Project Sheet

DKW-DE, step 3

Project type	transmission
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Key Information

Cross Border Project
AC transmission line
New

Under Construction

Description

New double circuit 380kV line from Kassoe (DK) to Audorf (DE). As third phase of the Danish-German agreement to upgrade cross border transfere capacity. The project is labelled by the EC as project of common interes (PCI 1.4.1)

Project promoters

Energinet.dk
TenneT DE

Countries

Germany
Denmark

National development plan(s)

NEP2030 v2019

Additional information on the project

http://kassoe-audorf.eu/

http://www.tennet.eu/de/unser-netz/onshore-projekte-deutschland/audorf-flensburg/
(in German)

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): Step 3 in the Danish-German agreement to upgrade the Jutland-DE transfer capacity. It consists of a new 400kV route in Denmark and In Germany new 400kV line mainly in the trace of a existing 220kV line.

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	110	Audorf (DE)	Kassoe (DK)	Under Construction	2020	Investment on time	

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 reduce price differentials between EU and/or non-EU countries	contributes to reduction of price spread by 2040
	Infrastructure to address system adequacy deficiencies and/or mitigate the risk of power failures.	facilitates exchange of RES and reserves
	Infrastructure to improve system flexibility and stability e.g. improve system or local ramp rate, improve transient stability or RoCoF to meet system Needs.	increases system size, thus facilitates sharing of ancillary service
	Infrastructure designed to enable cost-efficient grid connection of high volumes of RES and/or reduce RES curtailment	high RES increase expected on both sides of the border - further connection via P167 connecting to low

Need		How the project addresses each need (explanation provided by the project promoter(s))
		correlated RES area

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)	Denmark (DKw) - Germany	720	1000

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
144. Audorf - Kassoe	536		4
Total	536		4

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

144