


Documentation of the CWE FB MC solution as basis for the formal approval-request
(Brussels, 9th May 2014)

Annex 16.15 Presentation of the Utility Tool

Final format of the Utility Tool might be subject to future improvements.



CWE Flow Based Utility Tool

Reference time:

date:
2014-03-25

hour:
2

1) Check volume (interactive module)

Here you can check the simultaneous execution of trading volumes of the markets involved in the CWE Market Coupling

2) Max volume (information module)

Here you can find the maximal trade volumes (MWh/h) which can be physically transported between two Hubs under the condition that no other trade is executed between other Hubs.

HUB TO HUB EXCHANGES	Hub-to-Hub trade in MWh/h <i>(please insert values)</i>	Test 1: hub to hub inside FB space		direction ->	direction <-
	DE=>BE	0	Trades feasible		3535
DE=>NL	0			3667	4633
DE=>FR	0			5538	3257
NL=>BE	0			3154	3372
NL=>FR	0			4633	3257
BE=>FR	0			4345	3257

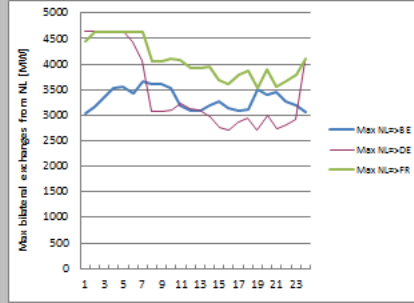
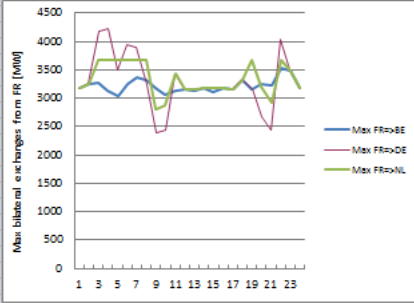
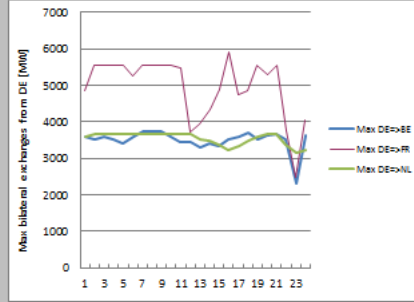
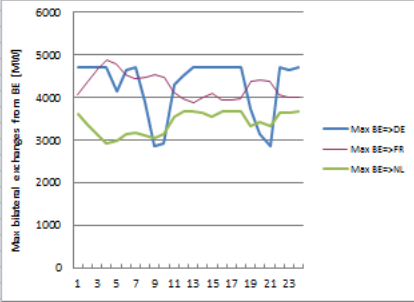
HUB POSITION	Hub Positions trade in MWh/h <i>(please insert values)</i>	Test 1: sum hub positions = 0	Test 2: hub positions inside FB space	export	import
	DE	0	OK	Trades feasible	6688
BE	0	5643			-3734
FR	0	3257			-5538
NL	0	4633			-3667

Market view | Market graphs | CWE map | PTDFs | Max net pos | Max exchanges | Hours | Dates

