Nordic TSOs' proposal for Arrangements concerning more than one NEMO in one bidding zone in accordance with Article 45 and 57 of the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a Guideline on Capacity Allocation and Congestion Management

Content

1. Introduction

This document contains a proposal from Energinet.DK ("ENDK"), Fingrid, Statnett and Svenska kraftnät ("Svk") as meant in articles 45 and 57 of Commission Regulation (EU) 2015/1222 of 24 July 2015 ("CACM Regulation")[1].

The reason for this proposal is the fact that besides NORD POOL ("Nord Pool"), which has been designated as Nominated Electricity Market Operator ("NEMO") in Denmark, Sweden and Finland, a second NEMO, EPEX SPOT, intends to offer services for single day-ahead and single intraday coupling in the Nordic area. DERA, Ei and EV have received requests from EPEX SPOT to be allowed to offer services for day-ahead and intraday markets in Denmark, Sweden and Finland. All three NRAs have accepted EPEX SPOT's requests.

In regards to Norway, the CACM Regulation is not yet implemented as Norwegian law due to delay in implementing the Regulation (EC) No 714/2009. EPEX SPOT is in contact with NVE in order to find an appropriate way of applying for necessary permits in Norway. No decision has been made from NVE in time of writing, but there are no indications from NVE that there are obstacles to EPEX SPOT applying for – and receiving the necessary permits under the existing legislation. This document is written under the assumption from Statnett that Norway will have a situation involving more NEMOs from approximately the same time as the other Nordic countries.

A proposal for cross-zonal capacity allocation and other necessary arrangements is to be developed by the TSOs in bidding zones (BZs) where more than one NEMO offers trading services. As EPEX SPOT has asked to become market operator simultaneously in the bidding zones of Denmark, Finland and Sweden, the TSOs have developed this proposal together.

Even though the current situation is that two NEMOs will be active in the Nordic region, the arrangements described in this proposal are not restricted to two NEMOs. The arrangements are able to include more NEMOs should further applications from other NEMOs be received by the regulators in the future.

In this proposal no distinction is made between EPEX SPOT and Nord Pool based on location of designation as NEMO. In other words, EPEX SPOT and Nord Pool are treated equally regardless of the fact that EPEX SPOT has not been designated as a NEMO in Denmark, Finland and Sweden.

The proposal has to be submitted for NRA approval within 4 months after more than one NEMO has been designated and/or allowed to offer trading services. As different dates apply to the NRA decisions (or communications) to allow EPEX SPOT to offer services, different deadlines for submission of the proposal to the different NRAs apply.

The proposal covers both arrangements for single day-ahead coupling and single intraday coupling in Nordic bidding zones and borders between these Nordic bidding zones (See Annex 1 for overview of the borders).

Pre- and post-coupling arrangements on the borders between the Nordic region and the CWE-CEE and Baltic regions are not covered by this proposal. This does not entail that NEMOs in the Nordic region are prevented from having access to the cross-zonal capacity on these borders. All NEMOs in the Nordic region will have equal access. At the latest

[1] Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management, OJ 25-7-2015 L 197/24.

following the implementation of more NEMOs in the Nordic region and the implementation of more NEMOs in adjacent bidding zones, the relevant Nordic TSOs in cooperation with the relevant neighbouring TSOs will analyse the impact on these borders and how to adapt current pre- and post-coupling solutions to the new arrangements on each side of these borders.

2. Legal requirements and interpretation

This chapter contains references to relevant articles in the CACM Regulation. Furthermore, a description is given on how these articles are interpreted in order to set the scope for this proposal.

According to article 36 (4) of the CACM Regulation, NEMOs shall use already agreed solutions to efficiently implement the objectives of this Regulation where possible.

In addition, the preamble of the CACM Regulation states the following:

"*14) For efficiency reasons and in order to implement single day-ahead and intraday coupling as soon as possible, single day-ahead and intraday coupling should make use of existing market operators and already implemented solutions where appropriate, without precluding competition from new operators*."

Single day-ahead and intraday coupling are defined in Article 2 (26) and 2 (27) of the CACM Regulation:

"'*single day-ahead coupling' means the auctioning process where collected orders are matched and cross-zonal capacity is allocated simultaneously for different bidding zones in the day-ahead market*;"

"'*single intraday coupling' means the continuous process where collected orders are matched and cross-zonal capacity is allocated simultaneously for different bidding zones in the intraday market*."

Article 4 (5) of the CACM Regulation states that:
"A NEMO designated in one Member State shall have the right to offer day-ahead and intraday trading services with delivery in another Member State. The trading rules in the latter Member State shall apply without the need for designation as a NEMO in that Member State." [..]

NEMOs are obliged to carry out MCO functions which relate to the task of matching orders from the day-ahead and intraday market for different bidding zones and simultaneously allocating cross-zonal capacities. The MCO functions are defined in article 7 (2) of the CACM Regulation:

"2.NEMOs shall carry out MCO functions jointly with other NEMOs. Those functions shall include the following:
(a) developing and maintaining the algorithms, systems and procedures for single day-ahead and intraday coupling in accordance with Articles 36 and 51;
(b) processing input data on cross-zonal capacity and allocation constraints provided by coordinated capacity calculators in accordance with Articles 46 and 58;
(c) operating the price coupling and continuous trading matching algorithms in accordance with Articles 48 and 60;

(d) validating and sending single day-ahead and intraday coupling results to the NEMOs in accordance with Articles 48 and 60."

In regards to post-coupling arrangements, the following definitions from Article 2 (42) and (43) of the CACM Regulation are relevant to mention:

"'*central counter party' means the entity or entities with the task of entering into contracts with market participants, by novation of the contracts resulting from the matching process, and of organising the transfer of net positions resulting from capacity allocation with other central counter parties or shipping agents;*

'shipping agent' means the entity or entities with the task of transferring net positions between different central counter parties."

