

Monthly report



November 2011

Monthly provisional values as of 01 March 2012

European Network of
Transmission System Operators
for Electricity



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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 power	Other renew.	of which wind	of which solar	Non identifiable	Total			monthly [GWh]	var. [%]
AT	0	2440	2280	0	0	0	741	5461	982	453	5990	1,5
BA	0	860	225	0	0	0	0	1085	1	0	1086	8,5
BE ²	3735	2978	107	277	177	100	0	7097 ¹	327	138	7286	-5,1
BG	1380	2390	221	50	50	0	0	4041	-834	95	3112	18,1
CH	2361	179	2535	121	5	0	0	5196 ¹	646	120	5722	-1,3
CY	0	341	0	9	9	0	0	350	0	0	350	-4,1
CZ	2447	4621	205	107	31	77	0	7380 ¹	-1550	111	5719	3,2
DE	8005	31667	1396	5843	2963	810	0	46911 ¹	-1261	728	44922	-4,2
DK	0	1929	1	939	730	0	0	2869 ¹	145	0	3014	-5,2
EE	0	941	3	119	36	0	0	1063	-373	0	690	-5,2
ES	4515	10120	2348	4871	3747	504	33	21887	-580	331	20975	-6,9
FI	1980	1915	1242	830	50	0	49	6016 ¹	1231	0	7247	-10,0
FR	33705	7060	3984	1595	919	182	0	46344	-3834	599	41911	-10,3
GB	4361	22067	744	2452	1177	0	0	29624	-160	326	29138	-4,2
GR	0	3645	235	313	241	39	0	4193 ¹	205	46	4352	6,9
HR	0	511	208	19	15	0	0	738	757	21	1474	1,5
HU	1469	1901	0	0	0	0	0	3370	337	0	3707	11,6
IE	0	1644	101	546	546	0	11	2302 ¹	-42	0	2260	-5,8
IS	0	0	1010	401	0	0	0	1411	0	0	1411	-0,6
IT	0	17389	3680	1860	695	733	0	22929	4408	244	27093	-1,9
LT	0	216	85	53	40	0	0	354 ¹	625	80	899	-0,6
LU	0	255	81	16	3	1	0	352	295	0	647	13,3
LV	0	319	83	19	6	0	219	640	0	0	640	-0,9
ME ³	0	86	276	0	0	0	0	362	14	0	376	n.a.
MK	0	404	127	0	0	0	0	531	325	0	856	15,7
NI	729	588	1	140	135	0	0	1458	40	0	1498	83,1
NL	348	9292	0	670	358	n.a.	0	10310	300	0	10610	1,0
NO	0	309	12597	128	128	0	0	13034 ¹	-2009	89	10936	-13,4
PL ⁴	0	12932	126	233	207	0	0	13291 ¹	-509	53	12729	3,7
PT	0	1883	936	1203	972	15	0	4022 ¹	187	97	4112	-5,5
RO	931	3158	674	112	96	0	0	4875	0	4	4871	6,1
RS	0	3093	491	0	0	0	0	3584	-387	61	3136	10,7
SE	3902	496	6040	1536	544	0	0	11974 ¹	-156	0	11818	-14,1
SI	499	447	229	0	0	0	0	1175	-94	0	1081	3,5
SK	1230	559	200	72	0	22	95	2156 ¹	269	60	2365	3,7
ENTSO-E	71597	148635	42471	24534	13880	2483	1148	288385¹	-695	3656	284033	n.a.
UA_W	0	798	2	0	0	0	0	800	-351	0	449	10,9

¹ Including deliveries from industry

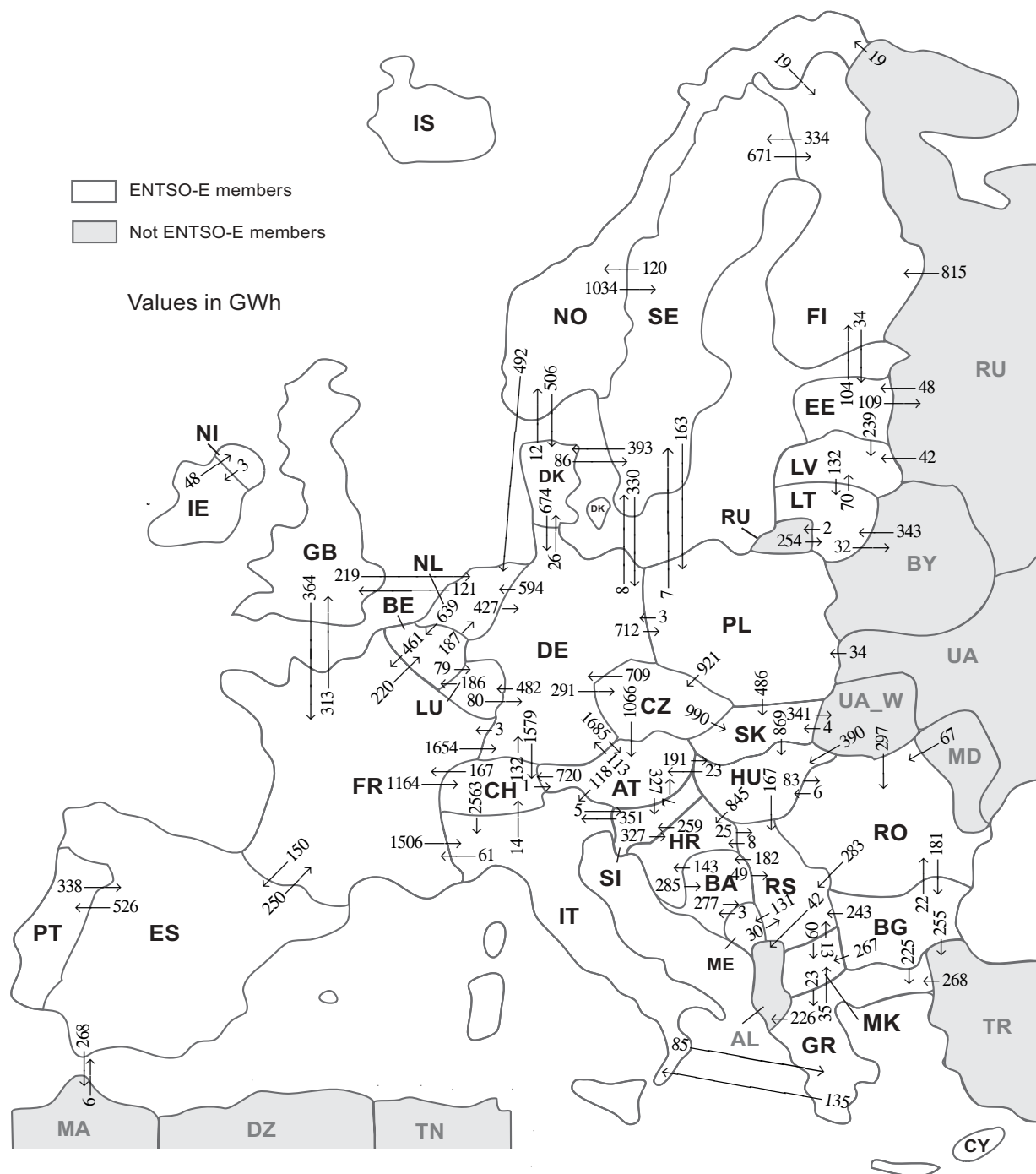
² The reported figures are best estimates based on actual measurements and extrapolations.

