

Monthly report



December 2010

Monthly provisional values as of 02 May 2011

European Network of
Transmission System Operators
for Electricity

entsoe

Table of contents		Page
1	Electricity supply situation of the countries	2
2	Electricity supply representativity of the countries	3
3	Physical energy flows	4
4	Monthly imports and exports	5
5	Load flows (night)	6
6	Load flows (day)	7
7	Unavailability of international tie lines (major events)	8
8	Network reliability (major events)	10
9	Highest and lowest load on the 3 rd Wednesday	11
10	Load diagrams on the 3 rd Wednesday	12
11	Water reservoirs Nordic	13

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 in GWh	
	Therm. nuclear	Fossil fuels	Hydro prod	Other renew.	of which wind	Non identifiable	Total			monthly	variation [%]
AT	0	2951	2875	0	0	747	6573	351	373	6551	7,0
BA	0	796	1038	0	0	0	1834	-676	0	1158	9,8
BE ²	3628	3157	152	566	143	0	7503 ¹	1085	151	8437	7,5
BG	1441	2282	496	51	51	0	4270	-907	110	3253	2,3
CH	2445	178	3169	112	2	0	5904 ¹	651	146	6409	6,2
CY	0	391	0	13	13	0	404	0	0	404	-1,5
CZ	2420	4519	290	47	33	0	7276 ¹	-934	90	6252	7,2
DE	13002	30441	1949	6363	3806	0	51755 ¹	-2729	780	48246	5,2
DK	0	3179	2	976	724	0	4157 ¹	-611	0	3546	n.a.
EE	0	1146	3	85	32	0	1234	-379	0	855	n.a.
ES	4806	9999	4281	5621	4661	34	24741	-260	502	23979	4,2
FI	2032	3931	1150	1150	27	70	8333 ¹	661	0	8994	n.a.
FR	41889	8566	7133	1470	986	0	59058	-792	578	57688	13,8
GB	5907	27381	507	771	370	0	34566	89	423	34232	n.a.
GR	0	3030	1015	288	243	0	4333 ¹	224	1	4556	0,1
HR	0	461	1056	0	0	0	1517	0	0	1517	-8,1
HU	1434	1758	6	182	77	0	3380	156	0	3536	5,2
IE	0	2279	51	234	234	18	2582 ¹	83	0	2665	n.a.
IS	0	1	1106	377	0	0	1484	0	0	1484	n.a.
IT	0	19807	4290	1541	1034	0	25638	2792	354	28076	3,8
LT	0	305	108	33	24	0	446 ¹	642	113	976	n.a.
LU	0	287	157	14	3	0	458	295	206	547	3,6
LV	0	418	183	12	5	0	613	138	0	751	n.a.
ME	0	97	444	0	0	0	541	-133	0	408	16,6
MK	0	431	203	0	0	0	634	272	0	906	13,3
NI ³	0	651	1	55	50	2	709	207	0	916	n.a.
NL	337	9701	0	920	387	0	10958	176	0	11134	10,2
NO	0	599	13367	100	100	0	14066 ¹	801	53	14814	n.a.
PL ⁴	0	13445	303	240	217	0	13988 ¹	-220	89	13679	6,6
PT	0	2335	1737	1364	1144	0	5436 ¹	-363	27	5046	5,1
RO	975	2565	2050	100	85	0	5690	-515	34	5141	7,3
RS	0	2680	1228	0	0	0	3908	-489	134	3285	-10,7
SE	5755	1081	6118	1717	380	0	14671 ¹	1781	2	16450	n.a.
SI	518	443	463	0	0	0	1424	-293	0	1131	10,9
SK	1240	653	478	45	1	95	2511 ¹	95	57	2549	8,3
ENTSO-E	87829	161944	57409	24447	14832	966	332595¹	1198	4223	329571	n.a.
UA_W	0	683	15	0	0	0	698	-178	0	520	20,6

