The **Spanish Electricity** System

PRELIMINARY REPORT

2012

RED ELÉCTRICA DE ESPAÑA

Drafting date:
21 December 2012

Provisional data:
Year end based on data estimated as at 14 December

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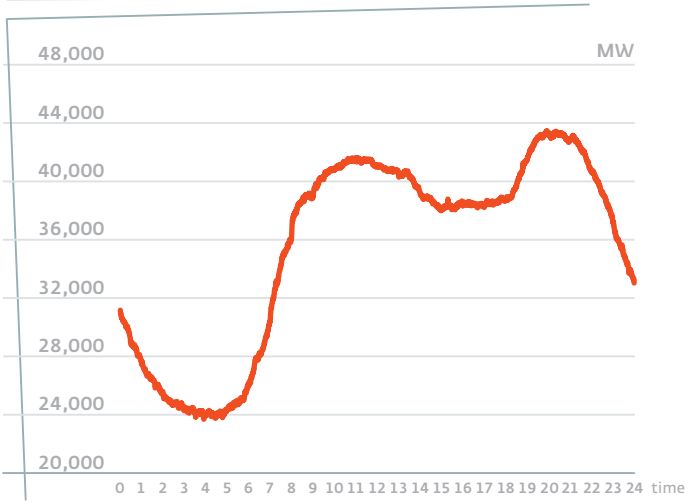
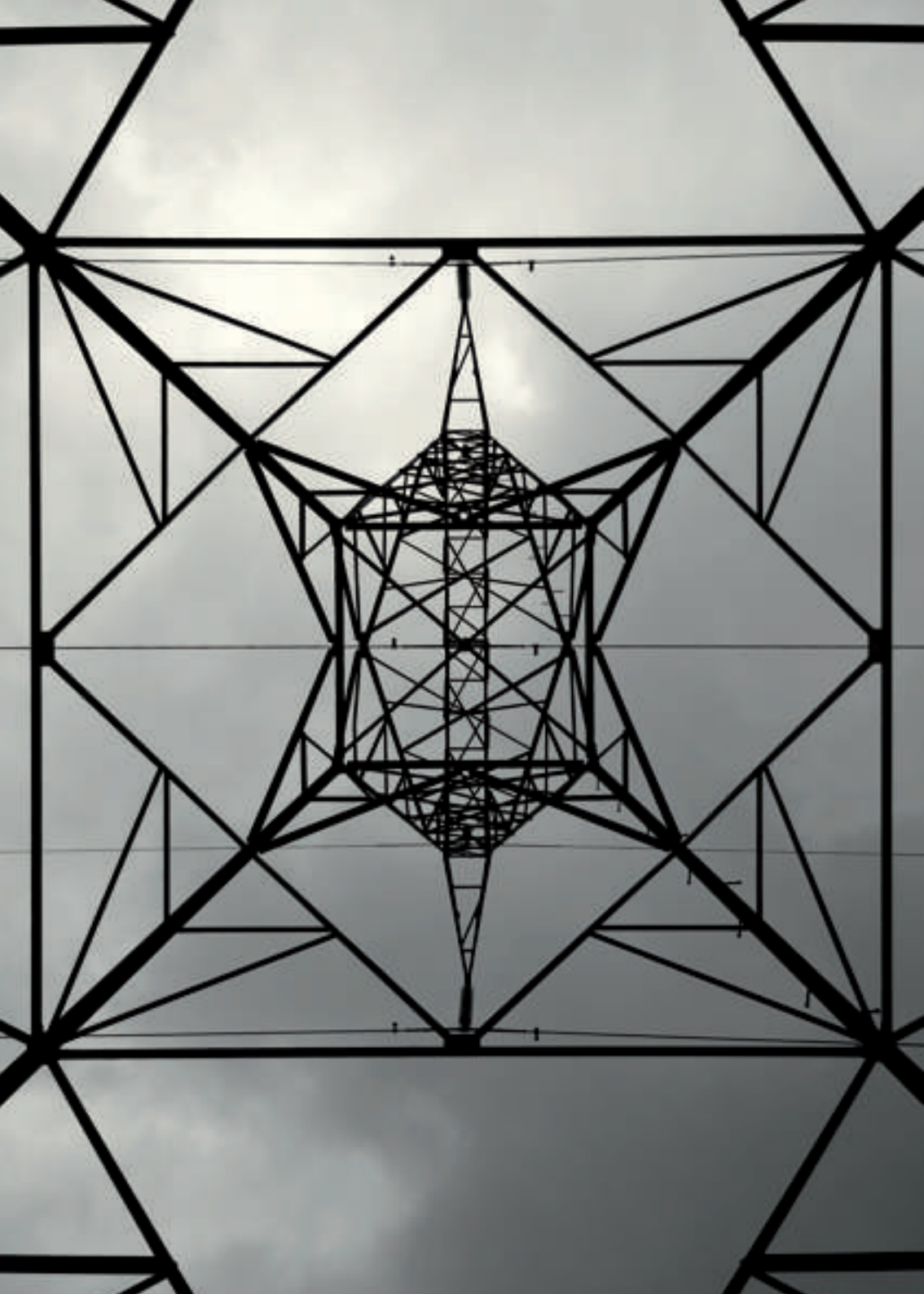
Load curve for the day of maximum average hourly power demand (24 January)





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RED ELÉCTRICA DE ESPAÑA
Generación eólica
Generación solar térmica
Potencia instalada solar fotovoltaica
Hueco de tensión

Introduction

This preliminary report presents **provisional** statistical data regarding the behaviour Spanish electricity system in 2012.

Peninsular System

The **annual demand** for electrical energy on the Spanish peninsula stood at 252,191 GWh, 1.2 % lower than in 2011. After factoring in the effects of seasonal and working patterns, and the effect of the additional day as 2012 was a leap year, a fall of 1.7 % was registered.

The annual **maximum of instantaneous power demand** was registered at 43,527 MW on 13 February at 8:21 pm.The annual **maximum demand value for average hourly power** reached 43,010 MW on 13 February, and a **maximum demand value for daily energy** of 873 GWh reached on 8 February, both lower than the equivalent all-time highs recorded in 2007.

Installed power capacity on the Spanish peninsula closed 2012 at 102,524 MW, a value which increased last year's figure by 2,356 MW. The majority of this variation in installed capacity comes from new infrastructures of renewable sources (1,122 MW of wind power, 968 MW of solar technologies, 192 MW of hydroelectric and 81 MW of renewable thermal).

Producible hydroelectric recorded a significantly low value of around 12,800 GWh, 54 % lower than the all-time average and 43 % less than that achieved in 2011. **Hydroelectric reserves** for the complete set of reservoirs ended 2012 with a fill level close to 36 % of its total capacity, compared to 52 % last year.

