

Monthly report



December 2011

Monthly provisional values as of 10 April 2012

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	Overview of the detailed physical energy flows	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	
	Therm. nuclear	Fossil fuels	Hydro power	Other renew.	of which wind	of which solar	Non identifiable	Total			monthly [GWh]	var. [%]
AT	0	2244	2178	0	0	0	736	5158	1626	580	6204	-5,3
BA	0	834	278	0	0	0	0	1112	66	21	1157	-0,1
BE ²	3926	2483	145	733	397	36	0	7287 ¹	448	141	7594	-10,0
BG	1444	2460	215	77	77	0	0	4196	-913	120	3163	-2,8
CH	2442	186	2527	125	5	0	0	5280 ¹	931	169	6042	0,1
CY	0	377	0	14	14	0	0	391	0	0	391	-3,2
CZ	2618	4558	248	99	62	37	0	7523 ¹	-1702	104	5717	-8,6
DE	8478	30807	1698	10764	8122	329	0	51747 ¹	-2580	738	48429	2,1
DK	0	1761	2	1529	1311	0	0	3292 ¹	-136	0	3156	-11,0
EE	0	908	4	152	60	0	0	1064	-325	0	739	-13,6
ES	4831	10109	2485	5693	4487	534	35	23153	-481	426	22246	-7,1
FI	2049	1840	1363	911	62	0	54	6217 ¹	1259	0	7476	-16,9
FR	39819	5436	5589	2708	2012	175	0	53552	-4799	607	48146	-16,5
GB	5192	21305	937	3183	1528	0	0	30617	1165	366	31417	-8,2
GR	0	3685	282	361	287	38	0	4328 ¹	269	76	4521	-0,8
HR	0	526	413	35	22	0	0	974	625	13	1586	4,5
HU	1432	1594	18	138	62	0	0	3182	265	0	3447	-2,5
IE	0	1704	116	649	649	0	17	2486 ¹	-54	0	2432	-8,7
IS	0	0	1057	435	0	0	0	1492	0	0	1492	0,5
IT	0	17780	3036	2548	1486	609	0	23364	4173	255	27282	-5,0
LT	0	333	77	93	79	0	0	503 ¹	500	55	948	-8,3
LU	0	248	100	25	12	0	0	373	277	131	519	-5,1
LV	0	310	208	26	11	0	0	544	219	0	763	1,6
ME ³	0	97	444	0	0	0	0	541	-133	0	408	n.a.
MK	0	519	95	0	0	0	0	614	309	0	923	1,9
NI	783	635	1	147	142	0	0	1566	54	0	1620	76,9
NL	362	9230	0	1162	850	n.a.	0	10754	319	0	11073	-0,5
NO	0	306	12555	144	144	0	0	13005 ¹	-444	125	12436	-16,1
PL ⁴	0	12848	166	571	522	0	0	13585 ¹	-422	58	13105	-4,2
PT	0	2135	824	1124	884	16	0	4083 ¹	429	114	4398	-10,3
RO	939	3056	651	176	159	0	0	4822	75	5	4892	-4,8
RS	0	3234	530	0	0	0	0	3764	-572	158	3034	-7,6
SE	5519	493	6811	2113	881	0	0	14936 ¹	-1501	0	13435	-18,3
SI	516	420	208	0	0	0	0	1144	-70	0	1074	-5,0
SK	1318	546	251	62	0	8	100	2277 ¹	199	61	2415	-5,3
ENTSO-E	81668	145007	45512	35797	24327	1782	942	308926¹	-924	4323	303680	n.a.
UA_W	0	773	13	0	0	0	0	786	-306	0	480	-7,7

