European Network of
Transmission System Operators
for Electricity

entsoe

ENTSO-E Net generation, exchanges and consumption 2011

Generation

Exchanges

Consumption

Generation capacity

Overview ENTSO-E in figures 2011 - Electricity system data of member TSOs' countries

Countries		AT	BA	BE [1]	BG	CH [2]	CY	CZ	DE [3]	DK	EE
Net generation "All values are calculated to represent 100% of the national values"											
Nuclear power	GWh	0	0	45943	15172	25560	0	26709	101458	0	0
Fossil fuels	GWh	23007	9404	28996	25889	2107	4833	48998	350456	21811	10271
Hydro power	GWh	33663	4290	1410	3542	33795	0	2821	19853	19	33
Other renewable net generation	GWh	0	0	9279	540	1419	115	2500	86123	11309	1085
- of which wind	GWh	0	0	2307	540	60	115	384	44641	8938	364
- of which solar	GWh	0	0	1493	0	0	0	2115	18341	0	0
Non-identifiable	GWh	8730	0	0	0	0	0	0	0	0	0
Total net generation	**GWh**	**65400**	**13694**	**85628**	**45143**	**62881**	**4948**	**81028**	**557890** [4]	**33139**	**11389**
Consumption "All values are calculated to represent 100% of the national values"											
Consumption	**GWh**	**68567**	**12186**	**86536**	**33233**	**64439**	**4948**	**63040**	**544267**	**34458**	**7827**
Variation (compared with 2010)	%	0,4	3,8	-4,1	5,1	-0,02	-5,8	-1,1	-0,6	-3,4	-2,4
Transmision network losses percentage consumption	%										
Net generation capacity as of 31 December 2011 "All values are identical with the national values and their representativity"											
NGC Nuclear	MW	0	0	5926	2080	3278	0	3692	12048	0	0
NGC Fossil fuels	MW	7425	1506	8539	6400	388	973	10938	66967	7486	2283
NGC Hydro power	MW	12919	1971	1420	3150	13723	0	2161	9209	10	4
NGC Renewable ernergy sources	MW	1054	0	4142	770	508	102	2190	53532	3967	254
- of which wind	MW	1017	0	1056	550	42	102	219	28254	3950	184
- of which solar	MW	0	0	1901	220	111	0	1971	22306	17	0
NGC Other sources	MW	0	0	0	0	205	0	0	3263	44	0
NGC Total	**MW**	**21398**	**3477**	**20027**	**12400**	**18102**	**1075**	**18981**	**145019**	**11507**	**2541**
Representativity of the values	%	100	100	100	99	100	100	100	93	100	100

Countries		PL [7,8]	PT	RO	RS	SE	SI	SK	ENTSO-E [9]
Net generation "All values are calculated to represent 100% of the national values"									
Nuclear power	GWh	0	0	10796	0	58023	5900	14379	**885586**
Fossil fuels	GWh	140894	24732	30099	32104	5359	4602	6331	**1625944**
Hydro power	GWh	2647	11825	14670	9162	65783	3362	4007	**511852**
Other renewable net generation	GWh	8069	11866	1403	0	17256	0	863	**312917**
- of which wind	GWh	2745	9002	1218	0	6070	0	0	**175184**
- of which solar		0	262	0	0	0	0	307	**45649**
Non-identifiable	GWh	0	0	0	0	0	0	968	**11145**
Total net generation	**GWh**	**151610**	**48423**	**56968**	**41266**	**146421**	**13864**	**26548**	**3347445**
Consumption "All values are calculated to represent 100% of the national values"									
Consumption	**GWh**	**145720**	**50499**	**54916**	**40174**	**139222**	**12558**	**26780**	**3311650**
Variation (compared with 2010)	%	1,5	-3,4	2,9	1,6	-5,6	2,5	0,5	**-1,9**
Transmision network losses percentage consumption	%								**1,6**
Net generation capacity as of 31 December 2011 "All values are identical with the national values and their representativity"									
NGC Nuclear	MW	0	0	1300	0	9363	696	1940	**126447**
NGC Fossil fuels	MW	30117	8779	8901	5478	4793	1282	2896	**447174**
NGC Hydro power	MW	2341	5392	6144	2888	16197	1063	2478	**196758**
NGC Renewable ernergy sources	MW	2209	4855	1030	0	6094	0	753	**152948**
- of which wind	MW	2059	4081	1006	0	2899	0	3	**90134**
- of which solar	MW	1	155	0	0	0	0	507	**47636**
NGC Other sources	MW	0	0	0	0	0	0	85	**4984**
NGC Total	**MW**	**34667**	**19026**	**17375**	**8366**	**36447**	**3041**	**8152**	**928311**
Representativity of the values	%	100	97	100	100	100	100	100	

Overview ENTSO-E in figures 2011 - Electricity system data of member TSOs' countries

ES	FI	FR	GB[5]	GR	HR	HU	IE	IS	IT	LT	LU	LV	ME	MK	NI[6]	NL	NO
55050	22266	421118	64550	0	0	14743	0	0	0	0	0	0	0	0	0	3919	0
121327	24167	51505	237151	42431	5161	16755	20417	8	218457	2752	2318	2885	1446	4858	6636	93002	4776
32173	12279	50267	7484	4254	4583	215	679	12743	47202	1049	1127	2870	1186	1469	7	0	121383
55594	10989	20059	19104	3379	217	1786	4359	4402	25758	620	216	183	0	0	1063	12104	1257
41661	482	12075	19104	2594	182	601	4359	0	9776	472	64	72	0	0	1005	5096	1257
9597	0	2415	0	441	0	0	0	0	10670	0	8	0	0	0	0	0	0
341	692	0	0	0	0	0	177	0	0	0	0	219	0	0	18	0	0
264485	**70393**	**542950**	**328289**	**50064**	**9961**	**33499**	**25632**	**17153**	**291417**	**4421**	**3661**	**6157**	**2632**	**6327**	**7724**	**109025**	**127416**
254990	**84244**	**479242**	**329115**	**52915**	**17498**	**40142**	**26122**	**17153**	**334640**	**10362**	**6558**	**7264**	**4183**	**8986**	**9009**	**117837**	**122020**
-2,2	-0,1	-6,7	-2,0	-1,2	-0,6	3,0	-3,4	2,8	1,3	0,8	-2,0	-0,7	3,3	7,3	-1,9	1,2	-6,4
7525	2676	63130	10397	0	0	1892	0	0	0	0	0	0	0	0	0	504	0
43659	8978	27789	61984	9614	1787	6860	6132	52	76287	2544	499	859	220	1157	2335	20137	1166
19081	3157	25405	3876	3223	2110	50	508	1860	21737	876	1134	1556	660	503	4	38	30164
26639	2254	10138	3355	1936	118	695	1615	661	20419	252	91	30	0	0	419	2439	450
20729	197	6639	3355	1363	118	325	1615	0	6918	202	41	30	0	0	405	2340	450
4916	0	2228	0	439	0	0	0	0	12773	0	40	0	0	0	0	51	0
0	44	0	45	0	0	0	242	0	0	0	16	21	0	0	7	1012	0
96904	**17109**	**126462**	**79657**	**14773**	**4015**	**9497**	**8497**	**2573**	**118443**	**3672**	**1740**	**2466**	**880**	**1660**	**2765**	**24130**	**31780**
100	100	100	90	100	100	100	100	100	100	100	100	100	100	100	100	100	100

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

2 Calculations of net generation and consumption based on the ENTSO-E database differ from the official values from the Swiss Federal Office of Energy.

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

4 Electricity generation and consumption also comprise shares of generation from industry's own power stations and feed-in from private generators (total of 12 monthly values). The part of net electricity generation relevant to primary control power amounts to 527,581 TWh.

5 Yearly values with the country code GB represents the sum of England, Scotland and Wales.

6 Yearly values with the country code NI represents the data GB Northern Ireland.

7 Operational data

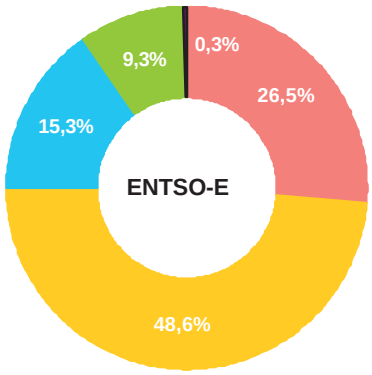
8 Other renewable includes energy from biomass co-firing in conventional thermal units.

