

Statistical Factsheet 2013

(formerly Memo)

provisional values as of 25 April 2014

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

ENTSO-E Transmission network losses percentage consumption: 1.6%

Net generation 2013¹

Consumption¹

Net generating capacity as of 31 Dec. 2013

	Consumption ¹										Net generating capacity as of 31 Dec. 2013										
	Thermal nuclear	Fossil fuels	Hydraulic	Renewable	-of which wind	-of which solar	-of which biomass	Non-identifiable	Total	Consumption 2013	Variation (compared with 2012)	NGC Nuclear	NGC Fossil fuels	NGC Hydro power	NGC Renewable energy sources	-of which wind	-of which solar	-of which biomass	NGC other sources	NGC Total	Representativity of the values
	TWh	TWh	TWh	TWh	TWh	TWh	TWh	TWh	TWh	%	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	%
AT ²	0.0	13.9	41.0	4.9	0.0	0.0	0.0	7.9	67.7	69.6	0.5	0	7834	13350	1906	1307	172	427	74	23164	100
BA	0.0	8.7	7.0	0.0	0.0	0.0	0.0	0.0	15.7	12.0	-0.9	0	1570	2031	0	0	0	0	0	3601	100
BE	40.6	26.9	1.7	9.1	3.6	2.4	3.1	0.0	78.3	86.2	1.6	5930	7500	1430	5740	1720	2680	1340	0	20600	100
BG ²	13.2	19.1	4.6	2.6	1.3	1.3	0.0	0.0	39.5	32.2	-0.8	2000	6731	3161	1713	677	1013	23	0	13605	100
CH ^{2,3}	24.9	2.2	39.6	1.6	0.1	0.0	0.0	0.0	68.3	64.9	0.1	3278	394	13770	557	45	192	320	210	18209	100
CY	0.0	4.0	0.0	0.2	0.2	0.0	0.0	0.0	4.2	4.2	-11.3	0	1478	0	144	144	0	0	0	1622	100
CZ	29.0	45.6	3.7	2.5	0.5	2.0	1.5	0.0	80.8	62.7	-0.5	4040	11237	2230	2402	270	2132	0	0	19909	100
DE ⁴	92.1	350.9	25.9	127.6	53.24	30	40.14	0.0	596.4	554.8	-1.2	12068	84411	10780	77360	34040	36913	5856	0	184619	100
DK	0.0	18.6	0.0	13.3	11.0	0.0	2.3	0.0	32.0	32.4	-5.6	0	8887	9	5969	4811	563	595	0	14865	100
EE	0.0	10.5	0.0	1.1	0.6	0.0	0.6	0.0	11.6	8.0	-1.1	0	2361	7	370	276	0	94	0	2738	100
ES	54.1	105.1	40.2	74.9	55.4	13.1	6.4	0.3	274.6	261.9	-1.8	7117	47314	19333	30459	22768	6894	796	63	104286	100
FI	22.7	20.4	12.7	11.5	0.8	0.0	10.7	0.9	68.2	83.9	-1.4	2752	9312	3168	2484	447	0	2037	21	17737	100
FR	403.7	45.0	75.5	26.6	15.8	4.6	6.2	0.0	550.8	495.1	1.2	63130	25576	25404	13951	8143	4330	1160	0	128061	100
GB ⁵	66.1	218.9	6.6	27.0	26.9	0.0	0.0	0.0	318.5	326.3	-2.1	9749	53287	3969	7926	6528	0	1398	0	74931	89
GR	0.0	35.4	5.2	7.0	3.4	3.4	0.2	0.0	47.5	49.6	-4.8	0	9640	3237	3985	1520	2419	46	90	16952	100
HR	0.0	4.1	8.0	0.6	0.5	0.0	0.1	0.0	12.8	17.1	-1.3	0	1788	2110	301	256	20	25	0	4199	100
HU	14.4	11.1	0.2	1.4	0.7	0.0	0.7	0.0	27.2	39.0	0.3	1892	6150	56	476	329	2	145	0	8574	100
IE ²	0.0	18.6	0.9	4.7	4.5	0.0	0.0	0.1	24.3	26.0	1.0	0	6176	511	2052	2033	0	0	329	9068	100
IS	0.0	0.0	12.8	4.9	0.0	0.0	0.0	0.0	17.6	17.6	3.1	0	52	1860	663	2	0	0	0	2575	100
IT	0.0	181.1	52.8	42.1	14.8	22.0	0.0	0.0	276.0	315.9	-3.7	0	77104	21880	25250	8102	16420	0	0	124234	100
LT	0.0	2.3	1.1	1.0	0.6	0.0	0.3	0.0	4.4	10.6	0.0	0	2620	1026	427	282	68	77	10	4083	100
LU ²	0.0	1.3	1.1	0.3	0.1	0.1	0.0	0.0	2.8	6.2	-1.6	0	509	1128	142	0	0	0	12	1791	98
LV	0.0	2.6	2.9	0.6	0.1	0.0	0.2	0.0	6.0	7.4	-4.1	0	905	1553	110	58	0	52	0	2568	100
ME	0.0	1.3	2.6	0.0	0.0	0.0	0.0	0.0	3.9	4.5	15.5	0	220	660	0	0	0	0	0	880	100
MK ²	0.0	4.1	1.6	0.0	0.0	0.0	0.0	0.0	5.6	8.0	-5.2	0	1157	503	0	0	0	0	0	1660	100
NI ⁶	0.0	6.0	0.0	1.4	1.3	0.0	0.0	0.0	7.4	8.9	-0.7	0	5988	12	1398	1313	0	26	0	7398	100
NL	2.5	77.0	0.0	12.9	5.6	0.0	0.0	0.0	92.3	110.6	-2.9	490	26759	38	3873	2713	760	400	684	31844	100
NO ²	0.0	3.3	129.0	1.9	1.9	0.0	0.0	0.0	134.2	127.8	0.0	0	1166	30819	730	730	0	0	0	32715	100
PL ⁷	0.0	135.7	3.0	12.2	5.7	0.0	6.4	0.0	150.9	145.5	0.4	0	29196	2349	4045	3387	0	658	0	35590	100
PT	0.0	18.3	14.6	14.9	11.8	0.4	2.7	0.0	47.8	49.2	0.2	0	7306	5652	4834	4368	282	177	0	17792	100
RO	10.7	23.6	14.9	5.3	4.6	0.4	0.3	0.0	54.5	52.3	-3.9	1300	9490	6227	3065	2451	565	49	0	20082	100
RS	0.0	32.1	11.1	0.0	0.0	0.0	0.0	0.0	43.2	39.4	-0.5	0	5580	2959	0	0	0	0	0	8539	100
SE ²	63.6	4.7	60.8	19.7	9.7	0.0	10.0	0.0	148.8	138.7	-2.3	9363	4666	16203	7151	3745	24	3036	0	37383	100
SI	5.0	4.4	4.5	0.0	0.0	0.0	0.0	0.0	13.9	12.7	0.2	696	1280	1123	0	0	0	0	0	3099	n.a.
SK	14.7	4.9	5.0	1.3	0.0	0.6	0.2	1.1	27.0	26.6	-0.7	1940	2801	2531	802	3	537	176	0	8074	100
ENTSO-E ⁸	857.2	1461.7	590.5	435.0	234.7	80.4	92.2	10.4	3354.8	3307.9	-0.5	113677	384034	190299	132925	78428	39073	13057	1493	1004062	

