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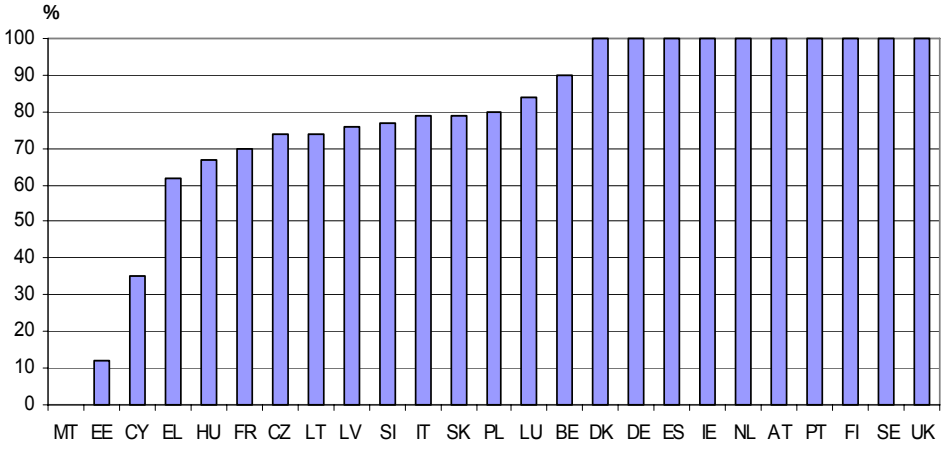
European electricity market indicators of the liberalisation process 2005 – 2006

Highlights

- **The deadline for the complete opening of the electricity market for all customers is 1 July 2007. By October 2006, the electricity markets of 10 Member States were fully open. In certain countries, the freedom of choice of an electricity supplier is still limited to large (industrial) customers.**
- **The number of electricity generating companies (generating 95% of the net electricity available in a country) varies from over 1000 in Denmark and over 450 in Germany to a single one in Greece, Malta and Cyprus.**
- **Many of these electricity generating companies are however small: in Denmark, only three have a share of at least 5% of the total national net generation. In Germany, this counts for four enterprises.**
- **At the level of the EU-27, the number of major electricity generating enterprises (i.e. those having a share of at least 5% in the total national net generation) remained fairly stable: they amounted to 87 in 2003, 80 in 2004 and 82 in 2005.**
- **In 2005, the largest number of electricity retailers can be found in Germany (940), Italy (430), Spain (382), the Czech Republic (286) and Poland (265).**
- **Beyond Cyprus and Malta, there are still five Member States with only a single retailer of considerable size (i.e. having a share of at least 5% of total electricity consumed by final customers).**

Graph 1: Degree of market opening: electricity consumed by customers given the choice of their electricity supplier — as percentage of total electricity consumption, October 2006



Source: Directorate-General Energy and Transport, on the basis of information provided by Regulators/Member States.

Introduction

Reliable electricity supply at acceptable prices is a key driver to economic growth and competitiveness. In order to benefit from efficient energy supply, the EU decided to bring the energy sector into line with the competitive parts of its economy by gradually introducing competition. Directive 2003/54/EC concerning common rules for the internal market in electricity gave deadlines for the opening of the market: 1 July 2004 for all business customers and 1 July 2007 for households. Certain countries anticipated the liberalisation process; others are slower in adopting the necessary measures.

Data presented in this publication are mainly based on the results of a voluntary, questionnaire-based data collection aimed at monitoring competition in the electricity market.

Figure 1, on the cover page, outlines the state of progress of the liberalisation process and expresses the degree of market opening. The market opening is defined as the percentage of the total electricity consumed by customers given the choice of their electricity supplier (eligible consumers).

By October 2006 full market liberalisation was completed in 10 Member States. Ireland was the latest country to reach full market opening in 2005. For certain countries the freedom to choose supplier is still limited to non-household customers. In other countries the threshold is linked to consumption of a certain quantity, quantities that are not reached by household consumers.

The following pages attempt to give a picture of the situation in the individual countries and notably outline the number and importance of electricity generating companies, the installed capacity of the various electricity generating power plants as well as the number of suppliers to end-customers. As the information in this publication is based on a voluntary data collection, a complete picture of the situation in certain countries cannot always be presented.

Number of companies and their relative importance

In the process of moving from an often state monopoly to open competition, certain Member States adopted the indicative timetable mentioned in the EU Directive, while others anticipated this schedule. In 2001, five Member States had already declared full market opening (Germany, Austria, Finland, Sweden and the UK); by September 2005, five other countries could be added to the list (Denmark, Spain, Ireland, the Netherlands and Portugal).

