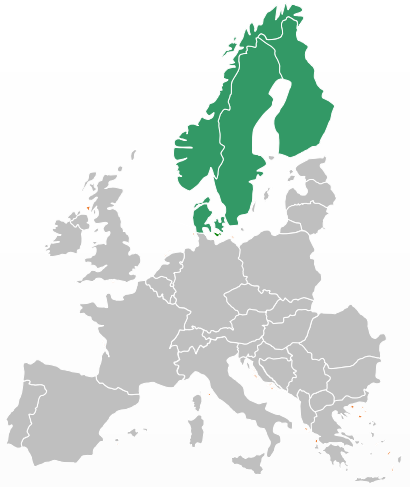

Overview of assumptions and parameters for the beginning of external parallel run

Latest update: 16th April 2024

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Implementation at the beginning of EPR

- TSOs' input parameters consist of
  - Reliability margin, Operational security limits, Critical network elements, Contingencies, Allocation constraints, Generation shift keys and Remedial actions
- Each TSO is responsible for definition/calculation of these input parameters

Reliability Margin (RM) (Article 3 of CCM)

TSO	Reliability Margin (RM) component	Frequency Containment Reserve (FCR) component
Energinet	5 % of Fmax on all AC-lines 0 % of Fmax on all DC PTCs 5 % of Fmax on all AC PTCs, except (0 % of Fmax) : FI_PTC_RAC_FI-SE1, FI_PTC_RAC_SE1-FI, FI_PTC_FI-SE1_FI-NO4, FI_PTC_SE1-FI_NO4-FI	Not yet implemented
Fingrid	5 % of Fmax on all AC-lines 0% of Fmax on HVDC, although redundant PTCs are defined for monitoring, and these include the default 5% RM	Not yet implemented
Statnett	5 % of Fmax on all AC-lines 0 % of Fmax on all HVDC-lines	Not yet implemented
Svenska Kraftnät	10 % of Fmax on certain AC-lines 5 % of Fmax on remaining AC-lines 0 % of Fmax on all DC-lines	Not yet implemented

PTC: Power Transfer Corridor

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Operational Security Limits (OSL) (Article 4 of CCM)

TSO	Type of OSL applied	Comments on application
Energinet	TATL for N-1 CNECs PATL for N-0 CNECs	For some N-1 CNECs it might be changed to PATL
Fingrid	TATL for N-1 CNECs PATL for N-0 CNECs (PTCs)	
Statnett	Thermal limits Dynamic stability limits Voltage limits	Limits in MW-values
Svenska Kraftnät	TATL for N-1 CNECs PATL for N-0 CNECs	

TATL: Temporary Admissible Transmission Loading
PATL: Permanent Admissible Transmission Loading

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Critical Network Elements (CNE) and contingencies (Article 5 of CCM)

TSO	Short description how CNEs and contingencies are selected and how contingencies are associated with CNEs
Energinet	CNECs are copied from the limitation known in the NTC world.
Fingrid	CNEs and Contingencies are selected based on experiences from historical and continuous operational security analysis done with PSSE and operational experience.
Statnett	For CNEs with dynamic stability limits, corridors from/to or close to bidding zones are used for 300kV and 420kV corridors. For CNEs with a defined contingency, CNECs on 300kV and 420kV are used, which are considered to be effectively relieved by a change in relevant net position.
Svenska Kraftnät	CNECs are selected by a qualitative assessment and operational experience. Most the CNECs are permanent and some are temporary based on outages.

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Allocation Constraints (AC) (Article 6 of CCM)

TSO	Type of AC	BZ border(s) applied
Energinet	Used to define min and max flows for HVDCs by setting min/max net positions on the HVDC virtual bidding zones.	DK1_SK, DK1_KS, DK1_CO, DK1_SB, DK2_SB, DK2_KO
Fingrid	Used to define min and max flows for HVDCs by setting min/max net positions on the HVDC virtual bidding zones.	FI-FI_EL (FI-EE) FI-FI_FS (FI-SE3)
Statnett	Used to define min and max flows for HVDCs by setting min/max net positions on the HVDC virtual bidding zones.	NO2_NL, NO2_ND, NO2_SK
Svenska Kraftnät	Used to define min and max flows for HVDCs by setting min/max net positions on the HVDC virtual bidding zones.	SE3_SWL, SE4_SWL, SE3_KS, SE3_FS, SE4_SP, SE4_BC, SE4_NB

Allocation constraints may include Combined dynamic constraints, Ramping rates and Implicit loss factors.

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Generation Shift Keys (GSKs) (Article 7 of CCM)

TSO	Strategy number with description / comments
Energinet	Strategy 0 (for all thermal power plants and offshore windfarms)
Fingrid	Strategy 0 (for nuclear, wind and non-conform loads) Strategy 6 (for other types)
Statnett	Strategy 7 (For NO1) Strategy 6 (For NO2-NO5) Wind power excluded from participation (participation factor set to 0).
Svenska Kraftnät	Strategy 0 (for nuclear and wind) Strategy 6 (for other types)

Strategy 0: Custom GSK strategy with individual set of GSK factors for each generator unit and load for each market time unit for a TSO.
Strategy 6: Generators and loads participate relative to their current expected power generation or loading power (MW).
Strategy 7: Loads participate relative to their power loading (MW).

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Remedial Actions (RAs) (Article 9 of CCM)

TSO	Short description how RAs will be applied in capacity calculation timeframe
Energinet	RA is currently not used.
Fingrid	Might be added for planned counter trade.
Statnett	Predefined RAs is applied to increase capacity on CNECs. Available RAs may be trip of hydropower, wind power, large consumption unit or HVDC runback.
Svenska Kraftnät	RA-values will be added on certain CNECs to take into account system protection schemes and other predefines RAs, such as bypassing of series capacitors.

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