CORESO Engineers ***North :*** CARNANDET Benoit ***South :*** PREVOST Raphaël	**Day Ahead report for** **28 January 2018**

Security Levels:

CWE: No critical constraints detected due to implementation of preventive actions (Tennet NL & Amprion) and Wind reduction in Real Time in Germany

CEE: No critical constraints detected.

CSE: Some constraints detected on RTE side. One of them could potentially require a coordination between RTE and Swissgrid.

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]	8600	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	1900
						900	**1**	
				Schw. Pumpe		800	2	1600
				Lippendorf		920	2	1840
RTE			RTE	Gravelines	Pmax (MW)	900	6	5400
Peak load [MW]	64600	13:00		Chooz		1500	2	3000
Generation Margin	Sufficient			Cattenom		1300	**3.5**	4550
				Fessenheim		900	**1**	900
NATIONAL GRID (UK time)				Penly		1300	2	2600
Peak load [MW]	40000	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]	34503	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

Rte : Cattenom 3 in outage until 20:00

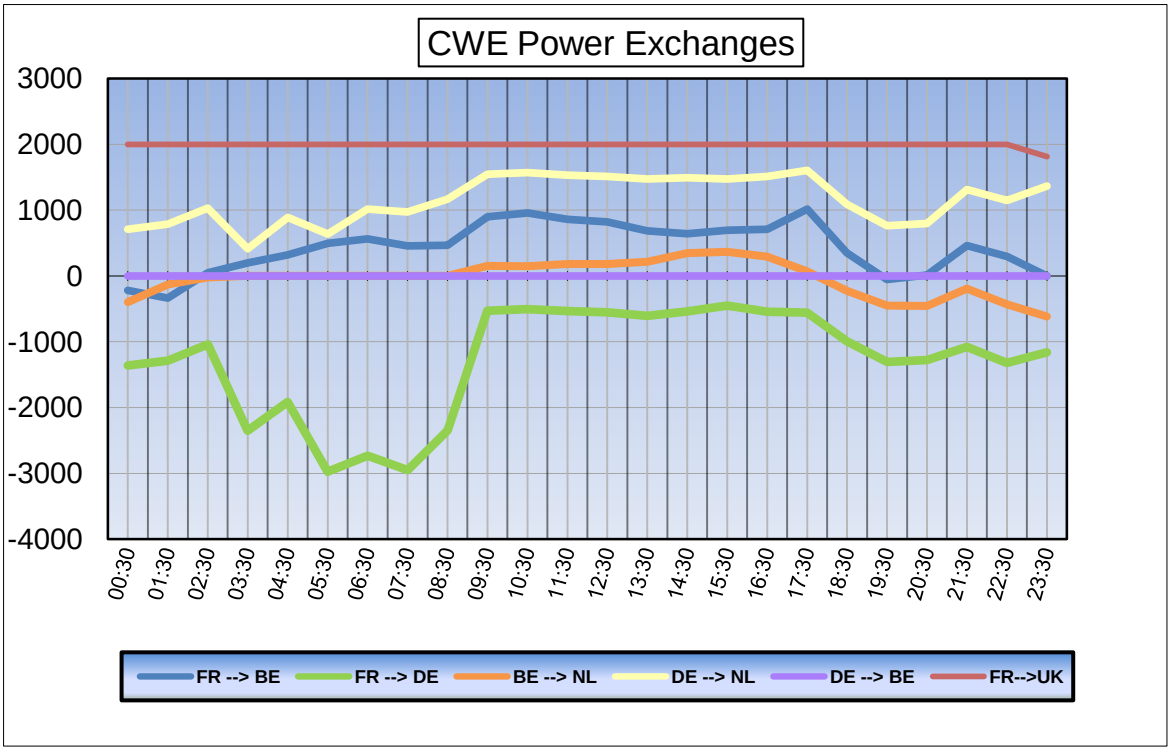
CSE

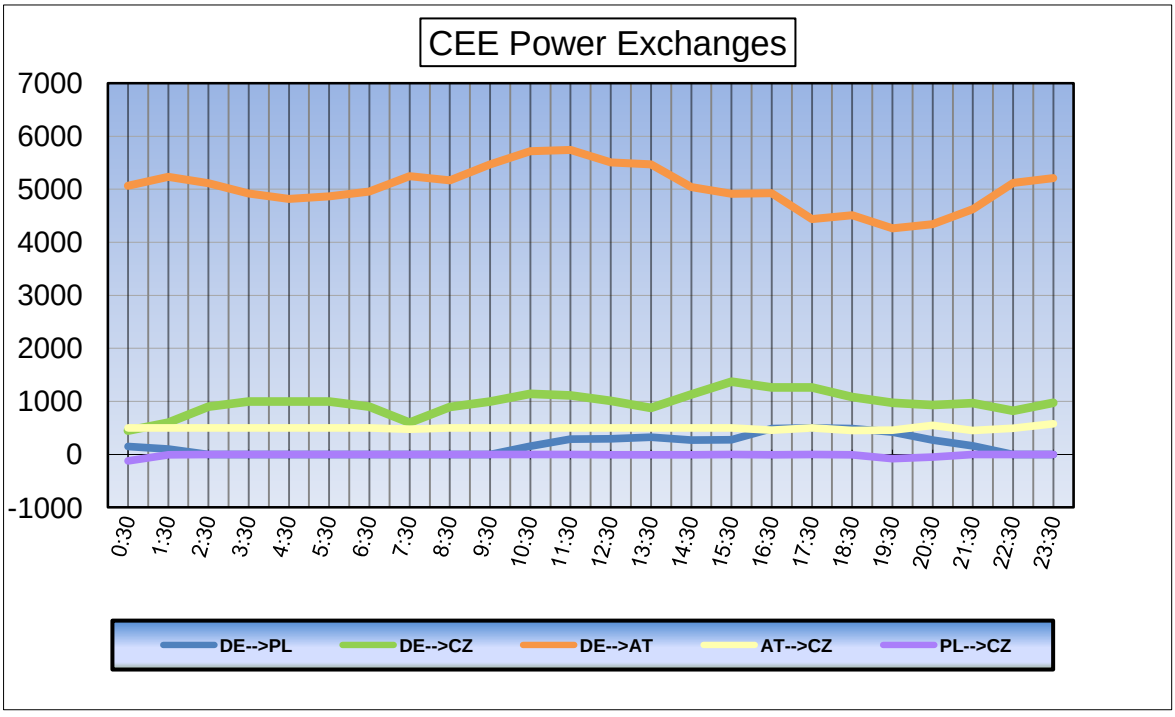
Outages table

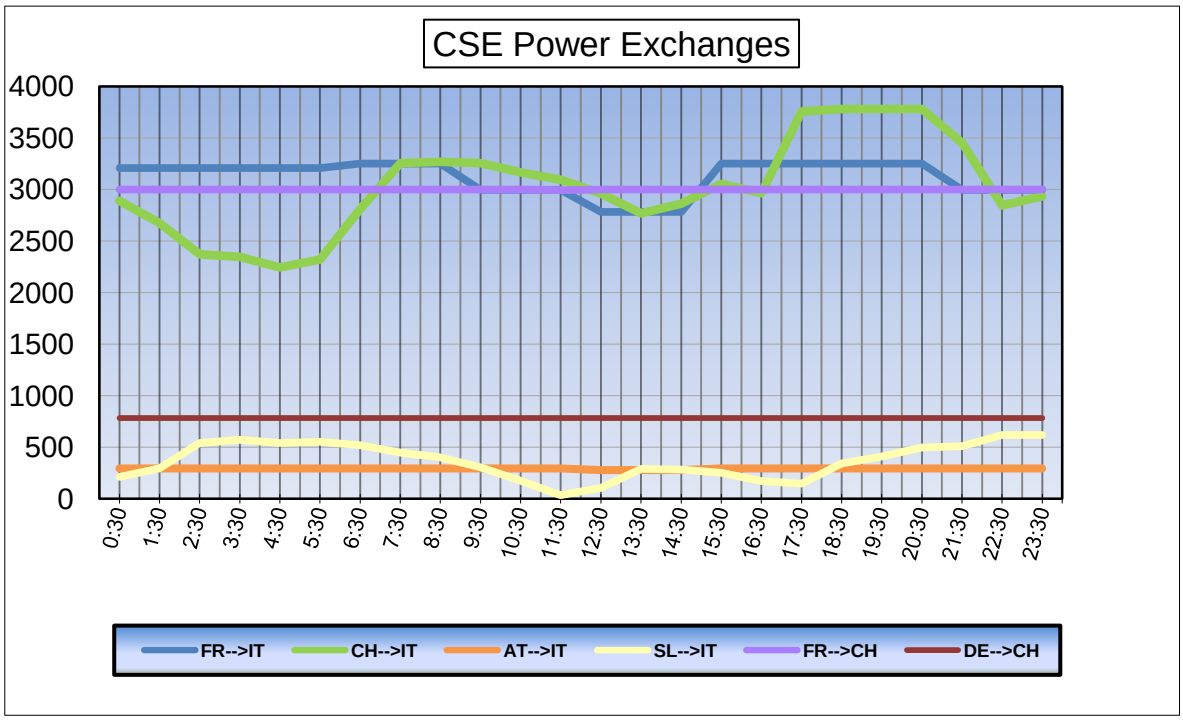
OUTAGES					
Owner	Type of element	Line name	start	end	Comments
50HzT	Hydro.Gen	GOLDISTHAL _ UNIT C 400 kV	27/01/2018	30/01/2018	265 MW