The increasing number of electricity generating companies represents a challenge with regard to statistical data compilation as many smaller enterprises enter the market. For this reason mainly the information in Table 1 refers to the number of companies representing at least 95% of net electricity generation. In 2005, the number of companies remained limited to five or fewer in eight Member States. In countries that declared full market opening by October 2006 this number is significantly higher, except for Ireland, where four companies were responsible for 95% of the electricity generation.

Table 1: Number of electricity generating companies per country, 2003-2005

	Number of companies representing at least 95% of the net electricity generation			Number of companies producing at least 5% of the national net electricity generation		
	2003	2004	2005	2003	2004	2005
Belgium	2	3	3	2	2	2
Bulgaria	13	14	14	5	5	5
Czech Rep.	20	17	18	1	1	1
Denmark	>1000	>1000	>1000	2	3	3
Germany	>450	>450	>450	4	4	4
Estonia	2	2	2	2	1	1
Ireland	5 (1)	3	4	3	2	4
Greece	1	1	1	1	1	1
Spain	:	:	:	5	5	4
France	4	4	4	1	1	1
Italy	79	83	88	4	4	4
Cyprus	1	1	1	1	1	1
Latvia	5	7	6	1	1	1
Lithuania	5	5	6	2	2	3
Luxembourg	9 (2)	9 (2)	>12	1	1	2
Hungary	30	10	23	6	4	3
Malta	1	1	1	1	1	1
Netherlands	≥87	≥53	48	4	4	5
Austria	34	39	53	7	5	4
Poland	31	54	70	7	5	5
Portugal	36	46	59	3	3	3
Romania	11	12	12	7	6	7
Slovenia	3	3	3	3	2	2
Slovakia	6	6	6	1	1	1
Finland	25	29	27	4	5	4
Sweden	7	14	14	3	3	3
United Kingdom	22	20	17	6	7	7
Croatia	2	2	2	2	2	2
FYROM	:	:	1	:	:	1
Turkey	148	172	192	3	4	4
Norway	161	165	175	6	5	4

(1) Based on installed capacity. (2) Generating over 1.5 MW.

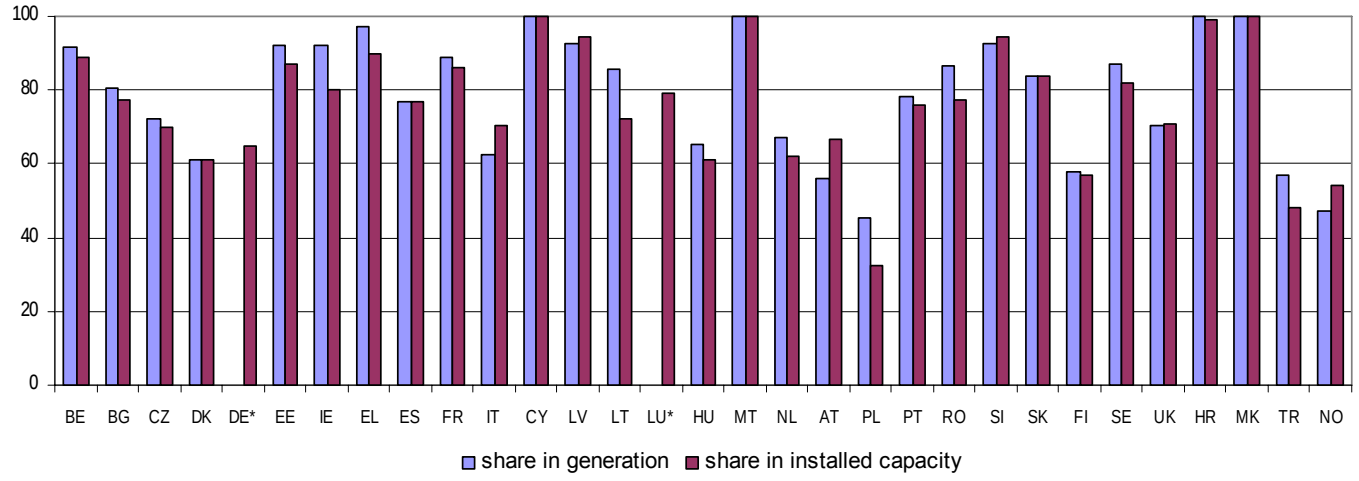
Source: Eurostat.

Between 2004 and 2005, the number of electricity generating companies has increased, particularly in Austria, Poland and Portugal, but also in Italy.

