



Le réseau  
de transport  
d'électricité



The current. The future.

# Celtic Interconnector

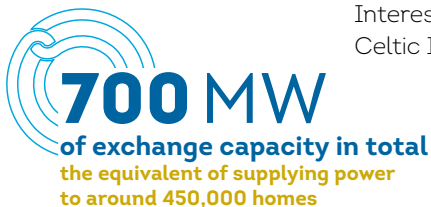
Connecting the electricity  
grids of Ireland and France



Co-financed by the Connecting Europe  
Facility of the European Union

# Celtic Interconnector

## Connecting the electricity grids of Ireland and France



The Celtic Interconnector project aims to create an electrical interconnection between Ireland and France to allow the exchange of electricity between the two countries. It is being developed by EirGrid, the electricity transmission system operator in Ireland and its French counterpart, Réseau de Transport d'Électricité.

The connection will link the existing electricity substation located in Knockraha (in East Cork, Ireland) to the substation in La Martyre (Finistère). Recognised as a Project of Common Interest (PCI) by the European Union, the Celtic Interconnector project responds

to European challenges regarding energy transition and addresses climate change by facilitating progress towards a low-carbon electricity mix. It will contribute to a more secure and a more sustainable electricity supply and will place downward pressure on electricity prices.

## The benefits of the project



### To facilitate the movement of electricity flows on a European scale

By facilitating electricity flows throughout Ireland, France and continental Europe, the Celtic Interconnector will enable European consumers to benefit from a more open electricity market.



### To strengthen the security of supply between countries

The Celtic Interconnector will strengthen the security of electricity supply between the two countries enabling them to rely on one another in the case of unexpected events and interruptions to supply (technical incidents, spikes in consumption...).



### To support the development of a more sustainable electricity mix in Ireland and France

The Celtic Interconnector will contribute to the European objectives of a low-carbon energy future, facilitating increased levels of renewables being integrated into the European electricity system. On a wider level, the project is part of plans for a European wide electricity network and will enable Ireland to benefit directly from the integrated European electricity market.

# A subsea electricity link across the Celtic Sea

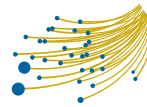
The Celtic Interconnector consists of a proposed 575 km long high voltage direct current (HVDC) connection between the electrical networks of Ireland (East Cork) and France (Brittany).



## 1 Connection to the Irish electricity network

The interconnector will be connected to the 220kV electrical substation in Knockraha, located in East Cork, Ireland. Onshore infrastructure associated with the interconnector will include a 220kV alternating current (AC) underground connection between the existing Knockraha substation and a new converter station and an underground direct current (DC) connection between the converter station and a landfall point on the Irish coast, where it will meet the subsea connection. The 30 to 40 km long underground connections would be primarily installed beneath the existing road network.

### Did you know?

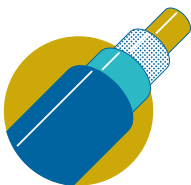


An additional benefit of the Celtic Interconnector will be the provision of a direct telecommunications link between Ireland and France (and continental Europe).

## 2 The subsea connection

Approximately 500 km long, the subsea connection will link the coast of Cork and the Ceinture Dorée (Gold Belt) coast in Brittany, passing to the west of the Isles of Scilly. Preliminary studies and detailed physical marine surveys have enabled the identification of a preferred route for the cable which avoids the most challenging areas and consequently minimises the environmental impact and any disruption to maritime users. The electrical cable will be either buried beneath the seabed or laid on the seabed and covered for protection.

### Did you know?



The subsea cable will not be visible at the landfall point. The underground cable will connect to the subsea cable by way of an underground transition joint and the landfall point will be fully re-instated following the completion of the works.

## 3 Connection to the French electricity network

The subsea cable from Ireland and the underground cable in France will meet on the east Ceinture Dorée coast. Onshore infrastructure associated with the interconnector will include an underground direct current connection between the French coast and the converter station and a 400kV alternating current underground connection to the La Martyre substation. The length of the underground connections will be approximately 40 km.

