CORESO Engineers ***North :*** SCHÜLKE Arnaud ***South :*** KROMLIDIS Stylianos	**Day Ahead report for** **21 January 2018**

Security Levels:

CWE: One constraint detected on FR-BE border manageable with classical remedial actions.

CEE: No critical constraint detected.

CSE: Constraints detected that remain manageable with classical remedial actions.

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]	9500	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]	66500	13:00		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]	44600	17:30		Paluel		1300	**3**	3900
Generation Margin	Sufficient			Nogent s/ Seine		1300	2	2600
				Bugey		900	**3**	2700
TERNA				St Alban		1300	2	2600
Peak load [MW]	34913	19:30		Cruas		900	**3**	2700
Generation Margin	Sufficient			Tricastin		900	**3**	2700

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

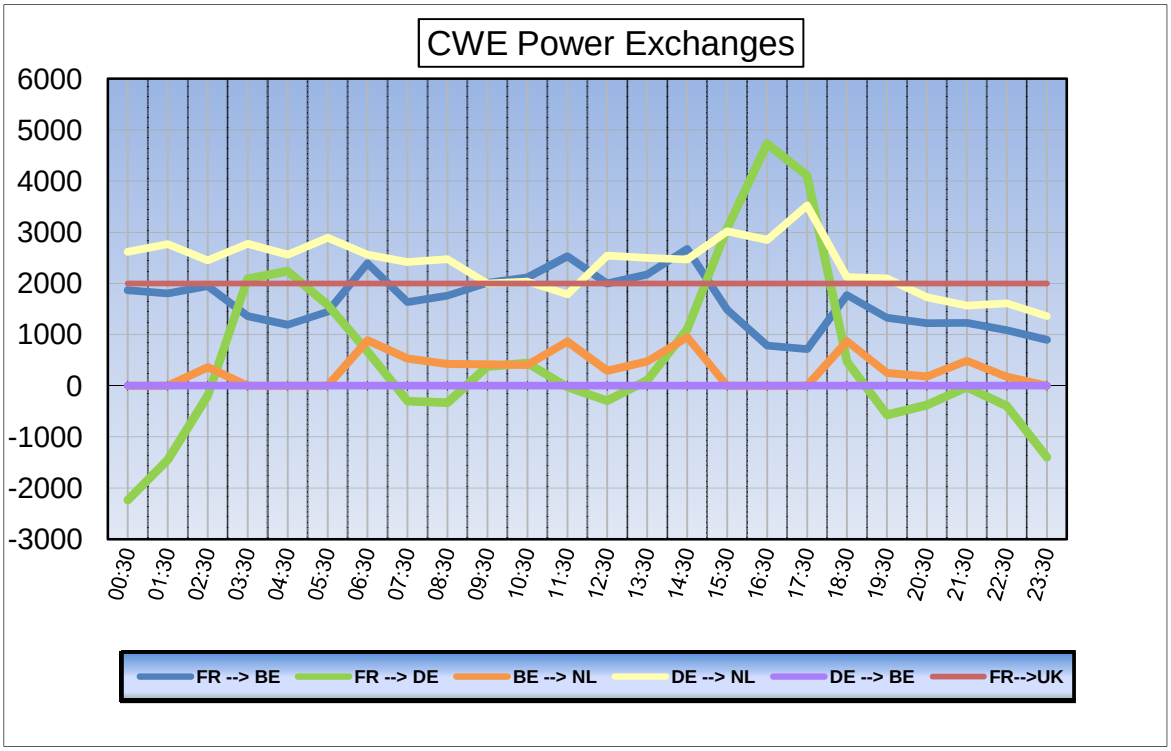
CSE

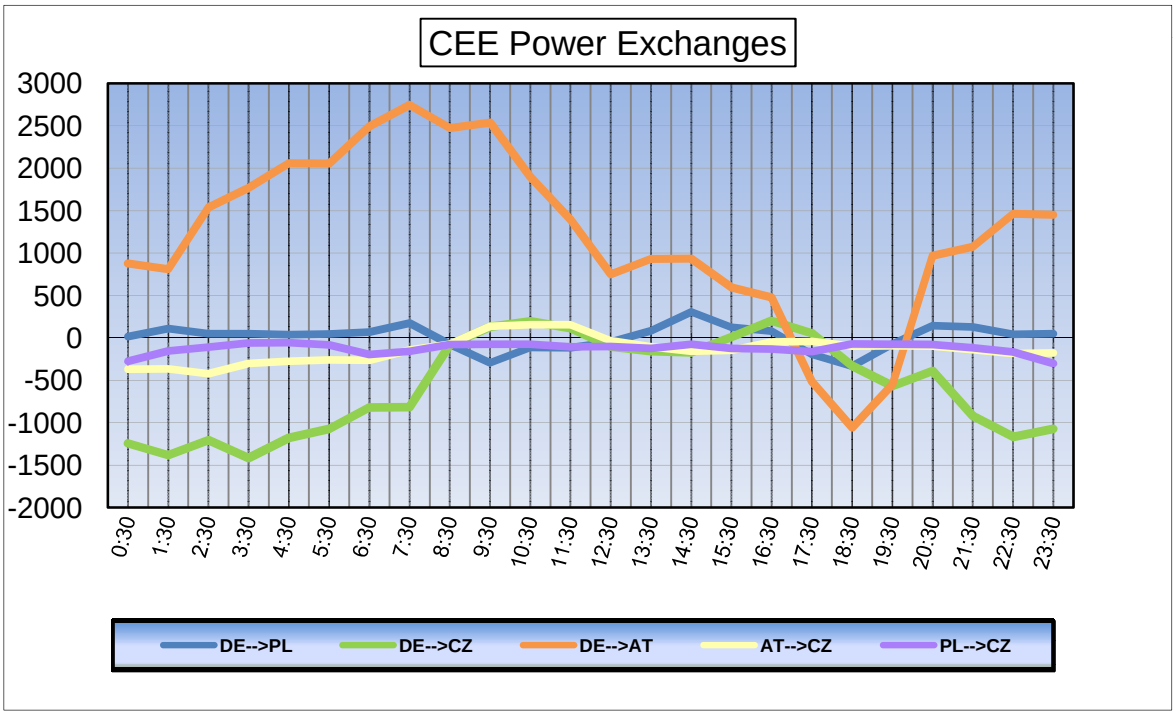
N-2 applied due to storm in the South of France from 00:00 to 12:00.

