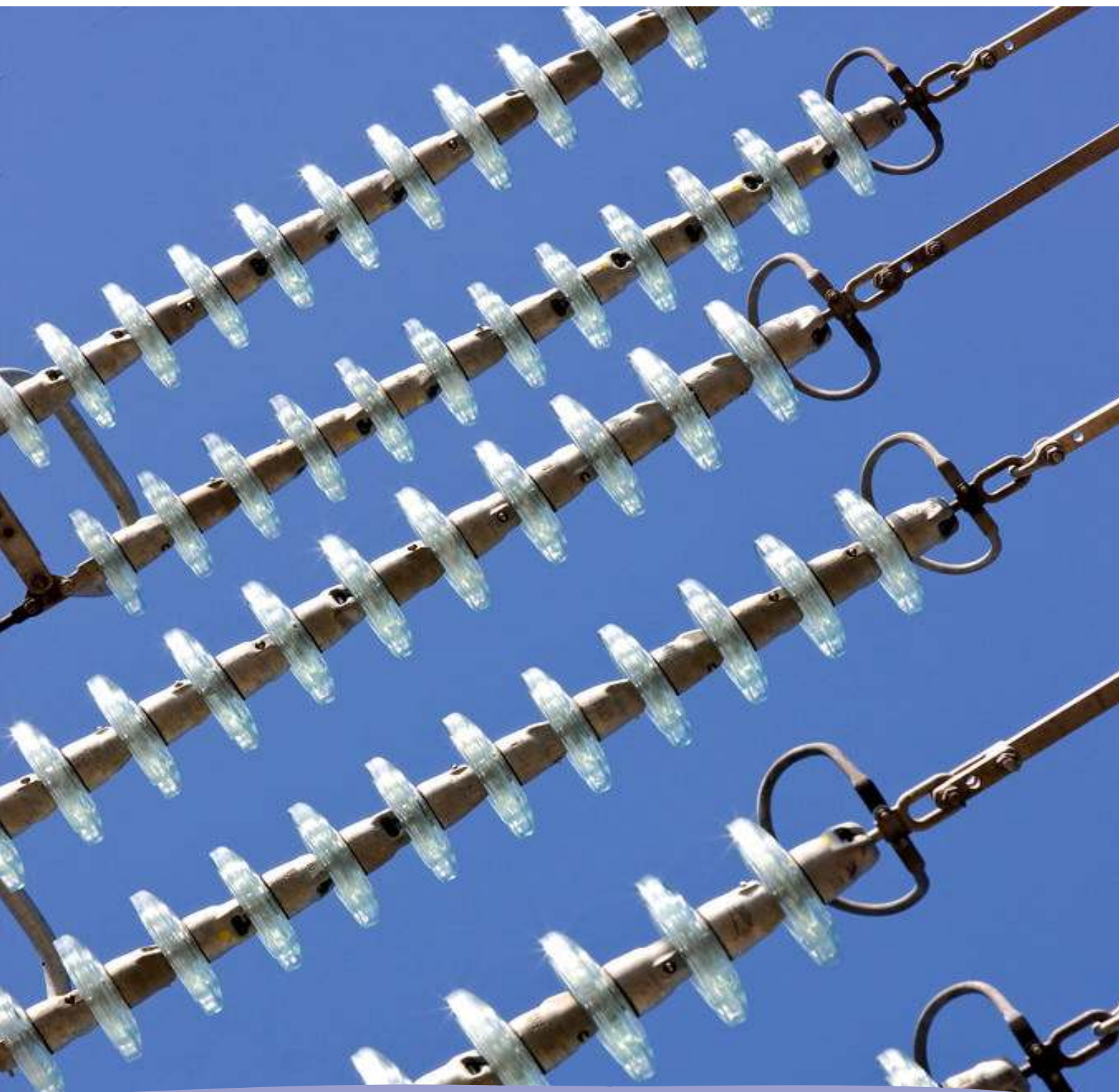


# Monthly statistics



## May 2013

Monthly provisional values as of 09 October 2013

European Network of  
Transmission System Operators  
for Electricity

entsoe

<b>Table of contents</b>		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 <sup>rd</sup> Wednesday	11
10	Load diagrams on the 3 <sup>rd</sup> Wednesday	12
11	Water reservoirs Nordic	13

