UCTE

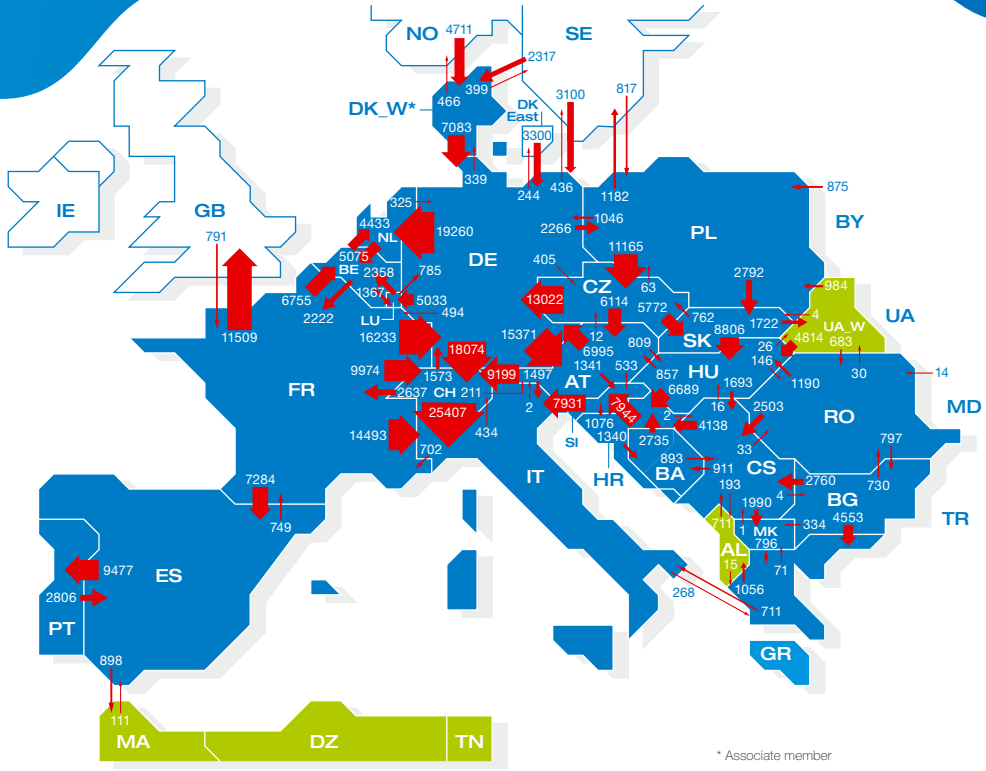
provisional values as of 31.03.2006

Memo 2005

union for the co-ordination of transmission of electricity

Physical energy flows

2005



UCTE region

Synchronous with UCTE region

	Import	Export
AT	23088	19773
BA	2251	3628
BE	14234	8024
BG	801	8377
CH	37601	29828
CS	8563	7285
CZ	12344	24971
DE	53462	61922
ES	10201	11124
FR	7595	66248
GR	5618	1838
HR	14638	9286
HU	15635	9411
IT	50039	1103
MK	2396	798
LU	6400	3143
NL	23693	5400
PL	5005	16185
PT	9477	2806
RO	1606	4520
SI	9285	9540
SK	8568	11290
UCTE	**322500**	**316500**
DK_W*	7367	7948
UA_W	1778	5501

