...strengthening the interconnection between Spain and France

An interconnected European energy network is vital for European energy security and competitiveness, as well as for achieving the decarbonization and climate change targets to which the EU is committed, under the European Green Deal. An interconnected network will also achieve the EU’s energy goals, guaranteeing affordable and sustainable energy compatible with growth and employment throughout the European Union. The interconnection of the energy system is thus key to working towards the climate neutrality target for 2050.

To achieve these goals, the European institutions are promoting and politically supporting the development of interconnections between the Iberian Peninsula and the rest of the EU. Hence, for the first time, the European Council meeting in Barcelona in March 2002 approved the goal for Member States to reach a level of electricity interconnection of at least 10% of installed generation capacity by 2020. Subsequently, the Madrid Declaration was signed at the France–Portugal–Spain summit on 3 March 2005, highlighting the importance of mobilising all necessary efforts to achieve the minimum electricity interconnection target of 10% by 2020 and increase it in subsequent years.

Cornerstones of the European Union energy policy

Develop a fully operational and interconnected European energy system to enable energy diversification and guarantee security of supply.

Promote the integration of renewable energies that contribute to reducing energy dependency.

Reduce greenhouse gas emissions by at least 40% compared to 1990 levels, by 2030.

Economic benefits for the electricity system

Larger-scale generation of renewable energy.

Increased integration of renewable systems.

Increased integration of reasonable energy systems.

Economic benefits for the electricity system

An interconnected network ensures that renewable energy generation can be supplied to the power grid on an hourly basis, compared to the current system where production is limited to peak demand periods.

Increased Integration of reasonable energy systems

A ring around Europe will improve the security of supply.

Electricity interconnection France-Spain across the Biscay Gulf

This project, the Biscay Gulf link, will enable an interconnection of 5000 MW, connecting the Basque Country and the French Pyrenees. It will secure the electricity supply of both countries.

PUBLIC PARTICIPATION

Each State will monitor and authorise the project based on its own procedures for electricity infrastructure projects. They will consult on each country's existing capacity, by 2020, to ensure public participation and public access to information in accordance with European requirements for the development of energy projects. For this purpose, a French-Spanish agreement on a process of consultation at the national level must be established for the project, public meetings and a specific organisational committee of guarantors of the consultation of opinions and respecting any type of consultation. During the public consultation and information phases, a number of rules will be prepared and the most suitable will be for the purpose of guaranteeing the hue energy interconnection project. This will involve the population's approval in the various stages to further the shown and technical specifications of the project.

The project leaders

INELFE is a simplified joint-stock company with shares held equally by Red Eléctrica de España and the public transmission grid manager in Spain, Red Eléctrica de España, Renova de Transport d’Electricitat d’Espanya (Renova) in Catalonia to develop and maintain interconnection links between the two countries in order to increase the electric inter-exchange capacity between the Basque Peninsula and the rest of Europe.

Public information leaflet

August 2020

www.inelfe.eu

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The new electricity interconnection across the Biscay Gulf...

The interconnection consists of four cables, two per link. This submarine and underground direct current dual connection will be 400 km in length, running between the Cubnezais substation (near Bordeaux, France) and the Gatika substation (near Bilbao, Spain).

It will have two converter stations - one at each end of the two links - that will convert the direct current to alternating current for connection to the electricity transmission grid of each country.

A dual submarine connection

**The connection to the Spanish electricity grid**

The interconnection will be connected to the Spanish substation, located to the north-west of Bilbao and 13 km from the town of Bizkaia. It will consist of installing underground cables between the futuro Futura converter stations, which will be built alongside the existing substation electricity substation in order to satisfy the trias trias area, where the ground connection will be made.

In accordance with the Spanish procedure, a Environmental Impact Assessment will be presented. This will include regional and environmental aspects, the various alternatives for the stations, the location and construction of the chosen project (assessment of least impact) and the analysis of the impacts and measures, as well as an environmental monitoring plan.

**The connection to the French electricity grid**

The link will connect to the Cubnezais electricity substation located near Bordeaux (near Bordeaux, France) and the Gatika converter station (near Bordeaux, France). It will have two submarine links - that will be 130 km in length, running between the French Médoc coast, except for a short section in France (near Bordeaux, Aquitaine), to the Médoc region to connect to the Cobベンテ因er station. Its entirely underground route will respect the environment and human activity by using pre-existing infrastructure and the network of forest lands.

