CORESO Engineers ***North :*** NYAZIKA Paget ***South :*** DECKERS Bram	**Day Ahead report for** **26 January 2018**

Security Levels:

CWE: No critical constraint detected.

CEE: No critical constraint detected.

CSE: No critical constraint detected.

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]	11600	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	6	5400
Peak load [MW]	74300	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]	46700	17:30		Paluel		1300	**3**	3900
Generation Margin	Sufficient			Nogent s/ Seine		1300	2	2600
				Bugey		900	4	3600
TERNA				St Alban		1300	2	2600
Peak load [MW]	46396	18:30		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

RTE agrees to implement 2 nodes at Chooz 220kV and to open standby transformer at Mazure if needed for Chooz-Monceau constraint.

Tennet NL: Meeden PSTs to +2 for TS 07:30 and +1 for TS 08:30 to 16:30.

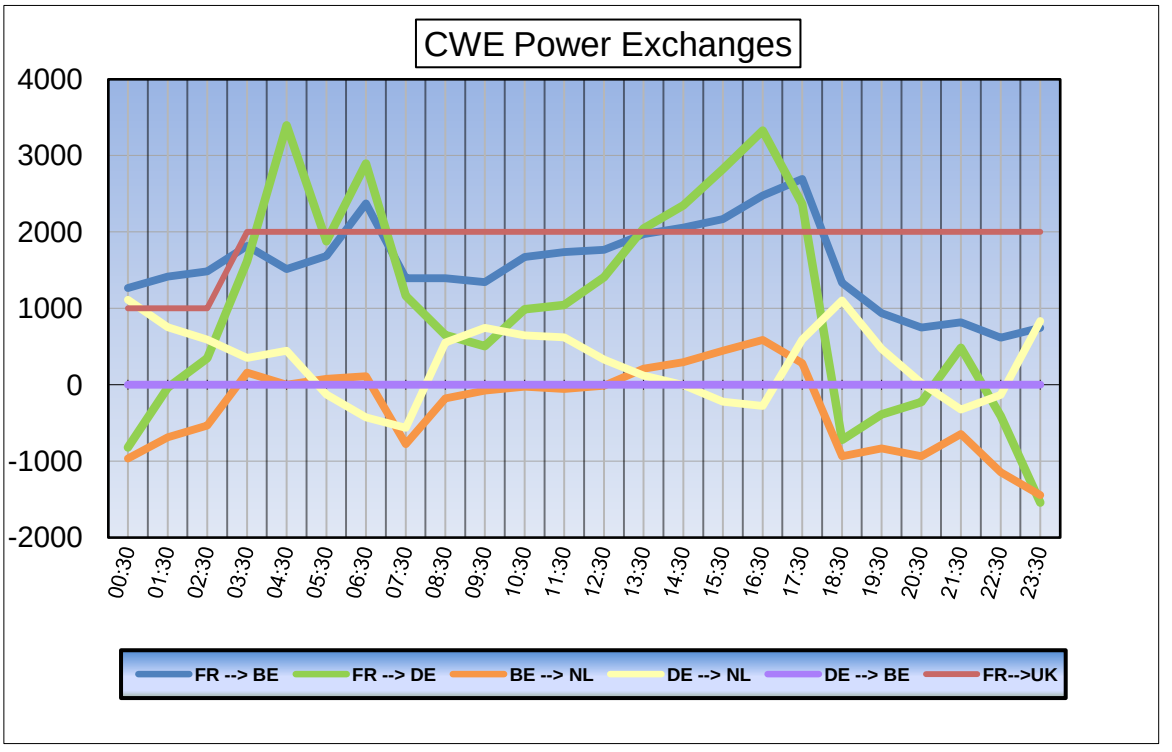
Diele PSTs to +3 for TS 07:30 and 16:30.

