Explanatory document on Request for CCR Hansa to be allowed to use C-NTC for capacity calculation methodology

DISCLAIMER

This document is released on behalf of all the transmission system operators of CCR Hansa as an explanatory note for the purpose of public consultation on the proposal for a common capacity calculation methodology in accordance with Article 20 (2) of Commission Regulation (EU) No 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management. This is a draft proposal and does not constitute a firm, binding or definitive TSOs' position on the content.

The TSOs of CCR Hansa acknowledge the objectives of the Commission Regulation (EU) 2015/1222 on capacity allocation and congestion management, which among others are:

- ensuring optimal use of the transmission infrastructure;
- ensuring operational security;
- optimising the calculation and allocation of cross-zonal capacity;

With this in mind, the CCR Hansa TSOs aim to implement an effective and efficient capacity calculation process, which allows for an optimal use of the transmission infrastructure while maintaining a high level of system security.

With the exception of the German – Western Danish border, the bidding zone borders included in the CCR Hansa connect the continental European and Nordic AC grids by HVDC cables. All of the CCR Hansa connections, including the German – Western Danish AC border, can be considered to be radial connections. These quite unique features were kept in mind by the CCR Hansa TSOs when developing the capacity calculation methodology for the CCR Hansa.

CACM article 20 paragraph 1 states that the approach used in the common capacity calculation methodologies shall be a flow-based approach, unless the TSOs concerned are able to demonstrate that the application of the capacity calculation methodology using the flow-based approach would not yet be more efficient compared to the coordinated net transmission capacity approach and assuming the same level of operational security in the concerned region.

The strength of the flow based approach is its ability to model the simultaneous influences of cross-border trades over several bidding zone borders on all grid elements in the investigated CCR, affected by several power flows. Particularly in highly-meshed grids, like the continental European and Nordic AC grids, this approach offers a good model of the real power flows. On radial connections and HVDC links – the latter being a physical representation of a NTC - however, the power flow has a predefined path across the bidding zone border. Here, the flow based capacity calculation does not yield additional benefit compared to the CNTC approach.

In order to ensure an optimal use of the available transmission infrastructure, the CCR Hansa TSOs keep in mind that it is necessary, when using a flow based capacity calculation, to create one consistent set of flow factors (PTDFs) and margins (RAMs). If grid elements are affected by trades originating in different CCRs, every capacity calculation has to take the effect of trading in other CCRs into account. This leads to an ex-ante splitting of the capacity of the grid elements. Due to the inflexibility of this approach, this will lead to a suboptimal use of the overall available capacity.

The approach developed by the CCR Hansa TSOs, aims for coordination between the CCRs Hansa, Core and Nordic by considering the actual interconnector capacity separately from the interaction of the interconnectors with the surrounding AC grids. While the interconnector capacity is calculated by CCR Hansa using the CNTC approach, the effect of power flows between the CCR Hansa and the AC grids is covered in the flow based capacity calculation projects of the CCRs Core and Nordic by modelling the interconnections of CCR Hansa using the 'Advanced Hybrid Coupling. This approach eliminates the need for ex-ante splitting of capacities of critical networks elements among different CCRs, and between different borders, and leaves this for the optimisation in the course of capacity allocation. This results in reduced uncertainties, and hereby higher available capacities for the markets, which in turn results in a better and more economically efficient use of the transmission infrastructure.