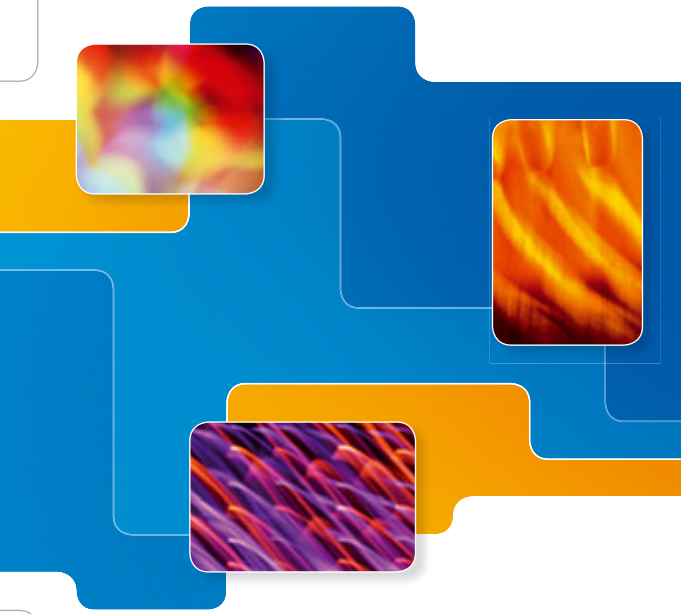
UCTE



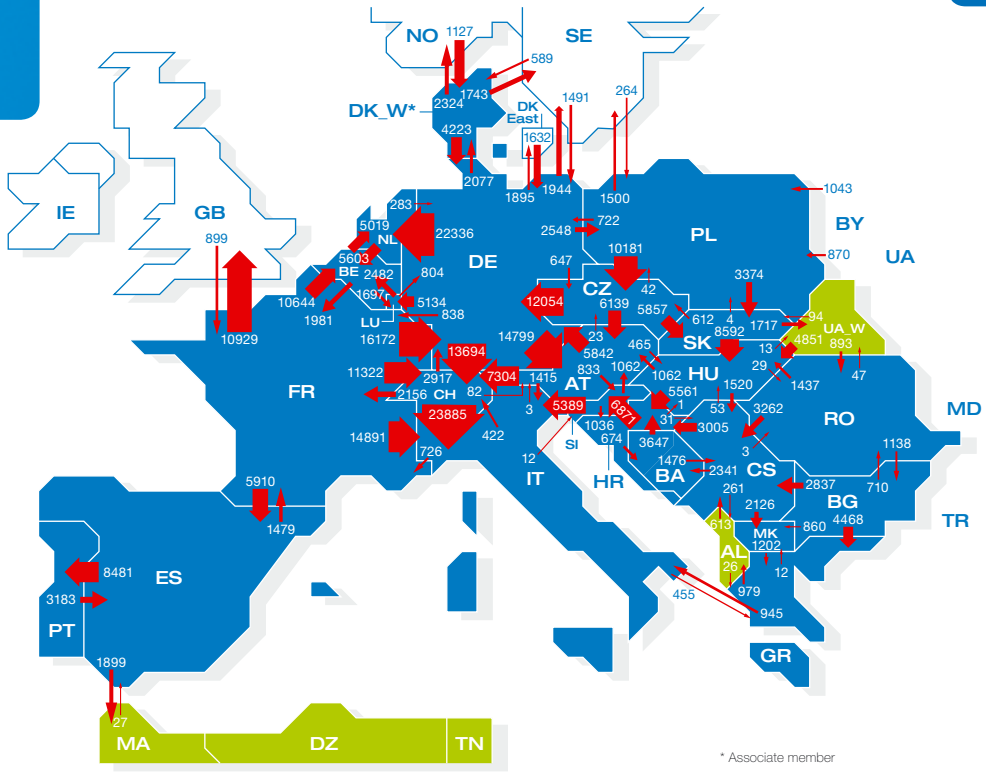
provisional values as of 15 April 2007

Memo 2006

union for the co-ordination of transmission of electricity

Physical energy flows

2006



UCTE region

Synchronous operation with UCTE region

	Import	Export
AT	23147	15882
BA	3015	5123
BE	18729	8697
BG	1138	8875
CH	32742	29040
CS	9739	7789
CZ	11463	24092
DE	46140	65912
ES	9120	11859
FR	8079	69868
GR	6151	1936
HR	13249	7577
HU	15399	8185
IT	46525	1618
LU	6831	3286
MK	2998	1202
NL	27355	5886
PL	4771	15777
PT	8481	3183
RO	1635	5884
SI	7716	7487
SK	9325	10925
UCTE	**313748**	**320083**
DK_W*	3793	8290