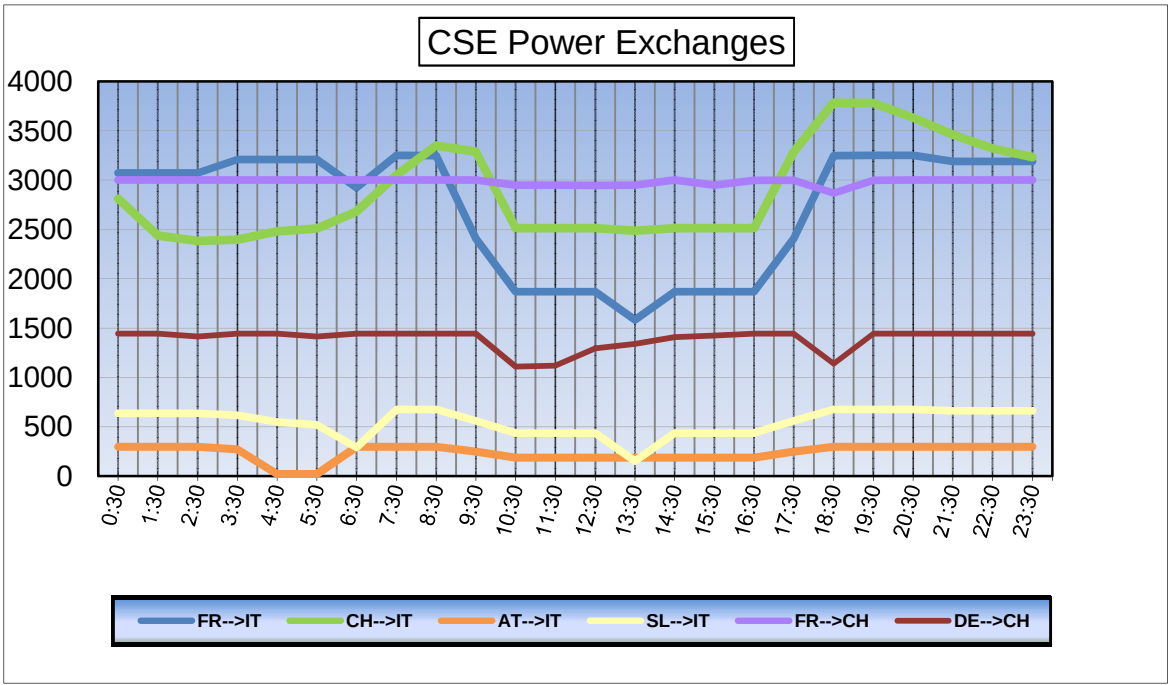
Outages table

OUTAGES					
Owner	Type of element	Line name	start	end	Comments
50HzT	Fossil.Gen	JANSCHWALDE _ Unit E 400 kV	20/01/2018	22/01/2018	250 MW (reduced)
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	HAMBURG Nord _ BRUNSBUTTEL 951 400 kV	14/01/2018	21/01/2018	
50HzT	Line	LUBMIN _ WIKINGER 281 220 kV	26/09/2017	31/01/2018	
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	KOBLENZ _ LIMBURG (Nassau) 400 kV	15/01/2018	21/01/2018	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
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	
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	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	18/01/2018	21/01/2018	
RTE	Nuc.Gen	BUGEY _ Unit 3 (900MW) 400 kV	19/01/2018	23/01/2018	
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	
RTE	Nuc.Gen	TRICASTIN _ Unit 1 (900MW) 400 kV	20/01/2018	23/01/2018	
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	23/01/2018	
S.GRID	Line	LIMMERN _ TIERFEHD 1 400 kV	28/01/2017	31/07/2018	
S.GRID	Line	MOREL _ SERRA 225 kV	16/01/2018	23/01/2018	
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	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	GROHNDE _ KLEIN ILSEDE 1 400 kV	18/01/2018	26/01/2018	daily
TENNET DE	Line	TWISTETAL _ BORKEN 3 400 kV	16/05/2017	11/10/2018	
TENNET DE	Line	WAHLE _ ALGERMISSEN 2 400 kV	18/01/2018	26/01/2018	daily
TENNET DE	Line	WAHLE _ KLEIN ILSEDE 3 380 kV	18/01/2018	26/01/2018	daily