50HzT	Hydro.Gen	MARKERSBACH _ Unit D 400 kV	28/09/2017	27/04/2018	160 MW
50HzT	Line	EULA _ Wolkramhausen 357 220 kV	28/01/2018	04/02/2018	
50HzT	Line	EULA _ Wolkramhausen 357 220 kV	06/10/2017	16/03/2018	
50HzT	Line	HAGENWERDER _ SCHMÖLLN 554 400 kV	22/01/2018	28/01/2018	
50HzT	Line	HAGENWERDER _ SCHMÖLLN 554 400 kV	28/01/2018	04/02/2018	
50HzT	Line	HAGENWERDER _ SCHMÖLLN 554 400 kV	21/01/2018	14/02/2018	
50HzT	Line	LUBMIN _ WIKINGER 281 220 kV	28/01/2018	04/02/2018	
50HzT	Line	RAGOW _ WUSTERMARK 521 400 kV	22/01/2018	28/01/2018	
50HzT	Line	RAGOW _ WUSTERMARK 521 400 kV	28/01/2018	04/02/2018	
50HzT	Line	WOLMIRSTEDT _ WUSTERMARK 494 400 kV	28/01/2018	04/02/2018	
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	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 / 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 2 400 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
PSE	Line	CZARNA _ PASIKUROWICE 400 kV	27/01/2018	02/02/2018	
PSE	Line	DUNOWO _ SLUPSK 400 kV	25/01/2018	28/01/2018	
PSE	Line	POLANIEC _ TARNOW 400 kV	22/01/2018	02/02/2018	daily
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	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	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	Line	LIMMERN _ TIERFEHD 1 400 kV	28/01/2017	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	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