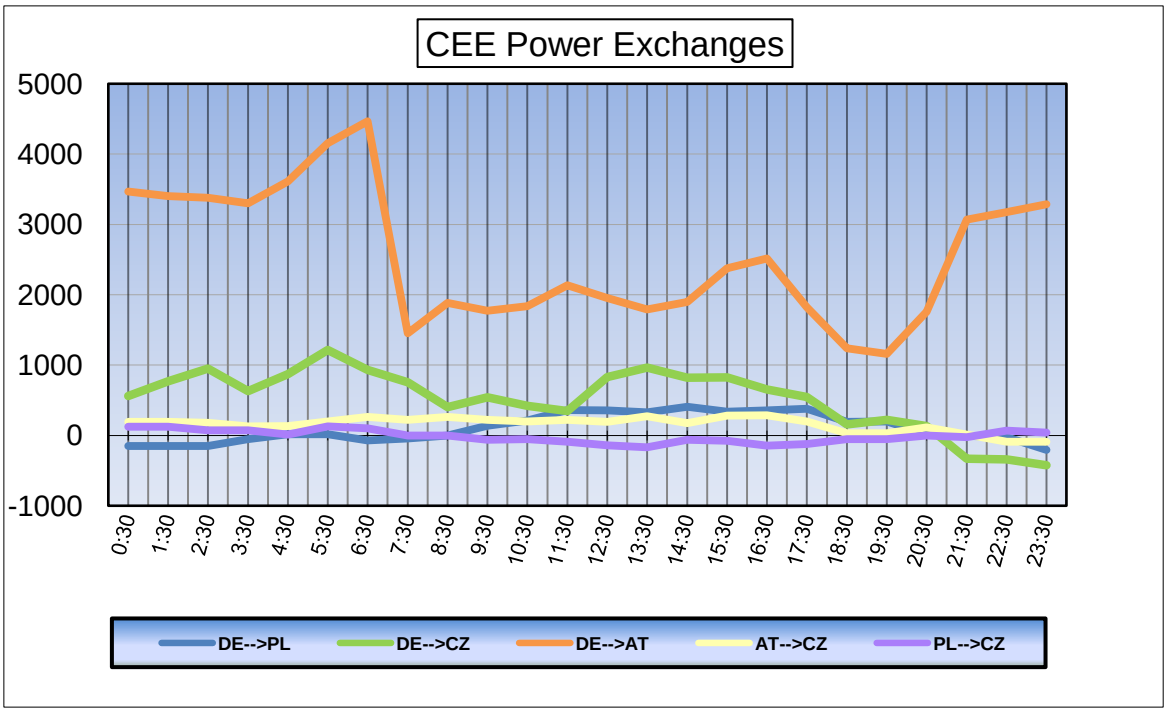
CSE

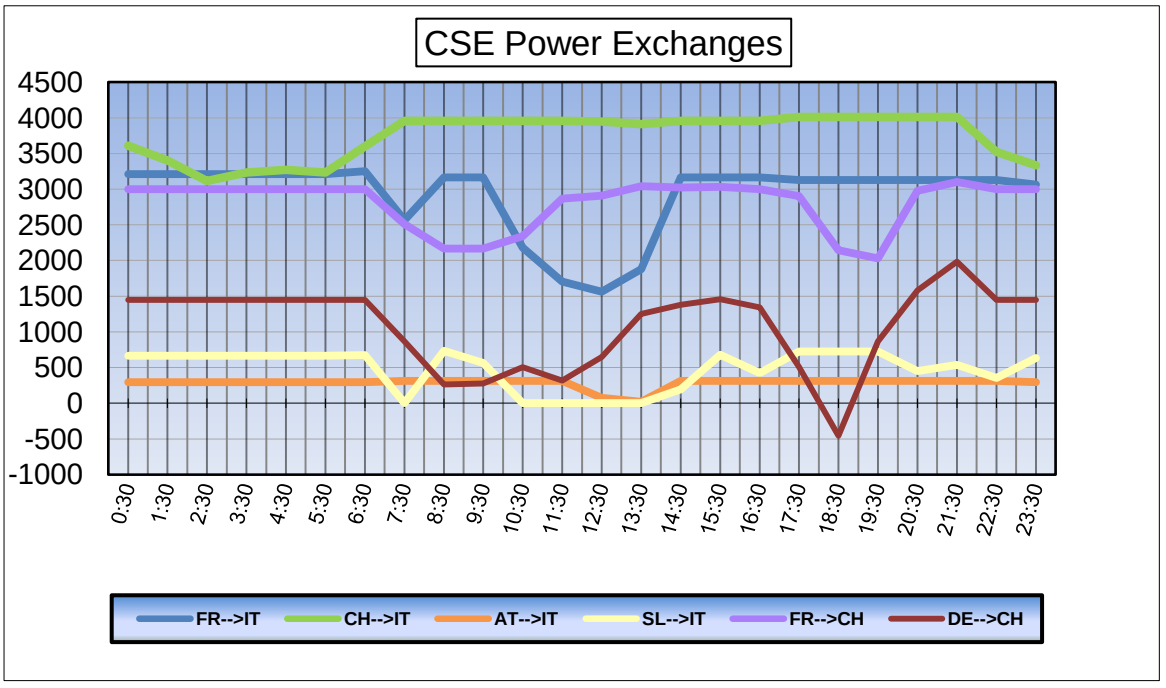
Outages table

OUTAGES					
Owner	Type of element	Line name	start	end	Comments
50HzT	Hydro.Gen	GOLDISTHAL _ Unit A 400 kV	22/01/2018	26/01/2018	265 MW
50HzT	Hydro.Gen	MARKERSBACH _ Unit D 400 kV	28/09/2017	27/04/2018	160 MW
50HzT	Line	EULA _ Wolkramhausen 357 220 kV	06/10/2017	16/03/2018	
50HzT	Line	HAGENWERDER _ SCHMÖLLN 554 400 kV	22/01/2018	28/01/2018	
50HzT	Line	LUBMIN _ WIKINGER 281 220 kV	26/09/2017	31/01/2018	
50HzT	Line	MARKERSBACH _ T connection ZWOENITZ 400 kV	24/01/2018	26/01/2018	daily
50HzT	Line	RAGOW _ WUSTERMARK 521 400 kV	22/01/2018	28/01/2018	
50HzT	Line	ROHRSDORF _ T connection ZWOENITZ 400 kV	24/01/2018	26/01/2018	daily
50HzT / PSE	Line	KRAJNIK _ VIERRADEN 507 225 kV	22/06/2016	31/05/2018	Long term outage
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
AMPRION	Line	NEHDEN _ ARPE Sud 400 kV	15/01/2018	02/02/2018	
AMPRION	Line	NEHDEN _ UENTROP Sauerland Nord 400 kV	15/01/2018	02/02/2018	daily
APG	Line	ST PETER _ Salzburg 455 220 kV	22/01/2018	26/01/2018	ALTERNATING WITH 456
APG	Line	ST PETER _ Salzburg 456 220 kV	22/01/2018	26/01/2018	ALTERNATING WITH 455
CEPS	Line	DASNY _ KOCIN 473 400 kV	08/01/2018	26/01/2018	
CEPS / SEPS	Line	NOSOVICE _ VARIN 404 400 kV	15/01/2018	02/03/2018	
CREOS	Line	BERTRANGE _ SCHIFFLANGE West 220 kV	08/01/2018	02/03/2018	
ELES / HOPS	Line	KRSKO _ TUMBRI 1 400 kV	22/01/2018	02/03/2018	
ELIA	Line	GEZELLE _ MAERLANT 109 400 kV	25/01/2018	09/02/2018	
ELIA	Line	GEZELLE _ STEVIN 111 400 kV	19/09/2017	02/03/2018	
ELIA	Line	GEZELLE _ STEVIN 112 400 kV	19/09/2017	02/03/2018	
ELIA	Line	MAERLANT _ GEZELLE 110 400 kV	25/01/2018	09/02/2018	
ELIA	Nuc.Gen	DOEL _ Unit 3 (1000MW) 400 kV	23/09/2017	16/04/2018	Forced outage
HOPS	Line	BRINJE _ KONJSKO 220 kV	17/01/2018	27/01/2018	
PSE	Line	DUNOWO _ SLUPSK 400 kV	25/01/2018	28/01/2018	
PSE	Line	POLANIEC _ TARNOW 400 kV	22/01/2018	26/01/2018	daily
