

YOUR CONTACT
TELEPHONE
E-MAIL

Mathias Fischer, press spokesperson
+49 921 50740-4044
mathias.fischer@tennet.eu

DATE
PAGE

20th of January 2021
1 of 3

The North Sea is becoming the powerhouse of Northwest Europe – Offshore wind energy as a central lever for the energy transition

- **TenneT increases transmission capacity to more than 26,000 megawatts in the German and Dutch North Sea by 2030**
- **2020 North Sea "wind harvest" exceeds previous year by more than twelve percent**

In 2020, the transmission system operator TenneT has transmitted around 22.76 terawatt hours (TWh^{*}) of wind energy from the German North Sea to onshore, thus achieving a new peak value. The 2020 result exceeds the previous year's value (20.25 TWh) by 12.4 percent. This means that, in purely mathematical terms, the annual demand of around seven million households, three quarters of a million more than in the previous year, can be covered with green energy. The share of electricity transmission from the North Sea is a strong 17.2 percent of total wind power generation in Germany, which reached 132.32 terawatt hours in 2020.

TenneT COO Tim Meyerjürgens said: "The North Sea is becoming the new powerhouse of Northwest Europe. TenneT already operates offshore grid connections in Germany and the Netherlands with a transmission capacity of around 8,500 megawatts, including more than 7,000 megawatts in the German North Sea. The German government also recognises the enormous importance of the North Sea for our electricity supply and has raised the targets for 2030 to 20,000 megawatts, of which TenneT will realise the largest part with approximately 17,000 megawatts. Added to this is the TenneT offshore grid in the Netherlands, where we will increase transmission capacity to 9,600 megawatts by 2030. All together, that's over 26,000 megawatts in 2030. We will invest 20 billion euros in the North Sea alone for this over the next few years."

In addition, TenneT plans to build a first cross-border wind power hub in the North Sea together with consortium partners by 2035, which, with 12,000 megawatts, will have the capacity of twelve large power plants. The hub will supply Denmark, the Netherlands and Germany with green wind power from the North Sea.

A wind power hub is a smart energy switching point: it connects wind farms to different countries and thus simultaneously provides a direct electrical connection between these countries at a lower cost. When the wind blows, the electricity from the offshore wind farms is transported to the connected countries via the submarine cables. And when the wind is calm, the same submarine cables can be used to trade electricity directly between the countries.

In order to achieve the new climate policy target of 55 percent less CO₂ by 2030, a further expansion of around 35,000 to 65,000 megawatts is to be expected in Germany in addition to the renewables expansion planned so far. In this context, the expansion of the electricity grid must keep pace with that of renewables.

"We have looked at the impact on grid expansion and expect up to 1,000 kilometres of additional new power lines," says Tim Meyerjürgens, "I believe this can be done. We will do our part and actively support the federal government in achieving these goals."

In the future, however, the distribution of energy from the ever-growing addition of renewables cannot be done via the power grid alone. Power to X, electrolyzers for the production and storage of hydrogen from green electricity as well as the coupling of the energy sectors will be essential factors in limiting the additional power grid expansion in the future.

Tim Meyerjürgens: "We especially have to think very broadly about hydrogen and its integration into the energy system, much broader than before, and take an overarching, systemic approach. A key success factor will be the intelligent coupling of the different sectors and a coordinated expansion of the gas and electricity infrastructure. Only if we position and operate the electrolyzers sensibly with a view to the entire electricity system can they relieve the pressure on the electricity system. Therefore, we need the right signals and incentives from politics and industry for the integration of electrolyzers into the existing infrastructure so that they support the energy system and do not become an additional burden on the electricity grids."

Further offshore balance data

In the German North Sea, the maximum value of the feed-in capacity of offshore wind farms in 2020 was measured at 6,035 megawatts (MW) on 02 January.

The capacity expansion of offshore wind farms in the German North Sea was 6,679 MW on the cut-off date of 31 December 2020.

TenneT's offshore transmission capacity is 7,132 MW in the German North Sea and transmitted 22.76 terawatt hours*) from sea to land in 2020.

Wind turbines in the Baltic Sea (50Hertz grid area) generated 4.13 terawatt hours in 2020, so Germany's total offshore generation in this period was 26.89 terawatt hours. Adding 105.43 terawatt hours*) of onshore wind energy generated brings the total yield in Germany to 132.32 terawatt hours*).

In the Netherlands, TenneT operates the two offshore grid connection systems Borssele alpha and Borssele beta with a combined capacity of 1,400 MW, thus transferring 1.82 terawatt hours of wind energy from sea to land in 2020.

**) Financially supported electricity volumes according to EEG, without other direct marketing and including 0.16 TWh unremunerated, due to negative prices; for 2020 as preliminary actual value. Onshore electricity volumes are integrated as preliminary estimates for the months of November and December 2020.*

TenneT

TenneT is a leading European grid operator (Transmission System Operator (TSO)). We design, build, maintain and operate the high-voltage electricity grid in the Netherlands and large parts of Germany and facilitate the European energy market. We are committed to providing a secure and reliable supply of electricity, today and in the future, 24 hours a day, 365 days a year and to playing our role in driving the energy transition. We transport electricity over a network of approximately 23,500 kilometres of high-voltage connections, from wherever and however it's generated, to over 42 million end-users while keeping electricity supply and demand balanced at all times. With close to 5,000 employees, we achieve a turnover of 4.1 billion euros and a total asset value of EUR 23 billion. TenneT is one of the largest investors in national and international onshore and offshore electricity grids. TenneT makes every effort to meet the needs of society. This will require us all to take ownership, show courage and connect with each other.