Owner	Type of element	Line name	start	end	Comments
TENNET DE	Line	JARDELUND _ AUDORF Grün 380 kV	22/01/2018	09/02/2018	daily
TENNET DE	Line	PLEINTIG _ KUPPLUNG 380 kV	22/01/2018	26/02/2018	
TENNET DE	Line	TWISTETAL _ BORKEN 3 400 kV	16/05/2017	11/10/2018	
TENNET DE	Line	WURGASSEN _ GROHNDE 2 400 kV	22/01/2018	02/02/2018	
TENNET DE	Line	WURGASSEN _ GROHNDE 2 400 kV	22/01/2018	02/02/2018	daily
TERNA	Line	CORDIGNANO _ SANDRIGO 362 400 kV	27/01/2018	**28/01/2018**	
TERNA / S.GRID	Line	PONTE _ AIROLO 225 kV	18/01/2018	05/02/2018	
TERNA / S.GRID	Line	PONTE _ AIROLO 225 kV	18/01/2018	05/02/2018	
TransnetBW	Line	BUNZWANGEN _ LAICHINGEN Grün 380 kV	01/01/2018	24/02/2018	
TransnetBW	Line	NEUROTT _ PHILIPPSBURG RT 400 kV	15/01/2018	07/02/2018	daily

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	05:30	07:30	10:30	11:30	12:30	17:30	19:30	20:30	21:30	23:30
BE	FR	ACHENE	LONNY	380.19	233	221	200	235	-70	-55	-59	-111	230	182	81	161
BE	FR	AUBANGE	MONT ST MARTIN	220.51	33	62	29	67	-37	-20	-20	21	72	87	51	60
BE	FR	AUBANGE	MOULAINE	220.51	22	49	15	54	-48	-27	-32	7	57	72	36	46
BE	FR	AVELGEM	AVELIN	380.80	145	98	152	82	-421	-398	-328	-649	-104	-89	-206	-80
BE	FR	AVELGEM	MASTAING	380.79	-27	-7	-8	-54	-318	-305	-275	-402	-192	-173	-226	-158
BE	FR	MONCEAU	CHOOZ	220.48	-68	-52	-64	-66	-158	-154	-150	-165	-122	-114	-127	-112
BE	NL	VAN EYCK 1	MAASBRACHT	380.27	-340	-323	-380	-388	-262	-256	-259	-202	-313	-315	-312	-359
BE	NL	VAN EYCK 2	MAASBRACHT	380.28	-13	-105	-195	-109	281	310	265	395	292	202	176	82
BE	NL	ZANDVLIET	BORSSELE	380.29	-320	-270	-304	-320	-127	-117	-158	-205	-437	-415	-273	-332
BE	NL	ZANDVLIET	GEERTRUIDENBERG	380.30	28	46	-9	12	273	297	285	314	55	60	98	15
BE	LU	BELVAL	SCHIFFLANGE	220.511	124	74	58	22	69	46	89	43	58	26	38	52

