

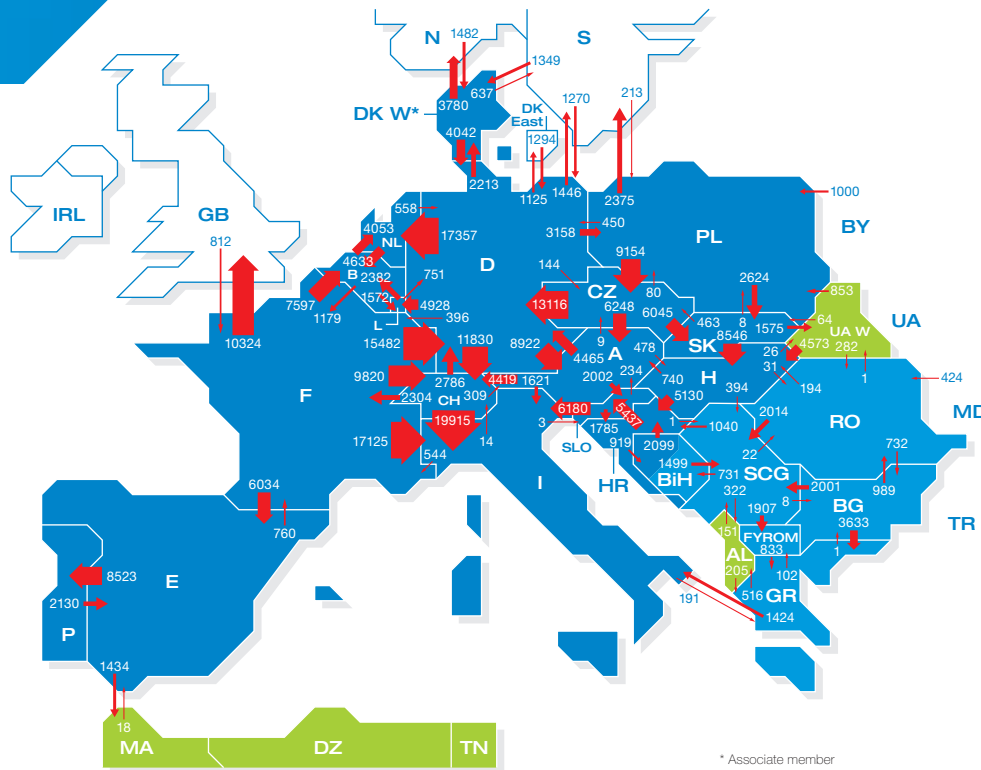
# UCTE



provisional values as of 30.03.2005

## Memo 2004

union for the co-ordination of transmission of electricity



- 1st synchronous UCTE region
- Synchronous Operation with UCTE region
- Former 2nd synchronous UCTE region, from November 2004 on synchronous with 1st UCTE region

	Import	Export
B	14612	6804
D	44214	51519
E	8182	10717
F	5995	66382
GR	4862	2043
I	46265	752
SLO	7442	8199
HR	10054	6357
BIH	1650	3598
FYROM	2009	833
SCG	6060	4030
L	6500	3133
NL	21410	5191
A	16453	12994
P	8523	2130
CH	26083	25314
CZ	9770	25489
H	13791	6321
PL	5312	14603
SK	8733	10592
RO	1748	2941
BG	741	6623
<b>UCTE</b>	<b>270409</b>	<b>276565</b>
DK W*	5044	8463
UA W	1602	5772