¹ Including deliveries from industry

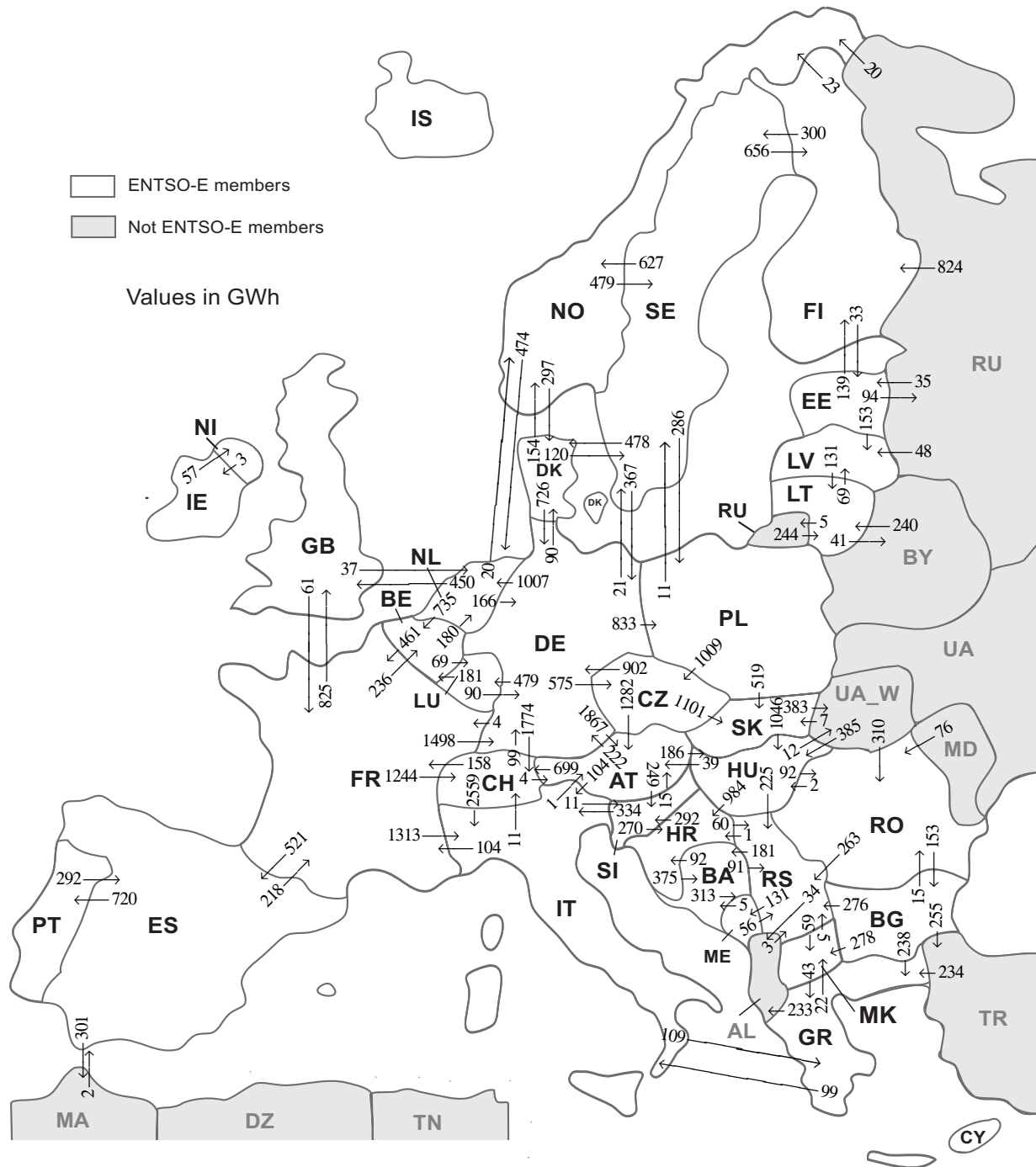
² The reported figures are best estimates based on actual measurements and extrapolations.

³ National monthly values as of December 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: **36934 GWh¹**

Total physical energy flows: **40720 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.