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

- All values of generation and consumption on page 2, 11 and 12 are calculated to represent 100% of the national values.
- All data with the country code GB represents monthly statistical data as sum of England, Scotland and Wales.
- All data with the country code NI represents the monthly statistical data of the Northern Ireland.
- 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	of which bio-mass	Non identifiable	Total			monthly [GWh]	var. [%]
AT	0	569	4706	426	n.a.	n.a.	n.a.	872	6573	-763	415	5395	-0,2
BA	0	528	702	0	0	0	0	0	1230	-310	0	920	-1,5
BE <sup>2</sup>	2190	2179	141	831	252	292	287	0	5341 <sup>1</sup>	1622	159	6804	0,6
BG	670	859	594	208	81	127	0	0	2331	-94	40	2197	-3,7
CH	1713	192	4038	140	9	0	0	0	6083 <sup>1</sup>	-881	146	5056	2,8
CY	0	316	0	15	15	0	0	0	331	0	0	331	-3,5
CZ	2133	3723	315	248	35	213	111	0	6419 <sup>1</sup>	-1492	85	4842	-0,8
DE <sup>3</sup>	6324	21767	2046	6869	3072	3346	450	0	37006 <sup>1</sup>	560	n.a.	37566	n.a.
DK	0	1271	1	859	682	0	177	0	2131 <sup>1</sup>	459	0	2590	-2,4
EE	0	846	4	79	33	0	46	0	929	-321	0	608	2,5
ES	3983	7372	4026	5861	4053	1388	420	142	21384	-132	453	20799	-3,3
FI	1759	1092	1529	819	49	0	770	65	5264 <sup>1</sup>	1005	0	6269	-1,1
FR	31169	1506	8608	2153	1154	486	513	0	43436	-5891	670	36875	4,6
GB	4452	17410	580	2176	1458	0	0	0	24618	111	327	24403	-8,5
GR	0	2656	392	575	262	295	18	0	3623 <sup>1</sup>	158	4	3777	-1,2
HR	0	205	868	30	30	0	0	0	1103	204	26	1281	-1,3
HU	1165	1066	0	0	0	0	0	0	2231	1102	0	3333	5,1
IE	0	1278	64	438	434	0	0	16	1796 <sup>1</sup>	340	43	2093	0,1
IS	0	0	1052	406	0	0	0	0	1458	0	0	1458	3,3
IT	11870	0	6587	4423	1535	2403	n.a.	0	22880	3085	300	25665	-3,0
LT	0	63	110	60	31	5	24	0	233 <sup>1</sup>	663	66	830	7,8
LU	0	62	104	25	6	7	4	0	191	446	134	503	-2,7
LV	0	67	641	43	6	0	14	0	751	-195	0	556	-4,1
ME	0	0	322	0	0	0	0	0	322	0	0	322	9,2
MK	0	264	222	0	0	0	0	0	486	74	0	560	-11,4
NI	0	488	0	126	119	0	2	0	614	103	0	717	153,4
NL	84	5656	0	1030	423	n.a.	n.a.	0	6770	1785	0	8555	-2,7
NO	0	310	9347	136	136	0	0	0	9793 <sup>1</sup>	-233	189	9371	1,4
PL <sup>4</sup>	0	10536	299	725	346	0	379	0	11560 <sup>1</sup>	-249	54	11257	-0,4
PT	0	1512	1173	1110	834	43	232	0	3795 <sup>1</sup>	150	73	3872	-2,4
RO	630	1258	1718	396	341	33	22	0	4002	28	13	4017	-7,1
RS	0	2025	1220	0	0	0	0	0	3245	-362	139	2744	-2,5
SE	4070	191	5203	1401	695	0	706	0	10865 <sup>1</sup>	-813	0	10052	-4,4
SI	517	173	595	0	0	0	0	0	1285	-294	0	991	-2,7
SK	1105	362	593	136	0	74	0	80	2276 <sup>1</sup>	-130	28	2118	1,0
<b>ENTSO-E</b>	<b>73834</b>	<b>87802</b>	<b>57800</b>	<b>31744</b>	<b>16091</b>	<b>8712</b>	<b>4175</b>	<b>1175</b>	<b>252355<sup>1</sup></b>	<b>-265</b>	<b>3364</b>	<b>248727</b>	<b>n.a.</b>

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

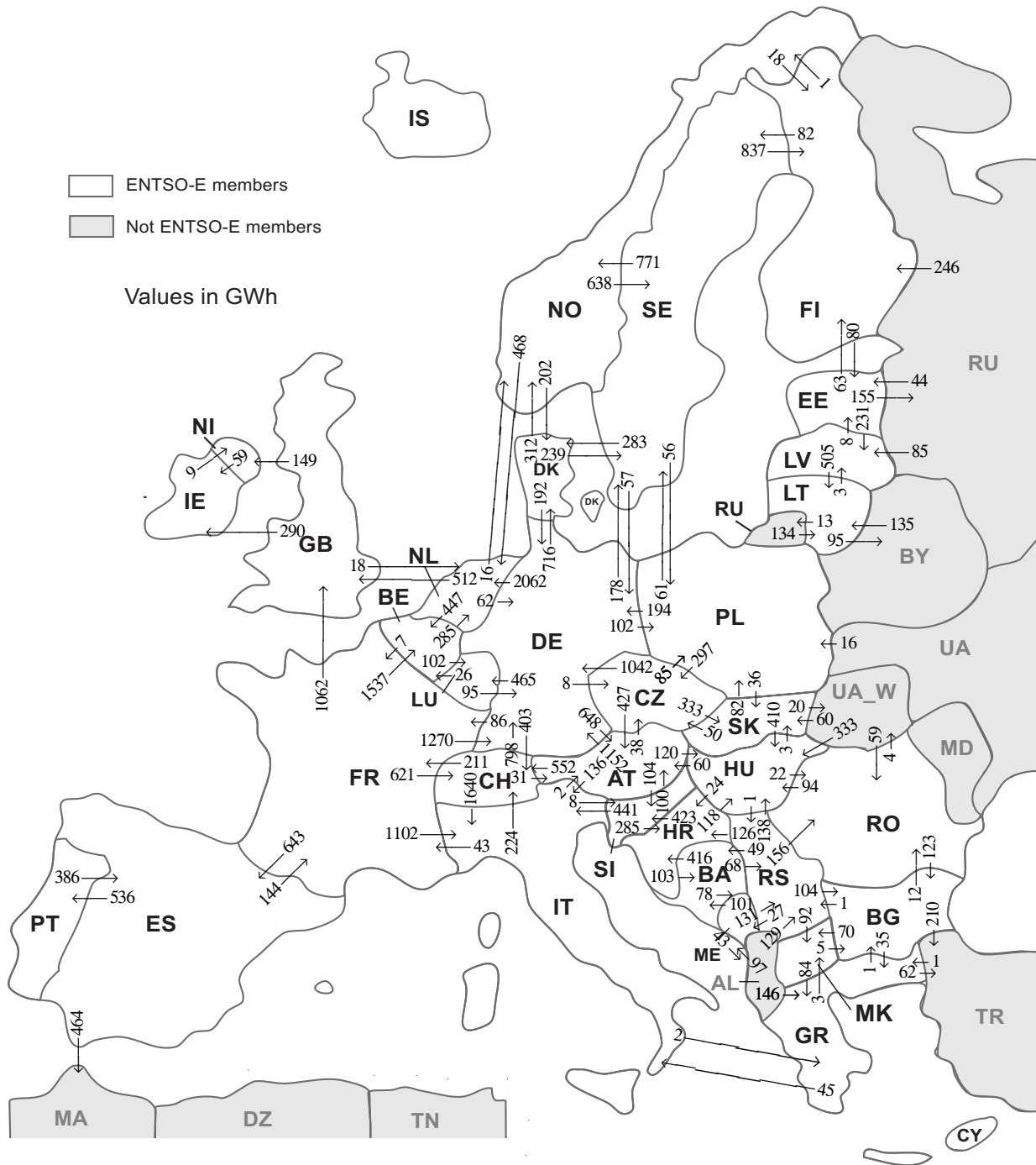
<sup>2</sup> The reported figures are best estimates based on actual measurements and extrapolations.

