

NordREG Wholesale & Transmission Developments Seminar 2023



Agenda

Block 1: Update on regulatory processes from the NordREG task forces				
10:10-11:30	Capacity calculation methodologies update	Jori Säntti, Finnish Utility Regulator		
	System operation terms and conditions update	Tuomas Tyni, Finnish Utility Regulator		
	Nordic Balancing model update	Søren Lorenz, Danish Utility Regulator		
	NordREG perspective on electricity market reform	Niels Duelund, Danish Utility Regulator		



POWER

Block 2: Discussions on well-functioning future Nordic markets		
11:30-12:15	 EU electricity markets at cross-roads Diagnostics; why EU forward markets don't work well? ACER's proposal for reform What about alternatives? 	Martin Povh, Policy Officer & Senior Expert, ACER
12:15-13:00	Lunch	
13:00-13:30	EEX plans for the Nordic market	Anje Stiers, Head of EU representation office, EEX
13:30 – 14:00	Visions on how competitive, organized, wholesale electricity markets in the future increasingly can be a key driver for efficient and secure delivery of Nordic and EU power system, energy & climate targets.	Rickard Nilsson, Senior Advisor Market Design, NordPool
14:00 - 14:15	Coffee	
14:15 – 14:45	 Nordic TSO-perspective Status on Nordic TSO developments Demand-side-response Adequacy and capacity markets Efficient design of CfD 	Halvor Enok Bakke, Senior Advisor, Statnett, MSG Nordic TSOs
14:45 - 15:15	 Electricity trading The value creation of electricity trading Obstacles for electricity trading Ambiguous regulatory guidance Limitations on cross border capacity Low liquidity in the Nordic forward market 	Astrid Buhr Broge, Chief Consultant, Green Power Denmark
15:15-15:30	Conclusion	Antti Paananen, Director, Finnish Utility Regulator



NordREG Wholesale & Transmission Seminar Capacity Task Force: Flow-Based CCM

Jori Säntti Chair of the NordREG Capacity Task Force

November 23rd 2023



Introduction: NordReg Capacity Task Force

- Responsible for the Nordic NRA work and cooperation concerning different capacity related issues
 - Discussing coordinated national decisions
 - Approving, developing and amendging the methodologies in dialogue with TSOs
 - Following the implementation of these methodologies
- The biggest task at the moment: Flow-based capacity calculation
 - A major paradigm shift related to how capacities are calculated in the Nordic CCR



Introduction: Where do we stand now with Flow-Based CCM?

- The current flow-based methodology was approved by the Nordic NRAs in September 2020
- CACM –regulation requires to test the new approach alongside the existing approach and involve market participants for at least six months
 - Aim is to enable market participants to adapt to the change.
- When approving the methodology, NRAs agreed to extend the parallel runs to cover at least 12 months, and having a Checkpoint in the middle of the parallel runs:
 - Ensuring that flow-based methodology operates sufficiently well
 - Emphasizing stakeholder involvement also during the implementation phase
 - Assessing and verifying the functionality and efficiency of flow-based calculations
 - Checkpoint based on assessing Key Performance Indicators: KPIs
- TSOs delivered a report concerning the parallel runs
 - NRAs gave an "OK" for the TSOs to proceed to the last (minimum) 6 months of parallel runs in June 2023



Introduction: Where do we stand now?

- After the checkpoint, the TSOs progressed to the final (minimum) 6 months of parallel runs, and a Go-live date was set for Q1/2024
- A couple of weeks ago, the TSOs informed the NRAs that due to pending IT —issues, the go-live —schedule of flow-based will need to be changed
 - A new go-live date was set for October 2024
- Indeed, there are some pending issues and questions remaining concerning the implementation of Flow-Based
 - Let's first have a look at why we are going for F-B in the first place



Why go for FB?

- Flow-based is the default option in CACM –regulation: The approach shall be F-B, unless it would not yet be more efficient than NTC
- With F-B, we can better utilize the Nordic power system, as more power can be moved where it is most valuable
 - Increased complexity in the Nordic power system. NTC not sufficient any more in the future
- Loss of consumer surplus and changing prices in some areas.
 - FB will Change the prices higher in some BZs. It is understandable that this is seen as a negative aspect
 - At the same time, FB optimization is more efficient compared to setting capacities using NTC, and thus will create socioeconomical benefits on a larger scale



Remaining Issues with the Flow-Based implementation?