The station to the ocean will take place via a directed drilling under the dune. On the one hand, this will enable natural wealth to be preserved and, on the other hand, confidentiality of the structure to be guaranteed.

**Converter stations**

Each converter station will be located far from the shore and will consist of one underground section. A similar, albeit slightly larger, device will be connected via a junction chamber. A similar, albeit slightly larger, device will be connected via a junction chamber.

**Transmission capacity**

2 X 1000 MW

**Length of the interconnection**

400 km

**Increase exchange capacity up to 5000 MW**

**KEY FIGURES**

- **4 cables (2 per link)**
- **5000 MW**
- **400 km**
- **2 X 1000 MW**
- **BILBAO**
- **GATIKA converter station**
- **CUBNEZAIS electricity substation**
- **Bordeaux**

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**Converter stations**

The converter stations will be located near to the town of Bizkaia and will be approximately 20 m high.

**Submarine cable laying**

Each cable will be placed on the seabed with the help of a cable-laying ship. Once work is completed, they will be covered over to hide them from sight.

**The submarine cable**

The submarine cable will be laid on the seabed with the help of a cable-laying ship. Once work is completed, they will be covered over to hide them from sight.

**The underground cable**

The underground cable will be laid on the seabed with the help of a cable-laying ship. Once work is completed, they will be covered over to hide them from sight.

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**ELECTRICITY GRID TO THE SPANISH COUNTRY**

**THE CONNECTION**

- **The links will be mainly underwater, with lengths of approximately 30 km from the marine basin to Spain, and 300 km to the north of Bordeaux.**

**THE INTERCONNECTION**

- **The connection will be connected to the Spanish substation, located to the north-west of Bilbao and 13 km from the town of Bizkaia.**

**CONVERTER STATIONS**

- **Each converter station will be located far from the shore and will consist of one underground section.**

**SUBMARINE CABLES**

- **The submarine cable will be laid on the seabed with the help of a cable-laying ship. Once work is completed, they will be covered over to hide them from sight.**

**UNDERGROUND CABLES**

- **The underground cable will be laid on the seabed with the help of a cable-laying ship. Once work is completed, they will be covered over to hide them from sight.**

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**KEY FIGURES**

- **Increase exchange capacity up to 5000 MW**
- **4 cables (2 per link)**
- **5000 MW**
- **400 km**
- **2 X 1000 MW**

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**Converter stations**

The converter stations will be located far from the shore and will consist of one underground section. A similar, albeit slightly larger, device will be connected via a junction chamber.

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An inter-connected European energy network is vital for European energy security and competitiveness, as well as for achieving the decarbonisation and climate change targets to which the EU is committed, notably under the European Green Deal. An inter-connected network will help achieve the EU’s energy goals, guaranteeing affordable, safe and sustainable energy solutions compatible with growth and wellbeing throughout the European Union thanks to the decarbonisation of the energy sector aimed at working towards the climate neutrality target for 2050.

To achieve these goals, the European institutions are promoting and publicly supporting the development of interconnections between the Basque Peninsula and the rest of the EU. Hence, for the first time, the European Council meeting in Brussels in March 2020 approved the goal for Member States to reach a level of electricity interconnection of at least 10% of total installed generation capacity, by 2050. Subsequently, the Madrid Declaration was signed at the Barcelona EU Energy Council on 3 March 2020 highlighting the importance of mobilising all necessary efforts to achieve the minimum electricity interconnection target of 10% by 2020 and increase it in subsequent years.

Cornerstone of the European Union energy policy

Develop a fully operational and interconnected European energy system to enable energy diversification and guarantee security of supply.

Promote the integration of renewable energies that will ensure the security of supply.

Reduce greenhouse gas emissions by 80 to 95% compared to 1990 levels.

Cornerstones of the European Union energy policy

Energy goal: guarantee affordable, safe and sustainable energy for all.

1. National Grid

2. Electricity Transmission Platform (EN)

3. Projects of common interest (PCI)

4. Electricity interconnection project France-Spain

A project of European interest to be built together

This project focuses on achieving the goals of the EU’s transition towards green energy. For this reason, on 16 October 2010, this project was designated by the European Commission and the European Parliament as a Project of Common Interest (PCI) within the framework of the European regulations on Trans-European energy infrastructure (407/2010).