¹ Including deliveries from industry

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

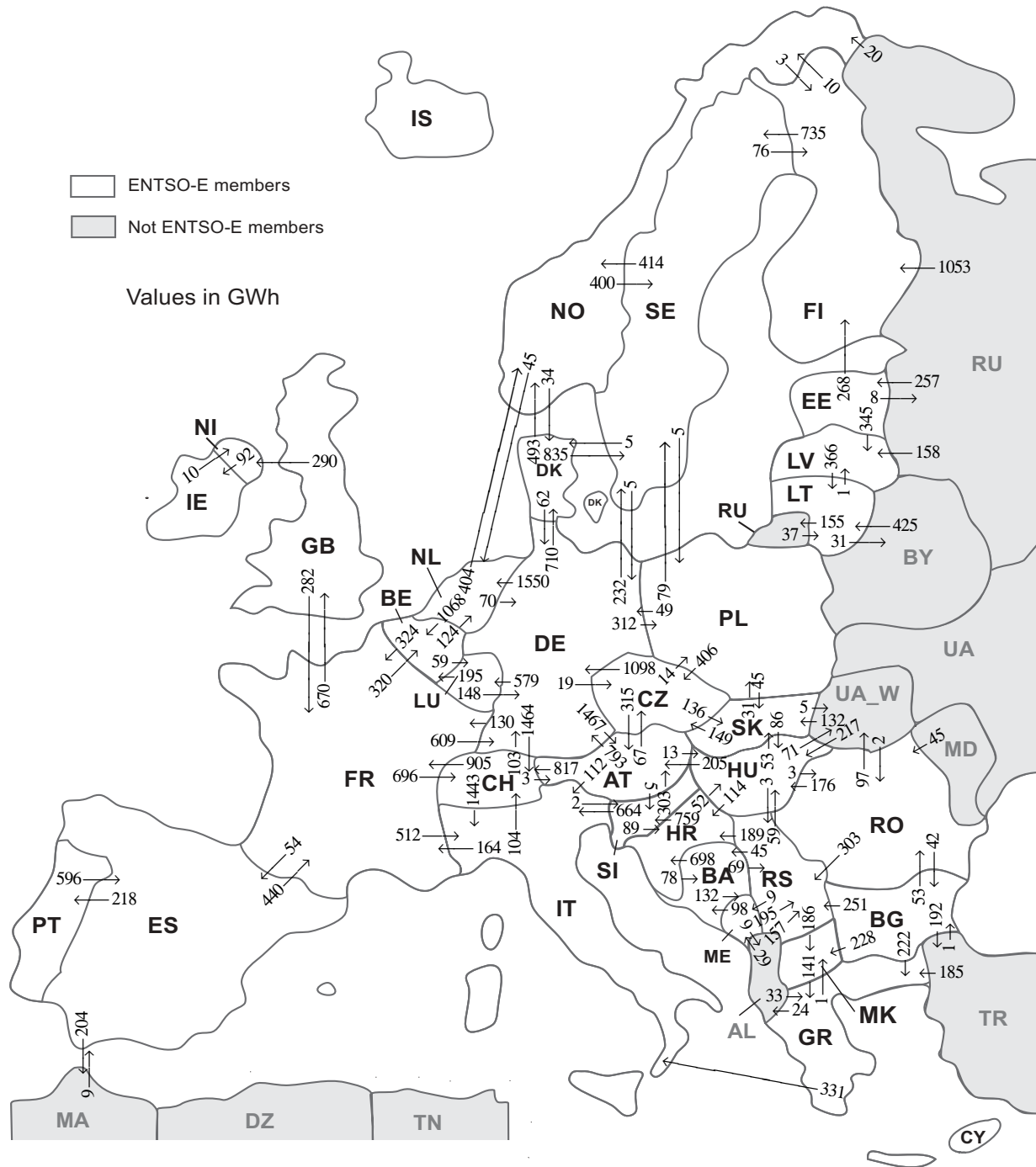
³ 9 Generating Units (1805MW) are capable of running on mixed fuels -

The data has identified which fuel type these have been run on and been added into the appropriate fuel typ.

⁴ 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	99	98	99	100	98
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	94	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: **30436GWh**

Total physical energy flows: **33992 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 (≤ 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.

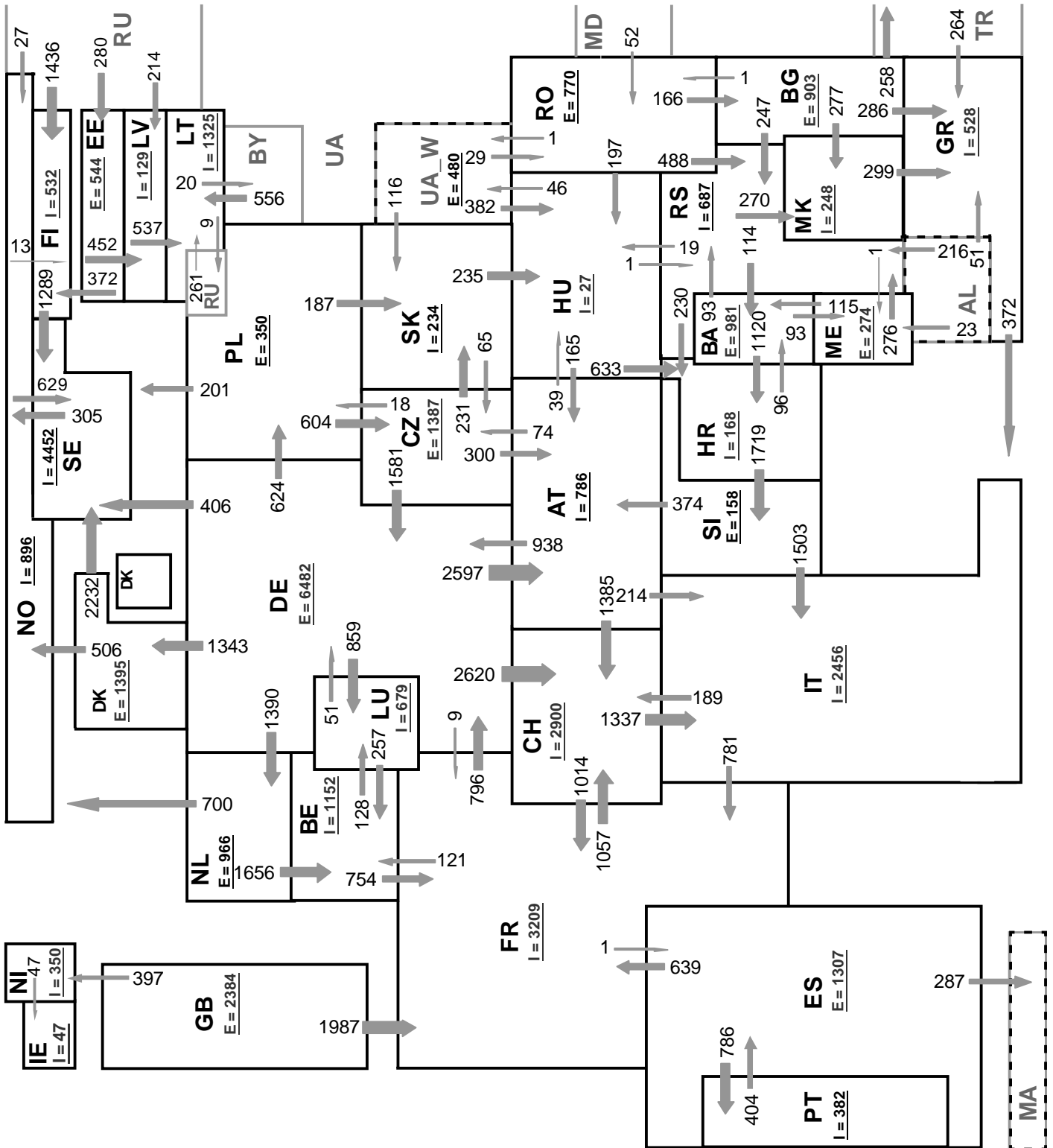
Overview of the monthly imports and exports in GWh