TENNET NL	Line	BLEISWIJK _ KRIMPEN WT 400 kV	21/01/2018	26/01/2018	
TENNET NL	Line	BLEISWIJK _ KRIMPEN ZT 400 kV	20/01/2018	26/01/2018	
TENNET NL	Line	HENGELO _ ZWOLLE WT 400 kV	13/01/2018	26/01/2018	
TERNA / S.GRID	Line	PALLANZENO _ SERRA 225 kV	16/01/2018	23/01/2018	
TERNA / S.GRID	Line	PONTE _ AIROLO 225 kV	17/01/2018	23/01/2018	

Exchange program forecasts






CSE Power Exchanges
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	00:30	03:30	07:30	10:30	11:30	12:30	15:30	17:30	18:30	19:30	22:30	23:30
BE	FR	ACHENE	LONNY	380.19	-98	-449	-244	-370	-360	-335	-595	-539	-393	-282	-195	18
BE	FR	AUBANGE	MONT ST MARTIN	220.51	-119	-196	-119	-176	-156	-151	-191	-164	-111	-72	-57	-10
BE	FR	AUBANGE	MOULAINE	220.51	-127	-198	-117	-179	-163	-164	-197	-174	-115	-91	-66	-16
BE	FR	AVELGEM	AVELIN	380.80	-501	-1000	-799	-778	-772	-702	-1145	-1239	-932	-611	-539	-330
BE	FR	AVELGEM	MASTAING	380.79	-370	-535	-481	-540	-542	-520	-666	-701	-581	-431	-360	-234
BE	FR	MONCEAU	CHOOZ	220.48	-199	-219	-198	-244	-247	-244	-268	-267	-248	-213	-177	-141
BE	NL	VAN EYCK 1	MAASBRACHT	380.27	-422	-77	-164	-184	-192	-227	2	124	-24	-136	-149	-286
BE	NL	VAN EYCK 2	MAASBRACHT	380.28	108	546	512	513	540	485	800	1145	881	578	441	178
BE	NL	ZANDVLIET	BORSSELE	380.29	-140	117	94	-47	-43	-57	139	217	73	-74	-88	-179
BE	NL	ZANDVLIET	GEERTRUIDENBERG	380.30	15	480	378	260	271	232	539	733	494	272	241	71
BE	LU	BELVAL	SCHIFFLANGE	220.511	-35	152	11	16	11	-10	76	126	33	-34	19	12

