

# Monthly report



## April 2011

Monthly provisional values as of 26 August 2011

European Network of  
Transmission System Operators  
for Electricity

entsoe

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#### **General remarks and abbreviations used in the tables**

- All values of production and consumption on page 2, 11 and 12 are calculated to represent 100% of the national values.
- UA\_W Ukraine West represents the so-called Burshtyn Island synchronously interconnected with ENTSO-E
- CET Central European Time

Countries	Net generation in GWh								Exchange balance in GWh	Pump in GWh	Consumption	
	Therm. nuclear	Fossil fuels	Hydro prod	Other renew.	of which wind	of which solar	Non identifiable	Total			monthly [GWh]	var. [%]
AT	0	1822	2400	0	0	0	680	4902	869	423	5348	23,2
BA	0	537	461	0	0	0	0	998	-60	0	938	3,0
BE <sup>2</sup>	3965	2321	113	483	134	111	0	6882 <sup>1</sup>	187	135	6934	-2,2
BG	1223	2053	244	38	38	0	0	3558	-881	104	2573	5,5
CH	2321	174	2142	117	5	0	0	4754 <sup>1</sup>	362	189	4927	-3,5
CY	0	337	0	10	10	0	0	347	0	0	347	1,8
CZ	2352	3528	269	273	37	245	0	6422 <sup>1</sup>	-1378	70	4974	-1,7
DE	7648	26893	1433	7996	3599	2434	0	43970 <sup>1</sup>	-91	468	43411	3,2
DK	0	1840	1	938	729	0	0	2779 <sup>1</sup>	-127	0	2652	-2,6
EE	0	696	4	79	22	0	0	779	-142	0	637	0,3
ES	4463	8212	3698	4812	3386	839	26	21211	-1075	297	19839	-2,9
FI	1973	2219	1016	986	34	0	62	6256 <sup>1</sup>	655	0	6911	0,3
FR	32860	2896	4036	1221	675	139	0	41013	-5054	525	35434	-8,3
GB	6088	17129	573	1135	545	0	0	24925	485	298	25112	1,0
GR	0	3002	305	305	250	25	0	3612 <sup>1</sup>	272	18	3866	-1,2
HR	0	333	379	15	12	0	0	727	595	13	1309	-3,5
HU	1090	1606	0	0	0	0	0	2696	639	0	3335	9,3
IE	0	1634	29	241	241	0	15	1919 <sup>1</sup>	128	0	2047	-3,7
IS	0	1	997	363	0	0	0	1361	0	0	1361	-1,1
IT	0	15965	4023	1469	782	247	0	21457	3938	200	25195	0,8
LT	0	157	105	44	30	0	0	306 <sup>1</sup>	546	57	795	3,4
LU	0	236	127	18	4	0	0	381	336	169	548	-3,4
LV	0	77	889	12	5	0	0	978	-415	0	563	-1,2
ME <sup>3</sup>	0	123	237	0	0	0	0	360	-53	0	307	n.a.
MK	0	458	124	0	0	0	0	582	125	0	707	10,3
NI	0	523	1	68	63	0	1	593	105	0	698	-3,5
NL	99	7463	0	637	325	n.a.	0	8199	469	0	8668	-3,5
NO	0	530	7706	109	109	0	0	8345 <sup>1</sup>	1243	243	9345	-7,8
PL <sup>4</sup>	0	11414	257	0	0	0	0	11671 <sup>1</sup>	-398	44	11229	1,3
PT	0	1416	1218	933	702	22	0	3567 <sup>1</sup>	502	54	4015	-2,6
RO	942	2050	1628	129	114	0	0	4749	-385	18	4346	5,7
RS	0	2408	869	0	0	0	0	3277	178	56	3399	-3,9
SE	4972	495	4523	1437	414	0	0	11427 <sup>1</sup>	-557	0	10870	n.a.
SI	498	438	248	0	0	0	0	1184	-190	0	994	6,0
SK	1197	573	281	67	0	16	81	2199 <sup>1</sup>	-47	40	2112	0,3
<b>ENTSO-E</b>	<b>71691</b>	<b>121559</b>	<b>40336</b>	<b>23935</b>	<b>12265</b>	<b>4078</b>	<b>865</b>	<b>258386<sup>1</sup></b>	<b>781</b>	<b>3421</b>	<b>255746</b>	<b>n.a.</b>
UA_W	0	490	11	0	0	0	0	501	-154	0	347	10,9