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

² NGC values as of 31 December 2012.

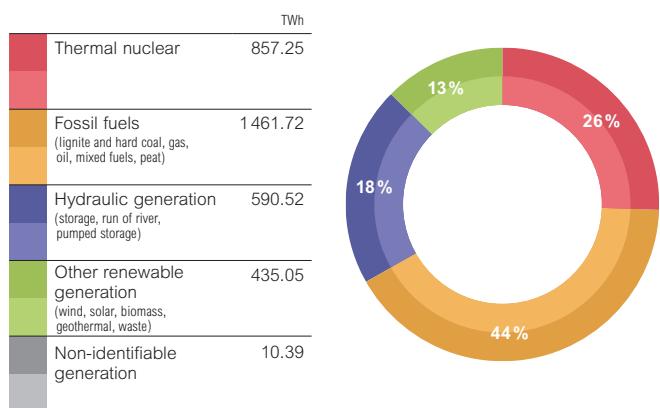
³ Calculation based on the ENTSO-E database differs from the official values from the Swiss Federal Office of Energy.
⁴ Values are provisional.

⁵ All data with the country code GB represents monthly statistical data as sum of England, Scotland and Wales.
⁶ All data with the country code NI represents the monthly statistical data of GB Northern Ireland.

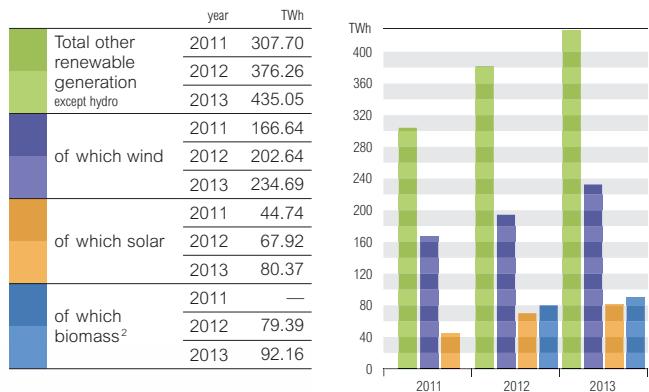
⁷ Net generation for biomass includes energy from biomass co-fired in conventional thermal unit.
⁸ Calculated sum of the ENTSO-E member TSOs' countries.