* Associate member

Values in GWh

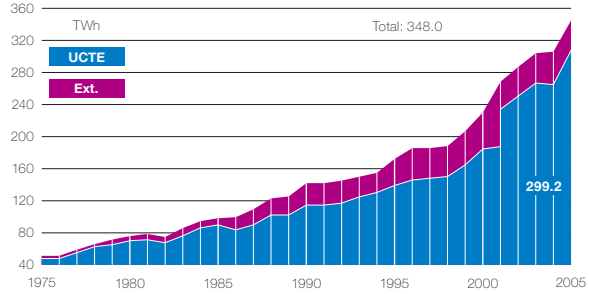
Exchange balance

	AT	BA	BE	BG	CH	CS	CZ	DE	ES	FR	GR	HR	HU	IT	LU	MK	NL	PL	PT	RO	SI	SK	**UCTE**	DK_W*	UA_W
2005	3315	-1377	6210	-7576	7773	1278	-12627	-8460	-923	-58653	3780	5352	6224	48936	3257	1598	18293	-11180	6671	-2914	-255	-2722	**6000**	-581	-3723
2004	3459	-1948	7808	-5882	769	2030	-15719	-7305	-2680	-60387	2819	3697	7470	45513	3367	1176	16219	-9291	6393	-1193	-757	-1859	**-6301**	-3419	-3317

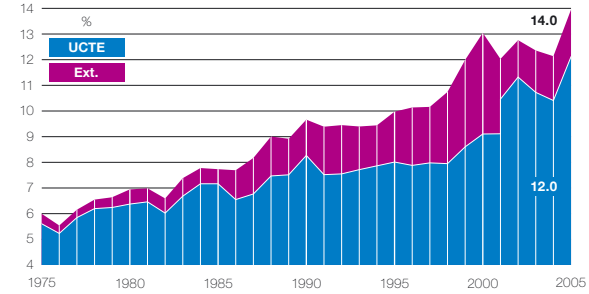
The above values have been harmonized between the countries concerned and may therefore differ from the official national statistics