9 Calculated sum of the ENTSO-E member TSO's countries.

Net electricity generation[1] and its structure

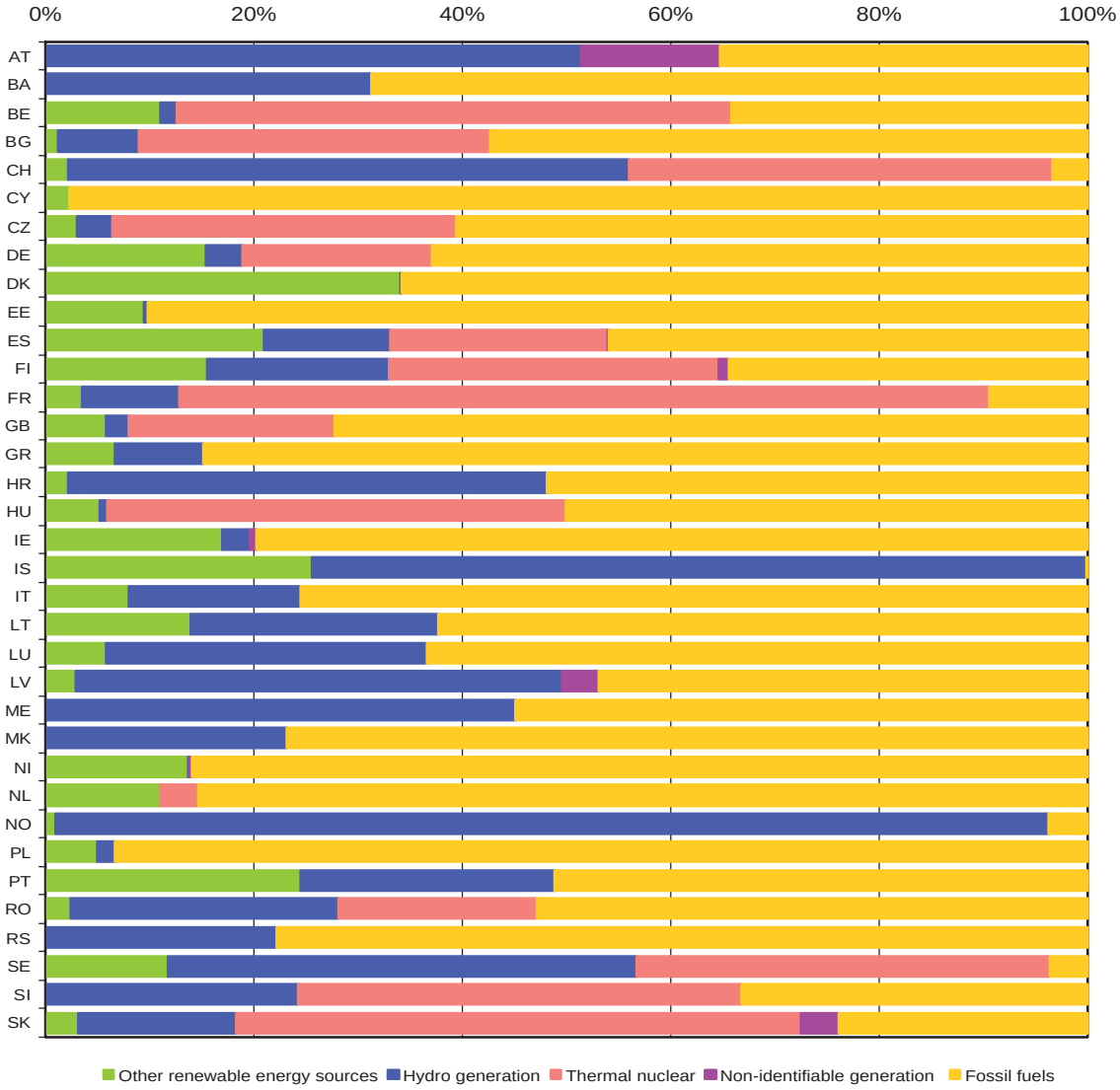
Overview generation mix as sum of the ENTSO-E member TSOs' countries

	GWh
Other renewable generation (wind, solar, geothermal, waste, bio fuels)	312917
Hydro generation (storage, run of river, pumped storage)	511852
Thermal nuclear	885586
Non-identifiable generation	11145
Fossil fuels (lignite and hard coal, gas,oil, mixed fuels, peat)	1625944



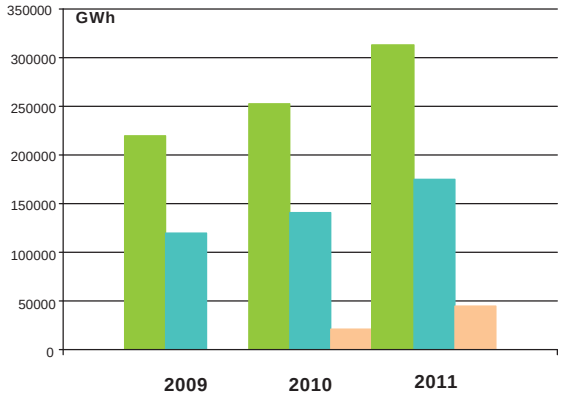
[1] All values are calculated to represent 100% of the national values.

Share of energy produced of each member TSOs' country 2011 in %
(Based on the net generation values as of the table on page 10 and 11)



Other renewable generation [1] including wind and solar power 2010 and 2011

Renewable generation except hydro of which wind and of which solar as sum of the ENTSO-E member TSOs' countries[1]



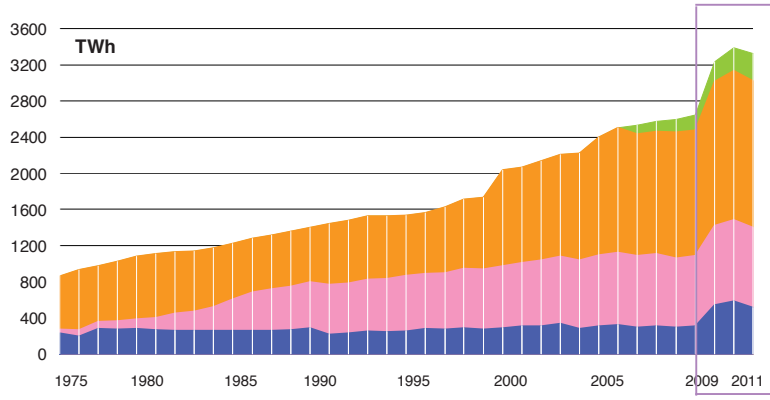
	year	GWh
Total other renewable generation except hydro	2009	219566
	2010	252990
	2011	312917
- of which wind	2009	120489
	2010	141521
	2011	175184
- of which solar[2]	2009	-
	2010	21539
	2011	45649

Monthly overview of the total other renewable generation except hydro with the share of wind and solar as sum of the ENTSO-E member TSOs' countries[1]

month	other renew except hydro	of which wind	of which solar		other renew except hydro	of which wind	of which solar
	2010 GWh	2010 GWh	2010 GWh		2011 GWh	2011 GWh	2011 GWh
January	21096	12408	597		24314	14674	1124
February	21374	13079	846		25193	15465	1845
March	23875	14366	1522		26762	14855	3340
April	19249	9655	2112		25719	13214	4560
May	20297	10594	2291		26305	13225	5257
June	17129	7913	2482		23199	10835	5310
July	18408	8558	3057		23155	12231	4592
August	19198	9329	2656		23384	10569	5753
September	19301	10284	2220		24548	12411	5205
October	24091	14566	1927		28290	16418	4256
November	24599	15484	1039		25450	15205	2578
December	24373	15286	790		36598	26082	1829
Sum 2010	**252990**	**141521**	**21539**	**Sum 2011**	**312917**	**175184**	**45649**

[1] All values are calculated to represent 100% of the national values.
[2] Data collection from year 2010 onwards.

