

We call for essential information under Flow-based Market Coupling to optimize value of power resources

Flow-based market Coupling (FBMC) was introduced in the Nordic day-ahead market on October 29, 2024, based on requirements in EU/EEA regulations and partly based on experiences from FBMC in the CORE region (13 Continental EU members). With FBMC, physical properties of the grid are included when calculating power flows and prices. Therefore, the method is expected to utilize the power system more efficiently.

At Nordenergi we believe that the special characteristics of the Nordic power system have not been sufficiently considered when specifying the operational requirements for FBMC in the Nordic region, causing loss of foresight leading to impaired quality of energy dispatch and hence reduced socioeconomic efficiency. Therefore, we believe it is necessary that more vital information is provided to the market participants in the Nordic market to optimize the socioeconomic value of Nordic power resources.

The Nordic power market is characterized by a high share of hydropower production and large reservoirs. Optimizing flexible hydro power resources implies utilizing them when they contribute to the highest possible value for the Nordic power system and society. This requires high quality forecasts for prices - and long-term production forecasts, up to several years ahead (management of multi-year reservoirs). It is of fundamental importance that vital information about the grid is provided to the market players, so that they can include physical properties of the grid in their models they use to calculate optimal use of flexible power resources.

Experience since go-live of FBMC shows that optimal use of the hydropower resource is more challenging. TSOs are satisfied with the introduction of FBMC in the day-ahead market, however the information published to the market players is not enough to create meaningful long-term forecasts and therefore it is considered more limiting and less relevant than with the previous market coupling, NTC¹ in this respect. Bidding in the day-ahead, intraday and balancing markets have become more challenging and less optimal, and therefore more expensive for society.

With the previous capacity allocation method, NTC, the capacity between bidding zones were provided to the market by the TSOs before market clearing. This capacity was relatively stable over time, except when major transmission lines were unavailable. Additionally, the given capacities often matched the published transmission urgent market messages (UMM). With FBMC the capacity allocation is still provided before the market clearing, however, it includes higher granularity of the physical properties of the grid and the grid components. Thus, the capacity allocation can have bigger impact on the power flows and prices. Hence, the stability of the capacity allocation is lower and therefore less predictable. Unlike NTC, the published transmission UMMs no longer reflect the actual impact on the capacity allocation, which decreases quality of long-term forecasts and consequently less optimal allocation of hydropower.

¹ NTC: Net Transmission Capacity

We have therefore proposed three measures for the Nordic TSOs and/or the Nordic Regional Coordination Centre (RCC) to improve the conditions for optimizing flexible Nordic power resources:

1. Publication of PTDF² and RAM³ values from RCC for the next 10 days, on a rolling basis
2. Publication of a static grid model for the Nordic market area
3. Nordic Unavailability Collection System (NUCS) messages with information connecting it to elements in the grid model

The market players have, since before the implementation of FBMC, asked the Nordic TSOs to provide information of this kind. We are aware that the Nordic RCC and TSOs have made some improvements, but we believe that this is not sufficient to ensure that flexible power resources can be utilized in the best possible way. We understand that providing PTDF and RAM values for 10 days ahead would require additional effort. We also recognize that sharing a static grid model and messages related to grid elements on NUCS involves jurisdictional challenges, as the Swedish TSO cannot disclose detailed grid data. However, we believe these challenges can be addressed within an allowed framework. If emphasis was put on trying to solve these challenges, the socioeconomic efficiency would improve. Below, we motivate how and why we think the Nordic TSOs should consider providing this information to the market players.

1. Publication of PTDF and RAM values from RCC for the next 10 days, on a rolling basis

Currently, PTDF and RAM values are published for D-1 by RCC, and now from January 2026 it is published also for D-2. For the coming 10-day period the TSOs have a relatively good overview of the grid situation, and it is possible to provide a forecast for the PTDF and RAM values with reasonable accuracy to the market. The forecast would need to be updated and published daily, on a rolling basis. Such forecasts would give the market participants the necessary information to take good dispatch decisions for the short-term horizon and price bidding in the balancing markets more accurately. The information would be equally valuable to all market participants regardless of whether they have detailed grid modelling or not. In addition to access to PTDF and RAM values, we also urge the Nordic RCC and TSOs to provide the underlying fundamental forecasts, including wind, solar and other relevant production and consumption assumptions that form the basis for the PTDF forecasts.

2. Publication of a static grid model for the Nordic market area

Together with the introduction of the FBMC methodology for market clearing in the Core region, a static grid model was made available to the market participants. We request the same information to be made available to the Nordic market participants.

The grid and grid elements are publicly owned infrastructure, and it is inefficient that the market players must individually make their own assumptions. It would be more efficient if this information came from an official source and was shared to the market players who have a legitimate need for this information.

As a short-term solution, if publishing a complete static grid model proves challenging due to data sensitivity or jurisdictional constraints, we encourage the Nordic RCC and TSOs to share the elements

² PTDF: Power Transfer Distribution Factor, describes how changes in production or consumption influence power flow for a given component in the grid

³ RAM: Remaining Available Margin, represent the available capacity for commercial power exchange

that can be disclosed. Providing partial information would still be highly valuable for market participants, and the remaining components could be addressed as soon as feasible.

3. NUCS messages with information connecting it to elements in the grid model

The information provided today in the published NUCS messages related to elements in the grid has very little value for the market participants. A way to provide meaningful information would be to connect the information in the NUCS message to elements in the (static) grid model. As the capacity calculation by nature is impacted by every change in the grid, a simulation including the new information is required to assess the effect properly.

Desired development

The producers responsibility is to maximize the value of their flexible green portfolio.

To fulfil this responsibility, there is a need for a transparent market that can be understood by all market participants. Producers need to be able to make price forecasts for all price areas – and with that, predict expected bottlenecks in the grid for the next hour and several years ahead. With the FBMC more essential information must be published by the Nordic TSOs and Nordic RCC so that hydropower producers, successfully, can optimize the resources as was done before in line with the overall societal interests.

Nordenergi recognizes the significant work done by the Nordic RCC and the Nordic TSOs. However, from our perspective, it is not sufficient that FBMC has improved the utilization of the Nordic transmission system on the day-ahead market, when the terms for optimizing the Nordic flexible system have deteriorated significantly. Moreover, the valuable flexibility of hydropower for balancing purposes has also decreased as intraday capacities in key borders have significantly decreased after implementation of FBMC on the day-ahead market. The three proposed measures should therefore be seen as a supplement to the implementation of FB in the intraday and balancing timeframes, and not as a replacement or reason for delay.

The Nordic RCC and TSOs have made some improvements but, in our opinion, this is far from enough to enable us to optimize the use of flexible power resources. We believe that the Nordic TSOs and the Nordic RCC have understood the challenges we have pointed out both before and after implementation of FBMC, but we cannot see that they are setting clear goals to improve this and are using sufficient resources to solve them.