PSE	Line	TUCZNAWA _ RZESZOW 400 kV	22/01/2018	26/01/2018	daily
RTE	Line	CHEVALET _ ARGOEUVES 1 380 kV	24/01/2018	23/02/2018	
RTE	Line	PLESSIS GASSOT _ VILLEVAUDE 4 400 kV	26/01/2018	26/01/2018	
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	BICKIGEN _ METTLEN 220 kV	22/01/2018	26/01/2018	No. 2 circuit Daily
S.GRID	Line	BICKIGEN _ METTLEN 220 kV	22/01/2018	26/01/2018	No. 1 circuit Daily
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	LIMMERN _ TIERFEHD 1 400 kV	28/01/2017	31/07/2018	
S.GRID	Line	VERBANO _ AVEGNO 1 225 kV	26/01/2018	26/01/2018	
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	Trafo 32
TENNET DE	***Fossil.Gen***	IRSCHING _ UNIT 4 400 kV	13/01/2018	29/01/2018	545 MW
TENNET DE	***Fossil.Gen***	STAUDINGER _ Unit 4 400 kV	22/01/2018	26/01/2018	577 MW

Exchange program forecasts






CSE Power Exchanges
4500
4000
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
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	00:30	03:30	04:30	07:30	10:30	12:30	14:30	17:30	18:30	19:30	22:30	23:30
BE	FR	ACHENE	LONNY	380.19	33	-207	-281	-125	-151	-214	-327	-425	-50	87	184	265
BE	FR	AUBANGE	MONT ST MARTIN	220.51	-34	-106	-140	-140	-146	-198	-184	-246	-118	-72	15	-10
BE	FR	AUBANGE	MOULAINE	220.51	-41	-117	-148	-148	-159	-204	-194	-245	-128	-76	3	-19
BE	FR	AVELGEM	AVELIN	380.80	-318	-643	-834	-422	-390	-428	-707	-919	-280	-46	-122	-104
BE	FR	AVELGEM	MASTAING	380.79	-306	-413	-488	-443	-464	-472	-549	-663	-396	-289	-253	-242
BE	FR	MONCEAU	CHOOZ	220.48	-184	-190	-200	-195	-198	-203	-209	-250	-194	-152	-177	-172
BE	NL	VAN EYCK 1	MAASBRACHT	380.27	-535	-301	-190	-331	-294	-250	-149	-202	-443	-441	-437	-630
BE	NL	VAN EYCK 2	MAASBRACHT	380.28	-263	85	288	127	270	286	415	395	-19	-68	-136	-358
BE	NL	ZANDVLIET	BORSSELE	380.29	-510	-182	-115	-619	-520	-523	-463	-434	-657	-693	-779	-621
BE	NL	ZANDVLIET	GEERTRUIDENBERG	380.30	-123	200	334	-14	247	271	390	364	-15	-72	-116	-276
BE	LU	BELVAL	SCHIFFLANGE	220.511	42	204	249	134	100	150	207	211	31	48	51	-31