4

Overview of the detailed physical energy flows in GWh

December 2011

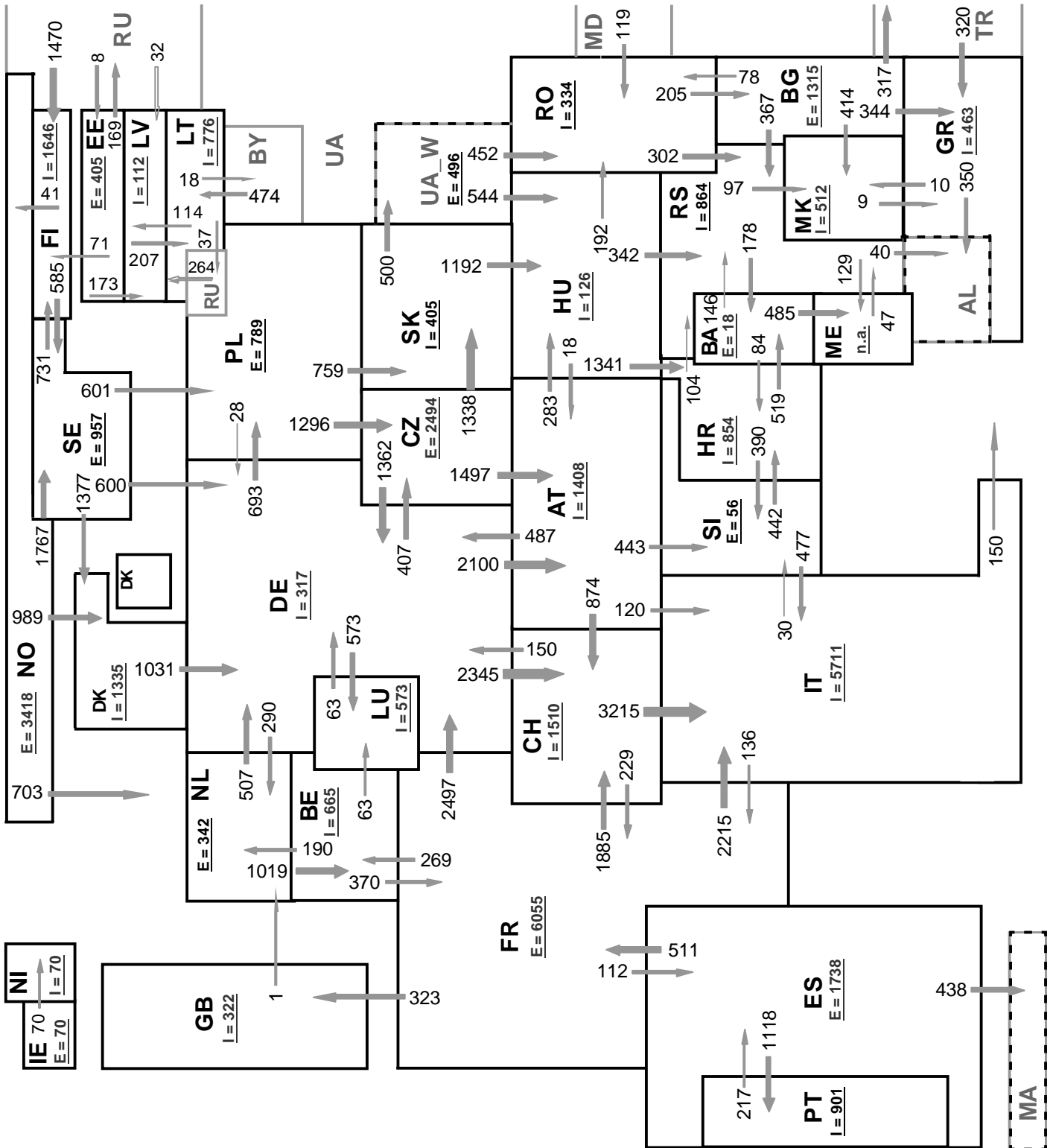
Outside flows	Inside flows of the countries																											UA_W	Other III ¹							
	AT	BA	BE	BG	CH	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HR	HU	IE	IT	LT	LU	LV	ME	MK	NI	NL	NO	PL			PT	RO	RS	SE	SI	SK	
AT	-	-	-	-	699	0	222	-	-	-	-	-	-	-	-	186	-	104	-	-	-	-	-	-	-	-	-	-	-	-	-	249	-	-		
BA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92	-	-	-	-	-	-	313	-	-	-	-	-	-	-	91	-	-	-			
BE	-	-	-	-	-	-	-	-	-	-	-	461	-	-	-	-	-	-	-	69	-	-	-	-	180	-	-	-	-	-	-	-	-			
BG	-	-	-	-	-	-	-	-	-	-	-	-	238	-	-	-	-	-	-	-	-	278	-	-	-	-	-	15	276	-	-	-	-	255		
CH	4	-	-	-	-	99	-	-	-	-	-	158	-	-	-	-	2559	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
CZ	1282	-	-	-	-	902	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	1101	-		
DE	1867	-	-	-	1774	575	-	90	-	-	-	4	-	-	-	-	-	-	479	-	-	-	-	-	1007	-	833	-	-	21	-	-	-			
DK	-	-	-	-	-	726	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	154	-	-	-	120	-	-	-			
EE	-	-	-	-	-	-	-	-	-	139	-	-	-	-	-	-	-	-	-	153	-	-	-	-	-	-	-	-	-	-	-	-	-	94		
ES	-	-	-	-	-	-	-	-	-	-	218	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	720	-	-	-	-	-	-	301		
FI	-	-	-	-	-	-	-	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-	-	-	300	-	-	-	-	0		
FR	-	-	236	-	1244	-	1498	-	521	-	-	825	-	-	-	-	1313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
GB	-	-	-	-	-	-	-	-	-	-	61	-	-	-	-	-	-	-	-	-	-	-	-	0	37	-	-	-	-	-	-	-	-	-		
GR	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	99	-	-	-	-	22	-	-	-	-	-	-	-	-	-	-	-	233		
HR	-	375	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	60	-	292	-	-	-	-		
HU	39	-	-	-	-	-	-	-	-	-	-	-	-	-	984	-	-	-	-	-	-	-	-	-	-	-	92	225	-	-	0	12	-	-		
IE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57	-	-	-	-	-	-	-	-	-	-		
IT	1	-	-	-	11	-	-	-	-	-	-	104	-	109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-		
LT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46		
LU	-	-	181	-	-	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LV	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
ME	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	-	-	-	-	-	n.a.		
MK	-	-	-	0	-	-	-	-	-	-	-	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-		
NI	-	-	-	-	-	-	-	-	-	-	0	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
NL	-	-	735	-	-	166	-	-	-	-	-	450	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-	-	-	
NO	-	-	-	-	-	-	297	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	474	-	-	-	-	-	479	-	-	0		
PL	-	-	-	-	1009	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	519	-	-	0		
PT	-	-	-	-	-	-	-	-	292	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RO	-	-	-	153	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
RS	-	181	-	0	-	-	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	131	59	-	-	-	0	-	-	-	-	-	0	0	0	
SE	-	-	-	-	-	367	478	-	656	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	627	286	-	-	-	-	-	-	-	-	
SI	15	-	-	-	-	-	-	-	-	-	-	-	-	270	-	-	334	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SK	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	1046	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	383	-
UA_W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	385	-	-	-	-	-	-	-	-	-	-	-	310	-	-	-	-	-	7	-	
Other III ¹	-	-	-	0	-	-	-	35	2	824	-	-	234	-	-	-	-	484	-	48	n.a.	-	-	-	-	20	0	-	76	3	-	-	-	-	-	