Regarding the **balance in the generation mix**, most of the technologies have seen increases in production over the previous year, with significant increases in coal (27.9 %) and in the totality of renewable energy facilities, amongst which most notably was the increase in solar thermal (84.4 %) and wind power (14.3 %). By contrast, combined cycle generation decreased by 23.2 % and hydroelectric 28.5 % (30.9 % of the power stations belonging to the ordinary regime and 15.6 % special regime).

With regard to **demand coverage**, nuclear remained in first position covering 22 % of demand (21 % in 2011), followed by coal with a contribution of 20 % (15 % in 2011) and wind power with a share of 18 % (16 % in 2011). Hydroelectric and combined cycle reduced their contribution by 7 % and 14 % respectively versus 11 % and 19 % in 2011. The remaining technologies had a similar contribution to last year. Overall, renewable energy in 2012 covered 32 % of demand, one percentage point less than the previous year.

Throughout 2012, **renewable energies** played a leading role in the total energy production of the system with a special contribution by wind generation. In this regard, in 2012 the maximum production values achieved in previous years were exceeded. On 24 September, 2012, at 3:03 am, the contribution of wind power exceeded 64 % of the coverage of demand and on 18 April at 4:41 pm, instantaneous wind production reached 16,636 MW. That same day maximum hourly and daily energy records were also exceeded, with 16,455 MWh and 334,850 MWh, respectively. Similarly, in November wind power generation was the technology with the largest contribution to the total energy production of the system, reaching 21.3 %.

Introduction

CO_2 emissions of the electricity sector on the Spanish peninsula in 2012 have been estimated at 81 million tonnes, 11 % above that recorded in 2011. This rise in emissions is mainly as a result of increased coal-fired generation.

Electricity exchanges through the **Spanish peninsula-Balearic Islands' interconnection** registered an export balance of 569 GWh towards the Balearic Islands, which allowed 10 % of the Balearic Islands' electricity system demand to be covered by the peninsular system.

The **balance of physical international electricity exchanges** was, for the ninth consecutive year, as an exporter. Exports rose to 18,857 GWh (14,023 GWh in 2011), while the imports figure fell to 7,427 GWh (7932 in 2011). As a result, the net balance as an exporter was 11,430 GWh, 87.7 % higher than in 2011. This balance accounted for 4.2 % of the total production on the Spanish peninsula.

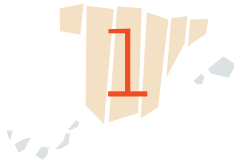
Extra-peninsular systems

Annual demand for electricity in the **extra-peninsular systems** as a whole closed 2012 with a growth of 1.0 % compared with the previous year. By systems, growth was 1.7 % in the Balearic Islands, 0.5 % in the Canary Islands, 5.5 % in Ceuta and 1.4 % in Melilla.

Transmission grid facilities

Regarding **transmission grid facilities**, during 2012, 859.64 km of new lines were put in service, meaning that at the end of the year the national transmission grid totalled 41,369 km of circuit. In addition, transformer capacity rose by 4,830 MVA, increasing the total national transformer capacity to 78,050 MVA.

Electricity balance, installed power capacity and transmission grid



Annual balance of electrical energy

	Peninsular system		Extra-peninsular systems		National total	
	GWh	% 12/11	GWh	% 12/11	GWh	% 12/11
Hydro	19,039	-30.9	0	-	19,039	-30.9
Nuclear	61,238	6.1	-	-	61,238	6.1
Carbón(1)	55,639	27.9	2,943	-2.9	58,581	25.9
Coal	0	-	7,578	1.3	7,578	1.3
Combined cycle	38,962	-23.2	3,911	-11.2	42,873	-22.2
Gross production	**174,878**	**-2.6**	**14,432**	**-3.2**	**189,310**	**-2.6**
Self-consumption	-7,885	8.8	-858	-2.7	-8,743	7.5
Special regime	**102,167**	**10.6**	**1,039**	**4.3**	**103,206**	**10.5**
Hydro	4,469	-15.6	2	-	4,471	-15.6
Wind	48,126	14.3	393	8.9	48,519	14.2
Solar photovoltaic	7,906	11.3	351	5.4	8,257	11.1
Solar thermoelectric	3,433	84.4	-	-	3,433	84.4
Renewable thermal	4,909	14.5	10	-70.2	4,919	13.9
Non-renewable thermal	33,325	5.0	283	5.7	33,608	5.0
Net production	**269,161**	**1.7**	**14,612**	**-2.8**	**283,773**	**1.5**
Pumped storage consumption	-4,970	54.6	-	-	-4,970	54.6
Peninsula-Balearics interc.(2)(3)	-569	-	569	-	0	-
International exchanges(3)	-11,430	87.7	-	-	-11,430	87.7
Demand (b.c.-at power station busbars)	**252,191**	**-1.2**	**15,182**	**1.0**	**267,373**	**-1.1**

(1) As of 1 January 2011 includes GICC (Elcogás). **(2)** Peninsula-Balearic Islands' interconnection operating at the technical minimum level of security until 13 August 2012. **(3)** Positive value: importer balance; negative value: exporter balance.