Generation

Generation mix in ENTSO-E member TSOs' countries¹



ENTSO-E other renewable generation except hydro in TWh¹



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

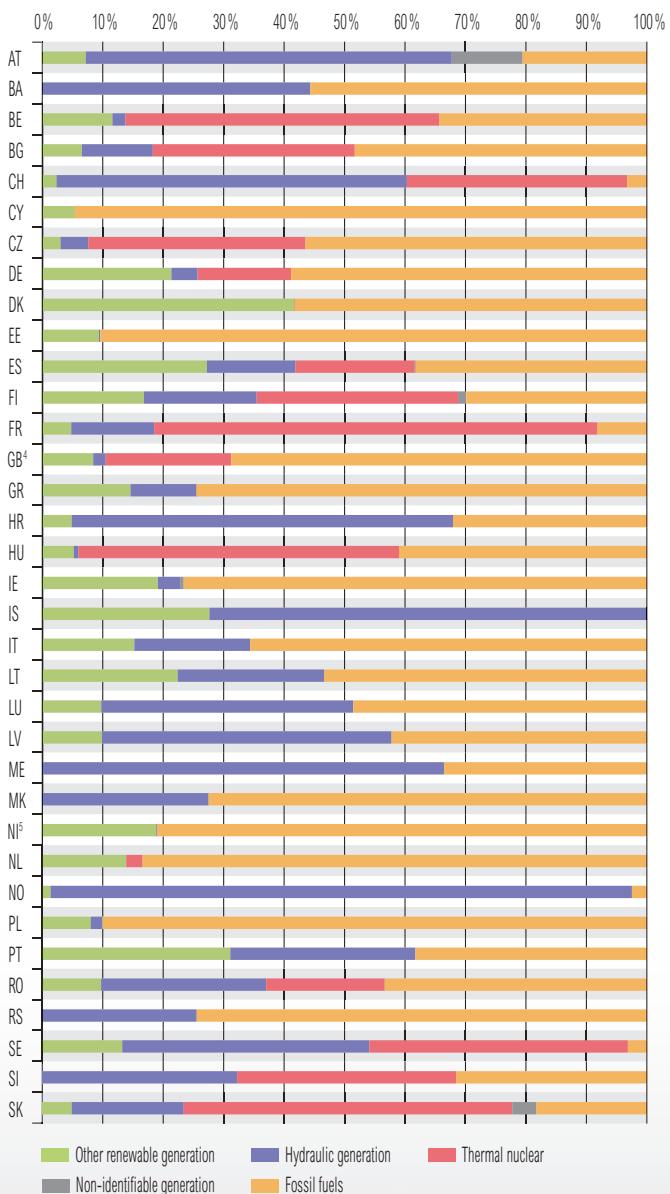
² Data collection from year 2012 onwards.

³ Share of energy produced, based on the net generation for each TSO as a member of ENTSO-E per the table ENTSO-E in figures on page 2–3.

