits (double circuit pylons), there is a risk that a single event could take both circuits out of service.

This option would not provide the necessary redundancy, and would not address the network issues.

Mobile phone and broadband signal

There are many thousands of kilometres of high-voltage power lines in Ireland, including many in heavily populated areas where mobile broadband signals are available.

Telecommunications networks are designed to be unaffected by external electromagnetic interference. Mobile phones can and are used in close proximity to power lines without any noticeable interference. Indeed, some pylons in Ireland have been used to mount mobile communications antennae.

Undergrounding

EirGrid is responsible for operating and developing Ireland's electricity transmission system. This is a 6,500 km network of high-voltage overhead lines, underground cables and substations used to transport electricity around the country.

Ireland's high-voltage transmission network operates at three different voltages. These are 110 kV, which makes up two-thirds of the network, 220 kV and 400 kV, similar to the lines proposed for the Grid Link Project.

There are approximately 440 km of 400 kV line already in existence in Ireland connecting Moneypoint power station to substations in the east of the country.

EirGrid has a statutory obligation to operate and develop a safe, secure, reliable and efficient transmission system while minimising impact on the environment.

There are a number of different ways to transport electricity over the transmission system and it is EirGrid's job to ensure that the right choice is made to ensure a safe and secure energy supply for homes, farms and businesses throughout Ireland.

EirGrid examines a number of different methods to transport electricity when developing our transmission system:

Option 1 – Alternating Current Overhead Line

Option 2 – Alternating Current Underground Cable

Option 3 – Direct Current Overhead Line

Option 4 – Direct Current Underground Cable

There is no single right answer. Each option has different strengths or weaknesses and depends upon the nature and parameters of each project. What works for one project might not work in another.

EirGrid must analyse the various options and then pick the one that best suits the needs of each unique project and the transmission system as a whole.

As stated above, EirGrid has committed to carrying out a detailed analysis of an underground option for the Grid Link Project. This analysis will be reviewed by an independent panel of experts chaired by former Supreme Court Justice Catherine McGuinness. This work is currently ongoing.

Many submissions received in respect of the consultation regarding the Grid Link Stage One Report raised the issue of undergrounding.⁸

It is important to be clear that an underground option for the Grid Link Project is technically possible, but it does not perform in the same way as the existing transmission system is configured, as is explained below in more detail.

Alternating Current versus Direct Current

"Transmission" refers to the carrying of bulk electricity from where it is generated (e.g. a wind farm or power station) or imported (via an interconnector from a neighbouring network), to the wider area where it is required (also known as "demand centres").

⁸ A copy of the Stage One Report can be found online here:
<http://www.eirgridprojects.com/projects/gridlink/stage1report/>

Ireland's electricity transmission network, as with every other national transmission network in the world, is an Alternating Current (AC) system. From the electricity generators, through the transmission network and into your home, everything is run on AC power.

Direct Current (DC) is also an effective means of transporting electricity. In fact, DC can be more efficient over long distances.

In January 2012 the Government published a report by an International Expert Commission that had been appointed to examine the possibility of undergrounding the North – South Interconnector.⁹

They concluded that it is not feasible to carry high-voltage power over long distances by means of underground AC cables. Our analysis has shown that in small and relatively isolated AC systems such as Ireland's AC network, it may be possible to accommodate AC cable lengths of relatively short distances on a particular circuit. However, this always has consequences for the stability of the system, which needs to be very well understood.

This means that for anything other than short distances, an underground option would require DC technology.

EirGrid recently completed the East – West Interconnector between Ireland and Britain using a DC underground cable. Clearly it is not possible to construct an AC overhead line across the Irish Sea.

The distance of the sea crossing, combined with the required capacity, is too great to use an AC underground cable but does not pose a difficulty for a DC underground cable.

In addition the electricity networks on the islands of Ireland and Great Britain are controlled and operated independently of each other. The only way to transfer electrical power between two such networks is to use DC technology.

In the case of the East – West Interconnector, therefore, a DC scheme, with DC underground cable, was the only technically feasible option available. At each end of the DC cable converter stations are installed to convert the power from DC to AC and vice versa.

This DC technology has an extensive track record in the application as an interconnector or to transport power from a generation source over a very long distance, and the operational requirements and risks are well understood.

The same cannot be said for the introduction of a DC circuit into a single AC meshed network and making it operate like an AC circuit. At each point where the DC circuit meets the AC network very large, complex, converter stations would be needed to convert the power from DC to AC and vice versa.

In a meshed AC network the AC circuits link together to naturally reinforce each other. If there is a sudden increase or drop in power supply or demand in one area, the system automatically compensates and adapts instantly.

In addition, if a transmission circuit goes out of operation, due to an unplanned outage or as part of planned maintenance, power can still flow to the area supplied by that circuit using other circuits also serving the area.

