

# Nordic CCM SH Meeting – meeting minutes

February 10, 2022, 9.30-11.00 (Web Conference, Open Registration)

Participants	
<b>CCM project/Stakeholder Involvement WG</b> <ul style="list-style-type: none"><li>• Satu Viljainen (Fingrid)</li><li>• Ulrik Møller (Energinet)</li><li>• Trond Jensen (Statnett)</li><li>• Emil Jansson (Svk)</li><li>• Susanna Lundmark (Svk)</li><li>• Ritva Hirvonen (Fingrid)</li><li>• Jens Stenport Nørgaard (Nordic RSC)</li><li>• Jakob Glarbo Møller (Nordic RSC)</li><li>• Zongyu Liu (E-Bridge Consulting)</li></ul> <b>Excused</b>	<b>Attendees (in total 47 attendees)</b>

Text in non-italics are comments, statements, questions or claims from the stakeholder(s).

*Text in italics are answers or comments provided by the Nordic CCM project.*

## 1. Welcome and opening words (9.30-9.35)

## 2. Status update of internal parallel run (9.35-9.45)

**Question:** Are you comfortable with the current published data/reports, which are 8 weeks ago comparing to the current date?

**CCM project:** *One of the main focuses of the internal parallel run (IPR) report is to be able to explain the FB capacity calculation and market coupling (CC & MC) results to the stakeholders. The published reports demonstrate that the TSOs are capable of diving into details of the FB CC and MC results and explain the outcome towards the stakeholders.*

*Additionally, due to the topology file (i.e. a required input file to run the simulation facility (SF)) was not available from the SF service provider, the TSOs were not able to produce the market reports that could have been published. The topology file issue has been solved recently.*

**Comment:** The data of those missing market time units (MTUs) and Energy Delivery Days (EDDs) should be handled better in the graphs.

**CCM Project:** *They are missing due to various reasons, e.g. IT issues, insufficient data input quality, failed validation, etc. As the IPR moves along, the quality and process related issues are gradually fixed. Regarding the external parallel run (EPR), all the missing MTUs are also captured as part of the KPIs.*

**Question:** When will the missing HVDC interconnectors be included?

**CCM Project:** *from week 49 and onwards, the missing HVDC interconnectors are included.*

*Please also note that for those weeks that the HVDC interconnectors are missing in the FB CC and MC, they are also manually removed in the NTC calculations to ensure the 'fair' socio-economic welfare (SEW) comparison.*

**Question:** what are the red dots in the IPR monitoring graph?

**CCM Project:** *They are the publication time that the Nordic RSC provides the FB CC results to the Nordic CCM project for the market simulations, mimicking the data transfer from the RSC to the NEMOs in the future.*

## 3. Preliminary observations based on Flow-Based market simulations (9.45-10.30)

**Comment:** It would be nice if you could show value in combination with energy turnover i.e. €/MWh for the period?

**CCM project:** *The TSOs will come back to this comment/request.*

**Question:** Do you know why the shadow price of the CNE spikes in that particular hour?

**CCM project:** *The TSOs do not know the exact reasons of the price spike, because of restrict access to the market bids.*

*A related comment, after the CCM project observes the critical network elements with contingencies (CNECs) with very high shadow prices, as part of the feedback loop, the observation/information is reported back to the TSO operators to make further assessment if these CNECs should remain in the FB CC and let the market allocates the optimal capacities accordingly, or be managed locally by the TSOs using countertrade or redispatch, such that these CNECs are not part of the FB CC and MC any longer.*

**Comment:** It would be nice if you would state the number of non-intuitive flow hours per bidding area as you previous showed for each report.

**CCM project:** *The TSOs will come back to this comment/request.*

**Question:** Stakeholders observed a few missing EDDs within the overall simulated period. The market outcome before the missing EDDs and after the missing EDDs changes a lot. Can we trust the results (of the ones before the missing EDDs)?

**CCM project:** *The missing EDDs may be the consequence of changes either on the grid topology or the market bids. The TSOs are not able to exactly pinpoint the changes due to restricted access to the market bids. However, regarding the grid topology changes, e.g. due to the planned and/or unplanned outages, there are almost always some changes in the grid topology. The outage information (impacting the cross-border trades) can be found on NUCS.*

*Additionally, the FB MC results are the outcome of the SDAC optimisation algorithm based on the input data into the SF, and they should be considered trustworthy from the optimisation perspective.*

**Comment:** missing information in the market report on the general trends/observation, e.g. in what kind of situations certain market outcome/observation occurs, winter/summer/outage situations, etc. Stakeholders expect intensive study on EPR results. Thus, the general trends/observations are very important in the market reports.

**CCM project:** There are a few aspects to address this comment. First, to make a general statement as stated in the comment, more market results are necessary. Second, neither TSOs nor stakeholders have a clear definition of these 'situations and observations' and how to make the clustering accordingly. Third, the TSOs aim at establishing the foundation of data and knowledge to facilitate the stakeholders to perform in-house / tailor-made analysis. Via webinars, data publication, market reports, technical documents, surveys, etc, the TSOs and the stakeholders are expected to drive the learning-by-doing process together.

**Comment:** Every IPR market report includes new adjustment. The stakeholders need 12 month stable results during EPR.

**CCM project:** The quality of the EPR is monitored via the KPIs, jointly agreed between NRAs and TSOs, considering the stakeholder feedback. In other words, the TSOs are preparing the start of the EPR in March 2022. The duration of the EPR is determined by the fulfilment of the KPIs and foreseen to be 12 months at least.