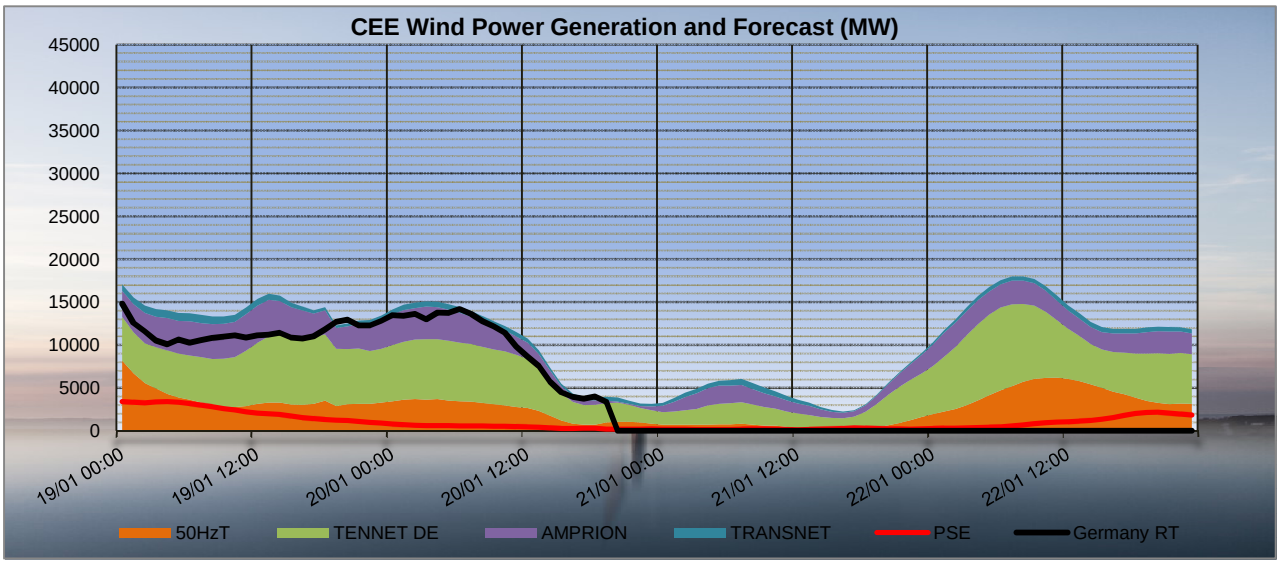
BE	FR	TOTAL		-1414	-2597	-1958	-2287	-2240	-2116	-3062	-3084	-2380	-1700	-1394	-713
BE	NL	TOTAL		-439	1066	820	542	576	433	1480	2219	1424	640	445	-216
BE	LU	TOTAL		-35	152	11	16	11	-10	76	126	33	-34	19	12
TOTAL BELGIAN IMPORT/EXPORT				-1888	-1379	-1127	-1729	-1653	-1693	-1506	-739	-923	-1094	-930	-917

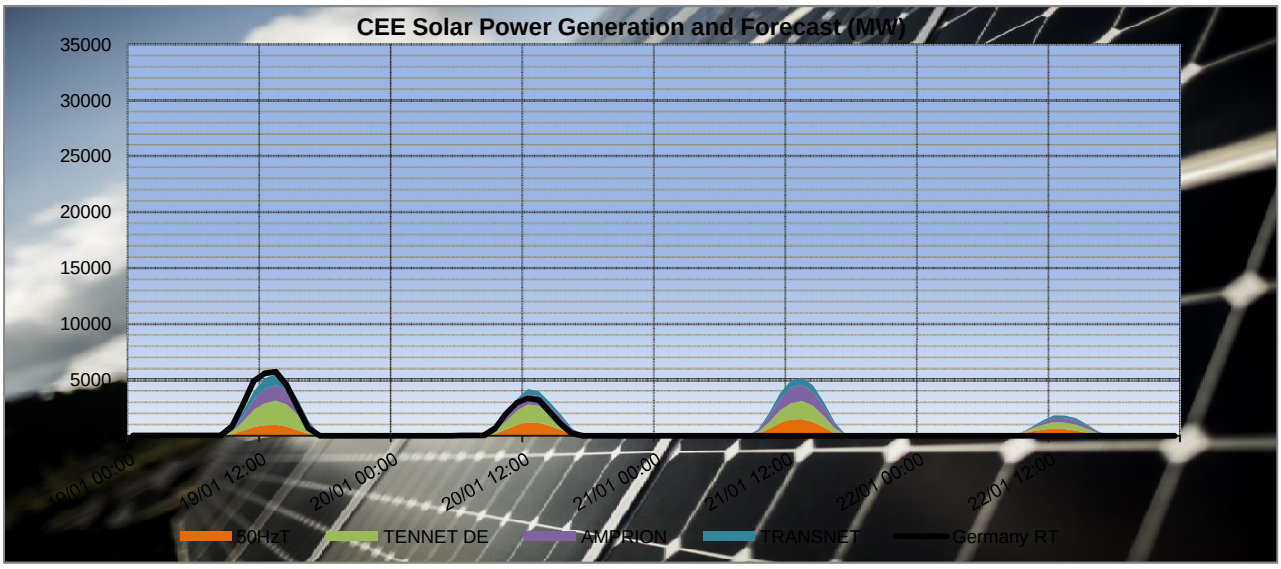
PST taps in DACF	**Zandvliet 1**	15	15	12	12	12	12	12	12	12	12	12	15
	Zandvliet 2	15	15	12	12	12	12	12	12	12	12	12	15
	Van Eyck 1	15	15	12	12	12	12	12	12	12	12	12	15
	Van Eyck 2	15	15	12	12	12	12	12	12	12	12	12	15
	Average	15	15	12	12	12	12	12	12	12	12	12	15