- Some questions keep reoccurring.
 - This is mainly a TSO-process at this stage
 - Likely still good to have a quick NRA –comment on some of the questions
- What is the NRA –role in the process?
 - NRA responsibility is making sure the methodology lives up to the regulation
 - If there are issues related to that, we will fix them
- An unfavorable market outcome is not an implementation/methodology issue
 - But only as long as we are operating within the regulation and methodology.
 - If there is something wrong operationally (incorrect PTDFs, errors in calculation, etc.), we should ensure the TSOs will fix it
- Decision for F-B was made in 2018, and the current methodology was approved in 2020.
 - We are now in the final stages of implementation of the approved F-B
 - Not the time to discuss alternative methodologies (NTC, other kinds of F-B approaches)



Remaining Issues with the Flow-Based implementation?

- The parallel run simulations are inaccurate? Why are simulations based on NTC –order books instead of F-B ones? Water values should be simulated?
 - There are limits to what kind of simulations can be performed and required from the TSOs
 - Distributional effect calculation is difficult, changing the water values will result in inaccuracy
 - Stakeholders can make own simulations based on the data provided
 - NRAs note the argument on the simulation accuracy affecting socioeconomical welfare numbers
 - The parallel runs and the checkpoint numbers have their limitations and should be interpreted taking into account the possible inaccuracies
 - At the same time: F-B being based on more accurate optimization, is always more beneficial, as long as there are no errors in the implementation
 - The Nordic Checkpoint -approach and extended parallel runs already goes significantly beyond the CACM requirements on parallel runs
 - We are already balancing between what can be required from the TSOs, the accuracy of parallel runs and postponing the go-live



Remaining Issues with the Flow-Based implementation?

- ID ATCE approach does not work and ID capacities are unknown?
 - The TSOs planned approach for ID ATCE has proven to be unfeasible in practice (overloads)
 - Z2Z-PTDF relaxation leads to overloads that are difficult to manage
 - TSOs are looking at RAM relaxation instead of PTDFs
 - The NRAs have noted the issue, have requested additional information from the TSOs
 - A functional solution will need to be found, and some ID capacities recalculated
 - NRAs worried about possible lock-in -situations, where no ID -trade could be performed
 - The go-live –schedule grants time to fix this issue
- Some areas will pay more for electricity? Is this ok?
 - Flow-based capacity calculation will change the prices, as the calculations are performed differently
 - Based on the simulated results, some areas will see a price increase. This is of course unfortunate
 - At the same time, price increases as a result of proper f-b capacity calculation should not be seen as an argument against flow-based as such
 - The CC -function will optimize the use of scarce transmission capacity based on the bids in each area, creating socioeconomical welfare in the Nordic area



What will happen now?

- TSOs have set the Go-live to be in October 2024
- **ID ATCE –issue** will need to be resolved
- TSOs proceed in the final stage of parallel runs
 - Alleviate and address the concerns among stakeholders and to ensure easy adoption of FB
 - Fixing any remaining operational issues
 - NRAs request the TSOs to extensively communicate the progress to NRAs and stakeholders during the upcoming months of EPRs
 - Regular stakeholder seminars and meetings with the Nordic NRAs
- NRAs will observe and examine the parallel runs in anticipation of the go-live
 - Focus should now be on possible **operational/technical issues of the F-B implementation**



Current terms and conditions under regulatory assessment in area of system operation

Tuomas Tyni

Chair of the System Operation and Grid Connection Task Force

23 November 2023



Overview, System operation task force (SO TF)

SO GL methodologies' amendments

- Coordination related to the evaluation of terms and conditions and methodologies proposed by TSOs at Nordic level
- Common Nordic NRA decision on these proposals
- Follow up the Nordic TSOs on the methodologies

Other coordinated work

- Grid Connection Network Codes
- Potentially coordinate views on EU-wide methodologies
- Communication with Nordic RCC in field of system operation



SO GL methodologies' amendments

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2023

- 3 methodologies approved in Spring
 - FRR dimensioning
 - FCR dimensioning
 - FCR additional properties
- 2 methodologies received
 - Ramping restrictions (LFC block methodology)
 - Exchange and sharing of FRR (Synchronous area methodology)

Decision on 2 methodologies?

2024

• Any other deliverables?