Development of net electrity generation [1]

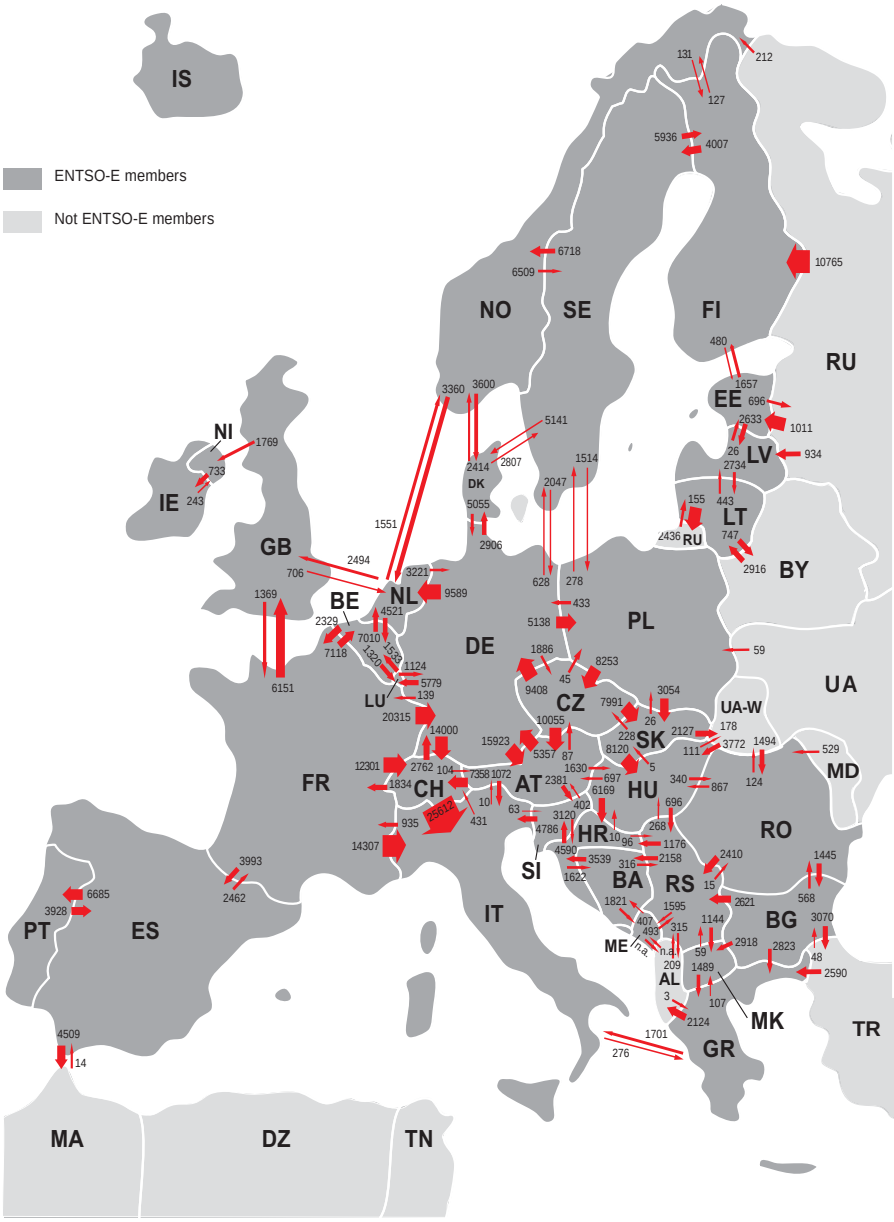


From year 2009 on calculated statistical data of ENTSO-E as sum of the member TSOs' countries. All yearly data from 1975 to 2008 are statistical data from the ENTSO-E Regional Group Continental Europe (former UCTE).

Year	Hydro power TWh	Thermal nuclear TWh	Fossil fuels TWh	Other sources [2] TWh	Total TWh
1975	222,9	50,0	585,4		858,3
1976	191,2	69,5	669,1		929,8
1977	276,2	82,2	610,4		968,8
1978	266,1	97,4	659,9		1023,4
1979	275,4	110,6	691,3		1077,3
1980	263,4	133,9	712,1		1109,4
1981	256,4	191,0	678,4		1125,8
1982	258,0	211,2	665,5		1134,7
1983	255,9	258,8	653,3		1168,0
1984	257,0	348,5	617,3		1222,8
1985	255,2	426,3	597,3		1278,8
1986	253,3	464,4	593,6		1311,3
1987	264,9	483,0	607,7		1442,1
1988	282,9	514,6	597,0		1483,5
1989	216,2	551,6	669,2		1528,7
1990	222,8	558,5	690,6		1565,9
1991	246,2	579,6	701,7		1625,0
1992	240,2	591,2	689,5		1618,0
1993	251,2	616,9	664,9		1630,0
1994	278,8	606,1	674,7		1657,5
1995 [3]	265,8	627,7	732,8		1740,2
1996	284,6	657,2	770,1		1841,4
1997	272,0	665,2	792,1		1861,3
1998 [4]	284,4	689,5	1057,7		2172,3
1999	292,5	707,0	1035,9		2128,7
2000	305,1	733,8	1093,4		2246,4
2001	331,6	744,4	1129,8		2291,0
2002	276,1	757,6	1187,6		2303,8
2003 [5]	307,4	787,4	1305,7		2484,6
2004	319,8	798,6	1386,3		2525,2
2005	292,4	792,6	1349,1	98,2	2540,4
2006	305,4	801,9	1354,3	115,8	2584,9
2007 [6]	294,2	759,4	1402,3	143,3	2607,1
2008	306,5	774,8	1384,1	170,0	2643,8
2009 [7]	540,2	877,0	1595,1	223,8	3236,2
2010	584,3	896,0	1650,1	261,3	3403,6
2011	511,0	885,6	1618,8	314,1	3347,4

[1] Values of detailed generation are national values; total net generation data are calculated to represent 100% of the national values.
[2] Before 2005, the information on other renewable energy sources was collected in a different manner. Some countries added them to fossil fuels, some considered them as the part of not represented in the figures (through the factor "representativity").
[3] As of September 1995 total German values
[4] Including values of CZ, HU, PL, SK as of 1998
[5] Including values of RO, BG as of 2003
[6] Including values of DK_W as of June 2007
[7] All yearly data from 1975 to 2008 are statistical data from the ENTSO-E Regional Group Continental Europe (former UCTE). From year 2009 on calculated statistical data of the ENTSO-E member TSOs' countries.

Physical energy flows 2011 - graphical overview in GWh



Consolidated physical inside and outside flows in GWh[1] :

	Inside	Outside
AT	27 191	17 885
BA	4 187	5 676
BE	13 189	10 652
BG	1 493	12 000
CH	34 090	30 312
CY	–	–
CZ	10 457	27 501
DE	49 722	55 988
DK	11 647	10 276
EE	1 517	4 986
ES	7 935	13 656
FI	18 489	4 614
FR	9 068	64 185
GB	8 645	3 844
GR	7 181	3 932
HR	14 004	6 318
HU	14 667	8 018
IE	733	243
IS	–	–
IT	47 478	1 715
LT	8 086	1 345
LU	7 099	2 657
LV	4 010	2 760
ME	3 416	900
MK	4 169	1 548
NI	2 012	733
NL	20 665	11 787
NO	11 022	13 600
PL	6 779	12 023
PT	6 685	3 928
RO	2 946	4 846
RS	6 900	6 671
SE	14 229	21 356
SI	7 034	8 308
SK	11 228	10 501

values in GWh

Sum of physical energy flows between ENTSO-E countries = 370786 GWh [2]

Total physical energy flows = 411934 GWh [2]

[1] Consolidated yearly values might differ from detailed flow data from the ENTSO-E database due to ex-post consolidation taking into account national statistical resources.

[2] Calculation based on the detailed physical energy flows in the table on page 16 without exchanges ME-AL

Physical energy flows 2011 - Detailed inside and outside flows between the countries in GWh [1]