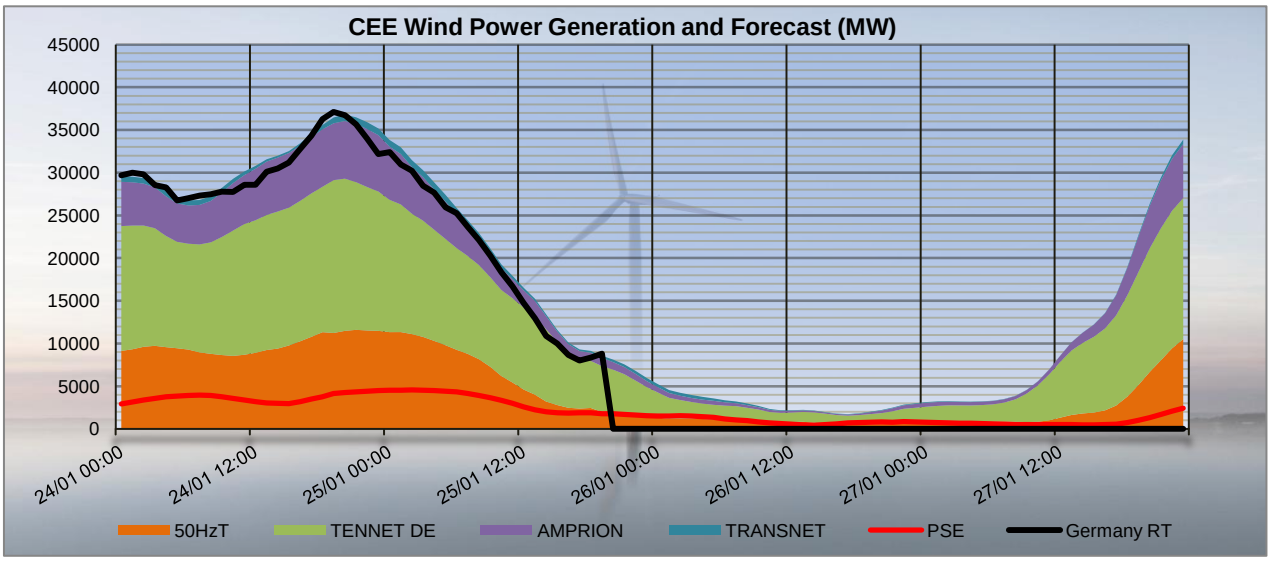
BE	FR	TOTAL		-850	-1676	-2091	-1473	-1508	-1719	-2170	-2748	-1166	-548	-350	-282
BE	NL	TOTAL		-1431	-198	317	-837	-297	-216	193	123	-1134	-1274	-1468	-1885
BE	LU	TOTAL		42	204	249	134	100	150	207	211	31	48	51	-31
TOTAL BELGIAN IMPORT/EXPORT				-2239	-1670	-1525	-2176	-1705	-1785	-1770	-2414	-2269	-1774	-1767	-2198

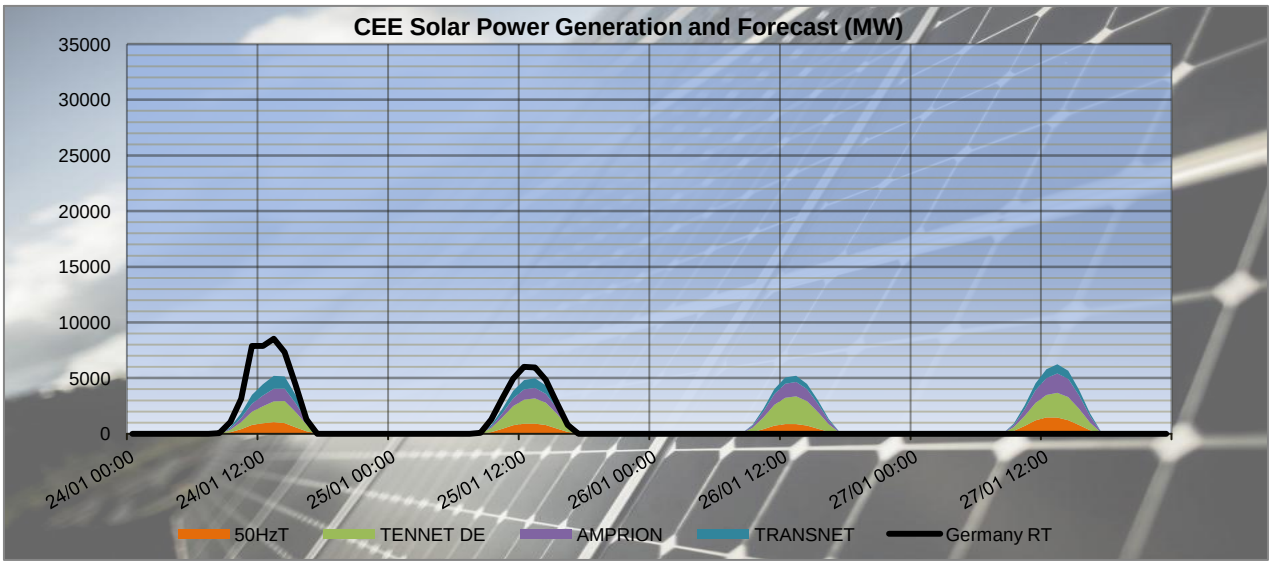
PST taps in DACF	**Zandvliet 1**	12	12	12	12	12	12	12	12	12	12	12	12
	Zandvliet 2	12	12	12	12	12	12	12	12	12	12	12	12
	Van Eyck 1	15	15	15	15	15	15	15	15	15	15	15	15
	Van Eyck 2	15	15	15	15	15	15	15	15	15	15	15	15
	Average	14	14	14	14	14	14	14	14	14	14	14	14

