Explanatory document concerning the Nordic TSOs' proposal for establishment of fallback procedures in accordance with Article 44 of the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a Guideline on Capacity Allocation and Congestion Management

Content

1. Introduction

According to article 44 of the CACM Regulation each TSO, in coordination with the other TSOs, in a capacity calculation region (CCR) shall develop a proposal for fallback procedures.

Today fallback procedures are already harmonized for CCR Nordic. In order to provide a reliable and transparent market for all involved actors, the fallback procedures need to be well-functioning in a future situation with multiple NEMOs active in the Nordic area. It is therefore necessary to update current fallback procedures.

This document contains an explanation of the proposal for new fallback procedures to be applied in CCR Nordic, applicable to the day-ahead market. The fallback procedures proposed to comply with the requirements of Article 44 of the CACM Regulation.

All timings in the explanatory document refer to CET, and wherever the Nordic region is mentioned this refers to CCR Nordic.

2. Legal requirements and interpretation

There are two types of fallback processes described in the CACM regulation:

1. Fallback procedures related to the day-ahead algorithm and calculation of price and net positions
2. Fallback procedures for capacity calculation, for the case where the initial capacity calculation does not lead to any results.

The second type of fallback is outside the scope of the proposal and this explanatory document as this procedure must, according to Article 21 (3) of the CACM Regulation, be included in the capacity calculation methodology.
Besides these fallback procedures, all NEMOs have to develop and submit for approval a backup methodology in accordance with Article 36(3) to secure the smooth operation of the single day-ahead coupling in order to avoid a partial and full decoupling and initiation of fallback procedures.
According to Article 8(2), TSOs shall:

"establish and operate fallback procedures as appropriate for capacity allocation in accordance with Article 44".

Article 39 (2) of the CACM Regulation specified the results of the day-ahead coupling algorithm:
"The price coupling algorithm shall produce at least the following results simultaneously for each market time unit:
(a) a single clearing price for each bidding zone and market time unit in EUR/MWh; (b) a single net position for each bidding zone and each market time unit;
(c) the information which enables the execution status of orders to be determined."

Article 44 states the following:

"By 16 months after the entry into force of this Regulation, each TSO, in coordination with all the other TSOs in the capacity calculation region, shall develop a proposal for robust and timely fallback procedures to ensure efficient, transparent and non-discriminatory capacity allocation in the event that the single day-ahead coupling process is unable to produce results. The proposal for the establishment of fallback procedures shall be subject to consultation in accordance with Article 12."

Article 50(1) states that:

"In the event that all NEMOs performing MCO functions are unable to deliver part or all of the results of the price coupling algorithm by the time specified in Article 37(1)(a), the fallback procedures established in accordance with Article 44 shall apply".

Furthermore, according to Article 50(2):

"In cases where there is a risk that all NEMOs performing MCO functions are unable to deliver part or all of the results within the deadline, all NEMOs shall notify all TSOs as soon as the risk is identified. All NEMOs performing MCO functions shall immediately publish a notice to market participants that fallback procedures may be applied."

The preamble of the CACM Regulation states the following on fallback procedures:

"(21) Despite the creation of a reliable algorithm to match bids and offers and appropriate backup processes, there may be situations where the price coupling process is unable to produce results. Consequently, it is necessary to provide for fallback solutions at a national and regional level to ensure capacity can still be allocated."

2.1 Interpretation and scope of the proposal

This proposal has been developed by the four Nordic TSOs in coordination with the relevant NEMOs. NEMOs are according to Article 7 (1) (h) of the CACM Regulation to take into account fallback procedures as established via this proposal.

The proposal applies to the bidding zone borders within the CCR Nordic. Fallback procedures for the bidding zone borders in CCR Hansa (and CCR Baltic) are developed separately and are outside the scope of this proposal.

Fallback procedures apply in the event that the single day-ahead coupling process is unable to produce results. The results meant are specified in Article 39 (2) of the CACM Regulation and relate to the output of the day-ahead price coupling algorithm, i.e. prices and net positions. Reasons for activating fallback procedures may relate to malfunctioning of the algorithm Euphemia, lacking order data from at least one NEMO, malfunctioning communication channels, etc.