<sup>1</sup> Including deliveries from industry

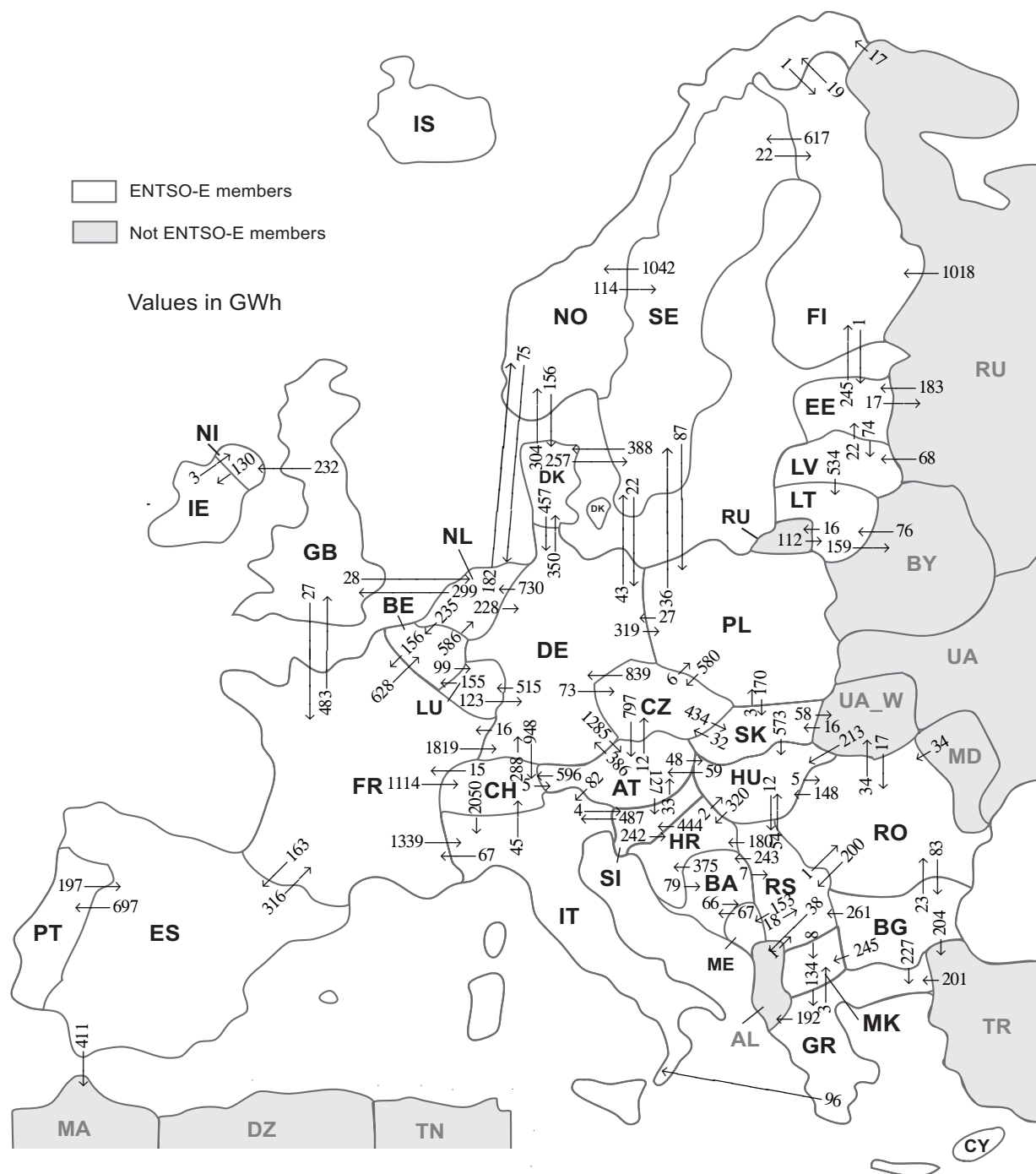
<sup>2</sup> The reported figures are best estimates based on actual measurements and extrapolations.

<sup>3</sup> National monthly values as of April 2010

<sup>4</sup> Operational data

All representativities of the national generation and consumption values on page 2 used to calculate values at a representativity of 100% as stated in the table above:

Countries	Representativities of the national values in %					Consumption
	Thermal nuclear	Fossil fuels	Hydro prod	Other renewable	Non identifiable	
AT	100	100	100	100	100	100
BA	100	100	100	100	100	100
BE	100	100	100	100	100	100
BG	100	100	100	100	100	100
CH	100	100	100	100	100	100
CY	100	100	100	100	100	100
CZ	100	100	100	100	100	100
DE	100	100	100	100	100	100
DK	100	100	100	100	100	100
EE	100	100	100	100	100	100
ES	100	97	100	95	100	98
FI	100	100	100	100	100	100
FR	100	100	100	100	100	100
GB	100	97	89	48	100	100
GR	100	100	100	100	100	100
HR	100	100	100	100	100	100
HU	100	100	100	100	100	100
IE	100	100	100	100	100	100
IS	100	100	100	100	100	100
IT	100	100	100	100	100	100
LT	100	100	100	100	100	100
LU	100	100	100	100	100	100
LV	100	100	100	100	100	100
ME	100	100	100	100	100	100
MK	100	100	100	100	100	100
NI	100	100	100	100	100	100
NL	100	100	100	100	100	100
NO	100	100	100	100	100	100
PL	100	100	100	100	100	100
PT	100	91	100	100	100	97
RO	100	100	100	100	100	100
RS	100	100	100	100	100	100
SE	100	100	100	100	100	100
SI	100	100	100	100	100	100
SK	100	100	100	100	100	100
UA_W	100	100	100	100	100	100



Sum of physical energy flows between ENTSO-E countries: **29452 GWh**

Total physical energy flows: **32537 GWh**

Not ENTSO-E members:

Albania, Belarus, Morocco, Republic of Moldavia, Republic of Turkey, Russia, Ukraine and Ukraine West