Development of exchanges

Sum of electricity exchanges of the UCTE in TWh



Part of exchanges in the consumption in %

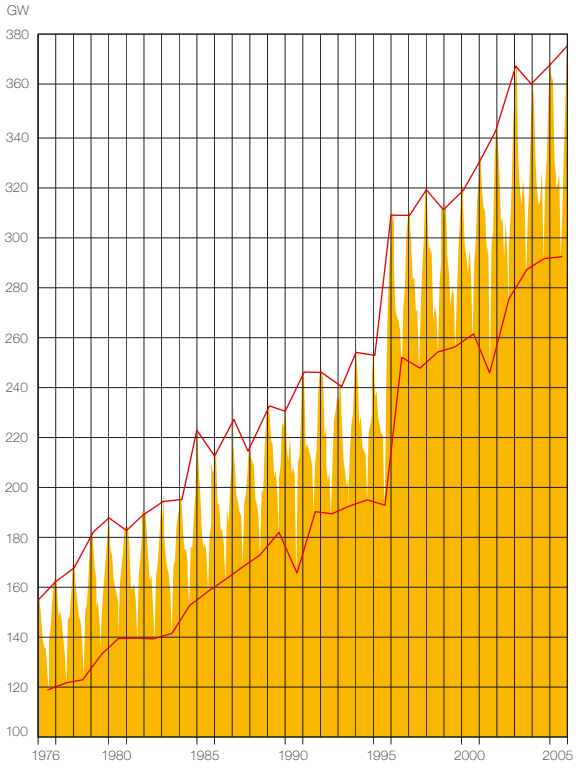


From year 2001 on sum of exchanges include CENTREL countries CZ, HU, PL, SK

From year 2003 on sum of exchanges include RO and BG

Ext. = exchanges with third countries

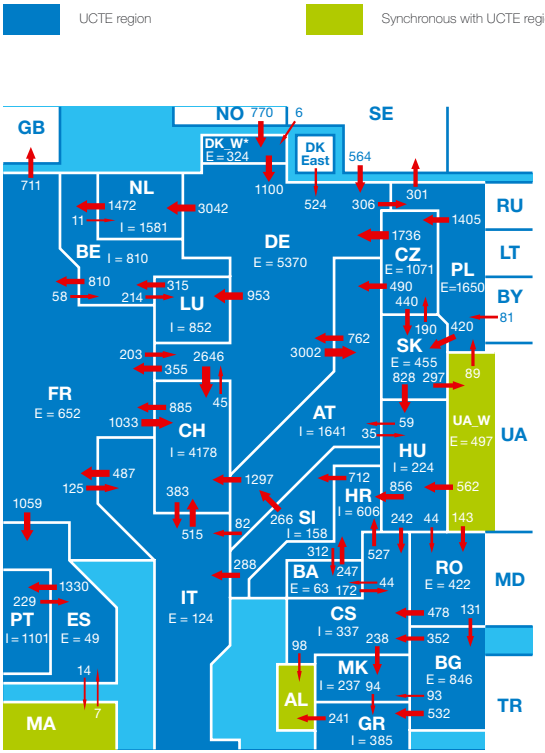
Power produced by UCTE members*



Max. 12/05: 375.9 GW Min. 08/05: 290.2 GW

* With CENTREL-countries from 10/1995 on and Denmark West from 01/1990 on

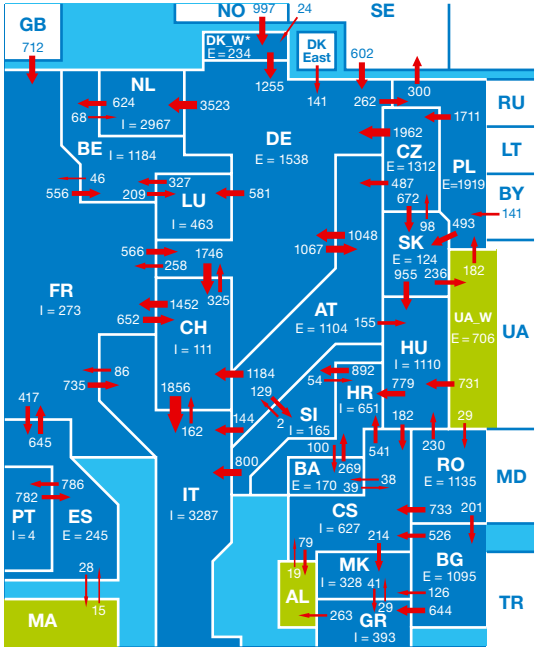
Load flows **night** 21 December 2005, 3.00 h[1]



Sum of physical power flows: UCTE = 32 850 MW
Total = 38 358 MW

Values in MW

Load flows **day** 21 December 2005, 11.00 h[1]