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	3208	1460	IT	4409	236
BA	561	496	LT	615	115
BE	1152	710	LU	548	271
BG	153	1062	LV	270	131
CH	3728	2820	ME	n.a.	n.a.
CZ	1584	3285	MK	359	48
DE	4070	6650	NI	57	3
DK	865	1000	NL	1698	1371
EE	68	386	NO	824	1250
ES	815	1239	PL	1119	1539
FI	1619	356	PT	720	292
FR	1006	5637	RO	492	418
GB	1275	98	RS	979	406
GR	624	354	SE	931	2414
HR	1345	727	SI	552	619
HU	1618	1352	SK	1627	1429
IE	3	57	UA_W	395	702

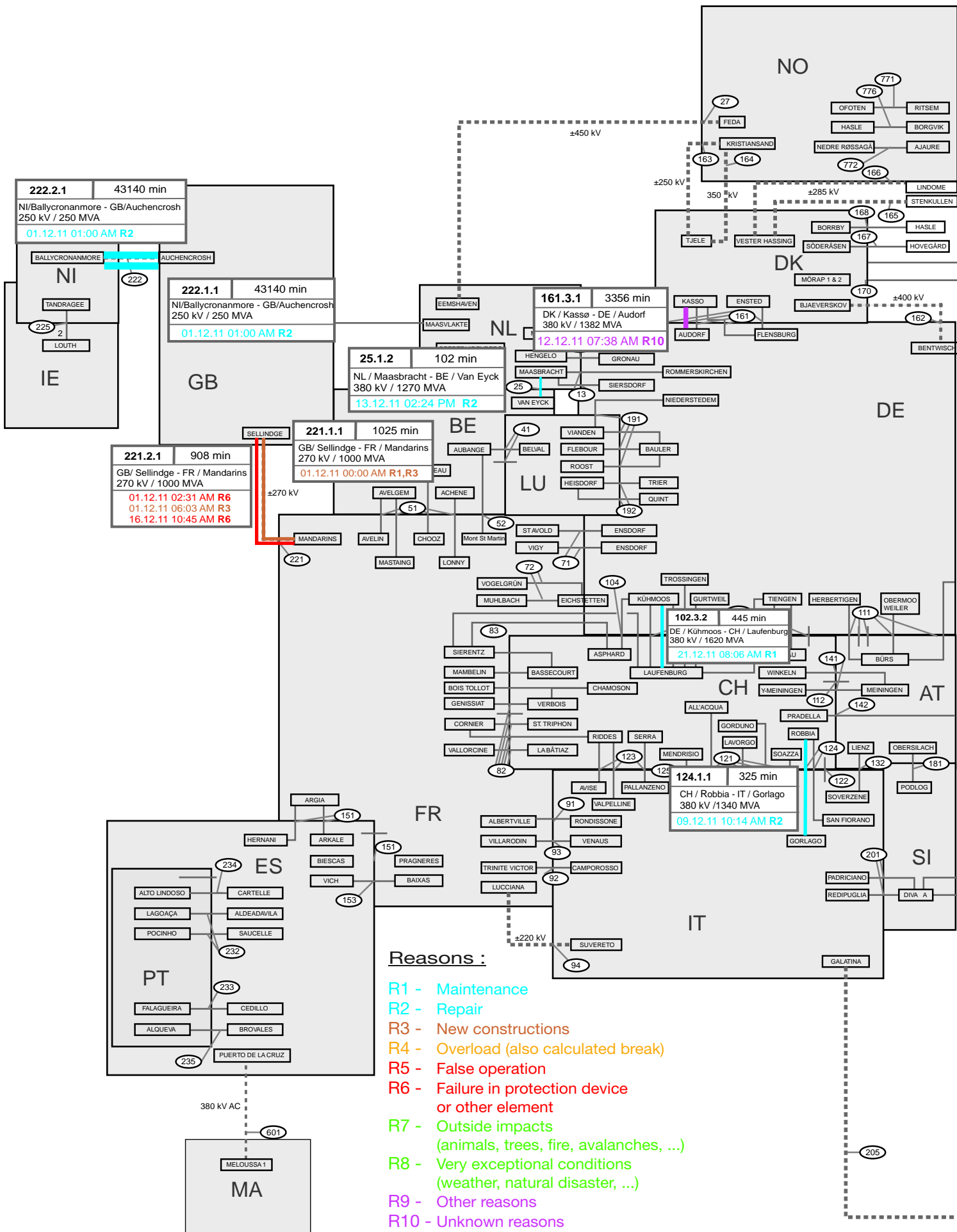
6



Sum of load flows in MW **ENTSO-E = 46964 MW** **Total = 52689 MW**
 (Sum of load flows without data between ME - AL)

