CORESO Engineers	**Day Ahead report for**
North : ROCHET Jonathan	
South : HECKMANN Steffi	**04 February 2018**

Security Levels:

CWE: No constraint detected.

CEE: No constraint detected.

CSE: Some constraints detected on SI-IT border which can be solved with taps changing.

Key overall conditions

Load & Generation margin forecast			Main generating units connected to the grid in DACF					
ELIA			Elia	Doel	Pmax (MW)	1000	**1**	1900
						450	2	
Peak load [MW]	9000	18:00		Tihange		1000	2	2900
						450	2	
Generation Margin	Sufficient			Coo		230	3	1170
						160	3	
			50HzT	Rostock	Pmax (MW)	530	1	530
				Janschwalde		500	6	3000
				Boxberg		500	2	2800
						900	2	
				Schw. Pumpe		800	2	1600
				Lippendorf		920	2	1840
RTE			RTE	Gravelines	Pmax (MW)	900	**5**	4500
Peak load [MW]	73 800	19:00		Chooz		1500	2	3000
Generation Margin	Sufficient			Cattenom		1300	4	5200
				Fessenheim		900	**1**	900
NATIONAL GRID (UK time)				Penly		1300	2	2600
Peak load [MW]	43 200	18:00		Paluel		1300	**3**	3900
Generation Margin	Sufficient			Nogent s/ Seine		1300	2	2600
				Bugey		900	4	3600
TERNA				St Alban		1300	**1**	1300
Peak load [MW]	35708	19:30		Cruas		900	**3**	2700
Generation Margin	Sufficient			Tricastin		900	4	3600

Generation margin legend:

Green: Sufficient margin available. No risk for need of inter-TSO solicitation due to margin issues.

Orange: Tight margin available. Low risk for need of inter-TSO solicitation due to margin issues.

Red: Insufficient margin available. High risk for need of inter-TSO solicitation due to margin issues.

Comments:

CWE / CEE

CWE: Forced outage of Gravelines 1. Gravelines 4 outage is canceled. Margin remains sufficient. Cattenom 4 back in service at 10 am.