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 [2]	MK	NI	NL	NO	PL	PT	RO	RS	SE	SI	SK	AL [3]	BY [3]	MA [3]	MD [3]	RU [3]	TR [3]	UA [3]	UA-W [3]
AT	-	-	-	-	7358	87	5357	-	-	-	-	-	-	-	-	1630	-	1072	-	-	-	-	-	-	-	-	-	-	-	-	-	2381	-	-	-	-	-	-	-	-
BA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3539	-	-	-	-	-	-	1821	-	-	-	-	-	-	-	316	-	-	-	-	-	-	-	-	-	-
BE	-	-	-	-	-	-	-	-	-	-	-	2329	-	-	-	-	-	-	-	1320	-	-	-	-	7010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BG	-	-	-	-	-	-	-	-	-	-	-	-	-	2823	-	-	-	-	-	-	-	-	2918	-	-	-	-	-	568	2621	-	-	-	-	-	-	-	3070	-	-
CH	104	-	-	-	-	-	2762	-	-	-	-	1834	-	-	-	-	-	25612	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CZ	10055	-	-	-	-	-	9408	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45	-	-	-	-	-	7991	-	-	-	-	-	-	-
DE	15923	-	-	-	14000	1886	-	2906	-	-	-	139	-	-	-	-	-	-	-	5779	-	-	-	-	9589	-	5138	-	-	-	628	-	-	-	-	-	-	-	-	-
DK	-	-	-	-	-	-	5055	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2414	-	-	-	-	2807	-	-	-	-	-	-	-	-	-
EE	-	-	-	-	-	-	-	-	-	-	1657	-	-	-	-	-	-	-	-	-	2633	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	696	-	-	-
ES	-	-	-	-	-	-	-	-	-	-	-	2462	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6685	-	-	-	-	-	4509	-	-	-	-	-	-
FI	-	-	-	-	-	-	-	-	480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	127	-	-	-	-	4007	-	-	-	-	-	0	-	-	-
FR	-	-	7118	-	12301	-	20315	-	-	3993	-	-	6151	-	-	-	-	14307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GB	-	-	-	-	-	-	-	-	-	-	-	1369	-	-	-	-	-	-	-	-	-	-	-	1769	706	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GR	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	1701	-	-	-	-	107	-	-	-	-	-	-	-	-	-	2124	-	-	-	-	0	-	-
HR	-	1622	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	96	-	4590	-	-	-	-	-	-	-	-
HU	697	-	-	-	-	-	-	-	-	-	-	-	-	-	6169	-	-	-	-	-	-	-	-	-	-	-	-	-	340	696	-	-	5	-	-	-	-	-	-	111
IE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	243	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IT	10	-	-	-	431	-	-	-	-	-	-	935	-	276	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63	-	-	-	-	-	-	-	-
LT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	443	-	-	-	-	-	-	-	-	-	-	-	-	747	-	-	155	-	-	-
LU	-	-	1533	-	-	-	1124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LV	-	-	-	-	-	-	-	-	26	-	-	-	-	-	-	-	-	-	2734	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-
ME [2]	-	407	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	493	-	-	-	n.a.	-	-	-	-	-	-
MK	-	-	-	0	-	-	-	-	-	-	-	-	-	1489	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59	-	-	-	-	-	-	-	-	-	-
NI	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	733	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NL	-	-	4521	-	-	-	3221	-	-	-	-	-	2494	-	-	-	-	-	-	-	-	-	-	-	-	1551	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NO	-	-	-	-	-	-	-	3600	-	-	131	-	-	-	-	-	-	-	-	-	-	-	-	-	3360	-	-	-	-	6509	-	-	-	-	-	0	-	-	-
PL	-	-	-	-	-	8253	433	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	278	-	3054	-	0	-	-	-	0	-
PT	-	-	-	-	-	-	-	-	-	3928	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RO	-	-	-	1445	-	-	-	-	-	-	-	-	-	-	-	867	-	-	-	-	-	-	-	-	-	-	-	-	-	2410	-	-	-	-	-	0	-	-	-	124
RS	-	2158	-	0	-	-	-	-	-	-	-	-	-	-	1176	268	-	-	-	-	-	1595	1144	-	-	-	-	-	15	-	-	-	-	315	-	-	-	-	-	-
SE	-	-	-	-	-	-	2047	5141	-	-	5936	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6718	1514	-	-	-	-	-	-	-	-	-	-	-	-	-
SI	402	-	-	-	-	-	-	-	-	-	-	-	-	-	3120	-	-	4786	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SK	-	-	-	-	-	228	-	-	-	-	-	-	-	-	-	8120	-	-	-	-	-	-	-	-	-	-	26	-	-	-	-	-	-	-	-	-	-	-	-	2127
AL [3]	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	n.a.	-	-	-	-	-	-	-	209	-	-	-	-	-	-	-	-	-	-
BY [3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2916	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-
MA [3]	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MD [3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	529	-	-	-	-	-	-	-	-	-	-	-
RU [3]	-	-	-	-	-	-	-	-	1011	-	10765	-	-	-	-	-	-	2436	-	934	-	-	-	-	-	212	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TR [3]	-	-	-	48	-	-	-	-	-	-	-	-	-	2590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UA [3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59	-	-	-	-	-	-	-	-	-	-	-	-	-
UA-W [3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3772	-	-	-	-	-	-	-	-	-	-	-	-	1494	-	-	-	178	-	-	-	-	-	-	-	-

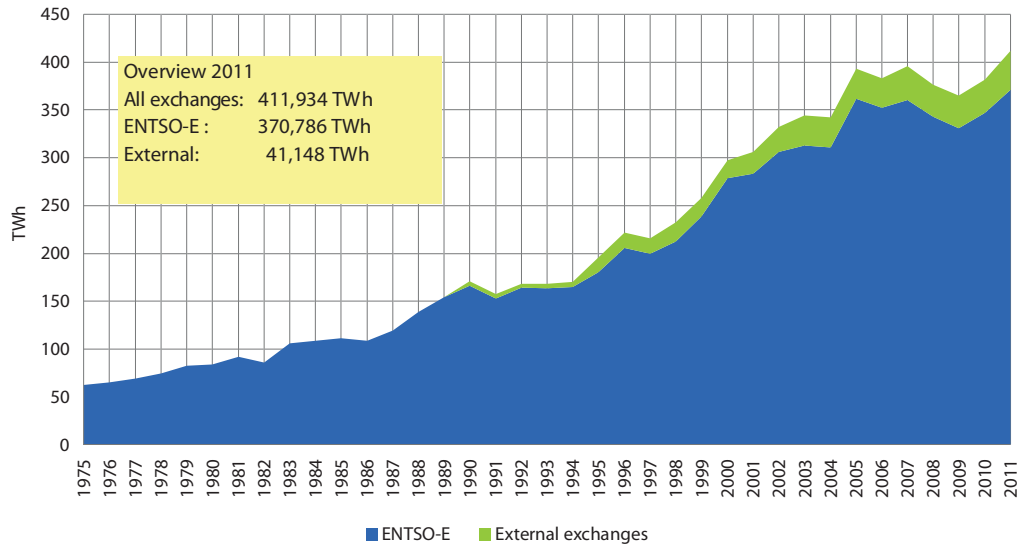
[1] Detailed harmonized values from the ENTSO-E statistical database.

[2] The information about the physical energy flows between ME and AL are not available.

[3] In synchroneous operation with ENTSO-E countries (not ENTSO-E members):
Albania (AL), Belarus (BY), Morocco (MA), Republic of Moldavia (MD), Russia (RU), Republic of Turkey (TR), Ukraine (UA) and Ukraine West (UA-W)

Development of the physical exchanges on tie lines

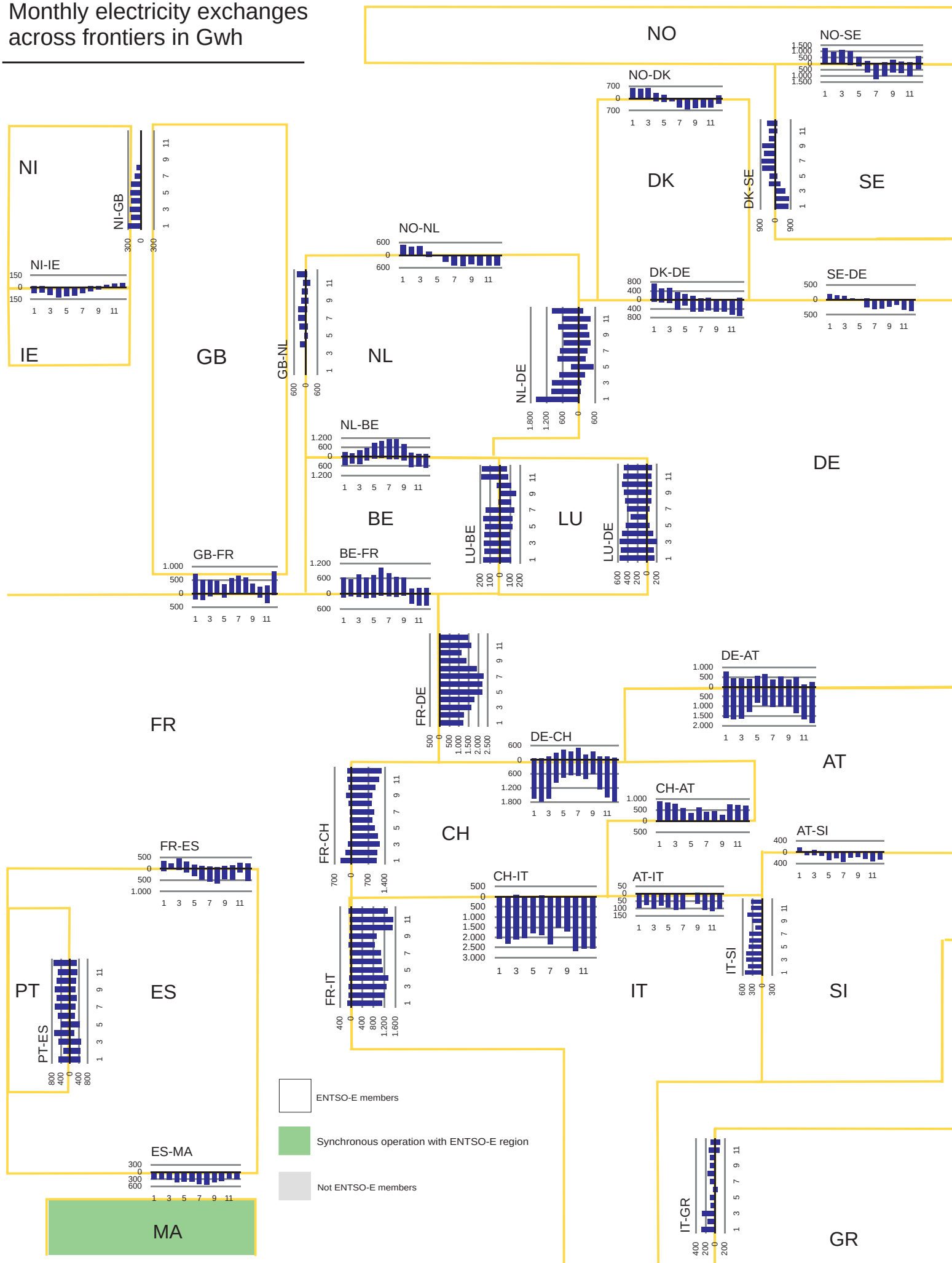
Development of overall cross-border exchanges of ENTSO-E member TSOs' countries since 1975