⁹ A copy of that report can be found online here: <http://www.dcenr.gov.ie/NR/rdonlyres/5E479E9C-5C4E-4D25-A585-2770FDE3A6B4/0/MeathTyroneReportFinal.pdf>

A DC circuit embedded in an AC network could not 'naturally' work like that. Instead it needs to be 'instructed' by computers to respond using a limited number of programmed scenarios.

This creates a risk to supply if, for example, there is a sudden loss of a major generator or another line and the system does not respond sufficiently fast to rectify the resulting imbalance between supply and demand. This could endanger power supply to tens of thousands of homes, businesses and factories.

EirGrid's preference is to always use the most appropriate technology for new circuits to ensure integration with our existing electricity system and guarantee a safer, more secure energy supply.

This preference reflects that of all other transmission system operators in Europe and internationally.

Overhead Lines versus Underground Cable

There are more than 6,500 kilometres of high-voltage overhead lines in Ireland today and 200 kilometres of high-voltage underground cable.

Globally, overhead lines are generally preferred because they are more reliable and they are less expensive for consumers.

There are advantages and disadvantages to both overhead line and underground cable options.

Overhead lines are usually more cost effective, more compatible with the existing network and easier to repair than underground cables. But the size and number of pylons required for an overhead line can make a substantial visual impact and communities are often reluctant to host the infrastructure required for overhead lines.

Underground cables have a greatly reduced visual impact and are consequently more likely to win community acceptance. However, they can also introduce other environmental impacts through increased excavation and construction works that would not be required for overhead lines and they are more expensive per kilometre length.

Cost comparisons between overhead lines and underground cables can be very difficult because, for example, terrain can vary and the cost of cable itself can fluctuate due to changes in the prices of copper and aluminium. In addition, converter stations are the most expensive aspect of any DC system. Therefore, the number of converter stations required will have a major impact on the cost.

We will also be examining the possibility of a sub-sea cable as part of the detailed assessment of the potential to underground the Grid Link Project.

The International Expert Commission established by the Government to examine undergrounding the North – South Interconnector suggested the cost of doing so would be more than three times the cost of an AC overhead line.

Notwithstanding this, the selection of an overhead line or an underground cable is influenced by a number of factors including technology acceptability, reliability, flexibility, the environment – including visual impact – and cost.

The International experience

Overhead AC lines are the most common choice for transmitting high-voltage electricity across Europe.

They make up more than 98 per cent of the continent's current transmission network and 94 per cent of planned new on-shore developments between now and 2022 according to the 10-Year Network Development Plan published by the European Network of Transmission Systems Operators for Electricity in 2012.

High-voltage lines are being successfully undergrounded elsewhere in Europe, but it is important to note that these are at the lower voltages – comparable to Ireland's 110 kV and 220 kV networks.

Denmark is sometimes cited as an example of what can be done in relation to undergrounding. They examined the feasibility of undergrounding their entire transmission network. Work is well advanced with the lower-voltage network at 132 kV and 150 kV.

However, they concluded that it was not technically feasible to underground the entire system, particularly at 400 kV level, and Denmark is developing its planned backbone 400 kV AC circuits as overhead line.

Cost-Benefit Analysis

Having listened to feedback from the public consultation, we have committed to a comprehensive underground analysis for Grid Link, to the same level of detail as overhead.

The Government-appointed Independent Expert Panel will review underground and overhead options to ensure they are done to the same level of detail. An overhead and underground option will be published side-by-side, in objective and comparable terms. Both options will be put out to public consultation.

The Panel has requested an economic appraisal of the underground and overhead options, which would include comparing the overhead and underground options against a range of economic and cost criteria.¹⁰

EirGrid will fully cooperate with the Independent Expert Panel and publish detailed costings in line with the Terms of Reference.

Next Steps

It is clear from the recent public consultation on the Grid Link Project that many people want a more detailed analysis of the advantages and challenges of delivering the project using an underground cable solution.

EirGrid is now carrying out a comprehensive and detailed assessment of the potential to underground the Grid Link Project.

As outlined above this analysis will be subject to review by an independent panel of experts who will ensure that people can have confidence in this analysis.

Ultimately, we will present two options for the Grid Link Project – an overhead line route and an underground cable route – for public consultation, with the advantages and disadvantages of both clearly explained.

¹⁰ A copy of the Panel's Terms of Reference are available online at:
<http://www.dcenr.gov.ie/Press+Releases/2014/Statement+by+the+Independent+Expert+Panel+considering+the+EirGrid+Grid+West+and+Grid+Link+projects.htm>

Health

EirGrid designs and operates the transmission network to the highest safety standards and complies with the most up-to-date national and international guidelines.

