

1 June 2018 – Berlin
Strommarkttreffen Intradayhandel

ID Flow-based market coupling: lessons learnt from DA & way forward

Silvia Messa

Statkraft Markets GmbH Portfolio Manager P&F
Silvia.messa@statkraft.de



European Federation
of Energy Traders
SO YOU CAN RELY ON THE MARKET

1. DA flow-based market coupling seen from market participants' eyes

Looking back 4 years ago at the CWE Flow-Based Forum: EFET identified many issues we still face today

Copy of June 2014 presentation

EFET

Conclusions



- Will sufficient transparency be provided to market participants to allow them to model FB results?
- Will TSOs be able to dispatch FB results appropriately, incl. in CEE?
- Will FB results be regular enough to provide appropriate forward price signals?
- Will FB parameters and fall-back solutions be robust and stable enough?
- Will NRAs provide appropriate supervision corresponding to well-defined responsibilities of the Project Parties?

Fundamental elements that still impede full efficiency of FBMC

EFET and NRAs assented to go-live under certain conditions:

- Improved transparency of FBMC parameters
- Clarity on the sensitivity of FBMC results to patches applied ex-post
- Better clarity on the efficiency robustness of the algorithm



Where we are still today despite intense stakeholder engagement:

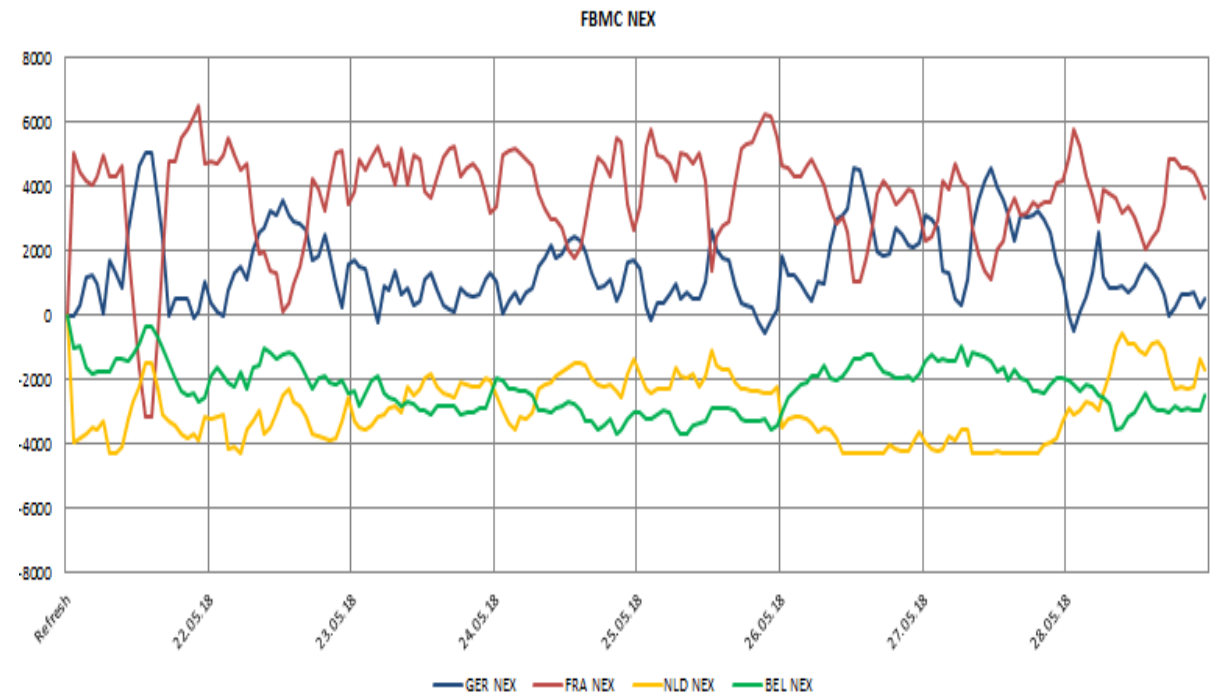
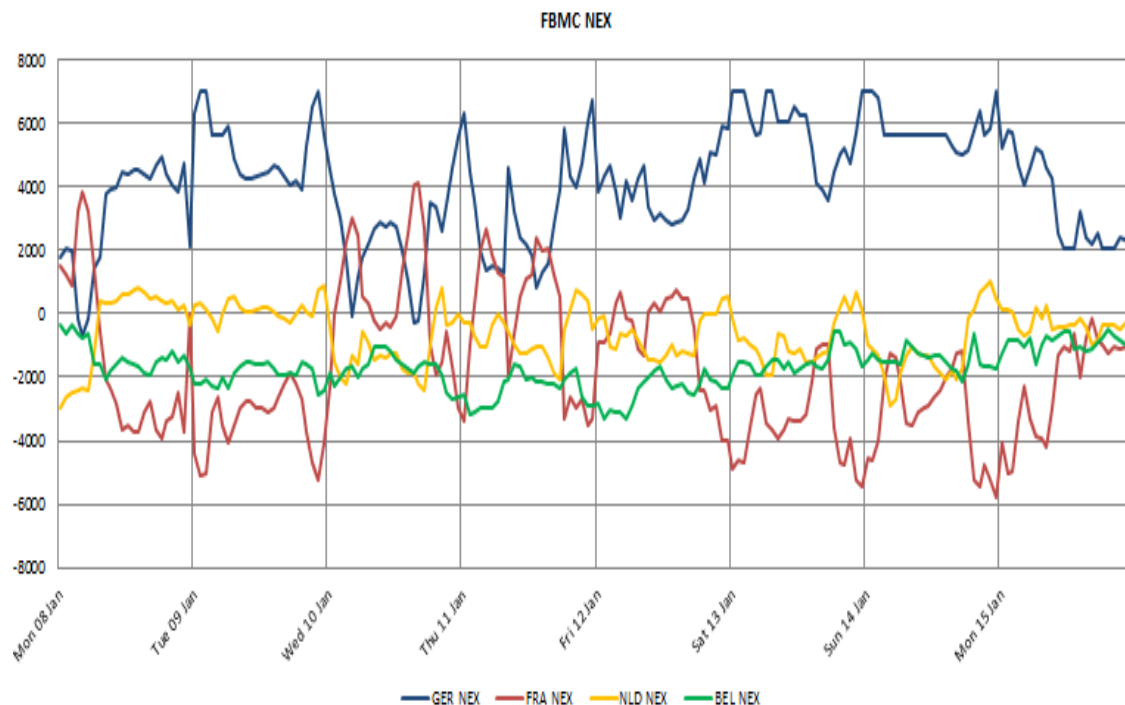
- Transparency on basic parameters is still a daily struggle
- LTA patch to accommodate long-term rights used >70% of the time
- Robustness of the model not thoroughly proved, and 2015>2017 XB capacities low compared to ATC and FBMC parallel run