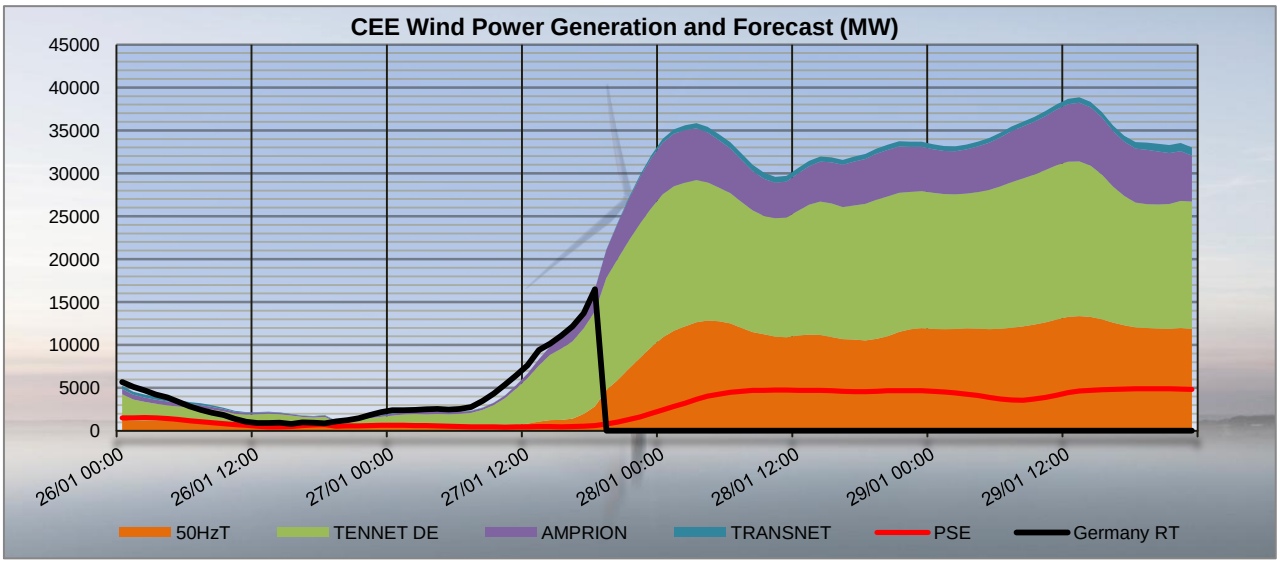
BE	FR	TOTAL		338	371	324	318	-1052	-959	-864	-1299	-59	-35	-391	-83
BE	NL	TOTAL		-645	-652	-888	-805	165	234	133	302	-403	-468	-311	-594
BE	LU	TOTAL		124	74	58	22	69	46	89	43	58	26	38	52
TOTAL BELGIAN IMPORT/EXPORT				-183	-207	-506	-465	-818	-679	-642	-954	-404	-477	-664	-625

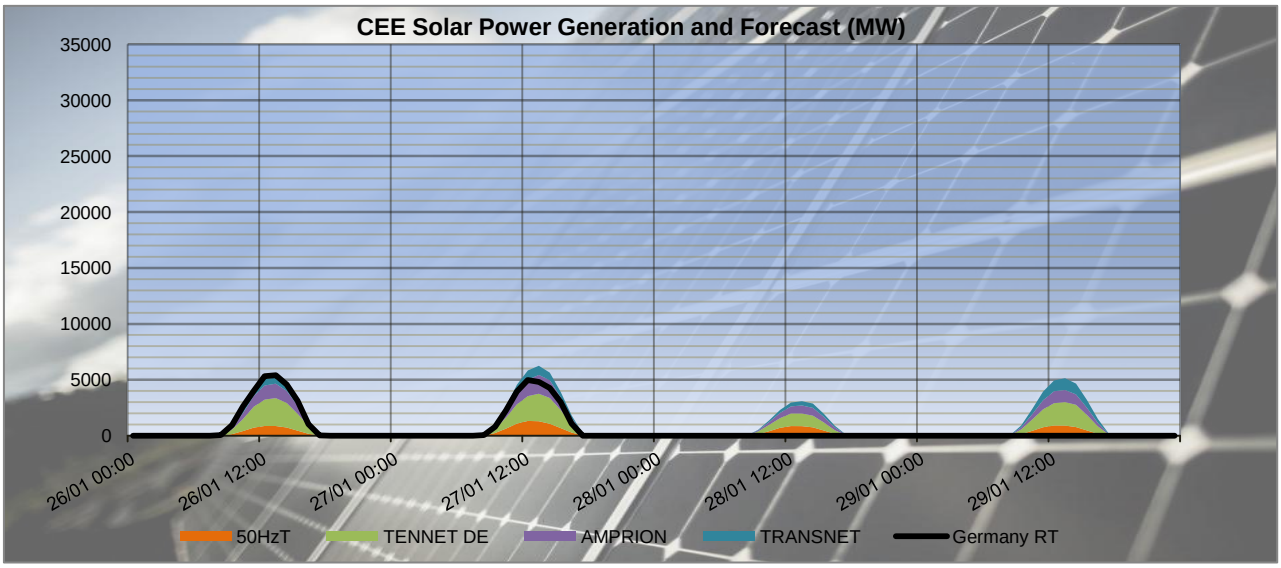
PST taps in DACF	**Zandvliet 1**	12	12	12	12	12	12	12	12	12	12	12	12	12
	Zandvliet 2	12	12	12	12	12	12	12	12	12	12	12	12	12
	Van Eyck 1	15	15	15	15	15	15	15	15	15	15	15	15	15
	Van Eyck 2	15	15	15	15	15	15	15	15	15	15	15	15	15
	Average	14	14	14	14	14	14	14	14	14	14	14	14	14