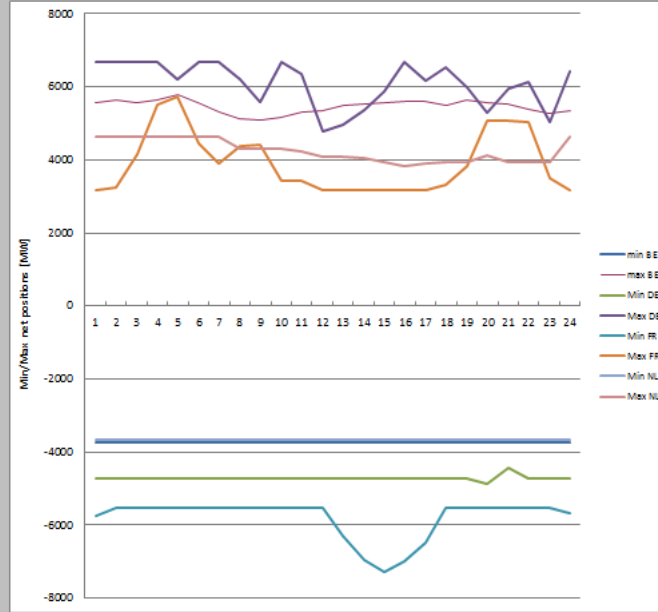
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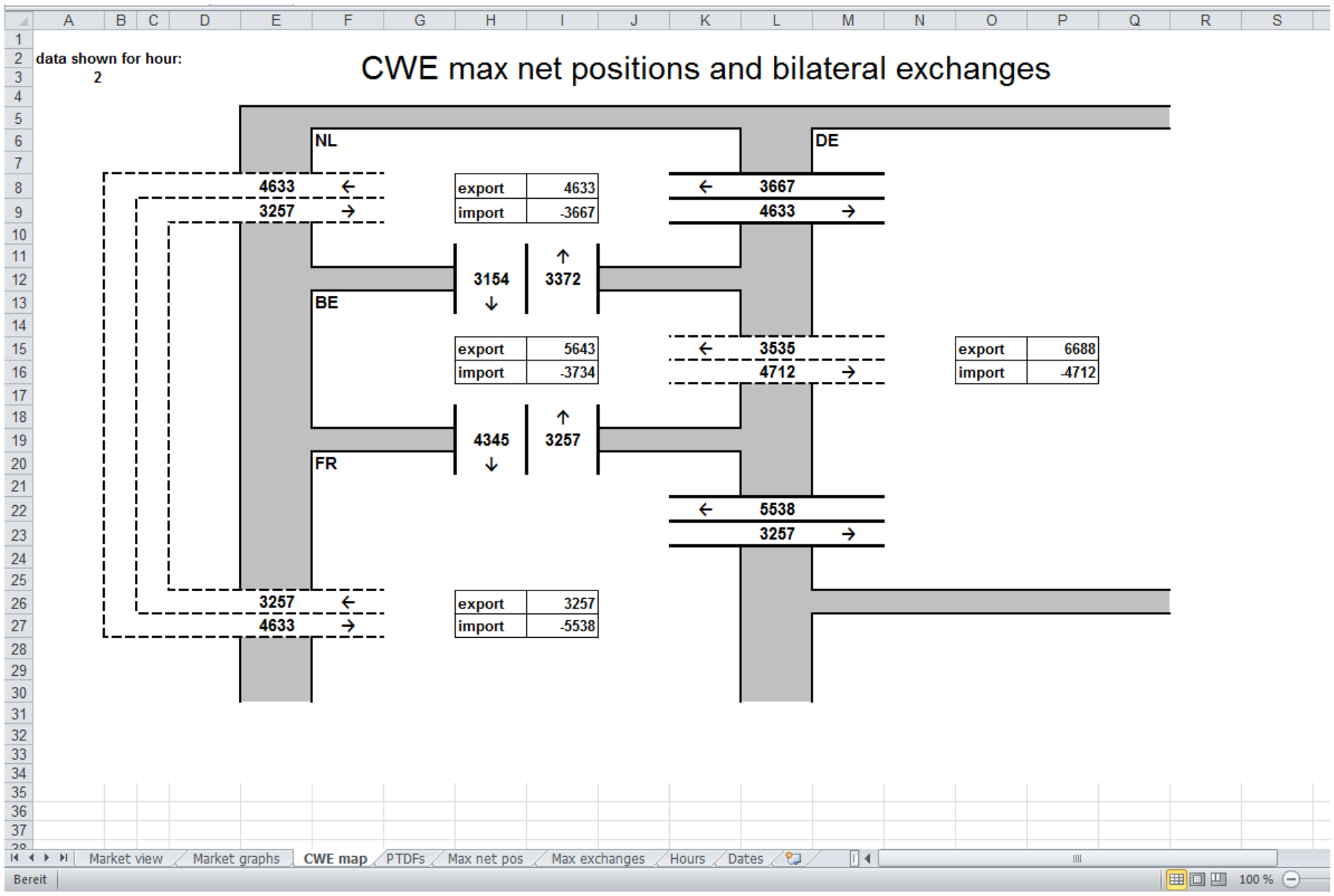
Maximum bilateral exchanges