National and international health and scientific agencies have reviewed more than 30 years of research into EMF. None of these agencies has concluded that exposure to EMF from power lines or other electrical sources are a cause of any long-term adverse effects on human, plant or animal health.

In March 2007, Ireland's Department of Communications, Marine and Natural Resources (DCMNR) assembled a panel of independent scientists to review EMF and radiofrequency research. In their report, entitled *Health Effects of Electromagnetic Fields*, they concluded that:

'No adverse health effects have been established below the limits suggested by international guidelines.'

On 4th February 2014, the European Commission's Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) published an opinion for public consultation which found no causal link between electromagnetic fields from transmission lines and any adverse effects to health.

This latest opinion is consistent with the previous SCENIHR view and that of the World Health Organisation (WHO), among others.

Based on its review of EMF research, the WHO has stated that compliance with the International Commission on Non Ionising Radiation Protection's (ICNIRP) guidelines, which have been adopted for the European Union, ensures that the fields humans encounter are not harmful to health.

The ICNIRP is a publicly funded body of independent scientific experts set up in 1992 to examine any possible risk to public health posed by non-ionising radiation like EMF.

It is formally recognised by the World Health Organisation and European Union as the nongovernmental standard setting body for EMF.

ICNIRP guidelines adopted by the EU suggest that in order to ensure public health and safety, members of the public should not be exposed to electric fields of 5,000 V/m or greater, and to magnetic fields of 100 μ T or greater.

EirGrid operates the Irish transmission system well within these guidelines, ensuring compliance with international best practice.

EirGrid recognises that some individuals are genuinely concerned about issues regarding EMF and health.

The protection of the health, safety and welfare of the general public and of our staff is a core company value.

That is why we provide clear, factual information on electricity transmission lines and the latest research into the suggestion that they could have implications for human health.

EirGrid is committed to addressing these concerns by continuing to:

- Design and operate the transmission system to comply with the ICNIRP's international guidelines on EMF, as reviewed by the World Health Organisation and endorsed by the EU and the Irish Government;
- Closely monitor engineering and scientific research in this area; and
- Provide information to the general public and to staff on this issue.

At the end of January 2014 then Minister for Communications, Energy and Natural Resources, Mr. Pat Rabbitte T.D., announced – as part of the Grid25 Initiatives – that the Department of Environment and Local Government will engage expert assistance to review and report on international developments in the scientific literature on potential health effects of EMF emanating from transmission grid infrastructure. It is anticipated that this study will provide the best available information on:

- Published, peer reviewed scientific literature relating to non-ionising radiation and associated epidemiological matters;
- Work carried out under, and findings of, relevant international bodies; as well as
- Relevant international and national standards and guidelines covering the period 2007 to date.

The study will serve as an update on the 2007 report mentioned above, *Health Effects of Electromagnetic Fields*.

EirGrid welcomes this study and commits that it will adopt and adhere to recommendations arising from this review.

More detailed information on EMF and health is available on the eirgridprojects.com webpage.

Visual Impact, Tourism and Cultural Heritage

EirGrid understands the concerns expressed by many people around the visual impact of the proposed transmission infrastructure on their local communities, and particularly the suggestion that it could have a detrimental impact on tourism.

At the start of this process, local authorities were contacted and asked to provide EirGrid with a list of scenic routes, views and prospects, amenity zonings and places of outstanding natural beauty in their areas.

All relevant information contained in County Development Plans was also considered at this stage.

These have all been mapped and are considered as potential constraints to transmission lines. Details of these constraints were provided in the Grid Link Project Constraints Report, published in August 2012.¹¹

During each of the three public consultations held to date on the Grid Link Project members of the public were asked to input into the identification of constraints in their local area. This information has been added to the project's geographical information system and is being used to inform the corridor evaluation process.

During the current process of identifying a least constrained corridor, we will aim to identify the corridor with minimum impact on the environment, including landscape, and to balance that with other constraints, such as population.

EirGrid always tries to mitigate the visual impact of transmission infrastructure where possible through design techniques, the routing of lines, and the location of the pylons in line with technical, environmental and landowner considerations.

Cumulative impact

There is also the possibility that a new development, such as the Grid Link Project, could have a greater potential impact on a local community because there is already a substantial amount of other infrastructural developments in the area. This is known as cumulative impact.

As part of the next stage of the project, which includes environmental and other survey work and the subsequent Environmental Impact Statement, the project team will identify any other projects, including existing overhead lines that, together with the Grid Link Project, could have a cumulative impact.

The Cumulative Impact Assessment is an important strand of the wider Environmental Impact Assessment process.

Tourism

Tourist attractions have been considered from the very earliest stages of the development of the Grid Link Project.