³ National monthly values as of November 2010

⁵ 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	100	100	100	100	100
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: **33964 GWh¹**

Total physical energy flows: **37826 GWh¹**

¹ Sum of physical energy flows without exchanges between ME - AL.

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 (≤ 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.

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Overview of the detailed physical energy flows in GWh

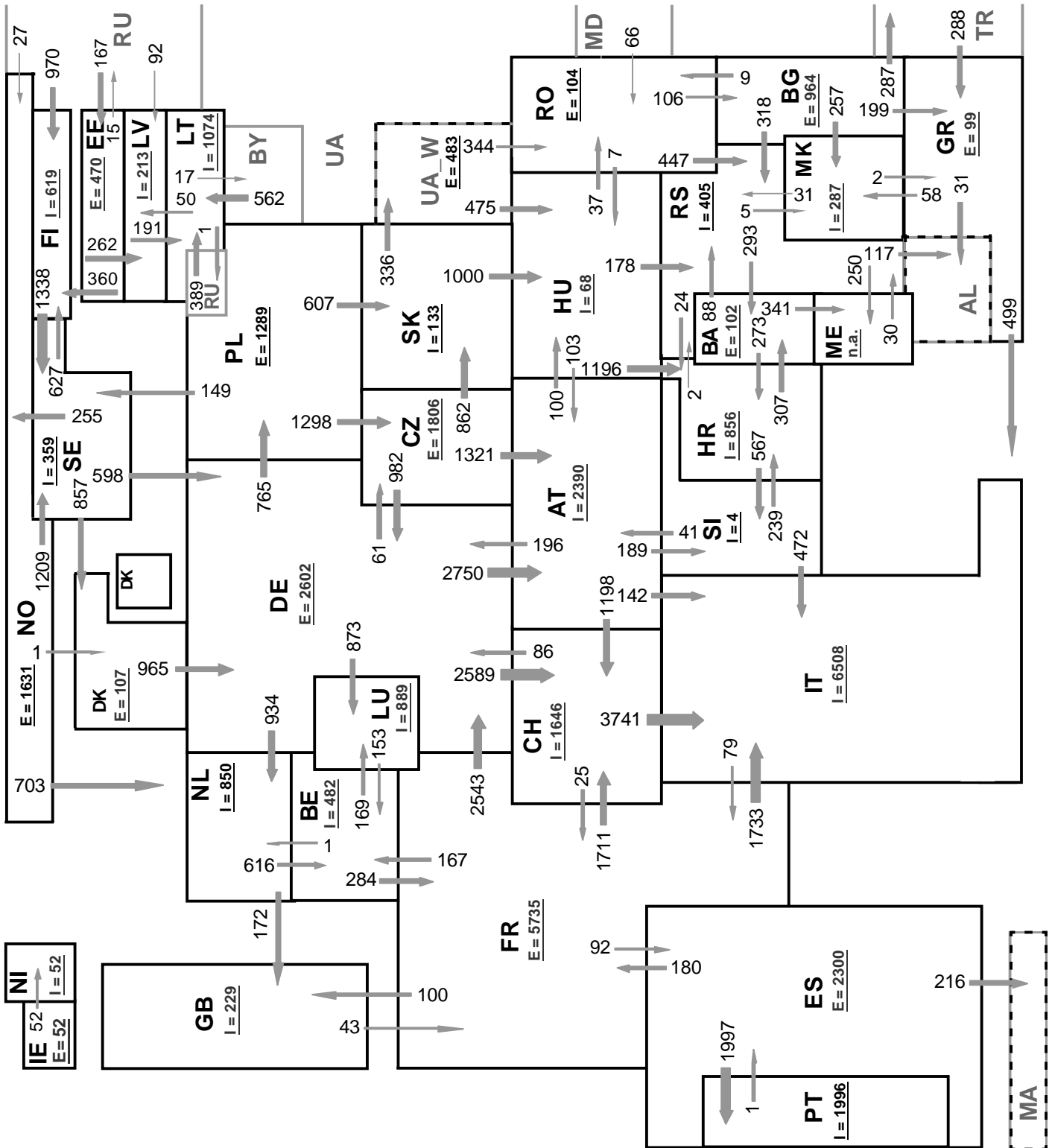
November 2011

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	NI	NL	NO	PL	PT	RO	RS	SE	SI	SK	UA_W	Other III ¹			
AT	-	-	-	-	720	0	113	-	-	-	-	-	-	-	-	191	-	118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	327	-	-
BA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	143	-	-	-	-	-	-	277	-	-	-	-	-	-	-	-	49	-	-	-	-	-	-	
BE	-	-	-	-	-	-	-	-	-	-	-	461	-	-	-	-	-	-	-	79	-	-	-	-	187	-	-	-	-	-	-	-	-	-	-	-	-	
BG	-	-	-	-	-	-	-	-	-	-	-	-	225	-	-	-	-	-	-	-	-	267	-	-	-	-	-	22	243	-	-	-	-	-	-	-	-	255
CH	1	-	-	-	-	132	-	-	-	-	-	167	-	-	-	-	-	2563	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CZ	1066	-	-	-	-	709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	990	-	-	
DE	1685	-	-	-	1579	291	-	26	-	-	-	3	-	-	-	-	-	-	-	482	-	-	-	594	-	712	-	-	-	-	8	-	-	-	-	-	-	
DK	-	-	-	-	-	674	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	86	-	-	-	-	-	-	
EE	-	-	-	-	-	-	-	-	-	-	104	-	-	-	-	-	-	-	-	239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	109
ES	-	-	-	-	-	-	-	-	-	-	-	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	526	-	-	-	-	-	-	-	-	-	268	
FI	-	-	-	-	-	-	-	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	334	-	-	-	-	-	0	
FR	-	-	220	-	1164	-	1654	-	150	-	-	313	-	-	-	-	-	1506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GB	-	-	-	-	-	-	-	-	-	-	-	364	-	-	-	-	-	-	-	-	-	-	-	0	219	-	-	-	-	-	-	-	-	-	-	-	-	-
GR	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	226
HR	-	285	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	25	-	259	-	-	-	-	-	