Synchronous operation with ENTSO-E region

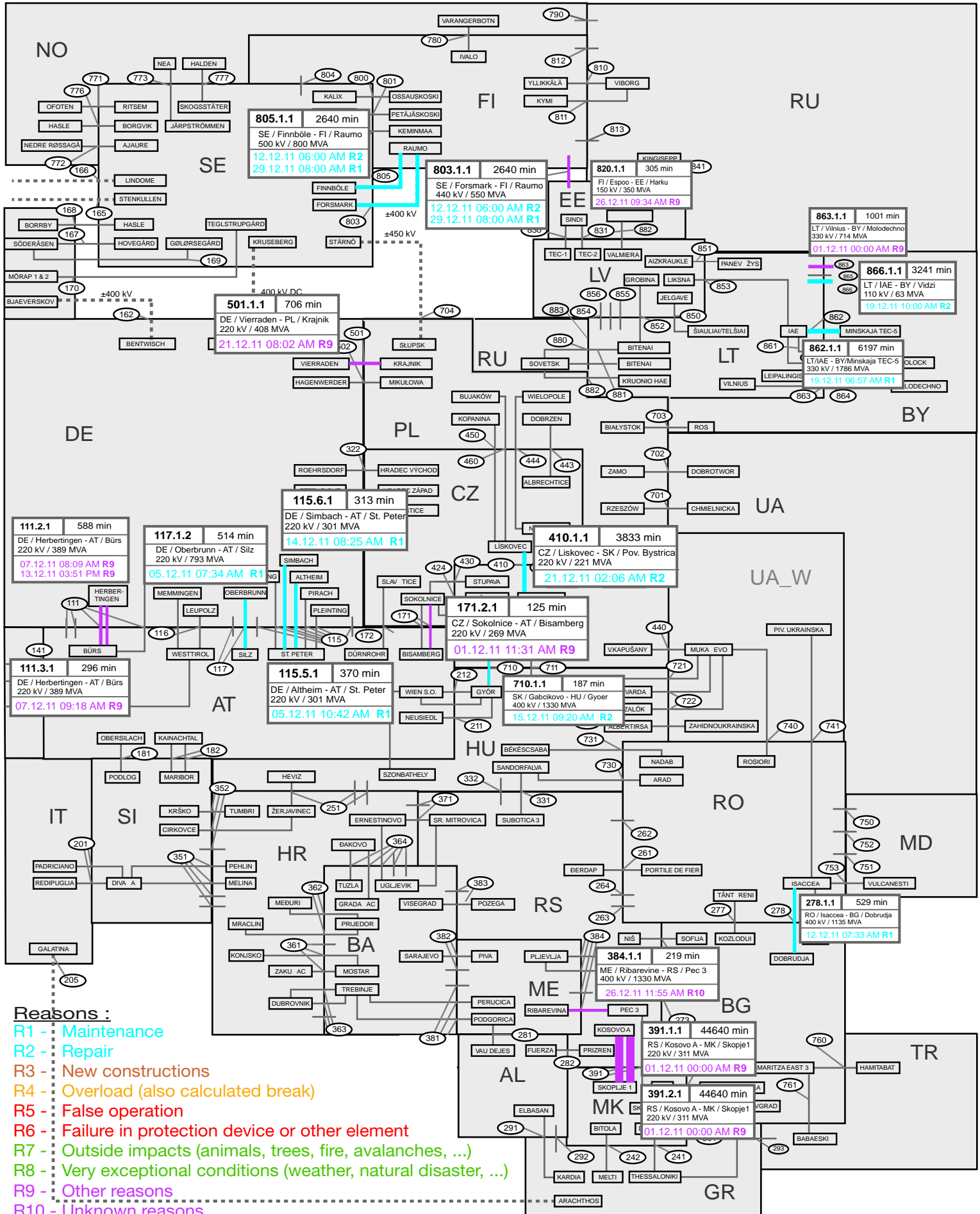
I = Import balance
E = Export balance

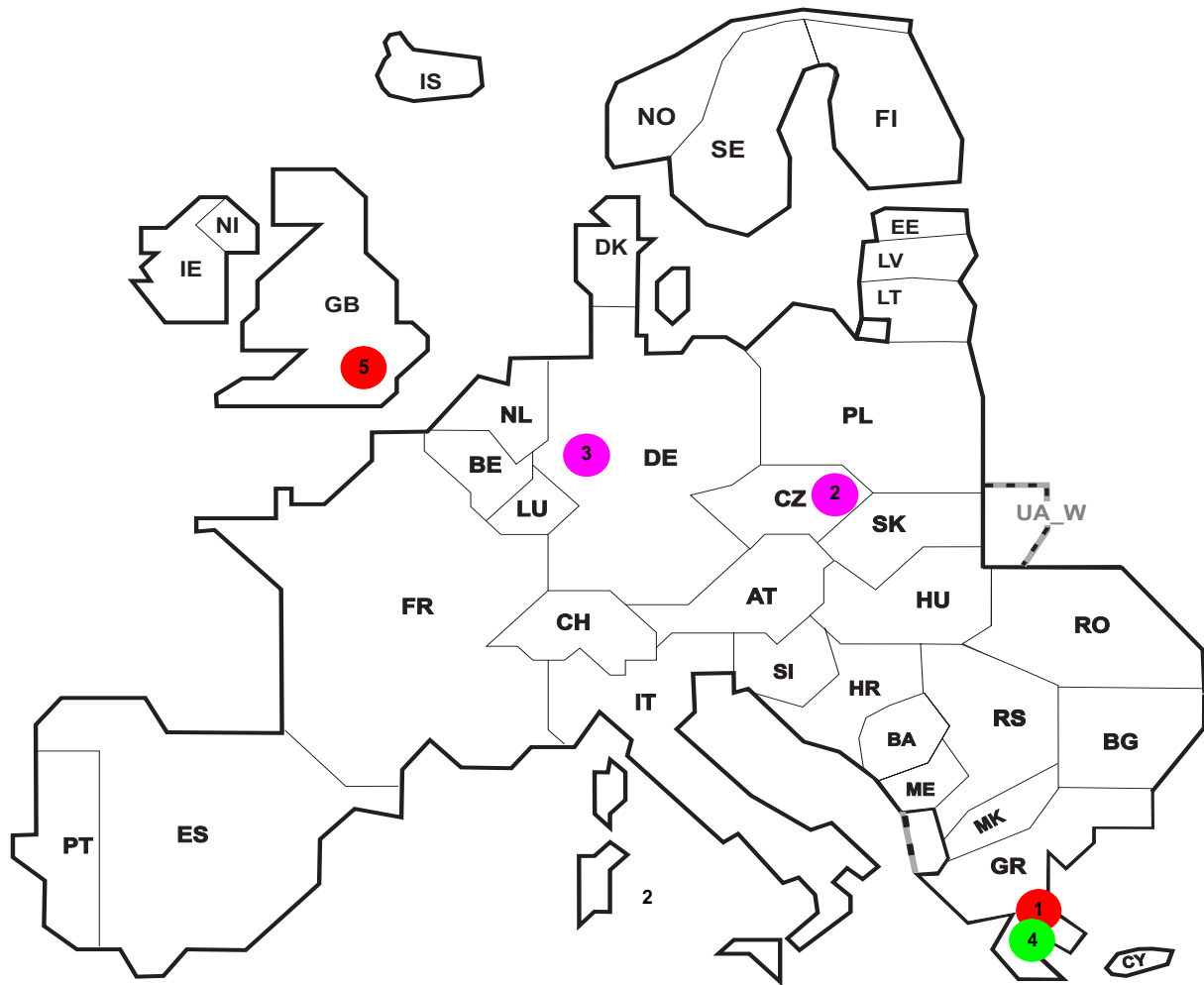


7

Unavailability of international tie lines (major events with sum over 100 minutes)

December 2011





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	GR	PALLINI	R6	19	10	112	0,189
2	CZ	H.Životice	R9	20	170	7	0,167
3	DE	Büscherhof	R9	145	266	29	0,140
4	GR	ANDROS	R8	12	6	121	0,119
5	GB	Pyle	R6	2	119	1	0,003

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 21.12.2011 CET of each country

	Highest		Low est		Load representativity %
	load MW	variation % ¹	load MW	variation % ¹	
AT	9442	-1,1	6227	-9,1	100
BA	1997	-2,6	1174	-2,7	100
BE ²	12337	-10,7	8594	-17,1	100
BG	6180	-6,9	3944	-8,7	99
CH	10161	-6,2	7185	-12,2	100
CY ³	696	-6,7	360	10,3	100
CZ	9109	-11,6	6878	-13,1	100
DE	78477	-5,6	50763	-21,6	91