Exporting countries	Importing 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	-	-	-	-	817	67	793	-	-	-	-	-	-	-	-	13	-	112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	
BA	-	-	-	-	-	-	-	-	-	-	-	-	-	698	-	-	-	-	-	-	-	132	-	-	-	-	-	-	-	-	69	-	-	-	-		
BE	-	-	-	-	-	-	-	-	-	-	-	324	-	-	-	-	-	-	-	59	-	-	-	124	-	-	-	-	-	-	-	-	-	-	-		
BG	-	-	-	-	-	-	-	-	-	-	-	-	222	-	-	-	-	-	-	-	-	228	-	-	-	-	-	53	251	-	-	-	-	-	-	192	
CH	3	-	-	-	-	-	-	-	-	-	-	905	-	-	-	-	-	1443	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
CZ	315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	136	-	-		
DE	1467	-	-	-	1464	19	-	710	-	-	-	130	-	-	-	-	-	-	579	-	-	-	-	-	1550	-	312	-	-	-	232	-	-	-	-		
DK	-	-	-	-	-	-	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	493	-	-	-	-	835	-	-	-	-		
EE	-	-	-	-	-	-	-	-	-	-	268	-	-	-	-	-	-	-	-	-	345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	
ES	-	-	-	-	-	-	-	-	-	-	-	440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	218	-	-	-	-	-	-	-	-	204	
FI	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	735	-	-	-	-	0	
FR	-	-	320	-	696	-	609	-	54	-	-	670	-	-	-	-	-	512	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GB	-	-	-	-	-	-	-	-	-	-	-	282	-	-	-	-	-	-	-	-	-	-	-	290	-	-	-	-	-	-	-	-	-	-	-	-	-
GR	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	24	
HR	-	78	-	-	-	-	-	-	-	-	-	-	-	-	-	52	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	759	-	-	-		
HU	205	-	-	-	-	-	-	-	-	-	-	-	-	114	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-	-	53	71	-	-	
IE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	
IT	0	-	-	-	104	-	-	-	-	-	-	164	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	
LT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	186	
LU	-	-	195	-	-	-	148	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LV	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	366	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
ME	-	98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	195	-	-	9	
MK	-	-	-	0	-	-	-	-	-	-	-	-	141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	
NI	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NL	-	-	1068	-	-	-	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	404	-	-	-	-	-	-	-	-	-	-	-
NO	-	-	-	-	-	-	-	34	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45	-	-	-	-	-	-	-	400	-	-	0
PL	-	-	-	-	406	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79	-	45	-	0	
PT	-	-	-	-	-	-	-	-	596	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RO	-	-	-	42	-	-	-	-	-	-	-	-	-	-	176	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	0	
RS	-	45	-	0	-	-	-	-	-	-	-	-	-	189	59	-	-	-	-	-	-	9	186	-	-	-	-	-	0	-	-	-	-	-	-	0	
SE	-	-	-	-	-	5	5	-	-	76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	414	5	-	-	-	-	-	-	-	-	-	
SI	303	-	-	-	-	-	-	-	-	-	-	-	-	89	-	-	664	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SK	-	-	-	-	149	-	-	-	-	-	-	-	-	86	-	-	-	-	-	-	-	-	-	-	-	-	31	-	-	-	-	-	-	-	5	-	
UA_W	-	-	-	-	-	-	-	-	-	-	-	-	-	217	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	132	-	-	
Other III ¹	-	-	-	1	-	-	-	-	257	9	1053	-	-	218	-	-	-	-	462	-	158	29	-	-	-	20	0	-	45	157	-	-	-	-	-	-	

Other III¹: Albania, Belarus, Morocco, Republic of Moldavia, Republic of Turkey, Russia and Ukraine

Sum of the monthly imports and exports in GWh

	import	export		import	export
AT	2293	1807	IT	3062	270
BA	221	899	LT	828	187
BE	1583	507	LU	638	343
BG	43	946	LV	504	366
CH	3081	2454	ME	170	302
CZ	641	1563	MK	415	141
DE	2937	6463	NI	300	92
DK	749	1390	NL	1719	1542
EE	257	621	NO	1341	482
ES	659	862	PL	362	579
FI	1400	745	PT	218	596
FR	2245	2861	RO	103	618
GB	670	572	RS	978	488
GR	581	356	SE	2281	505
HR	1090	889	SI	766	1056
HU	603	449	SK	366	271
IE	92	10	UA_W	173	351