HU	23	-	-	-	-	-	-	-	-	-	-	-	-	-	845	-	-	-	-	-	-	-	-	-	-	-	83	167	-	-	-	-	0	0	-	-	-	
IE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IT	0	-	-	-	14	-	-	-	-	-	-	61	-	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	
LT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	
LU	-	186	-	-	-	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LV	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	132	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
ME	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n.a.	
MK	-	-	0	-	-	-	-	-	-	-	-	-	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NI	-	-	-	-	-	-	-	-	-	-	-	0	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NL	-	639	-	-	-	427	-	-	-	-	-	121	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-
NO	-	-	-	-	-	-	506	-	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	492	-	-	-	-	-	-	-	-	-	-	-	-	0
PL	-	-	-	-	921	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
PT	-	-	-	-	-	-	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RO	-	-	-	181	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
RS	-	182	-	0	-	-	-	-	-	-	-	-	-	-	8	0	-	-	-	-	-	131	60	-	-	-	-	-	-	-	-	-	-	-	-	-	42	
SE	-	-	-	-	-	330	393	-	671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	163	-	-	-	-	-	-	-	-	-	-	-	-
SI	7	-	-	-	-	-	-	-	-	-	-	-	-	-	327	-	-	351	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SK	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	869	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	341	-
UA_W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-
Other III ¹	-	-	-	0	-	-	-	48	6	815	-	-	268	-	-	-	-	597	-	42	n.a.	-	-	-	19	34	-	67	0	-	-	-	-	-	-	-	-	

Other III¹: 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	2782	1469	IT	4673	165
BA	470	469	LT	729	104
BE	1045	727	LU	561	266
BG	181	1012	LV	351	132
CH	3477	2863	ME	n.a.	n.a.
CZ	1212	2765	MK	362	36
DE	4122	5380	NI	48	3
DK	925	772	NL	1492	1187
EE	82	452	NO	151	2051
ES	494	1044	PL	909	1417
FI	1609	368	PT	526	338
FR	1306	5007	RO	469	470
GB	434	583	RS	810	423
GR	601	396	SE	1469	1677
HR	1323	569	SI	591	685
HU	1456	1118	SK	1480	1210
IE	3	48	UA_W	341	691