Transparency (1): Why we need transparency?

- Flow based capacity calculation allows to **better reflect grid physical situation**, leading to **more volatility** (from one hour to the other) in the quantity that each zone can import/export
- **Volatility is NOT a problem**, when it comes with full transparency
- Full transparency = ability of market participants to model FBMC = better bidding in DA = better use of XB capacities in all timeframes = improved social welfare
- Lacking transparency = imprecise bidding in DA = uncertainty on forward markets = negative effects on hedging and investment decisions = social welfare destruction

Transparency (2): Necessity to model volatile environment

In ATC models, XB capacities available to the market are rather stable;
In FBMC, XB capacities available to the market change every day:



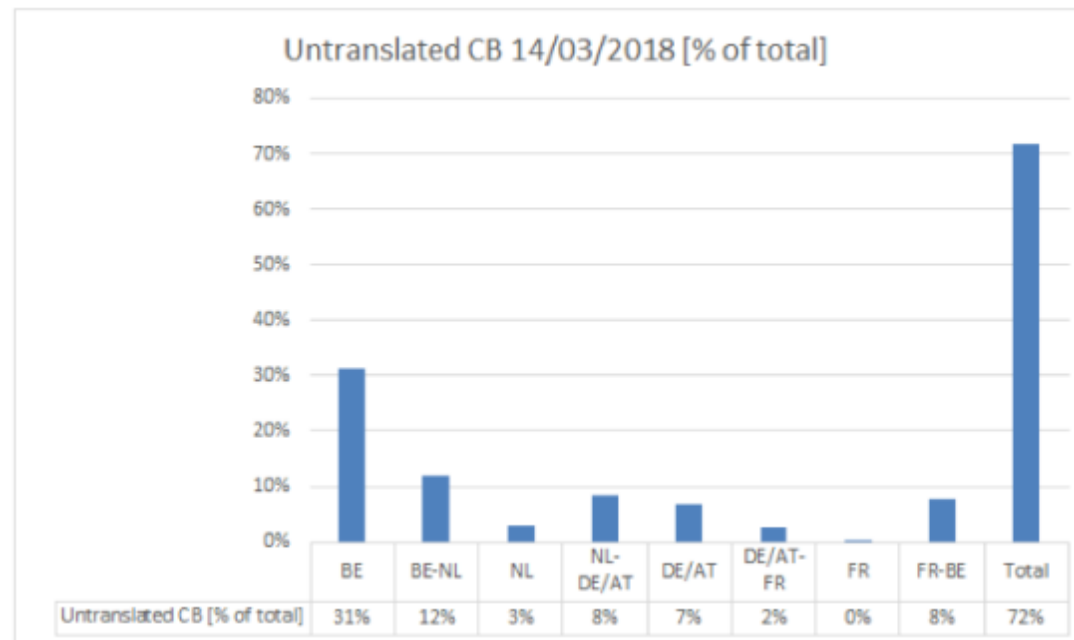
e.g.: net exports in
two weeks of 2018
(weeks 2 and 21)

