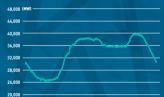
# 2013

### THE **SPANISH** ELECTRICITY **SYSTEM**



17 18 19 20 21 22 23 2



RED ELÉCTRICA DE ESPAÑA

#### ELECTRICAL ENERGY BALANCE

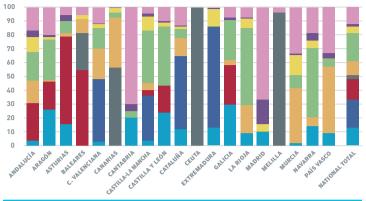
								S.	,r.	
	ANDALICIA	ARACON	ASTURIAS	BALEARES	C. VALENCIANA	CANARIAS	(ANTABALA	CASTILA LA MANY	ustilla vietn	CATALINA.
Hydro	1,303	3,594	1,911	-	1,584	0	611	551	7,955	4,607
Nuclear	-	-	-	-	8,327	_	_	8,003	0	24,777
Coal	9,775	3,777	9,224	2,591	-	-	-	929	6,216	-
Fuel / gas (1)	-	-	-	1,300	-	5,266	-	-	-	0
Combined Cycle	5,991	101	317	447	4,051	3,134	0	1,144	-	5,875
Ordinary regime	17,069	7,471	11,452	4,338	13,962	8,401	611	10,627	14,172	35,259
Generation consumption	-675	-395	-702	-313	-452	-438	-7	-704	-592	-1,302
Special regime	18,296	9,707	2,895	381	5,321	662	1,657	12,907	17,303	11,148
Net production	34,689	16,784	13,646	4,405	18,832	8,625	2,261	22,830	30,883	45,105
Pumped storage consumption	-471	-368	-77	-	-1,520	-	-759	-207	-1,729	-335
Energy exchange balance (2)	3,062	-6,226	-3,041	1,269	8,303	-	2,960	-10,878	-15,568	2,353
Demand (b.c.) (3) 2013	37,280	10,190	10,527	5,674	25,615	8,625	4,462	11,745	13,586	47,122
Demand (b.c.) (3) 2012	38,268	10,307	10,766	5,823	26,360	8,893	4,549	12,079	13,947	48,170
% 13/12	-2.6	-1.1	-2.2	-2.6	-2.8	-3.0	-1.9	-2.8	-2.6	-2.2
	LEUTA	EXTREMOUT	CALILIA CALILIA	LAPHOLA	Webel	MEILLA	<b>MURCIA</b>	WAVAREA	PRISURSEO	TOTAL
Hydro	CHUTA	2,855	600-000-000-000-000-000-000-000-000-000	106	NADRID 69	MEILLA	MIRELA 76	146	Pais <sup>VASCO</sup> 375	401 <sup>AL</sup> 33,970
Hydro Nuclear	teurra -					weith A				
	-	2,855	8,226	106	69	-	76	146	375	33,970
Nuclear	-	2,855 15,721	8,226	106 -	69 -	-	76	- 146	375	33,970 56,827
Nuclear Coal		2,855 15,721 -	8,226 - 9,885	106 - -	69 - -		76 - -	- 146	375 - -	33,970 56,827 42,398
Nuclear Coal Fuel / gas (1)	- - 221	2,855 15,721 - -	8,226 - 9,885 -	106 - - -	69 - - -	- - - 216	76 - - -	146 - - -	375 - - -	33,970 56,827 42,398 7,002
Nuclear Coal Fuel / gas (1) Combined Cycle		2,855 15,721 - - -	8,226 - 9,885 - 1,208	106 - - - 406	69 - - -	- - 216 -	76 - - 2,415	146 - - - 381	375 - - - 3,203	33,970 56,827 42,398 7,002 28,672
Nuclear Coal Fuel / gas (1) Combined Cycle Ordinary regime	- - 221 - 221	2,855 15,721 - - - 18,576	8,226 - 9,885 - 1,208 <b>19,319</b>	106 - - 406 512	69 - - - - 69	- - 216 - 216	76 - - 2,415 <b>2,491</b>	146 - - - 381 <b>527</b>	375 - - 3,203 <b>3,578</b>	33,970 56,827 42,398 7,002 28,672 <b>168,870</b>
Nuclear Coal Fuel / gas (1) Combined Cycle Ordinary regime Generation consumption	- 221 - 221 -19	2,855 15,721 - - - 18,576 -656	8,226 - 9,885 - 1,208 <b>19,319</b> -636	106 - - 406 <b>512</b> -11	69 - - - - 69 -1	- - 216 - 216 -14	76 - - 2,415 <b>2,491</b> -73	146 - - - 381 <b>527</b> -21	375 - - 3,203 <b>3,578</b> -45	33,970 56,827 42,398 7,002 28,672 <b>168,870</b> -7,054
