

North/South Electricity Interconnector **Frequently Asked Questions**

Why is another electricity interconnector required?

- *To allow the new all-island wholesale electricity market to work efficiently, encouraging competition in electricity supply thereby offering consumers choice and competitive prices.*
- *To allow more renewable generator capacity (mostly wind generation) to be connected to the electricity network. The Governments in both jurisdictions have set challenging targets for the amount of electricity to be generated from renewable sources.*
- *To increase the security of supplies to electricity consumers throughout the island of Ireland. Security of electricity supply is critical to a modern developed economy.*

A full Statement of Need will be included within the Environmental Impact Assessment that will accompany our application for Planning Permission.

What are the repercussions if the interconnector is not constructed ?

- *The targets for renewable energy use, set by Governments in both jurisdictions, are less likely to be met.*
- *The all-island wholesale electricity market will not work as effectively for the benefit of consumers.*
- *There will be a greater risk of blackouts in the event of faults at power stations or on existing interconnectors.*

Why doesn't NIE put the line underground?

There are a number of reasons why under-grounding is not a straightforward alternative to overhead lines. Some of these are technical reasons and some are to do with land use but the main reason is cost.

Cost

There are many comparisons quoted around the world and the cost of undergrounding will depend on a variety of factors including the voltage, the length and type of cable and the nature of the route and the type of ground conditions. It is possible that underground cables at this voltage level could be at least 10 times more expensive to install and commission than the equivalent overhead line.

This high cost is because of:

- *The cost of the cable itself*

- *The cost of excavation, cable laying and land reinstatement*
- *The cost of all of the jointing required, including terminals*
- *The cost of additional substations*
- *The cost of overcoming the technical issues associated with using underground cable*

NIE has proposed an overhead line as the most cost effective solution that complies fully with legislation and current guidelines. If the interconnector line was laid underground the additional cost of doing so would ultimately be paid for by electricity consumers through higher bills. In some circumstances undergrounding is appropriate for environmental reasons but as the proposed route for the Tyrone to Cavan interconnector doesn't pass through any areas officially designated as Areas of Outstanding Natural Beauty or Areas of Special Scientific Interest there are no specific environmental reasons why undergrounding is required.

Environmental Impact of underground cables:

Cables laid under agricultural land or cross-country impact on the environment.

A large swathe of land would be affected at the construction stage.

There would also be restricted land use in a corridor close to the cable. No building would be possible and planting restricted to shallow root systems so as not to interfere with the cable.

The large size of the towers required where cables enter the ground and additional sub stations required along the route must also be considered.

Maintenance and Repair:

The type of construction used for overhead tower lines is very robust and resistant to the impact of weather. If faults occur on overhead lines they are usually easy to find and quick to repair.

Faults on underground cable systems of the type required would generally be much more difficult to locate, and would take longer and be more expensive to repair due to the requirement to excavate and reinstate the ground. Access to the land for heavy excavation machinery would be required on an ongoing basis.

Is NIE rejecting any notion of undergrounding?

The Environmental Impact Assessment, which will accompany our application for Planning Permission, will consider undergrounding options.

Do we have to pay for undergrounding?

The additional cost of undergrounding would have to be borne by all consumers in Northern Ireland and would result in higher electricity bills.

What about the impact of the interconnector on the environment ?

NIE is currently undertaking an Environmental Impact Assessment (EIA). This is an essential requirement of planning law and must accompany any major planning application for both public and private developments. The EIA will be available for inspection by the public.

How high would the towers be?

They would be much shorter and more discreet than existing towers. An international overhead line design company has been commissioned to develop a design that will minimise the impact on the locality. The towers, on average, would be around 25 – 35 metres high. Conventional towers are on average 33% to 50% taller.

How do you select a route?

NIE follows a process in establishing a route. Initially a desktop study is carried out to establish a broad corridor identifying geographic and physical features such as built heritage, settlements, areas of special scientific interest and monuments. “Ribbon” development in the countryside and road crossings are also very significant considerations in defining the route.

This corridor is further refined by site investigations, drive-through surveys, and discussions with landowners and the Planning Authority as to future planned development.

Why a line from Tyrone to Cavan?

NIE and EirGrid believe this to be the best solution. The reasons for this include -

- *It has geographic separation (15km – 20km) from the existing Tandragee-Louth Interconnector, which is necessary for reasons of system security.*
- *Strategically, the location fits practically within the North-South network development plans.*

- *The length of the overhead line will be kept as short as possible.*

Where is the substation? How big is it?

The proposed substation, which is required for the Northern Ireland section of the interconnector, is to be located North of Moy in the townland of Turleenan and will occupy approximately 8.5 acres.

Who pays for the project?

Up to 50% funding of the design phase is being provided by European Union Trans-European Networks for Energy. The remainder of the design cost will be funded by NIE and is ultimately paid for by electricity consumers.