DK	5628	-10,8	3117	-14,7	100
EE	1257	-8,0	787	-14,9	100
ES	37749	-10,8	23613	-6,6	98
FI	11237	-19,3	8644	-24,8	100
FR	75461	-22,0	58900	-22,7	100
GB	54917	-6,9	32417	-9,6	92
GR	7711	-2,0	4351	-5,2	100
HR	2874	-7,8	1583	-16,1	100
HU	5492	-7,5	3556	-8,8	100
IE	4239	-9,1	2375	-10,0	100
IS	2101	-0,6	1864	-2,0	100
IT ⁴	51745	-5,8	25299	-17,0	100
LT	1688	-5,5	958	-12,1	100
LU	1188	22,3	638	-13,7	100
LV	1112	-10,5	633	-7,9	100
ME ⁵	575	n.a.	351	n.a.	100
MK	1486	-3,2	956	-6,5	100
NI	1564	-7,1	757	-13,4	100
NL	17322	-4,8	9655	-8,0	100
NO	20709	-5,2	15927	-7,2	100
PL ⁶	22896	-0,8	15311	-2,7	100
PT	7661	-10,4	4762	-5,8	100
RO	8012	-3,6	5653	-3,5	100
RS	6689	-4,9	4597	-5,2	100
SE	22023	-14,7	15382	-22,6	100
SI	1875	-2,3	1150	-14,8	100
SK	4076	-5,8	3025	-10,5	100
ENTSO-E	503259	n.a.	335730	n.a.	
UA_W	1022	-6,0	624	-9,7	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.

