Project Sheet

Reinforcement Northwestern DE

Project type	transmission
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Key Information

Internal Project
AC transmission line
New

Under Construction

Description

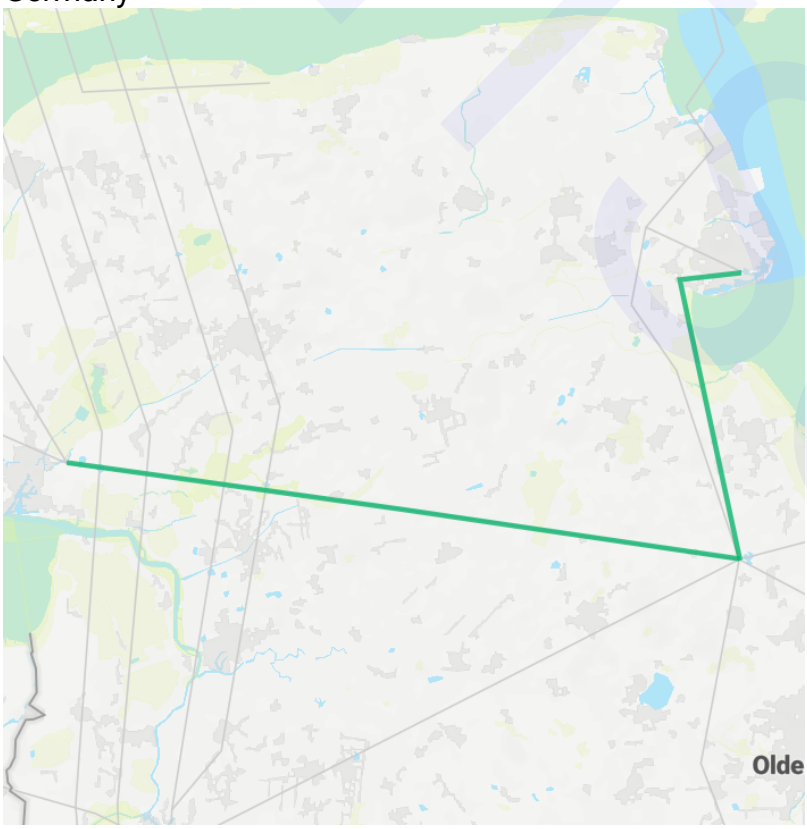
Integration of on- and offshore RES in Lower Saxony

Project promoters

TenneT DE

Countries

Germany



National development plan(s)

NEP2030 v2019

Additional information on the project

German grid development plan:

http://www.netzentwicklungsplan.de/en

Information on Investment 939 (in German)

http://www.tennet.eu/de/netz-und-projekte/onshore-projekte/emden-conneforde.html

Information on Investment Wilhelmshaven-Conneforde (in German)

https://www.tennet.eu/de/unser-netz/onshore-projekte-deutschland/wilhelmshaven-conneforde/

Project sheet backlog

6 Nov. 2020 - Publication as part of the draft TYNDP 2020 package for consultation

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Project Description & Context

Project Investments

Main investment(s): New 380-kV-line in existing OHL corridor for integration of RES

Type of element	Total route length (km)	From substation 1	To substation 2	Present status	Commissioning year	Progress of the investment	Explanation in case of delay or reclustering
AC transmission line	60	Conneforde	Emden /Ost	Under Construction	2023	Delayed	Due to complex and long permitting process

Other investments

Description	Type of element	Total route length (km)	From substation 1	To substation 2	Present status	Commissioning year	Progress of the investment	Explanation in case of delay or reclustering
New 380kV double circuit (OHL, partly underground) Conneforde - Wilhelmshaven (Fedderwarden, former Maade) including new 380kV switchgear Fedderwarden. Length 35 km.	AC transmission line	30	Conneforde (DE)	Wilhelmshaven (DE)	Under Construction	2020	Investment on time	

Reason for investment clustering

The main aim of the project is to integrate huge amounts of RES in the north-western part of Germany. It thus strengthens the north-western grid helping to transfer the RES energy from that region to the connection points to the south.
The two serial investments Emden-Halbemond and Conneforde-Emden and the investment Dollern-Elsfleth/West help to transfer the energy from RES sources to the connection points to

the south.
All three investments therefore significantly contribute to decreasing the RES curtailment in the coastal region and only together the full potential of the project can be achieved.

Is the project in the reference grid?

Yes

System Needs addressed by the project

Project promoter(s) selected up to 4 system needs that are addressed by their project in a predefined list. Available needs ranged from reduction of price differentials between countries, improvement of system flexibility and stability, enabling cost-efficient connection of high volumes of RES, improvement of voltage stability...
As part of the TYNDP 2020, ENTSO-E released a study investigating cross-border system needs in the 2030 and 2040 horizons.

The project promoter did not select any need.

Interconnection targets

In 2017, the Interconnection Target Expert Group proposed alternative indicators to the 15% interconnection criteria for every country and electrified island with a new methodology developed collaboratively between the European Commission, ENTSO-E, ENTSOG, industry, universities and other experts. The methodology is based on three indicators:
1. Price differential between EU countries, with an objective to reduce it below 2 EUR/MWh
2. Ratio between nominal transmission capacity and installed RES capacity, with a target of past 30%
3. Ratio between nominal transmission capacity and peak load, with a target of past 30%

The following maps show the ITEG methodology applied to the TYNDP 2030 scenarios, with the 2020 grid.

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Project Assessment

Transfer capacity increase (National Trends 2025)

	Border	A B	B A
Transfer capacity increase (in MW)	Internal (Germany)	0	0

CBA results

ENTSO-E has assessed the benefits delivered by each project in 2025 (scenario National Trends 2025) and in 2030 (three scenarios: National Trends, Distributed Energy and Global Ambition). Indicators B1 to B6 were computed by ENTSO-E, while promoters had the possibility to compute and submit so-called project-level benefits (B7 to B10). The benefits must be understood as benefits for Europe as a whole, not for the promoters of the project.
Results are presented per scenario.

This project chose not to request a cost-benefit analysis in the TYNDP 2020. The possibility to opt out of the CBA was offered to projects under construction or to very long-term project commissioning after 2035.

Residual impact

Information on the residual impact of the project was provided by the project promoter(s).

Project Costs

The project costs were provided by the project promoter(s).

	CAPEX (Meuro)	Uncertainty range (%)	OPEX
939. Conneforde - Emden	220	+-10%	1.8
1684. Conneforde-Wilhelmshaven	140	+-10%	1.1
Total	360		2.9000000000000004

Explanation provided by the project promoter on the CAPEX uncertainty range:

939

1684