3. Present Nordic fallback procedures

In this section, the present fallback solution in place within the Nordic area is described – starting with an introduction to the European market coupling.

3.1 The Multi-Regional Coupling (MRC)

In the Multi-Regional Coupling (MRC), prices are calculated in the PCR Matcher-Broker system (PMB) using the Euphemia algorithm, which all involved NEMOs have developed in close cooperation. The PMB system is designed so that the calculation will start when all the needed data is received, being all Network Data (Cross-Zonal Capacities and Allocation constraints) and Order Data (Order books).

The NEMOs take turns being the Coordinator – or responsible party – for the calculation. Currently, Nord Pool (NP), EPEX, GME and OMIE each spend two weeks as the Coordinator, two weeks as a hot backup (being able to take over the role as Coordinator on short notice) and two weeks off. NP and EPEX perform a full MRC shadow calculation today in

order to validate the valid results delivered by the calculation from the to all the other parties.

3.2 MRC procedures

Within MRC, TSOs and NEMOs have an agreed set of procedures for the day-ahead market coupling. These common procedures describe the way to act in normal situations, backup situations, fallback situations and special situations. Underlying to these common procedures each region has local procedures to ensure compliance with the MRC procedures (e.g. local procedures for fallback in case MRC declares fallback based on the common procedures for doing so).

3.2.1 MRC fallback procedures

As soon as an incident occurs that prevents the timely allocation of the CZCs via the implicit allocation process and/or the timely publication of the market coupling results, an MRC incident committee is convened by the NEMO acting as coordinator. The incident committee identifies the issue, assess and agree on potential fallback solutions.

MRC fallback procedures identify two overall fallback situations: Partial coupling or full decoupling.

In case of partial coupling, one region might experience problems and therefore has to be decoupled from the rest of MRC, which continues to be coupled. In case of full decoupling, all MRC regions and bidding zones are decoupled from each other.

Following the MRC incident committee declaring partial coupling or full decoupling, local fallback procedures are activated in order for the individual regions or bidding zones to allocate cross-zonal capacities and calculate a price for each bidding zone.

Depending on the reason for declaring a partial coupling or a full decoupling, the MRC fallback procedures identify 5 main situations, each of them with its specific deadline:

Partial Coupling			
Partial coupling known during the daily market coupling session			
1	Partial coupling for CZC-related reasons	→ 11:45 deadline	A NEMO has not submitted the network data by the deadline, which will lead to a partial coupling, meaning that the area(s) with the problem will be missing in the MRC-system. For example: if NP has not submitted the network data, this will lead to MRC declaring a partial coupling. The Nordic/Baltic region will in this case be missing from the calculations in the rest of MRC.
2	Partial coupling for reasons not related to the CZCs	→ 12:40 deadline	A NEMO has not submitted the order data, which will lead to a partial coupling, meaning that the region/area(s) with the problem will be missing in the MRC-system. For example: if NP has not submitted the order data this will lead to MRC declaring partial coupling. The Nordic/Baltic region will in this case be missing from the calculations

			in the rest of MRC.
Partial coupling known in advance			
3	Partial coupling known in advance	→ 10:30 deadline	Can only be declared in case the previous day's market coupling session resulted in partial coupling and the issue cannot be solved by 10:30 at the latest.
Full Decoupling			
Full decoupling known during the daily market coupling session			
4	Full decoupling known during the daily market coupling session	→ 13:50 deadline	Under normal circumstances, all NEMOs will receive the prices, net positions and flow results of the common price calculation in the MRC-system. Each NEMO checks the results for max/min prices, thresholds etc. and either confirms or rejects the results. If one or more of the NEMOs cannot provide this confirmation by 13:50 this will lead to a full decoupling.
Full decoupling known in advance			
5	Full decoupling known in advance	→ 10:30 deadline	Can only be declared in case the previous day's market coupling session resulted in full decoupling and the issue cannot be solved by 10:30 at the latest.