<sup>3</sup> The reported figures are best estimates based on actual inquiries, measurements and extrapolations.

<sup>4</sup> Operational data. Other renewable includes energy from biomass co-firing in conventional thermal units.

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 power	Other renewable except hydro	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	100	100	100	100	100
FI	100	100	100	100	100	100
FR	100	100	100	100	100	100
GB	100	96	87	67	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



Sum of physical energy flows between ENTSO-E countries: **30709 GWh<sup>1</sup>**

Total physical energy flows: **33260 GWh<sup>1</sup>**

<sup>1</sup> Sum of physical energy flows without exchanges between NO-RU.

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.

# 4

## Overview of the detailed physical energy flows in GWh

May 2013

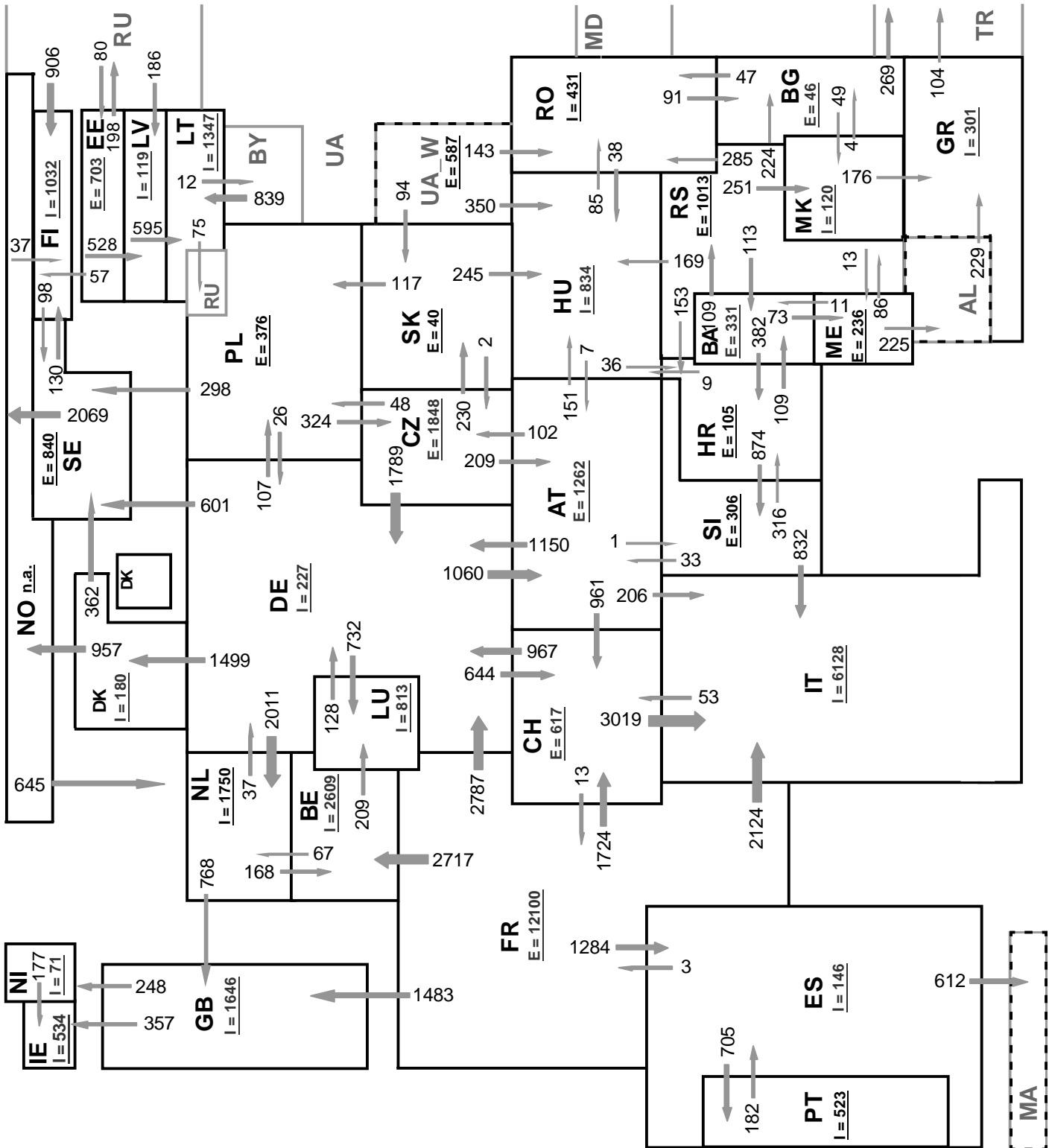
Outside flows countries	Inside flows of the countries																																		
	AT	BA	BE	BG	CH	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HR	HU	IE	IT	LT	LU	LV	ME	MK	NI	NL	NO	PL	PT	RO	RS	SE	SI	SK	Other III <sup>1</sup>	
AT	-	-	-	-	552	38	1152	-	-	-	-	-	-	-	120	-	136	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	-
BA	-	-	-	-	-	-	-	-	-	-	-	-	-	416	-	-	-	-	-	78	-	-	-	-	-	-	-	-	-	68	-	-	-	-	
BE	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	102	-	-	-	-	-	285	-	-	-	-	-	-	-	-	-	
BG	-	-	-	-	-	-	-	-	-	-	-	-	35	-	-	-	-	-	-	-	-	70	-	-	-	-	-	12	1	-	-	-	-	210	
CH	31	-	-	-	-	798	-	-	-	-	211	-	-	-	-	-	1640	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CZ	427	-	-	-	-	1042	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	-	-	-	-	-	-	-	333	-
DE	648	-	-	-	403	8	716	-	-	-	86	-	-	-	-	-	-	465	-	-	-	-	-	-	2062	-	102	-	-	-	178	-	-	-	
DK	-	-	-	-	-	192	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	-	-	-	239	-	-	-	-	
EE	-	-	-	-	-	-	-	-	-	63	-	-	-	-	-	-	-	-	-	-	231	-	-	-	-	-	-	-	-	-	-	-	-	-	155
ES	-	-	-	-	-	-	-	-	-	-	144	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	536	-	-	-	-	-	-	-	464
FI	-	-	-	-	-	-	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	82	-	-	-	-	0	
FR	-	-	1537	-	621	-	1270	-	643	-	-	1062	-	-	-	-	1102	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GB	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	290	-	-	-	-	-	-	-	149	18	-	-	-	-	-	-	-	-	-	-
GR	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	62
HR	-	103	-	-	-	-	-	-	-	-	-	-	-	-	-	118	-	-	-	-	-	-	-	-	-	-	-	-	0	-	423	-	-	-	
HU	60	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	22	1	-	-	-	3	0	
IE	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-
IT	2	-	-	-	224	-	-	-	-	-	43	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-
LT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	108
LU	-	-	26	-	-	95	-	-	-	0	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LV	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
ME	-	101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43
MK	-	-	-	5	-	-	-	-	-	-	-	-	84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-
NL	-	-	-	-	-	-	-	-	-	-	0	-	-	59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NL	-	-	447	-	-	62	-	-	-	-	-	512	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NO	-	-	-	-	-	202	-	-	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	468	-	-	-	-	-	-	638	-	-	n.a.
PL	-	-	-	-	297	194	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	-	36	0
PT	-	-	-	-	-	-	-	-	-	386	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RO	-	-	-	123	-	-	-	-	-	-	-	-	-	-	-	94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
RS	-	49	-	104	-	-	-	-	-	-	-	-	126	138	-	-	-	-	-	-	-	27	92	-	-	-	-	-	-	-	-	-	-	-	0
SE	-	-	-	-	-	57	283	-	-	837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	771	56	-	-	-	-	-	-	-	-
SI	100	-	-	-	-	-	-	-	-	-	-	-	-	285	-	-	-	441	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SK	-	-	-	-	50	-	-	-	-	-	-	-	-	-	410	-	-	-	-	-	-	-	-	-	-	-	82	-	-	-	-	-	-	-	20
Other III <sup>1</sup>	-	-	-	0	-	-	-	44	0	246	-	-	147	-	333	-	-	269	-	85	97	-	-	-	n.a.	16	-	59	129	-	-	-	-	60	-

