

Position Paper

Interconnectors



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The European electricity market is undergoing major changes. National borders are becoming less and less relevant. TenneT's cross border extra high voltage grid in the Netherlands and Germany is an important link within the European transmission grid. TenneT focuses on developing a north west European energy market and integrating renewable energy. Constructing interconnectors (cross border connections) is essential in order to meet our goals.

Since the liberalisation of the electricity market in the late 1990s, cross border extra high voltage connections are no longer solely used to provide assistance in the event of failures or shortages, but also to facilitate the growing trade in electricity across these connections. This development is opening up the national electricity markets. Thereby consumer can buy electricity where it is the cheapest and made available under the most favourable terms, while producers generate electricity where they can do so most economically. The result is a strong European market characterised by transparency and stable prices.

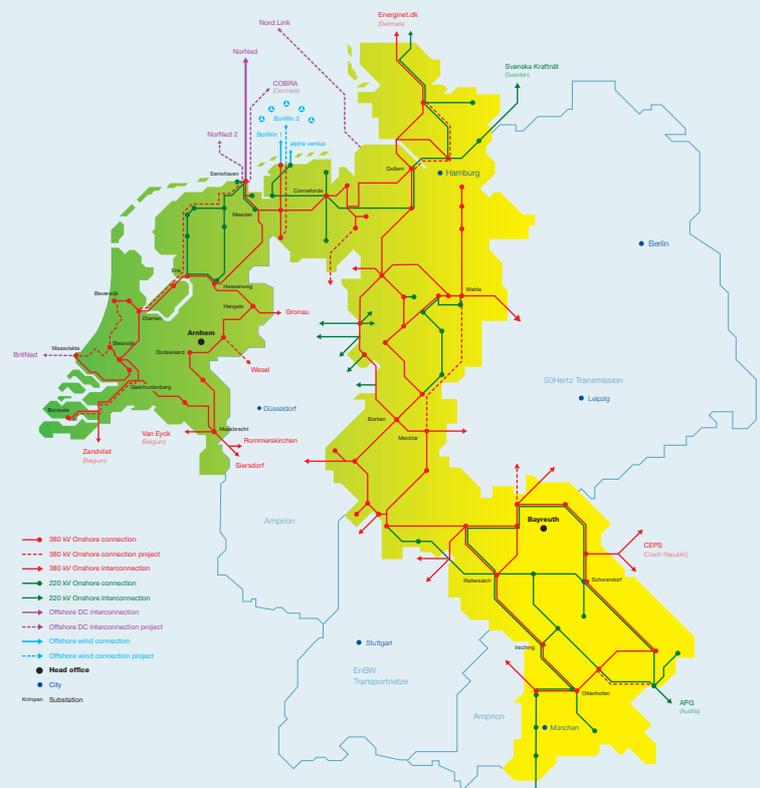


Single European electricity market

European policy, and therefore also TenneT's policy, is aimed at increasing the interconnection capacity to create a single, integrated electricity market. To achieve this aim, TenneT will work to construct new interconnections between the Netherlands and the United Kingdom, Denmark, Germany and Norway in the coming years.

Sustainability

Besides benefiting the market, interconnectors also play an important role in the integration of renewable energy in the European electricity grid. An interconnector between the Netherlands and Norway has already been supplying mainly renewable hydro-electricity from the Norwegian fjords to the Dutch high voltage grid since 2008. There are already plans for more electricity connections to Norway and Denmark, where large quantities of wind energy are produced. These links will make it possible to trade carbon free hydropower and wind energy.



Interconnections are essential in creating a single European market

Over land or across the sea

Interconnections between two countries can be constructed in several ways:

- As an overhead connection between the extra high voltage grids of two neighbouring countries. The various interconnections between the Netherlands and Germany/Belgium are examples of this method. These connections use alternating current, which is the standard throughout the European grid.
- As a subsea electricity cable between two countries. For example the cable link between the Netherlands and Norway, which has been supplying mainly renewable hydroelectricity from the Norwegian fjords to the Dutch high voltage grid since 2008. The cable uses direct current as standard, which is converted into alternating current at both ends. Another example is the BritNed-cable, which connects the Netherlands and the United Kingdom.

Q&A

Will many new interconnectors be constructed in the coming years?

In the coming years, TenneT will be working on new connections between the Netherlands and Germany (scheduled for completion in 2014/2015) and Denmark (scheduled for completion in 2016/2017), as well as two connections with Norway (both still in the planning stage).

Who will be paying for all these new cross border connections?

The exact nature of the financing arrangement depends on the type of collaboration between the two countries. The costs are generally borne by the electricity transmission system operators of the two countries linked up by the interconnector. For instance, the costs of the NorNed cable between the Netherlands and Norway were divided on a 50/50 basis between TenneT and its Norwegian counterpart Statnett. TenneT is able to recoup its investment costs by auctioning off the available transmission capacity on the interconnector to the highest bidder.

When will you stop constructing interconnectors?

The limited number of interconnectors between high voltage grids in different countries results in restrictions on trade due to insufficient capacity. Constructing interconnectors is therefore advisable as long as it contributes to reducing this capacity shortage. In other words: as long as the revenue generated by a new interconnector (by auctioning off its transmission capacity) exceeds the cost of its construction, the interconnector contributes to the creation of a single, integrated electricity market and its construction is therefore advisable.

How does TenneT ensure that the interconnection is used as efficiently as possible?

All electricity connections play a clear and necessary role in the European electricity system when it comes to safeguarding the security of supply and creating greater price stability. We work closely with electricity exchanges and other parties when allocating and distributing capacity, to ensure that the connections are used as efficiently as possible. One way of achieving this goal is to actively link up markets.

TenneT is Europe's first cross-border grid operator for electricity. With approximately 20,000 kilometres of (extra) high voltage lines and 36 million end users in the Netherlands and Germany we rank among the top five grid operators in Europe. Our focus is to develop a Northwest European energy market and to integrate renewable energy.

Taking power further

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