The right part of Table 1 displays the number of companies that are each responsible for at least 5% of the total national net electricity generation. The number of enterprises is generally very limited, still partially reflecting the former situation where one single company was often responsible for the quasi-totality of electricity generation. As in 2003, eight EU Member States declared a single enterprise to have a significant share in 2005. Conversely, in Romania and the UK there are seven and in Bulgaria, the Netherlands and Poland, five electricity generating companies are of considerable importance. In Spain, Hungary, Austria and Finland, the number of companies with a share of over 5% was reduced by one unit compared to a year earlier. In Hungary, there were six such companies in 2003, four in 2004, but only three in 2005.

The number of major enterprises at EU-27 level remained quite stable: such companies amounted to 87 in 2003, decreased to 80 in 2004 and increased slightly again in 2005 to reach 82 units.

Graph 2: Cumulated share of electricity generating companies with at least 5% of the national electricity generation and their respective capacity, 2005 – in %



* Share in generation not available

Source: Eurostat.

Graph 2 displays the cumulated shares of companies in a given country having a share of at least 5% of their respective national markets, both with regard to the electricity actually generated in 2005 and the installed capacity of the generating power plants.

Cyprus and Malta report a monopoly situation where a single company (see Table 1) is responsible for the totality of electricity generation, and thus the installed capacity.

Globally, an inverse relationship between the degree of market opening and the aggregated share of companies with at least 5% of the total generation/capacity can be observed. In Italy for instance, the four major companies (i.e. those which have at least a 5% share in total national electricity generation) were together responsible for 62% of the total electricity generated. The remaining electricity was generated by smaller enterprises (i.e. each with a share of under 5% in total electricity generation). Similarly, these major Italian companies represented 71% of the total installed capacity of the country.

In Austria, where full liberalisation was achieved some years ago, 53 generating enterprises were together responsible for at least 95% of the total net Austrian electricity generation in 2005. Between them, the four major companies had a share of 56% in total generation and 67% in installed capacity.

Power plant capacity

The net installed capacity of the various electricity generating stations available in 2005 is shown in Table 2. The information is given by type of power plant. At EU-27 level the total installed capacity amounted to almost 754 thousand MW. In 2004, the equivalent figure was 737 thousand MW and in 2003 it totaled 728 thousand MW.

On the basis of data available and considering all types of electricity generating plants, Germany has the highest installed capacity with 125 000 MW, followed by France with close to 117 000 MW. But whereas the majority of the capacity is conventional thermal in Germany (61%), France's nuclear power plants are responsible for 54% of its total installed capacity.
Conventional thermal installed capacity makes up the totality of the power generation in Cyprus and Malta, the near totality in Estonia (98%) and has a share of well over 90% in the Netherlands and Poland.

Conversely, the share of conventional thermal capacity is low in Austria (33%) but particularly Norway (less than 1%), where the hydro-electric share in total installed capacity reaches 98%.
Luxembourg displays a hydro share in total capacity of close to 70%, but this share is largely attributable to a pumped storage plant.

Table 2: Installed capacity (net in MW) of electricity generating power plants, by type of plant – 2005

	EU-27	EA-13	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU
Conv. thermal	428 638	269 301	8 712	6 682	11 456	10 205	76 375	2 254	5 132	9 708	34 175	27 350	61 932	1 124	603	2 470	358
Nuclear	135 396	101 195	5 802	2 722	3 760	-	20 378	-	-	-	7 876	63 363	-	-	-	1 183	-
Hydro	138 973	100 114	1 412	2 567	2 167	11	8 341	4	526	3 105	18 416	25 287	20 993	-	1 536	877	1 138
Wind	40 474	35 097	168	1	29	3 129	18 428	31	492	491	9 928	723	1 635	-	26	1	35
Other	10 460	10 407	2	-	-	3	1 508	-	-	1	7 691	-	938	-	-	25	130
TOTAL	753 941	516 114	16 096	11 972	17 412	13 348	125 030	2 289	6 150	13 305	78 086	116 723	85 498	1 124	2 165	4 556	1 661
Change in capacity compared to 2004																	
Added capacity	:	:	551	-	:	79	3 760	:	263	590	5 591	26	4 400	131	148	11	:
Decommissioned cap.	:	:	89	-	:	31	618	:	0	:	465	1 584	438	-	140	1 188	:
Capacity change	13 189 [1]	12 669 [2]	462	-	- 22	48	3 142	:	263	:	5 126	-1 558	3 962	131	9	-1 177	3

