

Project 123 - LitPol Link Stage 2

The LitPol Link Stage 2 is a continuation of building of the interconnection between Poland and Lithuania in order to achieve the planned transmission capacity of 1000 MW in both directions. Building of additional internal investments in Poland and Lithuania are necessary. The project improves connection the Baltic States to the Continental Europe and Baltic Sea ring. This is PCI project.

Classification Mid-term Project
 Boundary Poland - Lithuania
 PCI label 4.5
 Promoted by Litgrid; PSE



Investments								
Investment ID	Description	GTC Contribution	Substation 1	Substation 2	Present Status	Commissioning Date	Evolution since TYNDP 2014	Evolution Driver
335	Construction of new 400 kV AC double-circuit OHL Ostrołęka - Olsztyn Mątki.	100%	Ostrołęka (PL)	Olsztyn Mątki (PL)	Design & Permitting	2018	Delayed	Delay due to lingering permit granting process and other formal aspects.
373	Construction of new 400 kV AC double-circuit OHL line Ostrołęka-Stanisławów.	100%	Ostrołęka (PL)	Stanisławów (PL)	Design & Permitting	2021	Investment on time	The investment is in tendering procedure, the contract (design and build scheme) will be signed by Q4 2015.
374	Construction of new 400 kV AC double-circuit OHL line Kozienice-Siedlce Ujrzanów.	100%	Kozienice (PL)	Siedlce Ujrzanów (PL)	Design & Permitting	2019	Investment on time	Investment on time.
1038	Construction of the second 500 MW back-to-Back converter station in Alytus	100%	Alytus		Planning	2020	Investment on time	No change of status.

Additional Information

Link to PSE S.A. Development Plan : <http://www.pse.pl/index.php?modul=10&gid=402>

Description of PCI projects on PSE website: <http://www.pse.pl/index.php?dzid=256&did=2063>

2nd PCI list: https://ec.europa.eu/energy/sites/ener/files/documents/5_2%20PCI%20annex.pdf

Link to project web page: <http://www.litpol-link.com/>

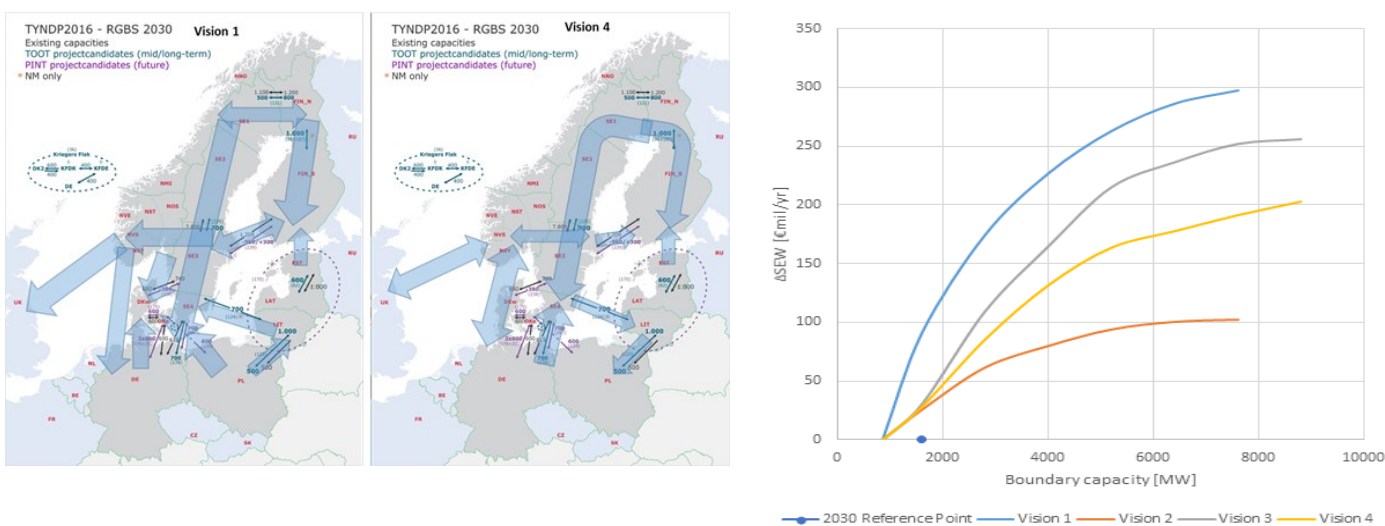
In 2nd PCI list there is position: 4.5.2 Internal line between Stanisławów and Olsztyn Mątki (PL) which corresponds functionally to investments included in project 123.