CSE

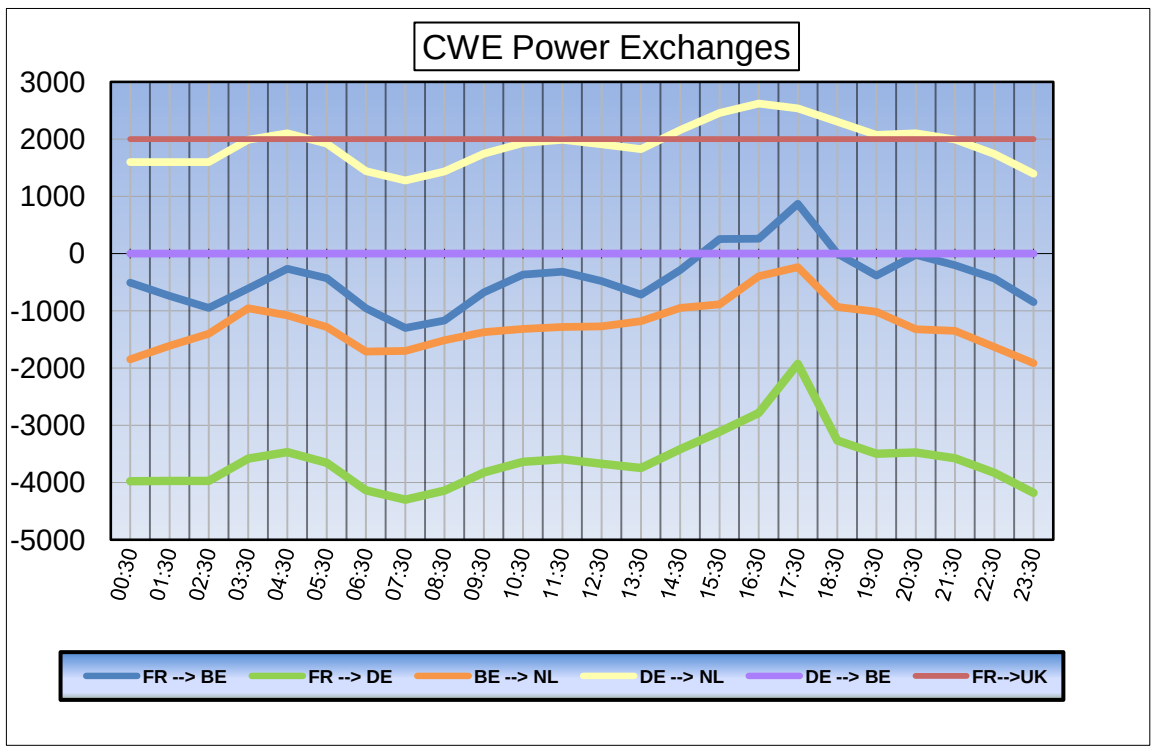
Outages table

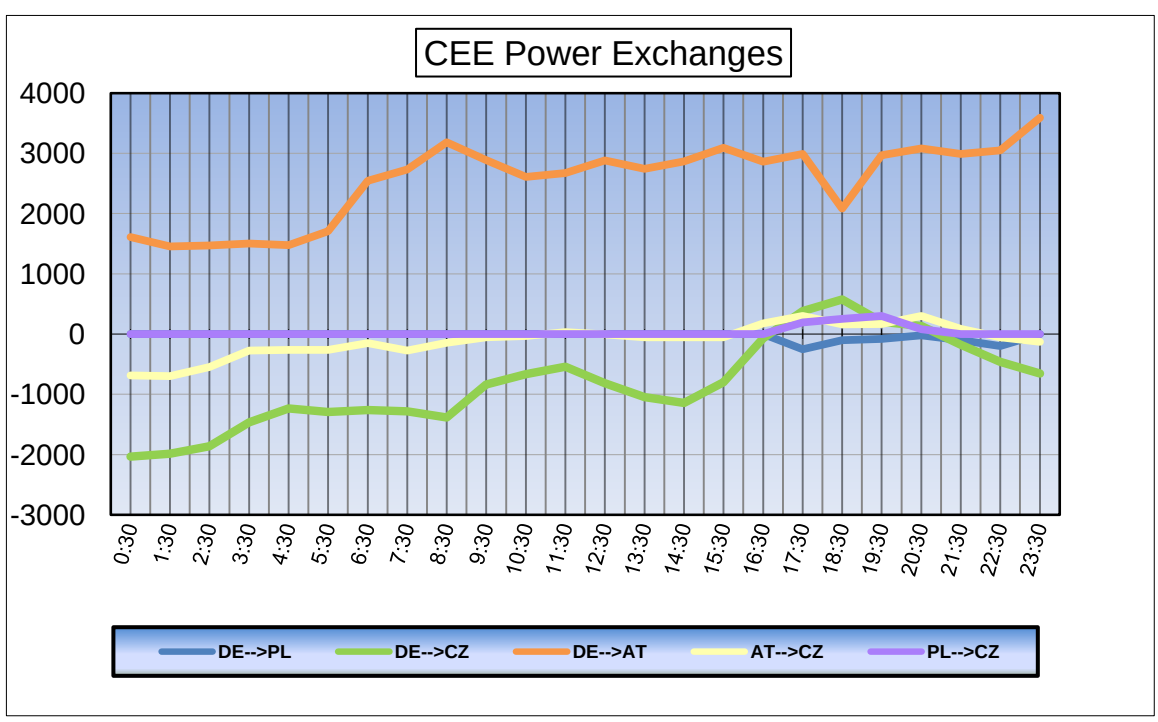
OUTAGES					
Owner	Type of element	Line name	start	end	Comments
50HzT	Hydro.Gen	MARKERSBACH _ Unit D 400 kV	28/09/2017	27/04/2018	160 MW
50HzT	Line	EULA _ Wolkramhausen 357 220 kV	04/02/2018	11/02/2018	
50HzT	Line	EULA _ Wolkramhausen 357 220 kV	28/01/2018	04/02/2018	
50HzT	Line	HAMBURG Nord _ BRUNSBUTTEL 951 400 kV	04/02/2018	11/02/2018	
50HzT	Line	LUBMIN _ WIKINGER 281 220 kV	04/02/2018	11/02/2018	
50HzT	Line	WOLMIRSTEDT _ WUSTERMARK 494 400 kV	04/02/2018	11/02/2018	
50HzT / PSE	Line	KRAJNIK _ VIERRADEN 508 225 kV	22/06/2017	31/05/2018	long term outage
AMP / TEN DE	Line	NEHDEN _ TWISTETAL W 400 kV	08/01/2018	23/02/2018	daily
CEPS	Line	BABYLON _ BEZDECIN 451 400 kV	01/02/2018	20/02/2018	permanently
CEPS	Line	KOCIN _ REPORYJE 1 400 kV	29/01/2018	14/02/2018	permanently
CEPS / SEPS	Line	NOSOVICE _ VARIN 404 400 kV	15/01/2018	02/03/2018	permanently
CREOS	Line	BERTRANGE _ SCHIFFLANGE West 220 kV	08/01/2018	02/03/2018	
ELIA	Line	DOEL _ MERCATOR 52 400 kV	01/02/2018	07/02/2018	permanently
ELIA	Line	GEZELLE _ MAERLANT 109 400 kV	25/01/2018	09/02/2018	permanently
ELIA	Line	GEZELLE _ STEVIN 111 400 kV	19/09/2017	02/03/2018	permanently
ELIA	Line	GEZELLE _ STEVIN 112 400 kV	19/09/2017	02/03/2018	permanently
ELIA	Line	MAERLANT _ GEZELLE 110 400 kV	25/01/2018	09/02/2018	permanently
ELIA	Nuc.Gen	DOEL _ Unit 3 (1000MW) 400 kV	23/09/2017	16/04/2018	forced outage
PSE	Fossil.Gen	DOLNA ODRA _ Unit 7 400 kV	30/01/2018	07/02/2018	
PSE	Fossil.Gen	KOPANINA _ Laziska Unit 12 225 kV	31/01/2018	04/02/2018	
PSE	Line	LESNIOW _ MIKULOWA 220 kV	02/02/2018	04/02/2018	permanently
RTE	Line	CHEVALET _ ARGOEUVES 1 380 kV	24/01/2018	23/02/2018	
RTE	Line	CHEVALET _ ARGOEUVES 1 380 kV	24/01/2018	23/02/2018	
RTE	Line	CREYS _ ST VULBAS 1 400 kV	31/01/2018	07/02/2018	
RTE	Line	GENISSIAT _ VIELMOULIN 1 400 kV	29/01/2018	23/02/2018	
RTE	Nuc.Gen	CRUAS _ Unit 2 (900MW) 400 kV	02/12/2017	30/03/2018	
RTE	Nuc.Gen	FESSENHEIM _ Unit 2 (900MW) 400 kV	01/01/2017	15/03/2018	
RTE	Nuc.Gen	PALUEL _ Unit 2 (1300MW) 400 kV	01/08/2015	15/04/2018	
S.GRID	Line	CHAMOSON _ MUHLEBERG "Sanetsch 2" 220 kV	24/10/2017	30/03/2018	
S.GRID	Line	CHATELARD _ NANT DE DRANCE 400 kV	16/01/2018	27/04/2018	
S.GRID	Line	HANDECK _ MOREL 220 kV	17/01/2018	06/02/2018	
S.GRID	Line	LIMMERN _ TIERFEHD 1 400 kV	28/01/2018	31/07/2018	
S.GRID	Nuc.Gen	BEZNAU _ BEZNAU G11 220 kV	13/03/2015	28/02/2018	182 MW
S.GRID	Nuc.Gen	BEZNAU _ BEZNAU G12 220 kV	13/03/2015	28/02/2018	182 MW
S.GRID	Transformer	BASSECOURT _ Transformer 400 kV	13/12/2017	31/03/2018	Trfo 32
TENNET DE	Generation	KUHTAI _ Unit 1 220 kV	02/10/2017	31/01/2019	142 MW
TENNET DE	Generation	KUHTAI _ Unit 2 220 kV	01/01/2017	01/10/2019	142 MW
TENNET DE	Generation	SILZ _ 2 220 kV	01/10/2017	01/10/2019	250 MW