Transparency (3): Necessity to link FB data to what is available on EU/local transparency platforms

- Two years of negotiations to force TSOs to publish the basic data required from them by the NRAs in the 2015 approval package
 - Yet this data is not kept up-to-date unless market participants carefully monitor it
 - Any request for new data elements needs to be tiresomely negotiated

e.g.: list of
untranslated CBs
on 14/03/2018

EFET



Strommarkttreffen Intradayhandel – 1 June 2018

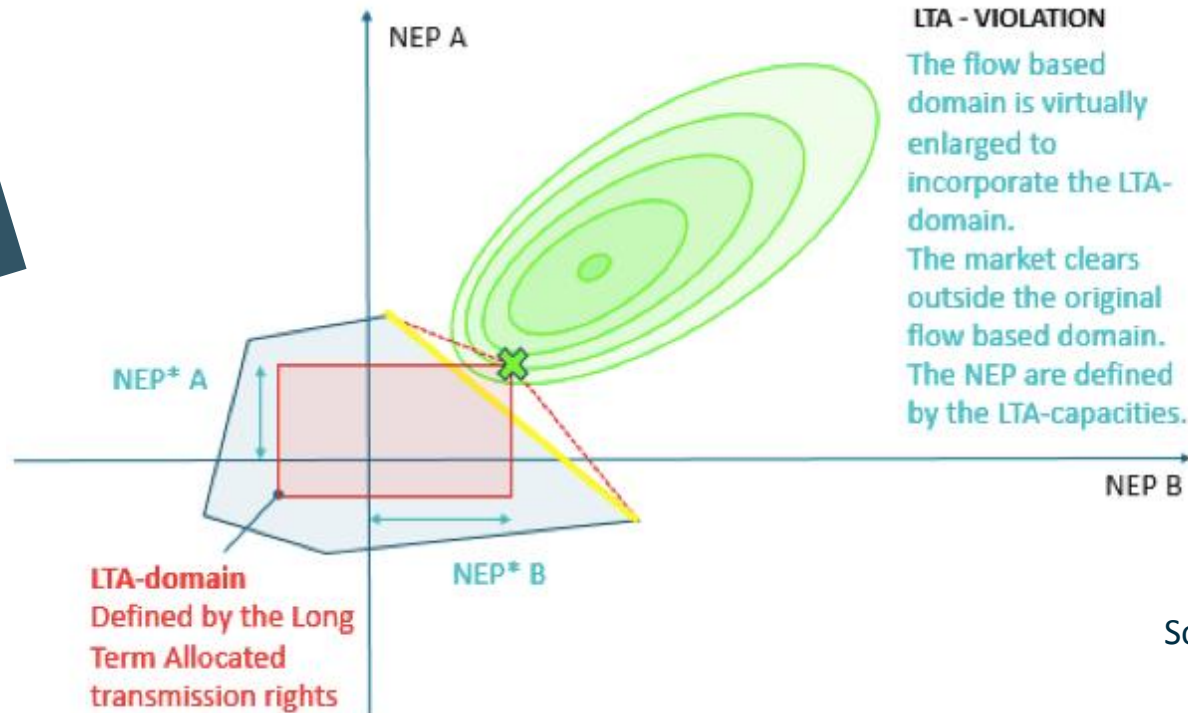
Transparency (4): List of outstanding market requests

- What urgently needs to be understood by market participants
 - Which lines limit the flow-based domain
 - => fully updated list of CB and COs, with unique EIC identifications
 - => translation of CBs and COs (to link them to available outage information)
 - => clarity on remedial actions applies, including PST tap positions
 - How the base-case flows for each CBCO affects their behaviour in the algorithm
 - How and when the LTA patch affects flow-based results
 - How the markets external to FBMC interact and affect FB results (refprog)
- Market participants submitted an updated list of transparency needs to the TSOs in April 2018, with the support of NRAs => action is needed!