	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	NO
Conv. thermal	6 654	571	19 967	6 276	29 815	7 279	11 954	1 357	3 090	10 680	7 424	65 035	1 800	1 010	25 901	255
Nuclear	1 866	-	449	-	-	-	707	656	2 640	2 671	9 471	11 852	-	-	-	-
Hydro	49	-	37	11 811	2 321	5 034	6 289	979	2 512	3 035	16 345	4 181	2 060	549	12 905	28 300
Wind	17	-	1 224	827	121	1 064	-	-	5	82	452	1 565	2	-	21	280
Other	-	-	123	-	-	14	-	-	10	-	3	12	-	-	15	-
TOTAL	8 586	571	21 800	18 914	32 257	13 391	18 950	2 992	8 257	16 468	33 695	82 645	3 862	1 559	38 842	28 835
Change in capacity compared to 2004																
Added capacity	105	-	331	372	413	725	208	:	4	50	325	1 697	13	:	2 127	420
Decommissioned cap.	100	-	35	127	133	47	-	:	25	-	664	239	-	:	83	5
Capacity change	5	-	296	245	280	678	208	:	- 21	50	- 339	1 458	13	:	2 044	415

[1] without EE, EL and SI ; [2] without EL and SI
Source: Eurostat.

Electricity trade

Imports of electricity are often an economic choice rather than, because of a shortage of generation possibilities.

EU electricity networks are interconnected and feature more or less significant exchanges. Intermediate markets such as the Iberian, Nordic and Western European electricity markets are however a fact of today.
Looking at the electricity trade balance, it appears that for 13 out of 27 EU Member States, the electricity balance in 2005 was negative. The highest deficit in absolute terms was recorded for Italy (49 200 GWh), followed by the Netherlands (18 300 GWh), Finland (17 000 GWh) and the UK (8 300 GWh).

Conversely, France continued to be the most important electricity exporting country in 2005 with over 52 300 GWh (roughly 10 000 GWh less than in 2004). The balances of the Czech Republic and Poland were also largely positive, with +12 600 GWh and +11 200 GWh respectively.

After registering 11 139 GWh in 2004, Spain's exports in 2005 (9 414 GWh) fell back somewhat but were still over the volume of 2003 (8 257 GWh). Sweden changed from a negative balance in 2003 (-13 165 GWh) to a positive one in 2004 (+2 104 GWh).

Table 3: Imports and exports, 2005, GWh

NET IMPORTERS	Imports	Exports	Balance	Total net electricity consumption
Luxembourg	6 391	3 131	-3 260	6 158
Latvia	2 855	707	-2 148	5 701
Hungary	15 637	9 410	-6 227	32 336
Denmark	12 943	11 574	-1 369	33 514
Austria	20 397	17 732	-2 665	56 796
Netherlands	23 691	5 398	-18 293	104 507
Finland	17 922	933	-16 989	80 935
Portugal	9 626	2 802	-6 824	46 322
Belgium	14 328	8 024	-6 304	80 182
Italy	50 264	1 109	-49 155	300 376
Greece	5 632	1 838	-3 794	50 904
Ireland	2 074	1	-2 073	24 352
United Kingdom	11 160	2 839	-8 321	345 243
Croatia	8 744	4 322	-4 422	14 355

NET EXPORTERS	Imports	Exports	Balance	Total net electricity generation
Lithuania	5 641	8 607	2 966	13 582
Slovenia	7 234	7 558	324	14 149
Slovakia	8 005	11 270	3 265	29 291
Czech Rep.	11 115	23 749	12 634	76 171
Estonia	345	1 953	1 608	9 114
Bulgaria	799	8 380	7 581	40 276
Sweden	14 600	21 900	7 300	154 610
Poland	5 002	16 188	11 186	143 550
France	8 035	60 296	52 261	549 372
Germany	56 861	61 427	4 566	579 036
Romania	2 321	4 686	2 365	55 503
Spain	8 075	9 414	1 339	282 132
Turkey	636	1 798	1 162	155 469
Norway	3 653	15 695	12 042	137 003

Source: Eurostat.

Retailing: consumers increasingly have the choice

An electricity generator is not necessarily also a retailer. With regard to the sales of electricity to end consumers, the latter increasingly have the choice as market opening has clearly led to the creation of new retailers.

Although not applicable to all countries, it can be noted that the number of electricity suppliers is generally highest where full liberalisation has already been achieved. Obviously the size of the country has an influence on the number of electricity retailers. Germany registered 940 retailers but only three (2004: four) reached a notable size (at least 5% of the total quantity of electricity supplied at national level). Similarly, 166 electricity retailers were counted in France (as in the previous years), but only one could be considered as 'major'.

The Czech Republic, Spain, Italy and Poland registered several hundred retailers. But Italy reported only two with a market share of at least 5% whereas there were six major retailers in Spain and Poland, and eight in the Czech Republic.

