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# **Annex 2: Justification of alternative configurations of the Bidding zone review region “Nordics” which are to be considered in the bidding zone review process**

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Bidding Zone Review Region Nordic Region

18 February 2020

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## Justification/Explanation on alternative configurations for BZRR Nordic

### Sweden

In the Nordic regional BZ review, an assessment of an alternative BZ configuration where (1) the Stockholm Metropolitan Area constitutes a new BZ, (2) current BZ SE4 is merged with the rest of current BZ SE3, and (3) current BZ SE2 is merged with the current BZ SE1, is proposed.

Power flows and trade patterns in the Swedish National Grids are changing rapidly as a result of thermal power plant decommissioning near traditional load centers in the southern parts of the country and a strong urbanisation trend. In the Stockholm Metropolitan Area, with a peak load demand of about 4 GW, preliminary market coupling simulations combined with load-flow and security analysis indicate congestions in the region are present in scenarios for 2020, 2025 and up until 2030. The same preliminary modelling exercise have indicated few market outcomes that result in congestions between the borders of current BZs SE3 and SE4. The main factors that contribute to this development is nuclear power plant decommissioning, new cross-BZ interconnectors and upcoming investments in the transmission grid.

The structural bottlenecks on the Swedish east coast in and around the Stockholm Metropolitan Area are foreseen to be mitigated by future investments in the mid 2030's at the latest. As the time horizon to fully alleviate congestion problems through investments is 10+ years, Svenska kraftnät proposes to include the configuration alternative in the Nordic regional BZ review.

Since the initial methodology proposal was submitted to all NRAs in October 2019, the proposed alternative configurations have been discussed with stakeholders and NRAs in stakeholder meetings. The outcome of the NRA and stakeholder dialogue is that the BZ review also should assess if BZ SE1 and BZ SE2 should be merged, modified or remain as it is in the current configuration. The background for including the bidding zone border between the BZ SE1 and the BZ SE2 in the review is that the border only been congested in the day ahead market for a few hours the last years.

### Norway

Statnett analyses indicate that congestions out of the northernmost bidding zone, NO4, will increase in the future. Splitting the NO4 will help us manage the bottlenecks efficiently.

From NO4 there are connections to Middle Norway (NO3), Northern Sweden (SE1 and SE2) and a weak non-market connection to Finland. The sum capacity of these lines is good. However, skewed loading of the different corridors prevents full utilization.

We expect this situation to become more frequent in the future, as the surplus in NO4 increases, partly due to increased wind power capacity, and because it can be even harder to predict the location of the generators that produce within the area. The challenge is mainly the interaction between the lines to Norway (NO3) and Sweden (SE1). Our simulation results show that the line to SE1 in many cases fill up first, leaving capacity to NO3 unused.

When we solve this type of congestion, it is challenging that the current NO4 bidding zone is such a large geographical area. This makes it necessary to predict the distribution of generation between the northern and southern parts of the area. Additionally, it is challenging that we do not know where the generation will be located until close to the hour of operation. Altogether, this makes the current NO4 zone a poor tool for keeping the flow within safe limits of operation, and we think a split will be beneficial for system operation.

The consequences of a split are further discussed in the Statnett Long-term Market Analysis 2018-40.

### Finland

The ACER/CEER Annual Report on the Results of Monitoring the Internal Electricity Markets in 2017 found Finland's performance to be adequate related both to 1) availability of HVAC capacity for cross-zonal trading and 2) use of costly remedial actions. Furthermore, ENTSO-E Bidding Zone Configuration Technical Report 2018 shows generally a very low amount of congestion on internal Finnish lines, while the amount of congestion was also reduced in 2017 compared to 2015-2016. Based on these findings, as well as plans to commission additional internal reinforcements in the early 2020s, studying alternative Bidding Zone configurations is not considered to be relevant for Finland in the upcoming Bidding Zone Review.

Currently NO4-FI capacity is included into SE1-FI capacity and commercial transactions are allocated from latter interconnector. Considering the non-market connection to NO4 bidding zone, evaluation of NO4-FI becoming a market border is included part of the bidding zone review process. The bidding zone review process supports profound and reliable analyses to increase Northern Finland's market transparency.

### **Denmark**

From DK, Energinet is not proposing a split of the bidding zones due to the fact that we currently do not see any significant challenges with meeting the 70% requirement. In today's capacity calculation the point of departure is 100% capacity on the network elements and a few dynamic restrictions which will not be influenced by a bidding zone split. In addition to this, the ENTSO-E technical report from 2018 shows that the congestions in relation to Denmark is found on the interconnectors to other bidding zones and not inside the two Danish Bidding zones.

### **Summary**

We propose that the above showed alternative configuration should be analysed during the official process foreseen for such an investigation, i.e. the bidding zone review of the concerned TSOs, and assessed by the criteria defined in Article 33 of EU Regulation 2015/1222.