

Nemo Link: preliminary results on impact (SPAIC)

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How to assess the impact of Nemo Link? SPAIC procedure!

Standard Process for Assessing Impact of Changes is a procedure defined to assess the impact of any major change in CWE region.

- The impact is assessed on 12 pre-defined (“average”) days representing one year of data (2017)

In order to perform this study, the following process has been performed:

1. 12 SPAIC days were calculated with full grid (no maintenance/outage) and Min RAM 20% applied
 - Nemo Link and incremental offshore wind included in grid model to assess impact on FB capacities
2. Extrapolation of 12 SPAIC days to a full year in order to calculate market results (price, welfare)
 - Two SPAIC days have price peaks for Belgium, strongly influencing results (not representative?)



Scenarios	FB capacities	UK-BE market capacity
Reference	Calculated with full grid without NemoLink/additional Wind	0 MW
NemoLink	Calculated with full grid with NemoLink and additional Wind*	1GW UK-BE

* Extra offshore wind included in the capacity calculation. However, no additional bids have been added in the Market Coupling.



Disclaimer

When interpreting the results of this study, one should have in mind following limitations/assumptions:

1. Full Grid assumption

In reality, outages of some Critical Network Elements can impact the FB capacities.

2. MinRAM application

Min RAM was applied for all applied days

3. Market results based on 12 SPAIC days

The FB capacities are based on 12 days for a whole year of Market Results. As in 2 of the 12 days BE price peaks occurred, the market coupling results (prices, welfare) could be not representative

4. Full capacity for NemoLink

Nemo Link was modelled as a 1000 MW infeed / offtake (i.e. it was assumed for this analysis that Nemo Link capacity was not restricted)

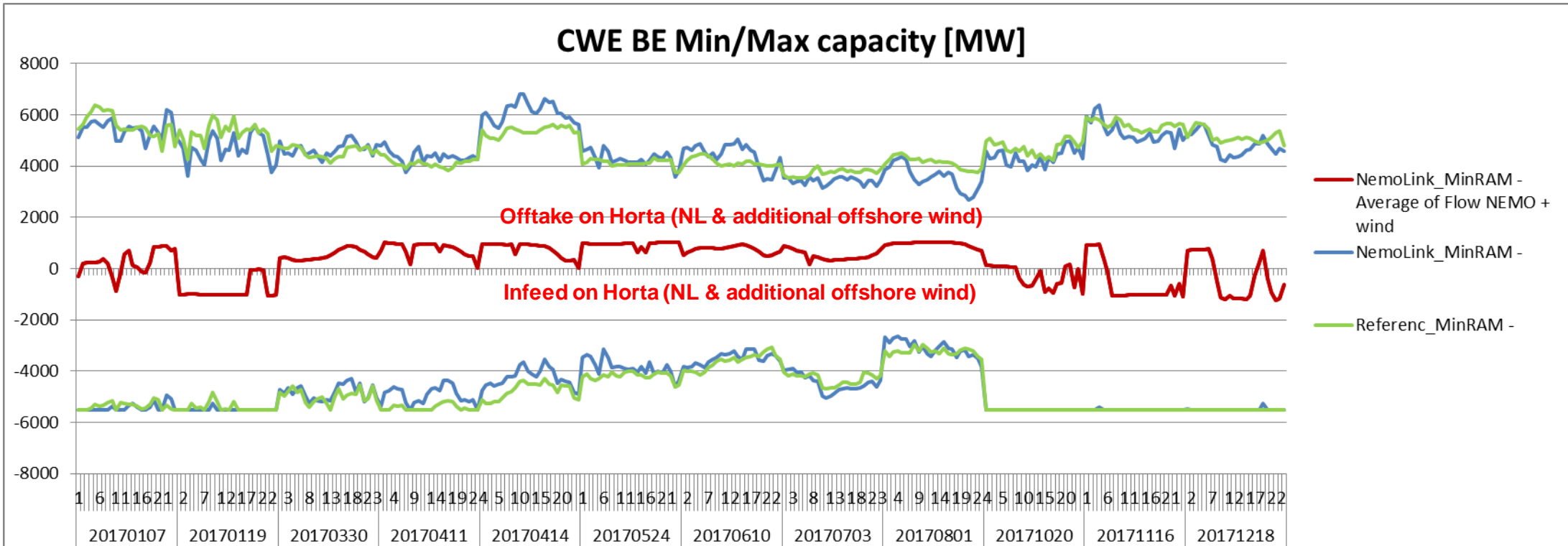
5. Market analysis based on historical bids