CREOS PST in DACF	**Schifflange**	17	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]**	15	15	15	15	15	15	15	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	15
Zandvliet PST 2	**[1;35]**	15	15	15	15	15	15	15	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	15
Van Eyck PST 1	**[1;35]**	15	15	15	15	15	15	15	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	15
Van Eyck PST 2	**[1;35]**	15	15	15	15	15	15	15	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	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	17

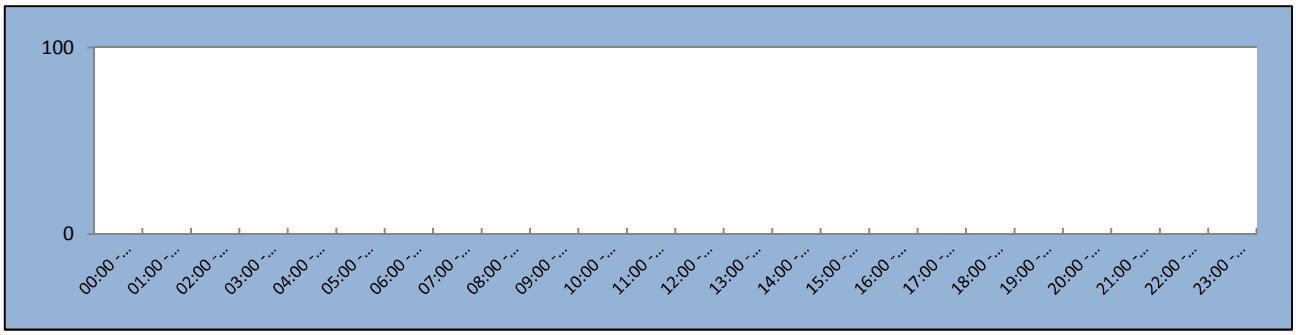
CEE Renewable Power Generation & Forecast



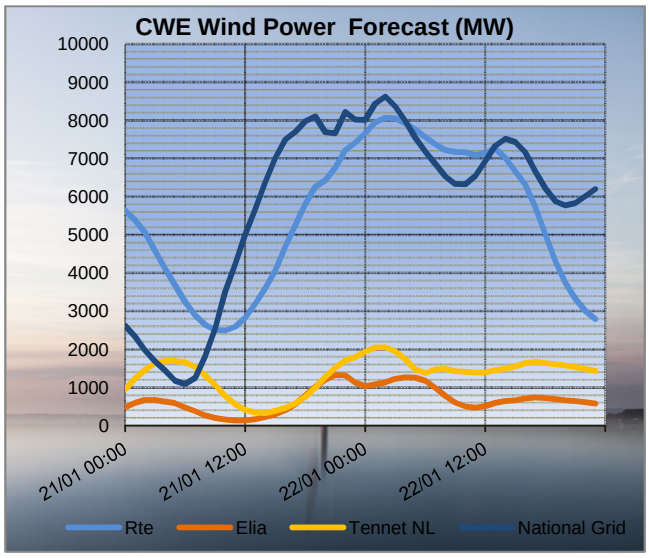


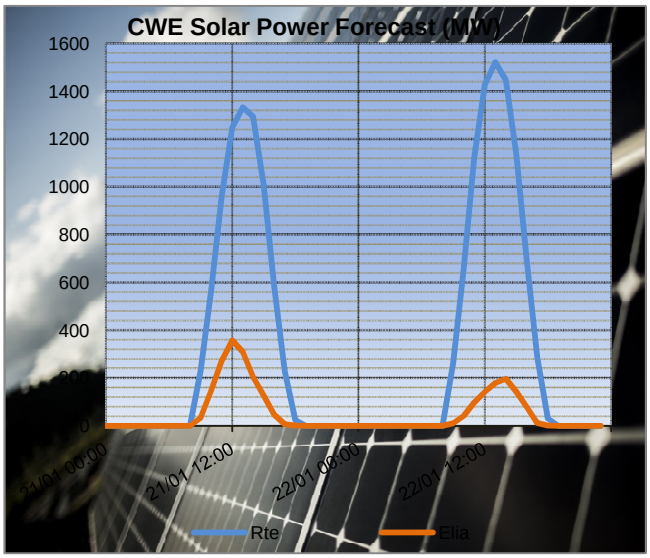
The charts above show the wind and solar generation forecasts for the TSOs in CEE (most significant) from D+1 until D-2 and the realised generation in Germany in real time. Source: Meteologica and 50HzT (RT)