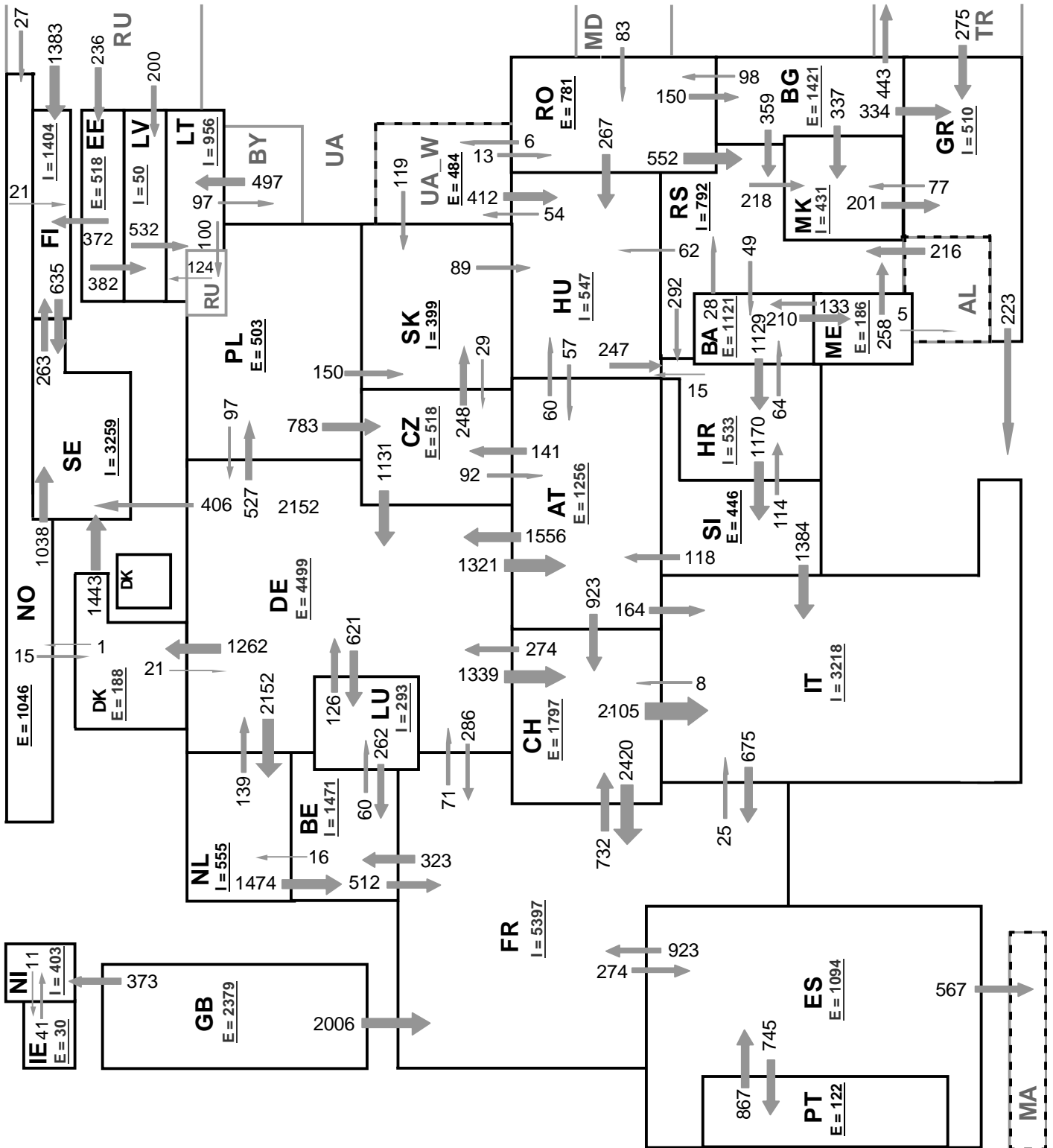
Sum of load flows in MW

ENTSO-E = 44512 MW

Total = 49040 MW

Synchronous operation with ENTSO-E region

I = Import balance
E = Export balance



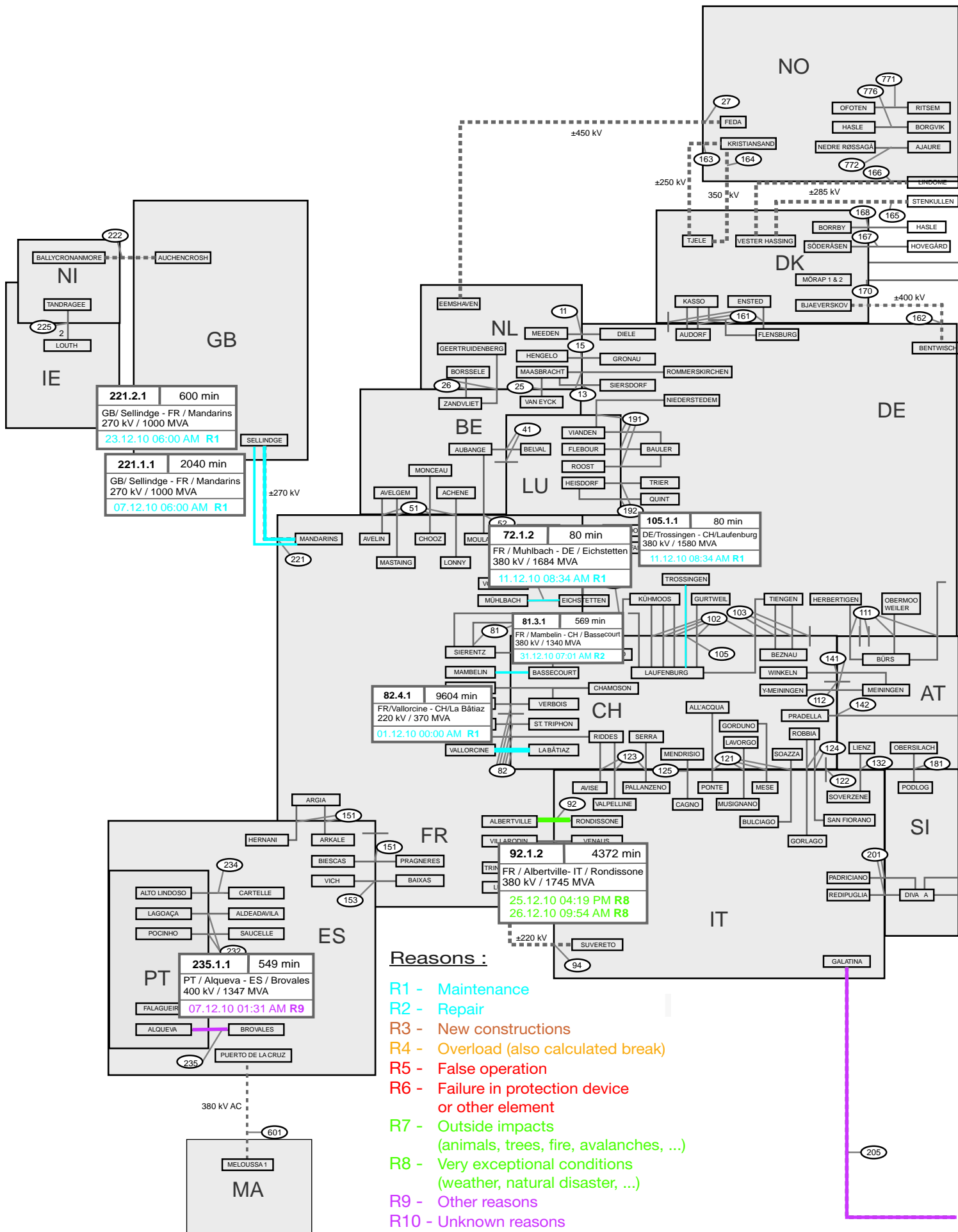
Sum of load flows in MW

