



### 3. Result elaboration: DA

Nordic CCM Stakeholder Meeting  
9 February 2023

Rikke Bjerregaard Jørgensen

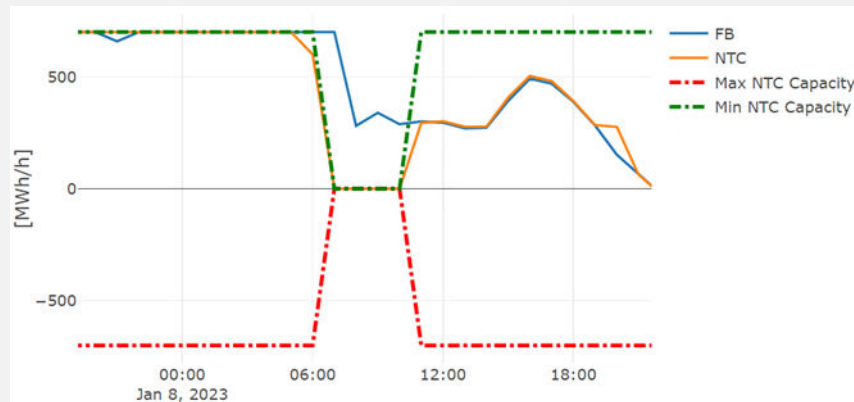
[rjr@energinet.dk](mailto:rjr@energinet.dk)



# EPR W50 to W1 market report walk-through

## Disclaimers

- On 25, 26 and 27 December, the aFRR capacities were included in NTC but not in FB domain. This due to data processing error.
- On 8 January, the capacity and flow on LT – SE4 in FB and NTC differ. FB provide full capacity while NTC capacity = 0. This due to a late change in capacity files by Litgrid.



NTC capacity and allocated flow in FB and NTC on LT-SE4

- Reoccurring disclaimers can be found in the [Phenomena report](#)



# Simulations done by NEMOs

- Simulation facility (SF) has been out of operation since June 2022.
- The NEMOs (EPEX and Nord Pool) have provided us with an alternative market simulation setup, using their test environment.
  - Fully comparable with the SF and DA-production environment.
  - As with the SF and the DA MC, the simulation is an optimization of the full SDAC MC region.
- The NTC results are no longer simulated, but taken from the actual DA MC results.
- The FB results are simulated, where the only thing changed compared to DA MC is the capacities
  - in CCR Nordic
  - on the borders to the continent.



# Socio-economic welfare Perspective

## Total SDAC MC region

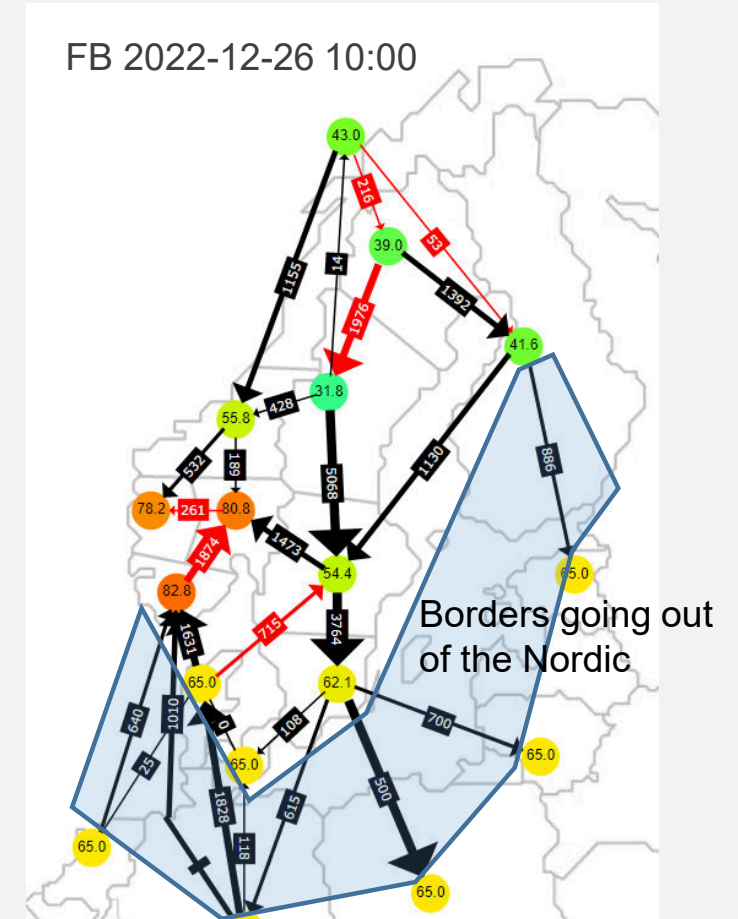
The SEW in total SDAC market-coupling region.