Maximum bilateral exchanges



Maximum / minimum net positions



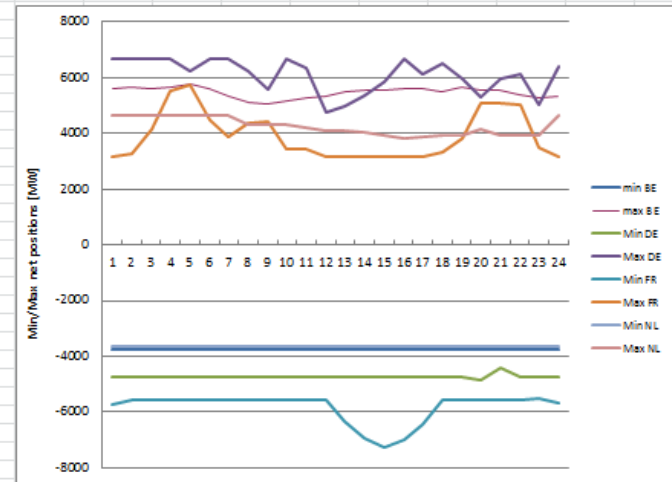


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	A	B	C	D	E	F	G	H	I	J	K	L
1			BE-hub (MW)	DE-hub (MW)	FR-hub (MW)	NL-hub (MW)	Sum					
2		Test Hub to Hub	0	0	0	0	0					
3		Test Hub Positions	0	0	0	0	0					
4												
5								Test Hub to Hub	# of constraints violated	Test Hub positions		
6		ID	BE-hub	DE-hub	FR-hub	NL-hub	RAM (MW)	0		0		
7		CB1	-0,00879	0,08377	-0,00291	0,04783	421	0		0		
8		CB2	0,01793	0,23032	0,14768	-0,01903	896	0		0		
9		CB3	0,09059	0,26791	0,16257	0,41515	1126	0		0		
10		CB4	0,0345	-0,14224	0,06628	-0,10376	979	0		0		
11		CB5	-0,03902	0,053	0,07114	0,02755	378	0		0		
12		CB6	0,17054	0,01386	-0,09138	0,0838	1068	0		0		
13		CB7	0,0891	0,00405	-0,00937	0,02677	465	0		0		
14		CB8	-0,05303	0,04515	0,0452	0,02915	353	0		0		
15		CB9	-0,04709	0,19488	0,08595	0,2392	867	0		0		
16	hour 1	CB10	-0,04709	0,19488	0,08595	0,2392	867	0		0		
17		CB11	0,05296	-0,0452	-0,04519	-0,02919	489	0		0		
18		CB12	-0,09942	-0,29921	-0,17425	-0,44579	1250	0		0		
19		CB13	-0,00832	-0,07556	-0,03085	0,1258	947	0		0		
20		CB14	-1	0	0	0	3734	0		0		
21		CB15	0	0	1	0	3174	0		0		
22		CB16	0	0	-1	0	5749	0		0		
23		CB17	0	-1	0	0	4722	0		0		
24		CB18	0	1	0	0	6678	0		0		
25		CB19	0	0	0	-1	3667	0		0		
26	CB20	0	0	0	1	4633	0		0			
27		CB1	-0,00879	0,08377	-0,00297	0,04783	551	0		0		
28		CB2	0,01793	0,23032	0,14743	-0,01903	967	0		0		
29		CB3	0,09059	0,26791	0,16233	0,41515	1214	0		0		
30		CB4	0,0349	-0,14449	0,06743	-0,10496	905	0		0		
31		CB5	0,0349	-0,14449	0,06743	-0,10496	905	0		0		
32		CB6	0,0345	-0,14224	0,06667	-0,10376	893	0		0		
33		CB7	-0,03902	0,053	0,07115	0,02755	366	0		0		
34		CB8	0,17054	0,01386	-0,09162	0,0838	1139	0		0		
35		CB9	0,0891	0,00405	-0,00937	0,02677	476	0		0		
36		CB10	-0,05303	0,04514	0,04516	0,02915	347	0		0		
37		CB11	-0,04709	0,19488	0,08572	0,2392	903	0		0		
38		CB12	-0,04709	0,19488	0,08572	0,2392	903	0		0		
39		CB13	0,05296	-0,0452	-0,04516	-0,02919	495	0		0		
40		CB14	-0,09942	-0,2992	-0,17396	-0,44578	1168	0		0		
41		CB15	-1	0	0	0	3734	0		0		
42		CB16	0	0	1	0	3257	0		0		
43		CB17	0	0	-1	0	5538	0		0		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	
		Prog	BE	DE	FR	NL		hour	min BE	max BE	Min DE	Max DE	Min FR	Max FR	Min NL	Max NL												
2		MinBE	-3734					1	-3734	5580,19	-4722	6678	-5749	3174	-3667	4633												
3		MaxBE	5580,19					2	-3734	5642,854	-4712	6688	-5538	3257	-3667	4633												
4		MinDE		-4722				3	-3734	5580,883	-4712	6688	-5538	4171	-3667	4633												
5	hour 1	MaxDE		6678				4	-3734	5643,136	-4712	6688	-5538	5513	-3667	4633												
6		MinFR			-5749			5	-3734	5785,76	-4712	6222	-5538	5715,988	-3667	4633												
7		MaxFR			3174			6	-3734	5581,778	-4712	6688	-5538	4459	-3667	4633												
8		MinNL				-3667		7	-3734	5304,677	-4712	6688	-5538	3891	-3667	4633												
9		MaxNL				4633		8	-3734	5111,824	-4712	6216	-5538	4369	-3667	4308,769												