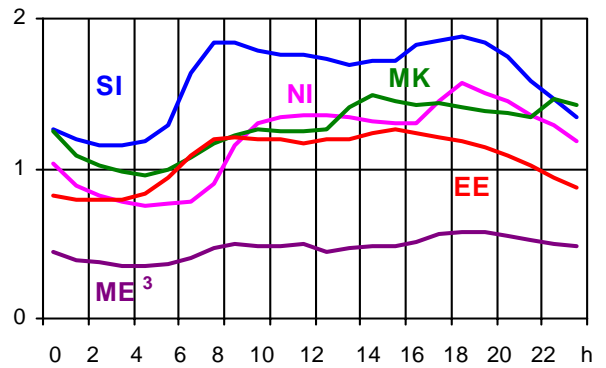
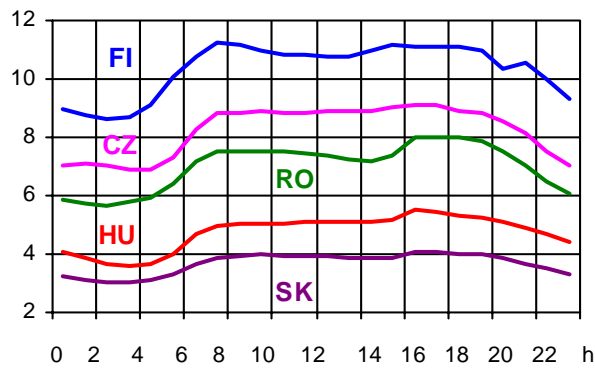
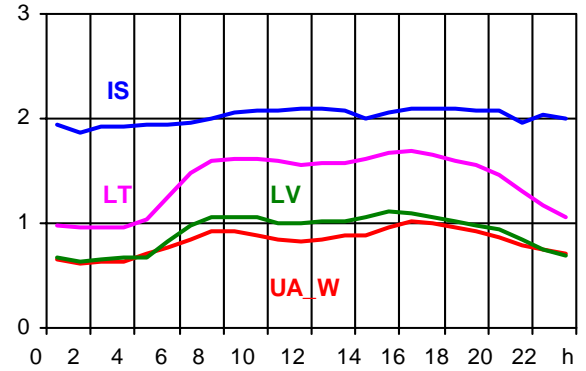
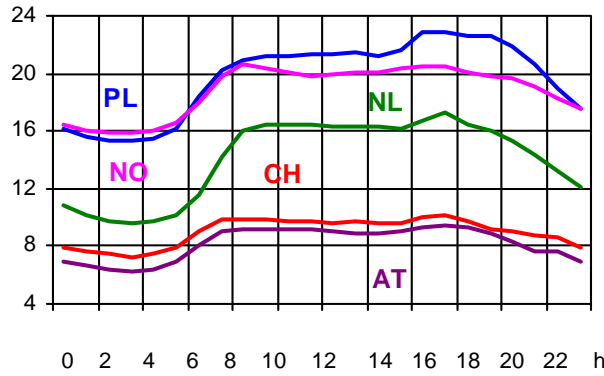
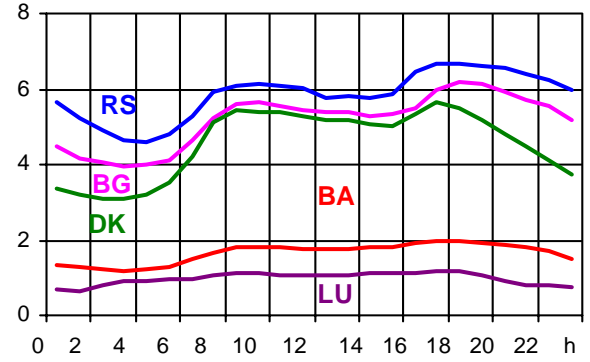
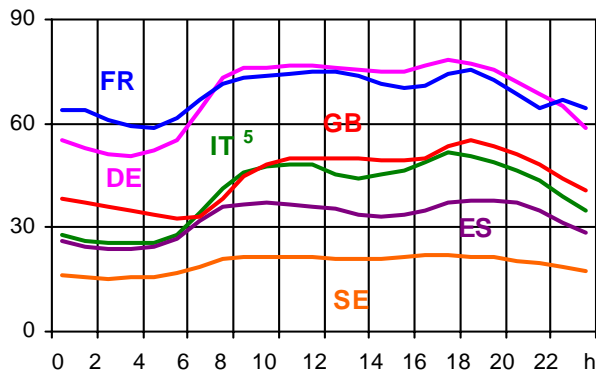
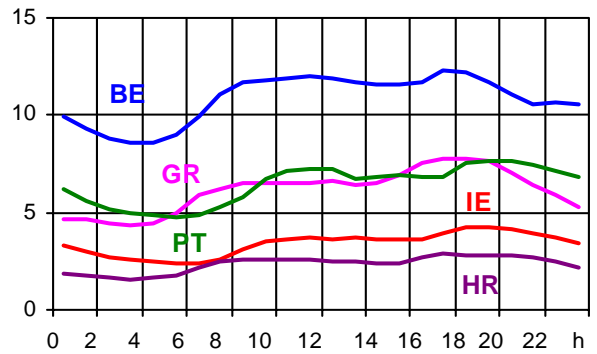
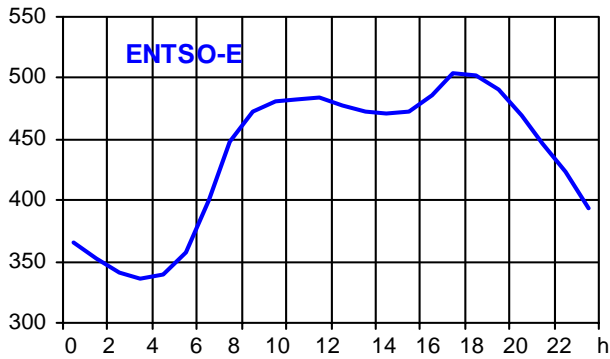
⁴ Monthly load values as of 19 December 2011