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

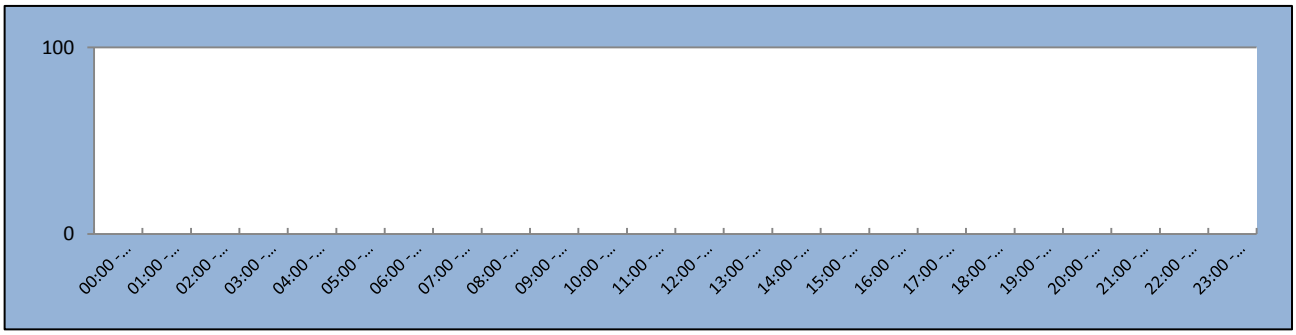
CEE Renewable Power Generation & Forecast



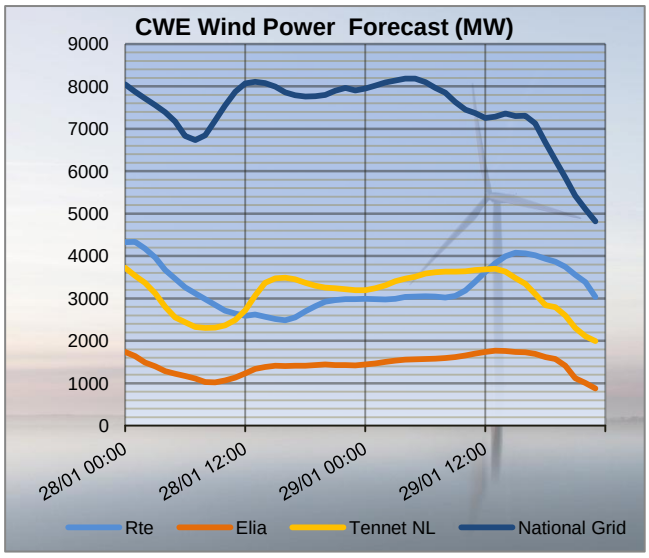


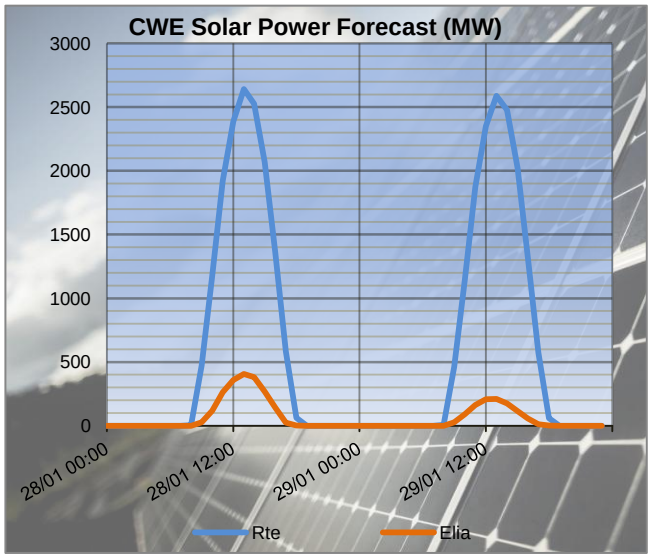
The charts above show the wind and solar generation forecasts for the TSOs in CEE (most significant) from D+1 until D-2 and the realised generation in Germany in real time. Source: Meteologica and 50HzT (RT)