Public participation

Each State will analyse and authorise the project based on its own procedures for electricity infrastructure. This will mean considering the network capacity and the energy infrastructure (347/2013). Each State will also interact with other neighbouring countries as required by the European Parliament as a ‘Project of Community Interest’ (PCI) within the framework of the European regulations on Trans-European energy infrastructure (407/2010).

The Biscay Gulf link will enable an interconnection capacity of 5000 MW, consistent with the energy 2050 goals.

The energy mix and periods of peak demand are different across the Biscay Gulf.

The energy mix and periods of peak demand are different across the Biscay Gulf. By using surplus capacity, the electricity generation can be maximised given that integrating safely is critical.

INELFE is a simplified joint-stock company with shares equally held by Red Eléctrica de España (the public process manager) and its French counterpart, Réseau de Transport d’Electricité. Its mission is to build and maintain interconnections between the two countries in order to increase the inter-regional exchange capacity between the Basque Peninsula and the rest of Europe.

Public information leaflet

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Energy interconnection France-Spain across the Biscay Gulf

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The new electricity interconnection across the Biscay Gulf...

The interconnection consists of four cables, two per link. This submarine and underground direct current dual connection will be 400 km in length, running between the Cubnesais substation (near Bordeaux, France) and the Gatika substation (near Bilbao, Spain).

It will have two converter stations - one at each end of the two links - that will convert the direct current to alternating current for connection to the electricity transmission grid of each country.

A dual submarine connection

**THE CONNECTION TO THE SPANISH ELECTRICITY GRID**

The interconnection will be connected to the Cubnesais substation, located to the north-west of Bilbao and 80 km from the coast. It will run in two parallel sections of direct current, each with a capacity of 500 MW, which will be installed underground cables between the future Cubnezais converter station, which will be built alongside the existing Cubnezais electricity substation, and the Cubnezais area, where the ground-level connection will be made.

In accordance with the Spanish procedure, a monitoring plan will be presented. This will include regional and environmental diagnostics, the various alternatives for the stations, the location and characteristics of the chosen project (assessment of least impact), and an analysis of the impacts and proposals in terms of preventive and corrective measures, as well as an environmental monitoring plan.

**THE CONNECTION TO THE FRENCH ELECTRICITY GRID**

The link will connect to the French electricity substation located to the north of Bordeaux. Hence, the underground section will run from the right bank of the River Dordogne, passing beneath the Capbreton canyon, the Marine region to the Capbreton beach, after passing over the submarine Capbreton canyon.

The choice of route and placement of the cables on the sea floor will minimise the impact on maritime activities, especially fishing.

**KEY FIGURES**

- Increase exchange capacity up to 5000 MW
- 4 cables (2 per link)
- 400 km Length of the interconnection
- Transmission capacity 2 x 1000 MW

**CONVERTER STATIONS**

The connection will link two alternating current systems via a submarine direct current line at each end of the connection.

The direct current into alternating current is converted at the direct current into alternating current for connection to the transmission grids of Spain and France.

**THE SUBMARINE CABLE**

Each cable will be placed on the sea bed with the help of a cable-laying ship. Generally speaking, the cables will be buried for protection under the sea floor. Once work is completed, they will be covered over to hide them from view.

**The submarine cable laying**

- Ø 20 cm Copper or aluminium conductor
- Ø 10 cm Steel, aluminium
- Ø 10 cm Glass protection casing

**The underground cable**

- Ø 20 cm Copper or aluminium conductor
- Ø 10 cm Steel, aluminium
- Ø 10 cm Glass protection casing

**Converter stations**

The converter stations cover an area of approximately 3.5 ha and will be approximately 20 m high.

- Ground-based connection
- Junctions
- Converter station CUBNEZAIS (near Bordeaux, France)
- Converter station GATIKA (near Bilbao, Spain)

**Ground-based connection**

- Ø 20 cm Copper or aluminium conductor
- Ø 10 cm Steel, aluminium
- Ø 10 cm Glass protection casing

**Junctions**

The underground cables will be installed in sections of approximately 400 m, each connected as a junction chamber. A similar, albeit slightly larger, device will be used to connect the submarine cables to the underground cables. These devices will eventually be covered over using protective elements so that they will not be visible, leaving them totally hidden from view.