The legal grounds for this proposal are laid down in Article 45 and 57 of the CACM Regulation. Article 45 has the following content:
"1.*TSOs in bidding zones where more than one NEMO is designated and/or offers trading services, or where interconnectors which are not operated by TSOs certified according to Article 3 of Regulation (EC) No 714/2009 exist, shall develop a proposal for cross-zonal capacity allocation and other necessary arrangements for such bidding zones in cooperation with concerned TSOs, NEMOs and operators of interconnectors who are not certified as TSOs to ensure that the relevant NEMOs and interconnectors provide the necessary data and financial coverage for such arrangements. These arrangements must allow additional TSOs and NEMOs to join these arrangements*."

"2.*The proposal shall be submitted to the relevant national regulatory authorities for approval within 4 months after more than one NEMO has been designated and/or allowed to offer trading services in a bidding zone or if a new interconnector is not operated by a certified TSO. For existing interconnectors which are not operated by certified TSOs the proposal shall be submitted within four months after entry into force of this Regulation*."
Article 57 of the CACM Regulation has identical content but relates to the intraday capacity allocation.

In regards to regulatory approval, Article 9 (8) of the CACM Regulation states:
"The following terms and conditions or methodologies shall be subject to individual approval by each regulatory authority or other competent authority of the Member States concerned:[…]
(d) where applicable, the proposal for cross-zonal capacity allocation and other arrangements in accordance with Articles 45 and 57."

The proposal is therefore submitted for regulatory approval to DERA in Denmark, EV in Finland, Ei in Sweden and NVE in Norway.

2.1 Interpretation and scope of the proposal

The proposal is to cover capacity allocation and other necessary arrangements to ensure that the relevant NEMOs provide the necessary data and financial coverage for such arrangements. Moreover, arrangements must be flexible to additional TSOs and NEMOs joining these arrangements in the future.

First, it should be noted that Article 45 of the CACM Regulation applies to single day-ahead coupling and Article 57 of the CACM Regulation applies to single intraday coupling. It is therefore required that the arrangements proposed apply to these two solutions.

Currently arrangements for single day-ahead and intraday coupling are not yet in place but are under development.

The whole process for single day-ahead and intraday coupling will consist of arrangements for pre-coupling and post-coupling, which is the responsibility of TSOs (as defined by the CACM Regulation article 8), whereas implementation of the MCO function has been provided by the NEMOs through the MCO plan (as defined by the CACM Regulation article 7).
Therefore this proposal covers both pre-coupling and post-coupling requirements for day-ahead and intraday capacity allocation, but not requirements related to the MCO function.

Secondly, the proposal shall relate to cross-zonal capacity allocation and other necessary arrangements. This formulation in the CACM Regulation is broad and unspecified. However, it is stated that the purpose of the proposed arrangements is to ensure that the relevant NEMOs provide the necessary data and financial coverage for such arrangements.

Based on this, the proposal is focused on arrangements which are needed to give several NEMOs access to cross-zonal capacity in the day-ahead and intraday timeframe, when single day-ahead and intraday coupling are implemented. Moreover, these arrangements are focused on data exchange and financial arrangement to comply with the aim of article 45 and 57 of the CACM Regulation.

Finally arrangements must be flexible to additional TSOs and NEMOs. The proposal for arrangements is a common proposal by all four Nordic TSOs thereby ensuring that the arrangements are flexible to several TSOs. At the same time the proposed arrangements are flexible to more NEMOs, should more NEMOs wish to join at a later stage.

The following is not part of this proposal:

- Market information and transparency requirements. This is not seen as directly relating to capacity allocation and the scope of the CACM Regulation as a whole.
- The fallback procedures, according to Article 44 of the CACM Regulation, require separate NRA approval on CCR level.
- National trading rules, which the TSOs apply to both designated NEMOs and NEMOs wanting to offer trading services in a bidding zone based on NEMO designation it has acquired for another bidding zone. They relate to for example requirements for balancing responsible parties and fall outside the scope of this proposal. If relevant the Nordic TSOs will address local rules when submitting the common proposal.

2.2 Process

Articles 45 and 57 of the CACM Regulation require that a proposal is developed in cooperation with the concerned TSOs and NEMOs.

By setting up a common proposal the condition is met that the proposal is developed in cooperation with concerned TSOs.

Moreover, the Nordic TSOs have been in dialog with Nord Pool and EPEX SPOT during the development of the proposal. A meeting was held to discuss arrangements on 14 March 2016 and a follow-up telephone meeting was held on 29 April 2016. On 20 May 2016 the draft proposal for an arrangement was sent to the NEMOs for commenting.

Specific for intraday, the already established local implementation project "NordLIP", now includes both Nord Pool and EPEX SPOT as part of the project.

3. Relevant algorithm requirements for price coupling – All TSOs proposal

According to the CACM Regulation article 37(1) all TSOs shall jointly provide all NEMOs with a proposal for requirements to the price coupling algorithm and the continuous trading matching algorithm. This proposal has been provided by the TSOs in April 2016. Within the same deadline NEMOs have also been required to propose a common set of algorithm requirements. Following these two proposals, all NEMOs are required to develop a proposal for the algorithms in accordance with the submitted requirements.

The common Nordic proposal for arrangements for more NEMOs has been developed with the assumption that the all TSO proposal for algorithm requirements will be included in the all NEMO proposal for the algorithms and approved and implemented. Should the requirements change, parts of this proposal might have to be updated to be aligned with the changes in algorithm requirements.

The following algorithm requirements are relevant for arrangements for more NEMOs.

The price coupling algorithm for the single day-ahead coupling shall be able to facilitate configurations with more than one NEMO for a given bidding zone, meaning several day-ahead trading hubs in a bidding zone.

For each bidding zone the result from application of the algorithm shall be one price and one net position for each Market Time Unit (MTU) and, where applicable, net positions for each scheduling area and each NEMO trading hub for bidding zones with several NEMOs in a bidding zone. If required by relevant TSOs there shall be one price and one net position for each MTU for each bidding zone under all circumstances, including partial and full decoupling. In case of partial decoupling, net positions and prices shall be determined by implicit auctions on non-decoupled bidding zone borders.