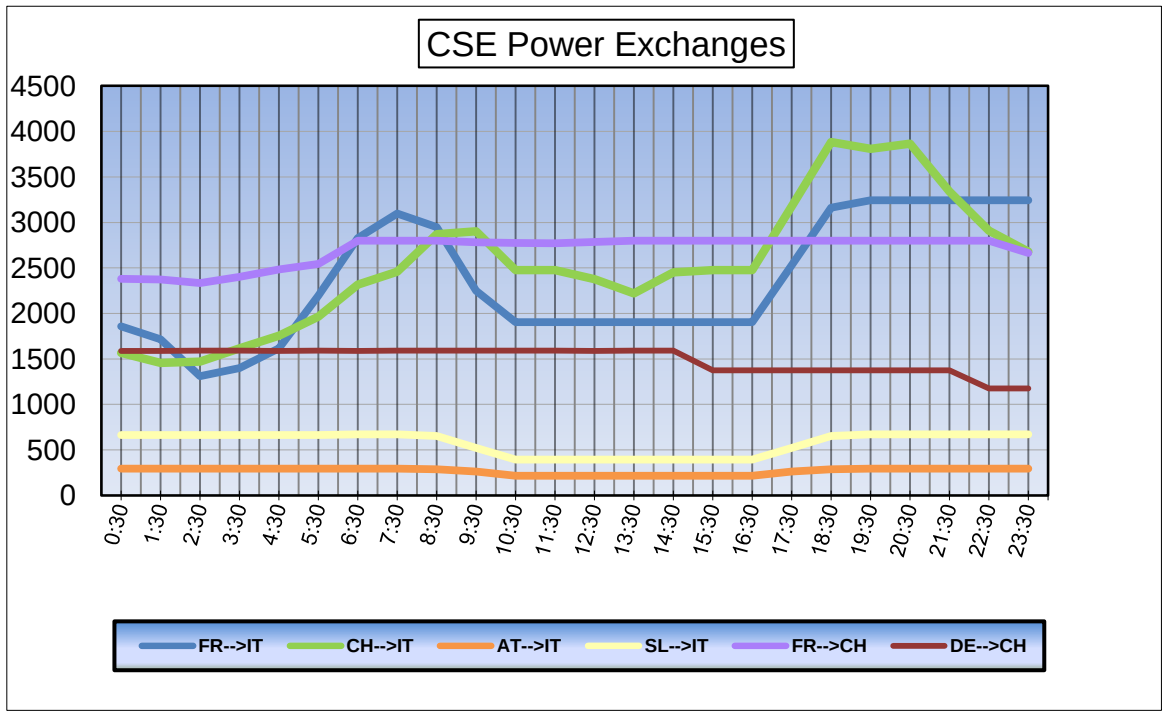
Owner	Type of element	Line name	start	end	Comments
TENNET DE	Hydro.Gen	WALDECK _ UNIT 5 400 kV	15/01/2018	30/11/2018	240 MW
TENNET DE	Hydro.Gen	WALDECK _ UNIT 6 400 kV	15/01/2018	14/02/2018	240 MW
TENNET DE	Line	JARDELUND _ AUDORF Grün 380 kV	22/01/2018	05/02/2018	daily

TENNET DE	Line	TWISTETAL _ BORKEN 3 400 kV	16/05/2017	11/10/2018	
TENNET NL	Line	ENS _ ZWOLLE WT 400 kV	03/02/2018	09/02/2018	
TENNET NL	Line	WATERINGEN _ BLEISWIJK Black 400 kV	**04/02/2018**	09/02/2018	
TENNET NL	Line	WATERINGEN _ BLEISWIJK White 400 kV	**04/02/2018**	09/02/2018	
TERNA	Line	PIAN CAMUNO _ S.FIORANO 358 400 kV	**04/02/2018**	**04/02/2018**	
TERNA	Line	PLANAIS _ UDINE OVEST 321 400 kV	30/01/2018	05/02/2018	
TransnetBW	Fossil.Gen	RHEINHAFEN _ Unit RDK Block 8 400 kV	01/01/2018	05/02/2018	800 MW
TransnetBW	Line	BUNZWANGEN _ LAICHINGEN Grün 380 kV	01/01/2018	24/02/2018	

Exchange program forecasts






CSE Power Exchanges
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0:30
1:30
2:30
3:30
4:30
5:30
6:30
7:30
8:30
9:30
10:30
11:30
12:30
13:30
14:30
15:30
16:30
17:30
18:30
19:30
20:30
21:30
22:30
23:30
FR-->IT
CH-->IT
AT-->IT
SL-->IT
FR-->CH
DE-->CH

ELIA expected flows & PSTs tap position

		Node 1	Node 2	Order	03:30	07:30	09:30	10:30	12:30	14:30	16:30	17:30	18:30	19:30	20:30	23:30
BE	FR	ACHENE	LONNY	380.19	495	586	475	421	452	362	272	89	418	519	395	616
BE	FR	AUBANGE	MONT ST MARTIN	220.51	99	171	165	94	93	84	50	38	99	149	102	170
BE	FR	AUBANGE	MOULAINE	220.51	85	149	145	73	77	62	34	21	84	132	88	153
BE	FR	AVELGEM	AVELIN	380.80	319	427	287	291	385	200	-7	-188	152	336	290	558
BE	FR	AVELGEM	MASTAING	380.79	38	101	-24	-61	-17	-63	-165	-318	-196	-133	-122	20
BE	FR	MONCEAU	CHOOZ	220.48	-34	-2	-60	-86	-78	-74	-95	-140	-109	-95	-95	-54
BE	NL	VAN EYCK 1	MAASBRACHT	380.27	-436	-461	-458	-482	-474	-411	-339	-297	-465	-492	-532	-605
BE	NL	VAN EYCK 2	MAASBRACHT	380.28	-559	-666	-506	-489	-489	-437	-268	-150	-292	-322	-575	-770
BE	NL	ZANDVLIET	BORSSELE	380.29	-318	-497	-505	-519	-554	-291	-215	-280	-481	-520	-570	-637
BE	NL	ZANDVLIET	GEERTRUIDENBERG	380.30	-7	-122	-53	-49	-44	61	185	276	20	-51	-130	-352
BE	LU	BELVAL	SCHIFFLANGE	220.511	-42	-106	-179	-161	-152	-171	-124	-168	-172	-167	-164	-182

