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Nordic Balancing Market: Challenges, Solutions, and Path Forward

Over the past year, several major changes have been implemented in the Nordic power markets causing a disruption in the functioning of the Nordic balancing market. The cost of balancing the power system has increased significantly with these costs ultimately borne by producers and consumers.

At the same time, uncertainty and market-related risks have grown, placing additional financial strain on market participants. Together, these developments have created an unsustainable situation that calls for urgent action. NordEnergi therefore urges TSOs and regulators to proactively engage with market participants to identify and implement measures that can ease the current challenges.

Since the current situation results from the combined effects of multiple market changes, no single solution will suffice. Instead, a set of coordinated, Nordic measures is required. To ensure progress and enhance transparency towards market participants, the TSOs should jointly develop a Nordic implementation timeline. This timeline could be inspired by the one the TSOs have already proposed for upcoming market changes. It should specifically focus on actions that stabilize and improve the current functioning of the Nordic intraday and balancing market. Such a timeline would provide visibility on next steps, allow market participants to prepare accordingly, and demonstrate a shared commitment to restoring a well-functioning and efficient Nordic power market. Below, we present our view on which measures should as minimum be included in such a timeline.

Flow-based capacity calculation has increased capacity for the Day-ahead market and as a result of this decreased the capacity available to the intraday and balancing timeframes, but it has also led to locked flows leaving even less possibilities for market participants to trade across borders in the intraday timeframe and for TSOs to exchange balancing energy in real time. In practice, there are fewer possibilities for market participants to trade their portfolio into balance and for TSOs to use the cheapest Nordic balancing resources. This drives up the overall cost for balancing the power system.

This phenomenon has also been acknowledged by NordREG in their recent letter to the Nordic TSOs. NordEnergi supports the letter from NordREG and urges the TSOs to implement solutions to increase the crossborder capacity for intraday and balancing. While this can be done by implementing flow based in the intraday- and balancing timeframes, we consider this a long-term solution[1] that must be supplemented by solutions in the shorter-term. One example of such solution is to recalculate the capacity during the day of operation when the main system flows are known and closer to real time when the forecasts are more accurate.

The specific design of such solutions depends on multiple variables of which not all are known to market participants, e.g. internal TSO processes and required time for recalculation. A first step would therefore be for TSOs to present potential solutions including timeline and expected impact, which can then be discussed with market participants the TSOs should also prioritise searching for measures to improve the efficiency of the ATCE method.

[1] With the exception of the Intraday Auctions (IDA) where an implementation project is already ongoing.

In parallel with the work on flow-based, a joint Nordic initiative should focus on improving the mFRR EAM. While the severity of the situation appears to be underestimated by the TSOs, some initial steps have already been taken. Each Nordic TSO has implemented or working actively on smaller adjustments to their mFRR requests, such as local deadbands. While these efforts are appreciated, we're concerned that they are carried out nationally and without coordination across the Nordics.

This fragmented approach creates a patchwork of solutions, increasing complexity for market participants operating in multiple countries and challenging the idea of a common Nordic market with shared framework conditions across all four countries. We therefore encourage TSOs to share experiences from the adjustments already made and jointly develop a coordinated set of both existing and new measures to be implemented across the Nordics. These measures should include enhanced market transparency and data publication, supporting a well-functioning and transparent market.

While the mFRR EAM adjustments referred to above can be implemented with relatively low effort, it appears more challenging for the TSOs to join the common European platform, MARI. As MARI is the long-term goal, it is critical to understand how its implementation will impact the current situation—whether it will ease, maintain, or even exacerbate existing challenges. It is important that any corrections done to the Nordic algorithm also be implemented in MARI in order not to reintroduce issues back into the Nordic market. It is therefore crucial that before the Nordic countries join MARI, these effects must be clarified and communicated to the market in a timely manner. Furthermore, it is essential that the Nordics join MARI simultaneously to preserve the Nordic balancing cooperation and shared framework conditions for market participants across the region.

In addition to the common Nordic measures mentioned above, the design of the imbalance price should be carefully evaluated. The Nordic TSOs have jointly agreed on a new methodology, in which the imbalance price is based on the maximum or minimum of the mFRR price and the volume-weighted average of the aFRR prices. So far, this design has only been implemented in Denmark and Finland, as they are the only two countries that have joined the European aFRR platform, PICASSO.

Early experience in Denmark and Finland has shown not only an increase in the average imbalance price but also a significant rise in volatility. Under the new design, the imbalance price exhibits less correlation with the physical needs of the system compared to the old design. Situations frequently arise where the imbalance price behaves in ways that are counterintuitive to the physical system conditions. For example, even when mFRR up-regulation volumes are clearly larger than down-regulation volumes, the imbalance price can still be dominated by down-regulation.

In other cases, the imbalance price moves in the opposite direction of what the relative mFRR prices and Day-Ahead prices would suggest. These patterns make it extremely difficult for BRPs to interpret market signals and assess whether their positions are costly, undermining transparency and creating unnecessary risk. For example, we have observed two consecutive Market Time Units (MTUs) in which the Day-Ahead price and the size of the imbalance were the same, and the mFRR prices were comparable, yet the imbalance price was more than twice as high in one MTU compared to the other. This occurred because the imbalance price was set by mFRR in one MTU and by aFRR in the other.

In light of these challenges it is important to evaluate whether the current Nordic design represents the most optimal approach. If the above raises any questions, we would be happy to provide further information and would welcome the opportunity to continue the dialogue.

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