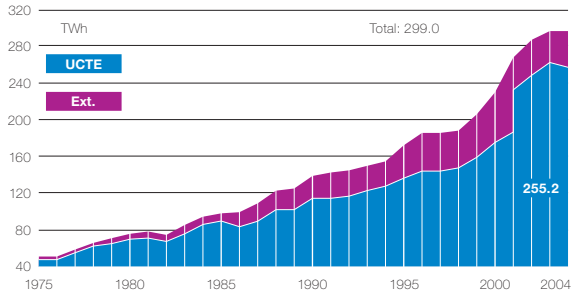
\* Associate member

Values in GW/h

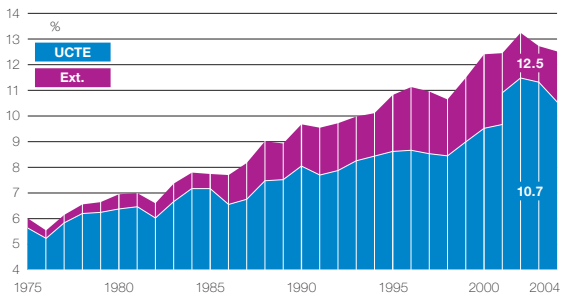
Exchange balance

	B	D	E	F	GR	I	SLO	HR	BIH	FYROM	SCG	L	NL	A	P	CH	CZ	H	PL	SK	RO	BG	<b>UCTE</b>	DK W*	UA W
2004	7808	-7305	-2535	-60387	2819	45513	-757	3697	-1948	1176	2030	3367	16219	3459	6393	769	-15719	7470	-9291	-1859	-1193	-5882	<b>-6156</b>	-3419	-4170
2003	6318	-8065	1667	-64536	2156	50794	151	3902	-933	934	3153	3765	17004	6147	2663	-1785	-16215	6937	-10276	-2256	-1989	-5580	<b>-6048</b>	n.a.	-4141

Sum of electricity exchanges of the UCTE in TWh



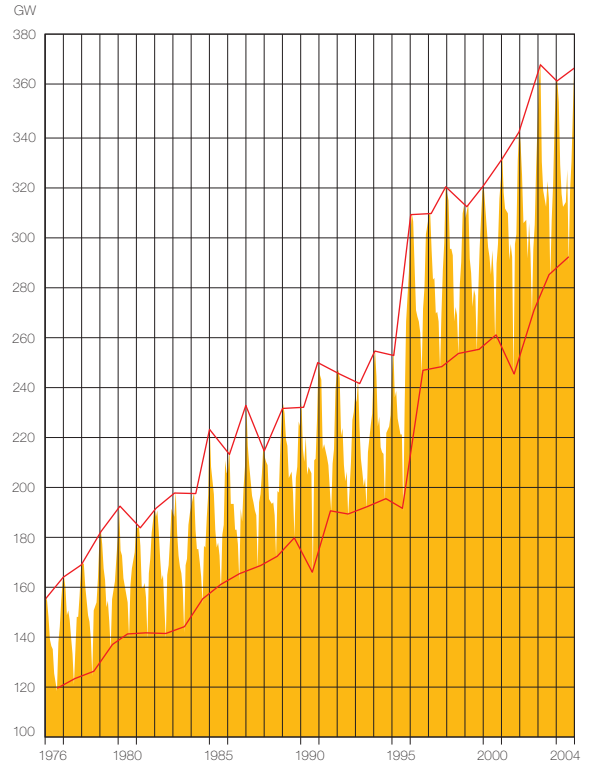
Part of exchanges in the consumption in %