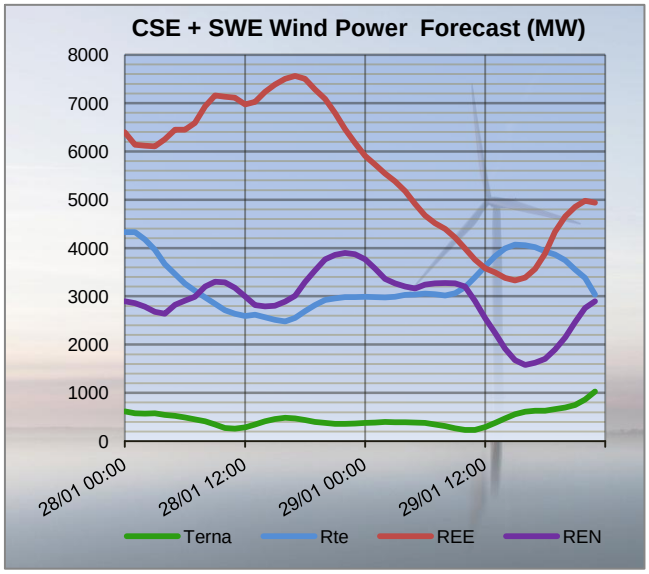
50HzT Preventive Redispatch

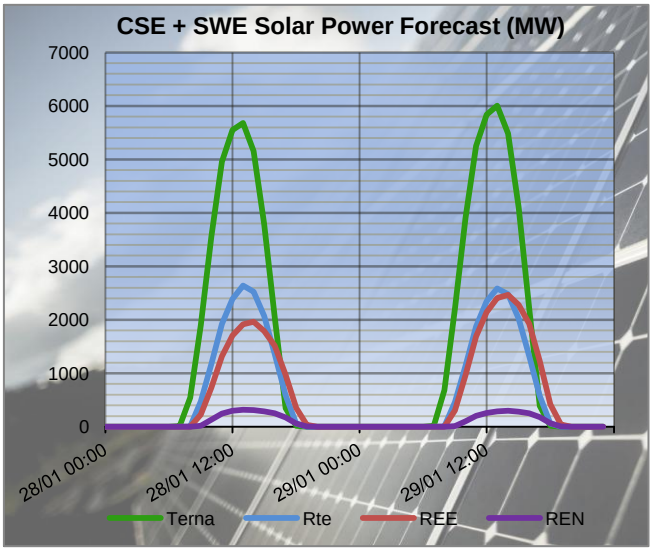


CWE, CSE & SWE Renewable Power Forecast (D-1 and D-2)









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	-309	-221	88	-290	-235	55	55	70	15	75	59	-16
FR	BE	MONT ST MARTIN	AUBANGE	-134	-62	72	-130	-67	63	5	37	32	4	20	16
FR	BE	MOULAINE	AUBANGE	-117	-49	68	-114	-54	60	17	48	31	16	32	16
FR	BE	AVELIN	AVELGEM	-52	-98	-46	21	-82	-103	458	421	-37	413	328	-85
FR	BE	MASTAING	AVELGEM	47	7	-40	132	54	-78	357	318	-39	341	275	-66
FR	BE	CHOOZ	MONCEAU	58	52	-6	79	66	-13	155	158	3	164	150	-14
FR	DE	MUHLBACH	EICHSTETTEN	286	402	116	171	312	141	288	440	152	204	384	180
FR	DE	VOGELGRUN	EICHSTETTEN	10	43	33	-1	51	52	44	84	40	62	88	26
FR	DE	ST AVOLD	ENSDORF	0	0	0	0	0	0	0	0	0	0	0	0
FR	DE	VIGY	ENSDORF 1	314	257	-57	234	222	-12	571	522	-49	574	525	-49
FR	DE	VIGY	ENSDORF 2	-249	-286	-37	-336	-326	10	234	199	-35	220	192	-28

				17:30			19:30			23:30		
		Node 1	Node 2	DACF	Merge	Delta	DACF	Merge	Delta	DACF	Merge	Delta
FR	BE	LONNY	ACHENE	122	111	-11	-205	-230	-25	-94	-161	-67
FR	BE	MONT ST MARTIN	AUBANGE	-41	-21	20	-107	-72	35	-126	-60	66
FR	BE	MOULAINE	AUBANGE	-26	-7	19	-91	-57	34	-109	-46	63
FR	BE	AVELIN	AVELGEM	655	649	-6	79	104	25	194	80	-114
FR	BE	MASTAING	AVELGEM	426	402	-24	190	192	2	241	158	-83
FR	BE	CHOOZ	MONCEAU	189	165	-24	146	122	-24	138	112	-26
FR	DE	MUHLBACH	EICHSTETTEN	275	565	290	177	416	239	265	412	147
FR	DE	VOGELGRUN	EICHSTETTEN	87	135	48	20	70	50	13	69	56
FR	DE	ST AVOLD	ENSDORF	0	0	0	0	0	0	0	0	0
FR	DE	VIGY	ENSDORF 1	633	591	-42	411	401	-10	315	331	16
FR	DE	VIGY	ENSDORF 2	106	88	-18	42	55	13	3	42	39