Sum of physical power flows: UCTE = 33 209 MW
Total = 38 963 MW

Values in MW

[1] CET (Central European Time) I = Import balance E = Export balance

* Associate member

Countries		AT	BA	BE	BG	CH	CS	CZ	DE	ES	FR	GR	HR	HU	IT	LU	MK	NL	PL	PT	RO	SI	SK	**UCTE**	DK_W[4]	UA_W[5]
Net production[1]																										
Thermal nuclear	TWh	0.0	0.0	45.3	18.7	22.0	0.0	23.3	154.5	55.1	430.0	0.0	0.0	13.0	0.0	0.0	0.0	3.8	0.0	0.0	5.1	5.6	16.4	**792.8**	0.0	0.0
Thermal conventional	TWh	24.1	6.6	33.5	20.9	2.2	27.5	49.8	357.6	151.6	58.9	43.3	5.2	17.9	240.8	3.1	5.0	86.7	140.2	35.2	29.8	4.2	5.5	**1350.1**	15.5	8.0
Hydroproduction	TWh	35.5	6.0	1.6	4.7	32.8	13.9	3.0	23.6	23.6	56.0	5.6	6.4	0.2	41.9	0.9	1.5	0.0	3.6	4.9	19.9	3.4	4.6	**292.9**	0.0	0.1
Other renewable	TWh	0.0	0.0	2.0	0.0	0.9	0.0	0.1	38.4	25.5	4.3	1.1	0.0	1.4	6.9	0.1	0.0	5.9	0.2	3.5	0.0	0.0	0.0	**90.1**	6.4	0.0
of which windpower	TWh	0.0	0.0	0.1	0.0	0.1	0.0	0.1	28.9	21.2	1.0	1.0	0.0	0.0	2.1	0.1	0.0	2.1	0.1	1.7	0.0	0.0	0.0	**58.1**	5.0	0.0
Not clearly identifiable	TWh	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	**7.5**	0.0	0.0
Total net production	TWh	63.8	12.6	82.4	44.3	57.9	41.4	76.2	574.1	255.8	549.2	50.0	11.6	33.1	289.6	4.1	6.5	96.4	144.0	43.6	54.8	13.2	29.2	**2533.4**	21.9	8.1
Consumption[1]																										
Consumption	TWh	63.2	11.2	86.8	36.1	63.0	41.6	62.7	556.4	247.9	482.4	52.9	16.6	39.3	329.4	6.2	8.1	114.7	130.4	49.8	51.9	12.6	26.3	**2489.0**	21.3	4.4
	%	-6.2	5.1	-1.7	3.0	4.4	0.3	2.0	0.7	-1.2	0.7	3.2	3.7	2.9	1.3	-0.8	9.3	3.4	0.1	4.8	2.3	-4.5	-0.1	**0.8**	0.9	-1.4
Peak load on 3rd Wednesday of December 2005[1]																										
Peak load	MW	8904	1891	13059	6222	9695	7126	9424	80879	40972	82319	8596	2810	6064	54115	929	1450	16597	21578	8681	7974	2075	4323	**389835**	3527	978
Variation[3]	%	-17.9	3.8	-2.0	4.6	1.5	-0.4	-6.7	-0.9	3.5	2.9	5.8	4.4	-4.6	1.9	4.8	6.8	-0.8	3.1	5.1	-0.7	2.1	0.0	**0.9**	-0.7	0.3
Maximum output capacity as of 31.12.2005[2]																										
Thermal nuclear	MW	0	0	5802	2880	3220	0	3537	20200	7600	63260	0	0	1755	0	0	0	449	0	0	655	670	2640	**112668**	0	0
Thermal conventional	MW	5900	1957	8099	5410	320	6400	10558	70400	35598	25331	7601	1691	5202	63400	481	1010	19457	29724	6551	9173	1262	2270	**317795**	5154	2347
Hydropower	MW	11700	2064	1417	2700	13315	3497	2165	9100	19253	25398	3108	2079	46	21000	1128	517	37	2245	4915	5819	872	2429	**134804**	10	27
Renewable ernergy sources	MW	670	0	750	1	290	0	43	19600	10311	1554	595	5	394	2362	67	0	2016	108	1347	0	0	3	**40116**	2392	0
Not unambigously identified energy sources	MW	0	0	0	0	250	0	0	0	0	0	0	0	683	0	0	0	18	0	0	0	0	696	**1647**	0	0
Total	MW	18270	4021	16068	10991	17395	9897	16303	119300	72762	115543	11304	3775	8080	86762	1676	1527	21977	32077	12813	15647	2804	8038	**607030**	7556	2374
Representativity of the values	%	100	99	100	100	100	100	100	90	100	100	100	100	100	100	100	100	100	100	96	100	100	100		100	100

Number of 220 kV and 380 kV circuits on cross-frontier transmission lines on 31. December 2005

	BA	BG	CH	CS	CZ	DE	FR	HU	IT	LU	MK	NL	PL	PT	RO	SI	SK	DK_W[4]	UA_W[5]
CS	3/1							–/1			2/1				–/1				
HR	7/2			–/1				–/2								2/3			
	GR	–/1							–/1		–/1								
		AT	2/2		2/1	11/3		2/1	1/–							1/2			
		DE	5/7		–/4		2/4			8/–		–/6	2/2					2/2	
		FR	5/5						3/3										
		IT	5/4													1/1			
			BG	–/1											1/4				
						BE	2/3			2/–		–/4							
220 kV/380 kV						ES	2/2							3/4					
												CZ	2/2				2/3		
														HU	–/1		–/2		2/2
																PL	–/2		1/1
																		RO	–/2
																		SK	–/1