Nuclear Coal Fuel / gas (1) Combined Cycle Ordinary regime Generation consumption Special regime	- 221 - 221 -19 -	2,855 15,721 - - - 18,576 -656 2,977	8,226 - 9,885 - 1,208 19,319 -636 14,398	106 - - 406 512 -11 1,438	69 - - - 69 -1 1,564	- 216 - 216 -14 8	76 - - 2,415 <b>2,491</b> -73 <b>3,463</b>	146 - - 381 527 -21 4,872	375 - - 3,203 <b>3,578</b> -45 <b>2,900</b>	33,970 56,827 42,398 7,002 28,672 168,870 -7,054 111,897
Nuclear Coal Fuel / gas (1) Combined Cycle Ordinary regime Generation consumption Special regime Net production	- 221 - 221 -19 - 202	2,855 15,721 - - - 18,576 -656 2,977 20,897	8,226 - 9,885 - 1,208 19,319 -636 14,398 33,081	106 - - 406 512 -11 1,438 1,940	69 - - - 69 -1 1,564 1,632	- 216 - 216 -14 8 210	76 - - 2,415 2,491 -73 3,463 5,881	146 - - 381 527 -21 4,872 5,378	375 - - 3,203 3,578 -45 2,900 6,434	33,970 56,827 42,398 7,002 28,672 168,870 -7,054 111,897 273,713
Nuclear     Coal     Fuel / gas (1)     Combined Cycle     Ordinary regime     Generation consumption     Special regime     Net production     Pumped storage consumption	- 221 - 221 -19 - 202	2,855 15,721 - - 18,576 -656 2,977 20,897 -57	8,226 - 9,885 - 1,208 19,319 -636 14,398 33,081 -436	106 - - 406 512 -11 1,438 1,940 0	69 - - - 69 -1 1,564 1,632 0	- 216 - 216 -14 8 210 -	76 - - 2,415 2,491 -73 3,463 5,881 0	146 - - 381 527 -21 4,872 5,378 0	375 - - 3,203 3,578 -45 2,900 6,434 0	33,970 56,827 42,398 7,002 28,672 168,870 -7,054 111,897 273,713 -5,958
Nuclear     Coal     Fuel / gas (1)     Combined Cycle     Ordinary regime     Generation consumption     Special regime     Net production     Pumped storage consumption     Energy exchange balance (2)	- 221 - 221 -19 - 202 -	2,855 15,721 - - - 18,576 -656 2,977 20,897 -57 -16,253	8,226 - 9,885 - 1,208 19,319 -636 14,398 33,081 -436 -13,107	106 - - 406 <b>512</b> -11 <b>1,438</b> <b>1,940</b> 0 -285	69 - - - - 1,564 1,632 0 28,537	- 216 - 216 -14 8 210 -	76 - - 2,415 <b>2,491</b> -73 <b>3,463</b> <b>5,881</b> 0 1,920	146 - - 381 527 -21 4,872 5,378 0 -658	375 - - 3,203 3,578 -45 2,900 6,434 0 10,882	33,970 56,827 42,398 7,002 28,672 <b>168,870</b> -7,054 <b>111,897</b> <b>273,713</b> -5,958 -6,732

(1) Generation by auxiliary units is included in the Balearic Island electricity system. (2) Provisional value. Includes values corresponding to intra-national and international energy exchange balances. Positive values indicate an import exchange balance and negative values show an export exchange balance. (3) b.c: measured at power station busbars.