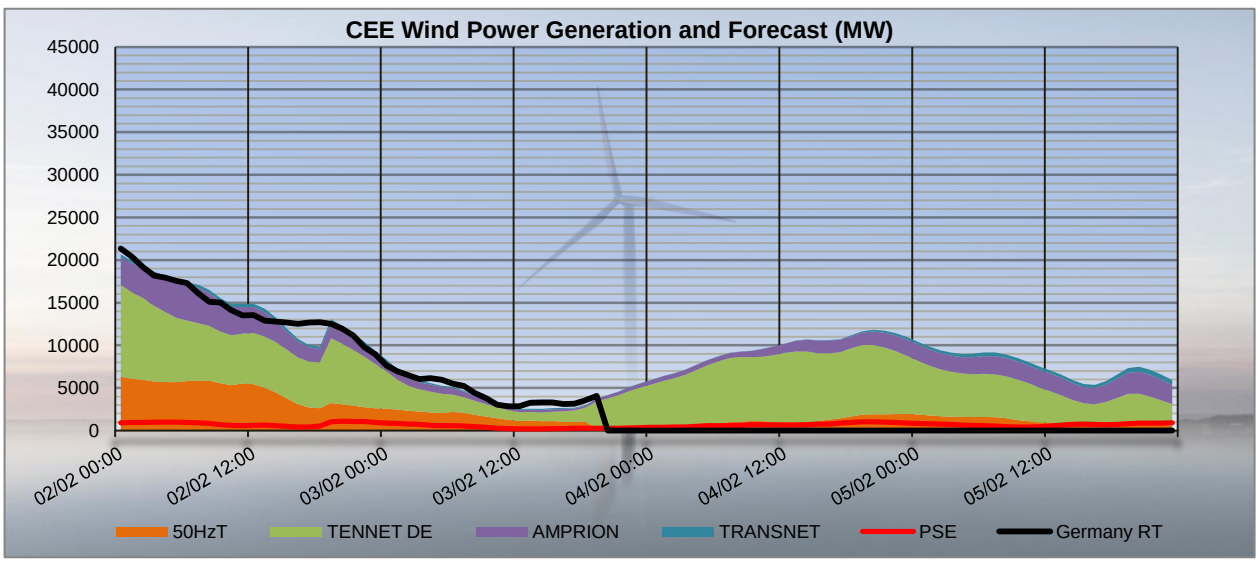
BE	FR	TOTAL		1002	1432	988	732	912	571	89	-498	448	908	658	1463
BE	NL	TOTAL		-1320	-1746	-1522	-1539	-1561	-1078	-637	-451	-1218	-1385	-1807	-2364
BE	LU	TOTAL		-42	-106	-179	-161	-152	-171	-124	-168	-172	-167	-164	-182
TOTAL BELGIAN IMPORT/EXPORT				-360	-420	-713	-968	-801	-678	-672	-1117	-942	-644	-1313	-1083

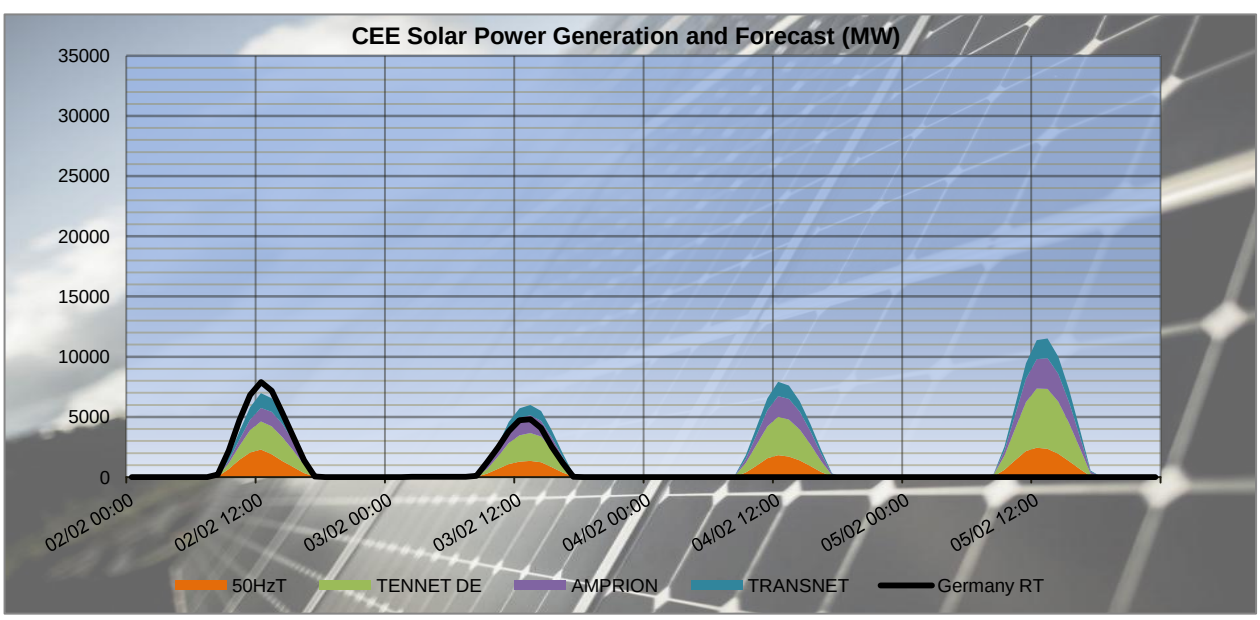
PST taps in DACF	**Zandvliet 1**	10	10	10	10	10	10	10	10	10	10	10	10
	Zandvliet 2	10	10	10	10	10	10	10	10	10	10	10	10
	Van Eyck 1	12	12	12	12	12	12	12	12	12	12	12	12
	Van Eyck 2	15	15	15	15	15	15	15	15	15	15	15	15
	Average	12	12	12	12	12	12	12	12	12	12	12	12