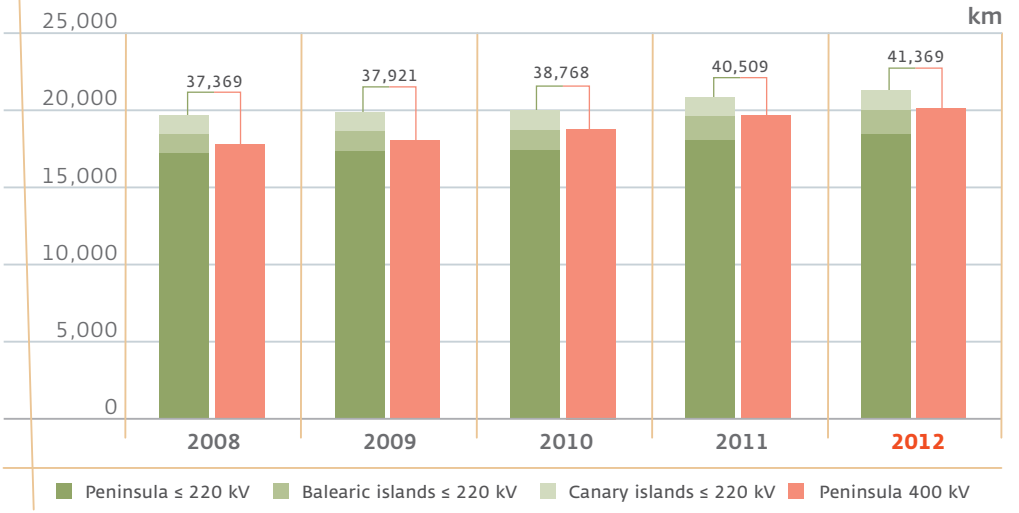
Installed capacity as at 31 December

	Peninsular system		Extra-peninsular systems		National total	
	MW	% 12/11	MW	% 12/11	MW	% 12/11
Hydro	17.761	1,1	1	0,0	17.762	1,1
Nuclear	7.853	0,0	-	-	7.853	0,0
Coal(1)	11.620	0,0	510	0,0	12.130	0,0
Fuel/gas	1.492	0,0	2.909	0,9	4.401	0,6
Combined cycle	25.291	0,1	1.854	0,0	27.144	0,1
Ordinary regime	**64.016**	**0,3**	**5.274**	**0,5**	**69.290**	**0,3**
Hydro	2.039	-0,1	0,5	0,0	2.040	-0,1
Wind	22.213	5,3	149	0,0	22.362	5,3
Solar photovoltaic	4.186	3,4	224	10,6	4.410	3,8
Solar thermoelectric	1.878	79,1	-	-	1.878	79,1
Renewable thermal	940	9,5	3	167,5	943	9,7
Non-renewable thermal	7.252	-0,4	121	3,2	7.373	-0,4
Special regime	**38.507**	**5,9**	**498**	**5,8**	**39.006**	**5,9**
Total	**102.524**	**2,4**	**5.772**	**0,9**	**108.296**	**2,3**

(1) GICC (Elcogás) included.

1 Electricity balance, installed power capacity and transmission grid

Evolution of the transmission grid in Spain



Transmission grid facilities in Spain

	400 kV	≤ 220 kV			
	Peninsula	Peninsula	Balearic Isl.	Canary Isl.	Total
Total lines (km)	**20,104**	**18,429**	**1,544**	**1,292**	**41,369**
Overhead lines (km)	20,049	17,757	1,085	1,024	39,916
Submarine cable (km)	29	236	306	32	602
Underground cable (km)	26	436	153	237	851
Transformer capacity (MVA)	73,834	63	2,528	1,625	78,050

Data relating to km of circuit and transformer capacity as at 31 December 2012.

Peninsular system
2.1 Demand

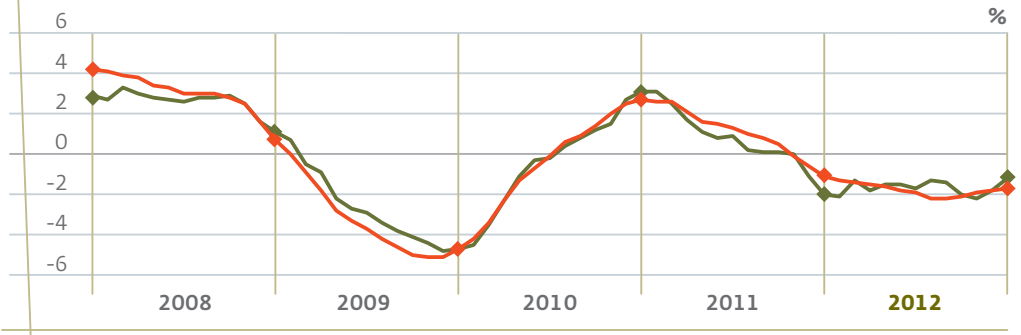
2

Demand evolution

Year	GWh	Δ Annual (%)	Δ Adjusted annual (*) (%)
2008	265,206	1.1	0.7
2009	252,660	-4.7	-4.7
2010	260,530	3.1	2.7
2011	255,373	-2.0	-1.1
2012	**252,191**	**-1.2**	**-1.7**

(*) Adjusted as a result of factoring in the effect of seasonal and working patterns.

Annual demand growth (rolling year)



Monthly demand growth (%)

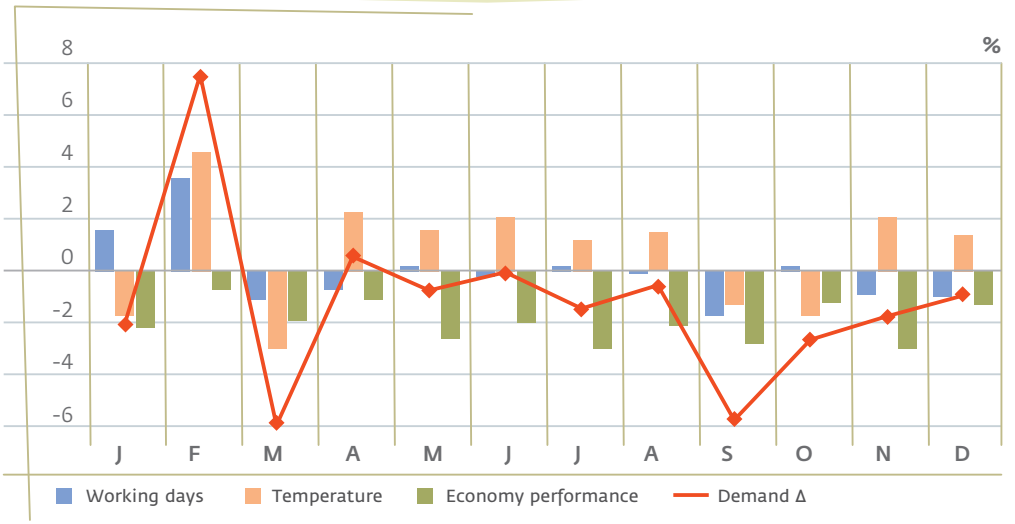
	J	F	M	A	M	J	J	A	S	O	N	D
Monthly	-2.2	7.5	-6.0	0.5	-0.8	-0.1	-1.5	-0.6	-5.8	-2.7	-1.8	-1.0
Cummulative	-2.2	2.4	-0.4	-0.2	-0.3	-0.3	-0.5	-0.5	-1.1	-1.2	-1.3	-1.2

Variations as compared to same month of previous year.