10		MinBE	-3734					9	-3733	5072,633	-4712	5575	-5539	4403	-3667	4313,098												
11		MaxBE	5642,854					10	-3733	5168,702	-4712	6688	-5539	3436	-3667	4301,068												
12		MinDE		-4712				11	-3733	5301,999	-4712	6352,687	-5539	3428	-3667	4230,735												
13	hour 2	MaxDE		6688				12	-3733	5355,865	-4712	4781,134	-5539	3163	-3667	4101,344												
14		MinFR			-5538			13	-3733	5492,456	-4712	4950,457	-6313	3163	-3667	4069,737												
15		MaxFR			3257			14	-3734	5535,985	-4722	5355,55	-6940,98	3174	-3667	4045,31												
16		MinNL				-3667		15	-3733	5560,675	-4722	5862,594	-7269	3173	-3667	3931,978												
17		MaxNL				4633		16	-3733	5589,517	-4722	6661,652	-7006	3173	-3667	3813,271												
18		MinBE	-3734					17	-3733	5608,296	-4712	6153,916	-6466	3163	-3667	3901,602												
19		MaxBE	5580,883					18	-3733	5493,019	-4712	6520,815	-5539	3326	-3667	3950,299												
20		MinDE		-4712				19	-3733	5652,069	-4712	5979	-5539	3842	-3667	3947,703												
21	hour 3	MaxDE		6688				20	-3733	5557,587	-4857,94	5288	-5539	5076	-3667	4129,137												
22		MinFR			-5538			21	-3734	5527,015	-4423,38	5942	-5538	5068,11	-3667	3942,165												
23		MaxFR			4171			22	-3734	5395,735	-4712	6123,471	-5538	5020	-3667	3919,744												
24		MinNL				-3667		23	-3734	5264,823	-4722	5029,776	-5528	3494	-3667	3944,168												
25		MaxNL				4633		24	-3734	5355,973	-4722	6426,347	-5683	3174	-3667	4633												
26		MinBE	-3734																									
27		MaxBE	5643,136																									
28		MinDE		-4712																								
29	hour 4	MaxDE		6688																								
30		MinFR			-5538																							
31		MaxFR			5513																							
32		MinNL				-3667																						
33		MaxNL				4633																						
34		MinBE	-3734																									
35		MaxBE	5785,76																									
36		MinDE		-4712																								
37	hour 5	MaxDE		6222																								
38		MinFR			-5538																							
39		MaxFR			5715,988																							
40		MinNL				-3667																						
41		MaxNL				4633																						
42		MinBE	-3734																									
43		MaxBE	5581,778																									
44		MinDE		-4712																								
45	hour 6	MaxDE		6688																								
46		MinFR			-5538																							
47		MaxFR			4459																							
48		MinNL				-3667																						
49		MaxNL				4633																						
50		MinBE	-3734																									
51		MaxBE	5304,677																									
52		MinDE		-4712																								
53	hour 7	MaxDE		6688																								
54		MinFR			-5538																							
55		MaxFR			3891																							
56		MinNL				-3667																						
57		MaxNL				4633																						
58		MinBE	-3734																									
59		MaxBE	5111,824																									
60		MinDE		-4712																								
61	hour 8	MaxDE		6216																								
62		MinFR																										



