Regional Group Summary Baltic Sea

Final version after public consultation and ACER opinion - October 2019



The Baltic Sea (BS) region comprises the following countries: Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Norway, Poland and Sweden.

Within the region, there are three separate synchronous systems: the Nordic system, the Continental system, and the Baltic power system which is currently part of the IPS/UPS system.

The electricity system in the Baltic Sea region is undergoing an unprecedented change as the electricity generation structure is rapidly becoming carbon-free and simultaneously more variable according to the weather.

2040 Needs

The map below shows potential needs for additional capacity increases in 2040 – beyond the 2020 grid.

Summary of capacity increases from 2020 to 2040



- Increases already identified in TYNDP 2016¹
- Increases beyond 2030 in only one scenario
- Increases beyond 2030 in at least 2 scenarios
- Stronger integration Germany-Poland

 increase
 market integration and facilitate thermal decommissioning.
 Euclider Integration Studen Finland

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- Further integration Sweden-Finland

 increase Nordic market integration.
- Further integration Norway-Denmark → lower price differences and increase Danish security of supply.
- Further integration Sweden/Denmark-Germany → lower price differences and optimise RES generation (hydro/wind).
- Further internal integration in the Baltics → increase security of supply.

More information can be found in the Regional Investment Plan 2017 of this regional group and in the European System Need Report 2017.

- https://www.entsoe.eu/Documents/TYNDP%20documents/TYNDP2018/ rgip_BS.pdf
- https://www.entsoe.eu/Documents/TYNDP%20documents/TYNDP2018/ energy_power_system_2040.pdf

¹ Reference capacities of TYNDP 2016 for 2030 which for some borders had been adjusted for the TYNDP 2018 purpose. Projects commissioned in 2020 are not included as increases. The main challenges and drivers of grid development in the region are:

- Integration of renewables.
- Nuclear and thermal decommissioning.
- Flexibility-need between synchronous areas.
- Security of supply for the Baltic countries.
- New consumption due to electrification.

These challenges are reflected in the planned projects and also in the simulated grid development needs for 2040.

Projects

The map below shows all the promoted projects that will be analysed with the CBA methodology in the TYNDP 2018.



Benefits

Increasing capacities at the borders, as shown on the map to the left, would have a significant impact on the ENTSO-E electrical system and society as a whole.



Up to 27 €/MWh reduction in marginal costs of electricity generation



13 to 77 тwh less curtailed renewable energy



9 to 30 Mton reduction in CO₂



Up to 65 gwh reduction in Energy Not Served