3.3 Current Nordic situation – local fallback procedures

3.3.1 Extension of calculation time for CCR Nordic until 20:00

In case of activation of the MRC fallback procedures, the current Nordic procedure is to always keep the Nordic (and Baltic) bidding zones coupled. This is independent of whether or not the reason is partial coupling or full decoupling. NP will use the PMB system locally, only containing Nordic-Baltic Network Data and Order Data, and set capacity on interconnectors of the adjacent CCR Hansa to 0 MW. Hence, all internal Nordic-Baltic connections, including Skagerrak, KontiSkan and Estlink will remain coupled[1].
In order to keep the Nordic bidding zones coupled, the Nordic TSOs have asked NP to continue calculations until 20:00.

The relatively late deadline increases the possibility of solving the issue(s) and thereby avoiding a no-price situation. The deadline has been agreed between NP and the Nordic TSOs and it has been included in NP's Rulebook on August 4, 2013.

3.3.2 No-price situation in CCR Nordic (no result at 20:00)

If NP is not able to determine the Elspot Prices before 20:00 on the day prior to the Delivery Day a no-price situation occurs. In this case the Price Report from the previous day will be deemed valid hour by hour in respect of both Auction Prices and Energy Volumes for the Delivery-Day in question.

In this context, the "previous day" means the previous working day if the auction failure has an effect on a working day, and the previous weekend day or public holiday, as ap-

[1] Current fallback in CCR Hansa is to conduct shadow auction. Following the auction conducted by JAO.EU, the order books of NP are reopened for 10 minutes.

propriate, if the auction failure has an effect on a Saturday, Sunday or public holiday. Working day means days from Monday to Friday, not including legal public holidays which are identified as public holiday in countries in the Electricity Exchange Area together having at least 67% of the consumption the previous year. Christmas Eve (24/12) and New Year's Eve (31/12) are considered public holidays. Thereby, a transparent and reliable Nordic market is maintained.[2]

Time	Action
11:45/12:40/13:50	MRC Market Coupling is declared to be partially or fully decoupled.
11:45/12:40/13:50	Local procedures are activated in case Nordic region is affected. NP will use the PMB system locally, only containing Nordic & Baltic data, and 0 MW capacity on all CCR Hansa interconnectors
20:00	In case of no results the Elspot auction is canceled, and NP will send out price and volume from last common banking day / not banking day for tomorrow.

Table 1: Deadlines for fallback procedures in CCR Nordic

3.3.3 Planned flow on the CCR Hansa interconnectors in case of no-price situation in CCR Nordic

If a situation occurs where NP is not able to determine bidding zone prices by 20:00, the results from the previous day will be used, according to current procedures described in the NP rulebook.

During local NP calculations of the Nordic bidding zone prices the planned flow on the Hansa interconnectors is set to 0 for the NP calculation. If the no-price situation occurs the results from a previous day will be copied, and the planned flow on the Hansa interconnectors will most likely be different from 0.

The planned flow according to the previous day's results will then be treated as an imbalance in the respective areas. The relevant TSO's handle this imbalance in the best way, either via intraday market, Regulating Power market, Counter-trade or etc.

If CCR Hansa is partially or fully decoupled, the capacity on the interconnectors will be subject to a shadow auction. If at the same time NP is unable to calculate prices for CCR Nordic, the owners of the transmission rights on the interconnectors are unable to place bids in NPs day-ahead auction. The resulting imbalances will then be handled the same way as described above.

4. Proposed fallback procedures for CCR Nordic

This chapter provides a description of and explanations for the proposed future fallback procedures and addresses important matters that have been considered in order to ensure well-functioning fallback procedures for the CCR Nordic. In line with Article 36(4) of the CACM Regulation, existing procedures will be reused as much as possible.

4.1 Keeping CCR Nordic coupled

CCR Nordic is characterized by a high number of bidding zones (12) compared to the rest of Europe, where a bidding zone normally corresponds to a country. CCR Nordic has a

[2] *Elspot Market Regulations*, NP 2016, http://www.nordpoolspot.com/TAS/Rulebook-for-the-Physical-Markets/Nordic-Baltic/

high proportion of cross-border capacity and trade, compared to the internal generation and consumption within each bidding zone. Bidding zone borders are reflecting the internal transmission constraints within a TSO's control area, and they are important tools for system operations. Full decoupling of all Nordic bidding zones will therefore have a more negative effect on system security compared to a similar full decoupling in continental Europe, where bidding zones are considerably larger.