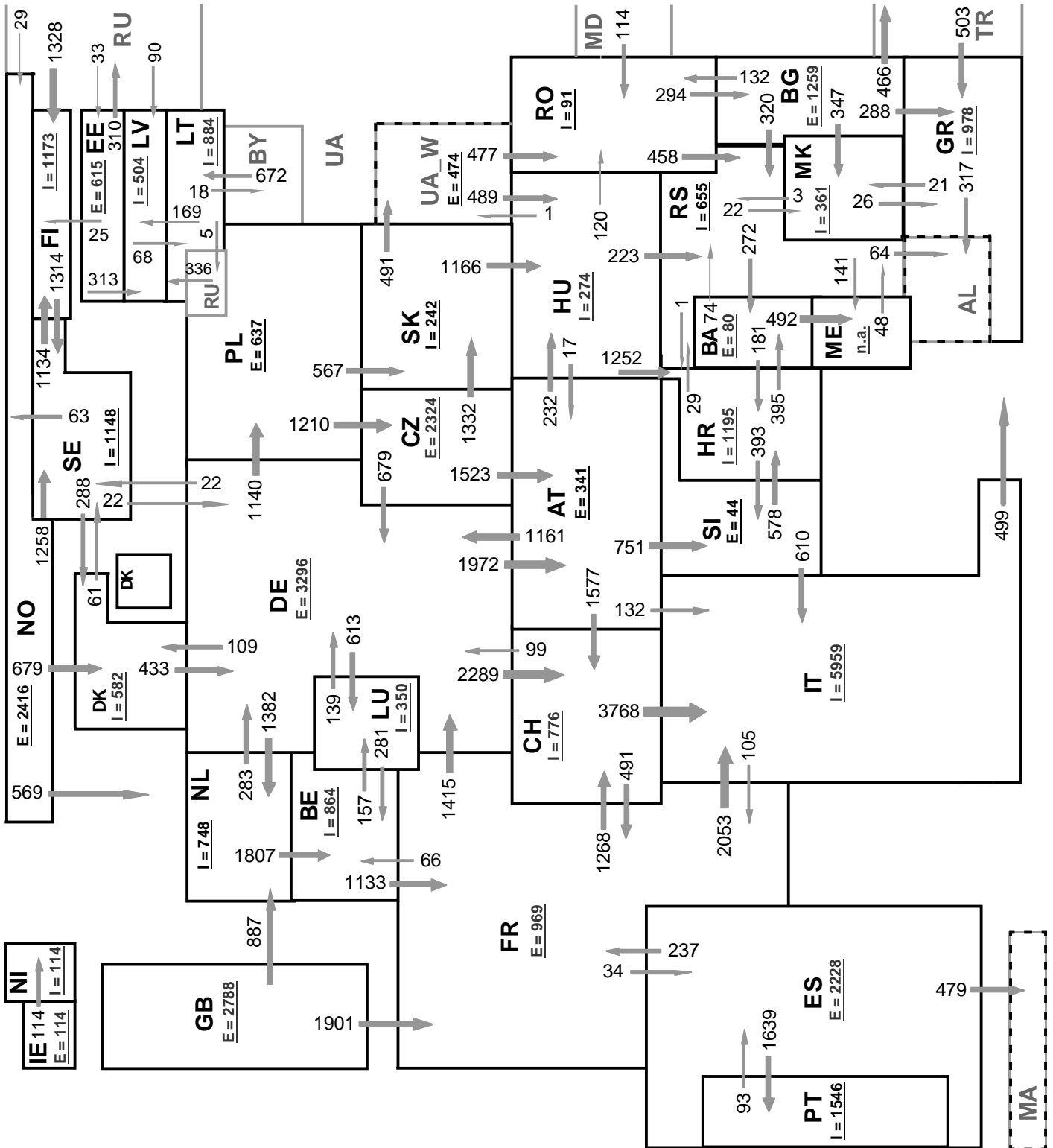


Sum of load flows in MW ENTSO-E = 43756 MW Total = 48156 MW
 (Sum of load flows without data between ME - AL)