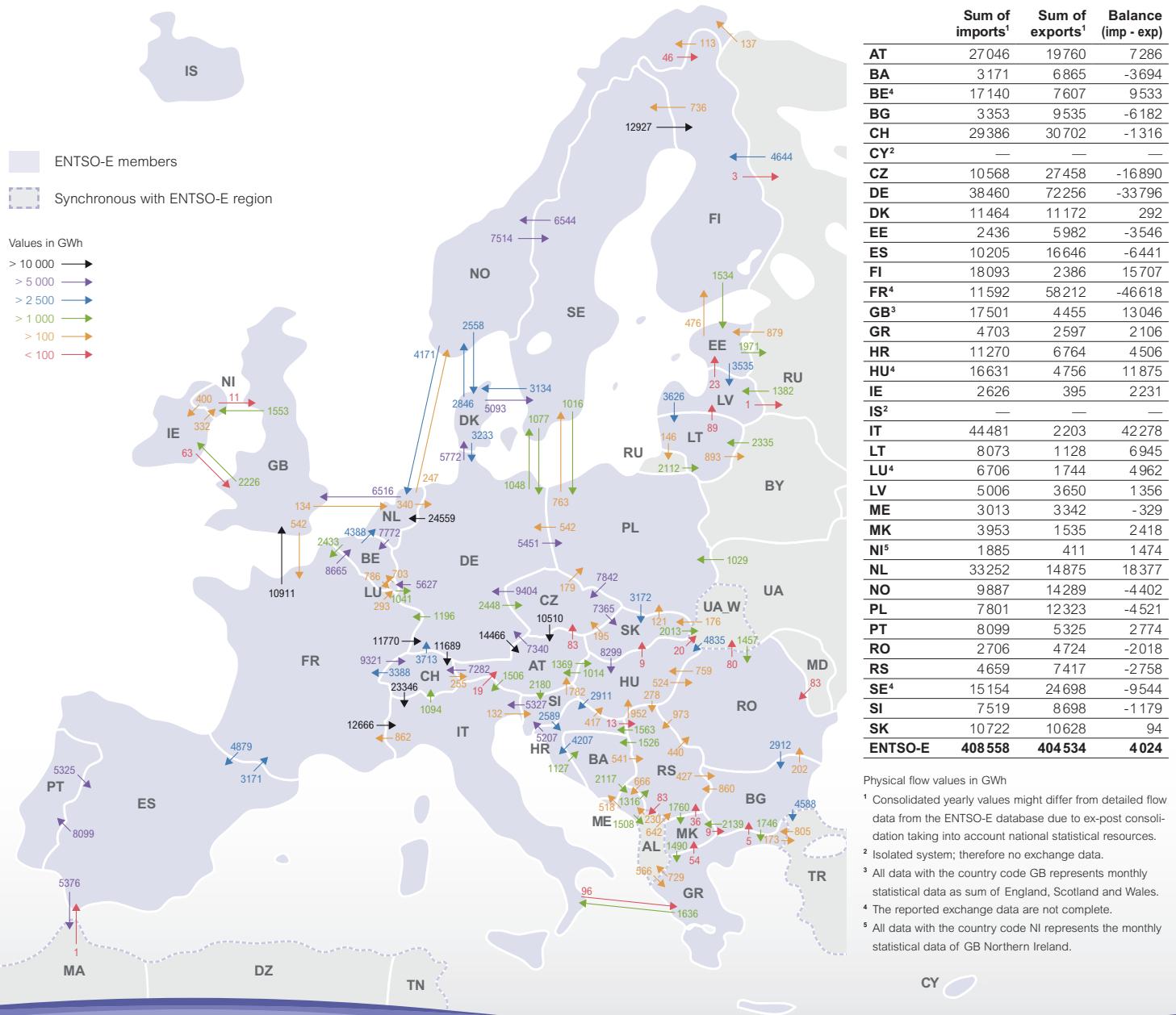
⁴ All data with the country code GB represents monthly statistical data as sum of England, Scotland and Wales.

⁵ All data with the country code NI represents the monthly statistical data of GB Northern Ireland.

Share of energy produced of each member TSOs' country 2013 in %³

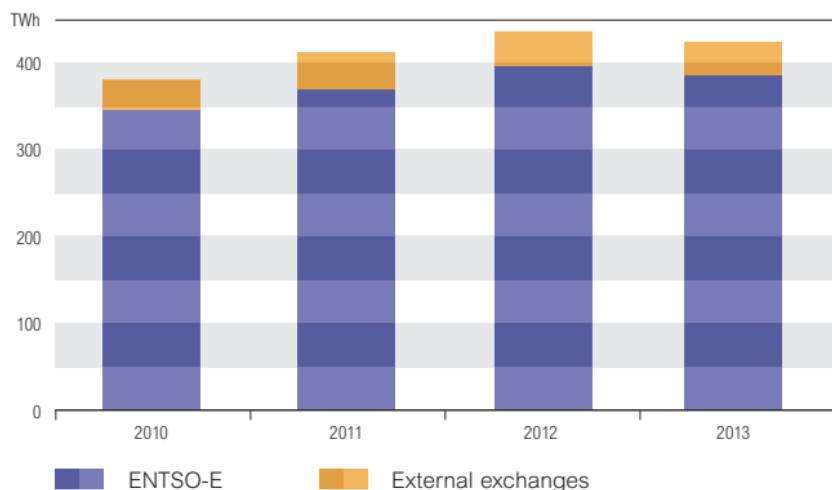


Physical energy flows



Development of exchanges

Development of overall cross-border exchanges of ENTSO-E member TSOs' countries during the past 4 years



Overview electricity exchanges for the past four years in GWh

	All Exchanges	ENTSO-E	External ¹
2010	381 589	347 167	34 422
2011	413 047	370 787	42 260
2012	437 841	398 367	39 474
2013	426 148	387 251	38 897

¹ External exchanges include Albania, Belarus, Moldavia, Morocco, Russia, Turkey, Ukraine and Ukraine-West.