CREOS PST in DACF	**Schifflange**	17	17	17	17	17	17	17	17	17	17	17	17

Proposal for real time after D-1 studies																								
Timestamps		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
PSTs																								
Zandvliet PST 1	**[1;35]**	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Zandvliet PST 2	**[1;35]**	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Van Eyck PST 1	**[1;35]**	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Van Eyck PST 2	**[1;35]**	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Schifflange PST 1	**[1;35]**	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17

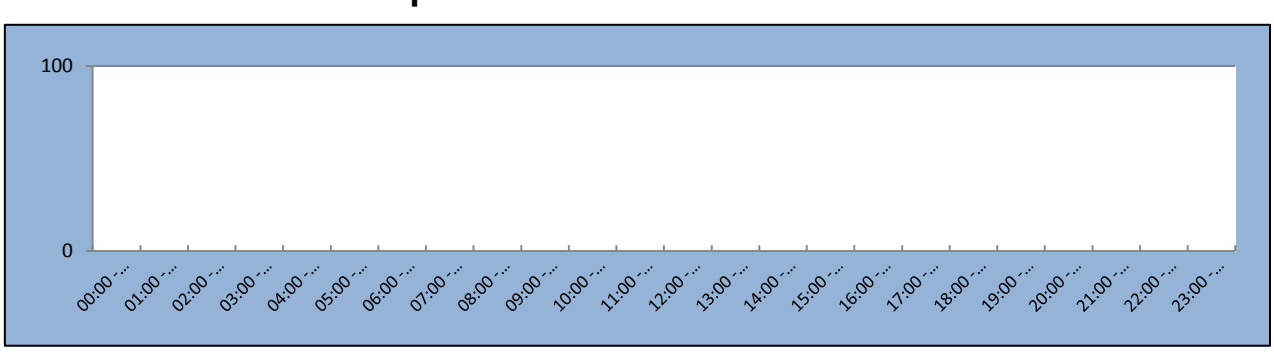
CEE Renewable Power Generation & Forecast



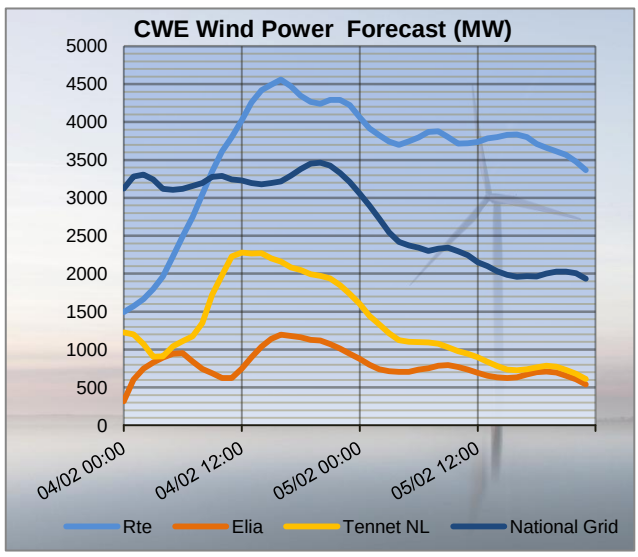


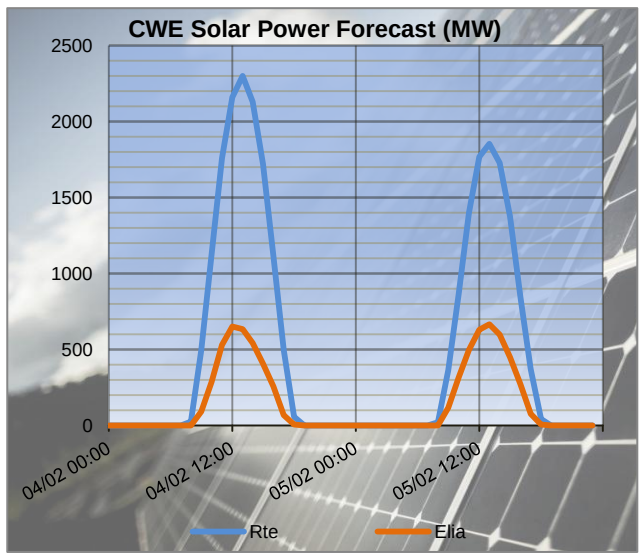
The charts above show the wind and solar generation forecasts for the TSOs in CEE (most significant) from D+1 until D-2 and the realised generation in Germany in real time. Source: Meteologica and 50HzT (RT)

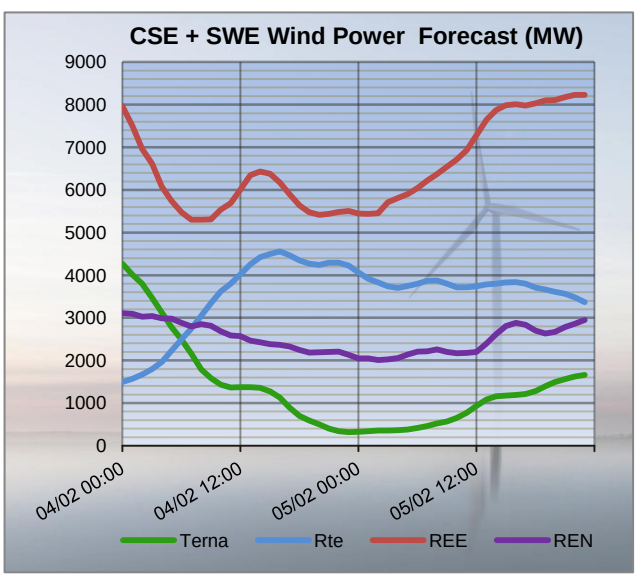
50HzT Preventive Redispatch

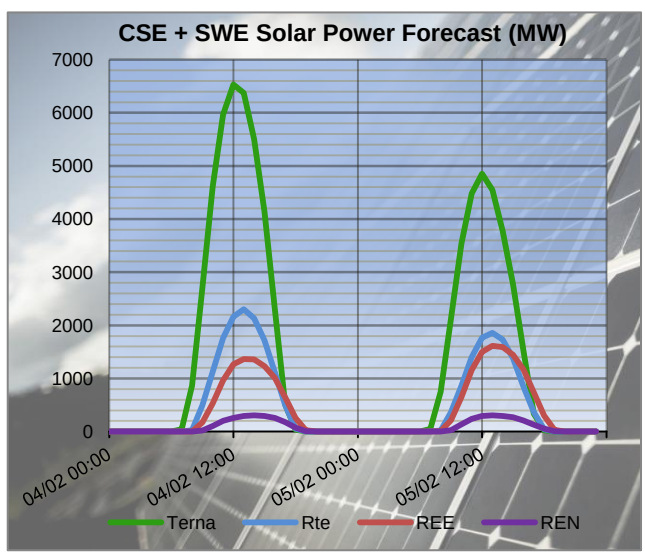


CWE, CSE & SWE Renewable Power Forecast (D-1 and D-2)