**Question:** How do TSOs select the CNECs as input to the FB CC? why CNECs are in and out of the FB CC and MC?

**CCM project:** It is a learning-by-doing process in the FB CC. In NTC, the mathematical connection between the CNECs and the cross-border trades is not obvious. In FB, the mathematical derivation between the two is more transparent. Specifically, in FB the TSOs apply outages to the individual grid models and perform security analysis. Based on the outcome on the loading of the network elements, the CNECs are selected and further provided as inputs to the Nordic level FB CC process. Within the FB CC process, the nominated CNECs from TSOs will go through a filter that sets the threshold to be 5% on the maximal z2zPTDF (please refer to the Nordic CCMs for details). The qualified CNECs are used further in the FB CC and MC steps. The unqualified ones are only for monitoring purposes without any impact on the market coupling. Additionally, upon the feedback from market analysis, the TSO operators will further evaluate the originally nominated CNECs, e.g. if they should be included in the FB CC or removed from the FB CC (managed locally via remedial actions).

**Comment:** (Linked to the question/answer above) Maybe it's good to consider harmonize the filter of max\_z2zPTDF on the CNECs for qualification (as stated above) and the ATC Extraction z2zPTDF threshold, e.g. change the z2zPTDF of DA z2zPTDF to zeros, as they are treated in the ATCE.

**CCM project:** No, the TSOs do not recommend to do this for the following reasons.

1. These two filters serve two different purposes, although they can both be set to 5% numerically. The high level description of the two filters are elaborated below.
  - a. The qualification filter: this one 'eliminates' the insignificant CNECs that should not limit the market trades. In other words, among all TSO-nominated CNECs if a small CNEC with a max\_z2zPTDF is below this threshold, it is 'removed' in a sense that it is not part of the subsequent FB CC and MC process anymore (i.e. not part of the FB domain). Instead, they are only considered as a monitored element for TSOs internal use.
    - i. This filter is applied for the DA FB CC and MC.
  - b. The ATCE method takes the Day Ahead (DA) z2sPTDFs as input and computes the corresponding z2zPTDF, which is further used in the ATCE optimisation. The z2zPTDF threshold is applied on the z2zPTDFs, changing all small z2zPTDFs (e.g. less than 0.05) to zeros. Note: the CNECs themselves are not removed from the ATCE computation, only modified by setting the small z2zPTDF values to 0 to neglect 'small impact'.
    - i. This threshold is applied for the ID timeframe.
2. Changing the DA z2zPTDF (as proposed by the stakeholders) creates issues with Euphemia. SDAC Euphemia requires z2sPTDF and RAM as inputs for the market coupling. Imagine the following steps in the DA FB CC process,
  - a. the coordinated capacity calculator (CCC) computes the z2sPTDFs and z2zPTDF for all nominated CNECs
  - b. for those (absolute values of) z2zPTDFs that are less than 5%, their z2zPTDF values are all set to 0. → we now have a set of modified z2zPTDFs with abs(z2zPTDFs) all above 5%.
  - c. Please bear in mind that Euphemia expects the z2sPTDF as inputs. How can TSOs 'convert' the modified z2zPTDFs back to z2sPTDFs that are compatible with Euphemia?
    - i. Note: transformation from z2sPTDF to z2zPTDF is a unique (one-to-one) transformation. On the contrary, the reserve transformation, i.e. from z2zPTDF to z2sPTDF, is not unique.

**Question:** IPR vs. EPR, will EPR be more stable, e.g. the correct capacity of DK1-NO2 as in the disclaimer?

**CCM project:** Yes. However, please allow the quality/process to improve over time. The TSOs expect issues at the beginning of the EPR, and will be transparent towards stakeholders. The TSOs hope that within a limited amount of time, the EPR quality and process become high and robust.

**Question:** How do you plan to show the changes and adjustments to the model you apply during the coming simulations as we can see that they can have rather huge impact on the simulated results, thus changes should be transparent somehow also in the coming reports. The decision-making process behind this process is clouded and not transparent to the stakeholders. So basically what Trond started to explain should be developed in text as a more strict method.

**CCM project:** Please refer to the high-level CNEC selection description above. In short, the CNECs are created and nominated based on the grid topology considering outages and the operational security in general. The market outcome analysis provides insight on the nominated CNECs, e.g. if they are too restrictive, or some important CNECs are not (properly) defined. The outage information is on NUCS platform (i.e. the same inputs as the TSOs creating the CNEC definition). Ultimately, the PTDFs, the associated CNEC names and much more information are published for transparency purposes. All stakeholders are invited to look into details regarding the CNECs and the changes in the FB domain in general.

**Question:** how do stakeholder retrieve the IPR and EPR data/results?

**CCM project:** Please visit [Simulation Results – Nordic Regional Security Coordinator \(nordic-rsc.net\)](https://nordic-rsc.net) and [Publication Tool \(iaa.eu\)](https://iaa.eu). The published datasets are also available for download. The post-coupling results will be uploaded as soon as they are available, including the ATCE results. On the next SH event planned on 23/03, the Nordic TSOs plan to elaborate on the data publication.

#### 4. Any other business and closing remarks (10.30-11.00)

All participants are thanked for their constructive inputs!

The presentations have been uploaded on the Nordic RSC website: <https://nordic-rsc.net/flow-based/documents-presentations/>