Synchronous operation with ENTSO-E region

I = Import balance
E = Export balance

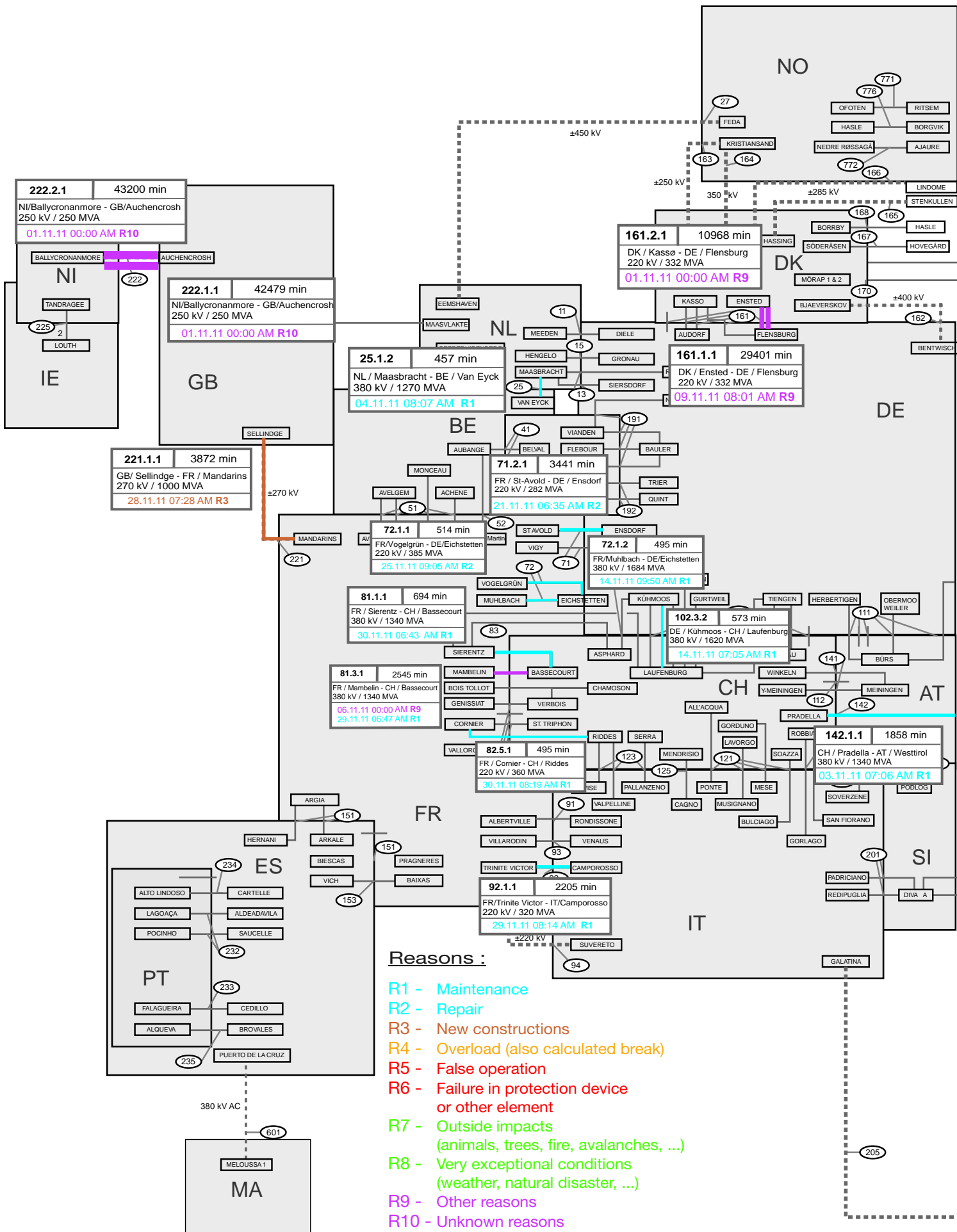
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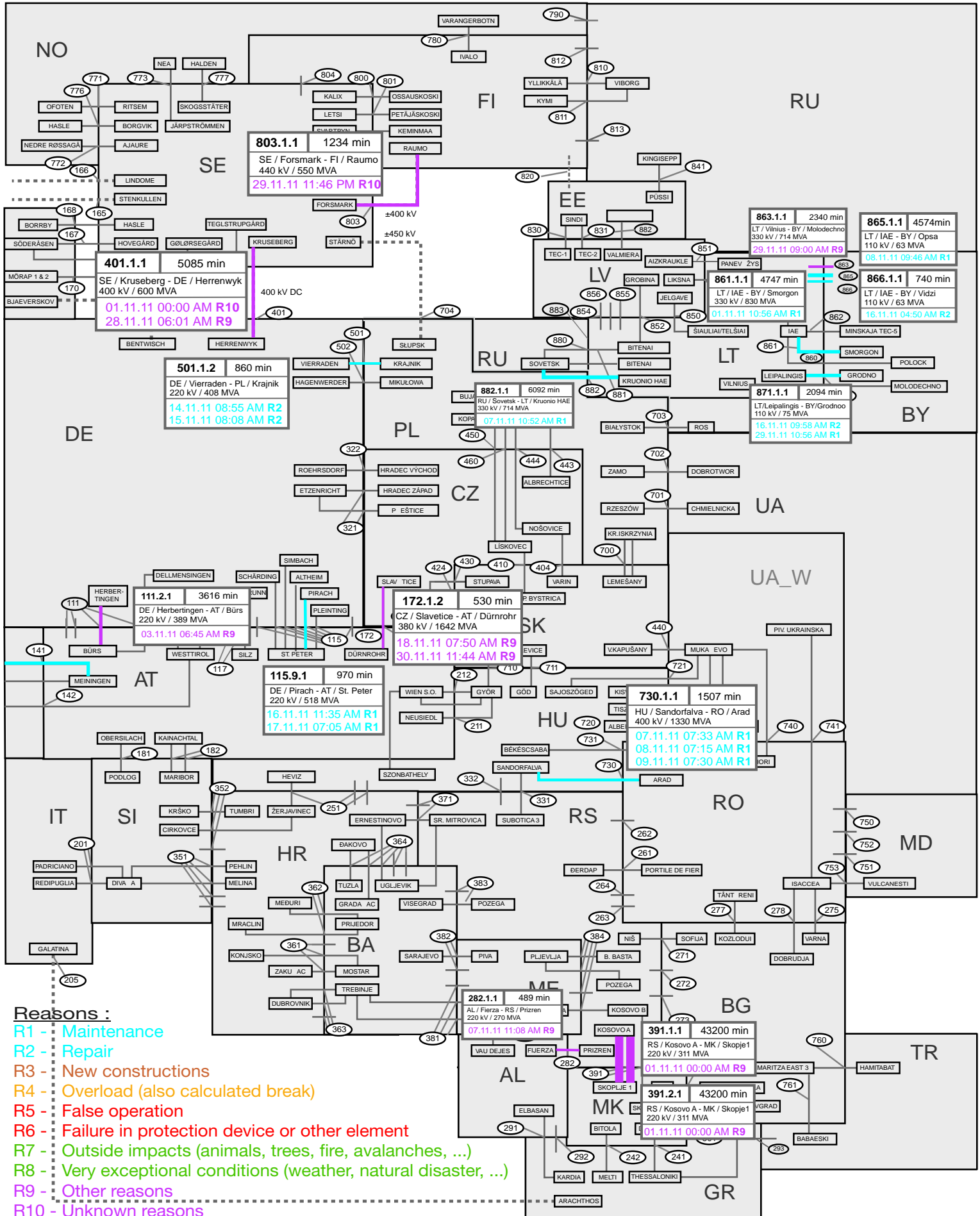