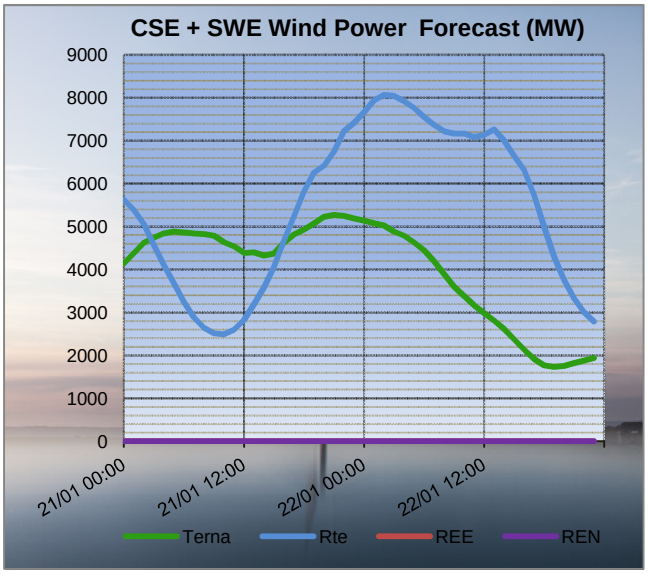
50HzT Preventive Redispatch

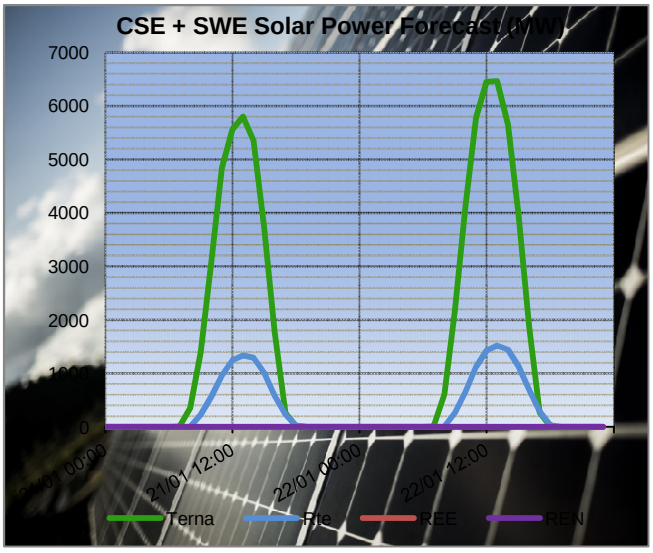


CWE, CSE & SWE Renewable Power Forecast (D-1 and D-2)









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	501	449	-52	320	244	-76	416	370	-46	316	335	19
FR	BE	MONT ST MARTIN	AUBANGE	100	196	96	28	119	91	63	176	113	32	151	119
FR	BE	MOULAINE	AUBANGE	106	198	92	30	117	87	71	179	108	50	164	114
FR	BE	AVELIN	AVELGEM	896	1000	104	711	799	88	750	778	28	659	702	43
FR	BE	MASTAING	AVELGEM	493	535	42	444	481	37	544	540	-4	523	520	-3
FR	BE	CHOOZ	MONCEAU	180	219	39	187	198	11	233	244	11	220	244	24
FR	DE	MUHLBACH	EICHSTETTEN	710	665	-45	375	330	-45	364	283	-81	223	132	-91
FR	DE	VOGELGRUN	EICHSTETTEN	126	128	2	51	84	33	88	96	8	43	70	27
FR	DE	ST AVOLD	ENSDORF	0	0	0	0	0	0	0	0	0	0	0	0
FR	DE	VIGY	ENSDORF 1	660	770	110	364	435	71	513	538	25	346	462	116
FR	DE	VIGY	ENSDORF 2	483	602	119	124	200	76	461	493	32	268	394	126

				17:30			19:30			23:30		
		Node 1	Node 2	DACF	Merge	Delta	DACF	Merge	Delta	DACF	Merge	Delta
FR	BE	LONNY	ACHENE	429	539	110	168	282	114	-49	-18	31
FR	BE	MONT ST MARTIN	AUBANGE	12	164	152	-71	72	143	-89	10	99
FR	BE	MOULAINE	AUBANGE	30	174	144	-44	91	135	-78	16	94
FR	BE	AVELIN	AVELGEM	1031	1239	208	609	611	2	340	330	-10
FR	BE	MASTAING	AVELGEM	602	701	99	465	431	-34	270	234	-36
FR	BE	CHOOZ	MONCEAU	202	267	65	186	213	27	124	141	17
FR	DE	MUHLBACH	EICHSTETTEN	859	634	-225	401	364	-37	477	480	3
FR	DE	VOGELGRUN	EICHSTETTEN	178	131	-47	59	80	21	64	85	21
FR	DE	ST AVOLD	ENSDORF	0	0	0	0	0	0	0	0	0
FR	DE	VIGY	ENSDORF 1	892	902	10	343	461	118	175	377	202
FR	DE	VIGY	ENSDORF 2	955	953	-2	309	434	125	132	356	224