UA_W	1777	5838

* Associate member

Values in GWh

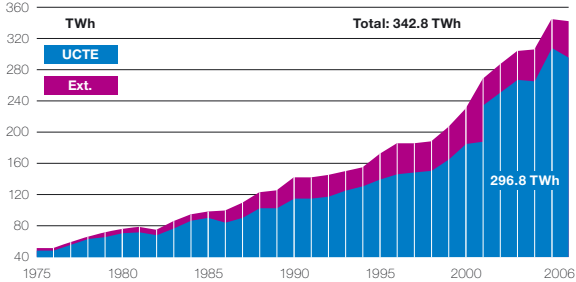
Exchange balance

	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
2006	7265	-2108	10032	-7737	3702	1950	-12629	-19772	-2739	-61789	4215	5672	7214	44907	3545	1796	21469	-11006	5298	-4249	229	-1600	**-6335**	-4497	-4061
2005	3315	-1377	6169	-7576	7470	1278	-12627	-8461	-923	-58653	3794	5352	6224	48936	3254	1598	18293	-11180	6671	-2914	-255	-2722	**5666**	-581	-3723

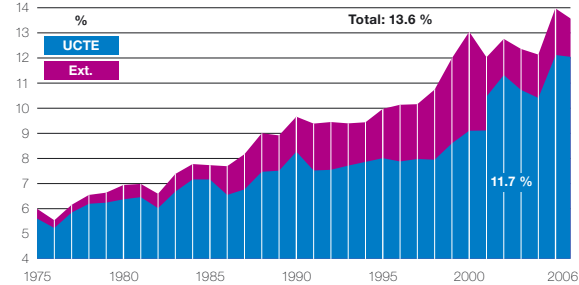
The above values have been harmonized between the countries concerned and may therefore differ from the official national statistics