## Environmental considerations

EirGrid and Réseau de Transport d'Électricité are committed to protecting and respecting communities and the environment affected by the interconnector in each country. They are also committed to preserving the natural environment and have appointed specialist firms to carry out specific environmental analyses, including ecological assessments, for the future connection and the converter stations. EirGrid and Réseau de Transport d'Électricité are working with local stakeholders and associations to carry out these environmental studies which will provide clarification on the project and assist with the development of a specific route while protecting the flora and fauna and any areas of environmental concern. The environmental studies carried out will inform an Environmental Impact Assessment of the project. Measures will be taken to avoid, prevent, reduce, and if possible offset significant adverse effects on the environment. Potential impacts in both terrestrial and marine environments include habitat loss and/or deterioration, water pollution, instream works, and disturbance or displacement of protected species. Mitigation options potentially include timing of works (e.g. to avoid sensitive seasons) sequencing of works (e.g. to implement mitigation first), and use of sensitive construction practices. In both terrestrial and marine environments, monitoring of construction will inform adaptive management of mitigation (e.g. to resolve mitigation conflicts, or to avail of new technologies).

## 4 The converter stations

To enable the routing of electricity to consumers, the connection to the AC electricity transmission system in Ireland and in France requires the construction of a converter station in each country. Each converter station requires a surface area of approximately 4 hectares, including a building which will measure up to 20-25 metres in height extending over approximately 0.5 ha. Public consultation and environmental studies will be an important consideration in the identification of a best performing option for the converter station and the AC connection, while taking account of environmental concerns.



Example of a converter station

# Celtic Interconnector

## A European Project of Common Interest

### Project Timeline

2014/ 2016	Feasibility Phase
2017/ 2018	Initial Design & Pre-Consultation Phase
2019/ 2021	Detailed Design and Consents Phase
2022/ 2026	Construction Phase

### National Grid Development Plans

At a European level, the Celtic Interconnector features in the Ten Year Network Development Plan (TYNDP) produced by ENTSO-E (European Network of Transmission System Operators for Electricity) since 2012. In Ireland, the project is a part of the EirGrid Transmission Development Plan (TDP), the plan for the development of the Irish transmission network and interconnection over ten years, most recently from 2018 to 2027. In France, the project is also included in the Schéma Décennal de Développement du Réseau (SDDR), the Ten-Year Electricity Grid Development Plan drawn up on a regular basis by Réseau de Transport d'Électricité since 2013.

### To learn more

#### EirGrid Transmission Development Plan:

[www.eirgridgroup.com/site-files/library/EirGrid/Transmission-Development-Plan-2018-2027.pdf](http://www.eirgridgroup.com/site-files/library/EirGrid/Transmission-Development-Plan-2018-2027.pdf)

#### Ten Year Network Development Plan (Réseau de Transport d'Électricité):

[www.rte-france.com/en/article/ten-year-network-development-plan](http://www.rte-france.com/en/article/ten-year-network-development-plan)

#### Public Information (European Commission):

[ec.europa.eu/info/about-european-commission/service-standards-and-principles/transparency\\_en](http://ec.europa.eu/info/about-european-commission/service-standards-and-principles/transparency_en)

#### PCI Manual of Permit Granting Process Procedures (An Bord Pleanála):

[www.pleanala.ie/PCI/PCIManual.htm](http://www.pleanala.ie/PCI/PCIManual.htm)

#### TYNDP 2018 - European Ten Year Network Development Plan (ENTSO-E):

[tyndp.entsoe.eu](http://tyndp.entsoe.eu)

### Alternatives Considered

A range of assessments have been carried out to date on the project. In Ireland two separate connection points were considered for the project, at Knockraha in East Cork and at Great Island in West Wexford. Six separate marine route corridors were also considered during the feasibility phase of the project. EirGrid confirmed in 2018 that the best performing location for the project to connect in Ireland was in East Cork and that the best performing marine route ran from Cork to Brittany and avoids UK territorial waters.

### Working towards a carbon-free Europe (by 2030)

- Each country must have an electrical interconnection capacity of at least **15%** of its installed generation capacity
- **40%** reduction in greenhouse gas emissions compared to 1990 levels
- A renewable energy target of at least **27%** of final energy consumption by 2030
- Achieve targets for an improvement in energy efficiency at EU level of at least **27%** (rising to **30%**)

### A Project of Common Interest

The European Union recognised the Celtic Interconnector as a Project of Common Interest (PCI) for the Northern Seas Offshore Grid (NSCOG) priority corridor in October 2013. This was reconfirmed in November 2017. The Celtic Interconnector project is seen as a key contributor to the European Energy Transition for Ireland, France and Europe.