Tourism has been included as a specific evaluation criterion in the Stage 1 Report and will be considered further as part of the process to identify the least constrained corridor.

¹¹ The constraints report is available online here:
<http://www.eirgridprojects.com/projects/gridlink/constraintsreport>

One of the purposes of the Stage 1 Report is to obtain knowledge regarding currently unidentified tourism features existing in the study area.

The issue of tourism will also be addressed in the subsequent planning application for the Grid Link Project.

We have committed, as part of the Grid25 Initiatives announced at the end of January, to address the potential for the Grid Link Project to impact on tourism and we are working with Fáilte Ireland on these issues.

EirGrid will identify the essential elements and principles of a best practice approach to the issue of tourism in respect of transmission infrastructure projects.

Cultural Heritage

During the constraints gathering stage the project team has collated information on architecture, archaeology, cultural heritage, landscape designations and the main tourist sites within the project area. These features have been considered in developing the corridor options.

In the case of site based features such as recorded monuments etc. it should be noted that it has not been possible to avoid all such features for the purposes of the corridor identification stage.

However their importance has been recognised and potential to impact on sites and features of an archaeological, architectural or cultural heritage value has been listed as a specific criterion as part of the corridor evaluation process.

Where such sites occur within the least constrained corridor further efforts will be made to minimise the impact on these sites by sensitive routing of the over-head line in accordance with best practice approaches such as CIGRE and the Holford Rules.

Impact on Landscape

During the corridor identification phase of the process, i.e. corridor identification, areas identified in County Development Plans as being of high sensitivity and / or high amenity have been identified as “primary constraints”. They were avoided as far as possible at the corridor identification stage.

It should be noted that it was not possible to avoid all such constraints for the purposes of corridor identification, but this may be possible with subsequent identification of a line route within the indicative corridor.

Sensitive areas and areas of high amenity will be further considered as part of a detailed Environmental Impact Statement on the proposed route.

At the corridor evaluation stage of the process, further consideration will be given to areas contained in corridors, in consultation with the relevant local authorities and with reference to issues raised during consultation. For the purposes of identifying constraints, data was requested from each local authority.

Scenic routes, views and prospects, high amenity areas, sensitive landscapes, areas of outstanding natural beauty and landscape sensitivity zones have been identified on the

constraints mapping, full details of which were provided in Appendix F and G of the Grid Link Project Constraints Report.¹²

It should be noted that there is no national landscape strategy for Ireland. Therefore, each local authority takes a slightly differently approach to how and what they designate, what is mapped and how the various designations are interpreted in a planning sense.

EirGrid recognises that the absence of a national landscape approach does not remove the responsibility to provide a full, balanced and objective consideration of the landscape.

There will be a further period of public consultation this year and EirGrid does not expect to submit a planning application for the Grid Link Project before 2016, which will involve statutory public consultation by An Bord Pleanála in relation to the project.

¹² The constraints report is available online here:
<http://www.eirgridprojects.com/projects/gridlink/constraintsreport>

Construction and Maintenance

Soils, Geology, Hydrogeology and Land Use

Potential impacts on Soils, Geology, Hydrology, Hydrogeology and Land Use will be assessed in accordance with best practice and with reference to national and EU guidance on Environmental Impact Assessment (EIA).

Regardless of the final project parameters (be they either overhead line, an underground route or a combination of both), during the statutory assessment of the preliminary design for the Grid Link Project, specialists in a range of areas including agronomy and hydrogeology will undertake desk and field based assessments of proposals.

This will be done in line with current best practice and with reference to national and EU guidance on Environmental Impact Assessment (EIA).

Field surveys will continue to be undertaken to assist in confirming the final alignment and landowner discussions will be on-going throughout this stage.

A planning application (including Environmental Impact Statement (EIS)) would then be prepared for submission to An Bord Pleanála (ABP). However, no planning application will be made before 2016.

Traffic Management and Construction

Regardless of the final project parameters (be they overhead line, an underground route or a combination of both), an Environmental Impact Statement (EIS) will be prepared as part of the submission to An Bord Pleanála, which is not anticipated to take place before 2016.

The EIS will include a Construction and Environmental Management Plan that will outline the management framework for the appointed project contractor and will incorporate the mitigating principles to ensure that construction work is carried out with minimal impact on the environment.

While there will be additional construction traffic during the construction period, a detailed traffic management plan will be in place for all construction activities.

Concerns raised in relation to impacts on ground water, drinking water and water supply during construction have also been noted by the project team. These concerns will be taken into consideration in the EIS.

ESB Networks would be responsible for carrying out construction and subsequently for ongoing maintenance of the transmission infrastructure.¹³

Insurance

As noted previously, national and international health and scientific agencies have reviewed more than 30 years of research into EMF.