Development of exchanges

Sum of electricity exchanges of the UCTE in TWh



Part of exchanges in the consumption in %

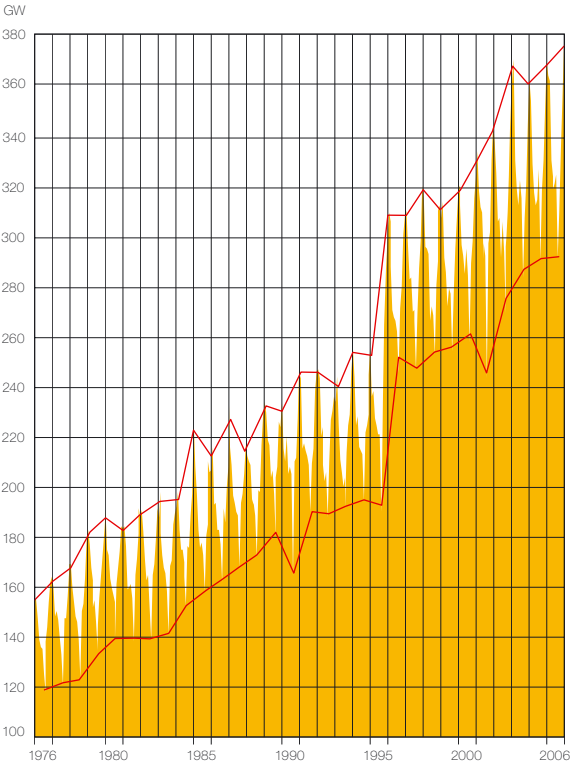


From year 2001 sum of exchanges include CENTREL countries CZ, HU, PL, SK

From year 2003 sum of exchanges include RO and BG

Ext. = exchanges with third countries

Power produced by UCTE members *



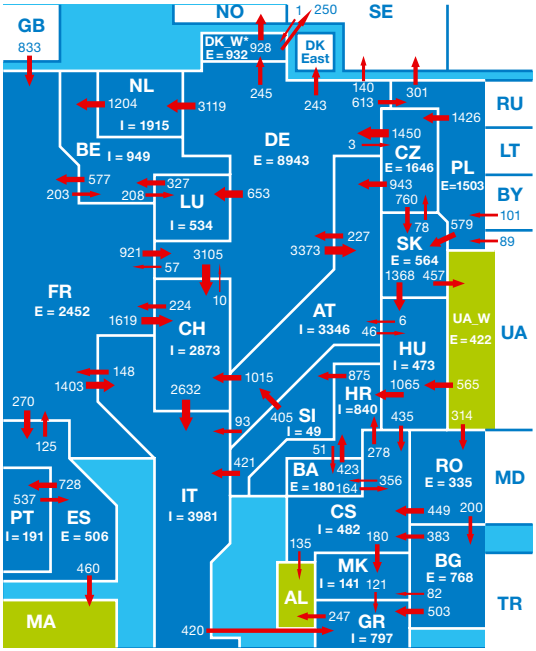
Max. 01/2006: 376.4 GW Min. 08/2006: 293.0 GW

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

Load flows **night** 20 December 2006, 3.00 h[1]

UCTE region

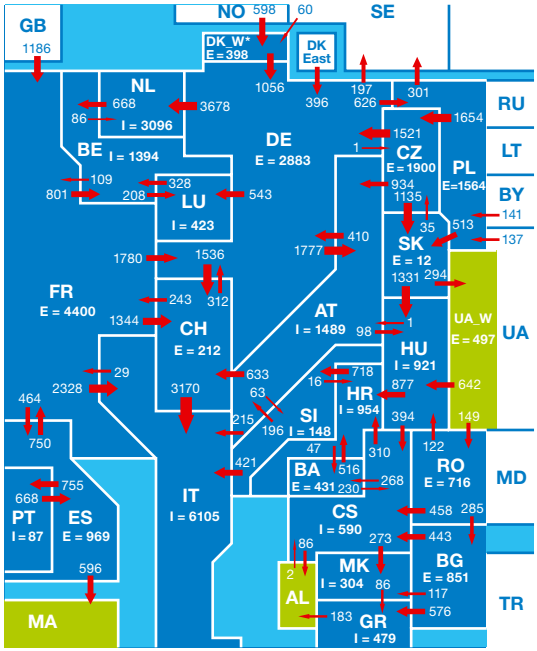
Synchronous operation with UCTE region



Sum of physical power flows: UCTE = 36 861 MW
Total = 42 170 MW

Values in MW

Load flows **day** 20 December 2006, 11.00 h[1]



