

Hours 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

MW

44,000

42,000

40,000

38,000

36,000

34,000

32,000

30,000

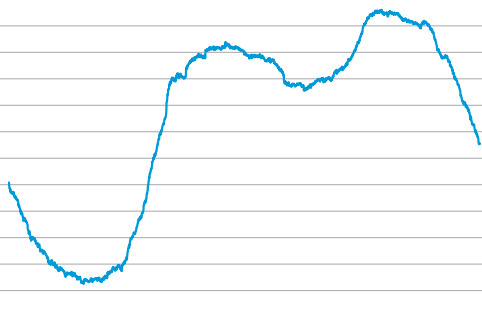
28,000

26,000

24,000

22,000

20,000



08

The Spanish electricity system

Summary



RED ELÉCTRICA DE ESPAÑA

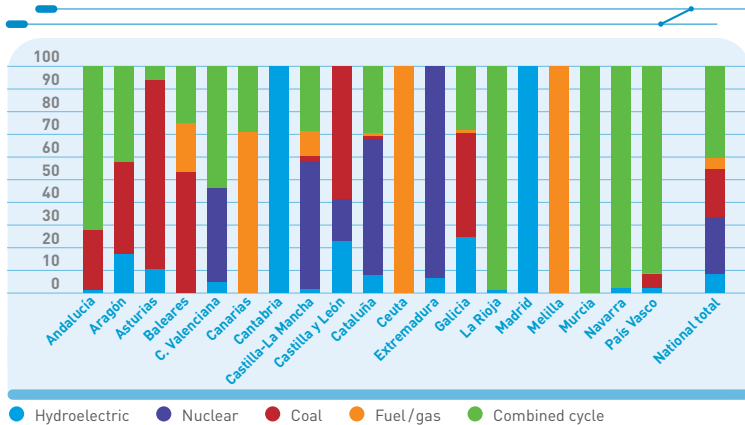
Electrical power balance (GWh)

	Andalucía	Aragón	Asturias	Baleares	C. Valenciana	Canarias	Cantabria	Castilla-La Mancha	Castilla y León	Cataluña
Hydroelectric	640	2,503	1,409	0	1,083	0	516	402	5,184	3,306
Nuclear	0	0	0	0	8,156	0	0	8,284	4,016	22,420
Coal	7,781	5,720	10,333	3,372	0	0	0	277	12,879	463
Fuel/gas (1) (2)	0	0	0	1,368	-	6,509	0	1,631	0	454
Combined cycle	21,361	5,961	810	1,581	10,639	2,661	0	4,272	0	11,179
Ordinary regime	29,783	14,184	12,552	6,322	19,878	9,171	516	14,866	22,079	37,821
- Generation consumption	-756	-659	-740	-374	-590	-517	-11	-919	-1,213	-1,330
Special regime	8,275	7,711	1,783	174	2,790	672	1,796	8,956	8,780	5,873
Net production	37,302	21,235	13,596	6,122	22,078	9,326	2,300	22,903	29,646	42,364
- Pump storage consumption	-456	-244	-79	0	-985	0	-620	-157	-497	-350
+ International exchanges (3)	3,327	-9,823	-1,364	0	6,713	0	3,188	-10,708	-15,029	5,407
Demand 2008	40,174	11,168	12,153	6,122	27,805	9,326	4,868	12,038	14,120	47,421
Demand 2007	39,983	11,088	12,054	5,996	27,706	9,212	4,817	11,980	13,995	47,211
% 08/07	0.5	0.7	0.8	2.1	0.4	1.2	1.1	0.5	0.9	0.4