None of these agencies has concluded that exposure to EMF from power lines or other electrical sources are a cause of any long-term adverse effects on human, plant or animal health.

¹³ More information can be found in the *ESB/IFA Code of Practice for Survey, Construction & Maintenance of Overhead Lines* which is available online here:
http://www.eirgridprojects.com/media/Appendix%20D.5%20ESB_IFA_code_of_practice.pdf

It is important to clarify that EirGrid is the Transmission System Operator. We are responsible for operating the transmission system, which is a meshed network of approximately 6,500km of high-voltage, 110 kV, 220 kV and 400 kV, overhead lines and underground cables and over 100 transmission stations.

However, the transmission system is owned by ESB.

ESB, in its capacity as the Transmission Asset Owner, is responsible for ensuring the system is constructed and maintained in such a manner as to allow for the reliable and safe operation of the system and to EirGrid's defined standards in accordance with the requirements set down by EirGrid and in accordance with best asset management practice.

ESB maintains a Public Liability Insurance Policy. There is no evidence of any successful claims against such a policy worldwide that EirGrid are aware of.

ESB's Public Liability Insurance Policy covers the risk of legal liability for injury or damage to third parties or their property and would cover any potential liability relating to the operation of high-voltage power lines.

Emerging developments in forward risk are assessed in conjunction with insurance underwriters on an ongoing basis, as required.

Animal Health, Agriculture and Equine

There are already approximately 6,500 km of high-voltage transmission lines operating on the Irish network, much of which is crossing working farmland.

It is possible that there may be some disruption to farming activity during the construction of an overhead line, for which there is compensation available to the landowner. If agreement cannot be reached on the levels of compensation, the matter can be referred to arbitration.

Once construction has been completed the land underneath the overhead lines can be used as before, with the exception of the area directly under the pylons, which will not be accessible for agricultural machinery, but can be used for grazing.

It is recognised that having pylons in a field represents an inconvenience and an obstacle for farm machinery and that is why compensation is provided to farmers through annual Mast Interference Payments administered by ESB Networks. EirGrid will work with the landowner to try and site pylons to minimise any potential impact on farm operations.

As with any overhead line, an awareness of its presence and safe work practices are required when working in proximity to the line. ESB Networks has produced a booklet, *Farm Well...Farm Safely*, which provides more information on how to farm safely in the vicinity of overhead lines.¹⁴

Animal health

As with human health, some concerns have been expressed about the potential effects of EMF from high-voltage transmission lines on animal health, welfare, behaviour and productivity.

Both economically important domesticated animal species and wildlife have been investigated since the 1970s. Overall, the research does not show that EMF have adverse effects on the health, behaviour or productivity of animals, including livestock.

The substantial body of research on wild and domestic animals is informative for all large mammals and does not indicate any risk.

Thus, there is no scientific basis in the research literature to conclude that the presence of a transmission line would create conditions that would impair the health of horses or would precipitate abnormal behaviour.

Studies on dairy cows, for example, failed to find any consistent variation in fertility, hormone levels, milk fat content or dry matter intake beyond what would be expected due to normal variation even when exposed to EMF far stronger than would occur from the Irish transmission system.

Other research on sheep has examined the effect of EMF on weight gain, wool production, behaviour, onset of puberty and immune function. None of the studies showed consistent or replicated evidence of adverse effects.

In relation to animal safety from the risk of electrocution, the grid is constructed and operated to the highest international standards resulting in there being far less potential risk to animals from transmission lines in fields where they graze than from natural phenomena, e.g., lightning.

¹⁴ A copy of *Farm Well...Farm Safely* is available online here:
http://www.esb.ie/esbnetworks/en/downloads/esb_networks_farm_safely_booklet.pdf

Agriculture

A scientific literature has accumulated, both from laboratory and field studies, on the potential effect of electric and magnetic fields from transmission lines on plants, including agricultural crops and trees, and forest and woodland vegetation. Overall, no confirmed adverse effects on plants have been reported from electric and magnetic field exposures at levels comparable to those near high-voltage transmission lines.

We are currently in the process of reviewing submissions received with respect to agriculture. Impact on agriculture is raised by many observers and the issues being raised can be broadly grouped under the following headings:

- Construction and maintenance related issues;
- Restrictions on farming activities;
- Obstruction to farming activities;
- Animal health & welfare;
- Health & safety;
- Perception of impact on farm produce quality;
- Overall farm profitability;
- Forestry;
- General impacts of farming the land.

Grid25 Initiatives

Recent consultations have raised specific issues regarding the possible impact of new electricity lines on the agriculture and equine industries.

As part of the Grid25 Initiatives (see page 3), EirGrid is carrying out separate reviews of the implications for both the agriculture and the equine industry of overhead transmission infrastructure.