Effect of the Long-Term Allocation patch

- The LTA patch modify FB results in an unpredictable manner
 - Predictability reduces as results do not derive from a mathematical calculation
 - LTA patch used over 70% of the time to accommodate allocated transmission rights => functions as ATC, but market participants never know when

e.g.: LTA patch activation results in violation of yellow FB constraint.

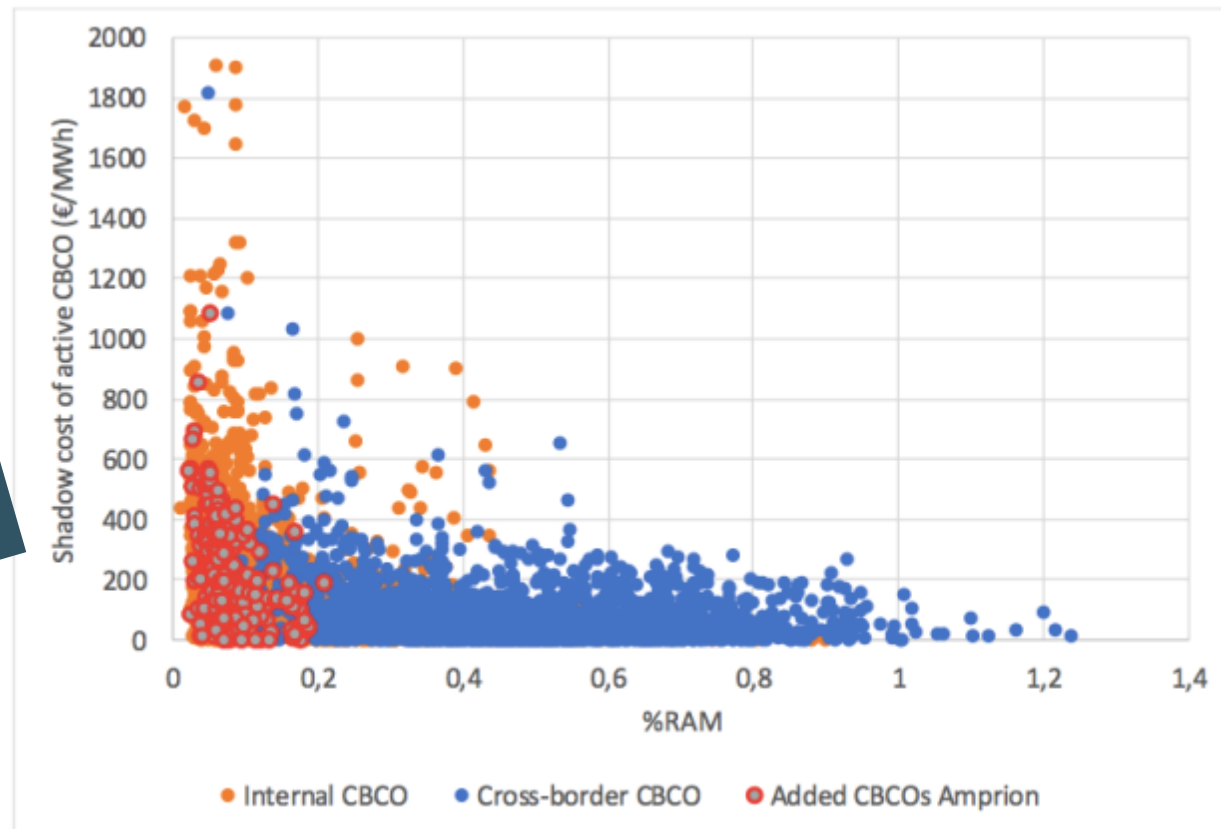


Similar questions
for the
application of
remedial actions
and external
constraints!

Efficiency and robustness

- Internal pre-loaded CBCOs severely restrict the FB domain
 - Inclusion of new CBCOs by TSOs not controlled by NRAs
 - Still no justification for the 5% PTDF sensitivity rule that activates CBCOs

e.g.: external and internal CBCOs (incl. new internal Amprion CBCOs added after go-live) limiting the FB domain, and their shadow cost



Source: CREG

2. Way forward for ID flow-based market coupling

The challenges of ID FBMC

- Will the application of flow-based capacity calculation bring any added capacity to the market?
- How will ID FBMC work with XBID (that uses ATC values)?
- How practical will flow-based capacity calculation work in a continuous trading environment?
- How frequently can ID capacities be re-calculated during the day with flow-based capacity calculation?