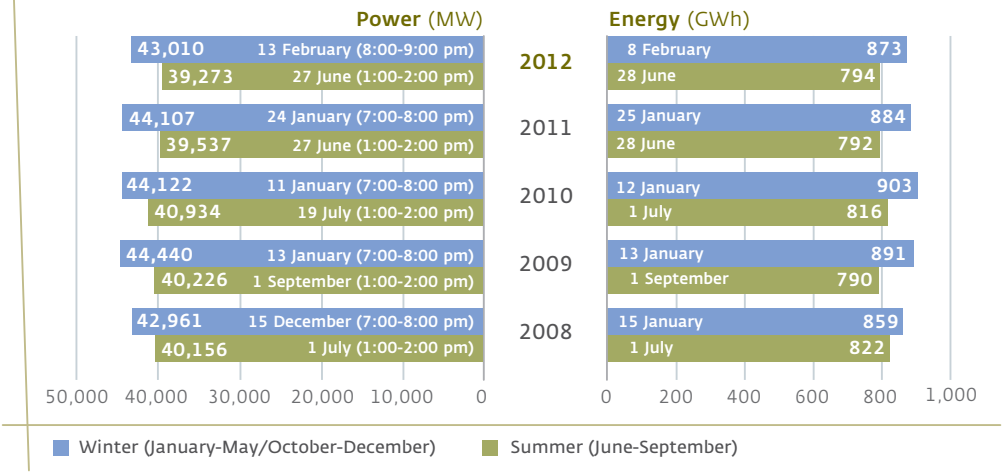
2 Peninsular system

2.1 Demand

Components of the monthly growth in demand



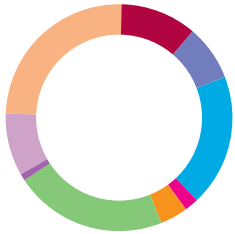
Maximum average hourly power demand and daily energy



Peninsular system
2.1 Demand

2

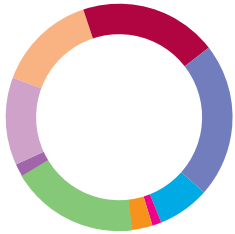
Installed capacity as at 31 December (102,524 MW)



- Combined cycle 25 %
- Coal 11 %
- Nuclear 8 %
- Hydro(1) 19 %
- Solar thermoelectric 2 %
- Solar photovoltaic 4 %
- Wind 22 %
- Renewable thermal 1 %
- Cogeneration and the rest of the technologies(2) 8 %

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

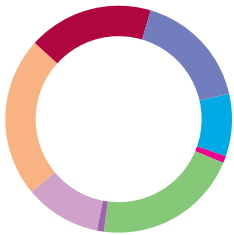
Demand coverage(1)



- Combined cycle 14 %
- Coal 20 %
- Nuclear 22 %
- Hydro(1) 7 %
- Solar thermoelectric 1 %
- Solar photovoltaic 3 %
- Wind 18 %
- Renewable thermal 2 %
- Cogeneration and the rest of the technologies(2) 13 %

(1) Pumped storage not included. **(2)** Includes non-renewable thermal and fuel / gas.

Maximum peak power demand coverage 43,010 MW(1)
13 February 2012 (7:00-8:00 pm)



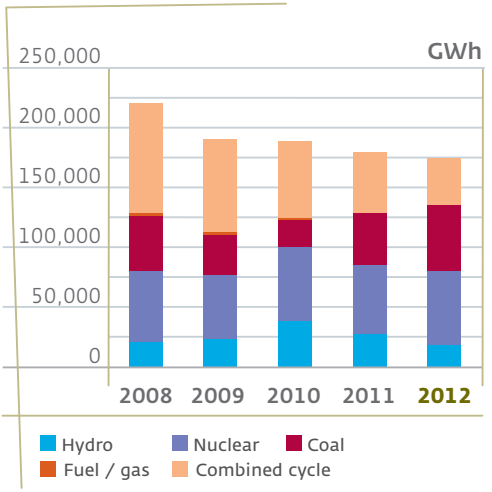
- Combined cycle 23 %
- Coal 18 %
- Nuclear 17 %
- Hydro(1) 9 %
- Solar thermoelectric 0,6 %
- Wind 21 %
- Renewable thermal 1 %
- Cogeneration and the rest of the technologies(2) 11 %

(1) Pumped storage not included. **(2)** Includes non-renewable thermal and fuel / gas.

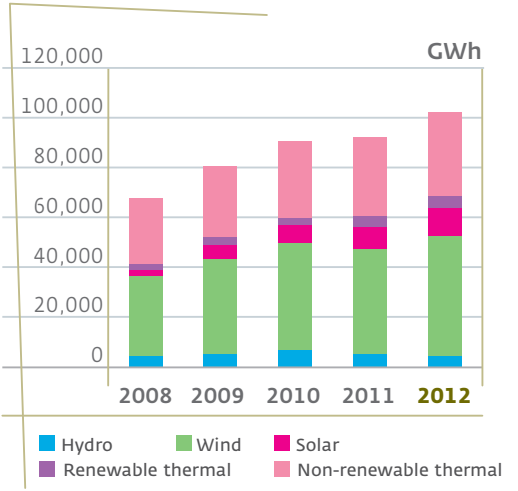
2 Peninsular system

2.1 Demand

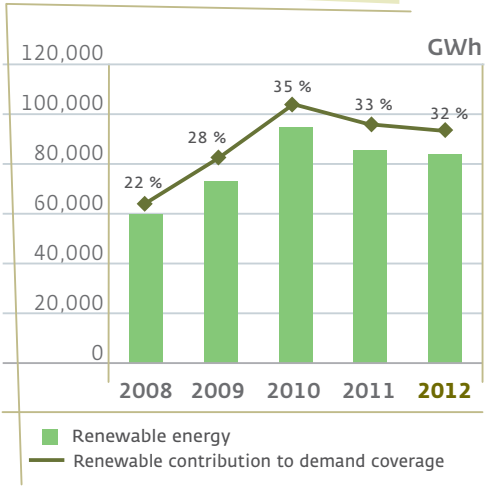
Evolution of gross production from ordinary regime



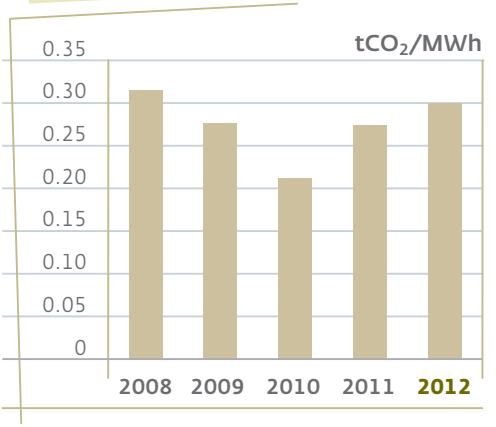
Evolution of production from special regime