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

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

	flows inside	flows outside
AT	1268	2102
BA	253	562
BE	2010	394
BG	233	328
CH	1800	2680
CZ	393	1887
DE	4862	4668
DK	1201	743
EE	132	449
ES	1029	1144
FI	1164	163
FR	491	6235
GB	1574	457
GR	268	111
HR	851	644
HU	1213	110
IE	349	9

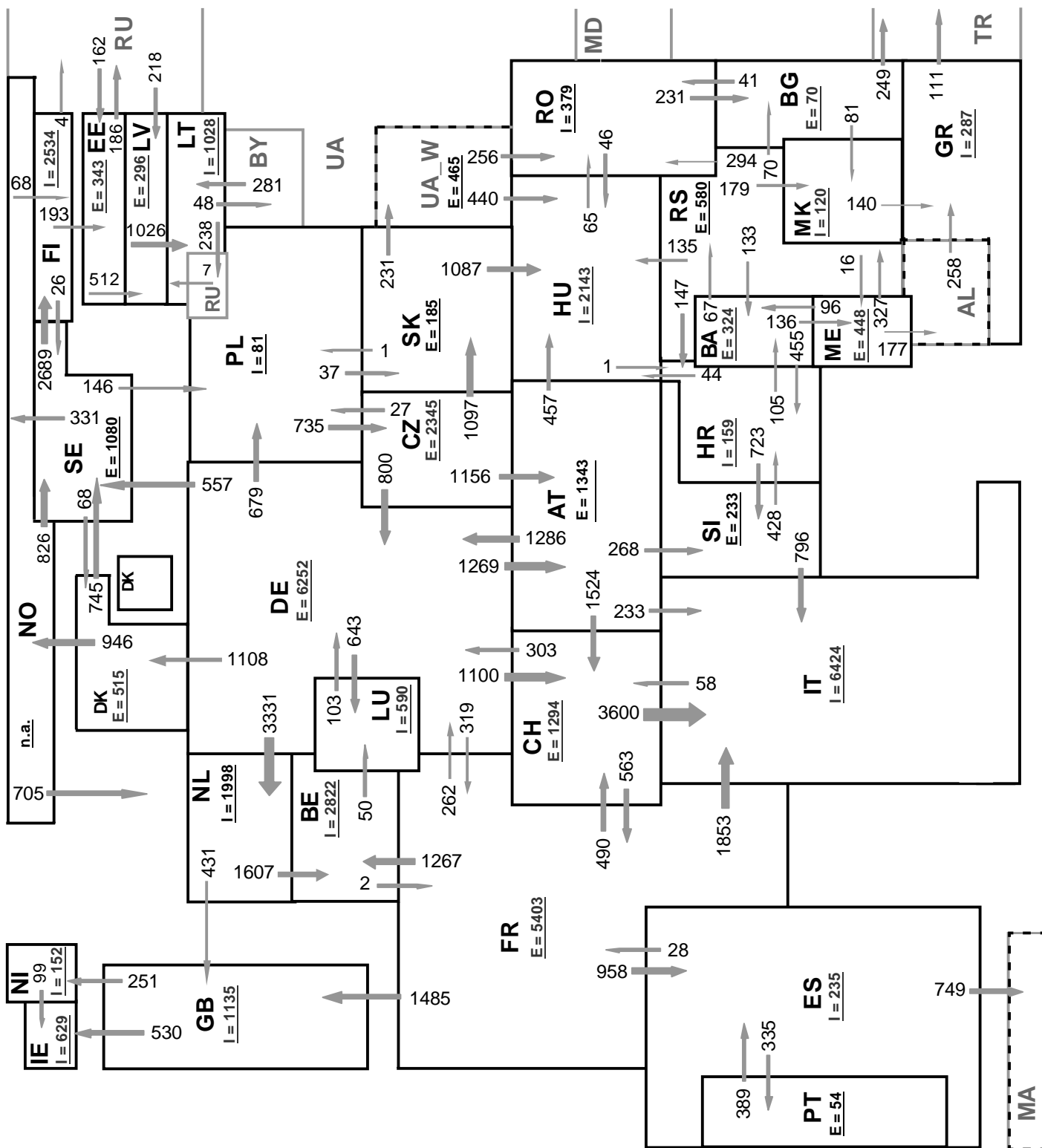
	flows inside	flows outside
IT	3364	279
LT	774	111
LU	567	121
LV	319	513
ME	202	275
MK	165	89
NI	158	59
NL	2833	1037
NO	n.a.	n.a.
PL	341	588
PT	536	386
RO	249	221
RS	330	692
SE	1198	2004
SI	535	826
SK	432	562
ENTSO-E	n.a.	n.a.