These reviews will examine best practice approaches in Europe and internationally. They will also include consultation with representative organisations in both industries and with the relevant Government departments.

This work will also be informed by expert assistance, as required.

Consulting with Communities

The Grid25 projects are being implemented across Ireland and affect a large number of people. At the outset, we outlined the roadmap for developing these projects and the opportunities for public participation throughout.

The EirGrid Project Development and Consultation Roadmap is used by EirGrid in developing its major electricity transmission infrastructure projects. The Roadmap sets out projects into different stages and public consultation is an integral part of the project development process at various stages.

The EirGrid Project Development and Consultation Roadmap was developed taking full cognisance of the Aarhus Convention and its principles and the United Nations Economic Commission for Europe Aarhus Convention Implementation Guide. The public consultation identified in different stages, and indeed the statutory planning process, facilitate public participation in environmental decision making.

Further information on this roadmap is available on the EirGrid Projects website.¹⁵

We have carried out extensive consultation over the past two years on the Grid Link Project, above and beyond what has taken place on any other energy infrastructure project in Ireland.

- There have been three public consultations on the Grid Link Project since the project was launched in 2012.
- Then Minister for Communications, Energy and Natural Resources, Mr. Pat Rabbitte T.D. launched the project on 12th April 2012 and encouraged people to get involved with the project. This launch was extensively covered in all national, local media and online.
- 33 open days have been held within the project area since the project launch where thousands of stakeholders met with the project team.
- EirGrid has opened five Project Information Centres since April 2012, at Midleton, Carrick-On-Suir, Carlow, New Ross and Kilcullen.
- A project information telephone line (1890 422 122) and email address (gridlink@eirgrid.com) have also been established.
- Since autumn 2012, the Grid Link Project Team has been visiting marts, libraries, shopping centres and agricultural shows, handing out information to stakeholders attending over 120 events.
- There has been extensive advertising in local and national press and on local radio stations within the project area at each stage of the project. In order to maximise the opportunity for media coverage, news releases were issued to national and local print, broadcast and electronic media.

¹⁵ A copy of the roadmap is available online here:

<http://www.eirgridprojects.com/media/EirGrid%20Roadmap%20Brochure%20July%202012.pdf>

- Hundreds of media articles have been published in the local and national media about the Grid Link Project and the Grid Link Project Manager has given more than 100 media interviews.
- The project team regularly updates County & City Councils, Chambers of Commerce, local community organisations and elected representatives. Six regional stakeholder forums have taken place within the project area and they have been attended by organisations from the tourism, business, sport, health and academic sectors.
- There will be further periods of public consultation and a full statutory public consultation by An Bord Pleanála.

We would like to thank you for taking the time to send your submission to us.

Many of the submissions we received to the recent consultation suggested ways in which the consultation process could be improved.

We are keen to respond positively to this feedback and we are conducting a thorough review of our consultation processes to enhance future public engagement.

This includes an external review of our consultation and engagement process.

To ensure the independence and objectivity of this, EirGrid requested that the Chair of the Chartered Institute of Arbitrators appoint a number of experienced professionals to undertake an independent external review.

As part of this work, a number of stakeholders (as selected by the external reviewers) will be asked for their opinions on EirGrid's consultation process and how it could be improved. This is to ensure that the widest possible opinions are included in the review.

The review is expected to be completed during the summer and its findings will be published, including any recommendations to enhance future public engagement.

This demonstrates our commitment to listening to, and responding to, feedback from communities and stakeholders in relation to the development of the national grid.

As in previous stages of the project, a consultation report will be prepared and published on the project website, which will address the issues arising in the public consultation and detail EirGrid's response to same. The report will demonstrate how public feedback has been considered as part of the project development to date.

The project team will consider any suggestions you may have on how the consultation process can be improved and on what issues need to be addressed.

Natural Habitats and Wildlife, including Birds

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are defined by European Union directives. These sites are of international conservation importance for the natural habitats and species that they are designated for. They are part of the wider Natura 2000 network of protected sites. Natural Heritage Areas (NHAs) are sites of national conservation importance for habitats and species.

SACs are areas given special protection to conserve natural habitats and wild fauna and flora. SPAs are to safeguard migratory birds and their habitats and certain bird species that are under threat. A number of these sites are located within the project study area.

Given their protection by European legislation, EirGrid must avoid any significant impact on the qualifying features of these designated sites. We therefore have identified these sites as primary constraints and every effort has been made to avoid directly crossing them with potential corridors.

However, due to the size and location of some of these EU designated sites – in particular river SACs – it has not been possible to avoid them entirely at this stage.

In addition to designated sites, we also need to be conscious of the potential for transmission lines to impact on protected bird species outside the boundaries of SACs and SPAs.