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

[2] All values are identical with the national values and there representativity

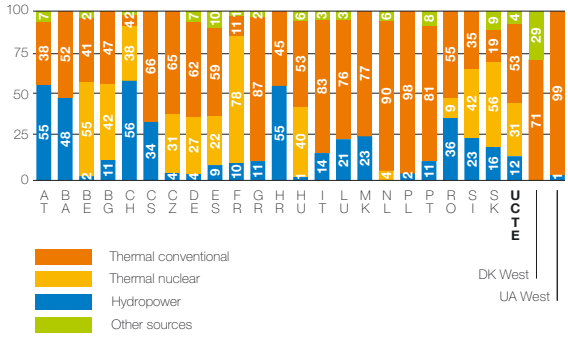
[3] As compared to last year and representativity 100 %

[4] DK_W represents the Western part of Denmark synchronously interconnected with UCTE (Jutland and Funen)

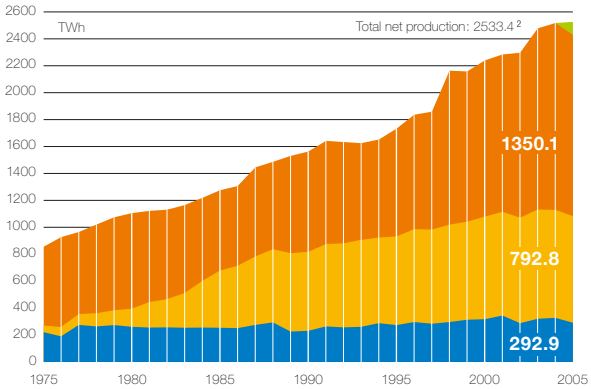
[5] UA_W represents the so-called Burshtyn Island synchronously interconnected with UCTE

Production

Structure of production in each country in %[1]

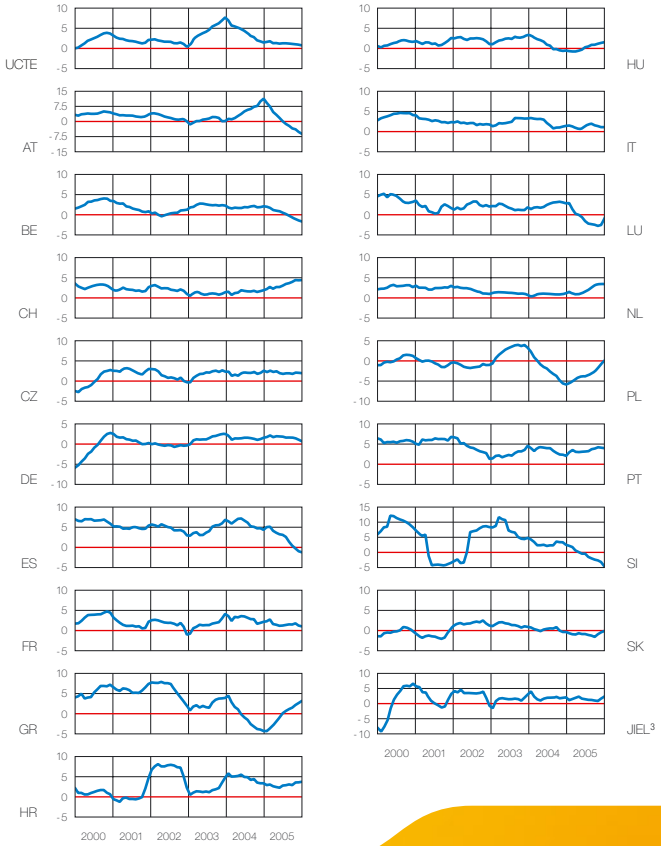


Net production in TWh



Consumption

Variation of the last 12 months' consumption in %[1]



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

[2] Including 97.6 TWh other sources in 2005; »other sources« published from 2005 on

[3] JIEL = SCG + FYROM (Serbia and Montenegro and Former Yugoslav Republic of Macedonia)