It is also important for liquidity in the Nordic market to keep the Nordic bidding zones coupled, especially since 94,8 %[3] of the total consumption of power in the Nordic and Baltic market is traded on NP. As mentioned earlier CCR Nordic comprises a high number of bidding zones. The majority of the Nordic bidding zones are therefore not large bidding zones in terms of generation and consumption. A small number of market participants within each bidding zone cannot ensure liquid markets if the bidding zones are decoupled and, as a result, it is not necessarily possible to obtain a reliable price for the bidding zones.

4.2 Multiple NEMOs in CCR Nordic - impact on fallback procedures

The Nordic national proposals for arrangement concerning more than one NEMO in one bidding zone all state that each NEMO offering services in the Nordic bidding zones shall allow its orders to be used for calculating and publishing a unique clearing price for the bidding zones during fallback situations.

This proposal for fallback procedures therefore incorporates a solution, where all NEMOs are equally involved and equally treated while at the same time respecting the need for keeping the CCR Nordic internally coupled also during a fallback situation. This results in a robust and non-discriminatory arrangement, in compliance with Article 44 of the CACM Regulation.

4.3 Activation of Nordic fallback procedures

The Nordic TSOs expect that the MRC will continue evolving into the future European single day-ahead coupling solution. Based on this assumption the existing setup, procedures, technical solutions etc. will be reused as much as possible in the future single day-ahead coupling. The timings used in this proposal are therefore mentioned under this assumption. Should MRC timings or procedures be changed, this will then also affect when to activate Nordic fallback procedures.

4.3.1 MRC partial coupling is declared

If one or more order books have not been submitted to the PMB by 12:40, an MRC partial coupling will be declared. If the problem with a missing order book is due to issues in CCR Nordic, CCR Nordic will be partially decoupled from the rest of the MRC and Nordic fallback procedures will be activated. If partial coupling is declared due to problems in another region, CCR Nordic will generally stay coupled with MRC (in case the neighbouring CCR Hansa has decoupled this will, however, de facto also lead to a decoupling of CCR Nordic).

Issues in CCR Nordic that can lead to declaring MRC partial coupling

If one or more of the NEMOs in CCR Nordic are not able to submit order data to the PMB by deadline, this will lead to MRC declaring a partial coupling resulting inCCR Nordic not being part of the MRC calculations. This is independent of whether or not one of the NEMOs in CCR Nordic is able to submit order data.

[3] Figure 2016 according to NP.

4.3.2 MRC full decoupling is declared

If MRC price coupling results are not confirmed by 13:50, the MRC will be fully decoupled. For all regions, including CCR Nordic, this means decoupling from the rest of the MRC regions and the activation of regional fallback procedures.

Issues in CCR Nordic that can lead to declaring MRC full decoupling

If one or more of the NEMOs in CCR Nordic experience problems in confirmation of results by the deadline, this will lead to full decoupling of MRC. This is independent of whether or not one of the NEMOs in CCR Nordic is not experiencing problems and leads to the activation of fallback procedures in CCR Nordic.

4.4 Course of action when Nordic fallback procedures have been activated

Activation of the Nordic fallback procedures results in a two-step approach, which will be further described in detailed procedures during implementation. However, the principles are as follows:

4.4.1 Step 1 – calculation until 20:00

In both a partial and a full decoupling situation the bidding zone borders of CCR Nordic will remain coupled. Prices will be calculated for the coupled CCR Nordic using the PMB system in a "local" mode by a Nordic "fallback operator". This calculation will contain Nordic network data and Nordic order data and set cross-zonal capacities on interconnectors from/to Nordic bidding zones to 0 MW. These interconnectors will be handled according to proposed fallback procedures for CCR Hansa and CCR Baltic.