Regarding the prices for each MTU, the output of the algorithm shall be: rounded and unrounded price in Euros for each bidding zone and, if requested by relevant parties, regional prices, such as unconstrained prices for specific Nordic regions.

Regarding the quantities for each MTU the output of the algorithm shall be: rounded and unrounded net position for each bidding zone, which is defined as the difference between matched supply and demand orders within a bidding zone, where rounding shall follow the rounding rules defined for each bidding zone and where applicable, net position for each scheduling area and each NEMO trading hub in bidding zones with several NEMOs.

The algorithm shall be able to implement a change of bidding zone configurations no later than 4 weeks after a TSO requests a change.

At the request of a TSO, the algorithm shall be able to deliver the bidding curves of the control area of the requesting TSO.

4. Proposal for Arrangement - day-ahead

4.1 Present Status

The Nordic Region has been part of the common day-ahead solution ”MRC” (Multi regional price coupling) from go-live of NWE (North West Europe) price coupling on 4th February 2014.

The current situation is shown in figure 1.

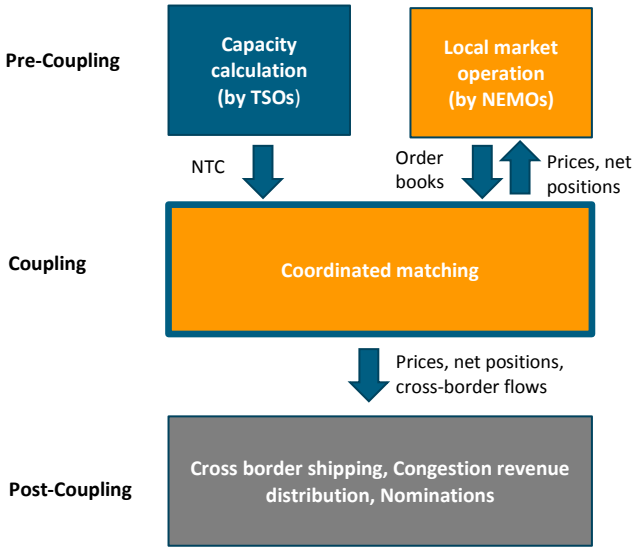

Figure 1: Common European day-ahead market – current situation

The Nordic TSOs and the Nordic power exchange Nord Pool are members of the MRC Joint Steering Committee (MRC JSC) and the MRC Operations Committee (MRC OPSCOM). The same is valid for EPEX SPOT that has also been a member from go-live of NWE price coupling. Both Nord Pool and EPEX SPOT are responsible for calculation of the prices and flows on a rotational basis with other NEMOs for MRC.

As members of MRC the Nordic TSOs, Nord Pool and EPEX SPOT are applying the agreed and approved MRC procedures in daily operations of the common day-ahead market as shown in figure 2. These procedures cover the process from the transfer of the Cross-Zonal Capacities (CZCs) and the Allocation Constraints (ACs) from the TSOs to the NEMOs and ends for the TSOs when the Scheduled Exchanges Notification has been successfully received by the TSOs.

The details of the pre-coupling and post-coupling are defined in regional procedures. These procedures are developed as supplements to the requirements of the MRC common procedures.

If problems arise during the price coupling process, MRC has established backup and fallback procedures to handle this situation. In case backup procedures cannot restore the situation back to normal, the fallback procedures will be applied. This results in either a partial or a full decoupling, where no coordinated matching is possible. Regional procedures are in place to ensure that a price is calculated.

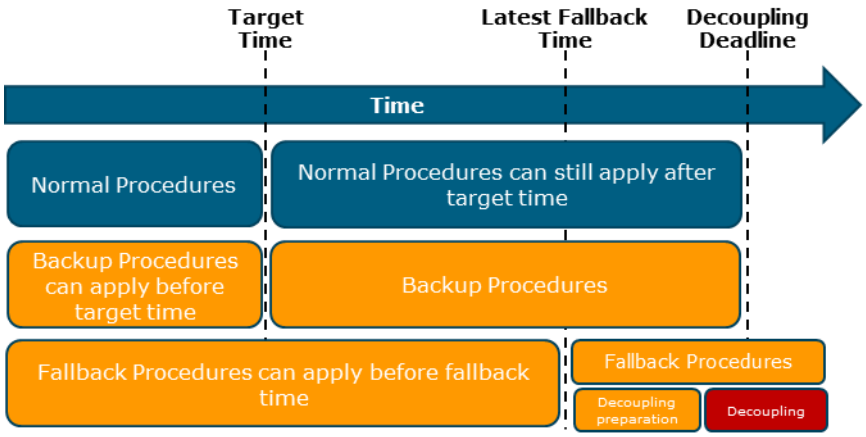

Figure 2: MRC procedures

4.1.1 Pre-coupling – current Nordic common procedure

Nordic TSOs provide the daily CZC on the internal Nordic interconnectors to Nord Pool via a common Nordic TSO system. Nord Pool is responsible for ensuring that the CZCs and also any possible ACs are forwarded to and included in the coordinated matching by the algorithm Euphemia.

4.1.2 Post-coupling – current Nordic common situation

Nord Pool is responsible for sending the trade results of all market participants to the relevant TSOs, sending the planned power flow between Bidding Zones to the relevant TSOs and scheduling the cross-border nominations between all internal Nordic bidding zones. Nord Pool acts as central counter party (CCP) in the Nordic market and is the responsible shipper on all internal Nordic borders.

4.1.3 Fallback solution – current Nordic common situation

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 partial coupling or full decoupling, local procedures are activated in order for the individual regions or bidding zones to allocate capacities and calculate a price.

In case of activation of the MRC fallback procedures, the current Nordic procedure is to always keep the Nordic bidding zones coupled. This is independent of whether or not the reason is partial coupling or full decoupling. The Nordic region is characterized by a high number of bidding areas, with a high proportion of cross border capacity and trade, compared to the internal generation and consumption within each area. Bidding zones 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 have a more negative effect on security of supply compared to a similar full decoupling in continental Europe.