Austria	APG TIWAG-Netz VKW-Netz	*Verbund – Austrian Power Grid AG* *TIWAG-Netz AG* *VKW-Netz AG*
Belgium	Elia	*Elia System Operator SA/NV*
Bosnia-Herzegovina	ISO BiH	*Nezavisni operator sustava u Bosni i Hercegovini*
Bulgaria	NEK	*Natsionalna Elektricheska Kompania EAD*
Croatia	HEP-OPS	*HEP-Operator prijenosnog sustava d. o. o.*
Czech Republic	CEPS	*CEPS, a.s.*
France	RTE	*RTE EDF Transport S.A.*
Germany	EnBW Transportnetze E.ON Netz RWE Transportnetz Strom VE Transmission	*EnBW Transportnetze AG* *E.ON Netz GmbH* *RWE Transportnetz Strom GmbH* *Vattenfall Europe Transmission GmbH*
Greece	HTSO/DESMIE	*Hellenic Transmission System Operator/ Diachiristis Elinikou Sistimatos Metaforas Ilectrikis Energias*
Hungary	MAVIR ZRt.	*MAVIR Magyar Villamosenergia-ipari Rendszerirányító Zártkörüen Müködó Részvénytársaság.*
Italy	Terna S.p.A	*Terna – Rete Elettrica Nazionale SpA*
Luxembourg	CEGEDEL Net S.A.	*Compagnie Grand Ducale d' Electricité du Luxembourg*
FYR of Macedonia	AD MEPSO	*Operator na elektroprenosniot sistem na Makedonija AD*
The Netherlands	TENNET	*TenneT bv*
Poland	PSE – Operator S.A.	*Operator Systemu Przesylowego*
Portugal	REN	*Rede Eléctrica Nacional, S.A.*
Romania	Transelectrica	*C.N. Transelectrica S.A.*
Serbia-Montenegro	EPCG JP EMS	*Elektroprivreda Crne Gore* *JP Elektromreža Srbije*
Slovakia	SEPS	*Slovenská elektrizačná prenosová sústava, a.s.*
Slovenia	ELES	*Elektro Slovenija*
Spain	REE	*Red Eléctrica de España S.A.*
Switzerland	ATEL BKW ÜTN EGL Grid EOS ETRANS NOK	*Aare-Tessin Ltd. for Electricity* *BKW Übertragungsnetz AG* *EGL Grid AG* *Energie Ouest Suisse* ETRANS AG *Nordostschweizerische Kraftwerke AG*
Denmark West	Energinet.dk*	*Energinet.dk*

* Associate member

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UCTE

The »Union for the Co-ordination of Transmission of Electricity« (UCTE) is an association of transmission system operators in continental Europe, providing a reliable market base by efficient and secure electrical »power highways«. The interconnected system ensures the technical condition for the reliable operation, and provides benefit for all market participants because TSOs guarantee market access.

For more than fifty years UCTE has been coordinating by a variety of technical rules and recommendations the international operation of high voltage grids that all work with one »heart beat«: the 50 Hz UCTE frequency. UCTE is committed to the development of the system to meet all new market requirements keeping a high reliability of the system. The UCTE network brings a safe electricity supply for some 450 million people. Therefore UCTE handles one of the biggest electrical synchronous interconnections worldwide. This technical solution provides the possibility of the free market operation.

The members of UCTE are the companies responsible for synchronous frequency system interconnection in *Belgium*, *Germany*, *Spain*, *France*, *Greece*, *Italy*, *Slovenia*, *Croatia*, *Serbia and Montenegro*, *Bosnia Herzegovina*, the *FYROM*, *Luxembourg*, *The Netherlands*, *Austria*, *Portugal*, *Switzerland*, *Poland*, the *Slovak Republic*, the *Czech Republic*, *Hungary*, *Romania* and *Bulgaria*. Since October 2001, the system operator of *Denmark* has been associated member of the UCTE.

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