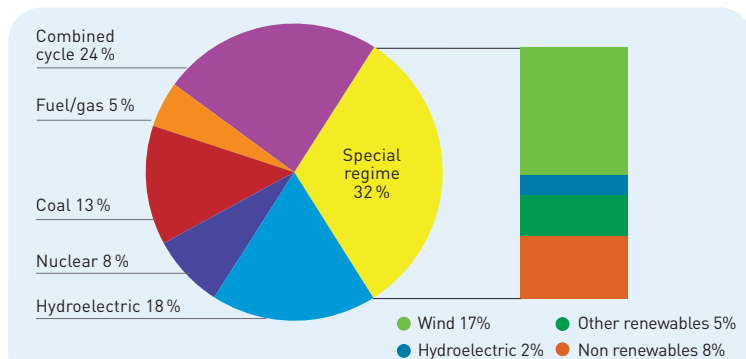
	Ceuta	Extremadura	Galicia	La Rioja	Madrid	Melilla	Murcia	Navarra	País Vasco	Total
Hydroelectric	0	1,274	4,546	77	37	0	51	132	267	21,428
Nuclear	0	16,098	0	0	0	0	0	0	0	58,973
Coal	0	0	8,188	0	0	0	0	0	634	49,647
Fuel/gas (1) (2)	227	0	245	0	0	208	0	0	48	10,691
Combined cycle	0	0	5,075	3,654	0	0	15,224	4,193	8,916	95,529
Ordinary regime	227	17,372	18,055	3,732	37	208	15,276	4,325	9,865	236,268
- Generation consumption	-17	-604	-629	-78	-1	-12	-471	-87	-249	-9,258
Special regime	0	379	9,975	1,115	1,450	9	1,394	3,599	2,421	67,153
Net production	210	17,147	27,402	4,769	1,487	205	16,199	7,837	12,037	294,164
- Pump storage consumption	0	-43	-300	0	0	0	0	0	0	-3,731
+ International exchanges (3)	0	-12,204	-7,098	-2,824	30,336	0	-7,492	-2,326	8,858	-11,040
Demand 2008	210	4,900	20,003	1,945	31,823	205	8,706	5,511	20,895	279,392
Demand 2007	203	4,820	19,782	1,912	31,507	193	8,622	5,435	20,622	277,139
% 08/07	3.5	1.7	1.1	1.7	1.0	6.2	1.0	1.4	1.3	0.8

(1) Includes GICC (Elcogás). (2) Generation by auxiliary units is included in the Balearic and Canary Island electricity systems. (3) Provisional value. Includes values corresponding to regional and international energy exchange. Positive values indicate import exchanges and negative values are export exchanges.

Structure of ordinary regime production by power station type (%)

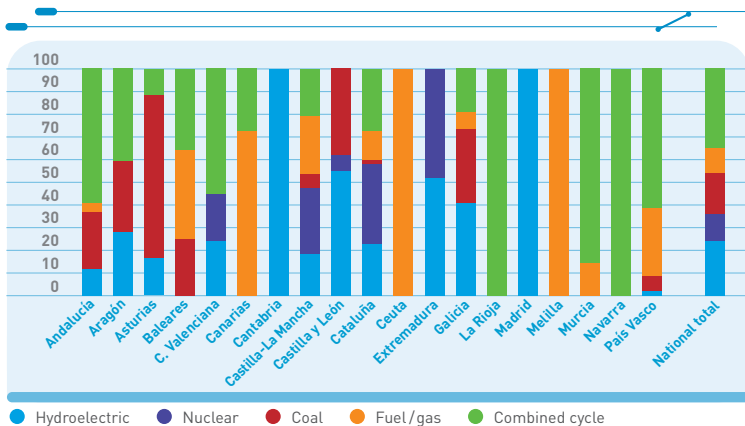


Installed capacity as on 31.12.2008 (*)

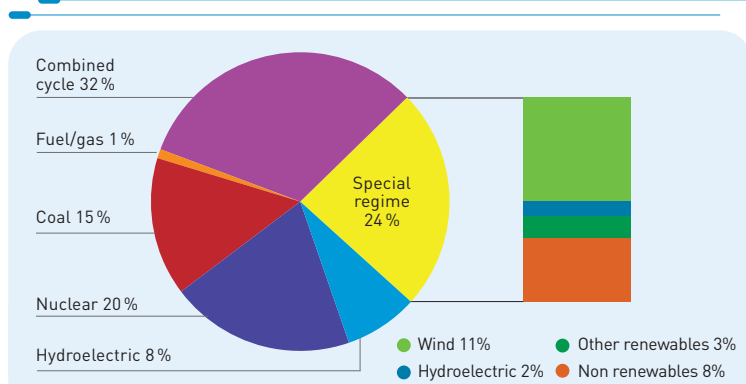


(*) Peninsular system.