Important lessons from DA FBMC for the future ID FBMC

- ID FBMC should only be implemented in a way that makes sense, i.e. improve the availability of capacity made available to the market
- Market participants must fully understand how the algorithm works and which parameters are used
- Transparency is a constant effort, it should not be the responsibility of the market to detect missing or incorrect information
- The FBMC framework (DA or ID) needs to be stable, its rules justified, and the integration of new elements properly disclosed
- NRAs need to be stricter in checking that TSOs respect the pre-established regulatory requirements

Important lessons from DA FBMC for the future ID FBMC

- ID FBMC should only be implemented in a way that makes sense, i.e. improve the availability of capacity made available to the market
- Market participants must fully understand how the algorithm works and which parameters are used => importance of clear ID capacity calculation methodologies (CACM implementation)
- Transparency is a constant effort, it should not be the responsibility of the market to detect missing or incorrect information
- The FBMC framework (DA or ID) needs to be stable, its rules justified, and the integration of new elements properly disclosed
- NRAs need to be stricter in checking that TSOs respect the pre-established regulatory requirements

secretariat@efet.org
www.efet.org

EFET

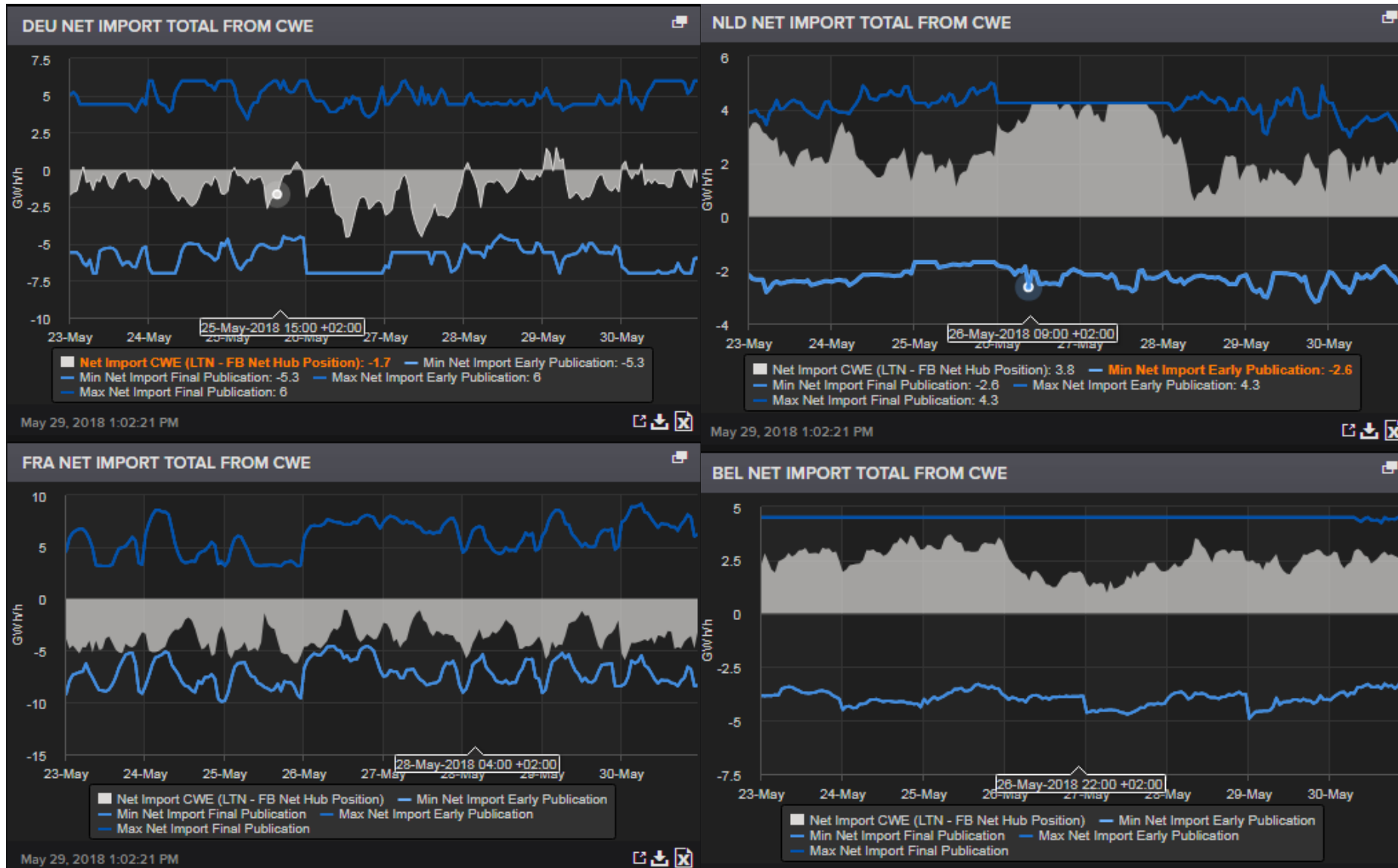
European Federation
of Energy Traders
SO YOU CAN RELY ON THE MARKET