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Highest and lowest hourly load values of each country 2013 in MW¹

	Highest load		Lowest load			
	date	time	date	time		
AT	27.11	18:00	11441	20.05	04:00	4607
BA	24.12	18:00	2074	02.05	06:00	866
BE	14.01	19:00	13345	28.07	07:00	6136
BG	09.01	19:00	6739	12.05	05:00	2432
CH ²	26.02	11:00	7937	01.08	08:00	2453
CY	30.08	15:00	815	02.12	04:00	254
CZ	28.11	17:00	10093	07.07	06:00	3952
DE	05.12	18:00	83102	02.06	07:00	32473
DK	24.01	18:00	6109	10.05	21:00	1088
EE	18.01	17:00	1425	07.07	04:00	486
ES	22.01	19:00	39640	01.04	04:00	17 091
FI	18.01	08:00	14146	23.06	05:00	5237
FR	17.01	19:00	92900	11.08	07:00	29869
GB ³	16.01	19:00	59440	23.06	07:00	19989
GR	08.01	19:00	8764	05.05	14:00	2224
HR	11.02	20:00	2813	31.03	04:00	1105
HU	12.12	17:00	5863	20.05	06:00	2661
IE	17.12	19:00	4491	04.08	08:00	1722
IS	06.03	12:00	2258	08.01	14:00	1551
IT	26.07	12:00	53976	27.10	04:00	19124
LT	21.01	09:00	1810	21.07	05:00	745
LU	13.12	18:00	994	01.01	07:00	373
LV	14.01	16:00	1380	22.07	04:00	436
ME	11.02	21:00	621	30.09	05:00	196
MK	22.12	18:00	1527	03.06	06:00	520
NI ⁴	21.01	19:00	1697	14.07	07:00	503
NL	17.01	18:00	18457	16.06	06:00	8257
NO	22.01	18:00	25229	04.08	06:00	8558
PL	10.12	17:00	22680	05.05	06:00	10206
PT	09.12	21:00	8322	28.04	08:00	3470
RO	14.01	17:00	8312	06.05	06:00	3456
RS	18.12	18:00	6930	06.05	04:00	2352
SE	25.01	09:00	26737	27.07	06:00	8696
SI	13.02	19:00	1984	31.08	07:00	775
SK	17.12	17:00	4126	07.07	06:00	2227
ENTSO-E ⁵	17.01	19:00	528 749	09.06	06:00	230 694

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.

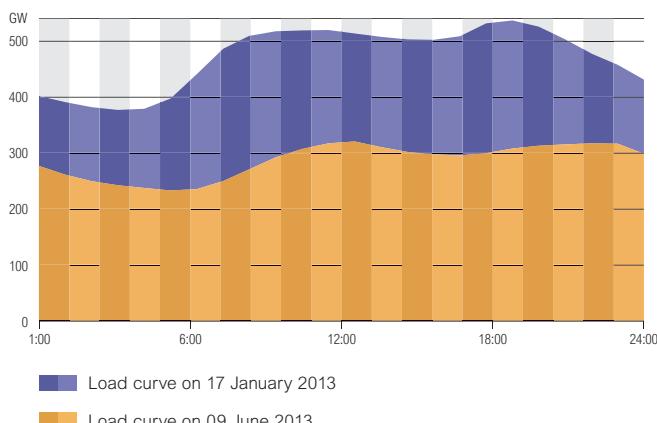
³ All data with the country code GB represents monthly statistical data as sum of England, Scotland and Wales.

⁴ All data with the country code NI represents the monthly statistical data of GB Northern Ireland.

⁵ Calculated as sum of the ENTSO-E member TSOs' monthly hourly load values.

ENTSO-E peak load 2013

ENTSO-E load diagram on the days of the highest and lowest load values^{1,2}



Country values in MW on the days of highest and lowest ENTSO-E load values^{1,2}

	17.01.13 at 19:00	09.06.13 at 06:00		17.01.13 at 19:00	09.06.13 at 06:00			
AT	10 886	4 883	FR	92 900	31 932	MK	1 193	578
BA	1 915	901	GB ³	58 243	21 585	NI ⁴	1 671	554
BE	13 035	6 525	GR	7 687	3 851	NL	18 169	8 419
BG	5 997	2 646	HR	2 666	1 114	NO	22 274	9 575
CH	7 363	3 306	HU	5 554	2 932	PL	22 262	10 782
CY	634	315	IE	4 329	1 827	PT	7 470	3 846
CZ	9 513	4 591	IS	2 179	1 828	RO	7 943	3 971
DE	76 124	34 863	IT	49 624	23 154	RS	6 409	2 580
DK	5 328	2 353	LT	1 646	826	SE	24 292	9 879
EE	1 358	535	LU	865	603	SI	1 960	1 113
ES	37 861	19 042	LV	1 268	533	SK	4 018	2 227
FI	13 455	6 786	ME	531	239	* ENTSO-E	528 749	230 694