Structure of ordinary regime production by power station type (%)

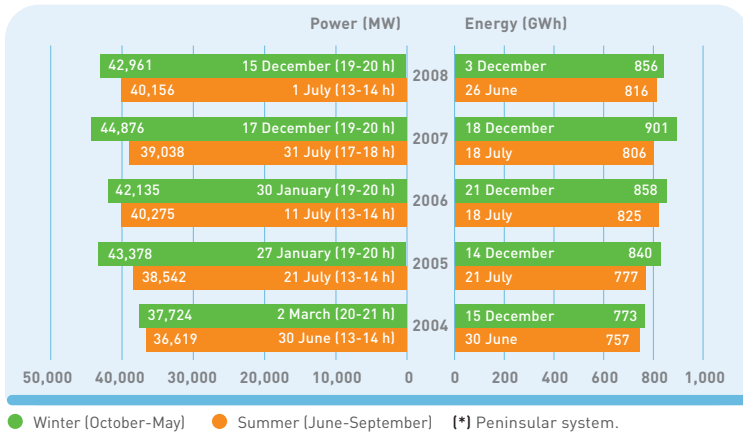


Annual demand coverage of electrical energy (*)

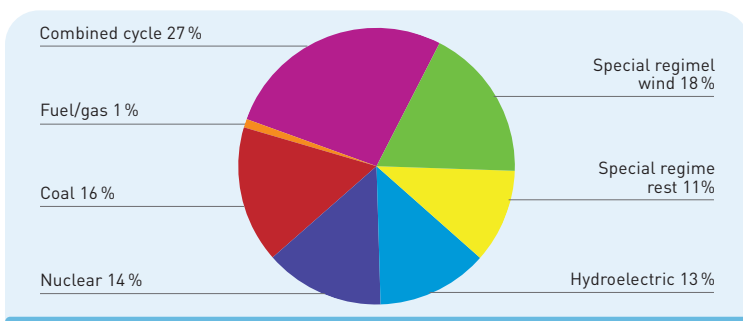


(*) Peninsular system.

Peak average hourly demand and daily energy (*)



Coverage of annual peak power demand 42,961 MW (*)

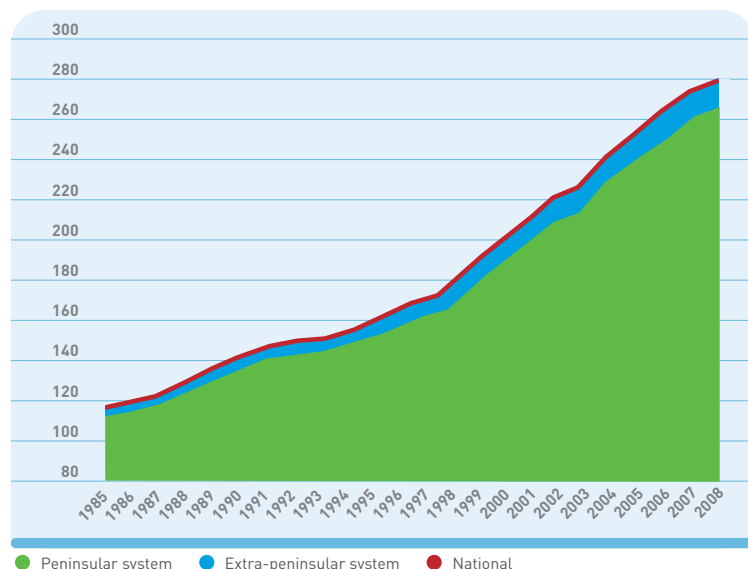


(*) 15 December 2008 (19-20 h). Spanish peninsula system.

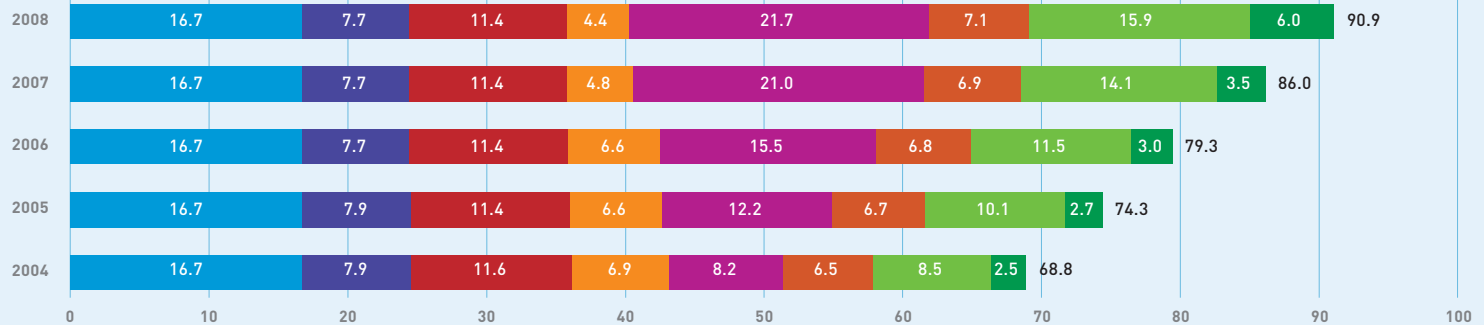
Annual evolution of Spanish peninsula demand and GDP