## Nordic CCR

- Congestion Income (CI) on borders inside the Nordic CCR.
- Producer and consumer surplus from the 4 Nordic countries.

## Borders going out of the Nordic (Hansa/borders to Baltic)

- CI on the borders going from a Nordic TSO to the continent.
- Half of CI will go to the Nordic Area while the other half will go to the neighbouring area.





# Data quality during the weeks

Energy Delivery Day	Mon 12/12	Tue 13/12	Wed 14/12	Thu 15/12	Fri 16/12	Sat 17/12	Sun 18/12	Mon 19/12	Tue 20/12	Wed 21/12	Thu 22/12	Fri 23/12	Sat 24/12	Sun 25/12
Substituted IGMs	0	0	0	24	0	0	0	0	0	0	0	0	9	19
IVA provision	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Final domain acceptance (1 TSO = 25%)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Energy Delivery Day	Mon 26/12	Tue 27/12	Wed 28/12	Thu 29/12	Fri 30/12	Sat 31/12	Sun 1/1	Mon 2/1	Tue 3/1	Wed 4/1	Thu 5/1	Fri 6/1	Sat 7/1	Sun 8/1
Substituted IGMs	16	8	5	8	2	0	3	14	0	0	0	0	9	19
IVA provision	0	0	0	1	0	0	1	2	3	2	4	2	0	2
Final domain acceptance (1 TSO = 25%)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