Sum of load flows in MW      **ENTSO-E = 41783 MW**      **Total = 46105 MW**  
 ( Calculated sum without data between NO - RU )

Synchronous operation with ENTSO-E region

**I** = Import balance  
**E** = Export balance



Sum of load flows in MW ( Calculated sum without data between NO - RU )

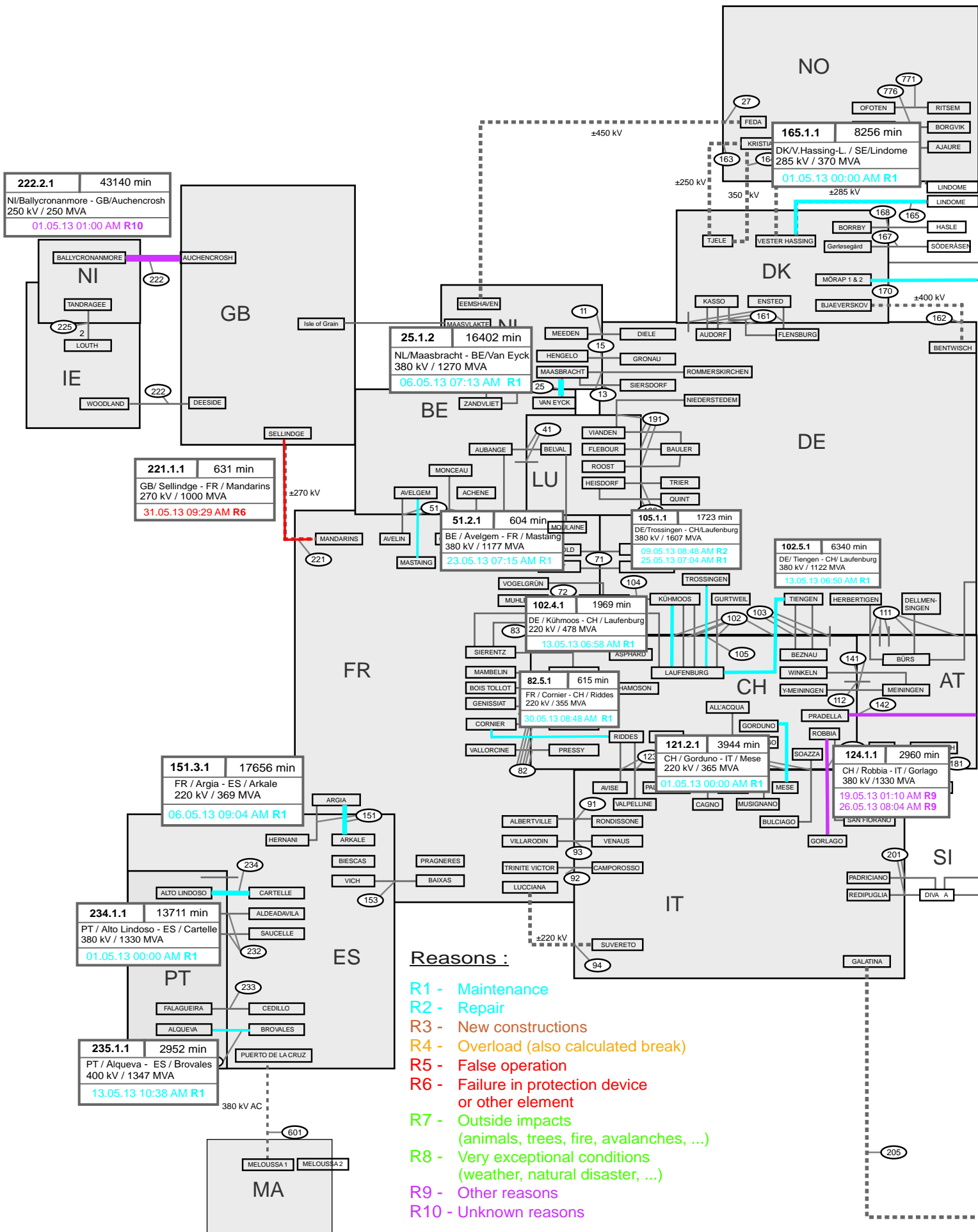
ENTSO-E = 45415 MW

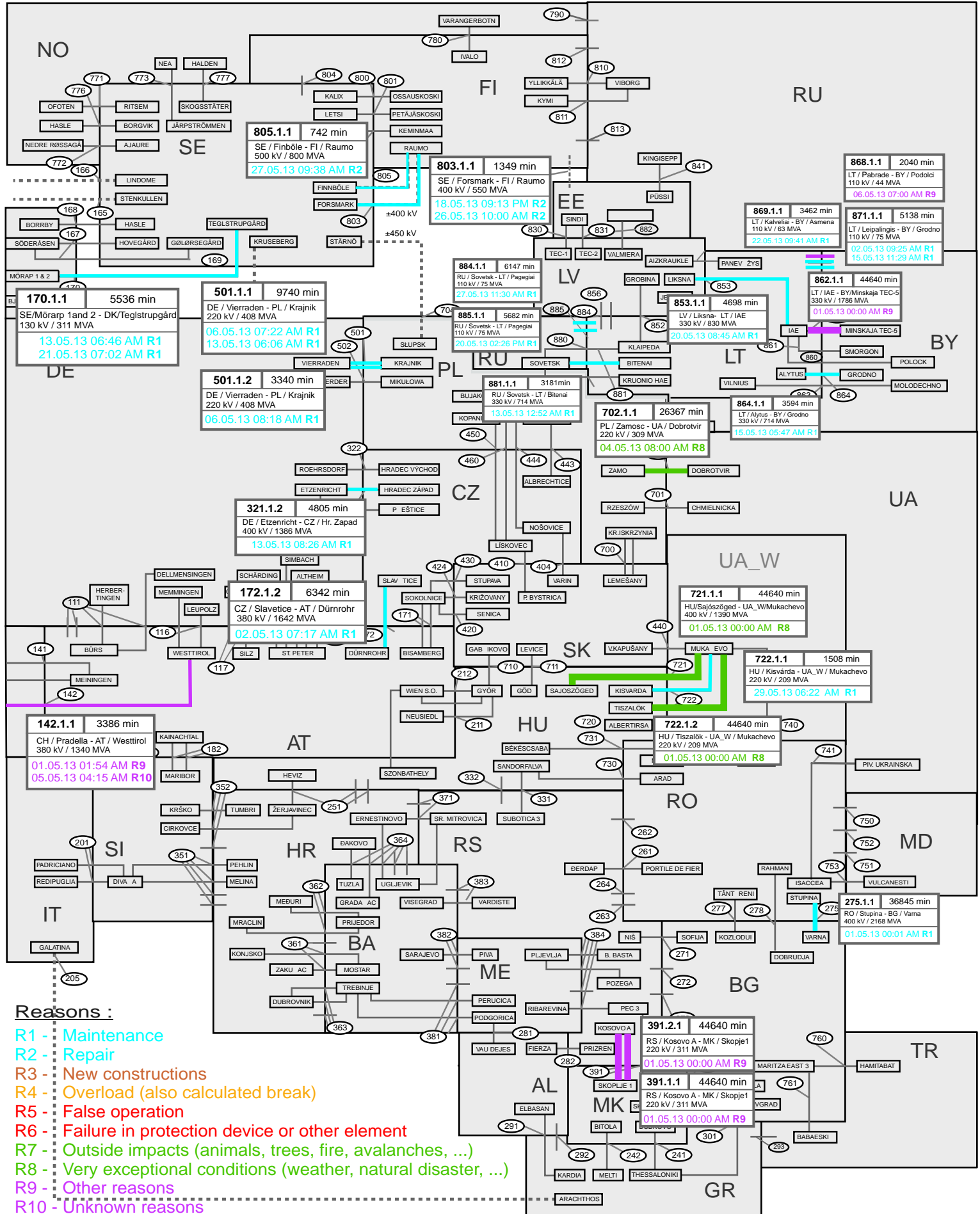
Total = 49030 MW

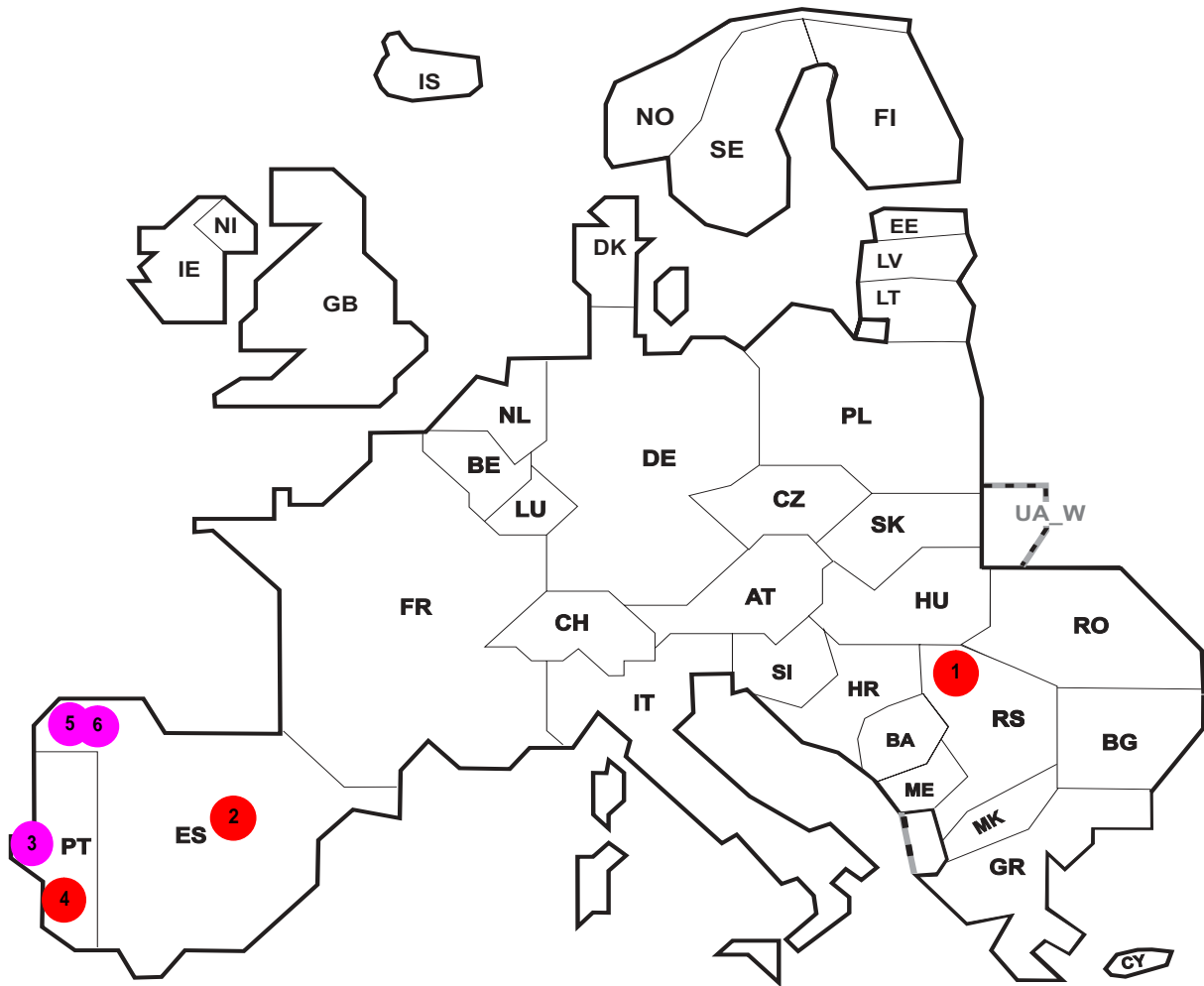
Synchronous operation with ENTSO-E region