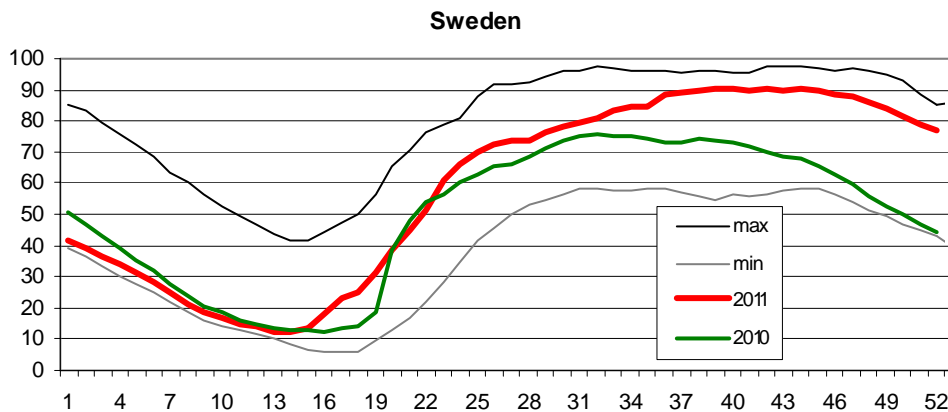
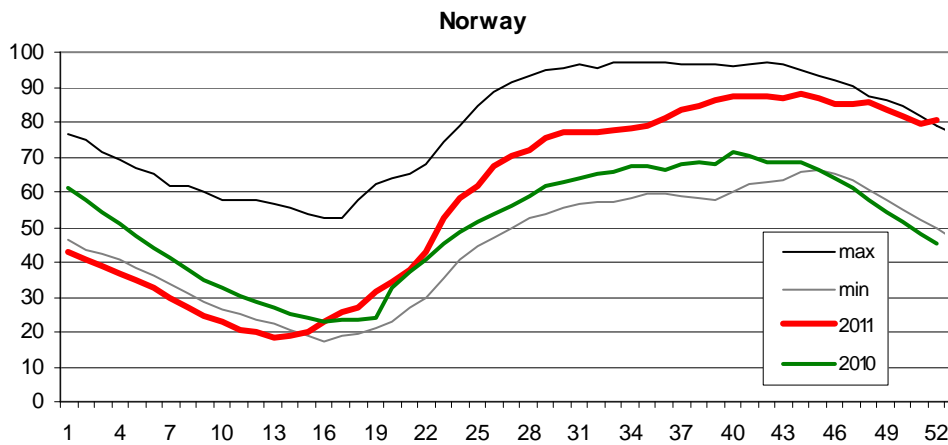
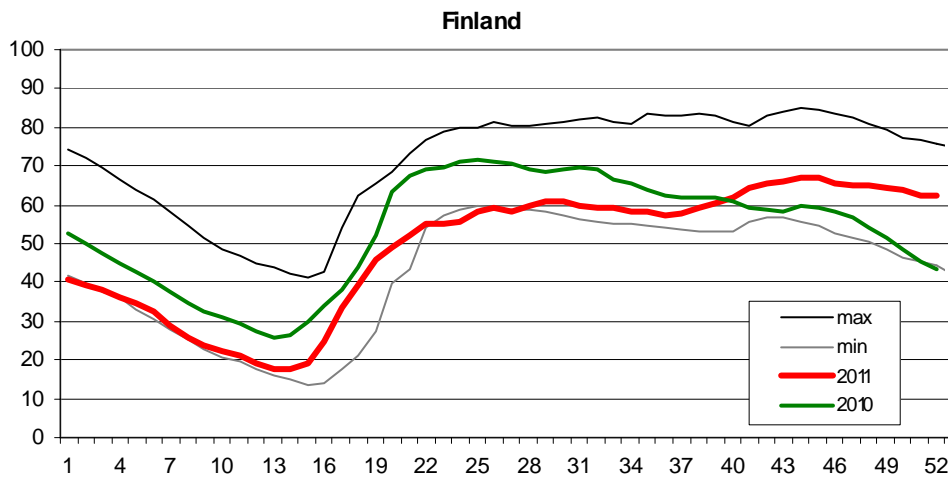
⁵ Monthly load values as of 15 December 2010

⁶ Operational data

Consumption hourly load curves on 21.12.2011 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

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