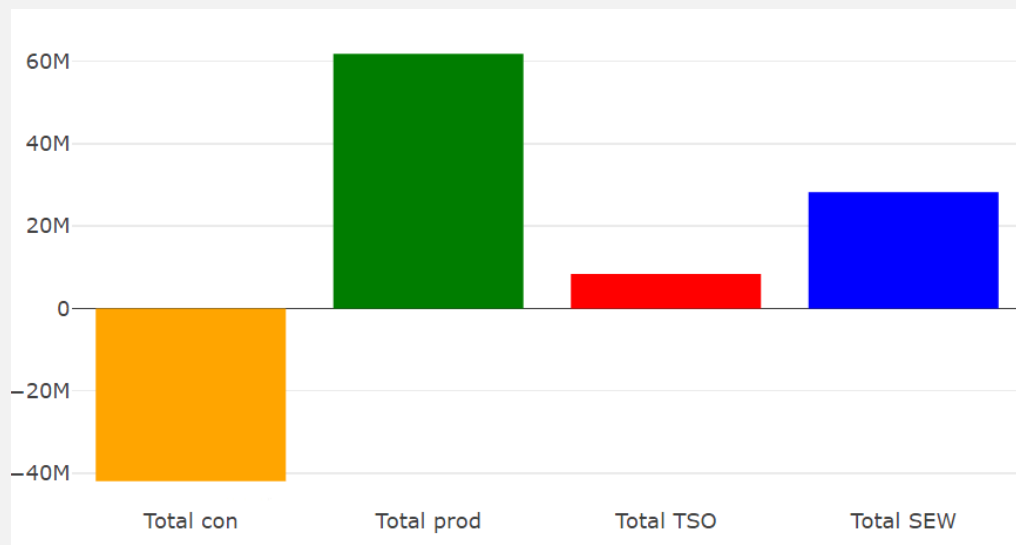


# Overall Socio-Economic Welfare (SEW) results W50-W1

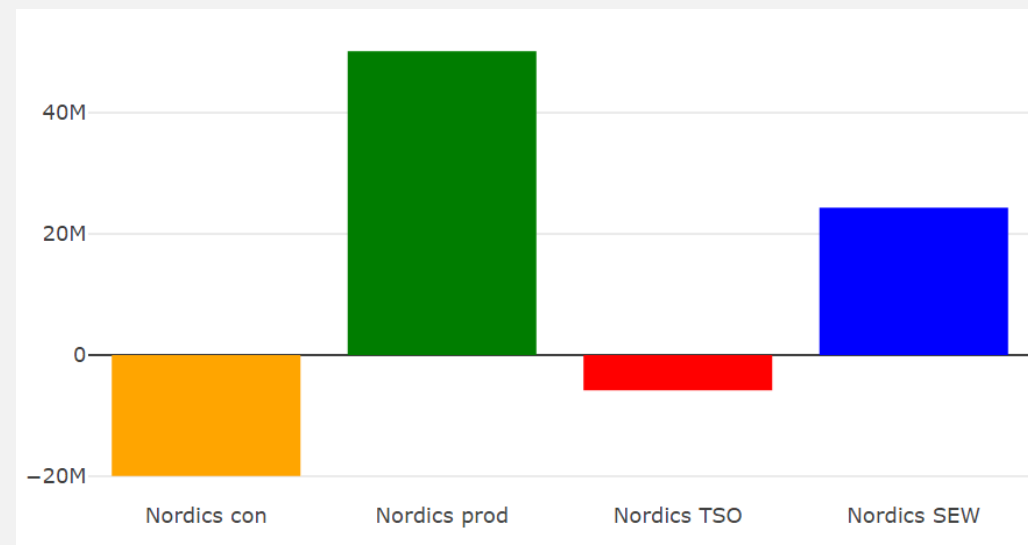
The change in SEW with FB in the total SDAC MC Region amounts to 28 MEUR.

- 24 MEUR for the Nordic CCR
- 20 MEUR for the borders going out of the Nordics
- -16 MEUR for the continent

FB increases the SEW gain and distributes surplus from consumers to producers.



SEW change in the total SDAC MC Region (FB-NTC)

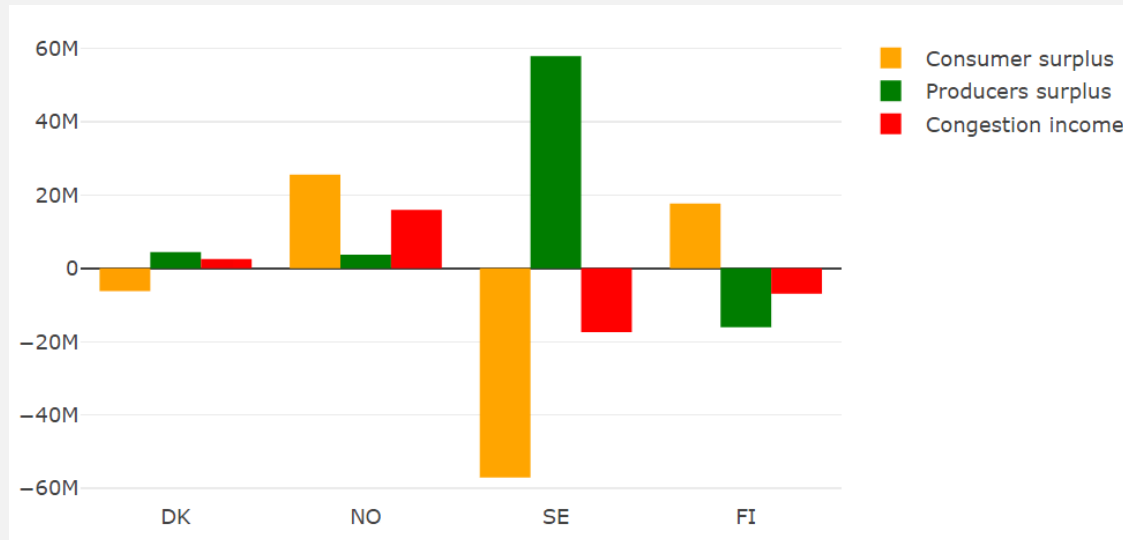


SEW change in CCR Nordic (FB-NTC)