	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	
1		hour	Max BE=>L	Max BE=>F	Max BE=>H	Max DE=>E	Max DE=>F	Max DE=>H	Max FR=>E	Max FR=>C	Max FR=>H	Max NL=>E	Max NL=>C	Max NL=>FR										
5		4	4712	4876,1875	2927,5897	3534,6847	5538	3667	3131,524	4229,1297	3667	3545,3561	4633	4633										
6		5	4130,3609	4793,1454	2973,6986	3401,9148	5538	3667	3031,6783	3495,3315	3667	3559,3279	4633	4633										
7		6	4656,5576	4548,403	3149,8108	3595,4369	5258,3025	3667	3240,4465	3942,1372	3667	3419,6094	4429,8768	4633										
8		7	4702,7687	4446,3189	3178,8653	3734	5538	3667	3357,8364	3891	3667	3674,0823	4055,9301	4633										
9		8	3903,0641	4472,5162	3103,2317	3734	5538	3667	3321,0332	3248,4848	3667	3601,0227	3065,2459	4066,8775										
10		9	2862,1291	4538,2105	3062,6516	3733	5539	3667	3176,46	2383,3745	2804,6972	3606,7391	3064,5004	4067,9279										
11		10	2937,4127	4464,184	3148,1904	3598,7133	5539	3667	3059,4798	2448,1287	2881,5977	3545,0289	3088,6716	4099,4189										
12		11	4310,1442	4144,7044	3536,3625	3457,9815	5470,327	3667	3140,4661	3428	3428	3200,0739	3224,865	4070,6785										
13		12	4522,774	3963,2874	3667	3427,8246	3725,7673	3667	3163	3163	3163	3086,2106	3132,6004	3926,4861										
14		13	4712	3883,2006	3667	3287,4233	3927,0969	3600,8423	3140,1835	3163	3163	3086,0205	3093,3852	3926,0246										
15		14	4722	4014,4048	3639,0101	3398,0094	4340,3826	3480,2974	3174	3174	3174	3190,7357	2981,5175	3960,46										
16		15	4722	4090,5299	3558,6883	3337,6897	4885,8952	3385,7911	3112,9104	3173	3173	3273,6903	2767,9136	3676,6606										
17		16	4722	3926,0792	3667	3510,9081	5905,9863	3228,0615	3173	3173	3173	3138,6546	2716,2781	3601,9141										
18		17	4712	3931,7876	3667	3579,4411	4757,5057	3338,5412	3163	3163	3163	3087,273	2871,0699	3804,9095										
19		18	4712	3965,6032	3667	3697,273	4853,2335	3469,7761	3326	3326	3326	3123,0769	2935,1234	3859,7847										
20		19	3749,5666	4383,5616	3341,275	3528,0921	5539	3587,1719	3160,4758	3170,0993	3667	3508,4468	2705,8765	3528,586										
21		20	3154,848	4416,0259	3416,2025	3619,8633	5288	3667	3242,8013	2673,6656	3206,4481	3412,9165	2999,9021	3908,6909										
22		21	2865,4124	4394,5425	3335,7255	3650,4537	5538	3667	3234,0116	2430,0441	2914,6793	3465,4229	2725,849	3550,9371										
23		22	4712	4061,3648	3628,6386	3502,6466	3756,0386	3376,8754	3524,7093	4049,0797	3667	3280,1062	2813,9375	3666,1565										
24		23	4660,4119	3994,2883	3645,7585	2319,8198	2484,9215	3158,2352	3494	3494	3494	3198,0706	2911,6711	3795,8532										
25		24	4722	3992,9015	3667	3622,3793	4066,7361	3208,2348	3174	3174	3174	3061,7594	4059,2239	4119,0929										