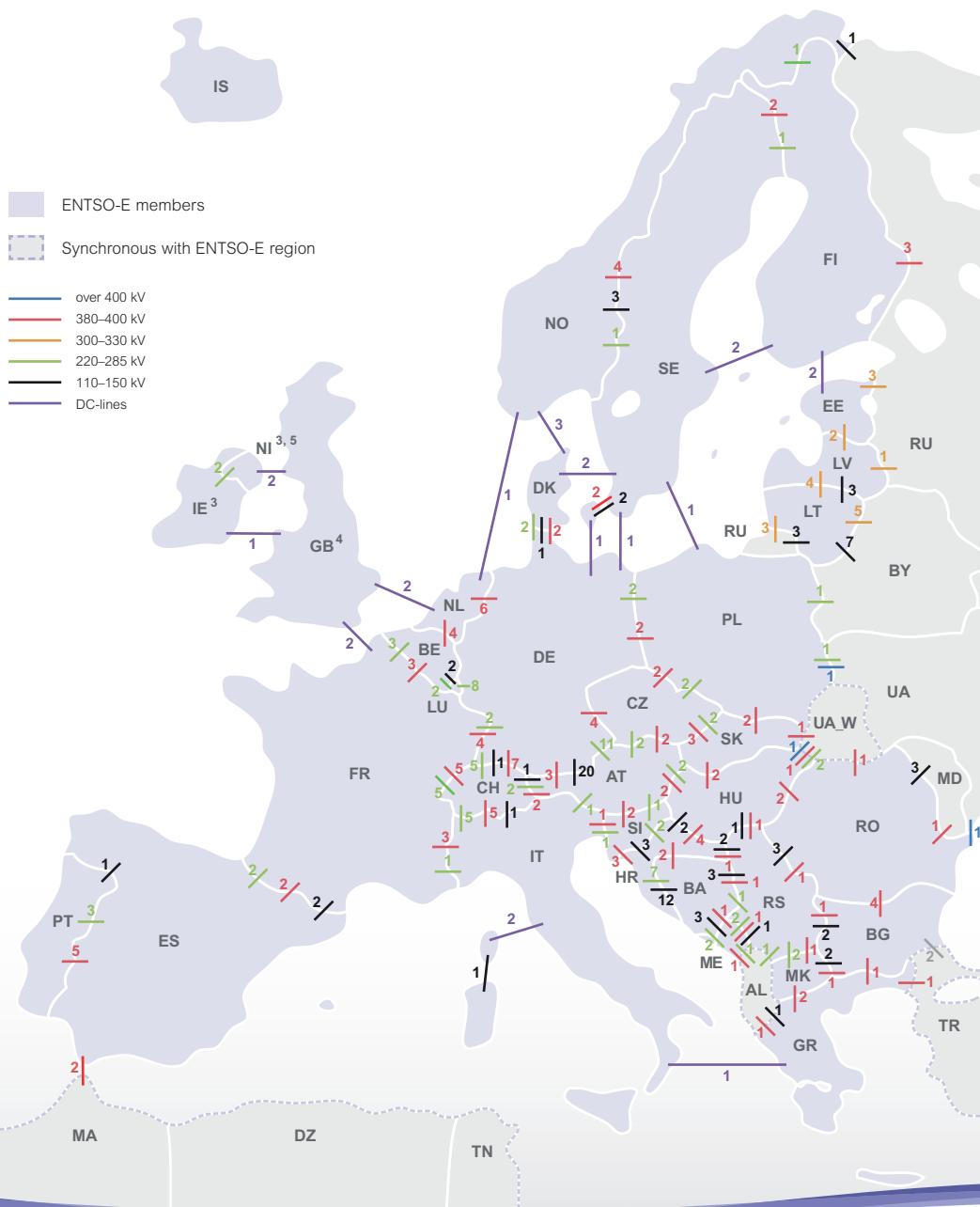
¹ Calculated load values as sum of the ENTSO-E member TSOs' countries.

² All values are calculated to represent 100% of the national values.

³ All data with the country code GB represents monthly statistical data as sum of England, Scotland and Wales.