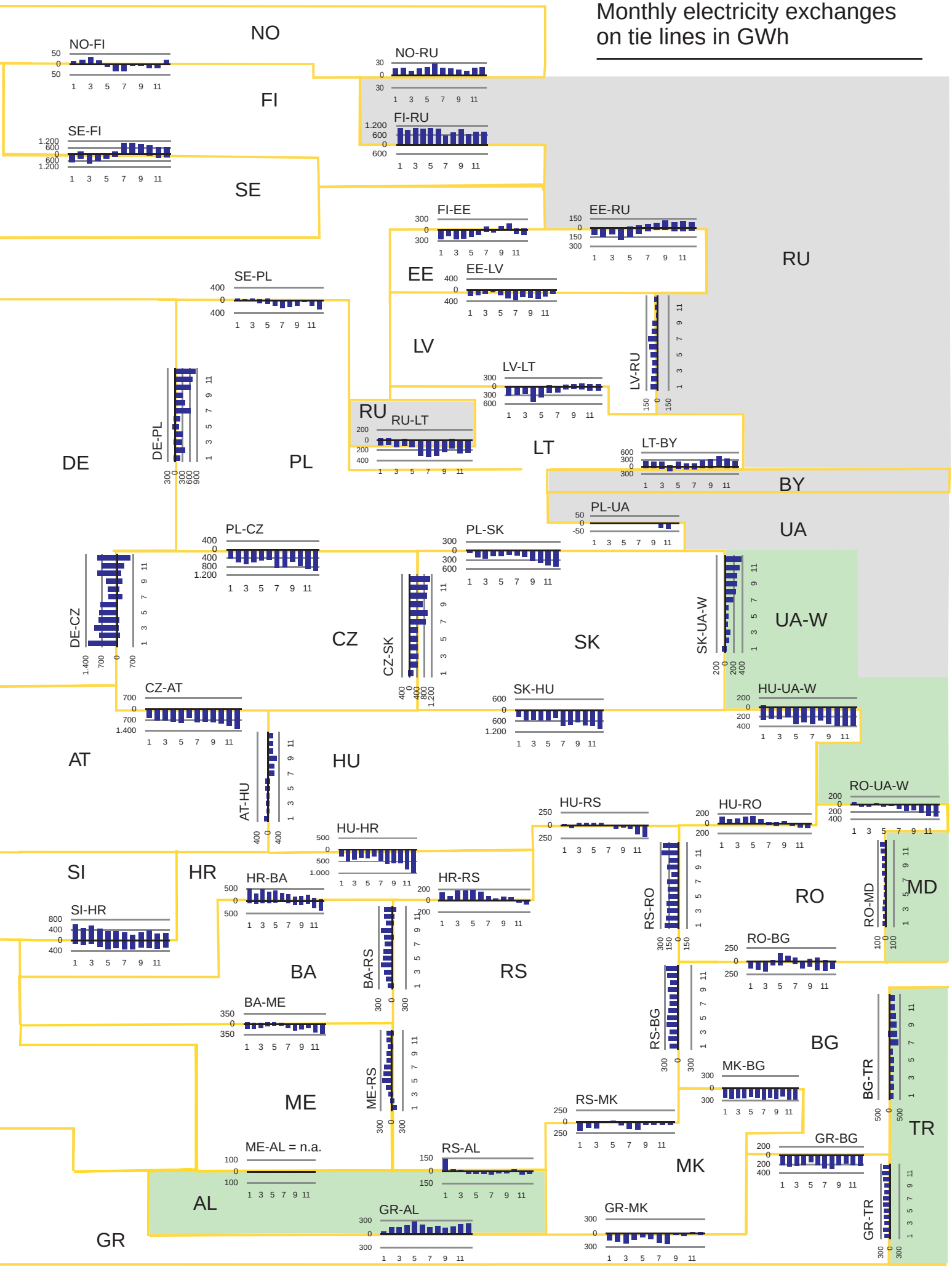
Year	Sum of total electricity exchanges	External exchanges
	TWh	TWh
1975	62,8	0,0
1976	65,4	0,0
1977	68,8	0,0
1978	74,3	0,0
1979	82,7	0,0
1980	84,1	0,0
1981	91,6	0,0
1982	85,7	0,0
1983	105,9	0,0
1984	108,9	0,0
1985	111,2	0,0
1986	108,8	0,0
1987	119,3	0,0
1988	138,6	0,0
1989	154,2	0,0
1990 [1]	170,9	4,6
1991	157,8	5,1
1992	168,2	4,4
1993	168,3	4,7
1994	170,2	5,0
1995 [2,3]	195,4	14,9
1996	221,7	15,8
1997	215,6	15,7
1998	232,7	20,2
1999	257,6	19,4
2000	297,3	18,4
2001	306,0	22,6
2002	332,0	26,3
2003	344,1	31,1
2004	342,5	31,6
2005	393,1	31,5
2006	383,2	31,0
2007	395,9	35,5
2008	376,4	33,6
2009 [4]	364,7	33,8
2010	381,6	34,4
2011 [5]	411,9	41,1

1 External exchanges of the Nordic countries are reliable since 1990
2 Reliable Baltic data is available since 1995
3 There were no exchanges between Republic of Ireland and Northern Ireland before 1995
4 External exchanges include Albania, Belarus, Moldavia, Morocco, Russia, Turkey, Ukraine and Ukraine-West since 2009
5 Sum of all cross-border exchanges 2011 without exchange data between Montenegro and Albania

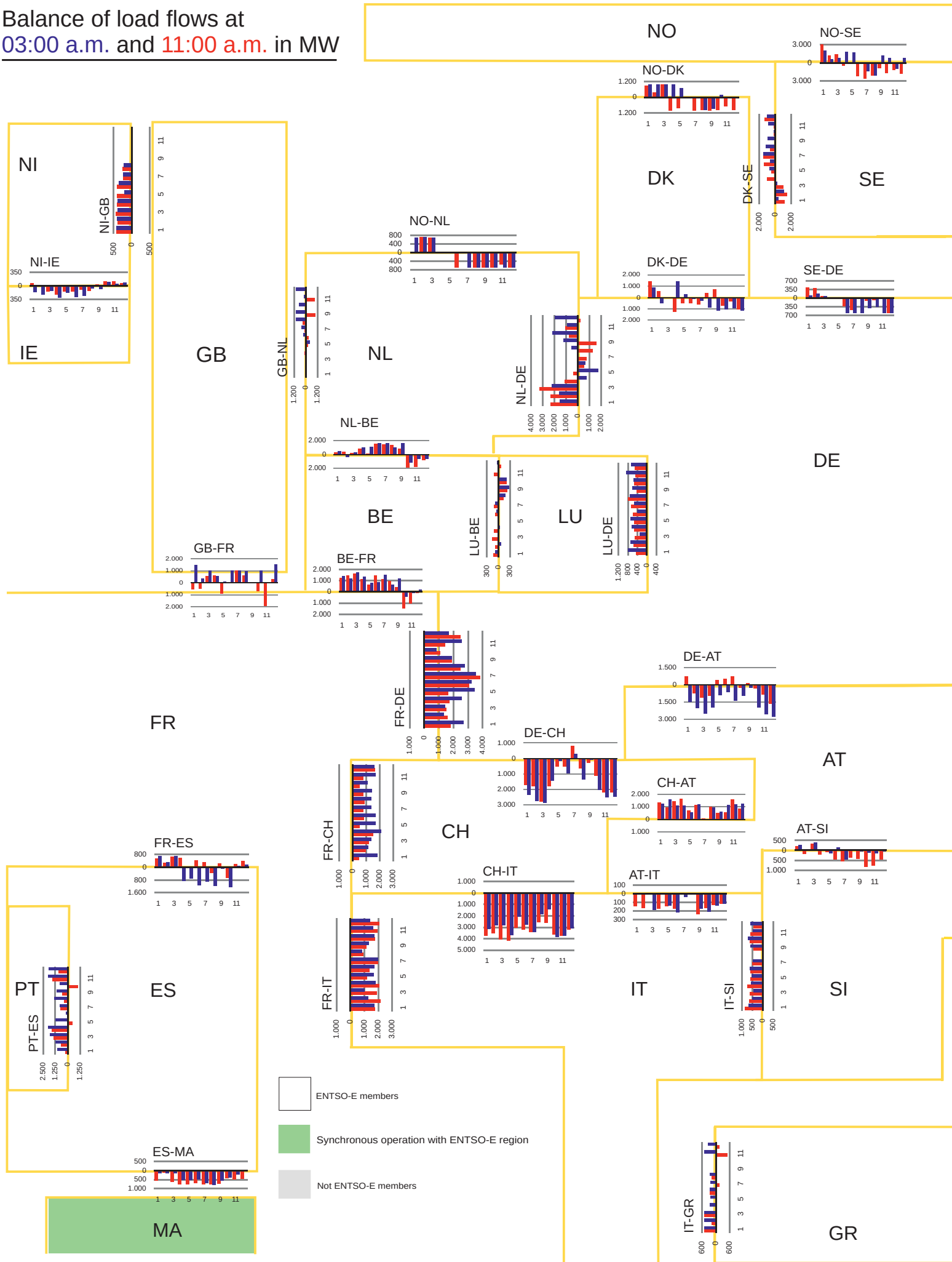
Monthly electricity exchanges across frontiers in Gwh



