Project Sheet

NoordWest380 NL

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Key Information

Internal Project
AC transmission line
Upgrade

Under Construction

Description

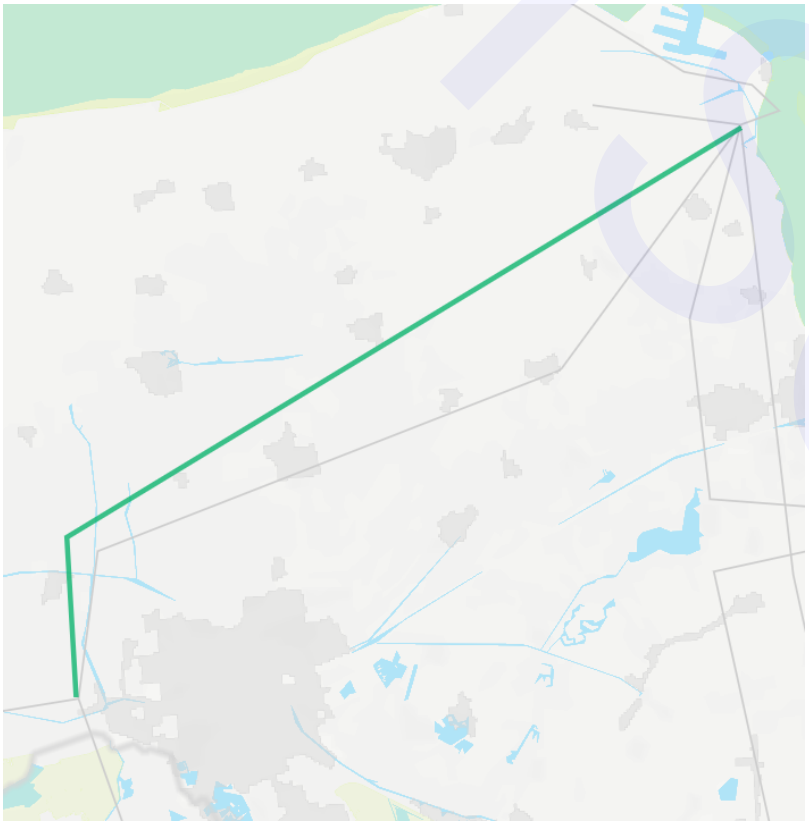
Upgrade of existing 220kV circuits between Eemshaven and Vierverlaten to 2* 380kV – 2645MVA circuits

Project promoters

TENNET-NL

Countries

Netherlands



National development plan(s)

Samenvatting KCD 2017, The Netherlands, page 23
https://www.tennet.eu/fileadmin/user_upload/Company/Publications/Technical_Publications/Dutch/TenneT_KCD2017_samenvatting.pdf

Additional information on the project

http://www.eemshaven-vierverlaten380kv.nl/
(in Dutch)

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): Upgrade of existing 220kV circuits between Eemshaven and Vierverlaten to 2* 380kV – 2645MVA circuits; New 380kV substation Vierverlaten

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	40	Eemshaven Oude Schip	Vierverlaten	Under Construction	2023	Rescheduled	

Is the project in the reference grid?

No

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.

Need		How the project addresses each need (explanation provided by the project promoter(s))
	Infrastructure to facilitate and accommodate future scenarios, cross-border flows or loop flows.	Due to the connection of new offshore wind power production in the north, as well as, the COBRA interconnector, a new pattern of power flows will be created. This project helps facilitate these new flow patterns.
	Infrastructure designed to enable cost-efficient grid connection of high volumes of RES and/or reduce RES curtailment	This projects facilitates the integration of large amounts of offshore wind generation connected to the north of the Netherlands by upgrading and expanding the Dutch transmission grid.

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 (The Netherlands)	150	150

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.

Non scenario-dependent indicator(s)

B8.0 Stability (Transient, Voltage and Frequency Stability)	Transient stability	Voltage stability	Frequency stability	
NoordWest380 (New AC line)	++	++	0	Qualitative assessment by ENTSO-E based on information on the project technology provided by the project promoter(s). This indicator is not dependent on scenarios or time horizons.

Residual impact

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

Residual environmental impact

Investment	Investment status	Distance (km)	Type of sensitivity

Additional information by the project promoter(s)

The new connection does not pass through a Natura 2000 area. Two Natura 2000 areas are located a short distance from the new connection. It concerns the Wadden Sea near the station Eemshaven-Oudeschip and the Leekstermeer area southwest of Vierverlaten.
The new connection does run through NNN areas (NatuurNetwerk Nederland, formerly National

Ecological Network, EHS), the objectives of which (mainly) focus on meadow birds. In addition, there are habitats for meadow birds outside the NNN (habitats for meadow birds). These areas are subject to a less strict regime than Natura 2000 areas. Where necessary, wire markers will be placed in the new connection to prevent the risk of collisions by birds with the connection.
The existing 220-kV connection from Eemshaven to Vierverlaten will be removed after the new 380-kV connection has been put into operation. This has a positive 'residual environmental/ social impact'.

Residual social impact

Investment	Investment status	Distance (km)	Type of sensitivity

Additional information by the project promoter(s)

The new connection is not located in the immediate vicinity of densely populated areas (including schools or similar institutions). Only scattered houses and a few small clusters of houses are in the immediate vicinity of the new connection.

Project Costs

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

	CAPEX (Meuro)	Uncertainty range (%)	OPEX
1546. NoordWest380	411	10%	2.1
Total	411		2.1

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

1546