



# NordLink

## Benefits of the NordLink interconnector

The exchange of power enabled by NordLink will increase security of supply for the German and Norwegian grid and will allow exchange of renewable energies, especially hydroelectric power and wind power, between both countries. In addition it will give more stable electricity prices on both sides and, further on, also will facilitate European market integration.



### Driver of the energy transition / Integration of renewables

NordLink is a cornerstone in the accomplishment of the energy transition. Since incorporation of the project in the federal national plan law (Bundesbedarfsplangesetz), the energy market necessity and urgent requirement for implementation of the project has been made statutory. The status "Project of Common Interest (PCI)" awarded by the European Union in accordance with the new guidelines for trans-European energy infrastructure underlines the high importance regarding socio-economic and energy market aspects of the project at a European level.

NordLink – the "green cable" – will help to facilitate the integration of more renewable energy in Norway and in Germany. It will thus help to reduce CO<sub>2</sub> emissions and reach climate goals.

With its capacity of 1.400 megawatts, the interconnector can provide renewable energy for more than 3.6 million German households and will be able to export for example wind generated by approximately 466 wind turbines of 3 megawatts. This is comparable to the capacity of a large conventional power plant.

### European market integration

NordLink is the first interconnector that directly connects Norwegian and German energy markets. This supports the integration of the Northwest European energy market, improves market efficiency and stabilises power prices.



## Exchange of wind and hydro power

Interconnectors improve security of supply under the changing dynamics of energy markets in Europe. To connect hydro power to wind generation will enable TenneT and Statnett to better match demand for and supply of electricity. When there is a surplus of electricity from renewable energy sources in Germany, this can be exported to Norway via NordLink.

In those times the water reservoirs in Norway can work as a natural storage for energy by keeping the water in the reservoir. Vice versa Germany can import Norwegian renewable energy in times of high demand. During dry and cold seasons in Norway the connection to Germany via NordLink will increase security of supply. This possibility requires also national grid expansion both, in Germany and Norway. In Germany, NordLink is a vital project in order to ensure future base load capability of the German renewable electricity system.

## Welfare

NordLink generates socio-economic benefits across borders. The socio-economic benefit is the sum of change in congestion rent, producer and consumer surplus and

depends on several factors such as the development of electricity prices, the future energy mix and market developments. An important part of the benefit is achieved by income from trade of capacity over the interconnector. The congestion revenue will be used for investing in grid projects or to lower grid fees. At times with high electricity prices in Germany (low photovoltaics and low wind in-feed), consumers will profit from the positive effect on the power prices due to the import of reasonable hydroelectric power from Norway.

In Norway, the interconnector will increase value creation for producers when there is a surplus of power, and benefit consumers when there is a shortage of power.

## German-Norwegian co-operation

The NordLink project will be realised by the Norwegian TSO Statnett and DC Nordseekabel GmbH & Co. KG, each with 50% ownership. TenneT TSO and German promotional bank KfW both have shares of 50% in DC Nordseekabel. DC Nordseekabel is responsible for the construction of the German part of the project, including permits.



## Facts and figures

### ■ Connection

- 623 km grid connection DC (HVDC)
- Capacity: 1.400 MW at  $\pm 525$  kV DC
- Onshore: 53 km overhead line (Vollesfjord to Tonstad/NO)
- Offshore: 516 km subsea cable
- Onshore: 54 km land cable (Büsum to Wilster/DE)

### ■ Grid connection points

- Substations Wilster (DE) and Tonstad (NO)

### ■ Project status

- Commissioning in 2020

TenneT is a leading European electricity transmission system operator (TSO) with its main activities in the Netherlands and Germany. With almost 23,000 kilometres of high-voltage connections we ensure a secure supply of electricity to 41 million end-users. We employ approximately 4,000 people, have a turnover of EUR 3.9 billion and an asset value totalling EUR 20.4 billion. TenneT is one of Europe's major investors in national and cross-border grid connections on land and at sea, bringing together the Northwest European energy markets and enabling the energy transition. We make every effort to meet the needs of society by being responsible, engaged and connected.

### Taking power further

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