				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	370	-143	418	290	-128	235	178	-57	174	71	-103
FR	CH	MAMBELIN	BASSECOURT	99	108	9	-14	-11	3	-77	-52	25	-134	-123	11
FR	CH	SIERENTZ	BASSECOURT	386	366	-20	372	364	-8	284	308	24	302	311	9
FR	CH	BOIS TOLLOT	ROMANEL	355	259	-96	281	205	-76	205	137	-68	176	137	-39
FR	CH	SIERENTZ	LAUFENBURG	403	448	45	317	356	39	145	190	45	108	94	-14
FR	CH	CORNIER	RIDDES	41	67	26	37	65	28	12	44	32	4	40	36
FR	CH	CORNIER	ST TRIPHON	37	46	9	18	47	29	7	18	11	3	19	16
FR	CH	PRESSY	VALLORCINES	9	30	21	-6	27	33	-53	-2	51	-96	-4	92
FR	CH	BOIS TOLLOT	VERBOIS	145	153	8	129	156	27	147	163	16	180	197	17
FR	CH	GENISSIAT	VERBOIS	219	195	-24	179	172	-7	150	139	-11	153	149	-4
FR	CH	GENISSIAT	VERBOIS	219	195	-24	179	172	-7	151	139	-12	153	149	-4
FR	IT	ALBERTVILLE	RONDISSONE	956	817	-139	943	796	-147	816	687	-129	775	617	-158
FR	IT	ALBERTVILLE	RONDISSONE	1018	806	-212	1049	837	-212	870	669	-201	841	600	-241
FR	IT	MENTON	CAMPOROSSO	258	505	247	156	435	**279**	145	498	**353**	153	473	**320**
FR	IT	VILLARODIN	VENAUS	561	551	-10	713	697	-16	559	582	23	599	584	-15

				17:30			19:30			23:30		
		Node 1	Node 2	DACF	Merge	Delta	DACF	Merge	Delta	DACF	Merge	Delta
FR	CH	SIERENTZ	ASPHARD	444	385	-59	298	235	-63	382	293	-89
FR	CH	MAMBELIN	BASSECOURT	90	65	-25	-96	-98	-2	-114	-85	29
FR	CH	SIERENTZ	BASSECOURT	288	300	12	360	329	-31	463	426	-37
FR	CH	BOIS TOLLOT	ROMANEL	55	157	102	59	23	-36	221	153	-68
FR	CH	SIERENTZ	LAUFENBURG	333	250	-83	239	190	-49	332	371	39
FR	CH	CORNIER	RIDDES	-3	59	62	-27	21	48	-16	19	35
FR	CH	CORNIER	ST TRIPHON	11	35	24	-51	-2	49	-51	-21	30
FR	CH	PRESSY	VALLORCINES	-102	13	115	-144	-29	115	-85	-41	44
FR	CH	BOIS TOLLOT	VERBOIS	220	186	-34	180	195	15	128	161	33
FR	CH	GENISSIAT	VERBOIS	180	168	-12	141	133	-8	157	154	-3
FR	CH	GENISSIAT	VERBOIS	180	168	-12	141	133	-8	157	154	-3
FR	IT	ALBERTVILLE	RONDISSONE	991	801	-190	973	782	-191	902	741	-161
FR	IT	ALBERTVILLE	RONDISSONE	1064	800	**-264**	1075	845	-230	928	669	**-259**
FR	IT	MENTON	CAMPOROSSO	155	518	**363**	162	434	**272**	161	205	44
FR	IT	VILLARODIN	VENAUS	732	642	-90	865	800	-65	511	507	-4

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	42	2448	41
	Doel - Mercator (51)	2239	21	2239	22
	Doel - Mercator (52)	2239	21	2239	22
	Doel - Mercator (54)	2448	21	2448	22
	Doel - Zandvliet (25)	2349	18	2349	16
	Mercator - Horta (73)	2569	6	2569	8
	Courcelles - Gramme (31)	2349	47	2349	46
	Mercator - Rodenhuize/Horta (74)	2349	5	2349	7
RTE	Attaques - Warande 2	3780	48	3780	49
	Avelin - Gavrelle	2622	13	2622	7
	Avelin - Warande	3458	23	3458	22
	Lonny - Seuil	4149	12	4149	15
	Mandarins - Warande 1	3780	44	3780	46
	Muhlbach - Scheer	2598	14	2598	19
	Revigny - Vigy	2596	20	2596	22
	Warande - Weppes	3458	28	3458	27