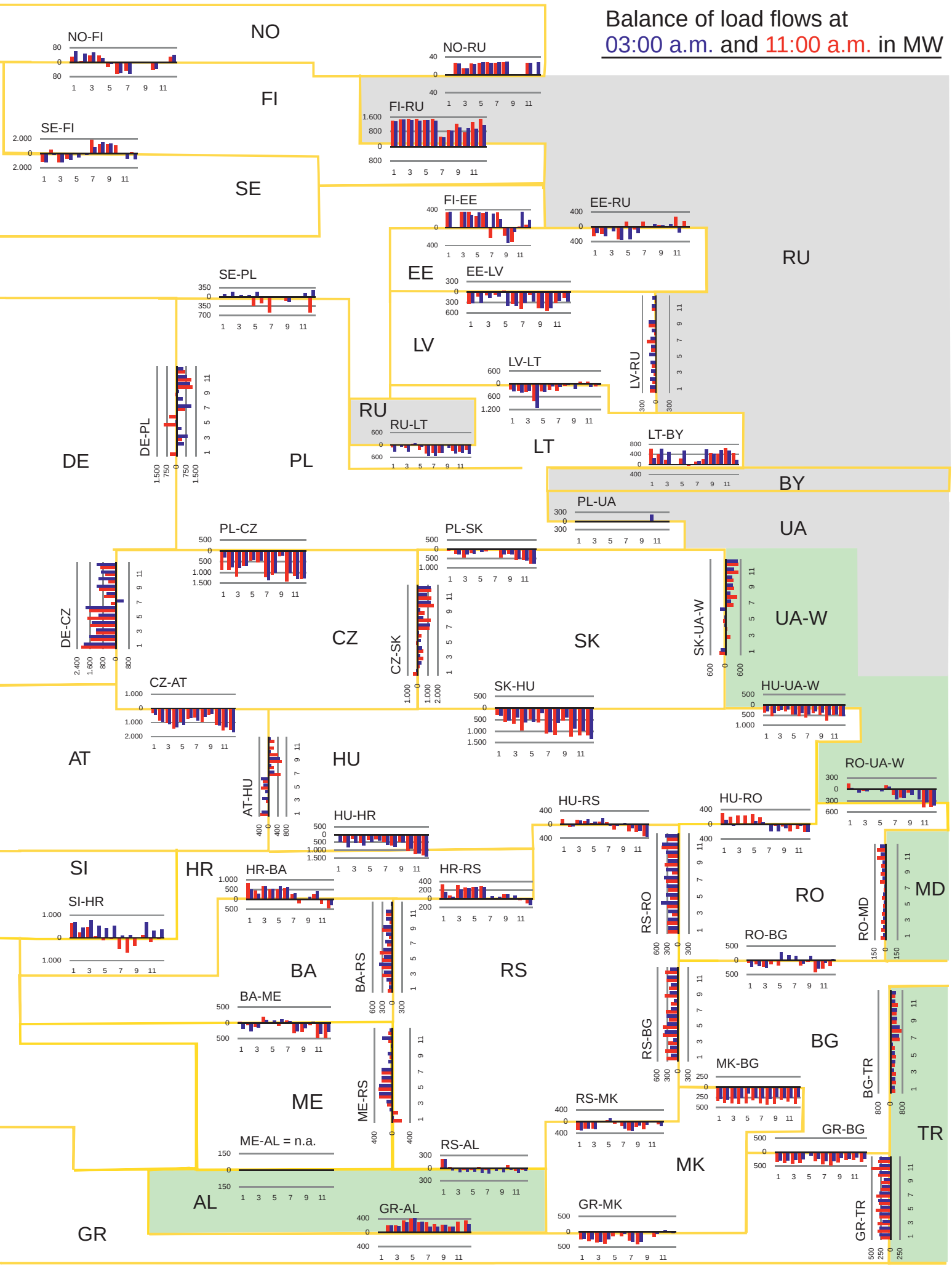
Monthly electricity exchanges on tie lines in GWh



Balance of load flows at 03:00 a.m. and 11:00 a.m. in MW



Balance of load flows at 03:00 a.m. and 11:00 a.m. in MW

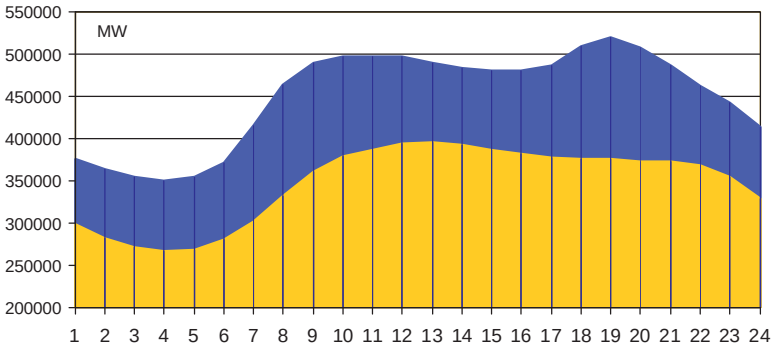


Highest and lowest hourly load value in each country 2011 in MW [1]