By far the biggest cost associated with the interconnector will be the construction cost. There is unlikely to be any grant aid from Europe for this phase so again electricity consumers will fund the cost.

Which jurisdiction will benefit more, North or South?

Benefits of the finished project for all electricity consumers in the island of Ireland include increased security of electricity supply, more support for the development and distribution of renewable energy and a greater scope for keeping prices down through being part of a larger, more competitive electricity market. It will enable more wind farm development than would otherwise be possible and enable local generators to sell into a larger market.

Will people living in the vicinity of the interconnector benefit from this project?

People living in the vicinity of the interconnector, like everyone else, will benefit from advantages of a more competitive electricity market, more secure supplies and the opportunity for increased levels of electricity from renewable generation.

It is also anticipated that construction firms will require local labour and services during the construction phase.

Why do you move the line to suit some landowners and not others?

The line route has been planned to take into account proposed development that landowners made us aware of. We are aiming to keep the line at least 60m, from all existing permanent dwellings and those for

which an application has been made for planning permission at the time of the route being finalised.

How much will landowners get paid?

Landowners will receive compensation as appropriate to the rights granted to NIE in respect of their land and reflecting the activities of NIE on their land.

What about health issues such as electric and magnetic fields?

EMFs (electric and magnetic fields) are a naturally occurring phenomenon. There is no proven link between EMF's and any illness, something confirmed in a recently issued World Health Organisation (WHO) report.

There is now a considerable body of research into electric and magnetic fields around electricity lines. Over £300m has been spent worldwide, over a period of 25 years, investigating the subject. Press coverage sometimes focuses on the more extreme aspects of the ongoing research leading to unjustified concerns.

The new interconnector will be designed to comply fully with Government policy and guidelines. A full section on EMFs will be included in the Environmental Impact Assessment with our application for Planning Permission.

The greatest sources of EMFs that most householders are exposed to are domestic appliances and the electric wiring in their homes.

How are you going to deal with landowners who have submitted planning applications?

During the consultation process we will talk with landowners in order to understand existing and proposed land use. We have taken into account planning applications that we were aware of when developing the proposed route.

How widely are you consulting?

We are keen to consult with all interested parties. We are contacting everyone living within a one-kilometre radius of the proposed route to give them the opportunity to discuss the project directly with NIE representatives.

Why did you not consult earlier?

Once a viable route corridor had been identified NIE started to carry out consultation with landowners to enable a detailed preferred route to be developed. Only since then has it been possible to provide detailed information during public consultation.

The programme of public consultation is planned to stretch through September and October 2007.

What happens if, assuming planning permission is granted, a landowner doesn't agree to have equipment sited on his land?

NIE will take all reasonable steps to reach an amicable settlement with landowners. However if a landowner continues to refuse permission NIE will reluctantly refer the matter to DETI for their consideration of a compulsory wayleave.

At what stage is the process now?

The project is still at an early stage, the final preferred route has now been identified and the consultation process is underway. Once this consultation is complete a Planning Application will be submitted.

Who is going to build the line?

A decision on who actually constructs the line will not be taken until a full design is completed and planning permission is granted. As of yet contractors have not been selected.

What about land damage and disruption?

Land damage or disruption will be compensated. Every effort will be made to ensure disruption is kept to a minimum; however, it may not be avoidable in all cases. The Environmental Impact Assessment will take this into account.

At what voltage is the line transmitting electricity? Is there similar in Ireland/Great Britain/Rest of World?

The line will be transmitting electricity at 400kV (400,000 volts). 400kV lines exist currently in the Republic of Ireland. This is the first of its kind in Northern Ireland though much of the network has been designed to allow 400kV operation if customer demand makes that necessary. 400kV lines

are common in GB and lines of much higher voltages (in some cases over 1500 kV) are in operation elsewhere throughout the world.

Why does it need to be 400kV?

- *The proposed line will be of single circuit design as opposed to a larger, more traditional double circuit line.*
- *Because the proposed line is single circuit the towers are smaller and will have less environmental impact*
- *To compensate for this the power needs to be transmitted at 400kV to achieve a similar transfer capacity to a larger double circuit tower line.*
- *A 400kV circuit fits with existing network development programmes in the island of Ireland.*

Why not upgrade the existing interconnector? At what voltage level is electricity transmitted on the existing interconnector?

It is not possible to upgrade the existing interconnector, as this does not address the risk of losing both circuits at the same time, e.g. through lightning strike or fault, with the major consequences of widespread blackouts.

The existing interconnector currently operates at 275kV but is designed so that it could operate at 400kV. It uses larger towers (double circuit) than those proposed for the Tyrone to Cavan interconnector.

The information herein is correct as at 1st September 2007. It has been issued by NIE as part of the consultation process with interested parties.