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

From year 2003 on sum of exchanges include RO and BG

Ext. = exchanges with third countries

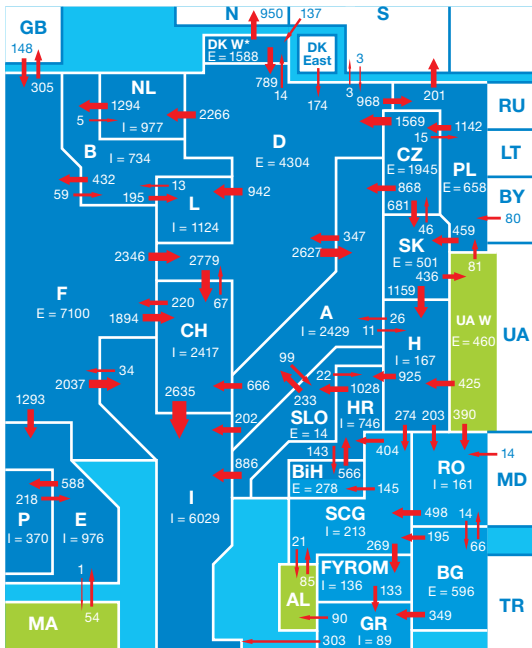


Max. 12/04: 368,2 GW Min. 08/04: 288,8 GW

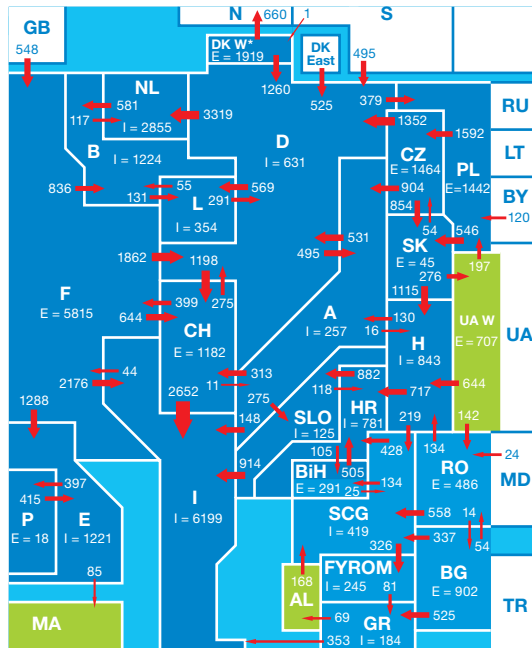
1st synchronous UCTE region

Synchronous Operation with UCTE region

Former 2nd synchronous UCTE region, from November 2004 on synchronous with 1st UCTE region



Sum of physical power flows: UCTE = 36 858 MW  
Total = 41 259 MW



Sum of physical power flows: UCTE = 32 393 MW  
Total = 37 607 MW

Values in MW

Values in MW

Countries		B	D	E	F	GR	I	SLO	HR	BiH	FYROM	SCG	L	NL	A <sup>3</sup>	P	CH	CZ	H	PL	SK	RO	BG	UCTE	DK W	UA W <sup>4</sup>
<b>Net production</b>																										
Hydropower	TWh	1.6	22.9	33.3	64.5	4.9	47.9	3.6	7.0	6.0	1.5	13.4	0.9	0.0	34.3	10.7	35.1	2.5	0.2	3.5	4.0	16.3	3.3	<b>317.3</b>	0.1	0.1
Thermal nuclear	TWh	44.9	157.1	60.9	426.8	0.0	0.0	5.2	0.0	0.0	0.0	0.0	3.6	0.0	0.0	25.4	24.8	11.2	0.0	15.7	5.1	16.6	<b>797.4</b>	0.0	0.0	
Thermal conventional	TWh	34.9	349.3	147.9	55.4	44.2	238.4	4.6	5.4	6.6	4.7	25.3	3.1	91.0	22.1	28.7	3.0	50.6	19.4	138.3	8.6	30.5	21.2	<b>1333.4</b>	24.2	7.6
Total	TWh	81.4	529.3	242.1	546.7	49.2	286.3	13.5	12.4	12.6	6.2	38.7	4.0	94.6	56.4	39.4	63.5	77.9	30.8	141.8	28.3	51.9	41.1	<b>2448.1</b>	24.3	7.7
Production representativity <sup>2</sup>	%	99	94	94	100	100	100	95	100	99	100	96	98	100	84	93	100	100	100	100	100	100	100		99	100
<b>Consumption</b>																										
Consumption	TWh	87.5	513.0	234.5	477.2	51.2	321.5	12.7	16.0	10.5	7.4	39.9	6.3	110.8	56.6	45.5	60.4	61.4	38.2	130.3	26.3	50.7	35.0	<b>2392.9</b>	20.9	4.4
Cons. representativity <sup>2</sup>	%	99	94	94	100	100	100	95	100	99	100	96	99	100	90	93	100	100	100	100	100	100	100		99	100
Δ% <sup>1</sup>	%	2.1	0.5	4.6	2.7	-4.4	0.3	2.2	3.4	-15.9	2.4	1.9	2.8	1.2	10.3	4.5	1.9	2.6	-0.5	-5.8	-0.3	2.6	-4.6	<b>1.2</b>	n.a.	7.1
<b>Peak load on 3rd Wednesday of December 2004</b>																										
Peak load	MW	13325	72000	37196	79981	8122	53093	1930	2692	1803	1358	6867	877	15128	8894	7840	9548	10097	6357	20937	4323	8028	5949	<b>370176</b>	3517	975
Peak load representativity <sup>2</sup>	%	100	91	94	100	100	100	95	100	99	100	96	99	90	82	94	100	100	100	100	100	100	100		99	100
Δ% <sup>1</sup>	%	4.3	-2.0	4.3	4.7	-6.6	3.4	0.5	3.5	7.2	5.8	2.5	-0.3	8.5	4.1	1.8	0.6	5.4	8.4	-5.4	3.1	6.4	-0.8	<b>2.0</b>		14.6
<b>Maximum output capacity as of 31.12.2004</b>																										
Hydropower	MW	1493	9000	18014	25394	3060	20770	862	2071	2064	503	3497	1128	37	11700	4717	13295	2138	46	2193	2429	6007	2930	<b>133348</b>	11	27
Thermal nuclear	MW	5802	20500	7876	63363	0	0	670	0	0	0	0	0	449	0	0	3220	3537	1755	0	2640	655	2880	<b>113347</b>	0	0
Thermal conventional	MW	8091	68100	32855	26908	7212	57000	1262	1670	1957	907	6400	477	18770	5900	6178	305	10591	5685	29350	2290	10081	6420	<b>308409</b>	5098	2347
Renewable energy sources	MW	366	17300	7361	1056	380	1688	0	5	0	0	0	60	1496	670	825	290	20	100	145	3	0	0	<b>31765</b>	2379	0
Not unambiguously identified energy sources	MW	0	0	0	0	0	0	0	0	0	0	0	0	400	0	0	225	0	690	0	696	0	0	<b>2011</b>	0	0
Total	MW	15752	114900	66106	116721	10652	79458	2794	3746	4021	1410	9897	1665	21152	18270	11720	17335	16286	8276	31688	8058	16743	12230	<b>588880</b>	7488	2374
Representativity of the values	%	99	90	100	100	100	100	100	100	99	100	96	96	100	100	94	100	100	100	100	100	100	100		100	100

