Project Sheet

GerPol Improvements

Project type	transmission
Project id	94
Created by	
Created on	Feb 8, 2021 3:06:48 PM

Index

Key Information 3
Description 3
Project Description & Context 5
Project Investments 5
System Needs addressed by the project 5
Interconnection targets 6
Project Assessment 10
Transfer capacity increase (National Trends 2025) 10
Boundary capacity diagram 10
CBA results 11
Residual impact 12
Project Costs 12

ENTSOE

Key Information

Cross Border Project
Phase shifting transformer
Upgrade

Under Construction

Description

Upgrade of the existing 220 kV double interconnection line between Krajnik and Vierraden to 400 kV together with installation of Phase Shifting Transformers (PST) on the two existing interconnection lines (Krajnik-Vierraden by 50Hertz Transmission GmbH in Vierraden and Mikulowa-Hagenverder by PSE S.A. in Mikulowa) including an upgrade of substations Vierraden, Krajnik and Mikulowa.

The new PST in Mikulowa on the 400 KV double line Mikulowa–Hagenwerder were already finally commissioned in June 2016.

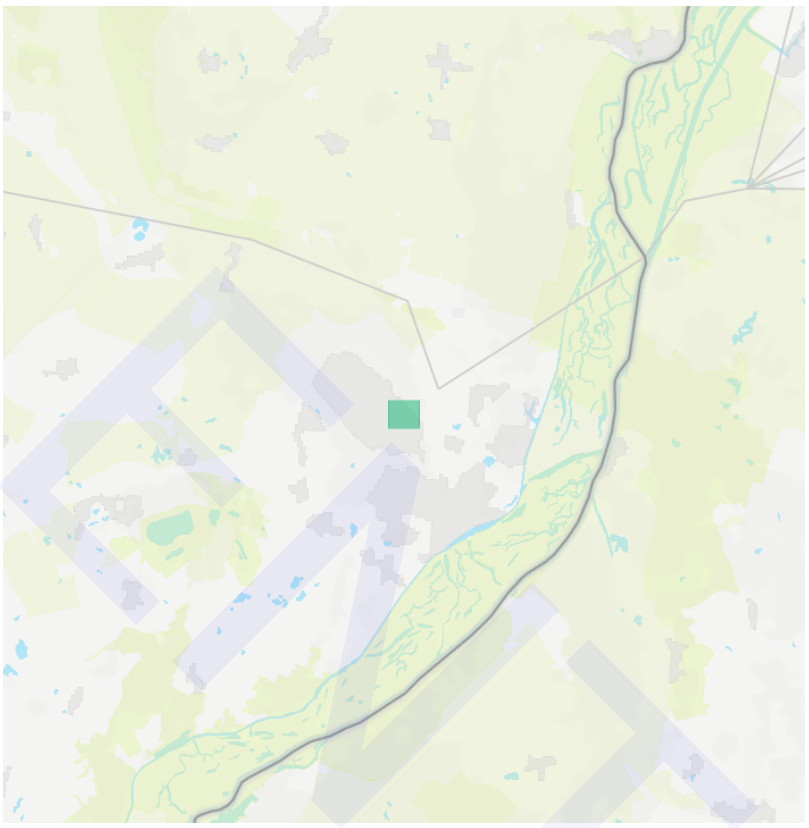
The first two PST in Vierraden have been commissioned in August 2018. The updated 400 kV double line Krajnik – Vierraden is in operation with one system and these two PST in series. On the German side there is a link to the existing 220 kV lines using two 380/220 kV transformers as an intermediate step. Two further PST will replace these two 380/220 kV transformers after the upgrade of the existing German Uckermark-line to 380 kV. This necessary upgrade of the connecting Uckermark-line is delayed due to the lack of an enforceable building permission.

Project promoters

50HERTZ

Countries

Germany
Poland



National development plan(s)

Germany: NEP2030 v2017 p. 188

Additional information on the project

Project sheet backlog

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

Project Description & Context

Project Investments

Main investment(s): Installation of new PSTs in Vierraden

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
Phase shifting transformer				Under Construction	2022	Delayed	Permitting is delayed

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.

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.	This project contributes a reduction of unscheduled flows DE-PL, PL-CZ and PL-SK by increasing the controllability of the power flow on the DE-PL border.
	Infrastructure designed to enable cost-efficient grid connection of high volumes of RES and/or reduce RES curtailment	This project enables the integration of additional RES in the area of western and north-western Poland as well as in the eastern part of Germany.
	Infrastructure to reduce price differentials between EU and/or non-EU countries	Finalization of the project GerPol Improvements allows to increase cross-border capacity on the Polish-German border and thus allows to exchange more energy.
	Infrastructure to address system adequacy deficiencies and/or	Project contributes to mitigate the risk of adequacy deficiencies in Germany and Poland

Need		How the project addresses each need (explanation provided by the project promoter(s))
	mitigate the risk of power failures.	by connecting areas with different mix of generation.

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.

ENTSOE

ENTSOE

ENTSOE

Project Assessment

Transfer capacity increase (National Trends 2025)

	Border	A B	B A
Transfer capacity increase (in MW)	Germany - Poland	500	1500

Boundary capacity diagram

Network boundary the projects helps mitigate

Central East integration

Boundary capacity diagram

ENTSO-E

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
1493. PST Vierraden	110.8		2
Total	110.8		2

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

1493

ENTSOE