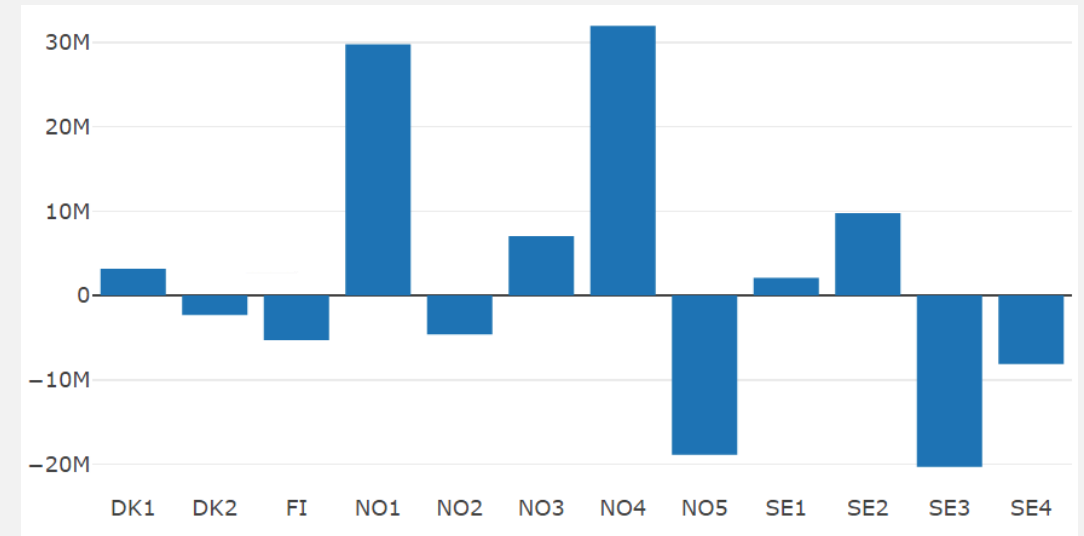


# Overall SEW results W50-W1

- The impact on prices has been differentiated between the Nordic countries.
  - **Consumer surplus:** Reduced in Sweden, increased in Norway and Finland
  - **Producer surplus:** Increased in Sweden, reduced in Norway
- Internally, in each country, there is a different impact of the prices as well.



Changes in SEW in CCR Nordic on a country level



Changes in SEW in CCR Nordic on a bidding zone level

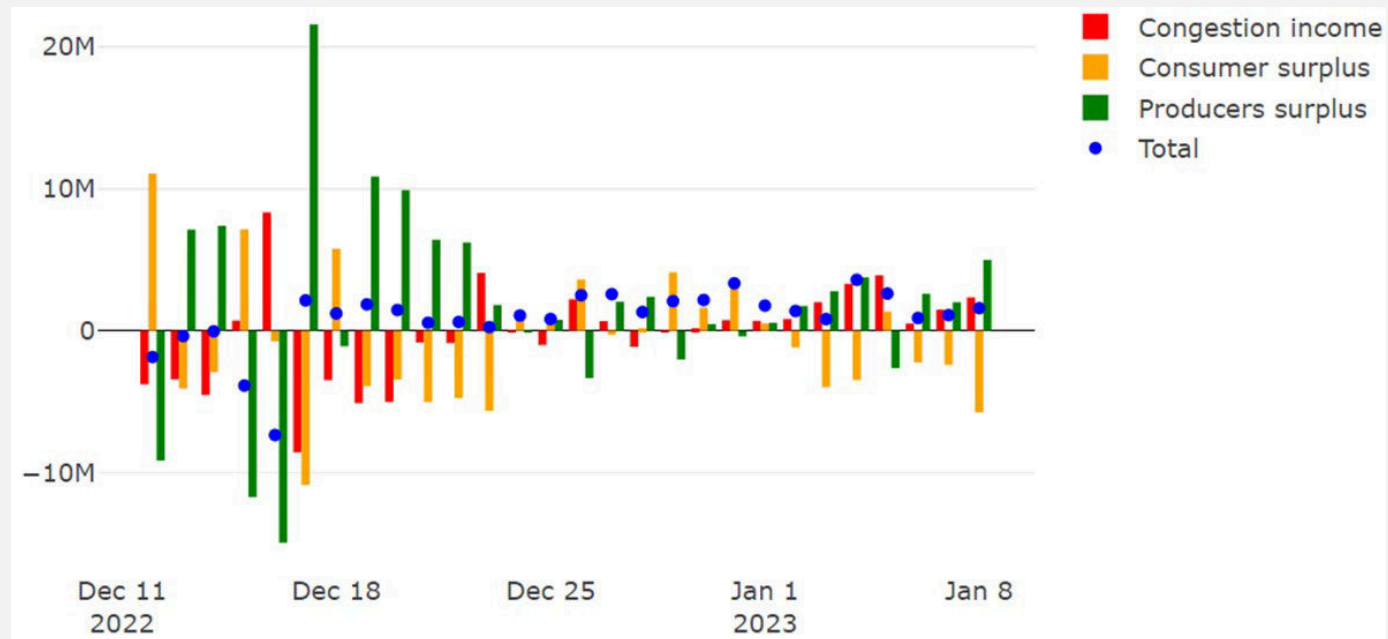


# Nordic SEW on a daily level

On a daily level, FB generates a positive SEW gain, which indicates that FB utilizes the grid better than NTC.