Individually the Nordic bidding zones are not large bidding zones. It is therefore important for liquidity in the Nordic market to keep the bidding zones coupled, especially since 84%[2] of the total consumption of power in the Nordic and Baltic market is traded on Nord Pool.

[2] Nord Pool Annual Report 2013

In order to keep the Nordic bidding zones coupled, the Nordic TSOs have asked Nord Pool to continue calculations until 20:00, using the common MRC algorithm Euphemia in an isolated regional mode. The Nordic TSOs, under these special fallback circumstances, are able to delay own procedures and wait for nominations. However, the TSOs cannot operate the system without the nominations. Therefore, if a result is not possible by 20:00, the TSOs have decided that trade results for the different Nordic Bidding Zones from the previous day are valid also for the coming day (or previous weekend in case fallback occurs during a weekend), thereby maintaining a transparent and reliable Nordic market.

4.1.4 Legal agreements – current Nordic common situation

The current role and responsibilities of Nord Pool is defined in and governed by a Nordic Day Ahead Operations Agreement (Nordic DAOA). Parties to the agreement are the four Nordic TSOs and Nord Pool. A Nordic DAOA Steering Committee consisting of the four Nordic TSOs has been established. Nord Pool is invited to the meetings to inform on relevant topics

The Nordic DAOA represents a "local arrangement" supplementing the MRC Day Ahead Operations Agreement (MRC DAOA). The MRC DAOA is the general framework of cooperation between all the MRC parties.

4.1.5 System Price

At present, the price coupling solution calculates the bidding zone prices, net positions, and cross-border flows in accordance with constraints provided by the Nordic TSOs for all the Nordic bidding zones and connectors between the bidding zones. Nord Pool publishes this information on its webpage.

In addition, Nord Pool publishes the system price. The system price corresponds to a market clearing price for the Nordic region if no constraints were present on the bidding zone borders.

The majority of the standard financial contracts traded in the Nordic region use the system price as reference price.

4.1.6 Change of Bidding Zone configuration

At present, a change of bidding zone configuration shall be implemented no later than 4 weeks after a TSO requests a change.

4.2 Description of the proposed arrangement for more NEMOs in the Nordic region

Nordic TSOs expect that the MRC will evolve 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) as basis for the day-ahead arrangement for more NEMOs in the Nordic region. This assumption is in line with the CACM Regulation as referred to in chapter 2 of this proposal (CACM Regulation preamble 14 and CACM Regulation article 36(4)).

A prerequisite for NEMOs in the day-ahead market in the Nordic region is therefore to be full members of MRC and to implement the MRC procedures. This requirement is already today fulfilled by both Nord Pool and EPEX SPOT.

The current MRC procedures will be updated when the plan to set up and perform the MCO function by the NEMOs has been approved and implemented as required by CACM

article 7(3). The TSOs and the NEMOs are then required to implement the updated procedures.

The Nordic procedures for pre- and post-coupling will be updated during the implementation phase to accommodate for the new arrangement in accordance with this proposal. This will be done in cooperation with the relevant NEMOs and CCPs.

4.2.1 More NEMOs in a bidding zone

To enable several NEMOs to provide single day-ahead market coupling services within a bidding zone, the bidding zones are divided into hubs as illustrated by figure 3. This approach is used since there is currently no solution in place for merging order books within a bidding zone. There will be one hub per NEMO per bidding zone and each hub will be connected to the order book of the concerned NEMO. Between the different hubs within the bidding zone and between each hub and its bidding zone there are in effect infinite capacities, i.e. there are no limitations on how many transactions that can take place between the different hubs/order books within the bidding zone.

Should more NEMOs wish to provide their services at a later stage, the relevant bidding zones will be divided into further hubs to correspond to number of NEMOs.

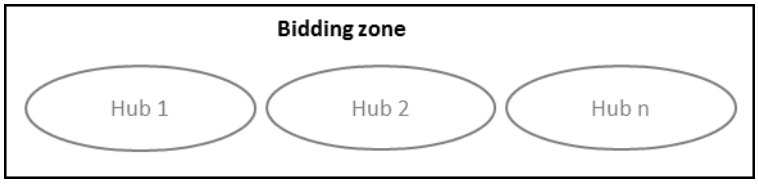

Figure 3: Bidding zones and hubs

4.2.2 Pre-coupling

The pre-coupling phase starts with the calculation of CZCs and possible ACs and ends for the TSOs when the CZCs and the ACs have been provided by the Coordinated Capacity Calculator (CCC) and ends for the NEMOs, when their order books (OBKs) have been provided to the MCO function. This is illustrated by figure 4.

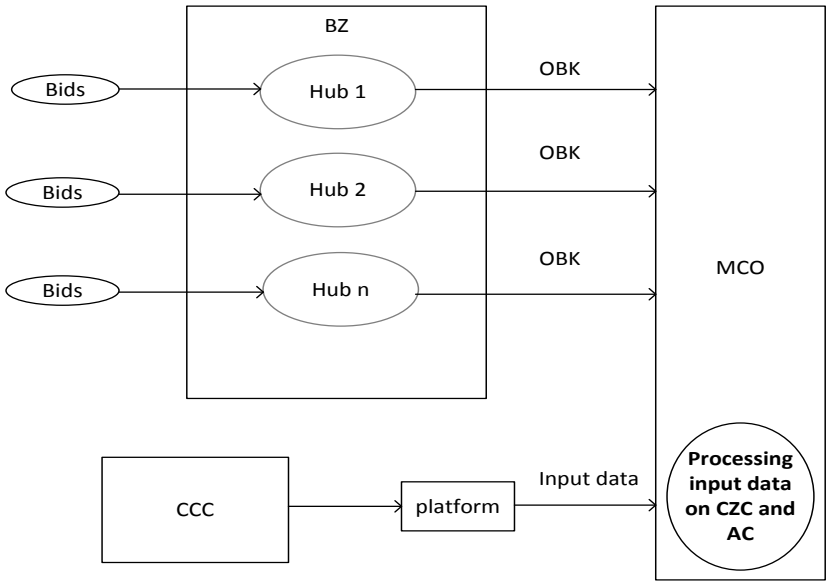

Figure 4: Data exchange during the pre-coupling phase

The definition of pre-coupling is based on the following CACM Regulation articles:

- article 7(2) where the interface between the MCO and pre-coupling is set – processing input data on CZC and AC provided by CCC;
- article 30(3) – defining that each CCC shall provide the validated CZC and AC for the purpose of allocating capacity;
- article 46(1) – where each CCC shall ensure that CZC and AC shall be provided to relevant NEMOs in the time to ensure the publication of CZC and of AC to the market no later than 11.00 market time day-ahead.