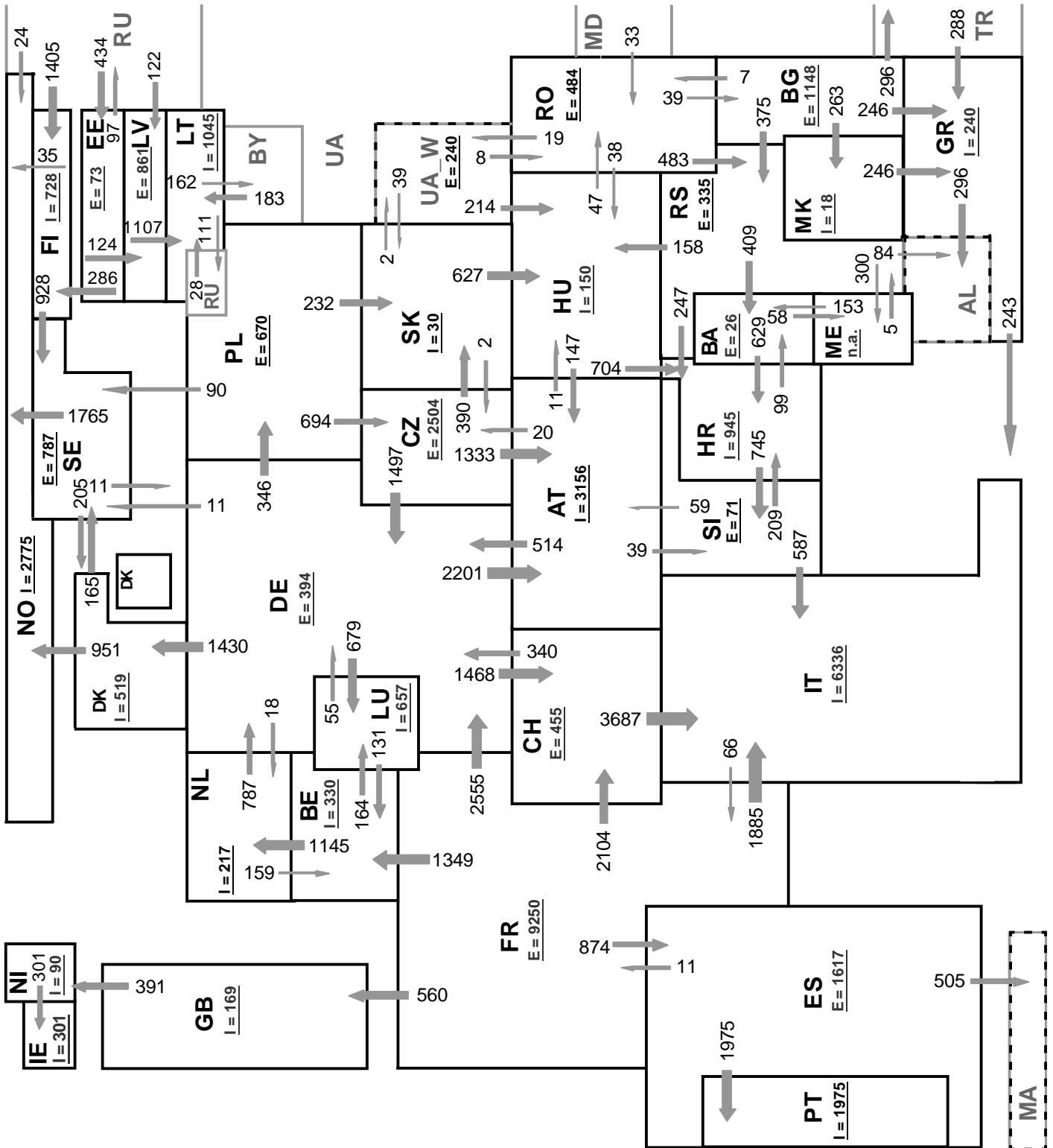
These physical energy flows were measured on the cross-frontier transmission lines ( $\leq 110$  kV) listed in table characteristics of the cross-frontier lines published in the Statistical Yearbook. These values may differ from the official statistics and the exchange balances on page 2.

Outside flows	Inside flows of the countries																																								
	AT	BA	BE	BG	CH	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HR	HU	IE	IT	LT	LU	LV	ME	MK	NL	NO	PL	PT	RO	RS	SE	SI	SK	UA_W	Other III <sup>1</sup>							
AT	-	-	-	-	596	12	386	-	-	-	-	-	-	-	-	48	-	82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	127	-	-				
BA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	375	-	-	-	-	-	-	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
BE	-	-	-	-	-	-	-	-	-	-	-	156	-	-	-	-	-	-	-	99	-	-	-	-	586	-	-	-	-	-	-	-	-	-	-	-	-				
BG	-	-	-	-	-	-	-	-	-	-	-	-	227	-	-	-	-	-	-	-	-	-	245	-	-	-	-	-	23	261	-	-	-	-	-	-	-	204			
CH	5	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	2050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
CZ	797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	434	-				
DE	1285	-	-	-	948	73	-	350	-	-	-	16	-	-	-	-	-	-	-	515	-	-	-	-	730	319	-	-	-	-	-	-	-	-	-	-	-				
DK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
EE	-	-	-	-	-	-	-	-	-	-	245	-	-	-	-	-	-	-	-	-	74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17			
ES	-	-	-	-	-	-	-	-	-	-	-	316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	697	-	-	-	-	-	-	-	-	-	-	411			
FI	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-	-	-	-	-	-	-	-	0			
FR	-	-	628	-	1114	-	1819	-	-	163	-	-	483	-	-	-	-	1339	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
GB	-	-	-	-	-	-	-	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-	-	232	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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HR	-	79	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	444	-	-	-	-			
HU	59	-	-	-	-	-	-	-	-	-	-	-	-	-	320	-	-	-	-	-	-	-	-	-	-	-	-	5	12	-	-	-	-	0	0	-	-				
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LU	-	-	155	-	-	-	123	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175		
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ME	-	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n.a.		
MK	-	-	-	0	-	-	-	-	-	-	-	-	-	134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
NL	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
NO	-	-	235	-	-	-	228	-	-	-	-	-	299	-	-	-	-	-	-	-	-	-	-	-	-	182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
PL	-	-	-	-	-	580	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
PT	-	-	-	-	-	-	-	-	-	197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RO	-	-	-	83	-	-	-	-	-	-	-	-	-	-	-	148	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
RS	-	243	-	0	-	-	-	-	-	-	-	-	-	180	54	-	-	-	-	-	-	153	8	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	38		
SE	-	-	-	-	-	-	22	388	-	-	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SI	33	-	-	-	-	-	-	-	-	-	-	-	-	242	-	-	-	487	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SK	-	-	-	-	-	32	-	-	-	-	-	-	-	-	-	573	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58	
UA_W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	213	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-
Other III <sup>1</sup>	-	-	-	0	-	-	-	-	183	0	1018	-	-	201	-	-	-	-	188	-	68	n.a.	-	-	-	17	0	-	34	1	-	-	-	-	-	-	-	-	-	-	

Other III<sup>1</sup>: Albania, Belarus, Morocco, Republic of Moldavia, Republic of Turkey, Russia and Ukraine

### Sum of the monthly energy flows inside and outside of each country in GWh

	flows inside	flows outside		flows inside	flows outside
AT	2179	1251	IT	4054	116
BA	389	448	LT	722	175
BE	1018	841	LU	614	278
BG	83	960	LV	142	556
CH	2703	2358	ME	219	85
CZ	697	2076	MK	256	134
DE	4189	4279	NI	235	130
DK	894	1018	NL	1419	944
EE	206	336	NO	1564	346
ES	360	1424	PL	415	813
FI	1286	637	PT	697	197
FR	597	5546	RO	80	465
GB	782	287	RS	499	677
GR	562	291	SE	1067	1561
HR	1117	525	SI	575	762
HU	1038	396	SK	620	666
IE	130	3	UA_W	92	246