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]**	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Zandvliet PST 2	**[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 1	**[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
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

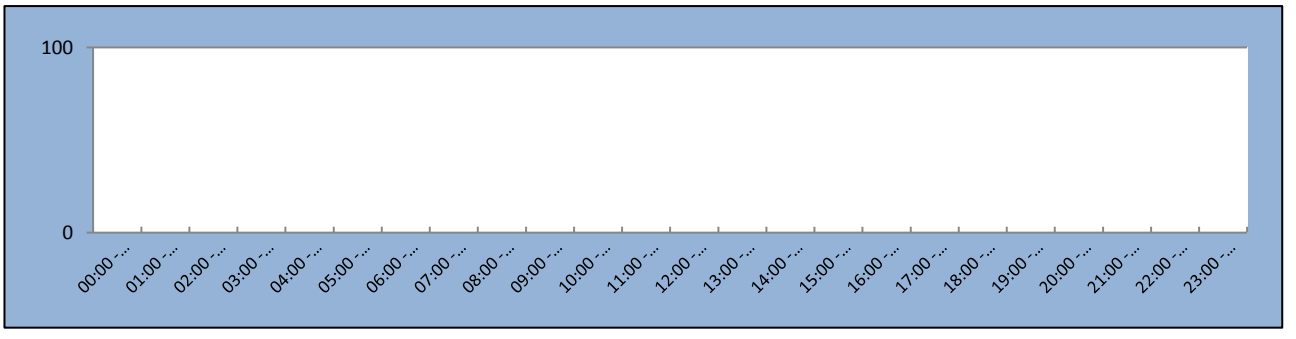
CEE Renewable Power Generation & Forecast



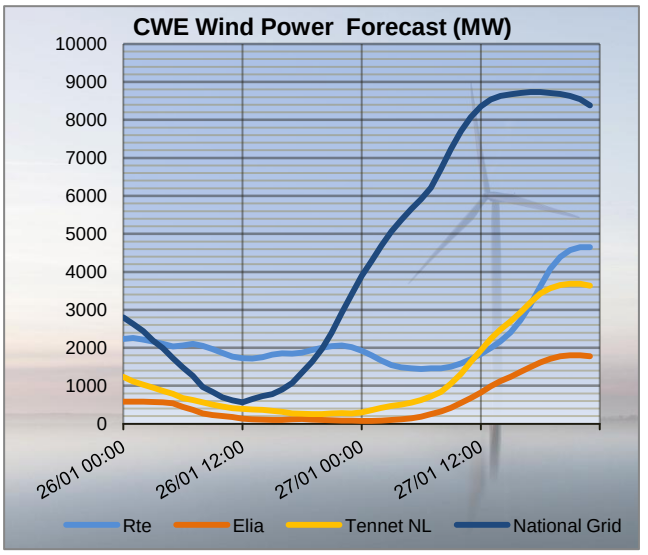


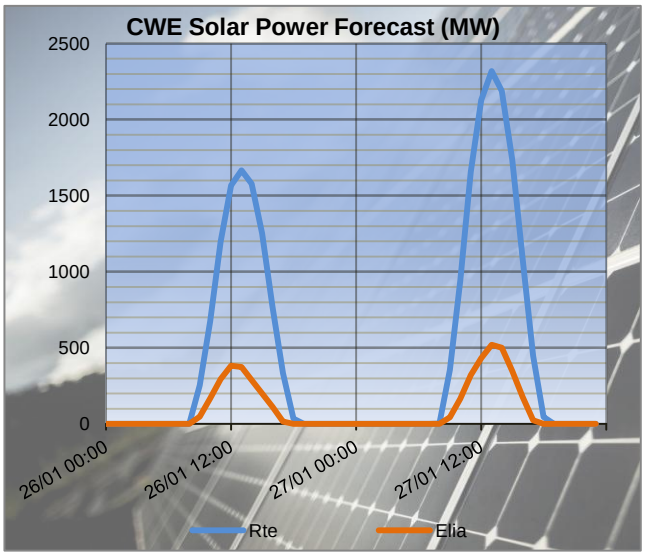
The charts above show the wind and solar generation forecasts for the TSOs in CEE (most significant) from D+1 until D-2 and the realised generation in Germany in real time. Source: Meteologica and 50HzT (RT)