Cross Zonal Capacity and allocation constraints

From the time where the CCC has been established according to the CACM Regulation article 27(2), the CCC will be responsible for providing the internal Nordic CZCs and ACs to the relevant NEMOs in accordance with the CACM Regulation article 46(1) to ensure the publication of CZCs and ACs.

For capacity allocation in accordance with article 30(3) the CCC will provide the data to a platform from which all relevant NEMOs can collect the CZCs and ACs. During implementation of this proposal, the details of such a platform will be further defined. For the time being the platform is to be seen as a place where data is available and at the same time ensures equal access to this data for all relevant NEMOs. By having such a platform the risk of CZCs being provided to the wrong recipients are lowered. According to the CACM Regulation article 7(2) the relevant NEMOs are responsible for processing the provided CZCs and ACs as part of the MCO functions to be carried out jointly with other NEMOs.

The relevant NEMOs are responsible for the necessary arrangements between them in order to process the information from the platform. Format and timing for sending of the CZCs and ACs to the MCO function must follow the corresponding MRC and/or NEMO procedures.

It is necessary for the CCC to be able to validate that the correct CZCs and ACs are used as input for the calculations by the MCO. The MCO is therefore to provide information back to the platform, which ensures that the CCC can make this validation.

The CCC should according to article 27 (2) of the CACM Regulation be established by mid-January 2018. If this deadline is moved as a consequence of possible delayed NRA decisions on e.g. the Capacity Calculation Regions, an interim solution will be implemented. Such an interim solution will ensure that all relevant NEMOs are provided the internal Nordic CZC and ACs at the same time. The current TSO pre-coupling system will be used to provide the CZCs on the specific Nordic borders. The Nordic TSOs will, in the absence of the CCC, define the CZCs across the bidding zones borders.

NEMO Order Books

During the pre-coupling phase each relevant NEMO collects bids and offers from the Nordic Market participants. Based on these bids and offers the relevant NEMOs send their order books to the MCO function as illustrated in figure 4. When this has been executed the pre-coupling phase ends.

4.2.3 Post-coupling

Delivery of results

The post-coupling phase starts with the delivery of the results according to the CACM Regulation article 48. All NEMOs performing the MCO function shall deliver the results to CCCs, TSOs and NEMOs; see figure 5.

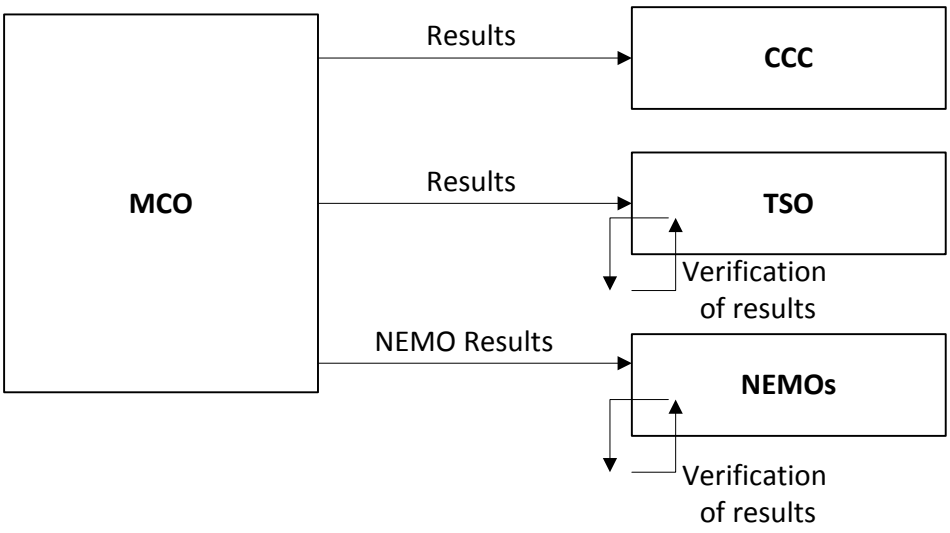

Figure 5: Delivery of results

The results shall be verified by TSOs (verify that results have been calculated based on the correct CZCs and ACs). The results shall also be verified by the NEMOs (verify that results have been calculated based on correct order books).

Clearing and settlement

According to the CACM Regulation article 7(1), the NEMOs will be responsible for acting as central counter parties (CCP) for clearing and settlement of the exchange of energy in accordance with Article 68(3). Each NEMO shall be connected to one CCP and set up the required contractual and financial arrangements. The CCP will clear the contracts resulting from the day-ahead trade with the market participants. In order for the CCP to be able to clear contracts with market participants, NEMOs shall provide information on the matching results. Based on this information, the CCP will provide hub nominations to the TSOs. The hub nominations consist of information related to market participant's trade with the NEMO.

It is up to the CCPs to agree how the clearing between them within a bidding zone should be managed. The leading principles should be that it should be done in an efficient manner and to as low cost as possible.

Shipping agents are responsible for transferring the net positions across bidding zone borders between the different CCPs. For the Nordic countries, the TSOs propose a solution with one common shipper for the entire region. This shipper will be the balancing responsible party for the exchange across the bidding zone borders and will be liable for the associated imbalances. Figure 6 shows an example of how the shipping agent transfers the net position from the CCPs in bidding zone 1 to the CCPs in bidding zone 2.