## Number of 220kV and 380kV circuits on cross-frontier transmission lines on 31. December 2004

	F	I	SLO	HR	BiH	FYROM	SCG	L	NL	A	P	CH	CZ	H	PL	SK	RO	BG	DK W	UA W
B	2/2							2/-	-/4											
D	2/4							8/-	-/6	11/3		5/8	-/4		2/2					2/2
E	2/2										3/4									
F	3/3											5/5								
GR	-/1				-/1													-/1		
I		1/1								1/-		5/4								
SLO			2/3							1/2										
HR				5/2			-/1										-/2			
SCG				3/1	2/1													-/1	-/1	
220kV/380kV											A	2/2	2/1							
														CZ	2/2	2/3				
															H	-/2	-/1			2/2
															PL	-/2				1/1
															SK					-/1
																	RO	1/4		-/1

<sup>1</sup> As compared to last year and representativity 100%

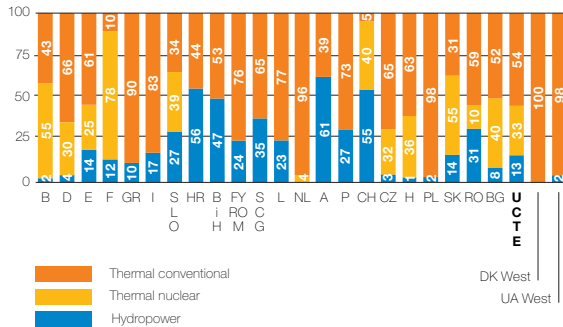
<sup>2</sup> Percentage as referred to total values in %

<sup>3</sup> Max.output capacity as of 31 December 2003

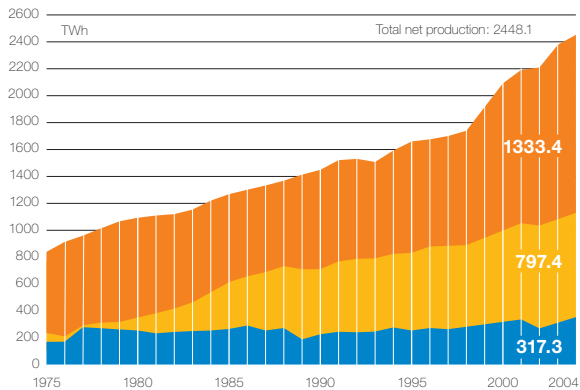
<sup>4</sup> UA W represents the so-called Burshtyn Island synchronously interconnected with UCTE