Evolution of renewable energies



Evolution of the emission factor associated to electricity generation

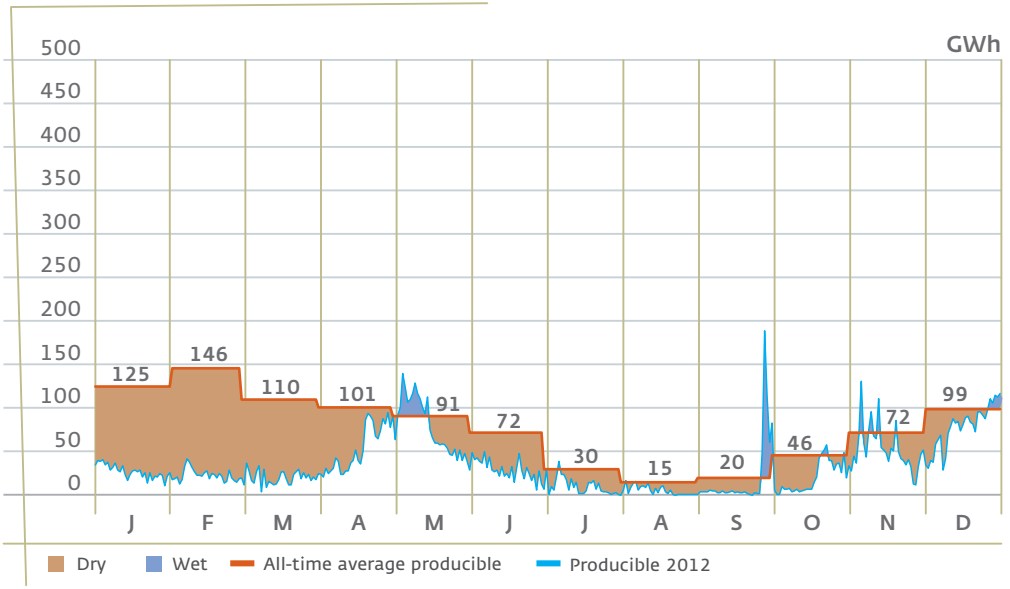


Peninsular system

2.2 Hydroelectric energy

2

Daily producible hydroelectric energy compared with the all-time average producible

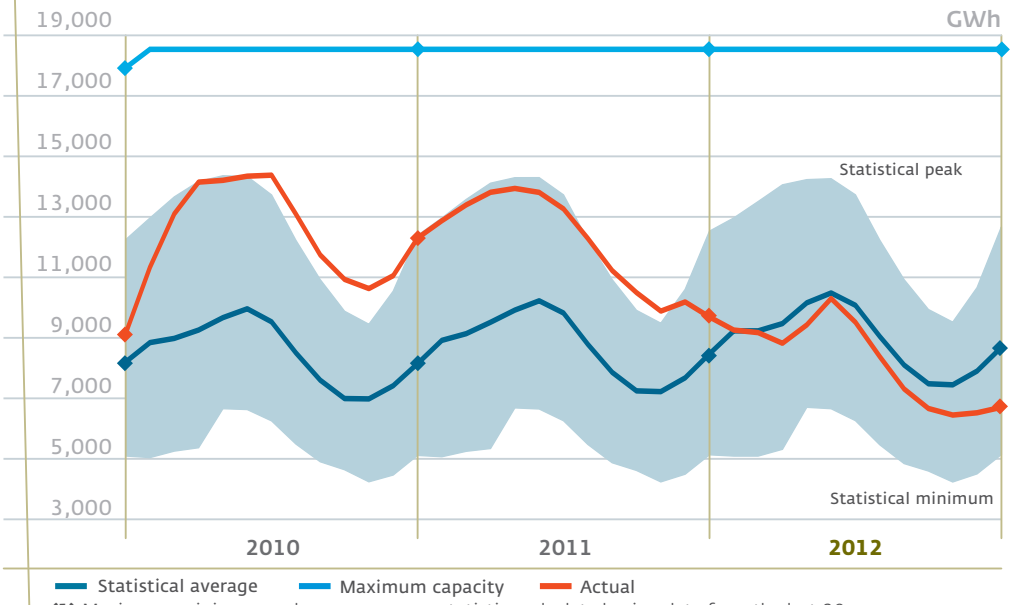


Annual producible hydroelectric energy

Year	GWh	Index	Probability of being exceeded (%)
2008	18,945	0.67	90
2009	22,262	0.79	76
2010	36,174	1.29	16
2011	22,506	0.81	74
2012	**12,773**	**0.46**	**100**

2 Peninsular system
2.2 Hydroelectric energy

Evolution of hydroelectric reserves(1)



(1) Maximum, minimum and average reserve statistics calculated using data from the last 20 years.

Hydroelectric reserves as at 31 December

	Capacity	2011		2012	
		GWh	% of maximum capacity	GWh	% of maximum capacity
Annual regime	8,967	3,834	42.8	3,388	37.8
Hyper-annual regime	9,571	5,856	61.2	3,318	34.7
Global	**18,538**	**9,691**	**52.3**	**6,706**	**36.2**

Peninsular system

2.3 Facilities. Generation and transmission

2

Variations in ordinary regime generator equipment

	Commissioned	
	Type	MW
Puentes García Rodríguez 5	Combined cycle	21
San Esteban II	Hydroelectric	192
San Juan	Hydroelectric	3
TOTAL		**216**

New 400/220 kV substations

	Voltage kV
Archidona	400
Brazatortas	400
Manzanares	400
Peñarrubia	400
Sax	400
Soto de Cerrato	400
Xove	400
Pradolongo	220
Bernat	220
Brazatortas	220
Can Vinyals (Electra Caldense)	220
Cicero	220

	Voltage kV
Esquedas	220
Gramanet (previously Sta. Coloma)	220
Hijar	220
La Espluga	220
Manzanares	220
Parque Ingenieros	220
Plasencia	220
Santa Engracia	220
Santa Pola	220
Trujillo	220
Valle Arcipreste	220

New 400 kV transmission lines

	No.of circuits	Km of circuits
I/O Archidona L/Caparacena-Tajo	2	2.47
I/O Brazatortas L/Guadame-Valdecaballeros	2	0.35
I/O Conso L/Trives-Aparecida	2	1.92
I/O Peñarrubia L/Pinilla-Rocamora	2	0.11
I/O Sax L/Benejama-Rocamora	2	2.80
I/O Soto de Cerrato L/Grijota-S.S. Reyes	2	5.08
I/O Xove L/Aluminio-Boimente	2	1.28
I/O Xove L/Aluminio-Boimente	1	0.74
I/O Xove L/Aluminio-Puentes	1	0.84
L/Tabernas-Benahadux	2	64.60
L/Brazatortas-Manzanares	2	229.15
L/Trives-Aparecida	2	123.40
TOTAL		**432.74**