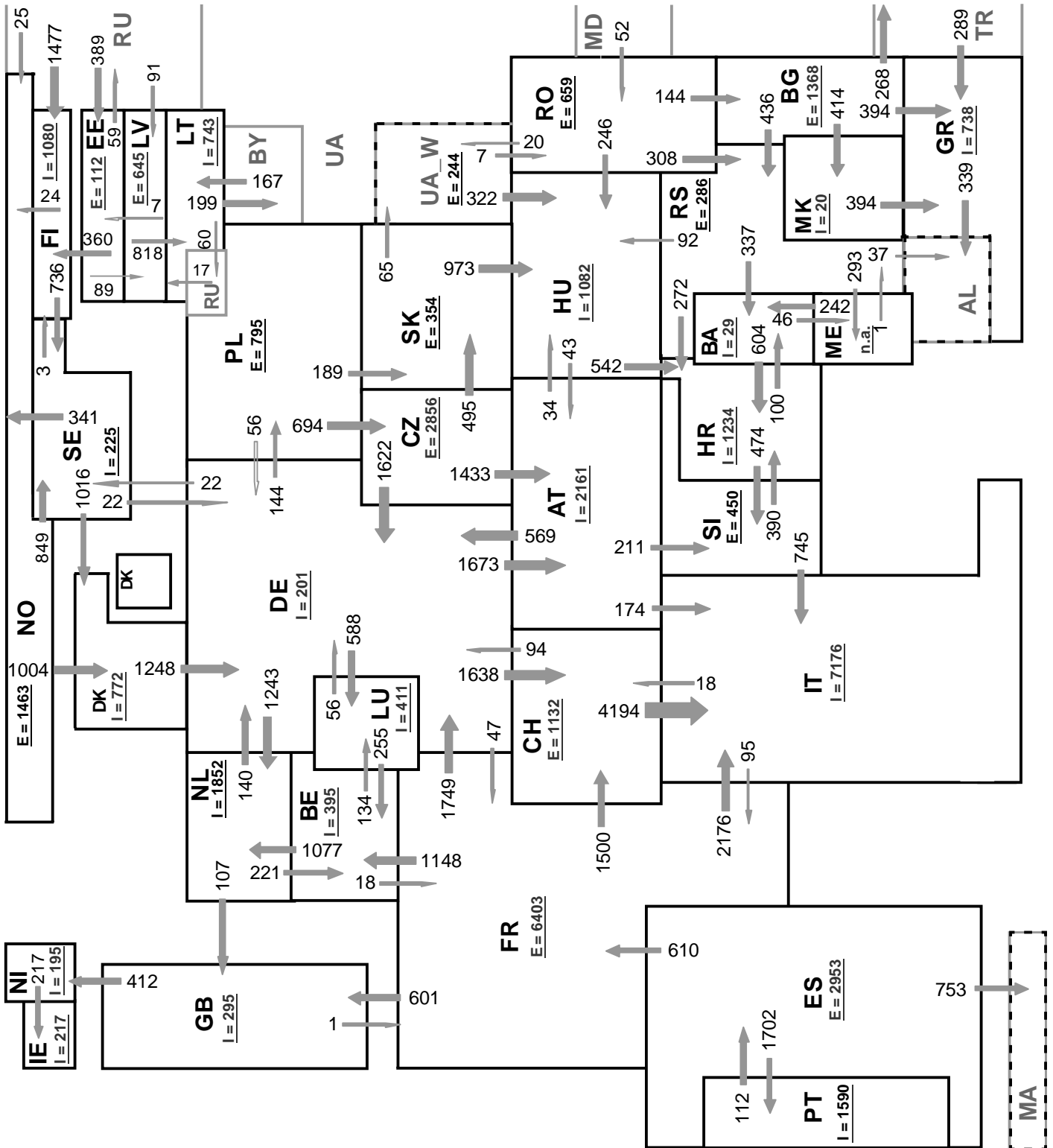
Sum of load flows in MW

ENTSO-E = 42215 MW

Total = 46565 MW

Synchronous operation with ENTSO-E region

I = Import balance  
E = Export balance



Sum of load flows in MW

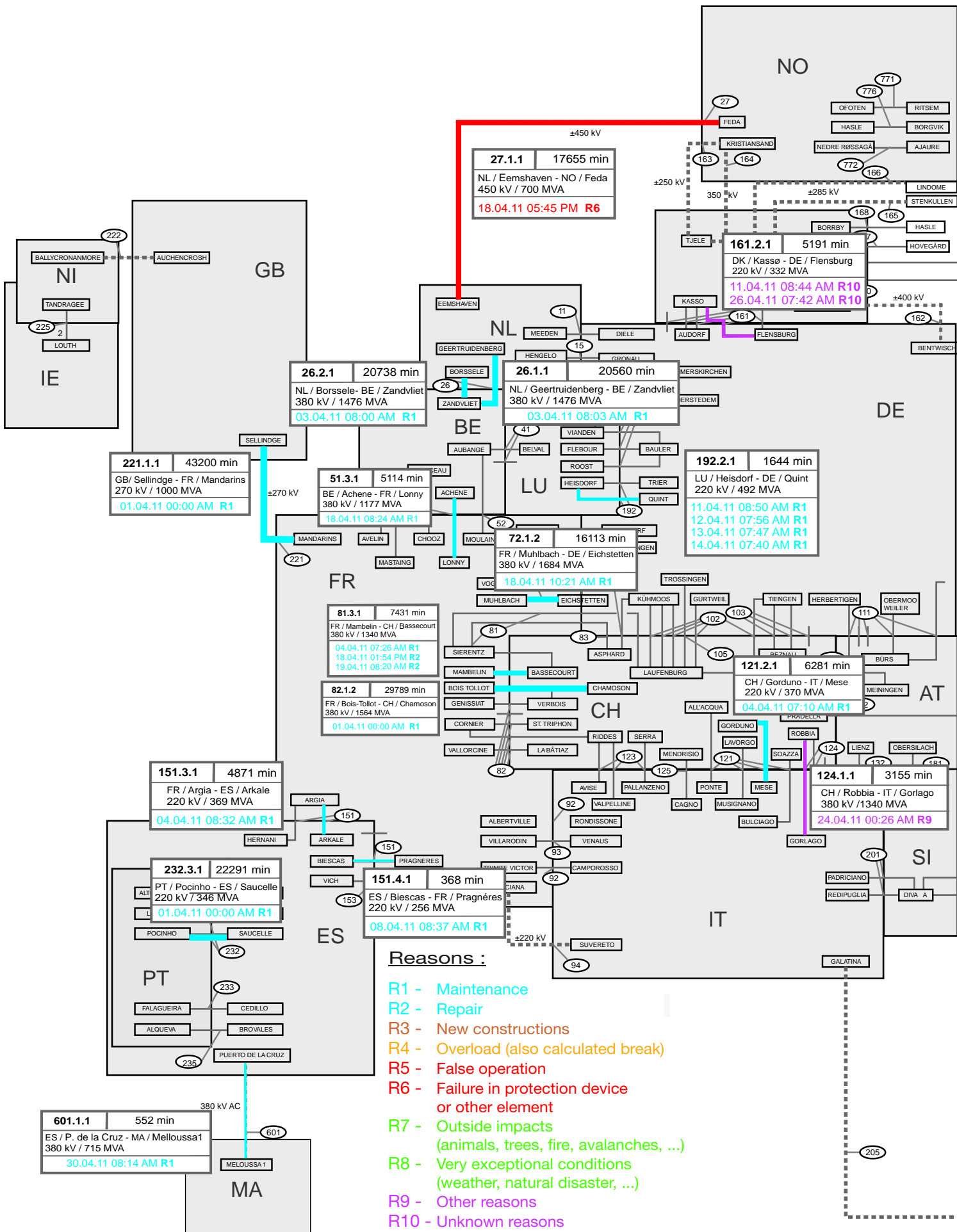
ENTSO-E = 41387 MW

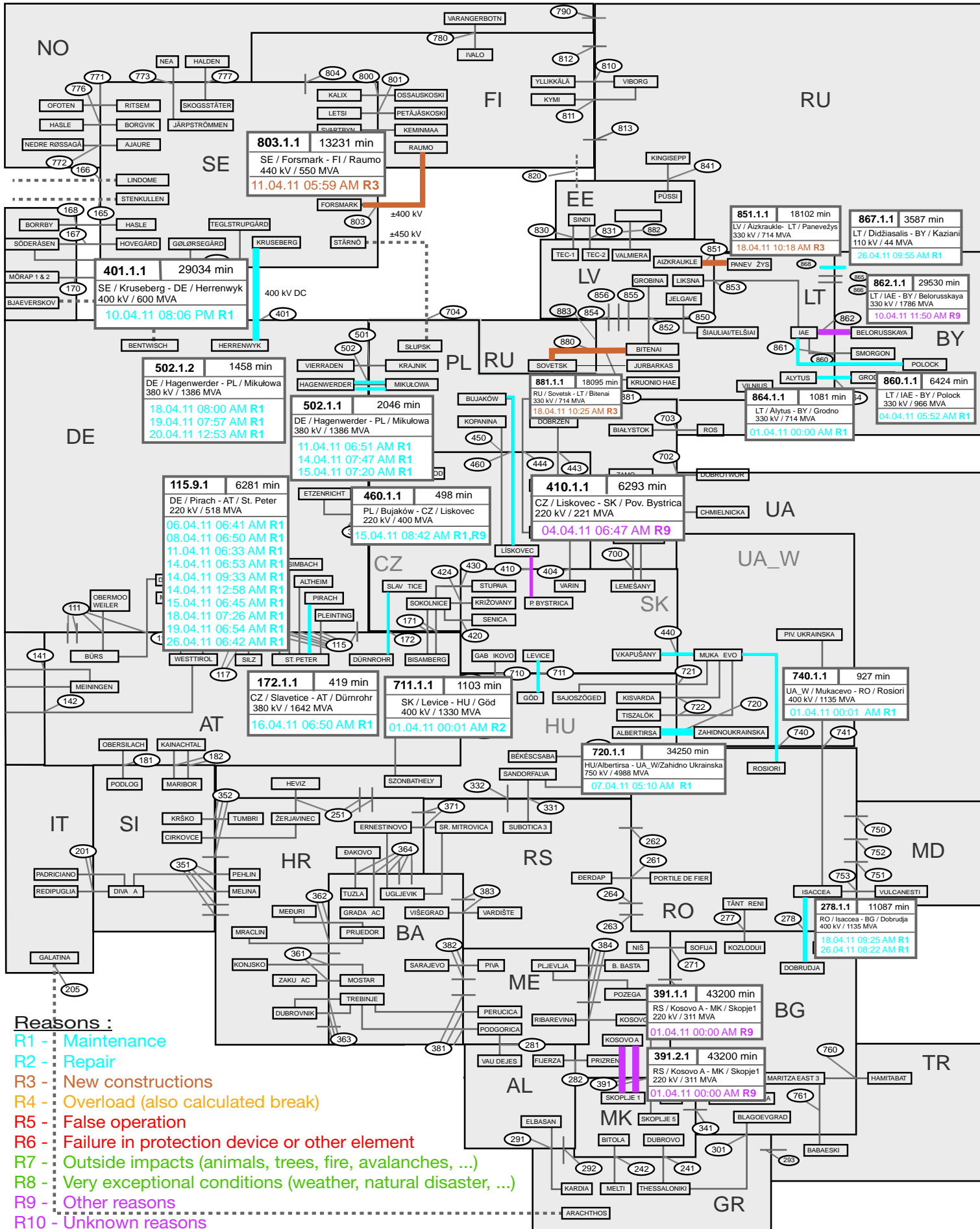
Total = 46112 MW

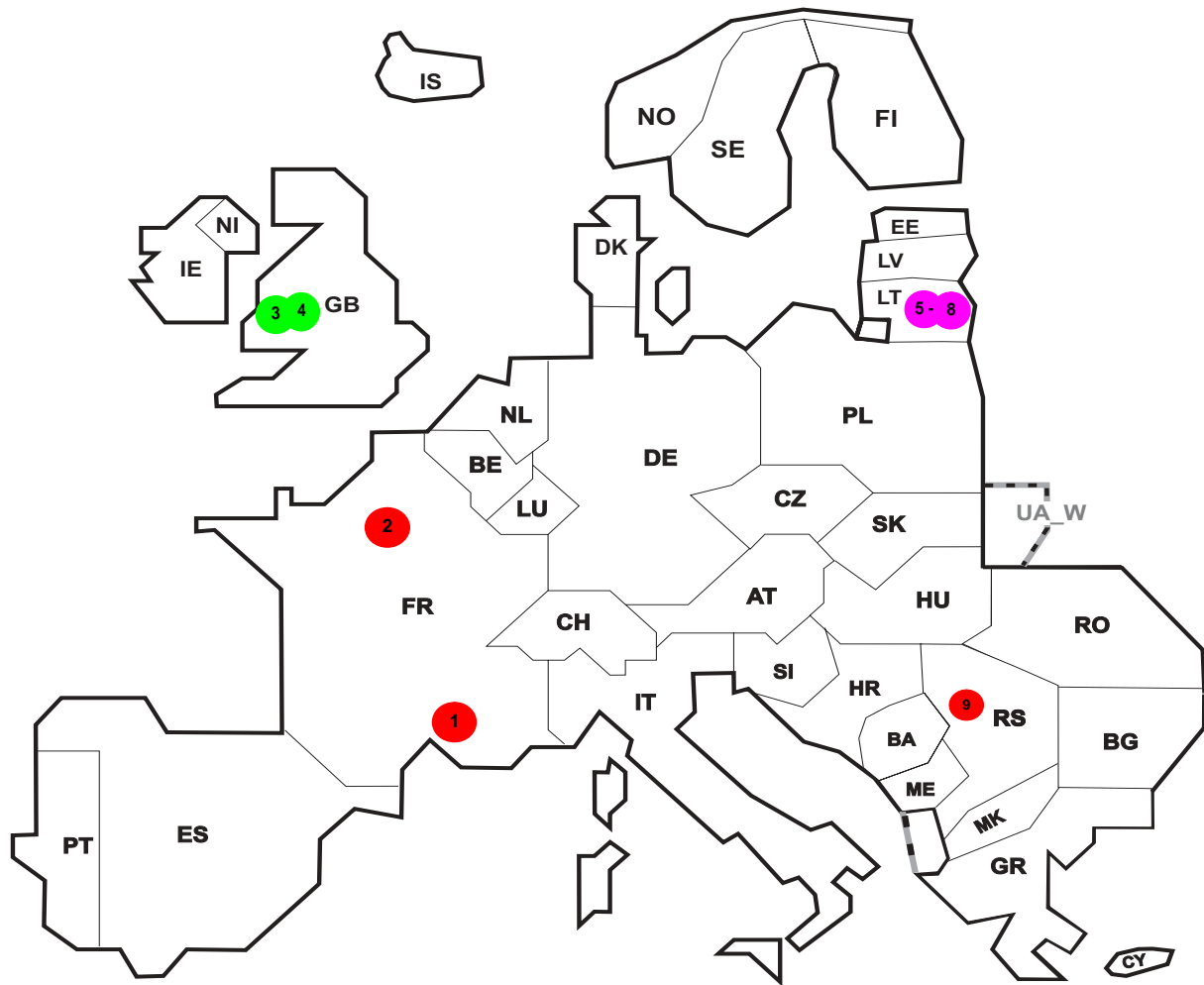
Synchronous operation with ENTSO-E region

I = Import balance  
E = Export balance









Reasons:

- R4 Overload (also calculated break)
- R5 False operation
- R6 Failure in protection device or other element
- R7 Outside impacts (animals, trees, fire, avalanches, ...)
- R8 Very exceptional conditions (weather, natural disaster, ...)
- R9 Other reasons
- R10 Unknown reasons

No	Country	Substation	Reason	Energy not supplied [ MWh ]	Total loss of power [ MW ]	Average interruption duration [ min ]	Equivalent time of interruption <sup>1</sup>
1	FR	Orangerie	R6	46	83	33	0,048
2	FR	Castagnary	R6	10	119	5	0,011
3	GB	Penrhos	R7	1	0	10	0
4	GB	Penrhos	R7	0	1	4	0
5	LT	Lietuvos E	R9	0	120	250	0
6	LT	Lietuvos E	R9	0	40	164	0
7	LT	Panevėžis E	R9	0	7	87	0
8	LT	Lifosa (Nevėžis)	R9	0	30	135	0
9	RS	Obrenovac	R6	0	280	7	0

Information about incidents in other countries are not shown with energy not supply equal zero or unavailable in the database.

<sup>1</sup> ( year [in min] \* energy not supplied ) / consumption last 12 months