To address this, the project team is gathering information on the sites, the species for which they have been designated and how those species actually use the sites and interact with the surrounding environment e.g. feeding sites, nesting sites, flight paths.

This has included a review of existing literature, consultation with regional and local National Parks and Wildlife Service (NPWS) staff, BirdWatch Ireland and a large number of submissions from local organisations and members of the public.

Bird surveys have commenced and the project ornithologist is focusing on particularly sensitive areas. Information gathered during these surveys will feed into the process of identifying a least constrained corridor.

Once a least constrained corridor has been identified, targeted bird survey work will be developed with the NPWS and BirdWatch Ireland to gather data on bird populations wintering in these areas.

This will include surveys to address both the summer and winter bird populations and bird movements. This is to ensure that any potential impacts on bird populations can be accurately identified and mitigated if required.

Honey bees

A number of submissions highlighted particular concerns about the possible implications for honey bees with the construction of an overhead line.

It may be useful to consider a recent study which investigated the potential effects of EMF from transmission lines on native bees in three states in the United States (Russell et al., 2013).

In the study, there was no indication of any effect of EMF on bee abundance, diversity, larval development, or behaviour such as floral visitation and pollination success.

Effects on biodiversity in general and the wider natural and semi-natural environment outside of designated sites are also taken into account. Detailed assessments will be carried out as the project progresses.

Regardless of the final project parameters (be they either overhead line, an underground route or a combination of both), specialists in a range of areas, including ecology, landscape, electromagnetic fields (EMF) and noise, will undertake desk and field based assessments of proposals.

This will be done in line with current best practice and with reference to national and EU guidance on Environmental Impact Assessment (EIA).

Field surveys will continue to be undertaken to assist in confirming the final route and landowner discussions will be on-going throughout this stage.

It should be noted that while it may not be possible to avoid all such constraints, EirGrid will make every effort to minimise the impact of the project on all environmental constraints in line with technical and landowner considerations and best practice routing principles.

A planning application, including an Environmental Impact Statement (EIS), will be prepared for submission to An Bord Pleanála (ABP), which is not anticipated to take place before 2016.

Noise

Noise from energised overhead lines is produced by a phenomenon known as “corona discharge” (a limited electrical breakdown of the air). While conductors are designed and constructed to minimise corona, surface irregularities caused by damage, insects, raindrops or pollution can strengthen the electric field enough for corona discharges to occur.

In certain conditions this can be heard as a “crackling” sound, accompanied by a low frequency hum.

The noise level generated by a high-voltage overhead line is weather-related, with highest noise levels occurring during damp conditions. Overhead lines are normally quiet during dry weather, except during long, dry spells when airborne debris sticks to the conductors.

The next stage of the project includes the statutory assessment of the preliminary design for the Grid Link Project. Specialists in a range of areas, including noise, will undertake desk and field based assessments of proposals in line with current best practice and with reference to national and EU guidance on Environmental Impact Assessment (EIA).

EirGrid is commencing extended noise surveys to obtain an evidence-based understanding of noise from 400 kV transmission lines in a range of typical Irish weather conditions.

If the Grid Link Project proceeds as an overhead line EirGrid will aim to locate power lines a minimum distance of 50 metres from existing dwellings to the centre of the line. In the vast majority of cases it is anticipated that a far greater distance will be achieved. Where this is not possible, we will engage with the individual householder on a case-by-case basis.

Proximity to dwellings, schools and community facilities

Many people are concerned about the proximity of overhead lines to their homes, and also to schools, community facilities and healthcare centres.

EirGrid designs and operates the transmission network to the highest safety standards and complies with the most up to date international guidelines and recommendations.

With all buildings – whether schools, homes or hospitals – EirGrid will maximise the distance between transmission lines and buildings, although it must be understood that the routing of transmission lines must consider all environmental and other constraints in an area.

As noted above, EirGrid aims to locate overhead power lines a minimum distance of 50 metres from existing dwellings to the centre of the line. In the vast majority of cases a far greater distance is achieved.

Property values

Property development (primarily one-off houses in the countryside) has occurred in many areas in close proximity to existing electricity transmission infrastructure, including in proximity to the existing 400 kV high-voltage lines between Moneypoint power station, Co. Clare, and the receiving substations in the east of the country.

Such development has occurred subsequent to the construction and operation of these transmission lines, suggesting that there are other factors contributing to a decision to buy or build property in a particular location.

While there may be perceived short-term negative impacts (essentially during the planning and construction stages) the existence of transmission infrastructure by itself does not unduly influence property values. In fact, there are a multitude of factors that can affect property prices.

Such a conclusion is consistent with other international research on this subject carried out over a number of decades in relation to property values and potential devaluation as a result of the construction of transmission lines, which have typically failed to show any statistically significant negative impact on property values.