The charts above show the latest wind and solar generation forecasts for D-1 and D-2 for all the European TSOs in CWE, CSE and SWE with a significant installed capacity. Source: Meteologica

RTE flows on cross-border lines

With last provided tap position on Belgian PSTs:

				03:30			07:30			10:30			12:30		
		Node 1	Node 2	DACF	Merge	Delta	DACF	Merge	Delta	DACF	Merge	Delta	DACF	Merge	Delta
FR	BE	LONNY	ACHENE	-466	-493	-27	-668	-585	83	-403	-421	-18	-362	-455	-93
FR	BE	MONT ST MARTIN	AUBANGE	-84	-98	-14	-159	-170	-11	-59	-94	-35	-62	-94	-32
FR	BE	MOULAINE	AUBANGE	-71	-84	-13	-138	-148	-10	-40	-73	-33	-47	-78	-31
FR	BE	AVELIN	AVELGEM	-210	-318	-108	-482	-425	57	-361	-291	70	-457	-389	68
FR	BE	MASTAING	AVELGEM	40	-37	-77	-125	-100	25	24	61	37	-23	16	39
FR	BE	CHOOZ	MONCEAU	60	34	-26	9	2	-7	87	86	-1	99	78	-21
FR	DE	MUHLBACH	EICHSTETTEN	-290	-8	**282**	-117	105	222	-158	-41	117	-227	-76	151
FR	DE	VOGELGRUN	EICHSTETTEN	-84	-30	54	-61	-7	54	-44	-36	8	-65	-41	24
FR	DE	ST AVOLD	ENSDORF	0	0	0	0	0	0	0	0	0	0	0	0
FR	DE	VIGY	ENSDORF 1	-438	-383	55	-427	-435	-8	-235	-255	-20	-317	-283	34
FR	DE	VIGY	ENSDORF 2	-440	-371	69	-436	-428	8	-235	-242	-7	-315	-269	46

				17:30			19:30			23:30		
		Node 1	Node 2	DACF	Merge	Delta	DACF	Merge	Delta	DACF	Merge	Delta
FR	BE	LONNY	ACHENE	87	-92	-179	-238	-525	**-287**	-247	-616	**-369**
FR	BE	MONT ST MARTIN	AUBANGE	24	-39	-63	-67	-150	-83	-78	-170	-92
FR	BE	MOULAINE	AUBANGE	37	-22	-59	-54	-133	-79	-65	-153	-88
FR	BE	AVELIN	AVELGEM	214	185	-29	-447	-345	102	-420	-558	-138
FR	BE	MASTAING	AVELGEM	337	316	-21	65	130	65	62	-20	-82
FR	BE	CHOOZ	MONCEAU	174	139	-35	113	94	-19	106	54	-52
FR	DE	MUHLBACH	EICHSTETTEN	88	290	202	-7	125	132	-178	98	**276**
FR	DE	VOGELGRUN	EICHSTETTEN	-21	23	44	-45	-14	31	-93	-25	68
FR	DE	ST AVOLD	ENSDORF	0	0	0	0	0	0	0	0	0
FR	DE	VIGY	ENSDORF 1	31	16	-15	-341	-221	120	-512	-373	139
FR	DE	VIGY	ENSDORF 2	50	35	-15	-330	-210	120	-513	-367	146

				03:30			07:30			10:30			12:30		
		Node 1	Node 2	DACF	Merge	Delta	DACF	Merge	Delta	DACF	Merge	Delta	DACF	Merge	Delta
FR	CH	SIERENTZ	ASPHARD	80	248	168	161	406	245	25	145	120	39	111	72
FR	CH	MAMBELIN	BASSECOURT	-250	-335	-85	-234	-314	-80	-266	-209	57	-267	-214	53
FR	CH	SIERENTZ	BASSECOURT	616	336	**-280**	623	315	**-308**	560	544	-16	546	530	-16
FR	CH	BOIS TOLLOT	ROMANEL	36	-40	-76	86	25	-61	-63	-48	15	29	-23	-52
FR	CH	SIERENTZ	LAUFENBURG	65	231	166	165	324	159	27	90	63	28	63	35
FR	CH	CORNIER	RIDDES	-94	-58	36	-68	-11	57	-79	-20	59	-62	-8	54
FR	CH	CORNIER	ST TRIPHON	-135	-81	54	-108	-42	66	-94	-53	41	-81	-42	39
FR	CH	PRESSY	VALLORCINES	-233	-158	75	-200	-97	103	-208	-119	89	-186	-102	84
FR	CH	BOIS TOLLOT	VERBOIS	105	148	43	169	166	-3	149	136	-13	145	154	9
FR	CH	GENISSIAT	VERBOIS	70	79	9	111	95	-16	115	107	-8	122	115	-7
FR	CH	GENISSIAT	VERBOIS	70	79	9	111	95	-16	115	107	-8	122	115	-7
FR	IT	ALBERTVILLE	RONDISSONE	394	237	-157	652	415	-237	536	302	-234	543	328	-215
FR	IT	ALBERTVILLE	RONDISSONE	395	315	-80	697	357	**-340**	571	248	**-323**	578	276	**-302**
FR	IT	MENTON	CAMPOROSSO	252	200	-52	156	202	46	147	204	57	156	194	38
FR	IT	VILLARODIN	VENAUS	-80	77	157	248	438	190	244	426	182	283	502	219