No bids were included for incremental generation / no change in bidding behavior of market parties

CWE Min/Max capacity (MinRAM 20 applied) Belgium

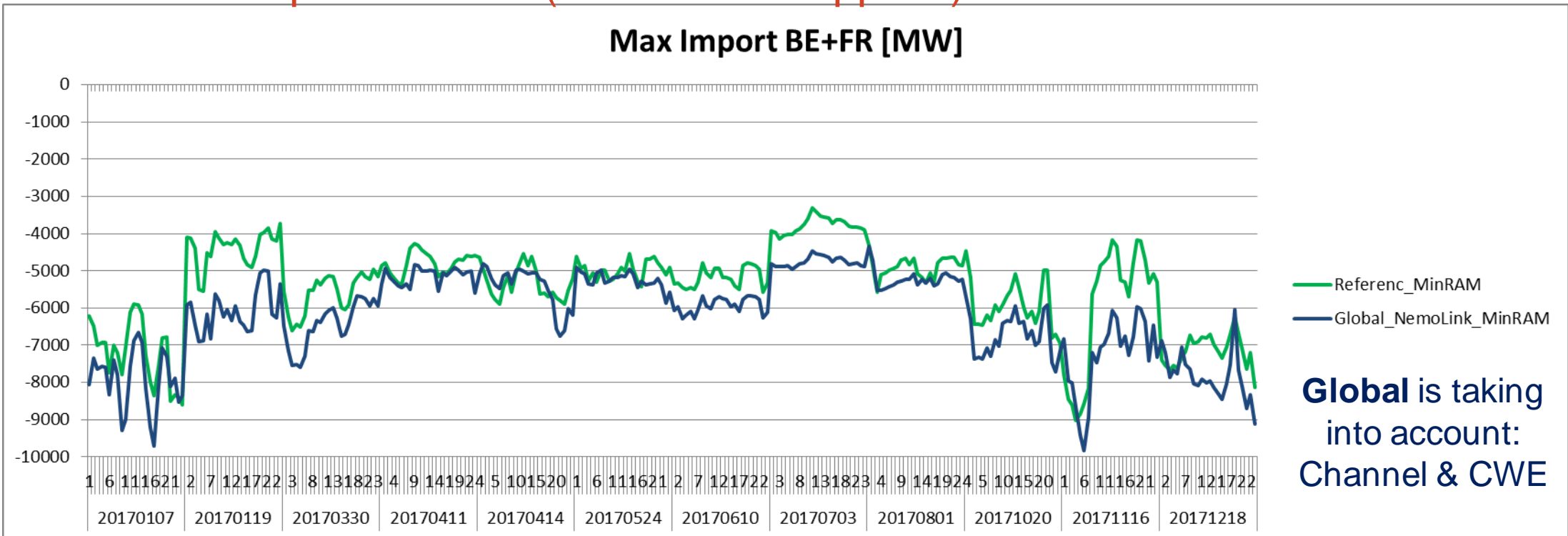


CWE
Capacities/
No other
CCRs



- Impact of NemoLink on our **BE** import capability from **CWE** region (BE-FR, BE-NL) is quite limited.
- **Nemo Link can add up to 1 GW of import capability (BE-UK) on top** (sum of CWE and Nemo Link import < 5,5 GW)

Max Import BE+FR (MinRAM 20 applied)



- Nemo Link increases the global (CWE+Nemo!) simultaneous import capability of Belgium and France
- Nemo Link import capacity was assumed to be 1 GW here (in reality Nemo Link import capacity can be restricted during (un)planned outages, in line with the Channel DA/ID CCM principles)