EXTRA CWE flow-based market coupling domain



EXTRA NEX and min-max position



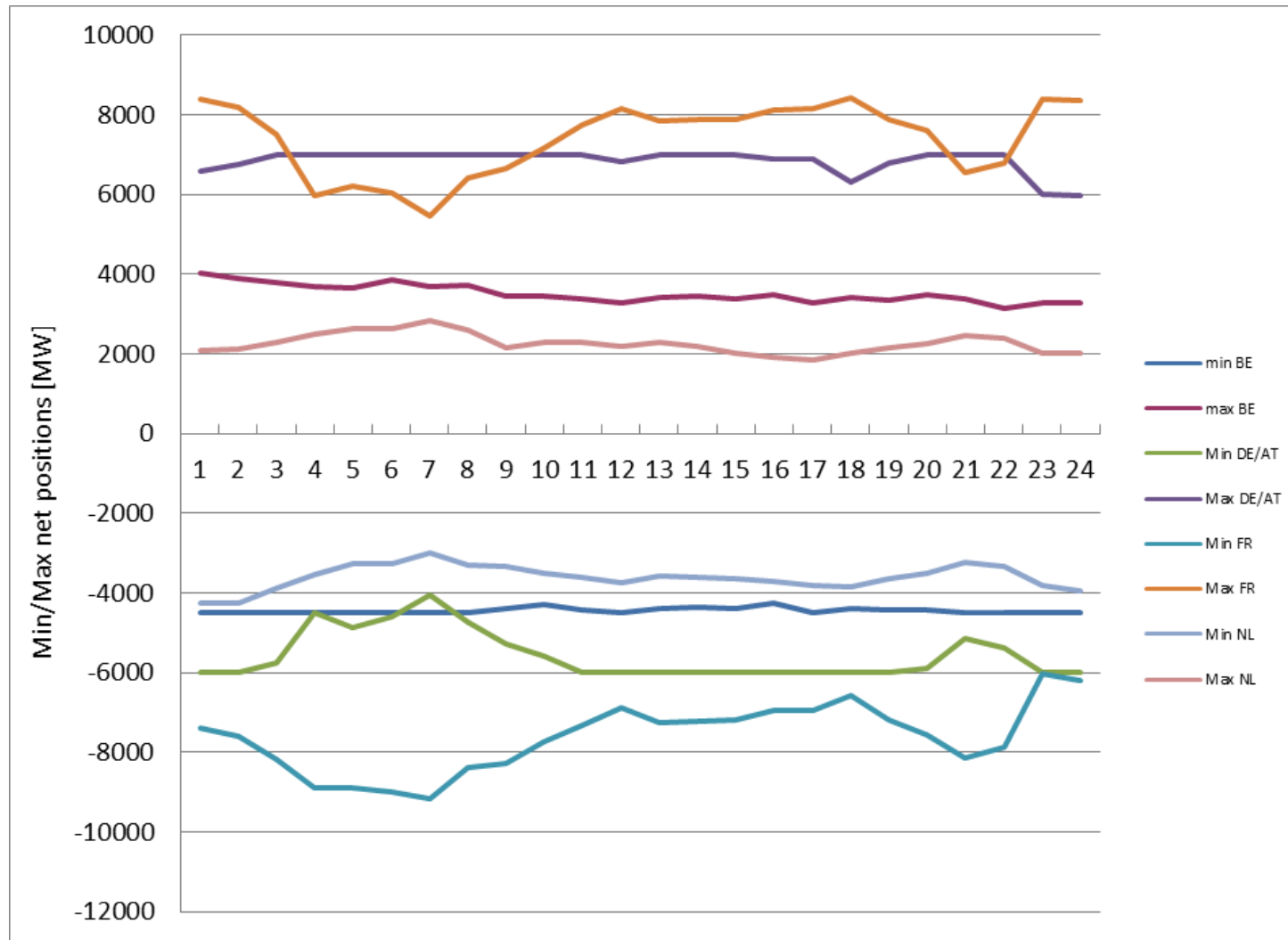
EXTRA the PTDF

Date:	2018-05-30	The data for 2018-05-30 has been retrieved successfully.							
		BE-hub (MW)	DE/AT-hub (M	FR-hub (MW)	NL-hub (MW)	Sum			
Test Hub to Hub		0	0	0	0	0			
Test Hub Positions		0	0	0	0	0			
	ID	BE-hub	DE/AT-hub	FR-hub	NL-hub	RAM (MW)	Test Hub to Hub	# of constraints violated	Test Hub position
hour 1	11043800000	-0.04847	-0.01754	0.14024	-0.1392	1421	0		0
	11075180000	0.2507	-0.01645	0.11164	-0.12472	1151	0		0
	11133240000	-0.21481	0.01217	-0.09872	0.16933	895	0		0
	11238080000	-1	0	0	0	4500	0		0
	11285830000	0.22765	-0.0133	0.10499	-0.18342	1270	0		0
	11367900000	0.04847	0.01754	-0.14024	0.1392	1222	0		0
	11401100000	0.14592	0.01499	-0.11083	0.11527	1027	0		0
	11621160000	0.16484	-0.01284	0.10161	-0.175	1138	0		0
	11868200000	-0.14592	-0.01499	0.11083	-0.11527	1383	0		0
	13722060012	-0.10676	0.0007	-0.05928	-0.13947	357	0		0
	13846370000	-0.03712	0.00618	-0.0097	-0.22697	888	0		0
	13873340000	-0.10692	0.0007	-0.05938	-0.13361	346	0		0
	14721580000	-0.19482	0.01784	-0.07374	-0.18166	607	0		0
	14790480001	-0.15297	-0.22605	-0.18617	0	263	0		0
	14790480002	-0.15642	-0.22527	-0.186	0	263	0		0
	14790480003	-0.15361	-0.2232	-0.18142	0	263	0		0
	14790480004	-0.15003	-0.22169	-0.17756	0	263	0		0
	14790480005	-0.14956	-0.2247	-0.18264	0	263	0		0
	14790480006	-0.1488	-0.2226	-0.17872	0	263	0		0