				17:30			19:30			23:30		
		Node 1	Node 2	DACF	Merge	Delta	DACF	Merge	Delta	DACF	Merge	Delta
FR	CH	SIERENTZ	ASPHARD	267	326	59	187	257	70	99	259	160
FR	CH	MAMBELIN	BASSECOURT	-115	-76	39	-214	-162	52	-269	-164	105
FR	CH	SIERENTZ	BASSECOURT	513	557	44	538	565	27	620	645	25
FR	CH	BOIS TOLLOT	ROMANEL	-152	-10	142	-135	101	236	-14	-21	-7
FR	CH	SIERENTZ	LAUFENBURG	228	229	1	183	158	-25	186	212	26
FR	CH	CORNIER	RIDDES	-89	-7	82	-80	-26	54	-80	-31	49
FR	CH	CORNIER	ST TRIPHON	-101	-46	55	-111	-53	58	-118	-73	45
FR	CH	PRESSY	VALLORCINES	-276	-117	159	-244	-154	90	-216	-152	64
FR	CH	BOIS TOLLOT	VERBOIS	157	150	-7	143	120	-23	130	148	18
FR	CH	GENISSIAT	VERBOIS	104	130	26	99	131	32	106	114	8
FR	CH	GENISSIAT	VERBOIS	104	130	26	99	131	32	106	114	8
FR	IT	ALBERTVILLE	RONDISSONE	721	628	-93	820	562	**-258**	654	416	-238
FR	IT	ALBERTVILLE	RONDISSONE	792	665	-127	924	583	**-341**	718	616	-102
FR	IT	MENTON	CAMPOROSSO	151	197	46	148	198	50	148	206	58
FR	IT	VILLARODIN	VENAUS	488	544	56	760	876	116	504	611	107

N state flows at 10:30 and 19:30

The Imax and load values in the table below are extracted from the merged TSOs' DACF.

TSO	Line (380 kV)	10:30		19:30	
		Imax (A)	% of Imax	Imax (A)	% of Imax
ELIA	Champion - Gramme (32)	2448	41	2448	49
	Doel - Mercator (51)	2239	43	2239	43
	Doel - Mercator (52)	2239	0	2239	0
	Doel - Mercator (54)	2448	43	2448	43
	Doel - Zandvliet (25)	2343	13	2349	12
	Mercator - Horta (73)	2569	33	2569	34
	Courcelles - Gramme (31)	2349	47	2349	56
	Mercator - Rodenhuize/Horta (74)	2349	38	2349	38
RTE	Attaques - Warande 2	3780	50	3780	51
	Avelin - Gavrelle	2622	33	2622	45
	Avelin - Warande	3458	5	3458	3
	Lonny - Seuil	4149	24	4149	27
	Mandarins - Warande 1	3780	47	3780	48
	Muhlbach - Scheer	2598	20	2598	28
	Revigny - Vigy	2596	41	2596	42
	Warande - Weppes	3458	10	3458	8

X < 50 % of Imax 50 ≤ X < 75 % of Imax X ≥ 75 % of Imax

TSO	Voltage	Line (380 kV)	10:30		19:30	
			Imax (A)	% of Imax	Imax (A)	% of Imax
50 HzT	380 kV	Eisenach - Mecklar (450-2)	2520	31	2520	22
		Hagenwerder - Mikulowa (567)	2520	20	2520	27
		Hagenwerder - Mikulowa (568)	2520	20	2520	27
		Remptendorf - Redwitz (413)	3594	41	3594	46
		Remptendorf - Redwitz (414)	3594	41	3594	46
		Röhrsdorf - Hradec (445)	2520	19	2520	29
		Röhrsdorf - Hradec (446)	2520	19	2520	29
		Vieselbach - Mecklar (449-1)	2520	32	2520	24
		Wolmirstedt - Helmstedt (491-1)	2400	12	2400	5
		Wolmirstedt - Helmstedt (492-2)	2400	12	2400	5
	220 kV	Vierraden - Krajnik (507)	1370	0	1370	0
		Vierraden - Krajnik (508)	1370	0	1370	0

X < 50 % of Imax 50 ≤ X < 75 % of Imax X ≥ 75 % of Imax

Special topologies at 10:30 and 19:30

Nodes in North area			10:30	19:30
380 kV	Elia	Doel	1	1
		Avelgem	1	1
	Rte	Warande	1	1
		Cergy	2	2
		Terrier	1	1
		Plessis Gassot	1	1
		Mery/Seine	2	2
		Muhlbach	1	1
		Vigy	1	1
	Transnet bw	Eichstetten	1	1
	Amprion	Uchtelfangen	1	1
	Tennet DE	Redwitz	1	1
	50 HzT	Remptendorf	1	1
		Wolmirstedt	1	1
	CEPS	Hradec Vychod	1	1
220 kV	50 HzT	Pasewalk	1	1

North analyses results

Security analyses have been performed for 24 timestamps.
All remedial actions have been agreed with concerned TSO during the day ahead process.

Constraints on Elia, RTE (North) and 50HzT 400kV grids and tie-lines

TSO	Validity	Contingency				Constraint					Timestamps of max
		U (kV)	Substation 1	Substation 2	Code	Overload	U (kV)	Substation 1	Substation 2	Code	
		No constraint detected									

Constraints greater than 100% on NL + Amprion 400kV grids and greater than 120% on DE, CZ, PL and SK 400kV grids

TSO	Validity	Contingency				Constraint					Timestamps of max
		U (kV)	Substation 1	Substation 2	Code	Overload	U (kV)	Substation 1	Substation 2	Code	
		No constraint detected									

Constraints on ELIA 220/150kV grid at 10:30

Contingency				Constraint					Comments
U (kV)	Substation 1	Substation 2	Code	Overload	U (kV)	Substation 1	Substation 2	Code	

50HzT DC loopflows sensitivity

Vierraden-Krajnik 220kV axis in long term outage till end of May 2018.