The fallback operator's deadline for completing the price calculation is 20:00. Applying this relatively late deadline of 20:00 increases the probability of solving the existing problem(s) and avoiding a no-price situation. This absolute deadline of 20:00 for when the day-ahead auction will be canceled must be transparent for the market participants and should be incorporated in the relevant NEMO rulebooks for market participants in the CCR Nordic.

4.4.2 Step 2 - no-price situation

Only in the unlikely event that the fallback operator is not able to complete calculations by 20:00, the no-price situation comes into effect. In that case NEMOs are to use results from a previous day/reference day to be agreed in advance in a dedicated procedure. The planned flow on interconnections from/to CCR Nordic according to the previous day's results will be treated as an imbalance in the respective TSOs' areas. The relevant TSOs handle this imbalance in the best way, either through intraday market, regulating power market, counter-trade etc. Market participants will be responsible themselves for their possible imbalances between the plans of the previous day and actual injections and outtakes. NEMOs could include liability provisions in their trading rules that free them from any liability due to loss or damage to a market participant following a no-price situation. Such provision could be based on the approval of the CCR Nordic fallback procedures by the CCR Nordic national regulatory authorities. Accepting such liability provisions would be a prerequisite for the market participants to trade on the NEMOs active in CCR Nordic.

4.5 Fallback operator

A fallback operator shall calculate market coupling results in case of MRC partial or full decoupling and deliver the results to the market participants by 20:00 or in case of no-price situation deliver the results of the chosen relevant day.

4.5.1 Selection of fallback operator

In case there is only one NEMO designated in the bidding zone, this NEMO can act as fallback operator (as currently in CCR Nordic). However, there will be at least two NEMOs offering trading services in CCR Nordic and equal treatment of these NEMOs has to be taken into account when the fallback operator will be assigned. Nordic TSOs should assign at least one fallback operator in CCR Nordic.

Two options can be identified in the fallback operator selection process:

- tendering for one fallback operator
- assigning each NEMO as fallback operator role applying rotational setup in this assignment

Nordic TSOs have considered both options for the selection of the fallback operator. Nordic TSOs may assign by tendering one NEMO as responsible for the fallback operator role and predefine requirements for acting as the fallback operator in the tendering process. However, tendering have some drawbacks,e.g.:

- lengthy process as European procurement rules and procedures have to be applied
- tendering has to be repeated after a couple of years
- there are not so many tenderers and they are acting as NEMOs and thus competing with each other
- equal treatment of NEMOs active in CCR Nordic might be challenged in the tendering process

Nordic TSOs have taken the view that assigning each NEMO as fallback operator in a rotational setup would be the best option for selecting the Nordic fallback operator due to the following:

- complies with the current MRC approach, where NEMOs can act as coordinator, backup coordinator or operator in the rotational setup
- ensures the equal treatment between the competing NEMOs

However, assigning each NEMO to be the fallback operator in a rotational setup should ensure that the rotational setup does not have any negative impact on operational security. A prerequisite for selecting the rotational setup is that the procedures detailing the interaction between the assigned fallback operator and the TSOs in a fallback situation are sufficient and appropriate from the TSOs point of view. These detailed procedures must be developed and approved before the rotational setup can be implemented. It must be known at all times, which NEMO is assigned as the Nordic fallback operator and what procedures this fallback operator has to take to handle the fallback situation.

When the rotational setup is applied, the role of the fallback operator is always assigned to a NEMO. The basis for this assignment is that a NEMO shall comply with the rotational scheme calendar of MRC and apply the following roles as defined in proposal for backup methodology by all NEMOs:

- Operator means a day-ahead NEMO that is setup to be able to perform the DA MCO Functions during the Market Coupling Phase, and which provides all connected Operators, including the Coordinator of the day, with the information needed for the calculation of the market coupling results. The Operator participates in the actions convened by the Coordinator, complies with commonly agreed decisions and accepts or rejects the market coupling results for its own results (plus those of any NEMO that it services).
- Coordinator means a day-ahead NEMO which, in addition to performing the tasks of an Operator, during the Market Coupling Session (MCS) is responsible for coor-

dinating the operation of the MCS. The Operators share the Coordinator role according to a rotational scheme calendar.