GWh

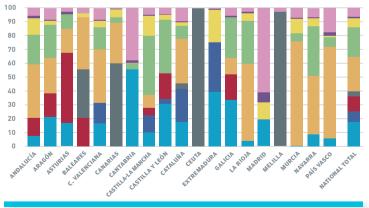
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#### STRUCTURE OF NET PRODUCTION STRUCTURE BY POWER STATION TYPE



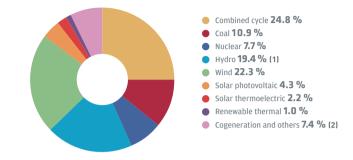
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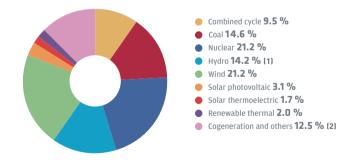
Hydro
Nuclear
Coal
Fuel/gas
Combined cycle
Wind
Solar [1]
Includes solar photovoltaic and thermoelectric.

#### INSTALLED CAPACITY AS AT 31.12.2013 PENINSULAR ELECTRICITY SYSTEM



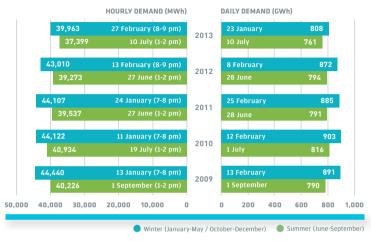
(1) Includes pure pumped storage (2,747 MW). (2) Includes non-renewable thermal and fuel/gas.

#### ANNUAL DEMAND COVERAGE PENINSULAR ELECTRICITY SYSTEM



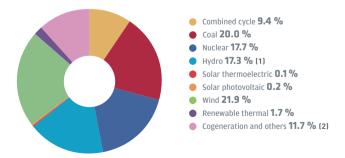
(1) Does not include pumped storage generation. (2) Includes non-renewable thermal and fuel/gas.

### MAXIMUM HOURLY AND DAILY DEMAND PENINSULAR SYSTEM

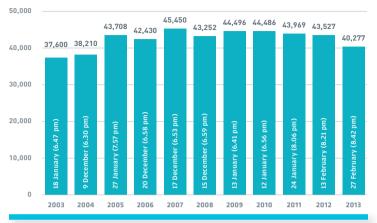


#### COVERAGE OF MAXIMUM HOURLY DEMAND 39,963 MWh - PENINSULAR SYSTEM

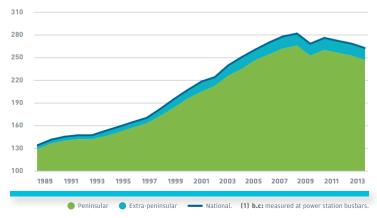
27 FEBRUARY 2013 (8-9 PM)



### INSTANTANEOUS PEAK POWER DEMAND PENINSULAR SYSTEM



### EVOLUTION OF ELECTRICAL ENERGY DEMAND AT B.C. (1)



MW

TWh

### ANNUAL EVOLUTION OF ELECTRICAL ENERGY DEMAND AND GDP - PENINSULAR SYSTEM

	GWh	۵ (%)	A BY ECONOMIC ACTIVITY (%)	GDP (*)
2009	252,660	-4.7	-4.7	-3.8
2010	260,530	3.1	2.7	-0.2
2011	255,631	-1.9	-1.0	0.1
2012	252,083	-1.4	-1.8	-1.6
2013	246,313	-2.3	-2.2	-1.2