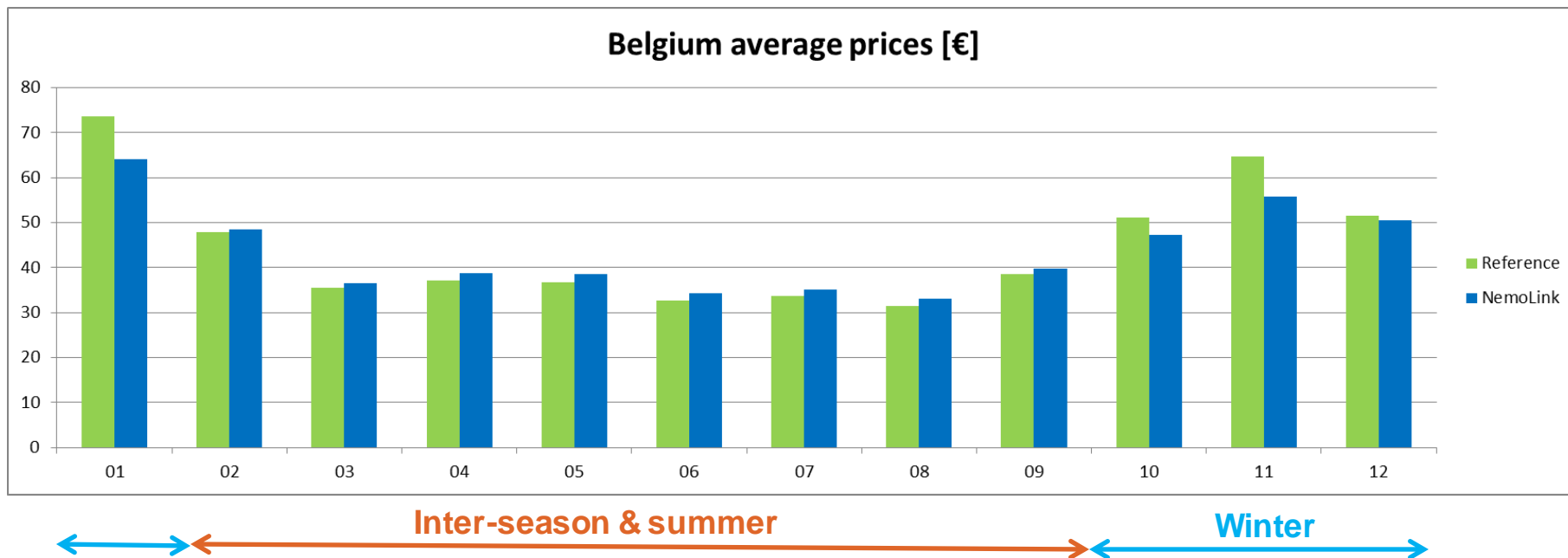


Market results



Results need to be interpreted considering the disclaimer introduced at the beginning of the presentation