Year	Demand (GWh)	Δ Demand	Δ Demand (by economic activity)	GDP
2004	235,999	4.5	4.2	3.3
2005	246,183	4.3	3.1	3.6
2006	253,445	3.0	4.0	3.9
2007	261,536	3.2	4.5	3.7
2008	263,530	0.8	0.6	1.2

Evolution of electrical energy demand (TWh)

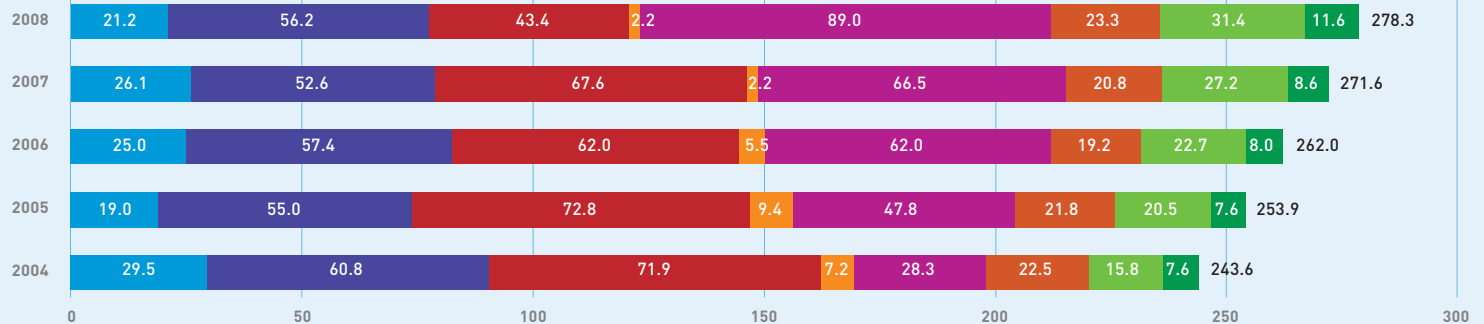


Annual evolution of installed power (*) (GW)



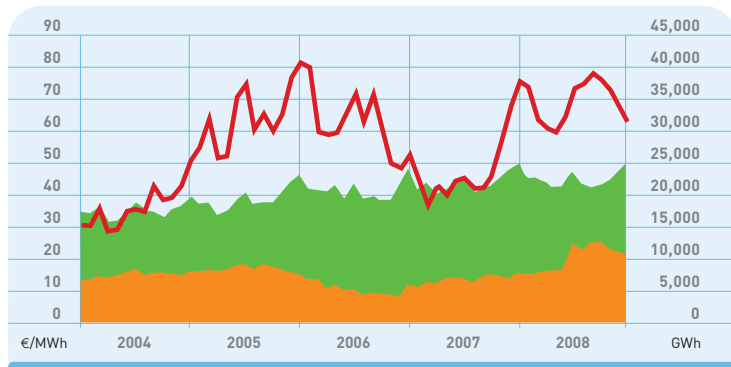
● Hydroelectric
 ● Nuclear
 ● Coal
 ● Fuel/gas
 ● Combined cycle
 ● S.R. Non renewables
 ● S.R. Wind
 ● S.R. Other renewables
 S.R.: Special Regime. (*) Peninsular system.

Annual evolution of the net production structure (*) (TWh)



● Hydroelectric
 ● Nuclear
 ● Coal
 ● Fuel/gas
 ● Combined cycle
 ● S.R. Non renewables
 ● S.R. Wind
 ● S.R. Other renewables
 S.R.: Special Regime. (*) Peninsular system.