Sum of physical power flows: UCTE = 37 100 MW
Total = 43 124 MW

Values in MW

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

* Associate member

Countries		AT	BA	BE	BG	CH[3]	CS	CZ	DE	ES	FR	GR	HR	HU	IT	LU	MK	NL	PL	PT	RO	SI	SK	**UCTE**	DK_W[5]	UA_W[6]
Net production[1]																										
Thermal nuclear	TWh	0.0	0.0	44.3	19.0	26.2	0.0	24.5	158.7	57.4	428.7	0.0	0.0	12.7	0.0	0.0	0.0	3.3	0.0	0.0	5.2	5.3	16.6	**801.9**	0.0	0.0
Thermal conventional	TWh	22.5	7.5	32.6	20.5	2.3	28.8	49.9	359.1	153.9	54.0	42.7	5.3	18.7	250.7	3.2	4.9	83.8	145.7	29.9	34.2	4.7	5.4	**1360.2**	20.1	8.3
Hydroproduction	TWh	34.1	5.9	1.6	4.5	32.6	12.5	3.3	24.0	29.2	60.9	6.4	6.1	0.2	42.4	0.9	1.6	0.1	2.8	11.2	18.0	3.1	4.4	**305.8**	0.0	0.1
Other renewable	TWh	0.0	0.0	2.9	0.0	1.1	0.0	0.1	46.0	27.6	5.5	1.3	0.0	1.2	8.4	0.1	0.0	7.6	0.3	4.8	0.0	0.0	0.0	**107.0**	6.1	0.0
of which windpower	TWh	0.0	0.0	0.3	0.0	0.0	0.0	0.0	32.3	22.5	2.2	1.2	0.0	0.0	3.2	0.1	0.0	2.7	0.2	2.9	0.0	0.0	0.0	**67.5**	4.7	0.0
Not clearly identifiable	TWh	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	**9.7**	0.0	0.0
Total net production	TWh	63.0	13.3	81.4	43.9	62.1	41.2	77.9	587.8	268.2	549.1	50.4	11.4	33.4	301.5	4.2	6.6	94.7	148.9	46.0	57.4	13.1	29.0	**2584.6**	26.2	8.4
Consumption[1]																										
Consumption	TWh	66.5	11.1	89.9	35.7	62.1	42.3	64.3	559.1	259.6	478.4	54.0	16.8	40.6	337.8	6.6	8.4	116.1	136.5	50.7	53.0	13.3	27.2	**2530.1**	21.7	4.3
	%	5.3	-0.7	2.2	-1.1	0.8	1.5	2.6	0.5	2.7	-0.8	2.1	1.5	3.3	2.2	6.1	3.8	1.3	4.5	1.7	2.2	4.4	3.5	**1.4**	2.1	-0.8
Highest load on 3rd Wednesday of December 2006[1]																										
Highest load	MW	9222	1826	13317	6029	9439	6936	9563	80230	42744	80966	8102	2817	6180	53631	921	1385	17335	22017	9048	7974	2166	4254	**390535**	3511	923
Variation[4]	%	3.6	-3.4	0.6	-3.1	-2.9	-2.7	1.5	-0.8	4.3	-1.6	-5.8	0.3	1.9	-0.9	-0.9	-4.5	4.5	2.0	4.4	0.0	4.4	-1.6	**0.1**	-0.5	-5.6
Maximum output capacity as of 31 December 2006[2]																										
Thermal nuclear	MW	0	0	5802	2000	3220	0	3537	20300	7458	63260	0	0	1755	0	0	0	485	0	0	655	696	2640	**111808**	0	0
Thermal conventional	MW	6254	1957	8165	5390	335	6400	10585	70400	37314	24837	8097	1691	5253	66200	487	907	19294	29810	6681	9029	1260	2270	**322616**	5156	1501
Hydropower	MW	11811	2064	1410	2704	13355	3497	2175	9100	18701	25457	3133	2079	46	21070	1128	503	37	2324	4948	5817	873	2429	**134661**	10	27
Renewable ernergy sources	MW	849	0	746	8	280	0	77	24500	23422	2403	587	10	435	2536	69	0	2313	168	1988	0	0	5	**60396**	2391	0
Not unambigously identified energy sources	MW	0	0	0	0	240	0	0	0	0	0	0	0	682	0	0	0	18	0	0	0	0	696	**1636**	0	0
Total	MW	18914	4021	16123	10102	17430	9897	16374	124300	86895	115957	11817	3780	8171	89806	1684	1410	22147	32302	13617	15501	2829	8040	**631117**	7557	1528
Representativity of the values	%	100	100	100	100	100	100	100	90	100	100	100	100	100	100	100	100	100	100	97	100	100	100		100	100

Number of 220 kV and 380 kV circuits on cross-frontier transmission lines on 31 December 2006

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

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

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

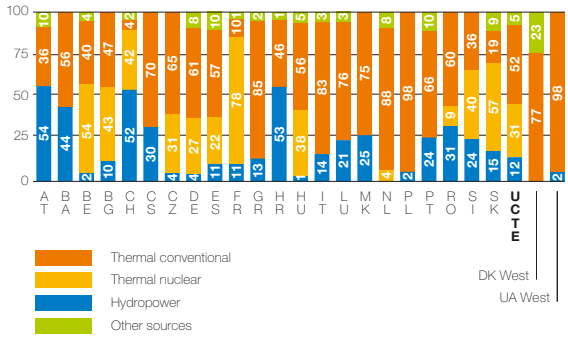
[3] Maximum output capacity as of 31 December 2005