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Grid information



Number of circuits on cross-frontier transmission lines as of 31 December 2013 in the ENTSO-E area^{1,2}

ENTSO-E Overview circuit length in km

	Length of AC circuits	of which AC cable	Sum of DC cable
220–285 kV	141359	3230	
330 kV	9141	14	
380/400 kV	151272	1512	
750 kV	471	0	
Sum	302243	4756	5260

Number of cross frontier lines in the ENTSO-E area

	AC	DC
Over 400 kV	7	7
380–400 kV	116	4
300–330 kV	18	
200–285 kV	89	10
110–150 kV	88	1
Under 110 kV	1	
Sum	319	22

¹ Non geographic location of lines.

² Between IE and NI 275kV instead 220kV.

³ Only lines operated by TSOs are taken into account.

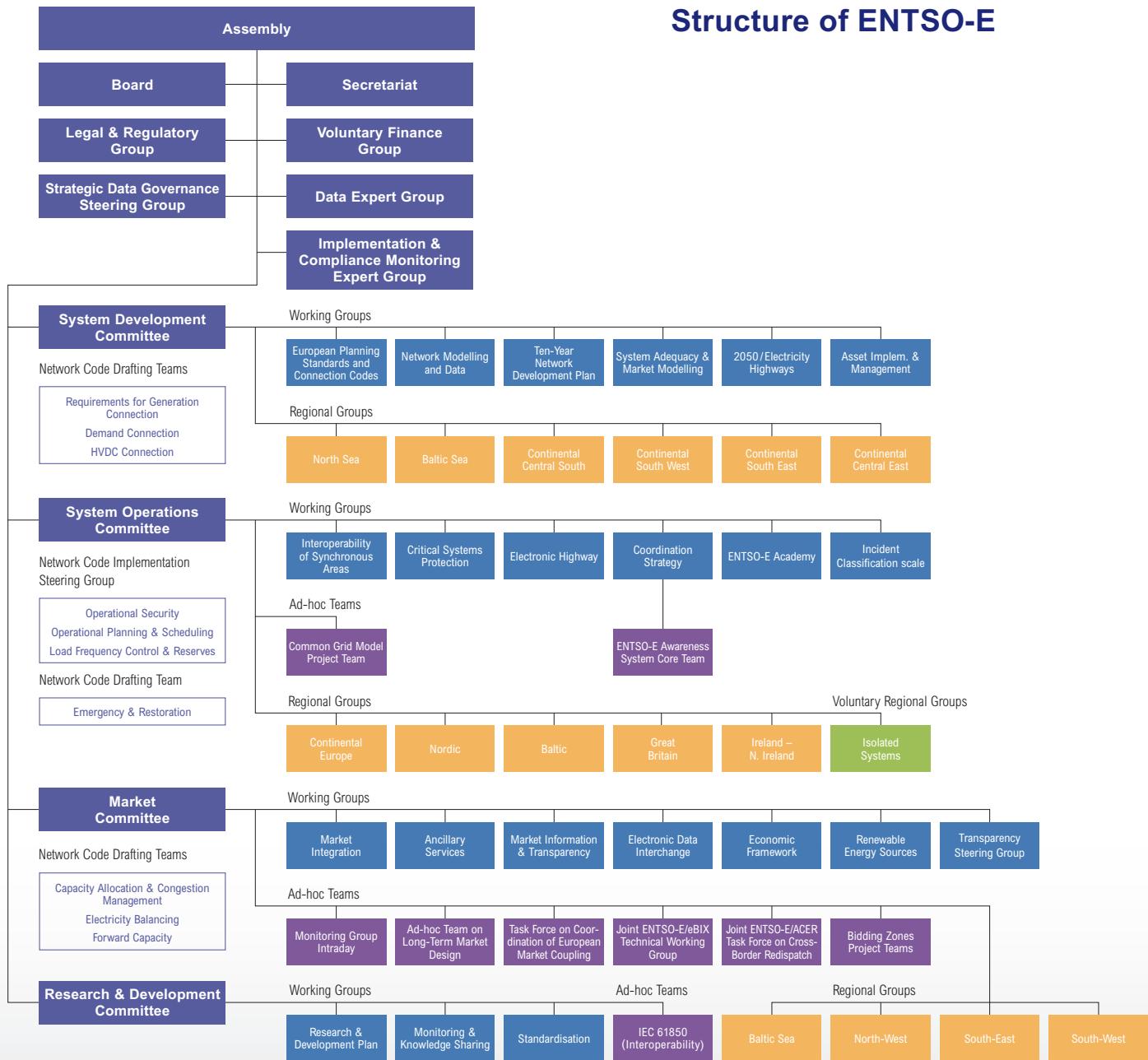
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⁵ All data with the country code NI represents the monthly statistical data GB Northern Ireland.