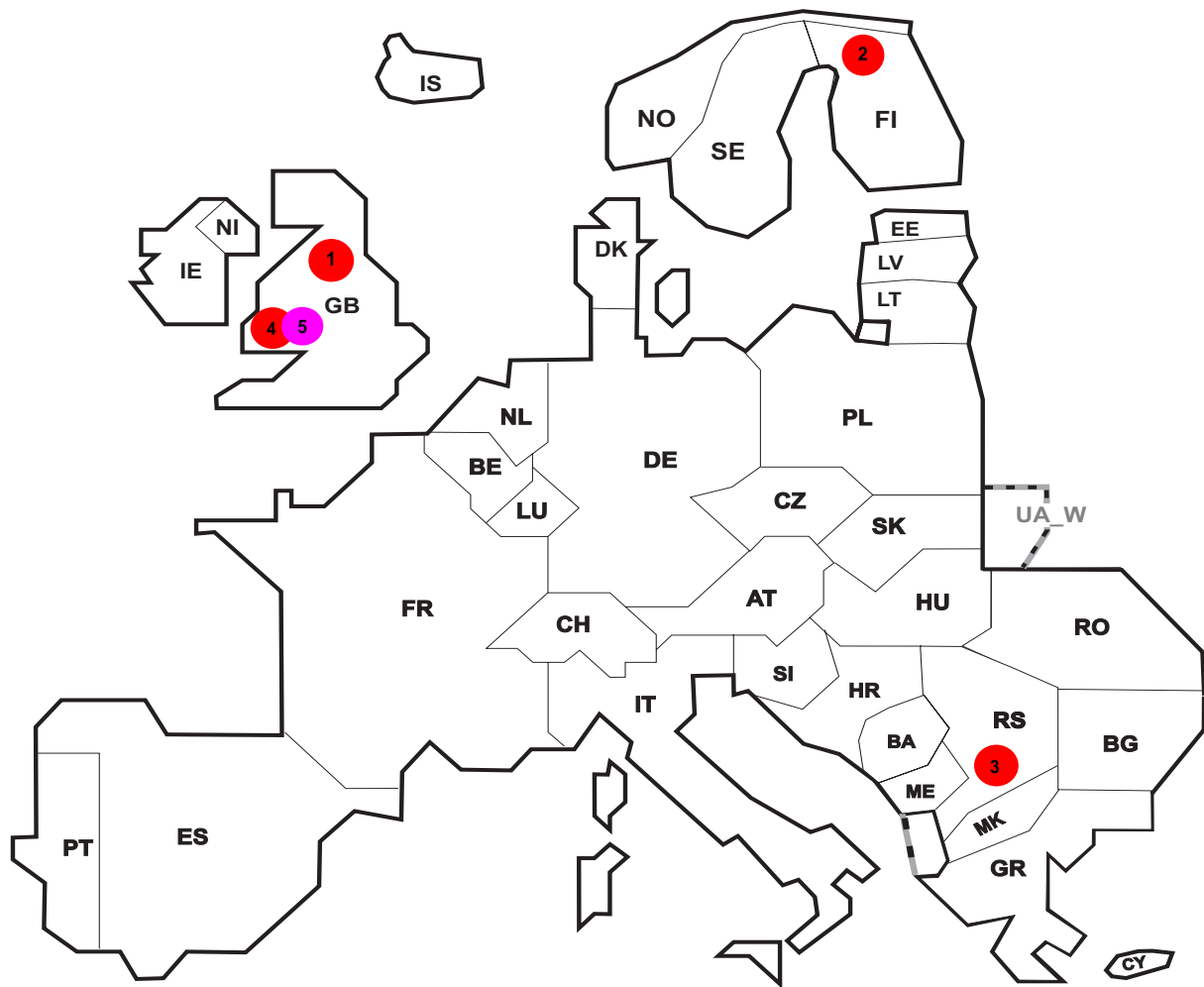
Sum of load flows in MW ENTSO-E = 49146 MW Total = 55679 MW
 (Sum of load flows without data between ME - AL)

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 ¹
1	GB	Aldw arke	R6	774	81	573	1,226
2	FI	Keminmaa	R6	112	110	61	0,686
3	RS	S. Mitrovica 2	R6	50	0	34	0,656
4	GB	Tremorfa	R6	9	3	163	0,014
5	GB	Tremorfa	R9	4	0	559	0,006

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

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

Highest and lowest load on the 16.11.2011 CET of each country

	Highest		Lowest		Load representativity %
	load MW	variation % ¹	load MW	variation % ¹	
AT	9135	6,7	5756	5,6	100
BA	1918	9,7	1138	17,3	100
BE ²	12505	-5,5	8739	-4,1	100
BG	6269	21,3	4076	24,1	99
CH	9748	2,4	6760	0,2	100
CY ³	710	9,1	370	10,3	100
CZ	9356	18,7	7005	16,1	100
DE	80593	1,8	54573	-2,4	91
DK	5633	-2,9	2994	-5,1	100
EE	1188	-4,0	752	-1,4	100
ES	36239	-7,9	22319	-8,2	98
FI	11145	-9,4	8873	-6,9	100
FR	74362	-6,0	52896	-6,3	100
GB	51838	-6,4	26906	-10,0	100
GR	7757	12,3	4564	8,5	100
HR	2666	4,9	1563	2,1	100
HU	5705	2,1	3724	5,6	100
IE	4441	2,7	2311	0,6	100
IS	2060	-0,5	1866	0,8	100
IT	50044	0,6	28722	-0,7	100
LT	1624	1,4	932	4,6	100
LU	971	0,5	695	-2,0	100
LV	1131	3,5	582	3,0	100
ME ⁴	569	n.a.	354	n.a.	100
MK	1414	18,1	924	29,2	100
NI	1556	-3,1	732	-10,3	100
NL	17346	1,3	10066	5,3	100
NO	18596	-6,0	14271	-6,0	100
PL ⁵	22041	4,1	14808	7,1	100
PT	7248	-5,9	4444	-7,4	100
RO	8016	5,6	5599	7,9	100
RS	6378	11,2	4331	29,4	100
SE	20820	-7,5	15166	-9,4	100
SI	1885	8,3	1156	-3,0	100
SK	3973	11,9	2999	8,0	100
ENTSO-E	493159	n.a.	325859	n.a.	
UA_W	987	12,3	652	19,4	100