	Highest hourly load value in each country				Lowest hourly load value in each country			
	Date	Day	Time	MW	Date	Day	Time	MW
AT	19 December	Monday	06:00 p.m.	9701	16 June	Thursday	06:00 a.m.	3794
BA	31 December	Saturday	06:00 p.m.	2150	22 July	Friday	04:00 a.m.	872
BE	31 January	Monday	07:00 p.m.	14081	22 May	Sunday	06:00 a.m.	6336
BG	01February	Tuesday	08:00 p.m.	6897	25 April	Monday	05:00 a.m.	2660
CH [2]	01 February	Tuesday	11:00 a.m.	8083	01 August	Monday	08:00 a.m.	2865
CY	16 February	Wednesday	08:00 p.m.	780	20 April	Wednesday	04:00 a.m.	343
CZ	01 February	Thursday	11:00 a.m.	10210	24 July	Sunday	06:00 a.m.	4315
DE	07 December	Wednesday	06:00 p.m.	83990	13 June	Monday	04:00 a.m.	35597
DK	05 January	Wednesday	06:00 p.m.	6231	24 July	Sunday	06:00 a.m.	2177
EE	23 February	Wednesday	09:00 a.m.	1510	24 June	Friday	04:00 a.m.	446
ES	24 January	Monday	07:00 p.m.	43596	24 April	Sunday	07:00 a.m.	17989
FI	18 February	Friday	09:00 a.m.	14965	26 June	Sunday	09:00 a.m.	5219
FR	04 January	Tuesday	07:00 p.m.	91720	07 August	Sunday	07:00 a.m.	31268
GB	06 January	Thursday	07:00 p.m.	57875	07 August	Sunday	07:00 a.m.	20001
GR	20 July	Wednesday	01:00 p.m.	9868	01 May	Sunday	06:00 a.m.	3356
HR	25 January	Tuesday	07:00 p.m.	2970	25 April	Monday	04:00 a.m.	1185
HU	24 November	Thursday	05:00 p.m.	5931	31 July	Sunday	06:00 a.m.	2630
IE	13 December	Tuesday	07:00 p.m.	4610	08 October	Saturday	06:00 a.m.	1586
IS	30 November	Wednesday	07:00 p.m.	2138	07 October	Friday	05:00 a.m.	1346
IT	13 July	Wednesday	12:00 a.m.	53668	24 April	Sunday	07:00 a.m.	20582
LT	25 February	Friday	09:00 a.m.	1734	26 June	Sunday	05:00 a.m.	703
LU	21 December	Wednesday	06:00 p.m.	1188	28 March	Monday	01:00 a.m.	148
LV	23 February	Wednesday	09:00 a.m.	1239	17 October	Monday	05:00 a.m.	141
ME	30 October	Sunday	03:00 a.m.	746	23 May	Monday	06:00 a.m.	305
MK	31 December	Saturday	03:00 p.m.	1642	26 June	Sunday	06:00 a.m.	540
NI	10 January	Monday	07:00 p.m.	1744	10 July	Sunday	07:00 a.m.	538
NL	13 December	Tuesday	06:00 p.m.	18049	12 June	Sunday	07:00 a.m.	8167
NO	21 February	Monday	09:00 a.m.	22129	24 July	Sunday	06:00 a.m.	8665
PL	22 December	Thursday	06:00 p.m.	22755	25 April	Monday	06:00 a.m.	9476
PT	24 January	Monday	09:00 p.m.	9192	24 April	Sunday	06:00 a.m.	3310
RO	03 February	Thursday	07:00 a.m.	8724	24 April	Sunday	03:00 p.m.	4086
RS	02 February	Wednesday	07:00 p.m.	7341	03 July	Sunday	06:00 a.m.	2436
SE	23 February	Wednesday	07:00 p.m.	26015	23 July	Saturday	07:00 a.m.	9261
SI	02 March	Wednesday	08:00 p.m.	1949	02 May	Monday	05:00 a.m.	784
SK	02 February	Wednesday	06:00 p.m.	4290	31 July	Sunday	06:00 a.m.	2213
ENTSO-E [3]	**01 February**	**Tuesday**	**07:00 p.m.**	**532599**	**31 July**	**Sunday**	**07:00 a.m.**	**234658**

[1] All values are calculated to represent 100% of the national values.
[2] Lowest and highest physical hourly vertical load value of the Swiss transmission grid.
[3] Calculated as sum of the ENTSO-E member TSO's hourly load values.

Highest and lowest load in each country on 3rd Wednesday in 2011



ENTSO-E load curve on 19 January 2011

with highest load: 518949 MW [3]
with lowest load: 350259 MW [3]

ENTSO-E load curve on 17 August 2011

with lowest load: 267285 MW [3]
with highest load: 394813 MW [3]

Highest load on 3rd Wednesday in each country [1]

Country	MW	Date	Time
AT	9442	21 December	06:00 p.m.
BA	1997	21 December	06:00 p.m.
BE [2]	13881	19 January	07:00 p.m.
BG	6395	16 February	08:00 p.m.
CH	10161	21 December	06:00 p.m.
CY	780	16 February	08:00 p.m.
CZ	9672	16 February	04:00 p.m.
DE	80593	16 November	06:00 p.m.
DK	5897	19 January	06:00 p.m.
EE	1495	16 February	09:00 a.m.
ES	40073	16 February	08:00 p.m.
FI	14272	16 February	07:00 a.m.
FR	82450	19 January	07:00 p.m.
GB	56621	19 January	07.00 p.m.
GR	9868	20 July	01:00 p.m.
HR	2874	21 December	06:00 p.m.
HU	5705	16 November	06:00 p.m.
IE	4528	19 January	07:00 p.m.
IS	2101	21 December	07:00 p.m.
IT	51050	21 December	06:00 p.m.
LT	1688	21 December	05:00 p.m.
LU	1188	21 December	06:00 p.m.
LV	1226	16 February	09:00 a.m.
ME	648	21 December	07:00 p.m.
MK	1486	21 December	03:00 p.m.
NI	1681	19 January	07:00 p.m.
NL	17346	16 November	06:00 p.m.
NO	21512	16 February	09:00 a.m.
PL	22697	21 December	06:00 p.m.
PT	8575	16 February	09:00 p.m.
RO	8447	16 February	07:00 p.m.
RS	6803	16 February	07:00 p.m.
SE	24238	16 February	07:00 p.m.
SI	1893	16 February	12:00 a.m.
SK	4126	16 February	10:00 a.m.
ENTSO-E [3]	**518949**	**19 January**	**07:00 p.m.**

Lowest load on 3rd Wednesday in each country [1]

MW	Date	Time
4580	17 August	04:00 a.m.
949	15 June	04:00 a.m.
7198	20 July	04:00 a.m.
2861	21 September	03:00 a.m.
4991	20 July	04:00 a.m.
343	20 April	01:00 a.m.
5520	17 August	05:00 a.m.
43617	17 August	04:00 a.m.
2423	20 July	05:00 a.m.
520	20 July	04:00 a.m.
21873	16 November	04:00 a.m.
6749	20 July	04:00 a.m.
35416	17 August	05:00 a.m.
24101	15 June	06:00 a.m.
3979	18 May	04:00 a.m.
1443	18 May	03:00 a.m.
3066	16 March	04:00 a.m.
1880	20 July	07:00 a.m.
1730	20 July	03:00 a.m.
25013	17 August	05:00 a.m.
810	15 June	04:00 a.m.
563	17 August	05:00 a.m.
449	15 June	04:00 a.m.
323	18 May	05:00 a.m.
624	15 June	04:00 a.m.
556	20 July	07:00 a.m.
9308	20 April	04:00 a.m.
8942	20 July	05:00 a.m.
12696	20 July	05:00 a.m.
4182	17 August	08:00 a.m.
4942	15 June	03:00 a.m.
2612	15 June	05:00 a.m.
10016	20 July	06:00 a.m.
1080	17 August	03:00 a.m.
2492	17 August	03:00 a.m.
267285	**17 August**	**04.00 a.m.**

[1] All values are calculated to represent 100% of the national values.
[2] The reported figures are best estimated based on actual measurements.
[3] Calculated load values as sum of the ENTSO-E member TSOs´ countries.

	NGC Nuclear		NGC Fossil fuels		NGC Hydro power		NGC Renewable		of which wind		of which solar		NGC Other resources		NGC Sum		Representativity [1]	
	MW		MW		MW		MW		MW		MW		MW		MW		%	
Country	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010
AT	0	0	7425	7389	12919	12665	1054	1031	1017	1002	0	0	0	0	21398	21085	100	100
BA	0	0	1506	1506	1971	1971	0	0	0	0	0	0	0	0	3477	3477	100	100
BE	5926	5945	8539	8668	1420	1421	4142	2659	1056	888	1901	766	0	0	20027	18693	100	100
BG	2080	2000	6400	6451	3150	3108	770	513	550	488	220	25	0	0	12400	12072	99	99
CH	3278	3253	388	384	13723	13522	508	355	42	18	111	71	205	213	18101	17727	100	100
CY	0	0	973	1385	0	0	102	82	102	82	0	0	0	0	1075	1467	100	100
CZ	3692	3666	10938	10892	2161	2203	2190	2177	219	218	1971	1959	0	0	18981	18938	100	100
DE	12048	20300	66967	69300	9209	10700	53532	47400	28254	26600	22306	16600	3263	4500	145019	152200	93	100
DK	0	0	7486	8867	10	9	3967	3802	3950	3802	17	0	44	697	11507	13375	100	100
EE	0	0	2283	2324	4	4	254	156	184	156	0	0	0	0	2541	2484	100	100
ES	7525	7525	43659	40841	19081	19051	26639	24641	20729	19821	4916	4104	0	0	96904	92058	100	100
FI	2676	2646	8978	9004	3157	3133	2254	2254	197	197	0	0	44	44	17109	17081	100	100
FR	63130	63130	27789	27403	25405	25418	10138	7559	6639	5603	2228	762	0	0	126462	123510	100	100
GB	10397	10608	61984	62535	3876	3887	3355	2630	3355	2630	0	0	45	45	79657	79705	90	89
GR	0	0	9614	9396	3223	3215	1936	1322	1363	1039	439	153	0	0	14773	13933	100	100
HR	0	0	1787	1781	2110	2113	118	116	118	79	0	0	0	0	4015	4010	100	100
HU	1892	1892	6860	6181	50	50	695	630	325	240	0	0	0	0	9497	8753	100	100
IE	0	0	6132	6219	508	508	1615	1615	1615	1615	0	0	242	208	8497	8550	100	100
IS	0	0	52	121	1860	1883	661	575	0	0	0	0	0	0	2573	2579	100	100
IT	0	0	76287	74976	21737	21521	20419	9992	6918	5814	12773	3470	0	0	118443	106489	100	100
LT	0	0	2544	2539	876	875	252	193	202	161	0	0	0	0	3672	3607	100	99
LU	0	0	499	509	1134	1128	91	95	41	43	40	27	16	0	1740	1732	100	100
LV	0	0	859	848	1556	1555	30	59	30	37	0	0	21	0	2466	2462	100	100
ME	0	0	220	210	660	660	0	0	0	0	0	0	0	0	880	870	100	100
MK	0	0	1157	1157	503	503	0	0	0	0	0	0	0	0	1660	1660	100	100
NIR	0	0	2335	2317	4	4	419	358	405	346	0	0	7	14	2765	2693	100	100
NL	504	480	20137	22005	38	37	2439	2943	2340	2273	51	68	1012	0	24130	25465	100	100
NO	0	0	1166	1166	30164	30164	450	450	450	450	0	0	0	0	31780	31780	100	100
PL	0	0	30117	29612	2341	2331	2209	1366	2059	1274	1	0	0	0	34667	33309	100	100
PT	0	0	8779	8547	5392	4988	4855	4370	4081	3705	155	122	0	0	19026	17905	100	97
RO	1300	1300	8901	9166	6144	6087	1030	501	1006	479	0	0	0	0	17375	17054	100	100
RS	0	0	5478	5475	2888	2884	0	0	0	0	0	0	0	0	8366	8359	100	100
SE	9363	9151	4793	5035	16197	16200	6094	5315	2899	2163	0	0	0	0	36447	35701	100	100
SI	696	696	1282	1282	1063	1063	0	0	0	0	0	0	0	0	3041	3041	100	100
SK	1940	1820	2896	2614	2478	2478	753	143	3	3	507	82	85	725	8152	7780	100	100
ENTSOE [2]	**126447**	**134412**	**447210**	**448105**	**197012**	**197339**	**152917**	**125302**	**90149**	**81226**	**47636**	**28209**	**4984**	**6446**	**928624**	**911604**		