Members of ENTSO-E

AT	Austria	APG VÜN	Austrian Power Grid AG Vorarlberger Übertragungsnetz GmbH
BA	Bosnia-Herzegovina	NOS BiH	Nezavisni operator sustava u Bosni i Hercegovini
BE	Belgium	Elia	Elia System Operator SA
BG	Bulgaria	ESO	Electroenergien Sistemen Operator EAD
CH	Switzerland	Swissgrid	Swissgrid ag
CY	Cyprus	Cyprus TSO	Cyprus Transmission System Operator
CZ	Czech Republic	ČEPS	ČEPS, a.s.
DE	Germany	TransnetBW TenneT GER Ampriion 50Hertz	TransnetBW GmbH TenneT TSO GmbH Ampriion GmbH 50Hertz Transmission GmbH
DK	Denmark	Energinet.dk	Energinet.dk
EE	Estonia	Elering AS	Elering AS
ES	Spain	REE	Red Eléctrica de España S.A.
FI	Finland	Fingrid	Fingrid OyJ
FR	France	RTE	Réseau de transport d'électricité
GB	United Kingdom	National Grid SONI (NI) SHETL SPTtransmission	National Grid Electricity Transmission plc System Operator for Northern Ireland Ltd Scottish Hydro Electric Transmission Ltd Scottish Power Transmission plc
GR	Greece	IPTO	Independent Power Transmission Operator S.A.
HR	Croatia	HOPS	Croatian Transmission System Operator Ltd
HU	Hungary	MAVIR ZRt.	MAVIR Magyar Villamosenergia-ipari Átviteli Rendszerirányító Zártkörűen Működő Részvénytársaság
IE	Ireland	EirGrid	EirGrid plc
IS	Iceland	Landsnet	Landsnet hf
IT	Italy	Terna	Terna – Rete Elettrica Nazionale SpA
LT	Lithuania	Litgrid	Litgrid AB
LU	Luxembourg	Creos Luxembourg	Creos Luxembourg S.A.
LV	Latvia	Augstsprieguma tīkls	AS Augstsprieguma tīkls
ME	Montenegro	CGES AD	Crnogorski elektroprenosni sistem AD
MK	FYROM	MEPSO	Macedonian Transmission System Operator AD
NL	The Netherlands	TenneT NL	TenneT TSO B.V.
NO	Norway	Statnett	Statnett SF
PL	Poland	PSE	PSE S.A.
PT	Portugal	REN	Rede Eléctrica Nacional, S.A.
RO	Romania	Triselectrica	C.N. Triselectrica S.A.
RS	Serbia	EMS	JP Elektromreža Srbije
SE	Sweden	Svenska Kraftnät	Svenska Kraftnät
SI	Slovenia	ELES	Elektro Slovenija d.o.o.
SK	Slovak Republic	SEPS	Slovenska elektrizacna prenosova sustava, a.s.

Structure of ENTSO-E



Reliable. Sustainable. Connected.

ENTSO-E represents 41 Transmission System Operators (TSOs) across 34 European countries and fulfils mandates under EC Regulation 714/2009 on cross-border electricity exchanges, fully applicable since 3 March 2011. ENTSO-E's overall objective is to promote the reliable operation, optimal management and sound technical evolution of the European electricity transmission system in order to ensure security of supply and to meet the needs of the European Internal Energy Market (IEM). Most notably ENTSO-E is mandated to publish EU-wide ten-year network development plans as well as draft network codes – ten codes by 2014.

Network codes are the building blocks of the Internal Energy Market. They cover three interrelated areas: three connection codes are setting the rules and requirements for grid users to create a fit for purpose network. Four operation codes define the way TSOs will keep the electricity system reliable, sustainable and stable. Three market codes define how electricity will be traded in Europe. They create the conditions to encourage greater competition, generator diversification and the optimisation of existing infrastructure. ENTSO-E started drafting the network codes in 2011. The first codes were delivered to European regulators (ACER) in 2012, who recommended their adoption to the European Commission (EC) in early 2013. In spring 2014, ENTSO-E successfully delivered the ninth code to ACER. Network codes should become EU law at the end of the comitology procedure, during which experts from member states and the European Commission scrutinise and approve the codes.

Visit www.entsoe.eu to keep up to date with progress on network codes, the TYNDP and other ENTSO-E deliverables and reports as well as ENTSO-E positions on TSO-related topics. The website provides updates on our four main areas of activity: system operation, system development, market and research & development. Extensive market-related data and information is available on our transparency platform www.entsoe.net with many data updated daily on congestion management, vertical load, balance management, transfer capacities and outages.

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