¹ Variation as compared to corresponding month of the previous year

² The reported figures are best estimates based on actual measurements and extrapolations.

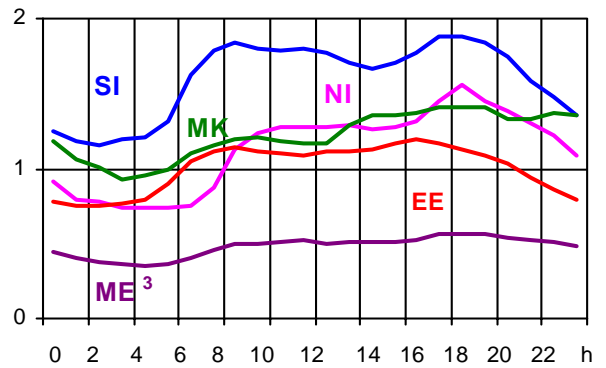
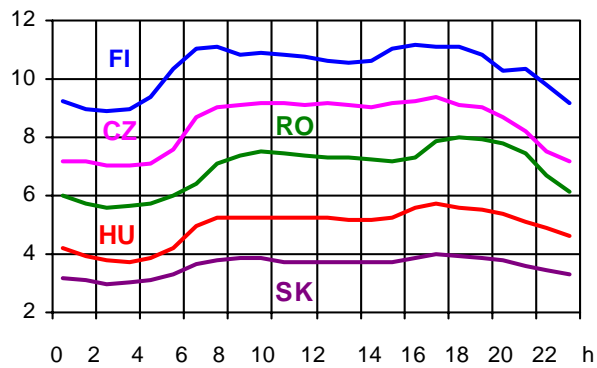
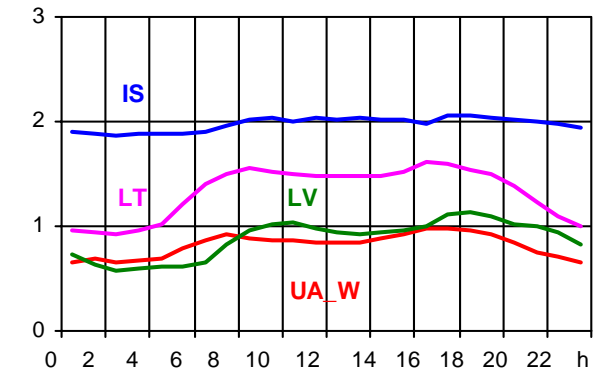
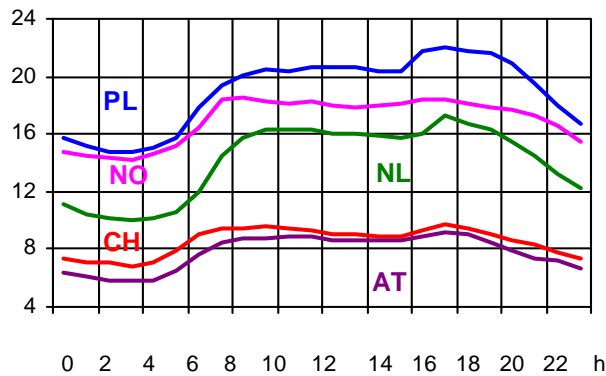
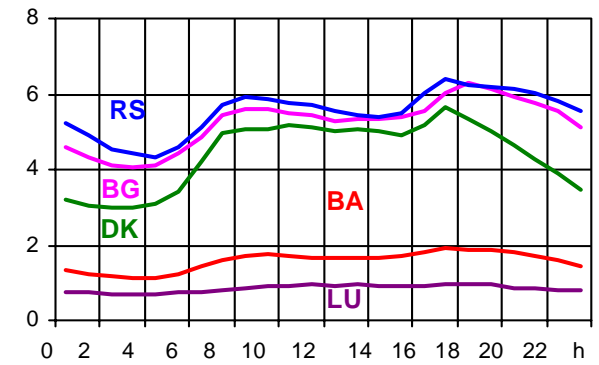
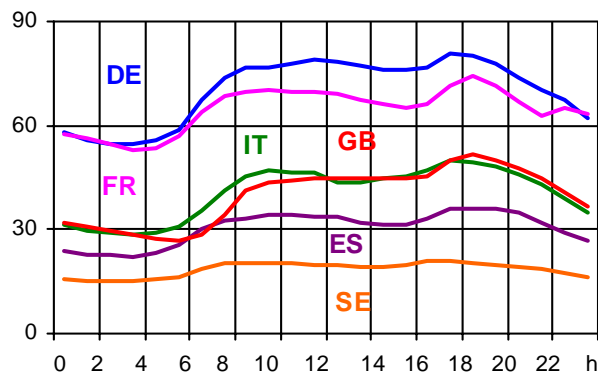
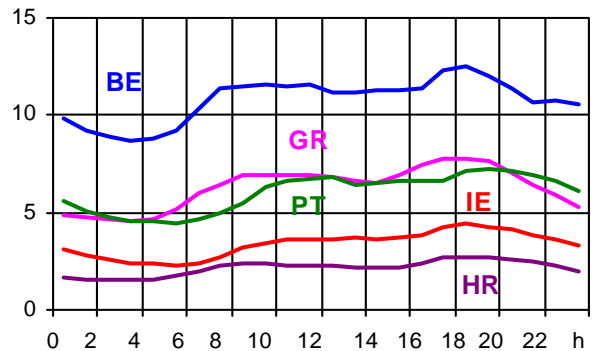
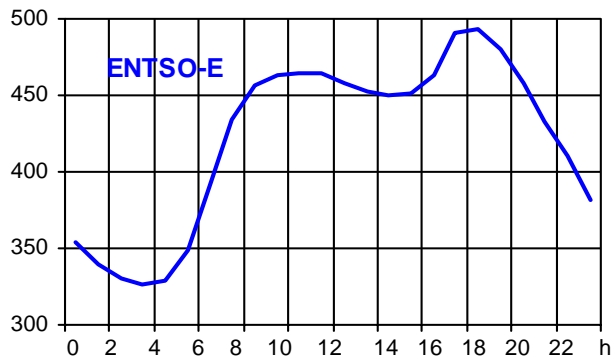
⁴ Only highest and lowest load value available.