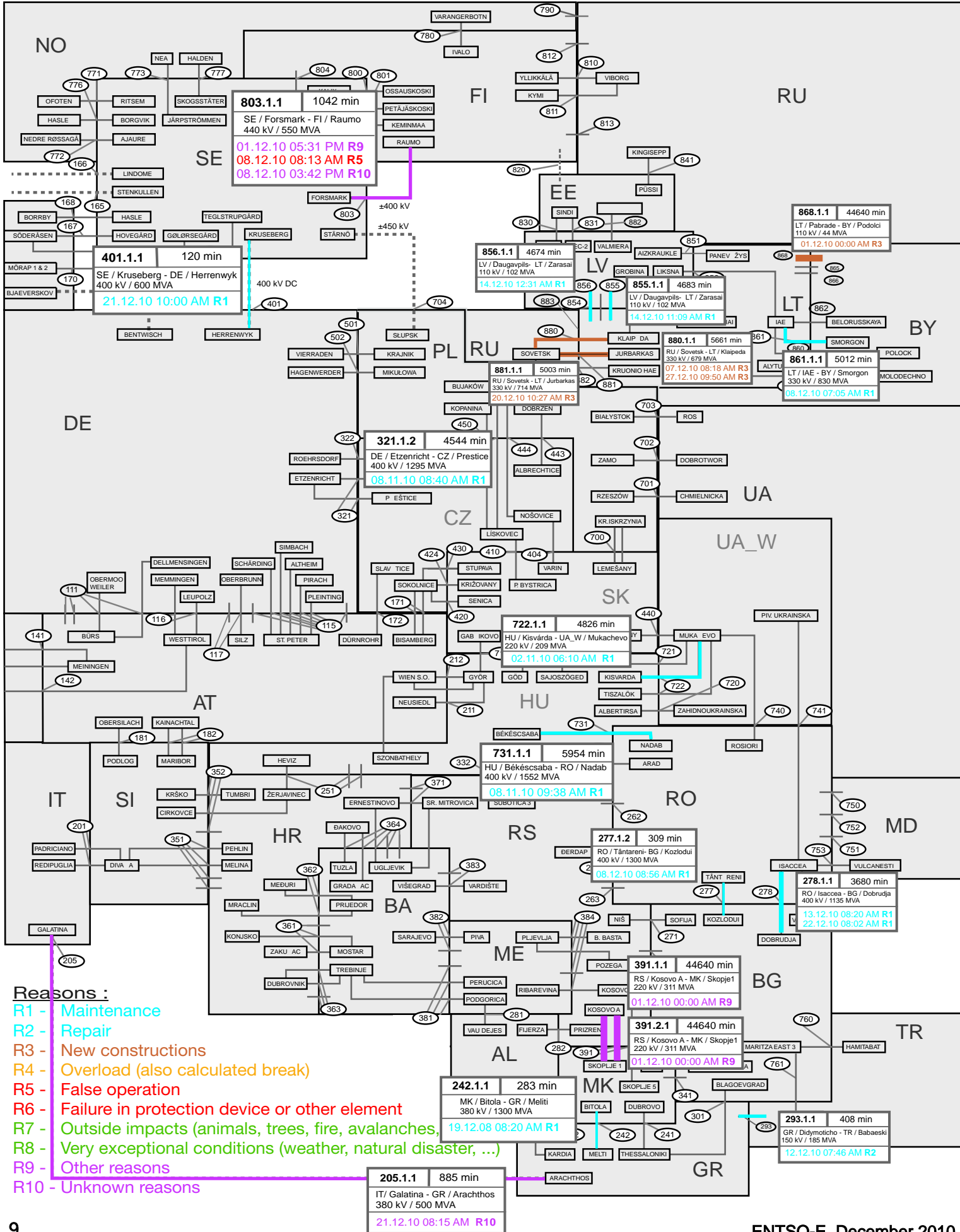
ENTSO-E = 40326 MW

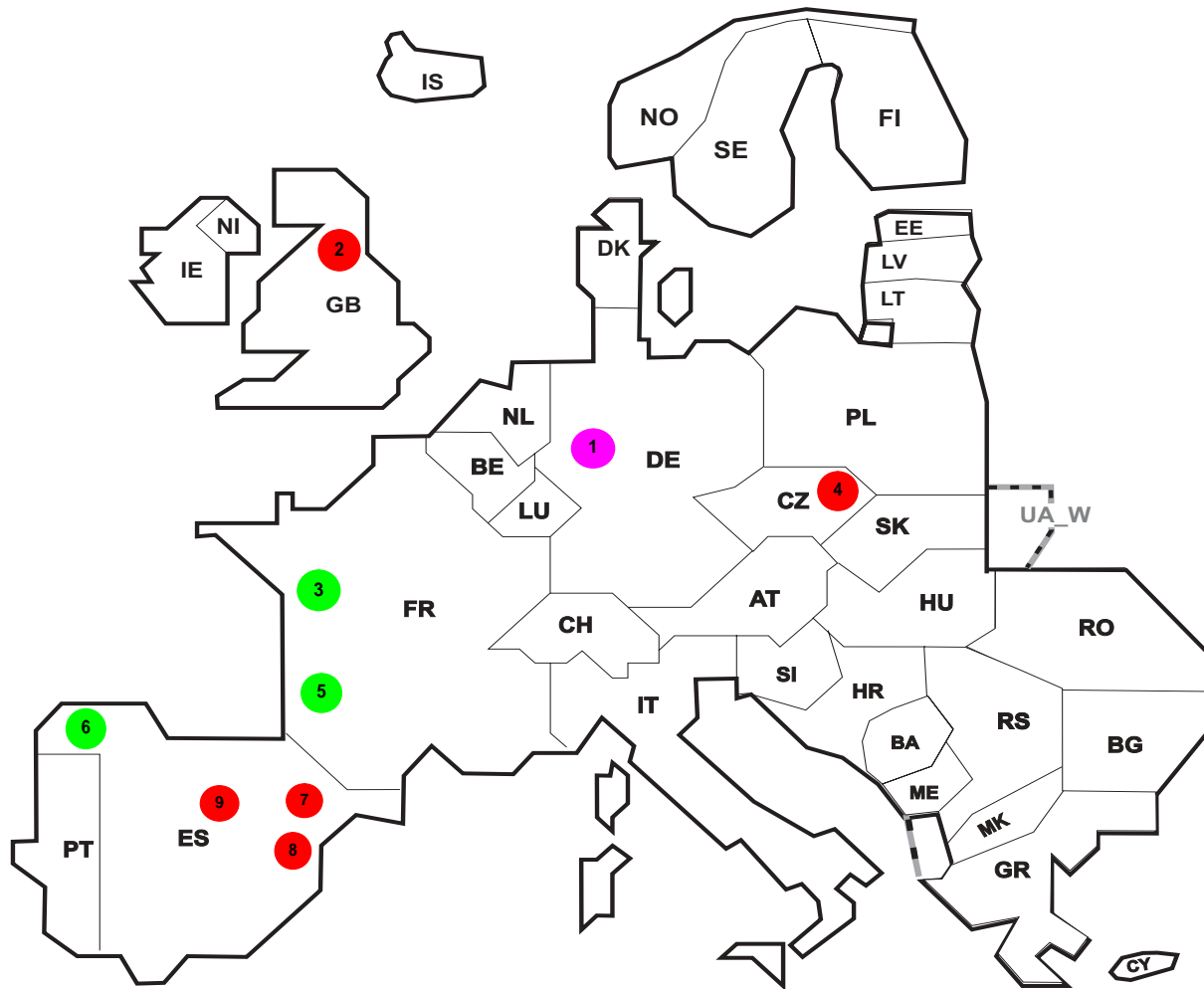
Total = 45565 MW

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 ¹
1	DE	Rommerskirchen	R10	356	310	65	0,341
2	GB	BLYTH	R6	122	58	126	0,191
3	FR	Chabossière	R7	71	131	33	0,073
4	CZ	Mirovka	R6	7	0	5	0,058
5	FR	Cubnezais	R8	46	72	38	0,047
6	ES	Meson	R8	18	150	14	0,035
7	ES	Centelles	R5	6	42	17	0,012
8	ES	Les Corts	R6	2	24	6	0,004
9	ES	Leganes	R6	1	27	3	0,002

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 15.12.2010 CET of each country