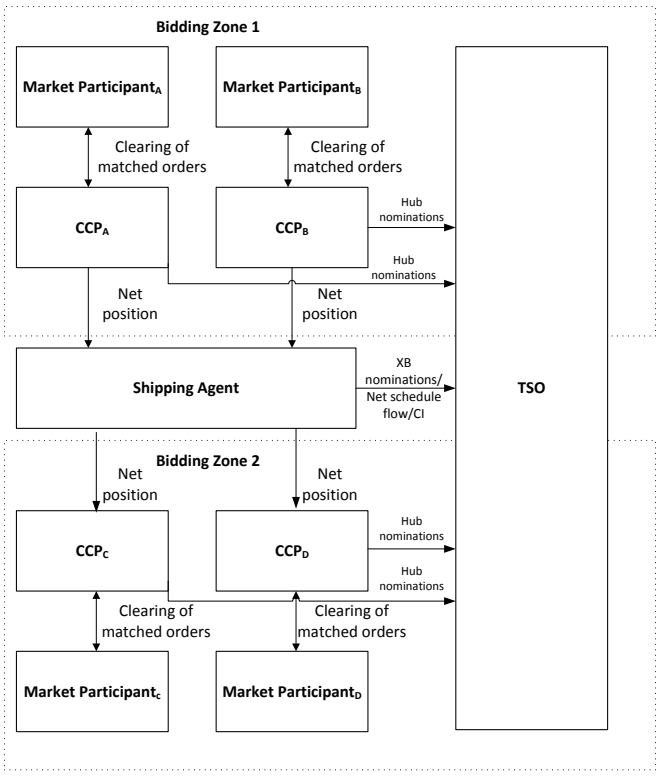

Figure 6: The transfer of net position by the shipping agent from bidding zone 1 to bidding zone 2 – with more NEMOs (and thereby more CCPs)

The shipper is responsible for providing cross-border nominations and scheduled exchanges to the TSOs. This shall be done in due time in accordance with defined processes and procedures in order for the TSOs to start planning for the next time frame (intraday). In addition, the shipping agent shall collect the congestion income and distribute it to the TSOs.

There are economies of scale in using only one common shipping agent in the Nordic countries compared to a solution with different shipping agents on all Nordic borders. In the common shipping agent approach, there is only one shipping IT-infrastructure to be set up by the TSOs and by the common shipper instead of developing and maintaining several parallel systems as the case would be if there were different shipping agents on all borders. The number of shipping agents may also have an impact on the collateral requirements. Using one common shipping agent would reduce the need of collateral contribution from the Nordic TSOs. In general having one common shipping agent is expected to ensure a more cost-efficient solution, which as a result will not affect the tariffs of the TSOs in a negative way.

From a TSO operational point of view there are also advantages of having one common shipping agent, especially when incidents occur and normal procedures cannot be followed. In particular, this is important for the intraday timeframe when there is limited time to be able to manage incidents before the operational hour. Hence the common shipping agent is also preferable from an operational security perspective.

Lastly, having one common shipper is cost efficient from a contractual perspective as only one contract will be needed.

4.2.4 Fallback

When the proposal for fallback has been developed, approved and implemented according to the requirements of the CACM Regulation article 44, this will be included into the arrangement for more NEMOs in the Nordic region.

It is to be ensured during the process that the proposal for fallback will incorporate a solution where more NEMOs are equally involved and equally treated while at the same time respecting the need for keeping the Nordic region internally coupled also during a fallback situation.

4.2.5 Legal agreements

The current Nordic Day Ahead Operations Agreement (Nordic DAOA) will be redrafted to accommodate for the new arrangement with more NEMOs. The new Nordic DAOA will define roles and responsibilities of the Nordic TSOs and of the NEMOs operating in the Nordic market. The redrafting is the responsibility of the Nordic DAOA Steering Committee but the relevant NEMOs will be consulted.
Apart from the new Nordic DAOA, it is expected that further agreements will be needed, such as e.g. a shipping agreement. It remains to be seen what the final contractual setup will be.

4.2.6 System Price

Because the majority of the standard financial contracts traded in the Nordic region use the system price as reference price, it is important to ensure that a system price is also calculated with more NEMOs in the Nordic region.

A specific Nordic TSO requirement is therefore that all NEMOs offering services in the Nordic bidding zones shall allow their order books to be used for calculating and publishing this additional system price (called reference price in the algorithm requirements) for the Nordic region. The calculation and publication will not be exclusive to one NEMO.

4.2.7 Change of Bidding Zone configuration

It is important for the Nordic TSOs that a change in bidding zone configuration can be implemented within the same deadlines as are currently enforced. A specific Nordic TSO requirement is therefore that each NEMO offering services in the Nordic bidding zones shall be able to implement a change of bidding zone configuration in its procedures no later 4 weeks after a TSO requests a change. The change of bidding zone configuration shall be done in accordance with the CACM Regulation article 32 and 33.

5. Proposal for Arrangement – intraday

5.1 Present Status

The Nordic Region is currently using Elbas for intraday trading. This trading platform is operated by Nord Pool. Until a new intraday platform - XBID – comes into operation it is foreseen that only Nord Pool will offer services in the intraday market in the Nordic Bidding Zones.

XBID will be the new common European intraday platform. Any buy bid in Europe can in principle be matched by any sell bid in Europe - taking into account network constraints. According to current planning, XBID will be in operation by Q3 2017.

The Nordic TSOs, Nord Pool and EPEX SPOT are members of the Joint Steering Committee of the XBID project, and they are also participating in several of the working groups. The

Nordic TSOs and Nord Pool have also jointly organized a local implementation project for XBID in the Nordics (Nordic LIP). Since EPEX SPOT has applied to offer services in the Nordic countries the scope of the NordLip has changed to include both NEMOs.

5.1.1 Legal agreements – current situation

There is no current agreement between the Nordic TSOs and Nord Pool regarding the operation of Elbas.

5.2 Description of the proposed arrangement for more NEMOs in the Nordic region

XBID will evolve into the future European intraday solution. Based on this assumption the setup, procedures, technical solutions etc. being developed in the XBID project will be reused (as much as possible) as basis for the intraday arrangement for more NEMOs in the Nordic region. This assumption is in line with the CACM Regulation as referred to in chapter 2 of this proposal (CACM Regulation preamble 14 and CACM Regulation article 36(4)).