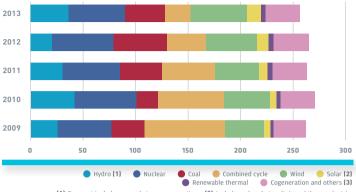
(A) Variation with respect to previous year. (\*) Source: INE

## ANNUAL EVOLUTION OF ELECTRICAL ENERGY DEMAND - EXTRA-PENINSULAR SYSTEMS

	BALEARIC I	SLANDS	CANARY I	SLANDS	CEUTA		MELILLA		
	GWh	Δ (%)	GWh	Δ (%)	GWh	Δ (%)	GWh	Δ (%)	
2009	5,993	-2.1	9,107	-2.4	212	0.9	206	2.4	
2010	5,840	-2.5	8,895	-2.3	218	2.8	213	3.6	
2011	5,743	-1.7	8,870	-0.3	203	-6.7	215	0.7	
2012	5,823	1.4	8,893	0.3	212	4.5	217	1.1	
2013	5,674	-2.6	8,625	-3.0	202	-4.8	210	-3.5	

(A) Variation with respect to previous year.

# ANNUAL EVOLUTION OF NET PRODUCTION STRUCTURE - PENINSULAR SYSTEM

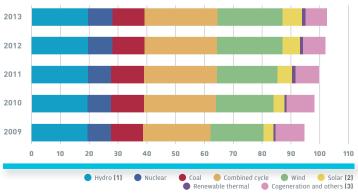


Does not include pumped storage generation.
Includes solar photovoltaic and thermoelectric.
Includes non-renewable thermal and fuel/gas.

TW<sub>h</sub>

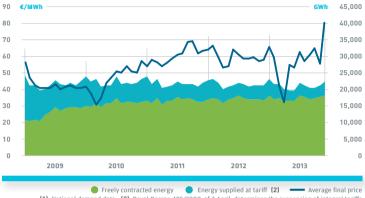
**GW** 

#### ANNUAL EVOLUTION OF INSTALLED CAPACITY - PENINSULAR SYSTEM



Includes pure pumped storage (2,747 MW).
Includes solar photovoltaic and thermoelectric.
Includes non-renewable thermal and fuel/gas.

## EVOLUTION OF MONTHLY ENERGY AND PRICES IN THE ELECTRICITY MARKET (1)



(1) National demand data. (2) Royal Decree 485/2009, of 3 April, determines the suspension of integral tariffs as of 1 July 2009 and the introduction of a last resort tariff.

#### EVOLUTION OF THE COMPONENTS OF THE \_\_\_\_\_€/MWh AVERAGE FINAL PRICE IN THE ELECTRICITY MARKET



#### ENERGY MANAGED IN THE PENINSULAR SYSTEM ADJUSTMENT SERVICES

	2012			2013	% 13/12		
	UPWARD	DOWNWARD	UPWARD	DOWNWARD	UPWARD	DOWNWARD	
Supply guarantee restrictions (1)	12,008	-	4,085	-	-66.0	-	
Technical restrictions (DBFP) (2)	6,162	61	7,240	193	17.5	217.6	
Reserve power (3)	1,636	-	3,010	-	84.0	-	
Secondary control band (4)	709	522	691	512	-2.5	-2.0	
Secondary control	1,510	1,262	1,806	1,070	19.5	-15.2	
Tertiary control	2,992	2,330	3,330	1,812	11.3	-22.3	
Deviation management	2,658	1,232	2,347	905	-11.7	-26.5	
Real-time constraints (5)	635	484	558	1,701	-12.1	251.6	