- Backup Coordinator means a day-ahead NEMO which in addition to performing the task as an Operator, is responsible, if necessary, to take over the Coordinator role at any moment. The Operators share the Backup Coordinator role according to a rotational scheme calendar.

4.5.2 Requirements to act as fallback operator in CCR Nordic

Partial or full decoupling of MRC are rare occasions and since the introduction of the Euphemia algorithm (February 2014) no fallback procedures have been initiated in the Nordic area. Implementation of backup methodology to be developed in accordance with the CACM regulation aims to prevent the partial and full decoupling implying that these situations would be rare also in the future. Thus, it may be foreseen that the additional workload of being the fallback operator is expected to be very limited. The workload will mainly consist of maintaining the readiness to act as the fallback operator in case the partial or full decoupling is announced affecting CCR Nordic.

Nordic TSOs propose to apply the rotational setup for the Nordic fallback operator. The main criteria/requirements to qualify as a Nordic fallback operator are as follows for each NEMO in the Nordic rotational setup:

- provide trading services in each bidding zone of CCR Nordic
- be coordinator and backup coordinator in the MRC
- commit to operate in CCR Nordic and notify the needed lead-time to start operation

In the rotational setup, each NEMO has to act as the Nordic fallback operator and there has to be at least one NEMO acting as the Nordic fallback operator.

4.6 Nordic fallback procedures – robust, reliable and transparent

This chapter focuses on explaining and justifying the proposed Nordic fallback procedures.

Equal treatment of multiple NEMOs

The proposed fallback procedures are aimed to be robust for future market conditions. Thus the suggested fallback procedures have been designed to be able to handle two or more NEMOs within CCR Nordic. Equal treatment is ensured by applying a rotational principle for the fallback operator role.

Keeping CCR Nordic coupled

As described in section 4.1 it is important to keep CCR Nordic coupled in all fallback situations. The proposal for the future fallback procedures are designed to ensure this as step 1 is to keep calculating for as long time as possible whereas step 2 (only if needed) is to use the results from the previous day, thereby still ensuring that the region is coupled.

One price per bidding zone per market time unit and the Nordic system price

Reliability of prices in the Nordic bidding zones is extremely important. As mentioned earlier most of the total consumption of power in the Nordic and Baltic market is currently traded on the power exchange. This will be endangered if market participants cannot trust in the prices.

The bidding zone prices and especially the Nordic system price is the basis for most financial trade in CCR Nordic and is used as reference price in bilateral trades and as a reference to contracts in the end user market to a larger extent than in other parts of Europe.

The importance of one price per bidding zone and a reliable Nordic system price is also the reason why it has been excluded from the proposal that the CCR Nordic still stay coupled with MRC, if at least one NEMO has no problems and can calculate. In such a case the price formation would be without a complete order book from the CCR Nordic bidding zones. This poses a risk of highly volatile prices, more than one price in a bidding zone per market time unit (MTU), the risk of the interconnector capacity not being used optimally since orders corresponding to all production and consumption would not be matched in a single process. A situation could occur, where one NEMO has high prices and another NEMO has very low prices thereby endangering the reliability of prices.

Calculation until 20:00 compared to other solutions

Common practice in the rest of Europe in a MRC declared fallback situation is to cancel the day-ahead auction at the deadline 13:50 (or 11:45/12:40 in case of partial coupling and then only for the involved interconnectors), and to either apply shadow auction (handled by JAO.EU) or let market participants use the intraday market to trade their power production and consumption.

Shadow auction

The alternative of applying shadow auction in CCR Nordic would entail carrying out explicit capacity auctions on each bidding zone border in the region. This solution would result in a situation where it is no longer possible to keep CCR Nordic coupled – one of the most important outcomes to be ensured by a Nordic fallback procedure.

Contrary to the rest of Europe, explicit auctions have been phased out in the Nordic region for many years[4]. Choosing shadow auction for CCR Nordic would therefore entail many Nordic market participants and even some of the TSOs having to set up internal systems and conclude arrangements with JAO.EU (or another service provider) to handle this. Such a change is not in line with Article 36(4) of the CACM Regulation, stating existing procedures to be reused as much as possible.