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	RS	Pancevo	R5	99	0	37	1,326
2	ES	Loeches	R6	30	0	25	0,060
3	PT	Neves Corvo	R10	2	0	3	0,018
4	PT	Subestação de Ruivães	R6	2	0	3	0,018
5	ES	Castrelo	R10	2	0	11	0,004
6	ES	Castrelo	R10	1	0	7	0,003

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 15.05.2013 CET of each country

	Highest		Low est		Load representativity %
	load MW	variation % <sup>1</sup>	load MW	variation % <sup>1</sup>	
AT	8951	-4,2	5796	-3,8	100
BA	1574	-5,7	942	-4,6	100
BE <sup>2</sup>	11188	4,5	7972	-0,1	100
BG	3888	-8,8	2866	-0,1	99
CH	8939	0,0	5731	0,0	100
CY	521	-9,5	307	-6,4	100
CZ	7561	-6,6	5541	-4,2	100
DE <sup>3</sup>	64833	-11,4	39839	-15,1	91
DK	4005	-17,1	2535	-10,5	100
EE	1008	2,4	624	2,5	100
ES	31511	-4,3	21339	-5,2	100
FI	9499	-1,1	7243	-2,4	100
FR	58905	2,0	41617	-3,8	100
GB	40629	-4,8	24567	-12,3	100
GR	6158	0,8	3777	-2,0	100
HR	2114	-6,5	1399	-1,0	100
HU	4822	-0,5	3350	-0,9	100
IE	3398	-3,6	1994	5,4	100
IS	2035	1,6	1877	0,4	100
IT	43713	-3,0	27258	-3,4	100
LT	1366	3,2	847	13,8	100
LU	733	-7,2	517	-12,7	100
LV	949	7,5	529	13,5	100
ME	398	-19,1	241	-26,3	100
MK	946	-7,3	598	-9,7	100
NI	1264	-2,2	695	-0,9	100
NL	13936	-6,0	8481	-6,0	100
NO	15583	5,8	12289	7,1	100
PL <sup>4</sup>	18522	-1,7	12826	-1,3	100
PT	6127	-8,8	4235	-4,7	100
RO	6307	-8,1	4602	-8,5	100
RS	4856	-3,5	2750	-6,7	100
SE	16271	0,2	12388	3,2	100
SI	1587	-9,9	1225	4,1	100
SK	3342	-4,1	2582	-1,5	100
<b>ENTSO-E</b>	<b>401802</b>	<b>-3,7</b>	<b>273479</b>	<b>-5,0</b>	

<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.

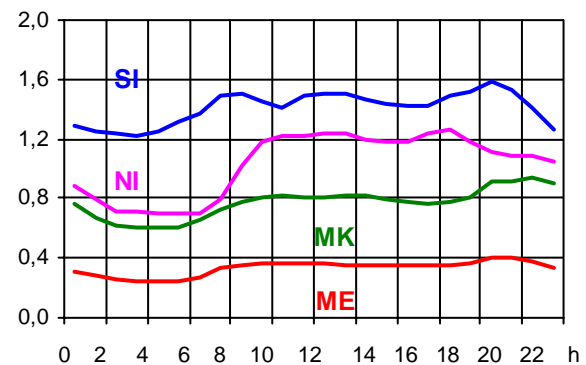
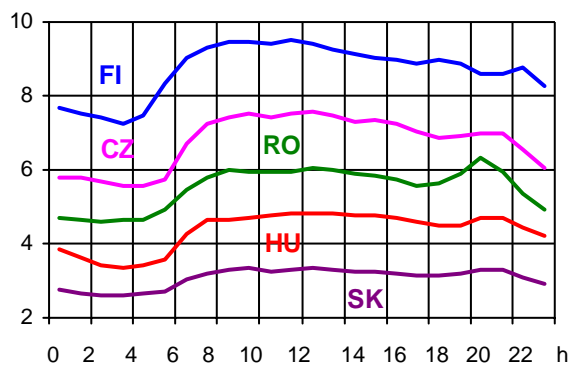
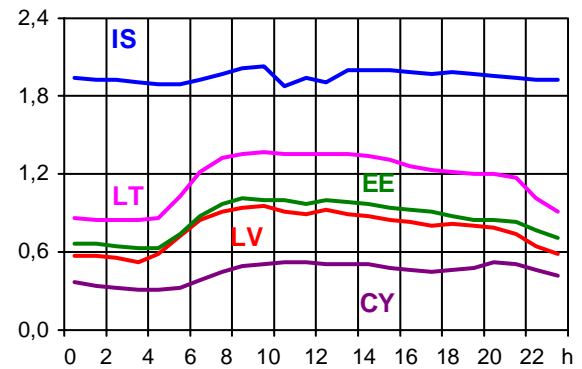
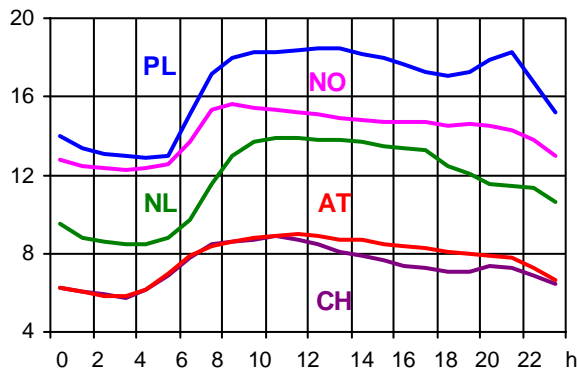
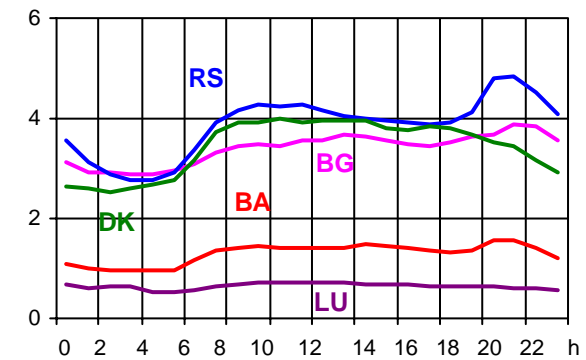
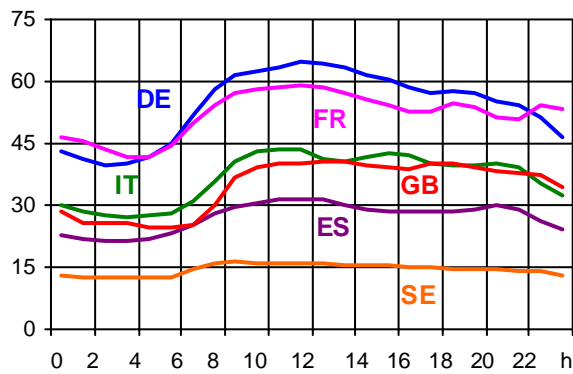
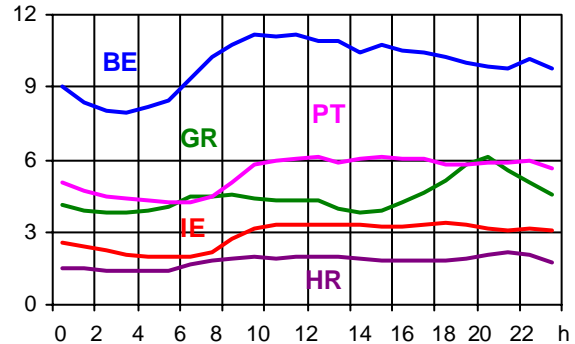
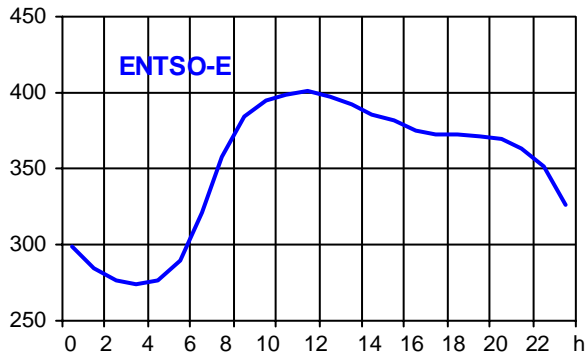
<sup>3</sup> A comparison with previous figures may be limited for statistical reasons related to renewable energies feed-in like direct marketing.