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	17	2520	33
		Hagenwerder - Mikulowa (567)	2520	23	2520	11
		Hagenwerder - Mikulowa (568)	2520	23	2520	11
		Remptendorf - Redwitz (413)	3551	26	3572	32
		Remptendorf - Redwitz (414)	3551	26	3572	32
		Röhrsdorf - Hradec (445)	2520	22	2520	10
		Röhrsdorf - Hradec (446)	2520	22	2520	10
		Vieselbach - Mecklar (449-1)	2520	19	2520	35
		Wolmirstedt - Helmstedt (491-1)	2400	11	2400	19
		Wolmirstedt - Helmstedt (492-2)	2400	11	2400	19
	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	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 / Rte	10:30 - 17:30	380	Gramme	Busbar	1A	118%	380	Monceau	Transformer	12	14:30
		380	Lonny	Busbar	1B	107%					
		Curative actions: Open the overloaded transformer => no cascading effect OR 2 nodes in Chooz 220 kV + 2 nodes in Mazures 220 kV. => in case of Gramme busbar fault: 105%. Remaining overload is then solved by the generation increased required to compensate the loss of Tihange 1. => in case of Lonny busbar fault: 95% remaining. Note: 2 nodes topology in Monceau 150 kV has a low impact on the constraint (around 1%).									

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	
No constraint detected									

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): **23:30**
- Peak period (07:00 – 23:00): **18:30**

Adaptations made on merged DACFs:

Off-peak:

- SI ➔ IT physical flow adapted to the target flow : **800 MW**
- Mendrisio-Cagno flow adapted to the schedule : **200 MW**
- PST of Lienz adapted to **150 MW**
- PST of Camporosso adapted to **200 MW**

Peak:

- SI ➔ IT physical flow adapted to the target flow : **800 MW**
- Mendrisio-Cagno flow adapted to the schedule : **169 MW**
- PST of Lienz adapted to **150 MW**
- PST of Camporosso adapted to **200 MW**

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	1
		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	49	2370	57
		Albertville - Rondissone 2	2370	45	2370	62
		Bulciago - Soazza	2300	40	2300	36
		Cagno - Mendrisio	855	32	855	36
		Musignano - Lavorgo	2270	63	2270	55
		Redipuglia - Divaca	2450	37	2450	38
		Robbia - San Fiorano	2530	48	2530	46
		Robbia - Gorlago	2530	56	2530	57
		Venaus - Villarodin	2715	30	2715	52
	220 kV	Airolo - Ponte	900	0	900	0
		Lienz - Soverzene	704	41	704	43
		Menton - Campo Rosso	1165	41	1165	43
		Padriciano - Divaca	960	49	960	42
		Riddes - Avise	1010	24	1010	24
		Riddes - Valpelline	1010	29	1010	31
		Serra - Pallanzeno	900	44	900	49

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	2263	4047	118	828
	Compensation ratio (calculated from NTC)	41%	47%	4%	8%
	Pentalateral impact on physical flows	-26%	-56%	-4%	-14%
Peak	Initial physical flows on adapted base case	3068	3877	123	813
	Compensation ratio (calculated from NTC)	41%	47%	4%	8%
	Pentalateral impact on physical flows	-26%	-56%	-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	RTE	400	Albertville	Busbar	1A	122%	220	Albertville	Longefan	2
						108%	220	Malgovert	Contamine	
		For info: **Curative action:** Opening the lines does not cause any further constraints								

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	Rondissone	N-2	110%	380	La Praz	PST	
		Curative action: Increase 8 taps at La Praz PST (1 -> 9) => **99% remaining.**								
	RTE	400	Albertville	Busbar	1A	127%	220	Albertville	Longefan	2
						116%	220	Malgovert	Contamine	
		For info: Curative action: Opening the lines does not cause any further constraints								
	Swissgrid/ Terna	380	Chamoson	Romanel	N-1	144%	380/	Chamoson	TRFO	
		For info: Preventive action: Reduce generation at Chamoson => **93% remaining**								

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	450
Rondissone 1 (1/33)	27	715
Rondissone 2 (1/33)	31	780
Camporosso (-32/32)	-10	192
Lienz (-32/32)	-16	119
Padriciano (1/33)	33	189
Divaca (-32/32 each)	-24	641

PST	Peak	
	Tap position	Physical flow to Italy (MW)
La Praz (1/33)	1	752
Rondissone 1 (1/33)	33	970
Rondissone 2 (1/33)	33	895
Camporosso (-32/32)	-2	201
Lienz (-32/32)	-24	124
Padriciano (1/33)	33	161
Divaca (-32/32 each)	-22	654

Conclusion

CWE: One constraint detected on FR-BE border manageable with classical remedial actions.

CEE: No critical constraint detected.
CSE: Constraints detected that remain manageable with classical remedial actions.