Evolution of monthly energy demand and prices in the electricity market (*)

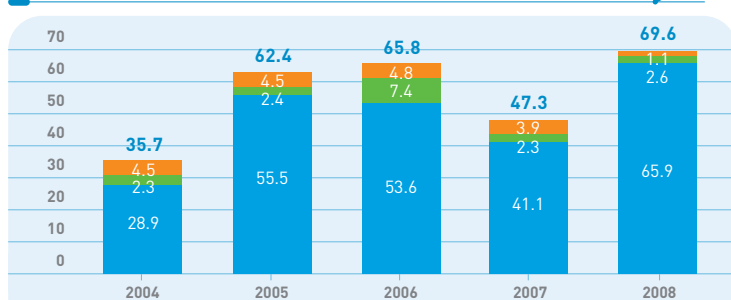


● Energy supply at integral tariff ● Free supply energy — Average final price

Includes bilateral contracts and excludes pumped storage demand.

(*) National demand data (regulated market + free) and external agents.

Evolution of the components of the electricity market average final price (€/MWh)



● Daily and intra-daily market ● Adjustment services ● Payments for capacity

Managed energy in the system adjustment services (GWh)

	2007		2008		% 08/07	
	Increase	Decrease	Increase	Decrease	Increase	Decrease
Technical restrictions (PBF - Basic Functioning Program) (1)	8,099	2,602	6,765	858	-16.5	-67.0
Secondary regulation band (2)	718	520	717	526	-0.2	1.3
Secondary regulation	949	1,188	1,127	1,123	18.7	-5.5
Tertiary regulation	1,752	2,107	2,450	2,008	39.9	-4.7
Deviation management	829	1,330	1,190	997	43.5	-25.0
Restrictions in real time	864	358	620	596	-28.3	66.6

(1) Increased or reduced energy in phase 1 of the restrictions (Resolution of 24 May 2006).

(2) Average hourly power [MW].

Adjusted average price in the system adjustment (€/MWh)

	2007		2008		% 08/07	
	Increase	Decrease	Increase	Decrease	Increase	Decrease
Technical restrictions (PBF - Basic Functioning Program) (1)	74.6	45.5	123.9	72.9	66.1	60.3
Secondary regulation band (2)		18.2		18.5		1.6
Secondary regulation	41.2	26.3	67.6	51.1	64.2	94.5
Tertiary regulation	52.8	22.0	75.7	45.5	43.4	106.8
Deviation management	52.7	24.9	70.3	50.2	33.3	101.7
Restrictions in real time	99.0	18.3	136.7	29.1	38.1	59.0

(1) Increased or reduced energy in phase 1 of the restrictions (Resolution of 24 May 2006).

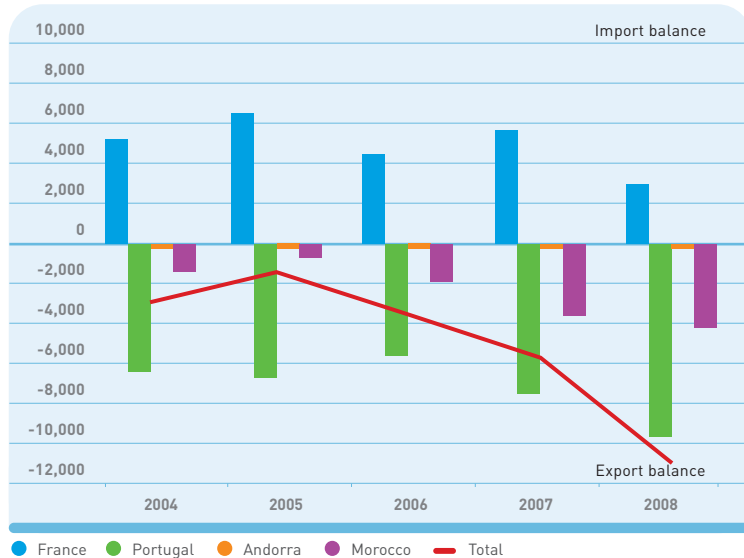
Physical international exchanges of electrical energy (GWh)



Physical international exchanges of electrical energy by interconnection (GWh)

	Input		Output		Balance	
	2007	2008	2007	2008	2007	2008
France	6,598	4,552	1,111	1,662	5,487	2,889
Portugal	2,153	1,314	9,650	10,753	-7,497	-9,439
Andorra	0	0	262	278	-261	-278
Morocco	22	15	3,501	4,227	-3,479	-4,212
Total	8,773	5,880	14,523	16,920	-5,750	-11,040

Evolution of physical balances of International exchanges (GWh)



Electricity transmission grid planning



Evolution of the transmission and transforming system (*)