Investment needs

At the end of 2015 was finished LitPol Link project - first 500 MW asynchronous connection on Lithuania-Poland border. The LitPol Link Stage 2 is a continuation of building of the interconnection between Poland and Lithuania in order to achieve the planned transmission capacity of 1000 MW in both directions in 2021. Building of additional internal investments in Poland and Lithuania are necessary. Project will help to further strengthen of Baltics integration into European market.

This is PCI project.

Making the balance between social welfare gain and infrastructure investment costs for increasing levels of interconnection, the optimal level of interconnection ranges from 1 GW to 2,5 GW between the Nordics/Baltics and the Continental Europe East. Compared to the present and planned investments this shows a potential for further projects.



Project Cost Benefit Analysis

This project has been assessed by ENTSO-E in line with the Cost Benefit Analysis methodology, approved by the EC in February 2015.

The indicators B6/B7 reflect particular technical system aspects of projects based on a summation of qualitative performance indicators, in line with the CBA methodology; these cannot be used as a proxy for the security of supply indicator.

The assessment of losses variations induced by the projects improved in the TYNDP 2016 compared to the TYNDP 2014 with a comprehensive all year round computations on a wide-area model capturing all relevant flows.

The results must however be considered with caution and not totally reliable due to their very high sensitivity to assumptions regarding the detailed location of generation which are not secured.

General CBA Indicators	
Delta GTC contribution (2020) [MW]	LT-PL: 500
	PL-LT: 1000
Delta GTC contribution (2030) [MW]	LT-PL: 500
	PL-LT: 1000
Capex Costs 2015 (M€) Source: Project Promoter	335
Cost explanation	245 MEUR - Cost of the project on PL side 90 MEUR - Cost of the project on LT side
S1	15-50km
S2	25-50km
B6	0
B7	++

Scenario specific CBA indicators	EP2020	Vision 1	Vision 2	Vision 3	Vision 4
B1 SoS (MWh/yr)	N/A	N/A	N/A	N/A	N/A
B2 SEW (MEuros/yr)	70 ±10	80 ±10	30 ±10	30 ±10	30 ±10
B3 RES integration (GWh/yr)	<10	<10	<10	60 ±10	20 ±10
B4 Losses (GWh/yr)	825 ±82	650 ±65	300 ±30	225 ±25	525 ±52
B4 Losses (Meuros/yr)	35 ±4	35 ±4	13 ±2	13 ±2	35 ±4
B5 CO2 Emissions (kT/year)	-400 ±50	1400 ±200	600 ±100	-1500 ±200	-1100 ±200

In the PL – LT Direction 1000MW of Delta GTC Was used and in the LT- PL direction 500 MW was used. This is because during the Litpol Link Stage 1 project, a 500 MW DC connection was built, but there will be no power flow in the PL-LT direction, the 500 MW will be in the LT-PL direction. The Litpol Link Stage 2 project add another 500 MW in 2020 and due to improvements in the Polish grid, there will be a power flow of 1000 MW GTC in both directions. The GTC in the LT-PL direction will therefore be 500 MW (1000MW – 500MW) and for the PL-LT direction it will be 1000MW (1000MW – 0MW).

Complementary information about the border on which the project is located	Vision 1	Vision 2	Vision 3	Vision 4
Average marginal cost difference in the reference case [€/MWh]	6.85	6.89	17.24	7.66
Standard deviation marginal cost difference in the reference case [€/MWh]	10.25	10.62	24.71	15.77
Reduction of marginal cost difference due to all mid-term and long-term projects [€/MWh]	9.87	9.56	11.56	8.50