				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	325	293	-32	249	204	-45	252	220	-32	119	153	34
FR	CH	MAMBELIN	BASSECOURT	-57	-8	49	-115	-57	58	-71	-18	53	-94	-32	62
FR	CH	SIERENTZ	BASSECOURT	473	461	-12	441	447	6	365	379	14	353	347	-6
FR	CH	BOIS TOLLOT	ROMANEL	220	132	-88	155	52	-103	162	96	-66	158	168	10
FR	CH	SIERENTZ	LAUFENBURG	276	367	91	303	369	66	211	277	66	98	219	121
FR	CH	CORNIER	RIDDES	-3	19	22	-16	16	32	-4	36	40	3	46	43
FR	CH	CORNIER	ST TRIPHON	-28	-25	3	-55	-42	13	-39	-8	31	-21	2	23
FR	CH	PRESSY	VALLORCINES	-101	-118	-17	-124	-109	15	-107	-78	29	-90	-61	29
FR	CH	BOIS TOLLOT	VERBOIS	147	156	9	107	140	33	136	176	40	173	155	-18
FR	CH	GENISSIAT	VERBOIS	179	165	-14	154	152	-2	154	162	8	176	167	-9
FR	CH	GENISSIAT	VERBOIS	179	165	-14	154	152	-2	154	162	8	176	167	-9
FR	IT	ALBERTVILLE	RONDISSONE	841	762	-79	880	773	-107	921	792	-129	882	771	-111
FR	IT	ALBERTVILLE	RONDISSONE	917	812	-105	977	837	-140	1013	851	-162	975	836	-139
FR	IT	MENTON	CAMPOROSSO	250	207	-43	146	191	45	142	196	54	143	194	51
FR	IT	VILLARODIN	VENAUS	457	516	59	566	586	20	798	805	7	746	780	34

				17:30			19:30			23:30		
		Node 1	Node 2	DACF	Merge	Delta	DACF	Merge	Delta	DACF	Merge	Delta
FR	CH	SIERENTZ	ASPHARD	236	272	36	198	183	-15	249	233	-16
FR	CH	MAMBELIN	BASSECOURT	-67	31	98	-127	-46	81	-108	-43	65
FR	CH	SIERENTZ	BASSECOURT	322	305	-17	359	332	-27	423	430	7
FR	CH	BOIS TOLLOT	ROMANEL	108	-106	-214	37	-131	-168	180	107	-73
FR	CH	SIERENTZ	LAUFENBURG	157	277	120	129	253	124	234	318	84
FR	CH	CORNIER	RIDDES	-9	19	28	-20	16	36	-20	28	48
FR	CH	CORNIER	ST TRIPHON	-39	-13	26	-42	-10	32	-66	-26	40
FR	CH	PRESSY	VALLORCINES	-127	-95	32	-117	-88	29	-140	-99	41
FR	CH	BOIS TOLLOT	VERBOIS	162	207	45	173	208	35	125	175	50
FR	CH	GENISSIAT	VERBOIS	161	144	-17	156	141	-15	158	174	16
FR	CH	GENISSIAT	VERBOIS	161	144	-17	156	141	-15	158	174	16
FR	IT	ALBERTVILLE	RONDISSONE	1023	886	-137	973	939	-34	835	824	-11
FR	IT	ALBERTVILLE	RONDISSONE	1124	958	-166	1084	554	-530	922	387	-535
FR	IT	MENTON	CAMPOROSSO	147	208	61	152	205	53	143	200	57
FR	IT	VILLARODIN	VENAUS	706	687	-19	947	1084	137	738	910	172

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	37	2448	42
	Doel - Mercator (51)	2239	19	2239	27
	Doel - Mercator (52)	2239	19	2239	27
	Doel - Mercator (54)	2448	19	2448	27
	Doel - Zandvliet (25)	2349	23	2349	12
	Mercator - Horta (73)	2569	10	2569	17
	Courcelles - Gramme (31)	2283	44	2349	49
	Mercator - Rodenhuize/Horta (74)	2259	10	2349	19
RTE	Attaques - Warande 2	3780	50	3780	52
	Avelin - Gavrelle	2622	6	2622	20
	Avelin - Warande	3458	21	3458	16
	Lonny - Seuil	4149	15	4149	19
	Mandarins - Warande 1	3780	48	3780	49
	Muhlbach - Scheer	2598	21	2598	20
	Revigny - Vigy	2596	16	2596	19
	Warande - Weppes	3458	25	3458	21

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	36
		Hagenwerder - Mikulowa (567)	2520	33	2520	32
		Hagenwerder - Mikulowa (568)	2520	33	2520	32
		Remptendorf - Redwitz (413)	3440	52	3394	57
		Remptendorf - Redwitz (414)	3440	52	3394	57
		Röhrsdorf - Hradec (445)	2520	54	2520	51
		Röhrsdorf - Hradec (446)	2520	54	2520	51
		Vieselbach - Mecklar (449-1)	2520	29	2520	34
		Wolmirstedt - Helmstedt (491-1)	2400	19	2400	23
		Wolmirstedt - Helmstedt (492-2)	2400	19	2400	23
	220 kV	Vierraden - Krajnik (507)	1325	0	1316	0
		Vierraden - Krajnik (508)	1325	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	1	1
		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	
50HzT / CEPS	22:00-23:00	380	Röhrsdorf	Hradec	446	109%	380	Röhrsdorf	PSTs	441	22:30
		Preventive action: Decrease taps on Hradec PSTs solve the constraint									