		2004	2005	2006	2007	2008
Km of circuit 400 kV	Red Eléctrica	16,548	16,808	17,005	17,134	17,686
	Other companies	293	38	38	38	38
	Total	16,841	16,846	17,042	17,172	17,724
Km of circuit 220 kV	Red Eléctrica	11,386	16,213	16,424	16,461	16,562
	Other companies	5,003	245	261	266	273
	Total	16,389	16,458	16,685	16,726	16,835
Transformer capacity (MVA)	Red Eléctrica	37,216	54,272	56,072	58,522	62,122
	Other companies	14,256	800	800	800	800
	Total	51,472	55,072	56,872	59,322	62,922

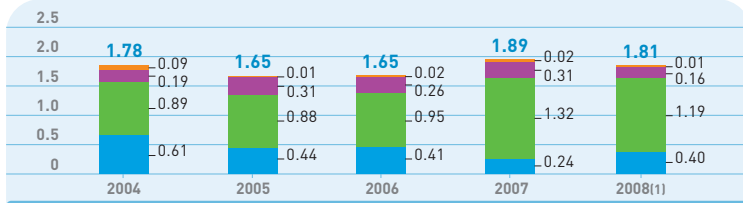
2005 reflects Red Eléctrica's acquisition of assets from other companies. (*) Spanish peninsula system.

Quality of the transmission grid (*)

	ENS (MWh)			TIM (minutes)		
	Red Eléctrica	Other companies (1)	Total	Red Eléctrica	Other companies (1)	Total
2004	840	409	1,250	1.88	0.92	2.80
2005	470	79	549	1.01	0.17	1.18
2006	870	65	936	1.82	0.14	1.95
2007	552	205	757	1.11	0.41	1.52
2008	574	0	574	1.15	0.00	1.15

ENS: Non-supplied energy. TIM: Average interruption time. (*) Peninsular system.
(1) Data corresponding to 0.9% of the transmission grid after 2005.

Annual evolution of the non-availability rate of the transmission grid (*) [%]



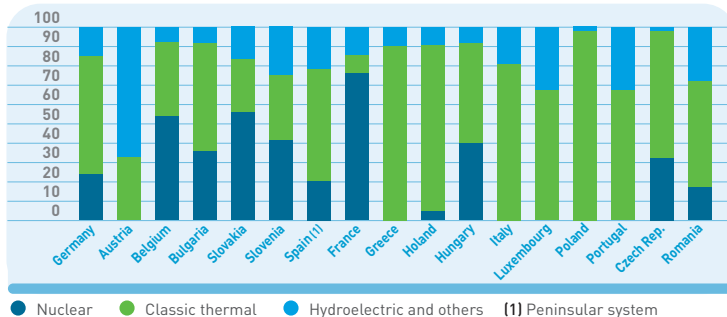
● Programmed for predictive and preventative maintenance. ● Programmed for causes not due to maintenance. ● Non-programmed due to corrective maintenance. ● Non-programmed due to fortuitous circumstances. Note: Classification according to RD 1955/2000. (1) Provisional data pending audit. In 2008 there is 0.6% without classification. (*) Spanish peninsula system.

Electrical energy demand and consumption per capita of the countries of the European Union members of the UCTE

	Demand (TWh)		Consumption per capita (kWh/hab.)	
	2008	% 08/07	2008	% 08/07
Germany	557.2	0.2	6,777	0.3
Austria	68.4	1.4	8,207	1.0
Belgium	89.5	-0.8	8,387	-1.5
Bulgaria	34.5	4.0	4,509	4.5
Slovakia	27.6	0.2	5,117	0.1
Slovenia	12.7	-5.7	6,262	-6.4
Spain (1)	263.5	0.8	5,820	-1.0
France	494.5	3.0	7,756	2.4
Greece	56.3	1.1	5,021	0.7
Holland	120.2	2.8	7,327	2.5
Hungary	38.9	-5.7	3,876	-5.5
Italy	337.6	-0.7	5,662	-1.5
Luxembourg	6.7	-1.5	13,795	-3.1
Poland	142.9	0.5	3,748	0.5
Portugal	52.2	1.2	4,916	1.0
Czech Rep.	65.1	0.7	6,274	-0.2
Romania	55.2	2.0	2,564	2.2
Total	2,422.9	0.8	6,001	0.4

Source: UCTE. Consumption per capita = Total consumption / Total population. Population data: Eurostat.
(1) Spanish peninsula demand.

Structure of the net total production of the countries of the European Union members of the UCTE (%)



● Nuclear ● Classic thermal ● Hydroelectric and others (1) Peninsular system



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