## Highest and lowest load on the 20.04.2011 CET of each country

	Highest load MW	variation % <sup>1</sup>	Lowest load MW	variation % <sup>1</sup>	Load representativity %
AT	7993	1,2	4904	-0,7	100
BA	1705	4,2	1000	5,4	100
BE <sup>2</sup>	11289	-1,5	8178	-3,5	100
BG	5121	14,3	3434	13,9	100
CH	8499	-1,5	5691	-4,0	100
CY <sup>3</sup>	628	3,6	343	1,8	100
CZ	8057	-1,7	6260	3,8	100
DE	75060	5,2	50034	-1,1	91
DK	4645	-8,3	2788	-6,4	100
EE	1103	4,4	737	2,5	100
ES	32152	-8,5	22491	18,4	98
FI	10601	1,5	8929	1,3	100
FR	56408	-4,4	41796	-5,8	100
GB	40088	-7,4	24808	-11,3	100
GR	6834	2,2	4363	7,7	100
HR	2372	1,9	1494	12,2	100
HU	4986	1,1	3458	2,4	100
IE	3464	-0,5	2026	-4,3	100
IS	1994	2,7	1851	11,0	100
IT	43138	-0,9	28230	2,1	100
LT	1364	4,2	857	8,6	100
LU	932	-7,4	673	-10,9	100
LV	940	0,0	539	-1,8	100
ME <sup>4</sup>	498	n.a.	333	n.a.	100
MK	1184	19,5	801	32,2	100
NI	1227	-9,2	681	-8,6	100
NL	15236	0,1	9308	0,2	100
NO	13693	-19,1	11386	-13,1	100
PL <sup>5</sup>	19481	3,1	13763	6,6	100
PT	7025	-0,6	4477	-0,2	97
RO	7433	4,9	5000	-2,7	100
RS	5379	1,2	3326	3,5	100
SE	17227	-4,4	12995	-2,2	100
SI	1702	3,0	1194	1,2	100
SK	3623	2,1	2711	1,6	100
<b>ENTSO-E</b>	<b>415549</b>	<b>n.a.</b>	<b>292054</b>	<b>n.a.</b>	
UA_W	797	20,2	471	19,2	100

<sup>1</sup> Variation as compared to corresponding month of the previous year

<sup>2</sup> The reported figures are best estimates based on actual measurements and extrapolations

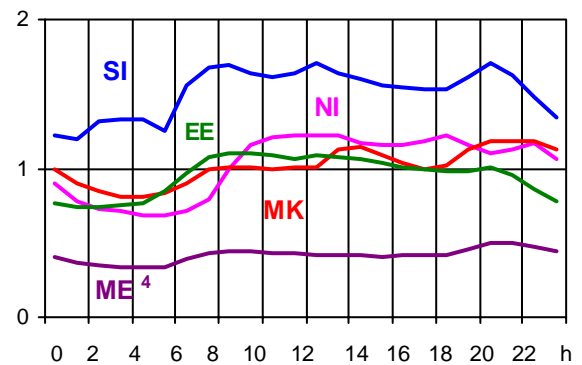
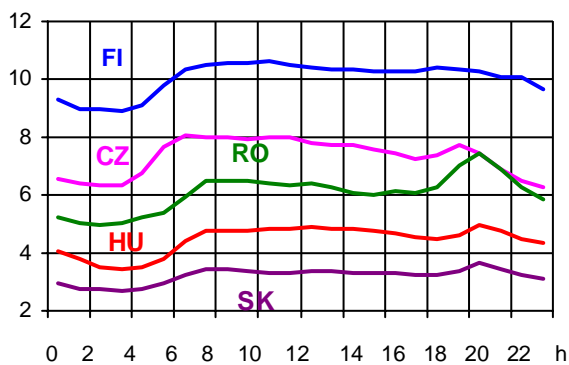
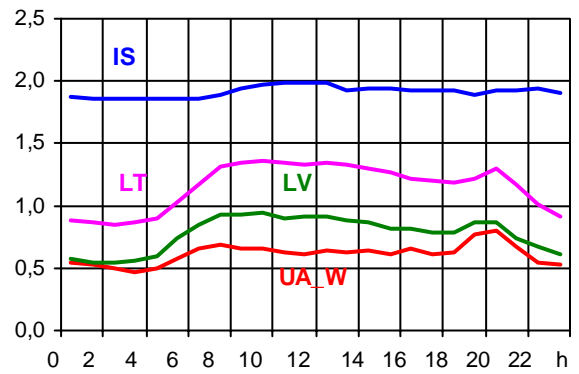
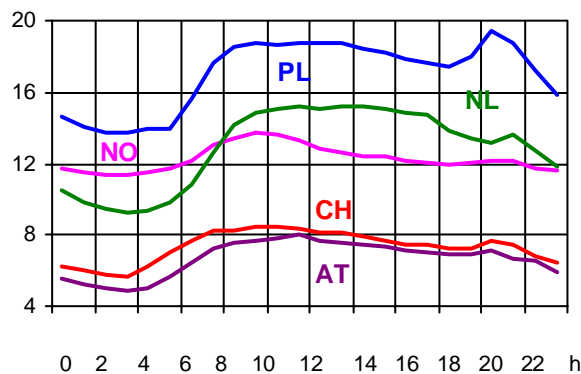
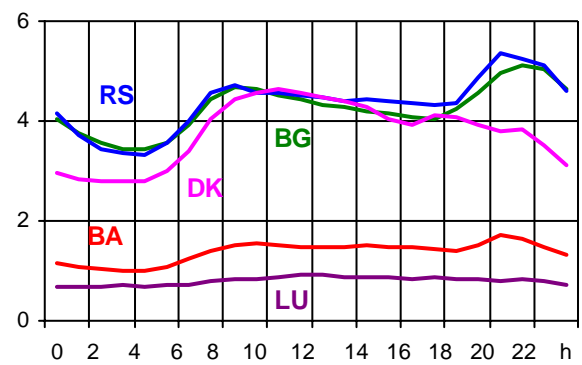
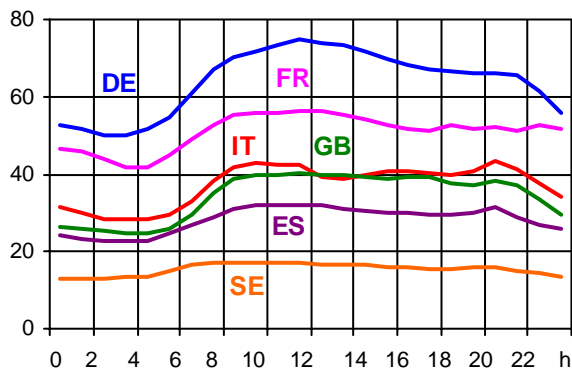
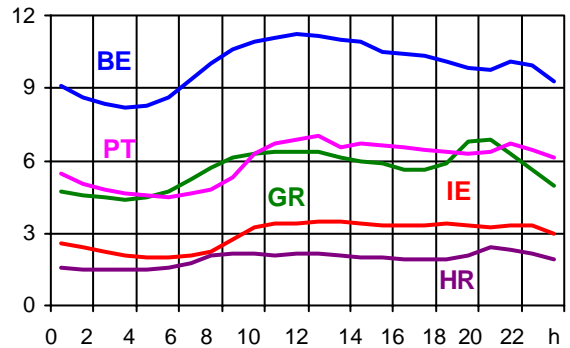
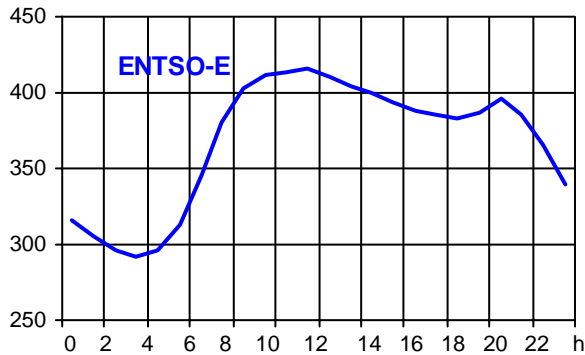
<sup>3</sup> Only highest and lowest load value available