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

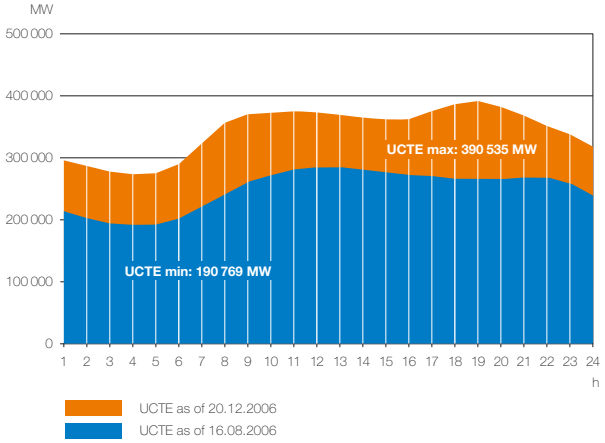
[5] DK_W represents the Western part of Denmark synchronously interconnected with UCTE (Jutland and Funen)

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

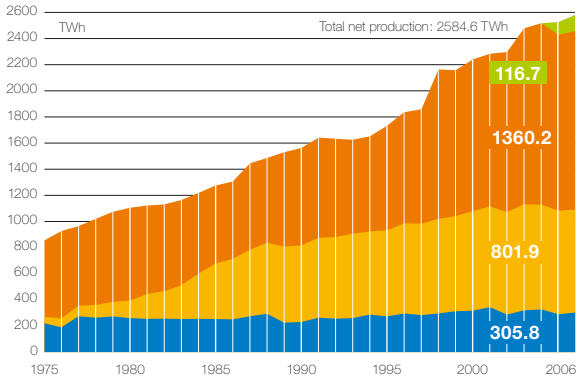
Structure of production in each country in %[1]



3rd Wednesday with maximum and minimum load in UCTE[1]



Net production history from 1975 to 2006 in TWh[1]



	lowest value	highest value
AT	4202	9222
BA	843	1826
BE	7362	13317
BG	2906	6340
CH	4834	10218
CS	2890	7047
CZ	5578	10095
DE	43526	80750
ES	20133	42744
FR	32431	80966
GR	4007	8586
HR	1207	2817
HU	3758	6271

	lowest value	highest value
IT	21737	53816
LU	375	972
MK	540	1525
NL	9065	17544
PL	10626	22017
PT	3789	9048
RO	4923	7974
SI	1022	2166
SK	2500	4316
UCTE	**190769**	**390535**
DK_W	1686	3652
UA_W	430	969

Values in MW

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

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	ESO EAD	*Electroenergien Sistemen Operator EAD*
Croatia	HEP-OPS	*HEP-Operator prijenosnog sustava d. o. o.*
Czech Republic	CEPS	*CEPS, a.s.*
France	RTE	*RTE Réseau de Transport d'Electricité*
Germany	EnBW Transportnetz E.ON Netz RWE Transportnetz Strom VE Transmission	*EnBW Transportnetz 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 Zártkörűen Működő Részvénytársaság.*
Italy	Terna S.p.A	*Terna – Rete Elettrica Nazionale SpA*
Luxembourg	CEGEDEL Net S.A.	*Compagnie Grand Ducale d' Electricité du Luxembourg*
Macedonia	MEPSO	*Makedonski Elektroprenosen Sistem Operator*
The Netherlands	TenneT TSO B.V.	*TenneT TSO B.V.*
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, a.s.	*Slovenská elektrizačná prenosová sústava, a.s.*
Slovenia	ELES	*Elektro Slovenija*
Spain	REE	*Red Eléctrica de España S.A.*
Switzerland	swissgrid	swissgrid ag
Denmark West	Energinet.dk*	*Energinet.dk*

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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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