I/O= input/output. L= Line

2 Peninsular system

2.3 Facilities. Generation and transmission

New 220 kV transmission lines

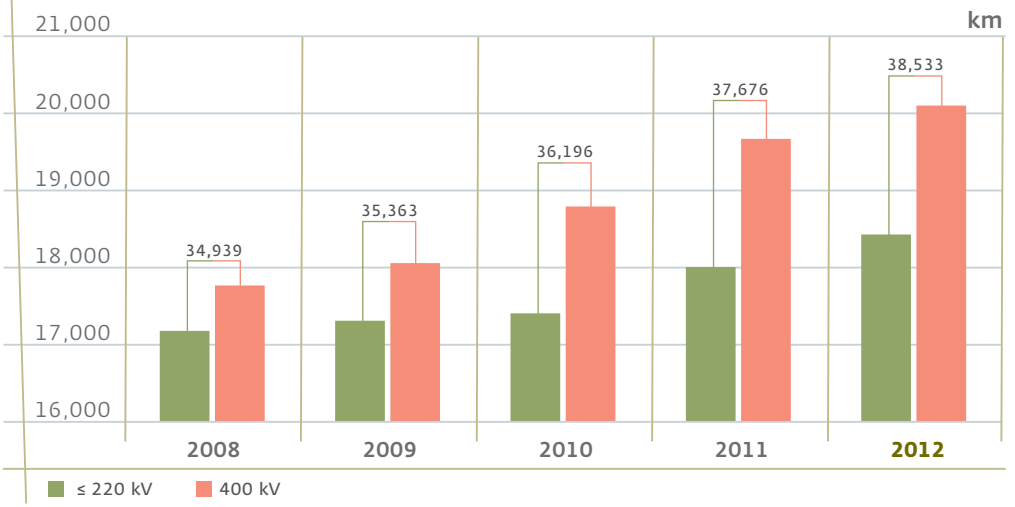
	No. of circuits	km of circuits
I/O Algete L/S.S. Reyes-Villaverde	2	3.37
I/O Balsicas L/EL Palmar-Fausita	2	13.66
I/O Esquedas L/Gurrea-Sabiñánigo	2	0.36
I/O Hijar L/Escatron-Escucha	2	2.62
I/O La Espluga L/Mangraners-Montblanc	2	1.32
I/O Manzanares L/Alarcos-La Paloma	2	9.07
I/O Manzanares L/Madridejos-La Paloma	2	11.93
I/O Nudo Viario L/Hospitalet-Viladecans (underground)	2	0.32
I/O Parla L/Almaraz-Villaverde	2	0.12
I/O Parque Ingenieros L/Ventas-Villaverde (underground)	2	0.19
I/O Talavera L/Azutan-Villaverde	2	24.54
I/O Trujillo L/Almaraz-Mérida	1	0.46
I/O Trujillo L/Almaraz-Mérida	2	3.05
I/O Trujillo L/Almaraz-Mérida (underground)	2	0.51
I/O Valle Arcipreste L/Majadahonda-Fuencarral (underground)	2	0.71
I/O Valparaiso L/Aparecida-Tordesillas	2	1.70
L/Alcira-Bernat	1	0.55
L/Alcira-Bernat	1	0.86
L/Bernat (Alcira)-Valldigna (1st circuit)	2	18.07
L/Bernat-Catadau (*)	2	31.00
L/Brazatortas-Puertollano	2	22.82
L/Brazatortas-Puertollano (underground)	2	0.69
L/Calamocha (REE)-Calamocha (Endesa) (1st circuit)(*)	2	0.14
L/Caparacena-Fargue	2	39.40
L/Catadau-Valle del Carcer (previously Vilanova)	2	51.67
L/Catadau-Valle del Carcer (previously Vilanova) (underground)	2	1.18
L/El Palmar 400-El Palmar 220 (2nd circuit)	2	0.44
L/El Palmar 400-El Palmar 220 (2nd circuit) (underground)	2	0.32
L/Galapagar (Iberdrola)-Galapagar (REE) (underground)	2	0.18
L/La Cereal-Tres Cantos (underground)	2	7.59
L/María-Fuendetodos	2	59.83
L/Mérida-Vaguadas (underground)	1	0.29
L/Mezquita-Calamocha	2	95.27
L/Parque Ingenieros-Villaverde (underground)	1	0.09
L/Pradolongo-Arganzuela (1st circuit) (underground)	2	0.50
L/Pradolongo-Parque Ingenieros (underground)	1	0.48
L/Santa Engracia-El Sequero	2	16.28
L/Sentmenat-Can Vinyals (underground)	2	1.39
Fuencarral: AT1 connection to GIS 220 (underground)	2	0.38
Tres Cantos GIS 220: feed TR3 (underground) (*)	1	0.12
Tres Cantos GIS 220: feed TR4 (underground) (*)	1	0.13
Vilanova: AT4 connection GIS 220 (underground)	1	0.08
Vilanova: AT5 connection GIS 220 (underground)	1	0.10
Vilanova: AT6 connection GIS 220 (underground)	1	0.12
TOTAL		**423.89**

(*) Pending reception of the commissioning certificate in December 2012.
AT= Autotransformer. GIS= Gas Insulated Switchgear. TR= Transformer. I/O= input/output. L= Line.

Peninsular system
2.3 Facilities. Generation and transmission

2

Evolution of the transmission grid



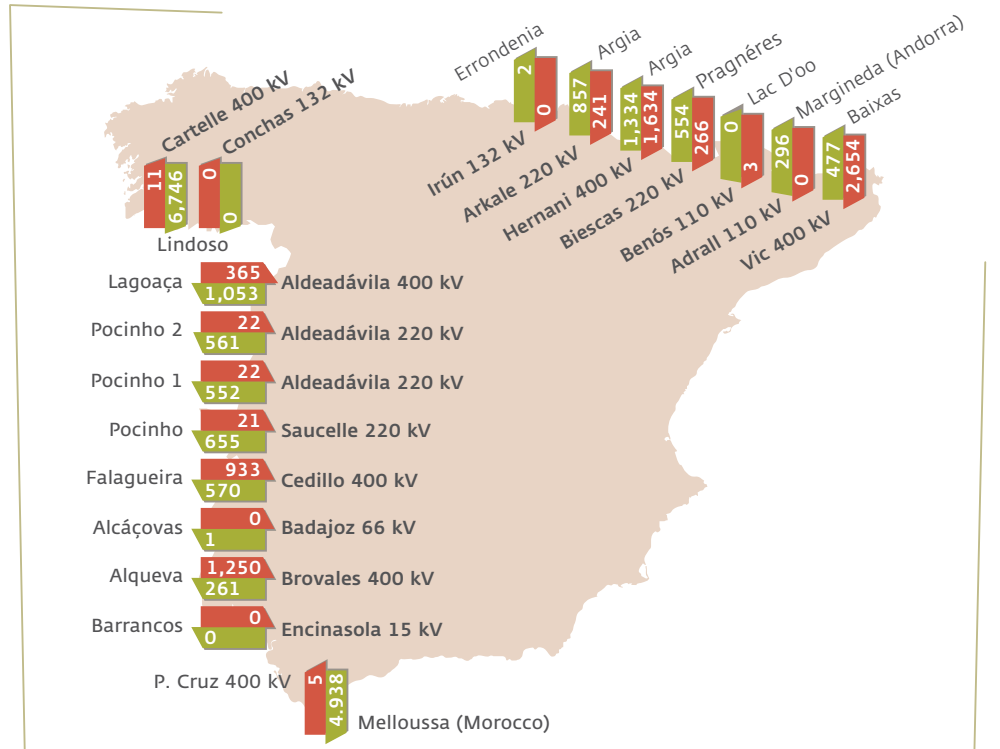
Evolution of the transmission system and transformer capacity