Largest differences between the welfare gains happened at the start of EPR. 16 and 17 December had the largest individual changes in SEW components.

- During these days there were high prices and big spreads in the Nordics in both the NTC and FB results.
- In production, the operators had to apply countertrading and other security measures

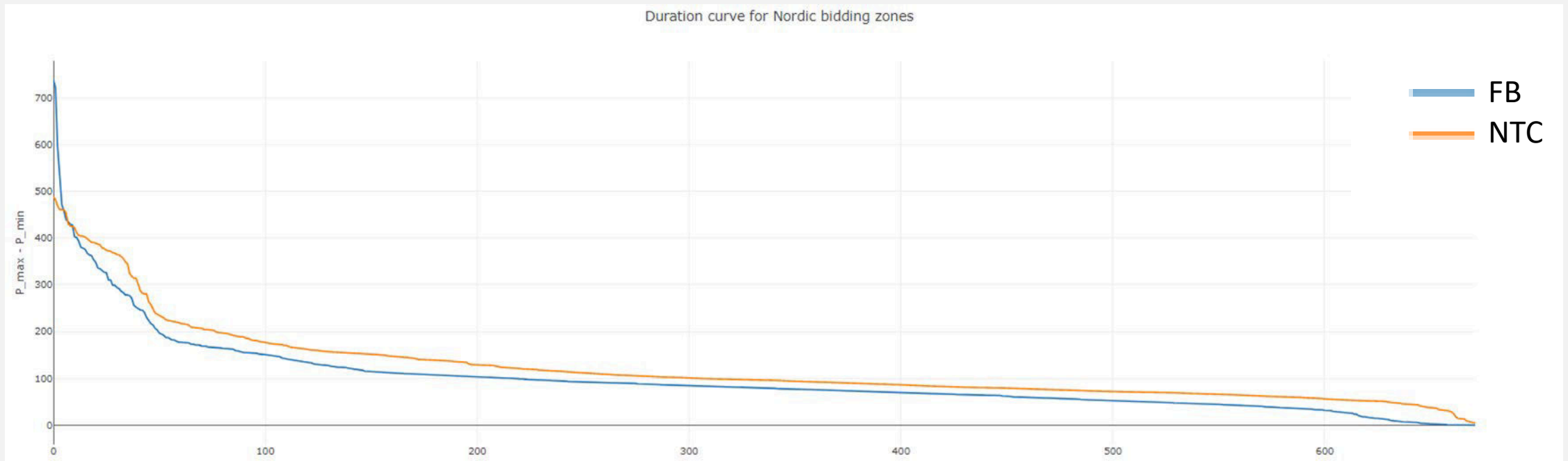


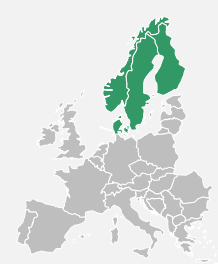




# Difference between the Max and Min price in the Nordics

- The difference between the highest and lowest price in the Nordic area in FB and NTC.
- FB decreases the price spread in the Nordics in 667 out of 672 hours.
- FB shows five hours with significant price spikes in FB for some areas in the Nordics.
- FB shows six hours where all prices in the Nordic area are equal: i.e. full price convergence!





# Prices in the Nordics

Bidding area	Maximum price €/MWh *		Average price €/MWh **		Minimum price €/MWh		Price diff. €/MWh	Price diff. %	Percentage of hours
	FB	NTC	FB	NTC	FB	NTC	FB-NTC (average)	(FB-NTC)* 100/NTC	price(FB) <price(NTC)
DK1	659.94	665.01	168.18	168.43	-3.29	-2.18	-0.25	-0.15	51.2
DK2	848.99	665.01 ↑	172	166.13	-1.48	-0.04	5.87	3.53	59.7
FI	665.04	665.01	162.93	166.17	3.59	-0.04	-3.24	-1.95	53
NO1	643.92	665.01	179.21	190.52 ↓	4.36	1.77	-11.31	-5.94	23.
NO2	638.57	665.01	175.9	190.52 ↓	4.3	1.77	-14.62	-7.67	13.7
NO3	564.37	590	137.75	116.27 ↑	4.28	11.07	21.48	18.47	85.6
NO4	520.23	504.8	110.45	79.16 ↑	4.21	11.07	31.29	39.53	85.6
NO5	628.67	665.01	175.77	191.56 ↓	4.35	11.07	-15.79	-8.24	11.3
SE1	589.97	590	129.27	119.66 ↑	4.18	0.04	9.61	8.03	70.1
SE2	573.1	590	122.34	119.73 ↑	3.2	0.04	2.61	2.18	51.9
SE3	834.57	665.01 ↑	167.67	163.77	1.4	0.04	3.9	2.38	60.4
SE4	882.47	665.01 ↑	172.29	164.94	-0.75	0.04	7.35	4.46	60.5