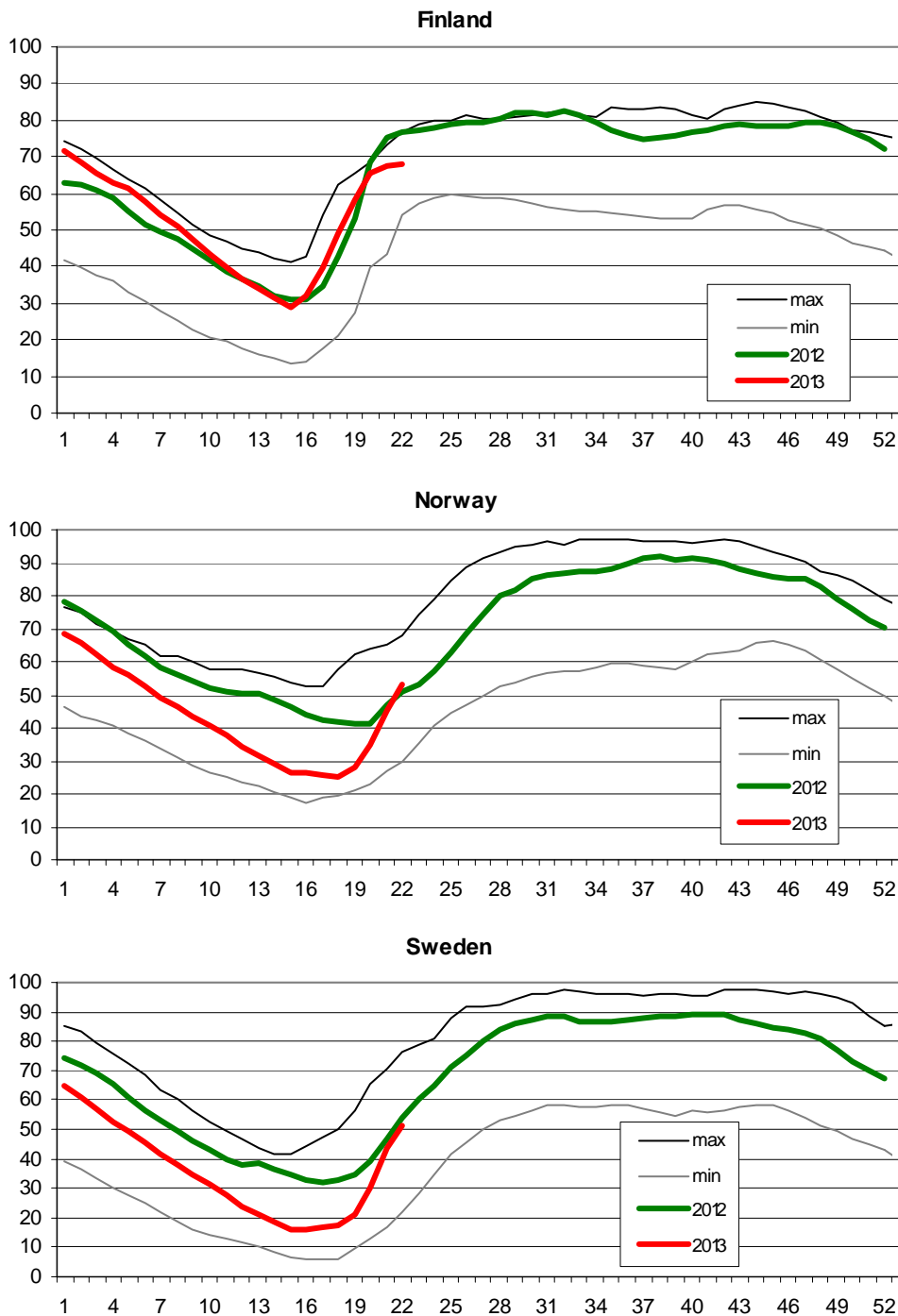
German TSOs are working on a modified system concerning gathering of data of voltage levels downstream the transmission grid. There may be remarkable deviations in future and current data might no longer be directly comparable with historical data. Also already available data for past periods may be changed retroactively and significantly in future.

<sup>4</sup> Operational data

Consumption hourly load curves on 15.05.2013 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](mailto:info@entsoe.eu)  
[www.entsoe.eu](http://www.entsoe.eu)