	2008	2009	2010	2011	2012
Circuit 400 kV (km)	17,765	18,056	18,792	19,671	20,104
Circuit ≤ 220 kV (km)	17,175	17,307	17,403	18,005	18,429
Transformer capacity 400/HV (MVA)	63,509	66,284	67,484	69,284	73,834

2 Peninsular system

2.4 International exchanges

Map of international physical energy exchanges (GWh)



Balance of international physical energy exchanges (GWh)

	France	Portugal	Andorra	Morocco	Total
2008	2,889	-9,439	-278	-4,212	-11,040
2009	1,590	-4,789	-299	-4,588	-8,086
2010	-1,531	-2,634	-264	-3,903	-8,333
2011	1,524	-2,814	-306	-4,495	-6,090
2012	**1,573**	**-7,774**	**-296**	**-4,933**	**-11,430**

Positive value: import balance; negative value: export balance.

Extra-peninsular systems
3.1 Demand

Balance of electrical energy

	Balearic Islands		Canary Islands		Ceuta		Melilla	
	GWh	% 12/11	GWh	% 12/11	GWh	% 12/11	GWh	% 12/11
Hydro	-	-	0	-	-	-	-	-
Coal	2,943	-2.9	-	-	-	-	-	-
Fuel/gas	1,325	0.2	5,789	1.5	234	5.1	230	3.4
Internal combustion engines(1)	980	1.6	2,230	-2.5	233	5.0	229	3.6
Gas turbines	345	-3.5	609	11.5	0.5	78.1	0.1	-76.7
Steam turbines	-	-	2,951	2.7	-	-	-	-
Combined cycle	946	-32.0	2,966	-1.7	-	-	-	-
Auxiliary generation(2)	-	-	-	-	-	-	-	-
Ordinary regime	**5,213**	**-9.3**	**8,755**	**0.4**	**234**	**5.1**	**230**	**3.4**
Self-consumption	-348	-7.4	-476	0.8	-20	1.2	-14	1.3
Special regime	**404**	**9.7**	**633**	**1.8**	**-**	**-**	**3**	**-62.6**
Hydro	-	-	2	29.9	-	-	-	-
Wind	6	6.8	387	9.0	-	-	-	-
Solar photovoltaic	116	14.4	236	1.5	-	-	0.1	24.0
Renewable thermal	1	-	9	-73.3	-	-	-	-
Non-renewable thermal	280	7.5	0	-	-	-	3	-63.5
Net production	**5,269**	**-8.3**	**8,911**	**0.5**	**214**	**5.5**	**218**	**1.4**
Peninsula-Balearics interc.(3)	569	-	-	-	-	-	-	-
Demand (b.c.-at power station busbars)	**5,838**	**1.7**	**8,911**	**0.5**	**214**	**5.5**	**218**	**1.4**

(1) Includes generators whose main fuel is fuel oil, gasoil and/or natural gas. **(2)** Emergency generator units which are installed temporarily in specific areas to cover deficits in generation. **(3)** Peninsula-Balearic Islands'interconnection operating at the technical minimum level of security until 13 August 2012. Positive value: import balance; negative value: export balance.

Installed capacity as at 31 December

	Balearic Islands		Canary Islands		Ceuta		Melilla	
	MW	% 12/11	MW	% 12/11	MW	% 12/11	MW	% 12/11
Hydro	-	-	1	0.0	-	-	-	-
Coal	510	0.0	-	-	-	-	-	-
Fuel / gas	827	3.1	1,899	0.0	99	0.0	85	0.0
Internal combustion engines(1)	199	0.0	546	0.0	83	0.0	70	0.0
Gas turbines	628	4.1	639	0.0	16	0.0	15	0.0
Steam turbines	-	-	713	0.0	-	-	-	-
Combined cycle	934	0.0	920	0.0	-	-	-	-
Auxiliary generation(2)	-	-	0	-	-	-	-	-
Ordinary regime	**2,271**	**1.1**	**2,820**	**0.0**	**99**	**0.0**	**85**	**0.0**
Hydro	-	-	0.5	0.0	-	-	-	-
Wind	4	-0.5	145	0.0	-	-	-	-
Solar photovoltaic	78	24.2	146	4.4	-	-	0.1	0.0
Renewable thermal	2	-	1	0.0	-	-	-	-
Non-renewable thermal	86	4.5	33	0.0	-	-	2	0.0
Special regime	**170**	**14.2**	**326**	**1.9**	**-**	**-**	**2**	**0.0**
Total	**2,441**	**1.9**	**3,146**	**0.2**	**99**	**0.0**	**87**	**0.0**

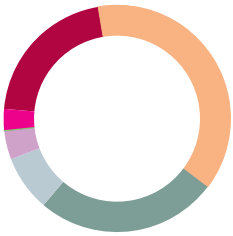
(1) Includes generators whose main fuel is fuel oil, gasoil and/or natural gas. **(2)** Emergency generator units which are installed temporarily in specific areas to cover deficits in generation.