	Highest		Lowest		Load representativity %
	load MW	variation % ¹	load MW	variation % ¹	
AT	9548	-1,3	6852	10,8	100
BA	2051	8,5	1207	10,0	100
BE ²	13810	3,4	10361	6,4	100
BG	6640	7,0	4320	7,2	100
CH	10835	5,6	8185	9,7	100
CY ³	746	n.a.	390	n.a.	100
CZ	10307	4,8	7918	7,2	100
DE	83090	5,0	64738	20,4	91
DK	6312	n.a.	3653	n.a.	100
EE	1367	n.a.	925	n.a.	100
ES	42301	-4,0	25275	60,9	98
FI	13923	n.a.	11501	n.a.	100
FR	96710	7,8	76197	7,9	100
GB	59008	n.a.	35869	n.a.	96
GR	7869	0,1	4590	-0,2	100
HR	3116	5,7	1886	15,3	100
HU	5937	-5,0	3901	-6,5	100
IE	4664	n.a.	2638	n.a.	100
IS	2113	n.a.	1903	n.a.	100
IT	54927	7,8	30472	9,1	100
LT	1680	n.a.	1025	n.a.	100
LU	971	13,6	739	23,2	100
LV	1243	n.a.	687	n.a.	100
ME	575	n.a.	351	n.a.	100
MK	1535	17,0	1022	26,5	100
NI	1684	n.a.	874	n.a.	100
NL	18187	2,7	10489	4,2	100
NO	21852	n.a.	17165	n.a.	100
PL ⁴	23081	2,9	15742	6,4	100
PT	8814	-4,6	5212	-3,5	97
RO	8313	3,5	5856	2,1	100
RS	7034	1,6	4849	4,3	100
SE	25807	n.a.	19868	n.a.	100
SI	1919	1,3	1349	23,2	100
SK	4326	6,7	3381	12,0	100
ENTSO-E	557280	n.a.	393245	n.a.	
UA_W	1087	9,7	691	21,9	100

¹ Variation as compared to corresponding month of the previous year

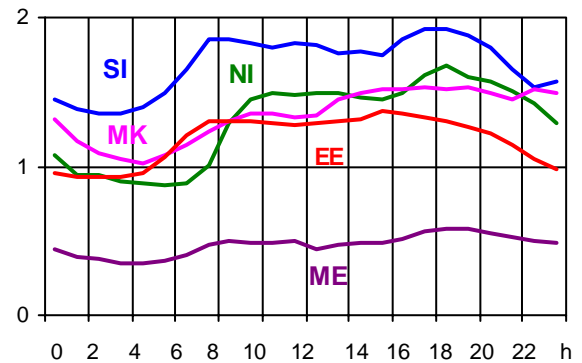
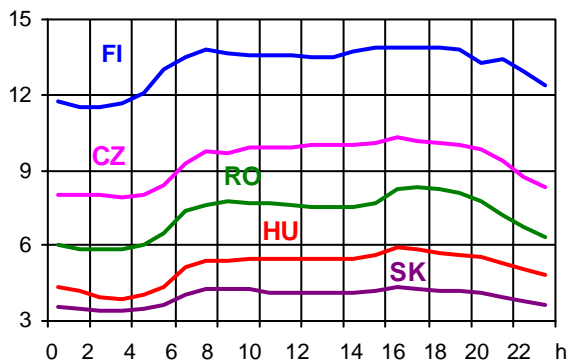
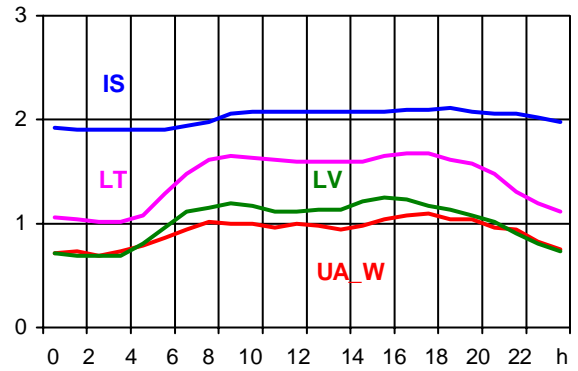
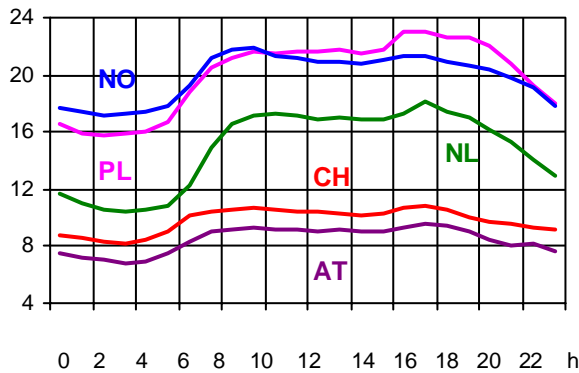
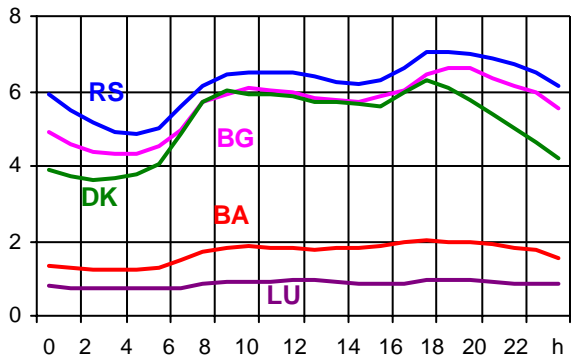
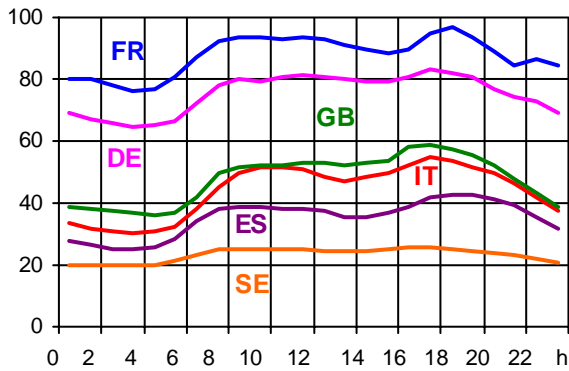
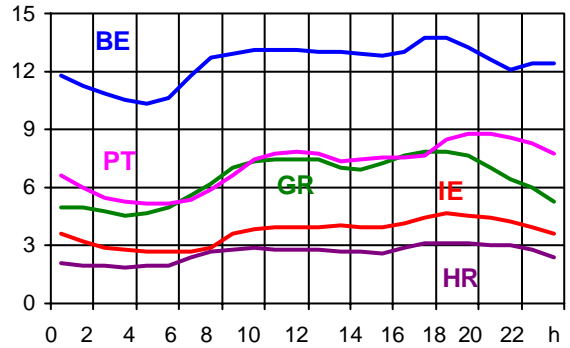
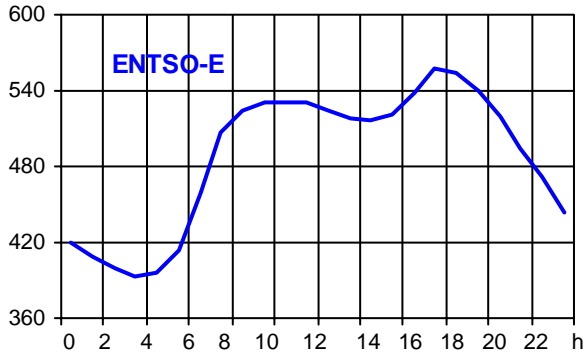
² The reported figures are best estimates based on actual measurements and extrapolations