There is a statutory entitlement to compensation for directly affected landowners. While agreement regarding compensation is always sought by EirGrid with landowners, there is also a process of independent arbitration, should such agreement not be reached.

The statutory entitlement to compensation is considered to offer an appropriate mitigation to landowners in respect of the impact, if any, upon property arising from the development of strategic transmission infrastructure.

Community Gain

EirGrid's community gain scheme, announced on 28th January 2014, has been developed in response to the Government Policy Statement published in July 2012 which underlined the appropriateness of incorporating community gain considerations into major infrastructure projects.

These payments are being put in place to address concerns about the visual impact of pylons associated with overhead lines.

These two elements will be applied to all new overhead transmission line and new rural station projects that have been granted planning approval since July 2012.

In recognition of the visual impact of transmission infrastructure EirGrid is proposing a community gain mechanism with two elements:

Local Community Fund

- A fund to which EirGrid will contribute €40,000 per kilometre for communities in proximity to new 400 kV pylons and new rural stations.
- This fund will be put in place on completion of the line and it is envisaged that it will be administered on a ring-fenced basis by/with the local authority on behalf of local communities

Proximity Allowance

- A once-off payment to owners of occupied residential properties (or those with full planning permission) within 200 metres from the closest point of the property to the centre of the new 400 kV lines or within 200 metres from a new rural station.
- For 400 kV lines there would be a payment of €30,000 for residences at 50m and this would decrease (on a sliding scale) to €5,000 at 200m.
- EirGrid seeks to locate new lines and stations at least 50m for homes and in exceptional cases where this is not achievable, EirGrid will engage with the affected property owners on an individual basis.

Planning Process

EirGrid does not intend to submit a planning application under the Planning and Development Acts to An Bord Pleanála before 2016.

It is expected that the Grid Link Project will be confirmed to be strategic infrastructure development under the Planning and Development Acts. As such, an application for statutory consent to construct the project is made directly to An Bord Pleanála.

Local planning authorities, through which functional areas the project might pass, would be statutory consultees in the statutory consent process. Further, local authorities are, and will continue to be, consulted extensively throughout the planning and development of this critical strategic infrastructure project.

On making any application to An Bord Pleanála for statutory consent for strategic infrastructure development, statutory consultation will form part of the consent process. Members of the public will have the opportunity to make formal submissions directly to An Bord Pleanála at that point.

Future Planning Applications

Concerns have been expressed about the potential for an overhead line, should the project proceed in that manner, to impact on future planning applications by individuals living in the vicinity of the route.

In due course, EirGrid will confirm what it considers to be the least constrained corridor from all of the available options following an evaluation of technical, environmental and social criteria.

Once the least constrained corridor is confirmed, EirGrid will begin the process of seeking an indicative line route within that route corridor. This process will include monitoring of planning applications within the least constrained corridor.

Information relating to applications which are granted planning permission will inform the line design process, with a focus where possible on avoiding sites that have planning permission.

This process will continue in parallel to the identification of an underground route for the Grid Link Project, as outlined above.

EirGrid does not intervene in the planning process and if planning permission is granted for applications in close proximity to the final line route, EirGrid will engage with the successful applicant to jointly determine the most appropriate course of action.

However, it should be noted that all these stages towards the identification of a line route will include public consultation, and so there will be a number of opportunities to keep EirGrid aware of the progress of any planning applications you may make, and/or your concerns to protect key development sites as EirGrid progresses from route corridor identification to identification of a line route.

How to contact the Grid Link Project

Email: gridlink@eirgrid.com Phone: 1890 422 122

Write: The Grid Link Project Manager, EirGrid, P.O. Box 100, Ballincollig, Co. Cork.

Website: www.eirgridprojects.com/projects/gridlink

Or

Visit: One of our information centres:

Information Centre	Opening Hours	Address
EirGrid Information Centre, Midleton	Mondays, 12 noon to 6pm	Unit 5 Market Green Shopping Centre (near the Dental Clinic), Midleton, Co. Cork
EirGrid Information Centre, Kilcullen	Mondays, 12 noon to 6pm	Market Square, Kilcullen, Co. Kildare
EirGrid Information Centre, Carrick-on-Suir	Tuesdays, 12 noon to 6pm	Carrick Community Business Centre, at the Nano Nagle Centre, Carrick-on-Suir, Co. Tipperary
EirGrid Information Centre, New Ross	Wednesdays, 12 noon to 6pm	The Coach House, Marsh Lane, New Ross, Co. Wexford
EirGrid Information Centre, Carlow	Thursdays, 12 noon to 6pm	Enterprise House, O'Brien Road, Carlow, Co. Carlow

*please note: project information centres are closed on bank holidays.