A prerequisite for NEMOs in the intraday market in the Nordic region is therefore to be full members of XBID and to implement the XBID procedures.

The Nordic local procedures will be established within NordLip and will accommodate for the new arrangement. This will be done in cooperation between the Nordic TSOs and the relevant NEMOs

Below we analyse briefly, how the different processes may be affected when we have several NEMOs in the intraday market. More detailed assessment will be necessary before implementation and will be carried out within the XBID and NordLIP projects.

5.2.1 Pre-coupling – XBID

Nordic TSOs will, from XBID go live, provide the daily CZCs on the internal Nordic bidding zone borders to the Capacity Management Module (CMM). The CMM is defined in Article 2 (40) of the CACM Regulation as a system which contains up-to-date information on available cross-zonal capacity for the purpose of allocating intraday cross-zonal capacity. The CMM is then makes the capacities available for the NEMOs in each bidding zone. This operation is independent of number of NEMOs within a bidding zone.

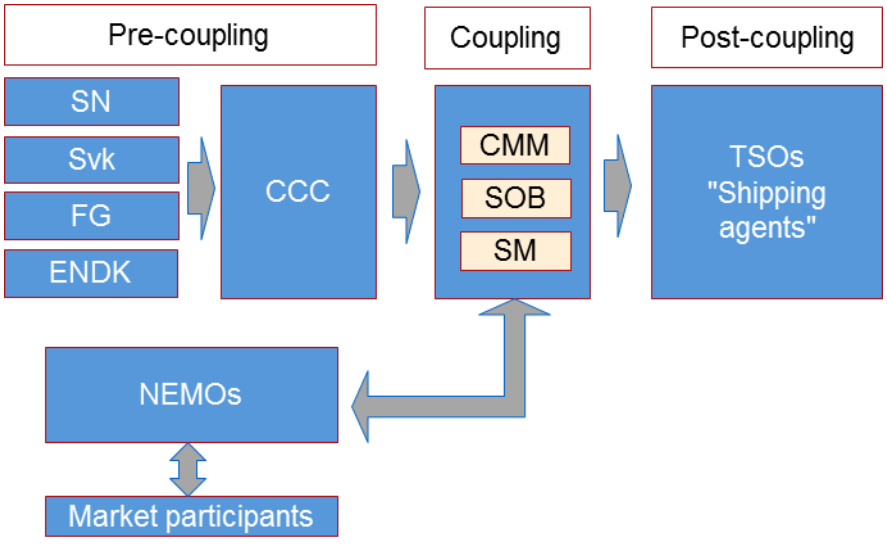

Figure 7: intraday procedure

The Shared Order Book (SOB)[3] allows for the simultaneously matching of all orders received by the NEMOs active in the single intraday coupling solution, regardless of how many NEMOs are active within a single bidding zone. The shipping module (SM) contains information on cross zonal flows on each bidding zone border to be sent to the assigned shipper. Some TSOs can also receive this information from the CMM.

When the CCC has been established according to the CACM Regulation article 27.2, the CCC will make sure that the NEMOs will have the Nordic cross-zonal capacities and allocation constraints available at the same time and at the latest 15 min before gate opening as stated in the CACM Regulation article 58.

If the establishment of the CCC is delayed the same situation applies as for day-ahead (see chapter 4.2.2) where the current TSO pre-coupling system will be used to provide data.

5.2.2 Post-coupling

The TSOs will require information from the XBID system on net scheduled flow per bidding zone border per MTU.

The TSOs need to agree on a model to handle the shipping between the bidding zones. As explained in section 4.2.3 a common Nordic shipping agent is the proposed solution. The arguments for a common Nordic shipping agent are the same for day-ahead as for intraday, which is why the Nordic TSOs propose that the solution for intraday and day-ahead should be aligned to have one common Nordic shipping agent for both day-ahead and intraday.
Specifically for intraday one further reason is that the XBID Shipping Module would most likely be much more complex and more expensive if it would have to take multiple shippers per bidding zone border into account.

For intraday it is, however, more urgent to find a solution in the short term since testing of the systems will start end of 2016. Therefore a three step approach is suggested in chapter 6.

Clearing and settlement

The same principles apply as for day-ahead (Chapter 4.2.3)

5.2.3 Legal agreements

When entering into XBID several agreements will be made including local and central operational agreements. As of summer 2016 the outline of the central operational agreement is being developed.
Apart from the XBID agreements, it is expected that further agreements will be needed, such as e.g. a shipping agreement. It remains to be seen what the final contractual setup will be.

6. Process for selection of a common shipping agent in the Nordic region

The Nordic TSOs propose to have a joint process to select a common shipping agent for all Nordic bidding zone borders in a three step approach.

[3] Defined in Article 2 (24) of the CACM Regulation.

In the short term there is a need for separate shipping arrangements for intraday and day-ahead. With regard to intraday, the XBID project will start testing a separate shipping module by the end of 2016, and there is no possibility to analyse a new solution for day-ahead at the same time. The Nordic TSOs will therefore as a first step decide on an interim intraday shipping solution, which might involve a tender,

As a step 2 the Nordic TSOs will invite to a tender for a common shipping agent for day-ahead. The timing of such a tender will depend on the planning by the implementation project for day-ahead.

As the third and final step it is foreseen that in the long term it will be most efficient to have the same shipper for both intraday and day-ahead, since this will:

- be more cost efficient and preferable from an operational point of view
- reduce any need for collateral contribution from TSOs
- ease the contractual set up
- contribute to a solution where we have a solution with one single shipper in Europe

The latter solution is considered as an enduring shipping solution by the Nordic TSOs.

7. Financial arrangements

According to the text of article 45 and 57 of CACM, the proposal has the aim to ensure that the relevant NEMOs provide the necessary financial coverage for the arrangements. In this respect we can distinguish between costs related to the establishment of the arrangements and for the operation of the arrangements.