	14790480007	-0.14877	-0.22356	-0.18038	0	263	0		0
	15304180000	0	-1	0	0	6000	0		0
	16773690000	0.12456	-0.04012	0.17702	0.00962	1380	0		0
	18183210000	0.12066	0.00343	-0.00906	0.04414	348	0		0
	18973740000	-0.12066	-0.00343	0.00906	-0.04414	499	0		0

EXTRA ATC not-CWE countries

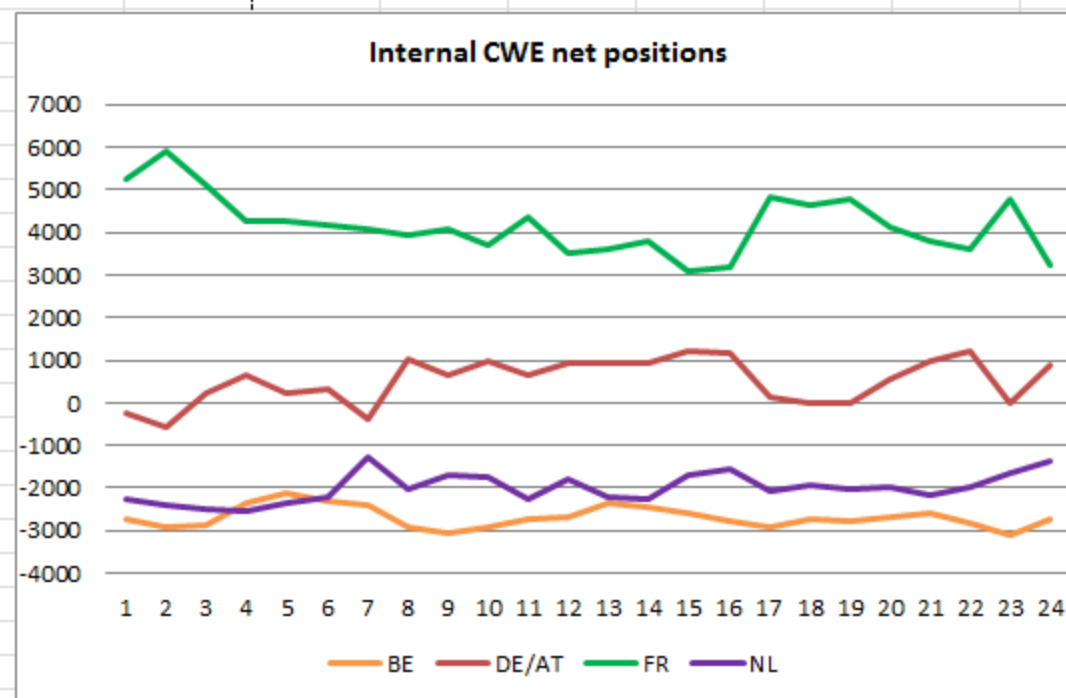
Date:	2018-05-30 The data for 2018-05-30 has been retrieved successfully.									
Hour	ATC (in MW)									
	FR-ES	ES-FR	DK1-DE/AT	DE/AT-DK1	FR-IT	IT-FR	DE/AT-IT	IT-DE/AT	SI-IT	IT-SI
1	1900	2650	700	1500	2318	1154	226	125		
2	1850	2850	700	1500	2318	1154	226	125		
3	1850	2850	700	1500	2318	1154	226	125		
4	1850	2850	700	1500	2318	1154	226	125		
5	1850	2850	700	1500	2318	1154	226	125		
6	1850	2850	700	1500	2318	1154	226	125		
7	1850	2500	700	1500	2062	1154	206	125		
8	2750	2500	700	700	2294	969	222	105		
9	2750	2500	700	700	2294	969	222	105		
10	2750	2500	700	700	2219	969	216	105		
11	2750	2500	700	700	2219	969	216	105		
12	2750	2500	700	700	2219	969	216	105		
13	2750	2500	700	700	2272	969	220	105		
14	2750	2500	700	700	2272	969	220	105		
15	2750	2500	700	700	2272	969	220	105		
16	2750	2500	700	700	2336	969	225	105		
17	2750	2500	700	700	2336	969	225	105		
18	2750	2500	1090	1500	2336	969	225	105		
19	2750	2500	1210	1500	2336	969	225	105		
20	2750	2500	1240	1500	2336	969	225	105		
21	2750	2500	1270	1500	2336	969	225	105		
22	2750	2500	1270	1500	2336	969	225	105		
23	2750	2500	1280	1500	2336	969	225	105		
24	1900	2650	1050	1500	2106	1154	209	125		