South analyses results

Security analyses have been performed for these 2 timestamps:

- Off-peak period (23:00 – 07:00): **05:30**
- Peak period (07:00 – 23:00): **07:30**

Adaptations made on merged DACFs:

Off-peak:

- SI ➔ IT physical flow adapted to **1100 MW** (not possible to reach the target flow of 800 MW)
- Mendrisio-Cagno flow adapted to the schedule : **102 MW**
- PST of Lienz adapted to **150 MW**
- PST of Camporosso adapted to **200 MW**
- PST of La Praz on **tap 1**

Peak:

- SI ➔ IT physical flow adapted to **1070 MW** (not possible to reach the target flow of 800 MW)
- Mendrisio-Cagno flow adapted to the schedule : **123 MW**
- PST of Lienz adapted to **140 MW**
- PST of Camporosso adapted to **200 MW**
- PST of La Praz on **tap 1**

Special topologies

Nodes in South area				
			Off Peak	Peak
380 kV	Swissgrid	Sils	1	1
		Robbia	2	2
	Rte	Génissiat	1	1
		Albertville	2	2
		Grande Ile	1	1
	Terna	Turbigo	1	1
		Baggio	1	1
		Bovisio	2	2
		Ostiglia	1	1

N state flows Off-Peak & Peak

The Imax and load values in the table below are extracted from the **adapted** merged TSOs' DACF.

TSO	Voltage	Line (380 kV)	Off Peak		Peak	
			Imax (A)	% of Imax	Imax (A)	% of Imax
Terna	380 kV	Albertville - Rondissone 1	2370	17	2370	25
		Albertville - Rondissone 2	2370	11	2370	21
		Bulciago - Soazza	2300	30	2300	40
		Cagno - Mendrisio	855	16	855	19
		Musignano - Lavorgo	2270	44	2270	57
		Redipuglia - Divaca	2700	39	2700	37
		Robbia - San Fiorano	2530	35	2530	46
		Robbia - Gorlago	2530	47	2530	57
		Venaus - Villarodin	2715	12	2715	23
	220 kV	Airolo - Ponte	900	14	900	21
		Lienz - Soverzene	750	49	750	46
		Menton - Campo Rosso	1165	43	1165	42
		Padriciano - Divaca	960	98	960	98
		Riddes - Avise	1010	8	1010	19
		Riddes - Valpelline	1010	8	1010	22
		Serra - Pallanzeno	900	23	900	34

For Terna:

X < 50 % of Imax | 50 ≤ X < 75 % of Imax | X ≥ 75% of Imax

Sensitivity coefficients for the Pentalateral instruction

The amount of the control program curtailment on peak and off-peak can be calculated thanks to the sensitivities in the table below:

		FR → IT	CH → IT	AT → IT	SI → IT
Off Peak	Initial physical flows on adapted base case	889	2937	145	1111
	Compensation ratio (calculated from NTC)	40%	49%	4%	8%
	Pentalateral impact on physical flows	-27%	-56%	-4%	-14%
Peak	Initial physical flows on adapted base case	1396	3881	137	1071
	Compensation ratio (calculated from NTC)	40%	49%	4%	8%
	Pentalateral impact on physical flows	-27%	-55%	-4%	-14%

OFF PEAK

Off Peak constraints on APG, Eles, RTE (South), Swissgrid and Terna 400kV grids and tie-lines

	TSO	Contingency				Constraint				
		U (kV)	Substation 1	Substation 2	Code	Overload	U (kV)	Substation 1	Substation 2	Code
Off - Peak	SWG / Terna / Eles	380	Sils - Filisur	Robbia - Pradella - Sils	N-2	114%	380/220	Redipuglia	Tfo	
						119%	220	Padriciano	PST	
						115%	220	Padriciano	Divaca	
		Curative action: Increase 7 taps on Divaca PST (from -32 to -25) => 94% remaining on Padriciano-Divaca, 98% on Padriciano PST, 95% on Redipuglia Tfo								
	Terna / Eles / APG	380 / 22	Divaca	Redipuglia / Padriciano	N-2	113%	220	Lienz	Soverzene	
		Curative action: Decrease 3 taps on Lienz PST (24 -> 21) => 94% remaining								
	RTE	380	Chaffard	Busbar	2B	105%	380	Chaffard	St Vulbas 1	
		Observability area								

PEAK

Peak constraints on APG, Eles, RTE (South), Swissgrid and Terna 400kV grids and tie-lines

	TSO	Contingency				Constraint				
		U (kV)	Substation 1	Substation 2	Code	Overload	U (kV)	Substation 1	Substation 2	Code
Peak	SWG / Terna / Eles	380	Sils - Filisur	Robbia - Pradella - Sils	N-2	109%	380/220	Redipuglia	Tfo	
						122%	220	Padriciano	PST	
						118%	220	Padriciano	Divaca	
		Curative action: Increase 8 taps on Divaca PST (from -32 to -24) => 95% remaining on Padriciano-Divaca, 98% on Padriciano PST, 87% on Redipuglia Tfo Note: 99% on Divaca PST								
	Terna / Eles / APG	380 / 220	Divaca	Redipuglia /	N-2	111%	220	Lienz	Soverzene	
		Curative action: Decrease 2 taps on Lienz PST (22 -> 20) => 98% remaining								
	RTE	380	Albertville	Busbar	2A	100% (1')	220	Albertville	Longefans	
		Preventive action: Increase 3 taps on La Praz PST (1 -> 4) => 97% (1') remaining **Curative action:** Change tap position to tap 19 on La Praz PST => 99% remaining								
	RTE	380	Chaffard	Busbar	2B	103%	380	Chaffard	St Vulbas 1	
		Observability area								
After the preventive actions mentioned above, no more additional constraints detected.										

Final PSTs settings

The tables below present the tap positions and the physical flows on different PSTs with the adaptations described at the top of the page (IT-SI target flow...) and preventive actions (before Pentalateral reduction).

PST	Off Peak	
	Tap position	Physical flow to Italy (MW)
La Praz (1/33)	1	222
Rondissone 1 (1/33)	8	176
Rondissone 2 (1/33)	11	285
Camporosso (-32/32)	-15	204
Lienz (-32/32)	-9	146
Padriciano (1/33)	33	377
Divaca (-32/32 each)	-32	735

PST	Peak	
	Tap position	Physical flow to Italy (MW)
La Praz (1/33)	4	376
Rondissone 1 (1/33)	10	368
Rondissone 2 (1/33)	12	419
Camporosso (-32/32)	-14	203
Lienz (-32/32)	-11	140
Padriciano (1/33)	33	376
Divaca (-32/32 each)	-32	698

Conclusion

CWE: No constraint detected.

CEE: No constraint detected.

CSE: Some constraints detected on SI-IT border which can be solved with taps changing.