Carrying out explicit shadow auctions on each bidding zone border would imply a manual and time demanding process for market participants as they would have to have personnel ready to first send bids to JAO.EU for capacity followed by sending bids to the NEMOs based on the awarded capacity in the shadow auction. Since it is expected that fallback procedures will be carried out very seldom there is also a risk that many of the smaller market participants are not fully up to date with procedures if fallback is activated, resulting in mistakes that could potentially be costly.

One of the reasons for applying shadow auctions on many European interconnectors is the fact that the TSOs need nominations earlier than Nordic TSOs. Common practice for Continental European TSOs is a nomination deadline at 15:30. The Nordic TSOs are, however, under special fallback circumstances, able to delay own procedures and wait for nominations. Therefore calculation time can be extended, improving the possibility for finding prices, net positions and flows through price coupling and not through the less efficient explicit auctions.

The late deadline can have some negative impact on TSOs since in some cases it could cause the cancellation of reserve trading between the TSOs, causing financially non-optimal maintenance of reserves. However, the negative impacts of having no price in the day-ahead market are considered greater.

[4] DK2 was the last Nordic bidding zone to join the price coupled Nordic region in 2000. Since then there has been no explicit auctions carried out on internal Nordic borders.

Intraday

The alternative with leaving all volume planned for day-ahead to the intraday market might be challenging for some Nordic market participants. Several minor Nordic market participants do not have the possibility to trade as they do not have 24/7 personnel available and they are not a member on intraday trading.

Hence, it is questionable whether leaving all market participants on their own without any prices is a realistic option as several market participants will not be able to sell/buy the needed volume in intraday timeframe, and the market prices in the intraday market will not be representative.

From a system security perspective, the TSOs need to be notified about the planned flow following the Nordic market coupling. The strong case for keeping the Nordics coupled justifies that the TSOs wait until 20:00. However, in the rare situation where market coupling is not successful within that deadline, the operational centres of the TSOs need a planned flow based on a market outcome. The operational phase would be challenging without any planned flow except that following from the intraday market.

The proposal is therefore to keep 20:00 as deadline for calculation of day-ahead prices in case of MRC partial or full decoupling thereby ensuring a very high probability that correct prices will be calculated for the Nordic bidding zones.

No-price situation at 20:00 in CCR Nordic

In the unlikely event that the fallback operator is not able to solve the problems by 20:00, results from a previous day/reference day is chosen according to agreed procedures.

Historically there is very minimal risk of a no-price situation in CCR Nordic. This has only happened once and happened before go-live of the NWE price coupling (North West Europe – now MRC). At that time it was concluded that the no-price situation would not have happened if the NWE price coupling had already been implemented.

Market coupling towards Germany, Netherlands and Poland (via CCR Hansa borders) and increased amount of wind generation are some of the reasons why making use of previous day's/reference day's results may be problematic. However, the logic behind the proposed approach is that the market and the TSOs are better off by having some results – prices, volumes and cross-border flows –rather than starting out with nothing before planning the day-ahead operations. The day-to-day changes in prices and flows in the Nordic region are limited[5].

For the market parties, having prices from a previous day /reference day as a starting point limits the need to make adjustments in the intraday market. For the TSOs it is important to ensure system security. This entails establishing fallback procedures, which ensure that the operational centres receive needed information. In the unlikely event that the fallback operator cannot calculate prices and flows for CCR Nordic by 20:00, the TSOs need for information can be met by applying the results from a previous day/reference day[6].

[5] Calculations based on data from Nord Pool show that in 2016 the average change per hour from one day to another was 5 % or less for all areas except wind dominated DK1.