Ramping restrictions for active power output in accordance with SO GL Article 137(3) and (4)

- The proposed methodology introduces updates on the current common ramping restrictions
 - Yearly evaluation of ramping restrictions on a specific HVDC interconnector
 - Ramping restrictions based on technical or operational limitations on the HVDC interconnectors
- The Nordic TSOs submitted the amended methodology in April
- The NRAs sent a request for amendment on 4 October 2023
 - Legal deadline for the TSOs is 4 December 2023



Limits on the amount of exchange of FRR between synchronous areas defined in accordance with SO GL Article 176(1) and limits on the amount of sharing of FRR between synchronous areas defined in accordance with SO GL Article 177(1)

- The Nordic TSOs submitted the amended methodology in April.
 - The Nordic TSOs however withdrew the methodology on 28 September
- The Nordic NRAs are waiting for new amended proposal somewhere in the first half of 2024
- The withdrawn proposed methodology introduced **limits for the exchange of aFRR and mFRR energy**
- Methodology also contains
 - Limits for sharing of aFRR and mFRR capacity
 - Limits for the exchange of aFRR and mFRR capacity



Other amendments in 2024

The Nordic TSOs have not notified the NRAs about any other upcoming amendments



Thank you!

Tuomas Tyni (tuomas.tyni@energiavirasto.fi)



NordREG Wholesale & Transmission Seminar Electricity Balancing Task Force: Update on NBM

Søren Lorenz Søndergaard Chair of the NordREG Electricity Balancing Task Force

November 23rd 2023



Content

- Latest news on the Nordic Balancing Model ("NBM")
- The role of the regulators in NBM
- Upcoming change to the Nordic aFRR Capacity market
- What is up for 2024





Introduction: Latest news on NBM

Latest news from the Nordic TSOs published on 5 September

- Nordic mFRR EAM (regulerkraft) go-live delayed to Q1 2025
- Transition to 15-minute market time units delayed to Q1 2025
- Nordic TSOs' accession to MARI delayed to 2026
- Statnett and Svenska Kraftnät accession to PICASSO delayed to 2026
- Energinet and Fingrid partially accessing PICASSO in July 2024
- Nordic mFRR capacity market uncertain timeline



The role of the regulators in NBM

Nordic NRAs:

- approve (or change) the TSOs' proposed methodologies
- supervise the implementation of said methodologies
 - a timely and correct implementation is legaly requiered
- have enforcement and sanctioning power towards each their TSO

NordREG EBTF coordinates on:

- approval of methodologies
- supervision of implementation
- enforcement and sanctioning





Upcoming change to the aFRR Capacity Market

Nordic aFRR Capacity Market went live 7 December 2022

Changes to the so-called

"a market-based methodology of cross-zonal capacity allocation for the exchange of balancing capacity or sharing of reserves"

Were required by an ACER decision.

This methodology defines how much cross-zonal transmission capacity can be reserved for balancing and not given to the day-ahead and intraday markets.

The Nordic TSOs submitted a proposal for amendment to the Nordic NRAs.



Upcoming change to the aFRR Capacity Market

On October 23rd, the amended methodology was approved by Nordic NRAs Changes implies:

 So called "mark-up" on the TSO forecast is no longer capped. This means that high volatility in price differences between bidding zones will result in less capacity being reserved for the balancing capacity market.

Implementation timeline is 6 months from the approval.



What is up for 2024?

The methodologies for the Nordic mFRR capacity market were withdrawn by the Nordic TSOs in april 2023.

The reason was high uncertainty on how to implement it in practice taking into account allocation constraints on the HVDC-interconnectors.

NordREG EBTF expect to continue the dialogue with the Nordic TSOs in 2024 on an upcoming Nordic mFRR capacity market



The new electricity market design reform

Niels Duelund NordREG Electricity Balancing Task Force

November 23rd 2023



Agenda

- TAG, and the 70% requirement.
- Single entity and CACM 2.0, where do we stand?
- Forward markets after EMD-reform: PPAs, zone to hub models and CFDs



Transmission access guarantee



New single entity for SDAC and SIDC

- One single entity to manage SDAC and SIDC
- Already proposed in CACM 2.0
- Proposal for a firm legal grounding in the EMD
- Subject is currently up for debate could go either way

Forward market reform

- Three topics all affecting the forward market
- Government support of PPAs
- Two sided CFDs as mandatory form of state aid
- The evaluation of the forward market and potential zone to hub model

Support of PPAs

- Support the uptake og PPAs by lowering barriers to entry
- Not price support, only facilitation
- Potential for standardised PPAs and a PPA trading platform

CFDs

• If a state chooses to do state aid, it must be two sided CFDs

Time (hours / months / years)

Zone to hub modellen

Market set-up