EXTRA max net positions (not valid simultaneously)



EXTRA actual NEX out of Euphemia

Date:	2018-05-30 The data for 2018-05-30 has been r					BE	DE	FR	NL				
Hour	Internal CWE Net Position (in MW)				(-) Export (+)	BL							
	BE	DE/AT	FR	NL		PL							
1	-2732.1	-254	5267.2	-2281.1									
2	-2907	-575.2	5904.6	-2422.4									
3	-2851.2	245	5099.6	-2493.3									
4	-2347.6	637.2	4254.3	-2543.8									
5	-2117.5	222	4258.8	-2363.2									
6	-2302.7	332.6	4165.5	-2195.3									
7	-2402.3	-395.3	4084	-1286.4									
8	-2922.1	1047	3921.8	-2046.6									
9	-3039.2	652.9	4066.9	-1680.6									
10	-2943.3	965.3	3719.8	-1741.8									
11	-2715.4	633.2	4363.3	-2281.1									
12	-2666.3	934.3	3529.4	-1797.2									
13	-2338.9	941.6	3606.8	-2209									
14	-2457.1	940.3	3783.6	-2266.6									
15	-2607	1209.1	3103.7	-1705.9									
16	-2786.6	1166.7	3180.5	-1560.5									
17	-2907.3	150.7	4813.8	-2057.2									
18	-2724.5	0	4643.3	-1919									
19	-2771.3	0	4800.9	-2029.5									
20	-2699	535.8	4149.6	-1986.4									
21	-2613.9	992.4	3808	-2186.5									
22	-2849.2	1233	3605.7	-1989.5									
23	-3110.5	0	4771.7	-1661.2									
24	-2726.5	875	3227.1	-1375.5									



EXTRA outcomes of the spot exchanges

In red not coupled hubs

NORTHERN EUROPE					
	UKPX	SYS	WDK	EDK	EEX
BL	66.69	42.30	45.94	46.09	46.68
PL	73.51	44.39	49.57	49.74	49.77
OP	59.88	40.22	42.31	42.44	43.59
block 5	79.28	44.47	52.34	52.34	52.92

WESTERN EUROPE					
	APX	EEX	PNX	EEX_CH	BELPX
BL	64.92	46.68	47.95	46.59	66.07
PL	75.78	49.77	57.97	50.87	73.95
OP	54.06	43.59	37.93	42.31	58.19
block 5	81.24	52.92	61.75	52.70	80.13

EASTERN EUROPE					
	OKO	ISOT	MAWR	EEX	OPCOM
BL	48.77	54.46	55.46	46.68	53.23
PL	53.25	63.13	64.57	49.77	60.40
OP	44.29	45.79	46.35	43.59	46.05
block 5	54.81	63.42	65.11	52.92	63.89

SOUTHERN EUROPE					
	EEX_CH	PNX	ITA_N	ITA_P	OMEL
BL	46.59	47.95	58.15	59.26	65.11
PL	50.87	57.97	63.01	62.93	66.35
OP	42.31	37.93	53.30	55.59	63.86
block 5	52.70	61.75	66.12	66.65	65.40

EXTRA outcomes of the spot exchanges