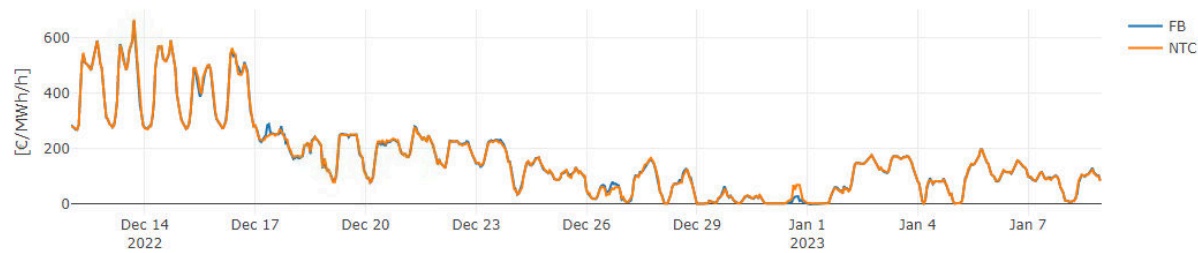
\*FB increased the maximum price for certain areas. This happened on 16 December, where we saw different security measures being activated in production.

\*\*FB has decreased the average price in the areas with highest prices in NTC, and increased it in the areas with the lowest average prices. This means that the FB was able to transport more cheap production to consumers.



# Prices in some of the Nordic areas

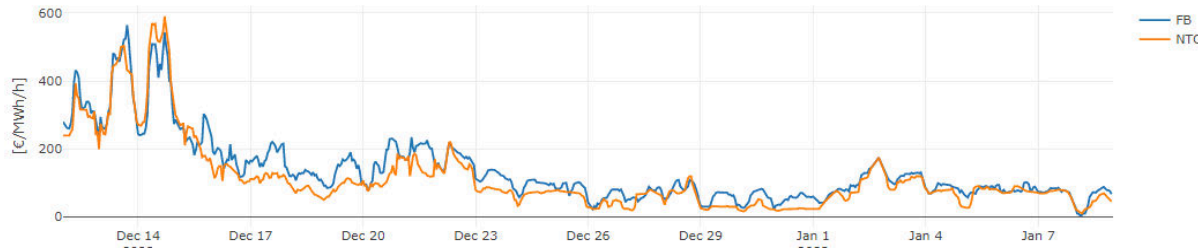
DK1 price



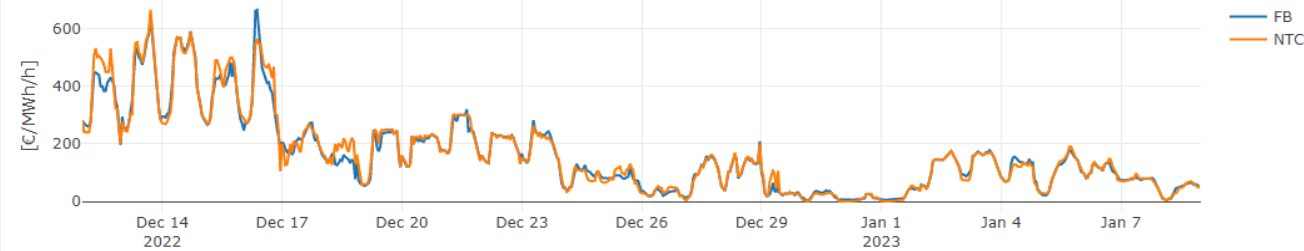
SE3 price



NO3 price



FI price





# Nordic net position

- FB resulted in a higher Nordic net position on average, which means more export towards the continent.
- Cumulatively the Nordic net position increased by 53 GWh over the period.