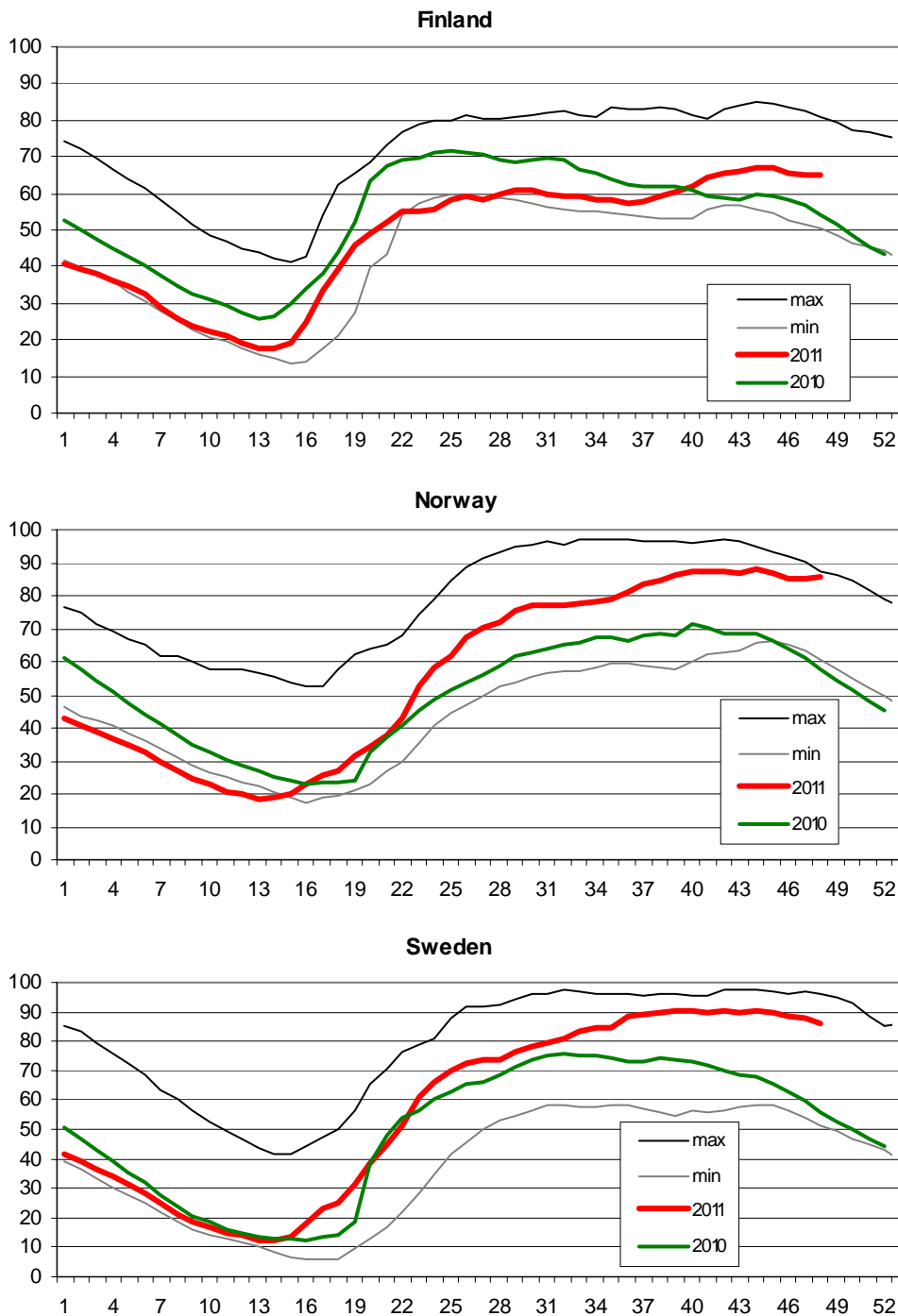
⁴ Monthly load values as of 17 November 2010

⁵ Operational data

Consumption hourly load curves on 16.11.2011 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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