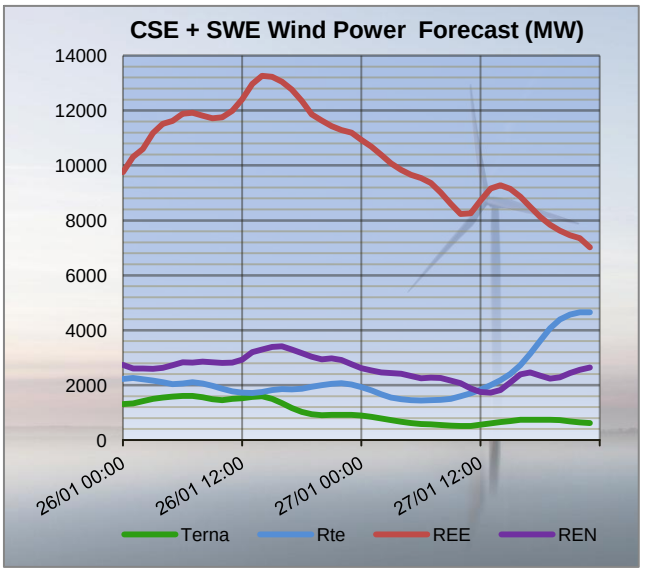
50HzT Preventive Redispatch

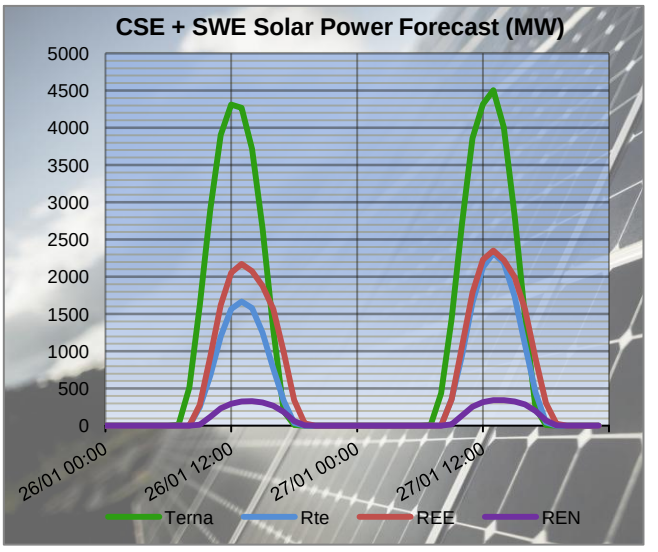


CWE, CSE & SWE Renewable Power Forecast (D-1 and D-2)









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	295	207	-88	37	125	88	219	151	-68	318	214	-104
FR	BE	MONT ST MARTIN	AUBANGE	47	106	59	33	140	107	82	146	64	106	198	92
FR	BE	MOULAINE	AUBANGE	60	117	57	45	148	103	97	159	62	117	204	87
FR	BE	AVELIN	AVELGEM	707	643	-64	370	422	52	330	390	60	429	428	-1
FR	BE	MASTAING	AVELGEM	468	413	-55	438	443	5	449	464	15	496	472	-24
FR	BE	CHOOZ	MONCEAU	169	190	21	193	195	2	187	198	11	207	203	-4
FR	DE	MUHLBACH	EICHSTETTEN	569	674	105	487	463	-24	286	364	78	324	443	119
FR	DE	VOGELGRUN	EICHSTETTEN	87	106	19	165	130	-35	96	89	-7	93	100	7
FR	DE	ST AVOLD	ENSDORF	0	0	0	0	0	0	0	0	0	0	0	0
FR	DE	VIGY	ENSDORF 1	697	664	-33	753	695	-58	682	644	-38	741	744	3
FR	DE	VIGY	ENSDORF 2	714	695	-19	833	789	-44	828	810	-18	899	917	18

				17:30			19:30			23:30		
		Node 1	Node 2	DACF	Merge	Delta	DACF	Merge	Delta	DACF	Merge	Delta
FR	BE	LONNY	ACHENE	456	425	-31	-106	-87	19	-158	-265	-107
FR	BE	MONT ST MARTIN	AUBANGE	111	246	135	-2	72	74	-43	10	53
FR	BE	MOULAINE	AUBANGE	115	245	130	6	76	70	-32	19	51
FR	BE	AVELIN	AVELGEM	919	919	0	-85	46	131	115	104	-11
FR	BE	MASTAING	AVELGEM	693	663	-30	227	289	62	262	242	-20
FR	BE	CHOOZ	MONCEAU	256	250	-6	144	152	8	167	172	5
FR	DE	MUHLBACH	EICHSTETTEN	752	707	-45	486	338	-148	356	250	-106
FR	DE	VOGELGRUN	EICHSTETTEN	183	128	-55	103	56	-47	31	27	-4
FR	DE	ST AVOLD	ENSDORF	0	0	0	0	0	0	0	0	0
FR	DE	VIGY	ENSDORF 1	939	1010	71	319	452	133	36	180	144
FR	DE	VIGY	ENSDORF 2	1182	1259	77	456	603	147	-47	107	154