# Production

Structure of production in each country in %

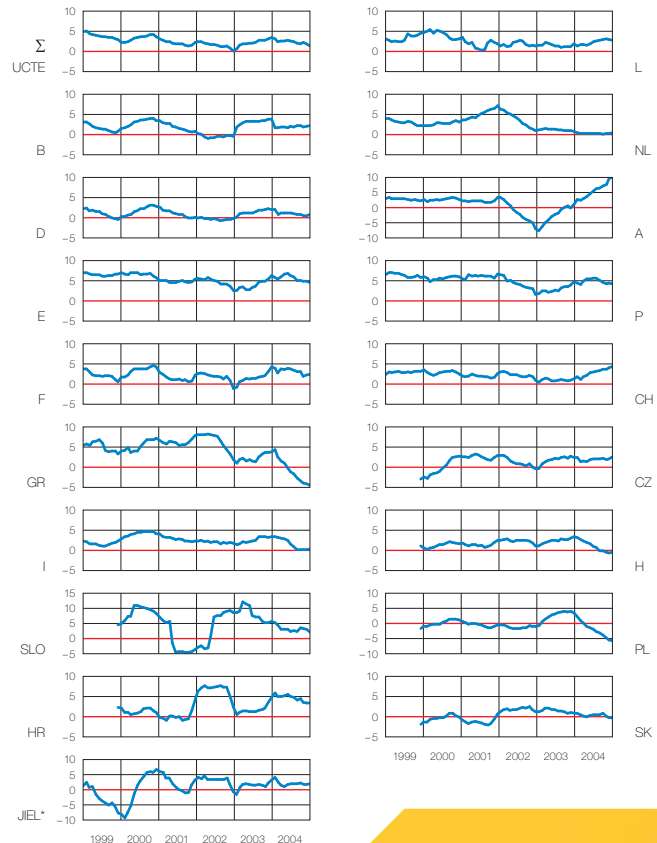


Net production in TWh



# Consumption

Variation of the last 12 months' consumption in %



\* JIEL = SCG + FYROM (Serbia and Montenegro and Former Yugoslav Republic of Macedonia)

Austria	TIPAG VERBUND-APG VKW ÜN	<i>Tiroler Regelzone AG Verbund – Austrian Power Grid GmbH VKW-Übertragungsnetz AG</i>
Belgium	Ela	<i>Ela System Operator</i>
Bosnia-Herzegovina	JPCC	<i>Joint Power Coordination Center</i>
Bulgaria	NEK	<i>Natsionalna Elektricheska Kompania EAD</i>
Croatia	HEP	<i>Hrvatska Elektroprivreda d. d.</i>
Czech Republic	CEPS	<i>CEPS, a.s.</i>
France	RTE	<i>RTE Gestionnaire du Réseau de Transport d'Electricité</i>
FYROM	ESM	<i>Elektrospastvo na Makedonija</i>
Germany	EnBW TN E.ON Netz RWE TN Strom VE Transmission	<i>EnBW Transportnetze AG E.ON Netz GmbH RWE Transportnetz Strom GmbH Vattenfall Europe Transmission GmbH</i>
Greece	HTSO/DESMIE	<i>Hellenic Transmission System Operator/Diachinistis Elinikou Sistimatos Metaforas Ilektrikis Energias</i>
Hungary	MAVIR	<i>Magyar Villamosenergia-ipari Rendszerezinyitó Rt.</i>
Italy	GRTN	<i>Gestore della Rete di Trasmissione Nazionale</i>
Luxembourg	CEGEDEL	<i>Compagnie Grand Ducale d'Electricité du Luxembourg S.A.</i>
The Netherlands	TENNET	<i>TenneT bv</i>
Poland	PSE-Operator	<i>PSE-Operator S.A.</i>
Portugal	REN	<i>Rede Eléctrica Nacional, S.A.</i>
Romania	Transelectrica	<i>Transelectrica S.A.</i>
Serbia and Montenegro	EPCG EPS	<i>Elektroprivreda Crne Gore Elektroprivreda Srbija</i>
Slovak Republic	SEPS	<i>Slovenská elektrizačná prenosová sústava, a.s.</i>
Slovenia	ELES	<i>Elektro Slovenija d.o.o</i>
Spain	REE	<i>Red Eléctrica de España S.A.</i>
Switzerland	ATEL BKW UTN EGL Grid AG	<i>Aare-Tessin Ltd. for Electricity BKW Übertragungsnetz AG Elektrizitäts-Gesellschaft Laufenburg Grid AG / Electricité de Laufenbourg Grid AG, S.A.</i>
	EOS ETRANS NOK	<i>Energie Ouest Suisse Etrans Ltd. Nordostschweizerische Kraftwerke AG</i>
Denmark	ELTRA*	<i>Eltra</i>

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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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