**Submarine cable laying**

- Ø 20 cm Copper or aluminium conductor
- Ø 10 cm Steel, aluminium
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...strengthening the interconnection between Spain and France

An inter-connected European energy network is vital for European energy security and competitiveness, as well as for achieving the decarbonisation and climate change targets to which the EU is committed, agreed under the European Green Deal. An inter-connected network will help achieve the EU's Energy goal: guarantee affordable, safe and sustainable electricity compatible with growth and employment throughout the European Union. Hence, for the first time, the European Council in the framework of the energy infrastructure (347/2013) on the lines that is not needed by its own countries.

Correspondences of the European Union energy policy

Develop a fully operational and interconnected Energy Union to enable energy diversification and guarantee security of supply.

Promote the integration of renewable energies that allow the expansion of nuclear capacity and reduce greenhouse gas emissions, and thus meeting the decarbonization objectives.

Reduce greenhouse gas emissions by 80% compared to 1990 levels.

Advantages

Improved security of supply and guarantee of energy diversity

The more meshed and interconnected the electricity networks are, the more stable they are. Interconnections are the more meshed and interconnected systems are, the more stable supply guarantee.

Increased efficiency of the electricity system

Improved security of supply and guarantee of energy diversity

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Enhanced security of supply and guarantee of energy diversity

The more meshed and interconnected the electricity networks are, the more stable they are. Interconnections are the more meshed and interconnected systems are, the more stable supply guarantee.

A project of European interest to be built together

This project presents a challenge for Romania, Spain and Europe in the achievement of their goals towards energy transition. For this reason, on 16 October 2013, this project was designated as an Energy Infrastructure Project of Common Interest within the framework of the Energy infrastructure (347/2013). These actions can be undertaken in a variety of ways but should at least guarantee public participation and public access to information in accordance with European requirements for Projects of Common Interest. Hence, the importance of mobilising all necessary efforts to achieve the minimum electricity interconnection target of 10% by 2020, and increase it in subsequent years.

To achieve these goals, the European institutions are promoting and politically supporting the development of Electricity Transmission Network Operators (ENTOs) in the EU. Hence, for the first time, the European Council meeting in Brussels in March 2015 approved the goal for Member States to reach the level of electricity interconnection of at least 10% of installed generation capacity by 2020. Subsequently, the Madrid Declaration was signed at the France-Portugal-Spain Summit on 3 March 2015 ratifying the minimum electricity interconnection target of at least 10% of installed generation capacity by 2020.

Cornerstones of the European Union energy policy

Reduce greenhouse gas emissions by 80% compared to 1990 levels.

Advantages

Improved security of supply and guarantee of energy diversity

The more meshed and interconnected the electricity networks are, the more stable they are. Interconnections are the more meshed and interconnected systems are, the more stable supply guarantee.

Increased efficiency of the electricity system

Improved security of supply and guarantee of energy diversity

The more meshed and interconnected the electricity networks are, the more stable they are. Interconnections are the more meshed and interconnected systems are, the more stable supply guarantee.

Economic benefits for the electricity system

The increased competitiveness of the electricity system improves energy efficiency and reduces the cost of generation and transmission, as well as the environmental impact, which is vital for European competitiveness.

Increased integration of renewable energy sources

The increased security of supply and guarantee of energy diversity is vital for European competitiveness.

Public participation

Each State will engage and allow the public to be part of the consultation process. The final consultation will be scheduled in each country based on their respective electricity transmission and power transmission systems. Hence, the importance of mobilising all necessary efforts to achieve the minimum electricity interconnection target of 10% by 2020, and increase it in subsequent years.

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Public information leaflet

Inelfe is a simplified joint-stock company with shares held equally by Red Eléctrica de España (the public electricity grid manager in Spain), and ENEL Italia, one of the world's leading companies in the development and management of environmentally friendly energy projects. It is a public-interest company that can be established in the nearest stages to further the objectives and technical specifications of the project.

The project leaders

Inelfe’s Project Leaders

Juan Prieto
Project Leader

Etienne Serres
Process Manager

Alex Guadalupe González
Project Leader

Inelfe

August 2020

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