				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	513	450	-63	282	335	53	209	334	125	262	302	40
FR	CH	MAMBELIN	BASSECOURT	103	191	88	-36	37	73	-109	0	109	-92	31	123
FR	CH	SIERENTZ	BASSECOURT	331	390	59	227	266	39	229	257	28	224	260	36
FR	CH	BOIS TOLLOT	ROMANEL	336	185	-151	-81	-129	-48	-22	-245	-223	107	-218	**-325**
FR	CH	SIERENTZ	LAUFENBURG	418	527	109	105	162	57	45	124	79	87	201	114
FR	CH	CORNIER	RIDDES	77	107	30	-45	-1	44	-33	-23	10	3	-12	-15
FR	CH	CORNIER	ST TRIPHON	70	55	-15	-21	-19	2	-14	-25	-11	-3	-18	-15
FR	CH	PRESSY	VALLORCINES	18	30	12	-197	-157	40	-145	-179	-34	-76	-165	-89
FR	CH	BOIS TOLLOT	VERBOIS	212	185	-27	245	212	-33	241	253	12	193	268	75
FR	CH	GENISSIAT	VERBOIS	258	216	-42	146	116	-30	142	107	-35	140	122	-18
FR	CH	GENISSIAT	VERBOIS	258	216	-42	146	116	-30	142	107	-35	140	122	-18
FR	IT	ALBERTVILLE	RONDISSONE	1025	999	-26	975	882	-93	932	866	-66	880	813	-67
FR	IT	ALBERTVILLE	RONDISSONE	1134	1092	-42	1090	965	-125	1011	923	-88	958	857	-101
FR	IT	MENTON	CAMPOROSSO	259	204	-55	143	193	50	141	195	54	151	205	54
FR	IT	VILLARODIN	VENAUS	715	881	166	936	1028	92	915	1016	101	801	893	92

				17:30			19:30			23:30		
		Node 1	Node 2	DACF	Merge	Delta	DACF	Merge	Delta	DACF	Merge	Delta
FR	CH	SIERENTZ	ASPHARD	527	479	-48	332	293	-39	331	303	-28
FR	CH	MAMBELIN	BASSECOURT	124	162	38	-102	-41	61	-77	-13	64
FR	CH	SIERENTZ	BASSECOURT	215	267	52	299	339	40	379	461	82
FR	CH	BOIS TOLLOT	ROMANEL	70	-30	-100	-21	-299	**-278**	208	53	-155
FR	CH	SIERENTZ	LAUFENBURG	311	271	-40	180	173	-7	334	276	-58
FR	CH	CORNIER	RIDDES	-6	38	44	-57	-49	8	-6	30	36
FR	CH	CORNIER	ST TRIPHON	14	21	7	-49	-68	-19	-36	-15	21
FR	CH	PRESSY	VALLORCINES	-152	-116	36	-141	-215	-74	-122	-82	40
FR	CH	BOIS TOLLOT	VERBOIS	215	247	32	168	215	47	149	207	58
FR	CH	GENISSIAT	VERBOIS	174	171	-3	125	92	-33	172	173	1
FR	CH	GENISSIAT	VERBOIS	174	171	-3	125	92	-33	173	173	0
FR	IT	ALBERTVILLE	RONDISSONE	1090	1035	-55	974	867	-107	934	835	-99
FR	IT	ALBERTVILLE	RONDISSONE	1209	1129	-80	1084	916	-168	1032	862	-170
FR	IT	MENTON	CAMPOROSSO	147	197	50	158	207	49	146	205	59
FR	IT	VILLARODIN	VENAUS	1017	1116	99	929	1104	175	796	844	48

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	43	2448	38
	Doel - Mercator (51)	2239	28	2239	40
	Doel - Mercator (52)	2239	28	2239	40
	Doel - Mercator (54)	2448	28	2448	40
	Doel - Zandvliet (25)	2293	7	2300	21
	Mercator - Horta (73)	2569	12	2569	27
	Courcelles - Gramme (31)	2308	48	2349	42
	Mercator - Rodenhuize/Horta (74)	2322	15	2349	30
RTE	Attaques - Warande 2	3780	55	3780	57
	Avelin - Gavrelle	2622	22	2622	34
	Avelin - Warande	3458	16	3458	13
	Lonny - Seuil	4149	18	4149	22
	Mandarins - Warande 1	3780	51	3780	54
	Muhlbach - Scheer	2598	17	2598	21
	Revigny - Vigy	2596	28	2596	34
	Warande - Weppes	3458	22	3458	19

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	4	2520	2
		Hagenwerder - Mikulowa (567)	2520	34	2520	31
		Hagenwerder - Mikulowa (568)	2520	34	2520	31
		Remptendorf - Redwitz (413)	3417	28	3440	31
		Remptendorf - Redwitz (414)	3417	28	3440	31
		Röhrsdorf - Hradec (445)	2520	24	2520	21
		Röhrsdorf - Hradec (446)	2520	24	2520	21
		Vieselbach - Mecklar (449-1)	2520	10	2520	7
		Wolmirstedt - Helmstedt (491-1)	2400	9	2400	13
		Wolmirstedt - Helmstedt (492-2)	2400	9	2400	13
	220 kV	Vierraden - Krajnik (507)	1316	0	1316	0
		Vierraden - Krajnik (508)	1316	0	1316	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	2	2
		Vigy	2	2
	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	
Elia	17-18	400	Gramme	Busbar	1A	105%	220	Chooz	Monceau		17:30
		Preventive Action: 2 nodes in Chooz 220kv -> 98% remaining.									