3 Extra-peninsular systems

3.1 Demand

Balearic Islands

Installed capacity as at 31 December 2012 (2,441 MW)



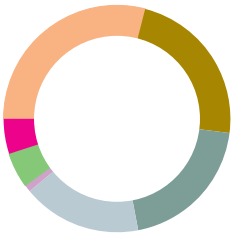
- Coal 21 %
- Combined cycle 38 %
- Gas turnbines 26 %
- Internal combustion engines 8 %
- Cogeneration and the rest of the technologies 4 %
- Renewable thermal 0,1 %
- Wind 0,1 %
- Solar photovoltaic 3 %

Demand coverage

- Coal 47 %
- Combined cycle 15 %
- Gas turbines 5 %
- Internal combustion engines 16 %
- Cogeneration and the rest of the technologies 5 %
- Wind 0,1 %
- Solar photovoltaic 2 %
- Peninsula-Balearic Islands'interconnection 10 %

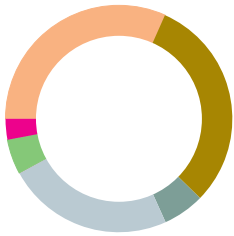
Canary Islands

Installed capacity as at 31 December 2012 (3,146 MW)



- Combined cycle 29 %
- Steam turbines 23 %
- Gas turbines 20 %
- Internal combustion engines 17 %
- Cogeneration and the rest of the technologies 1 %
- Wind 5 %
- Solar photovoltaic 5 %

Demand coverage



- Combined cycle 32 %
- Steam turbine 31 %
- Gas turbine 6 %
- Internal combustion engines 24 %
- Cogeneration and the rest of the technologies 0,1 %
- Wind 5 %
- Solar photovoltaic 3 %

Sistemas extrapeninsulares
3.1 Demanda

Monthly demand growth (%)

	E	F	M	A	M	J	J	A	S	O	N	D
Balearic Islands	-3,4	17,7	-4,4	1,3	-2,8	6,8	3,5	6,2	-7,1	0,3	-0,2	1,5
Canary Islands	1,9	6,8	1,1	-0,5	1,1	0,8	2,2	2,7	-0,4	-3,2	-3,1	-3,1
Ceuta	10,5	18,3	7,3	11,4	8,5	0,8	-4,8	0,5	2,6	-0,2	10,2	5,2
Melilla	4,9	11,9	2,3	2,6	0,9	1,2	2,1	1,5	-1,7	-1,8	-1,4	-5,0

Variation as compared to the same month of the previous year.

Maximum average hourly power demand and daily energy

	Power (MW)		Energy (MWh)	
Balearic Islands	1,100	14 February (8:00-9:00 pm)	14 February	20,065
	1,206	23 August (9:00-10:00 pm)	24 August	23,669
Canary Islands	1,439	15 February (8:00-9:00 pm)	15 May	26,493
	1,402	25 September (8:00-9:00 pm)	18 July	27,942
Ceuta	39	13 February (8:00-9:00 pm)	9 February	699
	35	27 June (12:00-1:00 pm)	3 August	663
Melilla	40	14 February (8:00-9:00 pm)	14 February	688
	38	27 August (12:00-1:00 pm)	10 August	743

Winter (January-May/October-December) Summer (June-September)

Demand evolution

	Balearic Islands		Canary Islands		Ceuta		Melilla	
	GWh	Δ Annual (%)	GWh	Δ Annual (%)	GWh	Δ Annual (%)	GWh	Δ Annual (%)
2008	6,122	2.4	9,333	1.3	210	3.5	205	6.1
2009	5,993	-2.1	9,107	-2.4	212	0.9	206	0.5
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	**5,838**	**1.7**	**8,911**	**0.5**	**214**	**5.5**	**218**	**1.4**

3 Extra-peninsular systems

3.2 Facilities. Generation and transmission

Variations in ordinary regime generator equipment

	Commissioned		Decommissioned	
	Type	MW	Type	MW
Balearic Islands				
Ibiza TG6B	Gas turbine	25		
Formentera AUX	Electrogen generator	8	Electrogen generator	8
Total		**33**		**8**

New transmission lines

	Voltage kV	No. of circuits	Km of circuits
Balearic Islands			
Santa Ponsa-Andraxt line	66	1	1.57
Santa Ponsa-Calviá 2 line	66	1	1.43
Total			**3.01**

Evolution of the transmission system and transformer capacity

		2008	2009	2010	2011	2012
220 kV (km)	Balearic Islands	177	185	185	430	430
	Canary Islands	163	163	163	163	163
	Total	**340**	**348**	**348**	**594**	**594**
132 kV (km)	Balearic Islands	199	199	206	220	220
	Canary Islands	-	-	-	-	-
	Total	**199**	**199**	**206**	**220**	**220**
< 132 kV (km)	Balearic Islands	875	884	890	890	893
	Canary Islands	1,015	1,127	1,129	1,129	1,129
	Total	**1,890**	**2,011**	**2,019**	**2,019**	**2,022**
Transformer Capacity (MVA)	Balearic Islands	1,998	1,998	1,998	2,248	2,528
	Canary Islands	1,250	1,375	1,625	1,625	1,625
	Total	**3,248**	**3,373**	**3,623**	**3,873**	**4,153**


RED ELÉCTRICA DE ESPAÑA
Generación eólica
Generación solar térmica
Cogeneración
Potencia instalada solar fotovoltaica
Huecos de tensión

Terminology index

Combined cycle. Technology for the generation of electrical energy in which two thermodynamic cycles coexist within one system: one involves the use of steam, and the other one involves the use of gas. In a power station, the gas cycle generates electrical energy by means of a gas turbine and the steam cycle involves the use of one or more steam turbines. The heat generated by combustion in the gas turbine is passed to a conventional boiler or to a heat-recovery element which is then used to move one or more steam turbines, increasing the yield of the process. Electricity generators are coupled to both the gas and steam turbines.

Closed-cycle pumped storage. Production of electrical energy carried out by the hydroelectric power stations whose higher elevation reservoir does not receive any type of natural contributions of water, but uses water solely from the lower elevation reservoir.

Generation consumption. Energy used by the auxiliary elements of power stations, necessary for the everyday functioning of the production facilities.

Hydroelectric reserves. The hydroelectric reserve of a reservoir is the quantity of electrical energy that could be produced in its own power plant and in all the power plants situated downstream, with the total drainage of its current useable water reserves and providing that drainage occurs without natural contributions. The annual regime reservoirs are those in which complete drainage would take place in less than one year. Hyper-annual regime reservoirs are those in which the total drainage time takes more than one year.

Ordinary regime. The production of electrical energy from all those facilities which are not included under the special regime.

Physical electricity exchanges (Intl.) The movements of energy which have taken place across lines of international interconnection during a certain period of time. It includes the loop flow of energy as a consequence of the grid design.

Producible energy. Maximum quantity of electrical energy that theoretically could be produced considering the water supplies registered during a specific period of time and once the supplies used for irrigation or uses other than the production of electrical energy have been deducted.

Producible hydroelectric index. This is the quotient between the producible energy and the average producible energy, both related to the same period and to the same hydroelectric equipment.

Special regime. Production of electrical energy which falls under a unique economic regime, originating from facilities with installed power not exceeding 50 MW whose production originates from cogeneration or other forms of electricity generation associated with non-electrical activities, if and when, they entail a high energy yield: Generation units that use renewable non-consumable energies, biomass or any type of biofuel as a primary energy source: Groups which use non-renewable or agricultural waste, livestock and service sector waste as primary energy sources, with an installed power lower than or equal to 25 MW, when they entail a high energy yield.

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