[6] The use of a reference day is also discussed in other situations, such as e.g. in the Nordic project for aFRR (automatic Frequency Restoration Reserves). Analyses in this specific project have shown that the use of a reference day (use of previous day or previous weekend) with actual day-ahead market prices in order to calculate the capac-

Over the years, Nordic TSOs have discussed different alternatives to using results from a previous day in a no-price situation, e.g. where NEMOs should analyse the next day, and find a similar day from previous price calculations. However, in a no-price situation the NEMOs may not have time (concentrating until 20:00 on solving the problem and calculating a price), expertise or relevant data to find the best day, seen from TSOs' and market participants' perspective.

There may also be conflicting interests between different market actors, which could lead to some actors complaining to the NEMOs if they do not agree with the day chosen. To avoid these uncertainties and to have the best possible transparency towards TSOs and market participants, a clear procedure to select the representative day needs to be prioritized and communicated. For the market, the most important in case of no-price situation is that the rule for choosing the day as the valid price results is transparent and ensures equal treatment for the market participants. Hence, requesting the NEMO as fallback operator to pick a day is not a good option for the market.

The proposal is therefore to use reference day to be agreed in advance in a dedicated procedure as fallback day to set the prices for each bidding zone in case prices cannot be calculated by 20:00.

Calculation until 20:00, and as a last resort using previous day /reference day results, ensures that key objectives in the Nordic market are realised:

- One unique price per bidding zone per market time unit
- A reliable reference price (the Nordic system price) e.g. for the financial market
- Needed information on flows by the operational centres of the TSOs to ensure system security
- Keeping the Nordic region coupled

4.7 Impact on the CCR Nordic from other CCR fallback procedures

Activation of fallback procedures in other CCRs, especially CCR Baltic and CCR Hansa might affect TSOs and NEMOs in CCR Nordic. In that case, the Nordic TSOs and the relevant NEMOs shall work together with the adjacent CCRs during implementation to find solutions to ensure that their fallback procedures do not affect the fallback procedures for CCR Nordic in a negative way.

5. Evaluation of the proposal against the objectives of the CACM Regulation

This proposal contributes to the achievement of the objectives of Article 3 of the CACM Regulation. The main purpose of this proposal is to achieve an efficient market coupling process also in the situation when the normal market coupling process fails. In particular, by keeping all bidding zones within the Nordics coupled, the proposed solution respects the need for a fair and orderly market as well as fair and orderly price formation also in a situation where the CCR Nordic is decoupled from the rest of MRC.

The CACM Regulation has the objective to ensure optimal use of the transmission infrastructure, operational security and optimizing the calculation and allocation of cross-zonal

ity to be reserved for aFRR on a daily basis should be sufficient. The analyses have shown that a reference day is good enough for a majority of hours, even if several reasons exist for price fluctuations between days. Based on these analyses it has been decided in the project to use a reference day and this is currently under development.

capacity. In this respect, the proposed fallback procedure opens up for a transparent and efficient use of transmission capacity in critical situations by in any case providing the market with DA auction results. The operational security is also ensured by establishing simple procedures and a distinct allocation of responsibility in a fallback situation.

In regard to the aim of the CACM Regulation to promote effective competition in the generation, trading and supply of electricity, this proposal has taken into account the importance of creating a level playing field for market parties active on cross-zonal markets, e.g. by keeping the Nordic market coupled in a fallback situation and avoiding a situation where all the volume planned for day-ahead is left to the intraday market. The creation of a level playing field for NEMOs specifically is supported by equal obligations and requirements for acting as fallback operator in the CCR Nordic.

By keeping the bidding zones within the CCR Nordic coupled also in a fallback situation, a functioning day-ahead market is ensured also in a situation where the primary market coupling process fails.

6. Implementation planning

The implementation of these fallback procedures shall coincide with the implementation of the MNA proposals for single day ahead coupling within the CCR Nordic.

In addition to the implementation of this fallback procedure in accordance with Article 44 of the CACM Regulation, the implementation of the MNA Proposal for single day-ahead coupling will be according to the following milestones:

- The implementation of the MCO function for single day-ahead market coupling by the relevant NEMOs in accordance with Article 7 (3) of the CACM Regulation;

7. Stakeholders' comments and assessment

Stakeholders have the opportunity to provide input on the Nordic TSOs proposal for arrangements concerning more than one NEMO.