**GWh** 

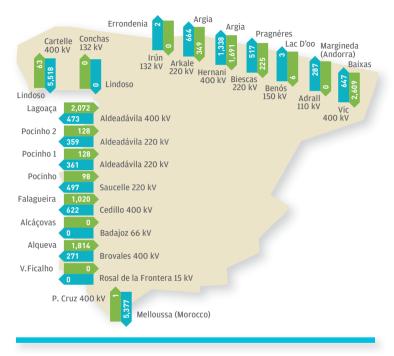
Increased energy in phase 1 of the supply guarantee restrictions (RD 134/2010 modified by RD 1221/2010) (P.O.3.10).
Increased or reduced energy in phase 1 of the technical resolution restrictions of the DBFP (Daily Basic Functioning Program) (P.O.3.2).
Total annual reserve (GW).
Average hourly power band (MW).
Increased program) (P.O.3.2).
Total annual reserve (GW).
Keiner System - Balearic power system interconnection.

#### AVERAGE WEIGHTED PRICE IN THE \_\_\_\_\_€/MWh PENINSULAR SYSTEM ADJUSTMENT SERVICES

	2012			2013	% 13/12		
	UPWARD	DOWNWARD	UPWARD	DOWNWARD	UPWARD	DOWNWARD	
Supply guarantee restrictions (1)	75.6	-	81.1	-	7.3	-	
Technical restrictions (DBFP) (2)	129.9	54.9	127.6	62.9	-1.8	14.7	
Reserve power (3)	39.7	-	36.9	-	-	-	
Secondary control band (3)		28.1		29.6		5.3	
Secondary control	51.0	32.9	50.5	28.7	-0.9	-12.8	
Tertiary control	59.7	22.2	62.5	16.8	4.7	-24.1	
Deviation management	60.2	27.4	60.1	22.5	-0.2	-17.7	
Real-time constraints	231.3	22.2	231.9	8.8	0.3	-60.3	

(1) Calculated on the basis of the cost for the settlement of supply guarantee restrictions process divided by scheduled energy for supply guarantee restrictions. (2) Increased or reduced energy in phase 1 of the technical resolution restrictions of the DBP (Daily Basic Functioning Program) (P.O.3.2). (3) Average hourly price (c/MW).

### MAP OF INTERNATIONAL PHYSICAL ENERGY EXCHANGES



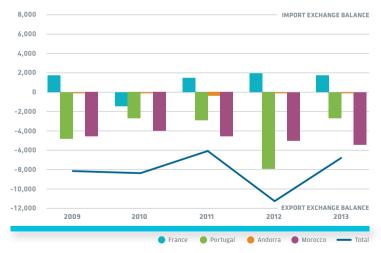
GWh

### INTERNATIONAL PHYSICAL ENERGY EXCHANGES — GWh BY INTERCONNECTION

		IMPORT		EXPORT		ALANCE (1)
	2012	2013	2012	2013	2012	2013
France	4,911	4,879	3,028	3,171	1,883	1,708
Portugal	2,871	5,323	10,768	8,100	-7,897	-2,777
Andorra	0	0	286	287	-286	-287
Morocco	5	1	4,904	5,377	-4,900	-5,376
Total	7,786	10,204	18,986	16,936	-11,200	-6,732

(1) Positive values indicate an import exchange balance and negative values indicate an export exchange balance.

#### EVOLUTION OF THE INTERNATIONAL PHYSICAL — GWh ENERGY EXCHANGES BALANCE



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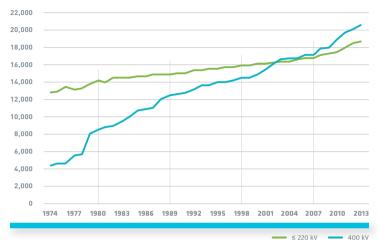


### TRANSMISSION GRID FACILITIES IN SPAIN

	400 kV			≤ 220 kV	
	SPANISH PENINSULA	SPANISH PENINSULA	BALEARIC ISLANDS	CANARY ISLANDS	TOTAL
Total lines (km)	20,641	18,667	1,544	1,289	42,140
Overhead lines (km)	20,586	17,986	1,089	1,023	40,683
Submarine lines (km)	29	236	306	30	601
Underground lines (km)	26	445	149	237	856
Transformer capacity (MVA)	76,508	63	2,748	1,625	80,944

Cumulative data regarding km of circuit and transformer capacity as at 31 December 2013.