In this proposal we limit the financial terms to costs related to the establishment of the arrangements described above. Operational costs must be dealt with within the wider framework of cost recovery and cost sharing for single day-ahead and intraday coupling.

As a general principle, all parties, NEMOs and TSOs, shall cover their own costs which relate to adapting current systems to the arrangements contained in this proposal.

In regards to costs incurred by the TSOs for establishing the platform as needed for the pre-coupling arrangement for the day-ahead market, the NEMOs shall cover all these costs. These costs shall be shared equally by relevant NEMOs. Should more NEMOs join at a later stage they shall also cover a share of the costs. In that case the NEMOs that have already paid a share will receive a partial refund.

Services of the common shipping agent shall be remunerated by the TSOs based on contract. Remuneration of the shipping agent by CCPs is outside the scope of this arrangement. Moreover, costs for shipping between CCPs within the bidding zone are not part of this arrangement and shall not be recovered by TSOs as these costs do not relate to capacity allocation.

8. Description of the expected impact on the relevant objectives of the CACM regulation

The proposed arrangements contribute to and do not in any way hamper the achievement of the objectives of Article 3 of CACM Regulation. In particular, the proposal serves the objectives providing non-discriminatory access to cross-zonal capacity (Article 3(j) of the CACM Regulation), creating a level playing field for NEMOs (Article 3(i) of the CACM Regu-

lation) and respecting the need for a fair and orderly market and fair and orderly price formation (Article 3(h) of the CACM Regulation).

These objectives are met for single day-ahead coupling by creating a hub for each NEMO within a bidding zone. Between hubs within a bidding zone exists unlimited transmission capacity. This approach ensures that within a bidding zone there is no limitation to access transmission capacity and that each NEMO has equal access to CZC as orders from all market participants in spite of which NEMOs they use shall be treated equally as regards to access to CZC. Furthermore, this approach respects the need for a fair and orderly market and orderly price formation taking into account all orders of each NEMO equally when allocating cross-zonal capacity across bidding zones within day-ahead market coupling. In general, the taken approach together with post-coupling arrangements creates a level playing field for NEMOs within a bidding zone as related to access to cross-zonal capacity. This is ensured also during the pre-coupling phase for day-ahead coupling, where the coordinated capacity calculator will make cross-zonal capacity available to all NEMOs for publication to the market and to carry out MCO functions.

For the intraday timeframe these objectives are met with single intraday coupling as there is no need for specific arrangements for pre-coupling or matching phase in case of several NEMOs within a bidding zone. The shared order book will accommodate all orders from all bidding zones and all NEMOs and the capacity management module shall ensure that cross-border capacity is allocated accordingly to each order coming from the shared order book.

Regarding the objective of ensuring fair and non-discriminatory treatment of TSOs and NEMOs (Article 3(e) of the CACM Regulation), the financial and settlement arrangements proposed by Nordic TSOs ensure that TSOs and NEMOs are treated in a fair and non-discriminatory way.

The arrangements serve the objective of optimising the allocation of cross-zonal capacity in accordance with Article 3(d) of the CACM Regulation as the arrangements lay down a common approach across the Nordic countries for several NEMOs. By this coordination, Nordic TSOs ensure compatible arrangements and their application across the Nordic region. Like the single day-ahead and intraday coupling solutions, these complementary arrangements ensure optimal use of the transmission infrastructure (Article 3(a) of the CACM Regulation).

Regarding the objective of transparency and reliability of information (Article 3(f) of the CACM Regulation), these arrangements, being proposed by Nordic TSOs and once approved by regulatory authorities, will be the basis for further work towards market coupling in the most transparent way. These arrangements have been developed jointly by the Nordic TSOs in consultation with relevant NEMOs, approved by regulatory authorities and published by TSOs, thus, increasing transparency and reliability of information. With regard to the arrangements when implemented, reliability and transparency is ensured as data is provided on a common platform allowing for all NEMOs to access this platform and by following the verification process to ensure that correct data is used.

In conclusion, the proposed arrangements contribute to the general objectives of the CACM Regulation to the benefit of all market participants and electricity end consumers.

9. Publication and implementation of the arrangements

Each TSO shall publish the arrangements without undue delay after the national regulatory authority has approved the proposed arrangements.

The implementation of the arrangements shall coincide with the implementation of single day-ahead or intraday coupling on the corresponding bidding zone border in accordance with the CACM Regulation.

Annex 1: Bidding zones and bidding zone borders covered

Bidding zones as per June 2016:

- Denmark 1 (DK1),
- Denmark 2 (DK2),
- Sweden 1 (SE1),
- Sweden 2 (SE2),
- Sweden 3 (SE3),
- Sweden 4 (SE4),
- Finland (FI),
- Norway 1 (NO1),
- Norway 2 (NO2),
- Norway 3 (NO3),
- Norway 4 (NO4), and
- Norway 5 (NO5).

Bidding zone borders as per June 2016

- Denmark 1 - Sweden 3 (DK1-SE3);
- Denmark 2 - Sweden 4 (DK2-SE4),
- Denmark 1 - Denmark 2 (DK1-DK2),
- Sweden 4 - Sweden 3 (SE4-SE3),
- Sweden 3 - Sweden 2 (SE3-SE2),
- Sweden 2 - Sweden 1 (SE2-SE1),
- Sweden 3 - Finland (SE3-FI),
- Sweden 1 - Finland (SE1-FI),
- Denmark 1 – Norway 2 (DK1-NO2),
- Sweden 3 – Norway 1 (SE3-NO1),
- Sweden 2 –Norway 3 (SE2-NO3),
- Sweden 2 - Norway 4 (SE2-NO4),
- Sweden 1 – Norway 4 (SE1-NO4),
- Norway 3 – Norway 4 (NO3-NO4),
- Norway 1 – Norway 3 (NO1-NO3),
- Norway 1 – Norway 5 (NO1-NO5),
- Norway 1 – Norway 2 (NO1-NO2), and
- Norway 2 – Norway 5 (NO2-NO5).