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 constraints 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	
400	Massenhoven	Busbar		101%	150	Petro	Burcht		
For information									

50HzT DC loopflows sensitivity

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

South analyses results

Security analyses have been performed for these 2 timestamps:

- Off-peak period (23:00 – 07:00): **06:30**
- Peak period (07:00 – 23:00): **16:30**

Adaptations made on merged DACFs:

Off-peak:

- SI ➔ IT physical flow adapted to the target flow : **720 MW**
- Mendrisio-Cagno flow adapted to the schedule : **190 MW**
- PST of Lienz adapted to **120 MW**
- PST of Camporosso adapted to **200 MW**
- PST of Rondissone on max. tap position
- PST of La Praz on tap 10 in preventive

Peak:

- SI ➔ IT physical flow adapted to the target flow : **800 MW**
- Mendrisio-Cagno flow adapted to the schedule : **100 MW**
- PST of Lienz adapted to **120 MW**
- PST of Camporosso adapted to **200 MW**
- PST of Rondissone on max. tap position
- PST of La Praz on tap 10 in preventive

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	**1**	**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	75	2370	73
		Albertville - Rondissone 2	2370	82	2370	80
		Bulciago - Soazza	2300	25	2300	28
		Cagno - Mendrisio	855	36	855	22
		Musignano - Lavorgo	2270	41	2270	44
		Redipuglia - Divaca	2700	31	2700	35
		Robbia - San Fiorano	2530	41	2530	42
		Robbia - Gorlago	2530	39	2530	42
		Venaus - Villarodin	2715	59	2715	56
	220 kV	Airolo - Ponte	900	0	900	0
		Lienz - Soverzene	750	42	750	37
		Menton - Campo Rosso	1165	43	1165	44
		Padriciano - Divaca	960	36	960	41
		Riddes - Avise	1010	37	1010	34
		Riddes - Valpelline	1010	41	1010	53
		Serra - Pallanzeno	900	46	900	53

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	3751	3175	127	730
	Compensation ratio (calculated from NTC)	41%	47%	4%	8%
	Pentalateral impact on physical flows	-25%	-56%	-4%	-15%
Peak	Initial physical flows on adapted base case	3597	3299	111	819
	Compensation ratio (calculated from NTC)	39%	48%	4%	9%
	Pentalateral impact on physical flows	-24%	-57%	-4%	-15%

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	Rte / Terna	380	Albertville	Grand Ile	N-2	104% (20')	380	Albertville	Grand Ile	3
						103% (20')	380	Albertville	Rondissone	1
		Curative action: 2-node topology in Grand Ile (isolate busbar 2A) 96% remaining on Albertville - Grand Ile 94% remaining on Albertville - Rondissone								
	Rte / Terna	380	Albertville	Rondissone	N-2	107% (10')	380	La Praz	PST	3
						101% (20')	380	Villarodin	Venaus	1
		Curative action: Automatic tap changer to neutral position and Bypass on La Praz PST 101% remaining on Villarodin - Venaus 2-node topology at Piossasco (Venaus and Magliano on the same busbar) 79% remaining on Villarodin - Venaus								

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	Rte / Terna	380	Albertville	Grand Ile	N-2	104% (20')	380	Albertville	Grand Ile	3
						100% (20')	380	Albertville	Rondissone	1
		Curative action: 2-Node topology in Grand Ile (isolate busbar 2A) 95% remaining on Albertville - Grand Ile 92% remaining on Albertville - Rondissone								
	Rte / Terna	380	Albertville	Rondissone	N-2	110% (10')	380	La Praz	PST	
		Curative action: Automatic tap changer to neutral position and bypass the La Praz PST								

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)	10	890
Rondissone 1 (1/33)	33	1254
Rondissone 2 (1/33)	33	1148
Camporosso (-32/32)	12	203
Lienz (-32/32)	2	128
Padriciano (1/33)	6	141
Divaca (-32/32 each)	16	590

PST	Peak	
	Tap position	Physical flow to Italy (MW)
La Praz (1/33)	10	929
Rondissone 1 (1/33)	33	1212
Rondissone 2 (1/33)	33	1107
Camporosso (-32/32)	12	210
Lienz (-32/32)	-8	113
Padriciano (1/33)	6	158
Divaca (-32/32 each)	16	663

Conclusion

CWE: No critical constraint detected.
CEE: No critical constraint detected.
CSE: No critical constraint detected.