Table 4: Retailing: number of electricity suppliers to final customers, 2003 - 2005

	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
Total number of suppliers																
2003	45	8	365	113	940	42	6	5	375	166	390	1	1	8	11	12
2004	48	12	238	75	940	41	8	4*	383	166	400	1	4	8	11	12
2005	**54**	**13**	**286**	**70**	**940**	**40**	**9**	**4***	**382**	**166**	**430**	**1**	**4**	**7**	**11**	**17**
Suppliers having a share of at least 5% of the total																
2003	2	8	8	5	4	1	4	1	6	1	3	1	1	3	3	7
2004	3	8	8	:	4	1	4	1	6	1	1	1	1	2	3	7
2005	**3**	**8**	**8**	**7**	**3**	**1**	**5**	**1**	**6**	**1**	**2**	**1**	**1**	**2**	**3**	**8**

	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK	TR	NO
Total number of suppliers															
2003	1	42	160	175	5	8	8	18	>100	127	24	1	1	5	223
2004	1	33	125	202	9	20	7	23	>100	130	32	1	1	130	226
2005	**1**	**32**	**125**	**265**	**10**	**40**	**11**	**34**	**>100**	**122**	**33**	**1**	**1**	**174**	**223**
Suppliers having a share of at least 5% of the total															
2003	1	≥3	:	3	1	8	6	5	3	3	7	1	1	1	4
2004	1	5	5	5	1	9	6	5	3	3	7	1	1	1	4
2005	**1**	**5**	**6**	**6**	**1**	**9**	**6**	**5**	**3**	**3**	**7**	**1**	**1**	**1**	**4**

* 4 suppliers were active in 2004 and 2005, although there were 11 supply license holders in 2004 and 17 in 2005 Source: Eurostat.

Comparing the global situation of 2005 to that of a year earlier, the total number of retailers at EU-25 level (and taking the number reported by Finland as a minimum value) increased from 3 033 to 3 207. In 2003, 3 156 retailers were still registered.

The number of retailers has remained constant in Germany, France and Luxembourg. In Italy and Poland, the relatively high number of retailers continued to increase. In Member States with less retailers in absolute terms, increases were observed in Belgium, Bulgaria, Portugal, Romania, Slovenia, Slovakia and the United Kingdom.

A consolidation appears to be taking in place in Denmark, the Netherlands and Austria, where the number of retailers has considerably dropped compared to 2004 and 2003. The Czech Republic, with high retailer numbers in absolute terms, reported a substantial drop between 2003 and 2004 (from 365 to 238) followed by a considerable increase again in 2005 (to 286).

➢ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

Country codes

EU: European Union, including the 27 Member States (EU-27): Belgium (BE), Bulgaria (BG), the Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), the Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE) and the United Kingdom (UK).

EA-13: Euro area
HR: Croatia
MK : Former Yugoslav Republic of Macedonia
TR: Turkey

NO: Norway

Symbols and abbreviations

":" not available

"-" nil or not applicable.
MW: megawatt, or one watt x 10^6
GWh: gigawatthour, one watt x one hour x 10^9
TWh: terawatthour, one watt x one hour x 10^{12}

Definitions

Wind energy: Kinetic energy of wind exploited for electricity generation in wind turbines.

Geothermal energy: energy available as heat emitted from within the earth's crust, usually in the form of hot water or steam and used to generate electricity.

Solar energy: Solar radiation exploited for electricity generation by photovoltaic cells or solar thermal electric plants.
Biomass: covers organic, non-fossil material of biological origin which may be used as fuel for electricity production. It comprises charcoal, word, wood wastes (wood chips, sawdust, shavings, etc.) and other solid wastes (straw, rice husks, nut shells, poultry litter, crushed grape dregs, etc.).

Imports and Exports: Amounts of electricity are considered as imported or exported when they have crossed the political boundaries of a country, whether customs clearance has taken place or not.

Data sources

The source of all figures presented in this publication (except Figure 1 and partial data in Table 2) is a questionnaire-survey launched by Eurostat and reflects the state of data availability in 2007.
It is recalled that the figures are collected on a voluntary basis. The reader is also reminded that the data in this publication might show differences with similar data published by other national and/or international authorities.

Data of Figure 1 are based on information provided by Regulators / Member States to the Commission's Directorate General Transport and Energy .

Data as presented in this publication are only partially included in Eurostat's statistical reference database NewCronos.

Further information:

Reference publications

Title	Gas and electricity market statistics data 1990-2006
Catalogue No	KS-76-06-289-EN-C
Price	25 EUR

Data: EUROSTAT Website/Home page/Environment and energy/Data

Environment and energy
- **Energy**
  - **Main indicators - Energy Statistics**
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