#### GRAPH SHOWING THE EVOLUTION OF THE PENINSULAR 400 kV AND ≤ 220 kV TRANSMISSION GRID



### TRANSMISSION GRID QUALITY

		ENS (MWh)			AIT (MINUTES)		
	SPANISH PENINSULA	BALEARIC ISLANDS		SPANISH PENINSULA	BALEARIC ISLANDS	CANARY ISLANDS	
2009	437	39	1,679	0.91	3.41	96.89	
2010	1,571	9	4,090	3.17	0.77	241.68	
2011	280	39	17	0.58	3.54	1.02	
2012	133	7	10	0.28	0.68	0.61	
2013	1,156	81	3	2.47	7.50	0.18	

ENS: Energy not supplied. AIT: Average Interruption Time.

km

## NON-AVAILABILITY RATE OF THE PENINSULAR TRANSMISSION GRID



### NON-AVAILABILITY RATE OF THE BALEARIC ISLANDS' TRANSMISSION GRID



#### NON-AVAILABILITY RATE OF THE CANARY ISLANDS' TRANSMISSION GRID



Programmable for causes not due to maintenance.
Programmable for predictive and preventative maintenance.
Non-programmable due to corrective maintenance.
Non-programmable due to fortuitous circumstances.
Note: Classification in accordance with R0 1955/2000. [\*] Provisional data pending audit.

%

%

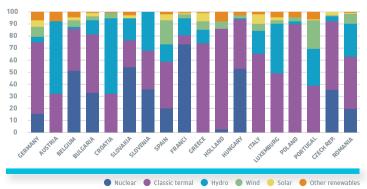
%

#### ELECTRICAL ENERGY DEMAND AND CONSUMPTION PER CAPITA OF THE COUNTRIES OF THE EUROPEAN UNION MEMBERS OF THE CONTINENTAL EUROPE (ENTSO-E)

		DEMAND (TWh)	CONSUMPTION PER CAPITA (KWh/Hab		
	2013	% 13/12	2013	% 13/12	
Germany	530.6	-1.7	6,589	-2.0	
Austria	69.6	0.5	8,236	0.0	
Belgium	86.2	1.6	7,726	1.0	
Bulgaria	32.2	-0.8	4,422	-0.2	
Croatia	17.1	-1.3	4,004	-1.0	
Slovakia	26.6	-0.7	4,925	-0.8	
Slovenia	12.7	0.2	6,154	0.1	
Spain	261.0	-2.3	5,586	-2.1	
France	495.1	1.2	7,550	0.7	
Greece	49.6	-4.8	4,481	-4.3	
Holland	110.6	-2.9	6,588	-3.1	
Hungary	39.0	0.3	3,939	0.6	
Italy	315.9	-3.7	5,293	-4.2	
Luxembourg	6.2	-1.6	11,530	-3.8	
Poland	145.5	0.4	3,776	0.4	
Portugal	49.2	0.2	4,687	0.7	
Czech Republic	62.7	-0.5	5,963	-0.6	
Romania	52.3	-3.9	2,613	-3.5	
Total	2,362.1	-1.2	5,775	-1.3	

Source: ENTSO-E. Consumption per capita = Total consumption / nº inhabitants. Population data: Eurostat.

#### STRUCTURE OF THE NET TOTAL PRODUCTION OF ----- % THE COUNTRIES OF THE EUROPEAN UNION MEMBERS OF THE CONTINENTAL EUROPE (ENTSO-E)





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