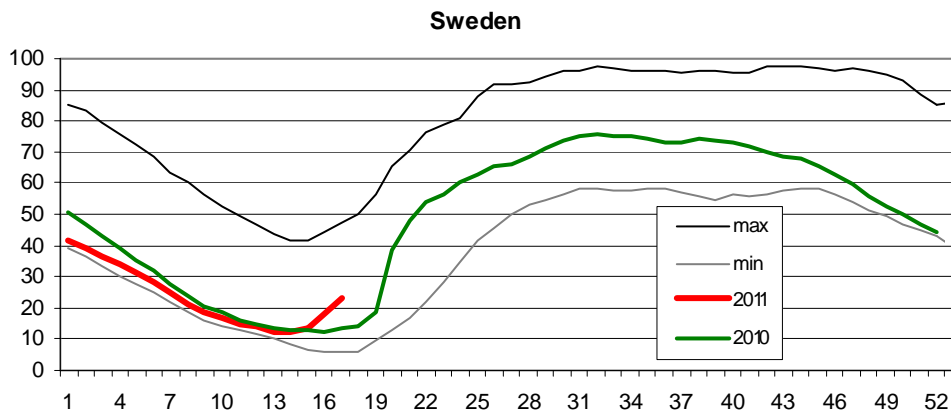
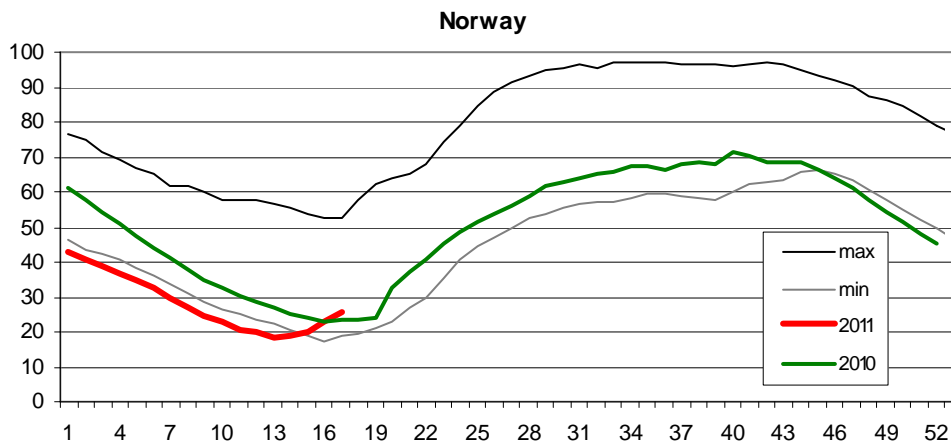
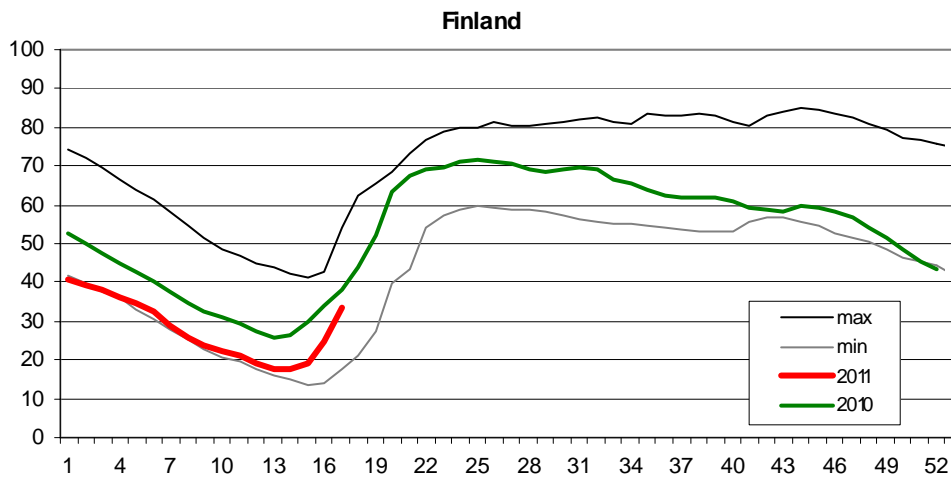
<sup>4</sup> Monthly load values as of 21 April 2010

<sup>5</sup> Operational data

Consumption hourly load curves on 20.04.2011 CET

Values in GW





**Finland:** Reservoir capacity: 5.530 GWh  
Minimum and maximum limits are based on values for the years 1990-2002

**Norway:** Reservoir capacity: 81.729 GWh  
The statistics are supposed to cover 97.1 percent of the total reservoir capacity.  
The total reservoir capacity is 84 147 GWh  
Minimum and maximum limits are based on values for the years 1990-2003

**Sweden:** Reservoir capacity: 33.758 GWh  
Minimum and maximum limits are based on values for the years 1950-2006

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