[1] Percentage as referred to the total values of a country
(The total values of a country are defined as the synchronously interconnected system plus the areas directly connected via AC or DC to the mainland system.).
[2] Calculated sum of ENTSO-E member TSOs´countries

Country	Reported year	Fossil fuels power units								Nuclear power units	
		10 MW ≤ x < 200 MW		200 MW ≤ x < 400 MW		≥ 400 MW		Total		Total	
		Number	MW	Number	MW	Number	MW	Number	MW	Number	MW
AT	2008	62	3146	8	2735	0	0	70	5881	0	0
BA	2011	6	810	3	696	0	0	9	1506	0	0
BE	2011	68	3704	12	3595	3	1232	83	8531	7	5926
BG	2011	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2080
CH	2011	42	462	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5	3278
CY [1]	2011	31	973	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	0
CZ [2]	2010	n.a.	10661	0	0	1	460	n.a.	11121	6	3692
DE	2011	320	20600	67	20300	61	38600	448	79500	9	12100
DK	2011	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	0
EE	2011	18	2219	0	0	0	0	18	2219	0	0
ES	2011	225	6069	46	15949	37	20480	308	42498	8	7525
FI	2010	110	5500	10	2355	1	565	121	8420	4	2671
FR	2011	183	6717	22	5468	23	12686	228	24871	58	63130
GB [3]	2011	50	2094	24	7550	93	52340	167	61984	21	10397
GR	2011	21	2360	19	5566	4	1688	44	9614	0	0
HR	2011	16	837	4	950	0	0	20	1787	0	0
HU	2011	61	3212	14	2984	1	425	76	6621	4	1892
IE	2011	23	1672	8	2324	4	2136	35	6132	0	0
IS	2011	2	36	0	0	0	0	2	36	0	0
IT	2011	1490	18909	106	31630	38	22706	1634	73245	0	0
LT [4]	2011	14	1409	4	1200	0	0	18	2609	0	0
LU	2010	0	0	1	385	0	0	1	385	0	0
LV	2010	8	540	1	291	0	0	9	831	0	0
ME	2007	1	190	0	0	0	0	1	190	0	0
MK	2010	2	301	4	856	0	0	6	1157	0	0
NIR	2011	12	958	4	966	1	402	17	2326	0	0
NL	2011	n.a.	1832	20	6080	21	12225	n.a.	20137	1	504
NO	2010	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	0
PL [5]	2011	n.a.	13330	57	14111	5	2676	n.a.	30117	0	0
PT	2010	49	1991	16	4888	4	1707	69	8586	0	0
RO	2011	81	5520	11	3148	0	0	92	8668	2	1300
RS	2011	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SE	2011	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	9363
SI	2007	2	276	1	312	1	672	4	1260	1	696
SK	2011	41	2420	1	288	0	0	42	2708	4	1940
ENTSO-E [6]		**2938**	**118748**	**463**	**134627**	**298**	**171000**	**3522**	**422940**	**130**	**126494**

[1] The difference from 2010 depends on the explosion of the Vasilikos Power Station and the introduction of small Temporary generating units.
[2] Fossil fuels >= 5MW
[3] > 400 MW: Mothballed and commissioning units are excluded.
[4] 10 MW < x < 200 MW: Except for the generation of bio-power.
[5] Units with the capacity <10MW are included too. No precise information about number of units with the capacity <50MW.
[6] Calculated sum of fossil fuels except BG, DK, NO, RS and SE.

Inventory of hydro power units											
Country	Reported year	1 MW ≤ x < 10 MW		10 MW ≤ x < 50 MW		50 MW ≤ x < 100 MW		≥ 100 MW		Total	
		Number	MW	Number	MW	Number	MW	Number	MW	Number	MW
AT	2008	582	910	100	2496	19	1473	27	6918	728	11797
BA	2011	n.a.	n.a.	13	343	12	765	6	863	31	1971
BE	2011	17	59	7	194	0	0	6	1164	30	1417
BG [1]	2011	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	3150
CH	2011	203	703	109	2804	43	2917	34	7530	389	13954
CY	2011	0	0	0	0	0	0	0	0	0	0
CZ	2010	n.a.	280	10	239	6	484	6	1100	n.a.	2103
DE	2000	234	898	78	1648	14	1026	15	4841	341	8413
DK [1]	2011	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	10
EE	2011	0	0	0	0	0	0	0	0	0	0
ES	2011	520	1729	138	3135	43	2937	38	11055	739	18856
FI	2010	94	351	65	2328	7	434	0	0	166	3113
FR	2011	550	1753	184	4462	38	2793	62	15955	834	24963
GB	2011	3	23	26	587	9	727	12	2539	50	3876
GR	2011	96	174	5	84	2	120	11	2845	114	3223
HR	2011	12	52	23	605	6	453	8	978	49	2088
HU	2011	10	47	0	0	0	0	0	0	10	47
IE	2011	5	20	11	196	4	292	0	0	20	508
IS	2011	11	50.9	15	484	11	652	6	690	43	1877
IT	2011	743	2329	237	5556	29	1964	42	11692	1051	21541
LT	2011	4	8	4	101	0	0	4	900	12	1009
LU	2010	3	20	1	11	1	1	1	1096	6	1128
LV	2011	1	1	4	72	21	1455	0	0	26	1528
ME	2007	3	8	0	0	0	0	2	649	5	657
MK	2010	12	15	3	73	3	265	1	150	19	503
NI [1]	2011	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4
NL	2011	3	12	2	26	n.a.	n.a.	n.a.	n.a.	5	38
NO	2011	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	30164
PL [2]	2011	75	153	21	504	5	293	8	1256	109	2206
PT	2010	114	396	4	903	33	2199	8	1395	159	4893
RO	2011	193	969	102	2193	17	1175	9	1670	321	6007
RS [1]	2011	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2888
SE [1]	2011	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	16197
SI	2007	1	8	11	314	5	319	2	230	19	871
SK	2011	29	190	36	734	10	820	6	734	81	2478
ENTSO-E		**3518** [3]	**11108** [3]	**1209** [3]	**30092** [3]	**338** [3]	**23564** [3]	**314** [3]	**76250** [3]	**n.a.**	**193478** [4]

[1] Total hydro power units in MW as reported NGC hydro power as of 31 December 2011
[2] Additionally 134 MW in 865 Hydro power units with the capacity <1MW.
[3] Calculated sum except BG, DK, NI, NO, RS and SE
[4] Calculated sum with reported values of NGC hydro power as of 31 December 2011 from BG, DK, NI, NO, RS and SE