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	
TenneT NL	11:00-14:00	380	Lelystad	Diemen	Axis	102%	380	Lelystad	Diemen	Remaining	12:30
		Preventive action : 2 nodes in Ens +9 taps on Gronau PST and the wind reduction in Germany in Real Time solve the constraint									
TenneT NL	11:00-14:00	380	Lelystad	Ens	Axis	108%	380	Lelystad	Ens	Remaining	11:30
		Preventive action : 2 nodes in Ens +9 taps on Gronau PST and the wind reduction in Germany in Real Time solve the constraint									
TenneT DE / Amprion	00:00-24:00	380	Hanekenfahr	Dorpen West		134%	380	Dorpen West	Niederlangen		00:30
		Preventive action : +9 taps on Gronau PST, 3 nodes topology in Hanekenfahr (DOPT information) -> 109% then wind reduction (decision in Real Time)									

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 constraints 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): **04:30**
- Peak period (07:00 – 23:00): **17:30**

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 : **132 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 6 in preventive

Peak:

- SI ➔ IT physical flow adapted to the target flow : **800 MW**
- Mendrisio-Cagno flow adapted to the schedule : **196 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	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	47	2370	56
		Albertville - Rondissone 2	2370	50	2370	60
		Bulciago - Soazza	2300	28	2300	38
		Cagno - Mendrisio	855	26	855	34
		Musignano - Lavorgo	2270	48	2270	56
		Redipuglia - Divaca	2450	37	2450	39
		Robbia - San Fiorano	2530	38	2530	49
		Robbia - Gorlago	2530	38	2530	47
		Venaus - Villarodin	2715	27	2715	36
	220 kV	Airolo - Ponte	900	0	900	0
		Lienz - Soverzene	704	44	704	43
		Menton - Campo Rosso	1165	42	1165	44
		Padriciano - Divaca	960	42	960	38
		Riddes - Avise	1010	25	1010	19
		Riddes - Valpelline	1010	30	1010	41
		Serra - Pallanzeno	900	42	900	52

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	2247	3092	124	792
	Compensation ratio (calculated from NTC)	41%	47%	4%	8%
	Pentalateral impact on physical flows	-31%	-52%	-4%	-14%
Peak	Initial physical flows on adapted base case	2655	3837	123	801
	Compensation ratio (calculated from NTC)	41%	47%	4%	8%
	Pentalateral impact on physical flows	-26%	-56%	-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	La Coche	N-2	107% (20')	380	Albertville	Longefan	
		Preventive action: Change tap position to tap 6 on La Praz PST-> 98% remaining on the line. **Curative action:** Change tap position to tap 25 on La Praz PST -> 97 remaining on the line								
	Rte / Terna	380	Albertville	Grande Ile	N-2	99% (1')	380	Passy	Pressy	
		Preventive action: 2 nodes in Riddes (agreed by Swissgrid, RTE will have to call close to real time to ask for the topological change) **Curative action:** 2-node topology in Pressy and change tap position on La Praz PST to tap 16.								

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		Albertville	La Coche	N-1	111% (1')	220	Albertville	Longefan	
						95% (5')	380/220	La Praz	Transformer	
		Preventive action: Change tap position to tap 10 on La Praz PST-> 99% of the 10' rating remaining for the line and 95% of the 20' rating remaining for the transformer. **Curative action:** Change tap position to tap 28 on La Praz PST -> 99 % remaining on the line								
	Rte / Terna	380	Albertville	Rondissone	N-2	103% (20')	380	La Praz	PST	
		Curative action: An automatic device will change tap position to tap 4 -> 99% remaining.								
	Rte / Terna	380	Albertville	Grande Ile	N-2	99% (1')	380	Passy	Pressy	
		Curative action: 2-node topology in Pressy substation and change tap position to tap 17 on La Praz PST -> 97% 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)	6	400
Rondissone 1 (1/33)	33	762
Rondissone 2 (1/33)	33	816
Camporosso (-32/32)	-6	209
Lienz (-32/32)	7	127
Padriciano (1/33)	7	165
Divaca (-32/32 each)	14	633

PST	Peak	
	Tap position	Physical flow to Italy (MW)
La Praz (1/33)	10	519
Rondissone 1 (1/33)	33	906
Rondissone 2 (1/33)	33	991
Camporosso (-32/32)	-1	220
Lienz (-32/32)	4	125
Padriciano (1/33)	6	148
Divaca (-32/32 each)	18	655

Conclusion

CWE: No critical constraints detected due to implementation of preventive actions (Tennet NL & Amprion) and Wind reduction in Real Time in Germany

CEE: No critical constraints detected.

CSE: Some constraints detected on RTE side. One of them could potentially require a coordination between RTE and Swissgrid.