Impact of NemoLink on Belgian prices



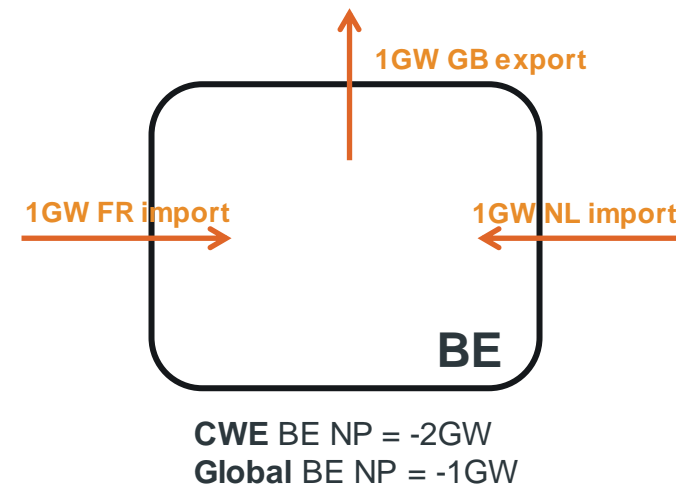
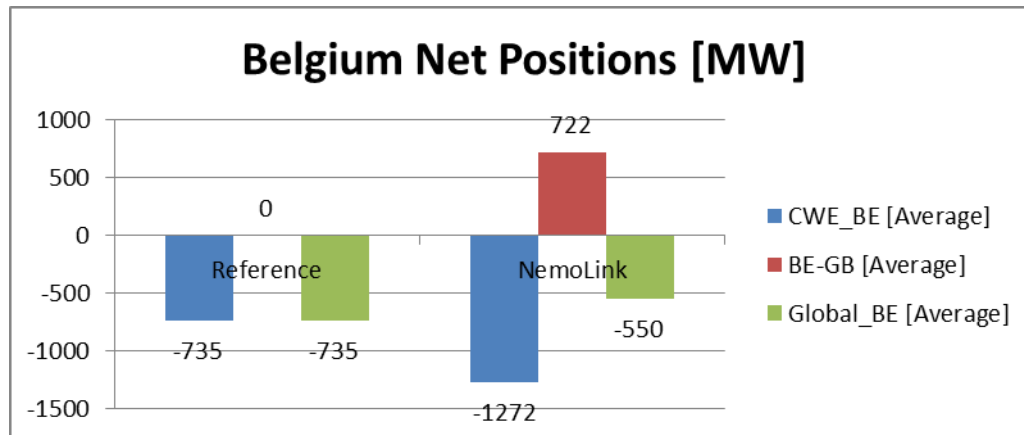
Impact of Nemo Link on BE prices in the SPAIC analysis was different over the year:

1. *Inter-season & Summer*: no BE price peaks in SPAIC & mainly export on NemoLink => BE prices increase
2. *Winter*: price peaks in SPAIC days & (resulting) import on NemoLink => BE prices decrease



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CWE/Global Net positions



[MW]	Average BE CWE NP	Average NL CWE NP	Average FR CWE NP	Average DE CWE NP
Reference	-735	-686	-1686	3107
NemoLink	-1272	-477	-1309	3058

- The global net position of Belgium increases with 185 MW (i.e. export to UK sourced in BE)
- On average 722 MW is exported to UK
 - Remainder of the export volume is mainly sourced in NL and FR (i.e. transit to UK via Belgium)



Results need to be interpreted considering the disclaimer introduced at the beginning of the presentation

Prices (CWE + GB)

[€]	Average of P_GB	Average of P_BE	Average of P_FR	Average of P_NL	Average of P_DE/AT
Reference (12 SPAIC days)	51.64	44.53	44.13	38.92	35.23
NemoAlone (12 SPAIC days)	50.81	43.51	44.68	39.65	35.03
Reference (10 SPAIC days)	50	39.8	39.2	37.1	32.7
NemoAlone (10 SPAIC days)	49	40.4	40.1	37.7	32.5

Impact on BE price:

- Two of the SPAIC days have BE price peaks; due to NemoLink these price peaks decreased, explaining the average decrease in BE prices of the SPAIC analysis
- Taking out these two days, BE prices slightly increased, given the average export from BE to GB.

Decrease of GB price:

- Explained by the export most of the time towards UK

Increase of FR/NL prices:

- Reflecting the transit volumes stemming from FR and NL

Conclusions

Nemo Link has a positive impact on the Belgian and BE-FR global (CWE + Nemo Link) max import

- Belgium import capability on CWE borders almost unchanged

In the SPAIC, Nemo Link will export on average to UK

- Part of this export is sourced in Belgium
- Majority of the export is transit from FR/NL through Belgium towards UK

In the SPAIC, Nemo Link impact on Belgium price is two-fold:

- SPAIC days showed a decrease of the BE price in case of price peaks (i.e. import over Nemo Link!)
- Not considering the price peaks, the BE price slightly increases due to the (on average) export to UK