# Working together to build the network of tomorrow

## Let us hear your views

EirGrid and Réseau de Transport d'Électricité are both examining the project in accordance with their national procedures. Moreover, as the Celtic Interconnector has been identified as a Project of Common Interest (PCI), both promoters will ensure provision of information to and participation of the public, in accordance with European requirements.

## EirGrid's Six Step Process for developing projects in Ireland

Many people might not take an active interest in a project at the start of the development process. However, it is important that we gather stakeholder views before this point.

We want stakeholders to know how and why we plan our projects, so we can receive feedback as early as possible.

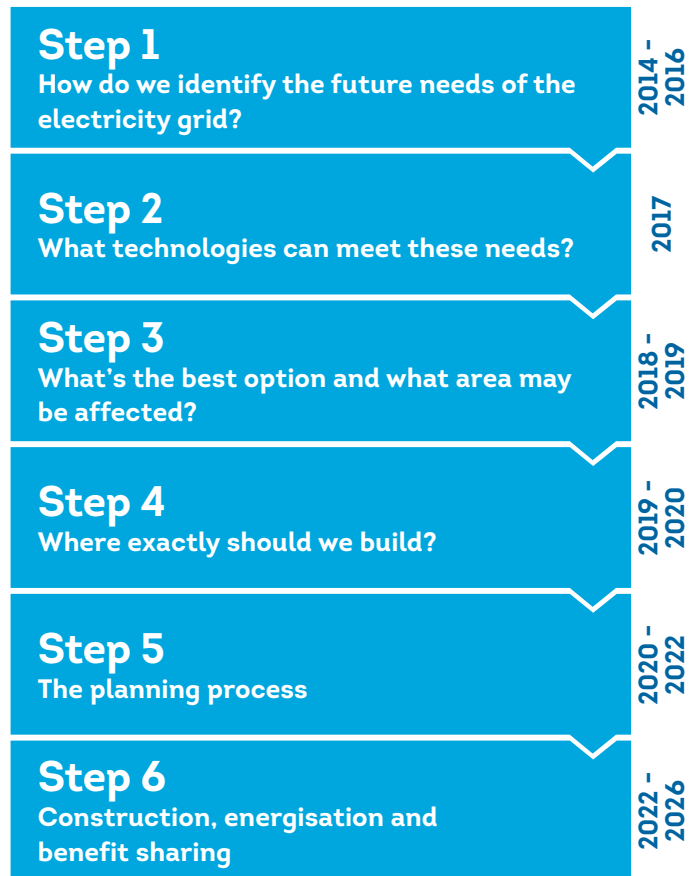
Designing an electricity transmission project can be a complex and lengthy process.

Because of this, we use a consistent project planning process to explore options and make decisions. This means we follow the same steps for every project.

The decision-making tools we use, and the amount of engagement we carry out at each step, depends on the scale and complexity of each project.

## What is happening now in Ireland?

At EirGrid we follow a step by step approach to planning the grid. This approach facilitates engagement and consultation with our stakeholders and the public which helps us to explore options fully and make more informed decisions.



## For further information

**On the project and its development:**  
[www.celticinterconnector.eu](http://www.celticinterconnector.eu)

**EirGrid project website:**

[www.eirgridgroup.com/the-grid/projects/celtic-interconnector](http://www.eirgridgroup.com/the-grid/projects/celtic-interconnector)

**Réseau de Transport d'Électricité project website:**

[www.rte-france.com/celtic-interconnector](http://www.rte-france.com/celtic-interconnector)

**PCI Procedures Manual (French):**

[www.ecologique-solidaire.gouv.fr/interconnexions-electriques-manuel-des-procedures](http://www.ecologique-solidaire.gouv.fr/interconnexions-electriques-manuel-des-procedures)

**PCI Procedures Manual (English):**

[www.pleanala.ie/PCI/PCIManual.htm](http://www.pleanala.ie/PCI/PCIManual.htm)

## The project teams

### EirGrid

**Gary Nolan**, Project Manager Ireland  
**Eoghan Tuite**, Consultation Process Manager Ireland

[celticinterconnector@EirGrid.com](mailto:celticinterconnector@EirGrid.com)

### Réseau de Transport d'Électricité

**Eric Thébault**, Project Manager France  
**Gaëlle Chevreau**, Consultation Process Manager France

[rte-celtic-interconnector@rte-france.com](mailto:rte-celtic-interconnector@rte-france.com)