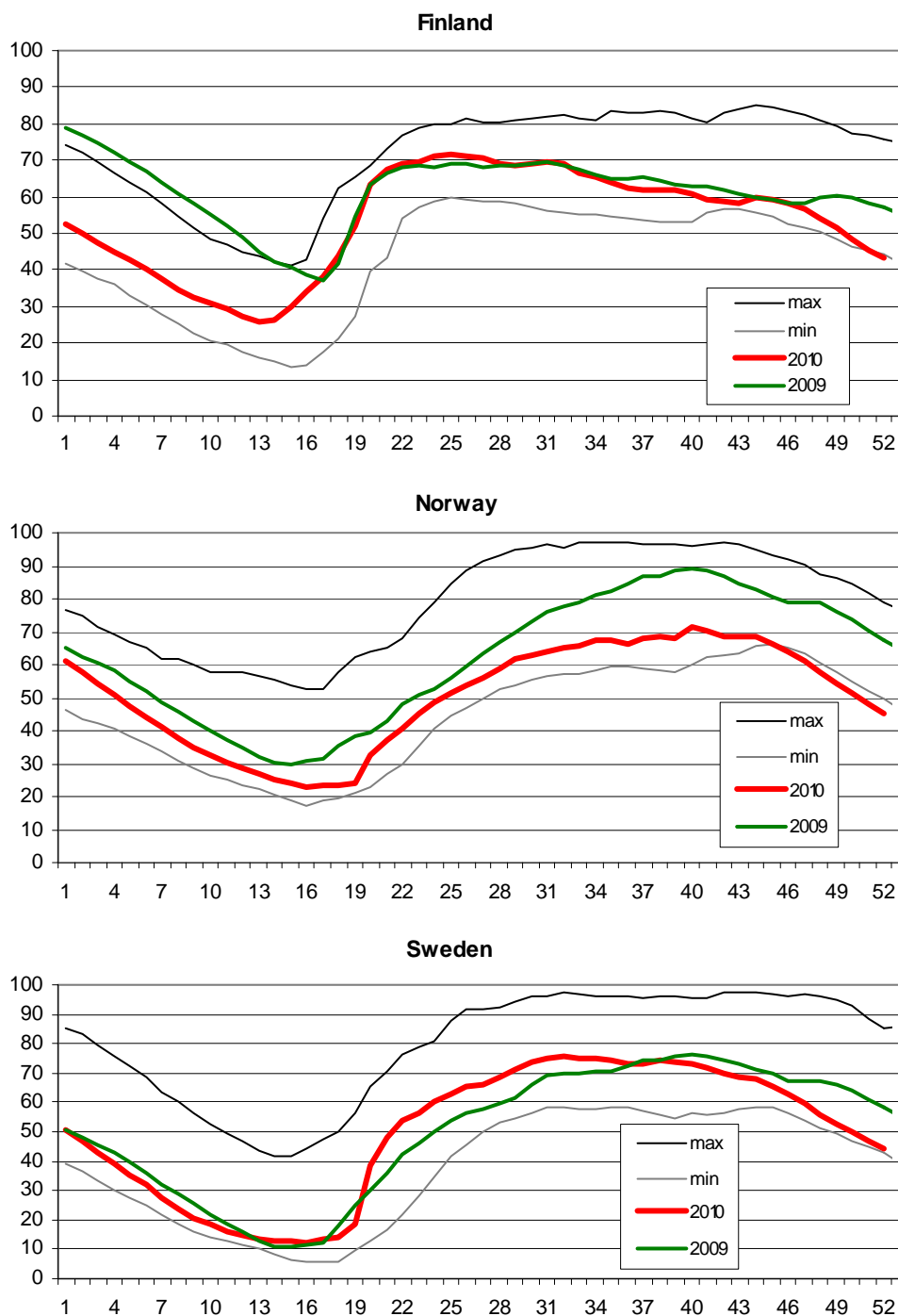
³ Only highest and lowest load value available

⁴ Operational data

Consumption hourly load curves on 15.12.2010 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

Contact

Avenue de Cortenbergh, 100
B-1000 Brussels – Belgium
Tel + 32 2 741 0950
Fax + 32 2 741 0951

info@entsoe.eu
www.entsoe.eu

