

THE SPANISH
ELECTRICITY SYSTEM
**PRELIMINARY
REPORT 2015**



RED
ELÉCTRICA
DE ESPAÑA



index



electricity
balance,
installed
power
capacity and
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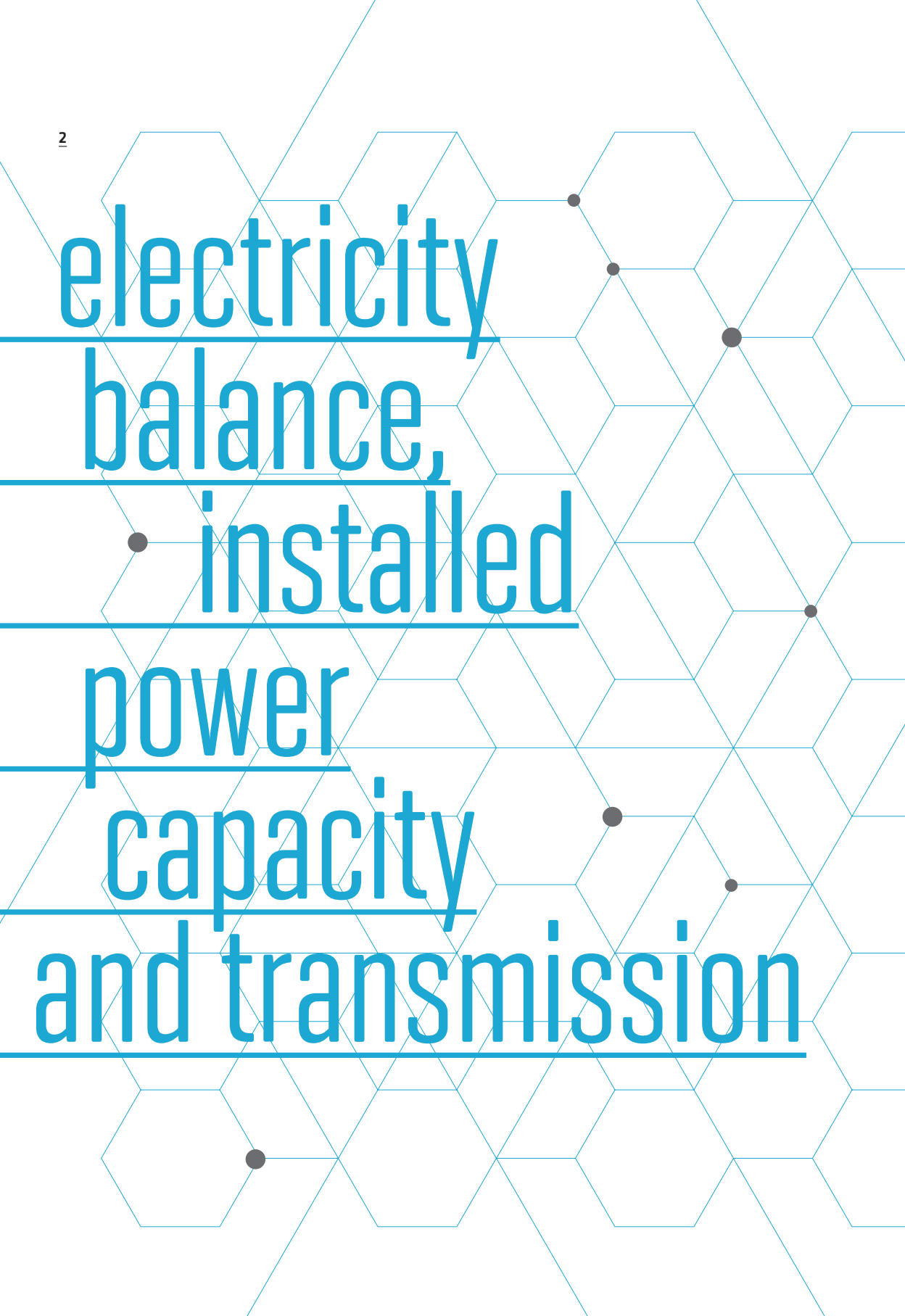
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electricity
balance,
installed
power
capacity
and transmission

Demand for electrical energy in Spain breaks the downward trend registered in the past four years

3



This preliminary report presents the **provisional** statistics regarding the behaviour of the Spanish electricity system during 2015. Close of year conducted with estimated data as at 16 December 2015.

The most significant aspect of the balance of the Spanish electricity system in 2015 has been the growth in demand over the previous year, after four consecutive years of decline. On the generation side, most noteworthy has been the fall in renewables, due mainly to lower hydroelectric generation. Meanwhile, the balance of electricity exchanges continued to be as exporter although it recorded a significant drop due to the substantial increase in imports from France.



ANNUAL ELECTRICAL ENERGY BALANCE ⁽¹⁾

	Peninsular system		Non-peninsular system		National total	
	GWh	% 15/14	GWh	% 15/14	GWh	% 15/14
Hydro	25,733	-28.2	0	-	25,733	-28.2
Nuclear	56,796	-1.0	-	-	56,796	-1.0
Coal	54,553	23.8	2,119	-12.3	56,672	21.9
Fuel / gas ⁽²⁾	-	-	6,891	3.4	6,891	3.4
Combined cycle ⁽³⁾	26,086	18.2	4,131	7.1	30,217	16.6
Consumption in generation ⁽⁴⁾	-7,087	8.0	-751	-0.5	-7,838	7.1
Hydro-wind	-	-	9	-	9	-
Other hydro ⁽⁵⁾	5,659	-19.9	4	2.2	5,663	-19.9
Wind	47,948	-5.3	432	9.1	48,380	-5.2
Solar photovoltaic	7,861	0.8	402	-0.7	8,264	0.7
Solar thermoelectric	5,158	4.0	-	-	5,158	4.0
Renewable thermal	4,921	4.3	10	-10.1	4,930	4.3
Cogeneration and other	26,845	4.9	339	16.6	27,183	5.0
Net production	254,473	0.4	13,585	2.2	268,057	0.4
Pumped storage consumption	-4,497	-15.6	-	-	-4,497	-15.6
Peninsula-Balearic Islands' link ⁽⁶⁾	-1,328	2.3	1,328	2.3	0	-
International exchanges ⁽⁷⁾	-467	-86.3	-	-	-467	-86.3
Demand (b.c.-at power station busbars)	248,181	1.9	14,913	2.2	263,094	1.9

⁽¹⁾ Allocation of generation units based on primary fuel. ⁽²⁾ Generation from auxiliary generation units is included in the Balearic Islands' electricity system. ⁽³⁾ Includes operation in open cycle mode. ⁽⁴⁾ Consumption in generation corresponding to hydro, nuclear, coal, fuel/gas and combined cycle production. ⁽⁵⁾ Includes all those units less than 50 MW that do not belong to a hydro unit (UGH). ⁽⁶⁾ Positive value: incoming energy; negative value: outgoing energy. ⁽⁷⁾ Positive value: importer balance; negative value: exporter balance.



Installed power capacity in the complete set of generating facilities in Spain increased slightly in 2015, closing the year at 108,299 MW [an increase of 0.4% compared to 2014]. Most of new installed power has corresponded to the commissioning of the 854 MW 'La Muela II' hydroelectric station, offsetting the closure of the 520 MW 'Foix' fuel-gas fired power station which was the last of this technology on the Peninsula. Variations in the rest of technologies have been nil or insignificant.

Electricity consumption in Spain recovered in 2015 a positive rate of growth not seen since 2010

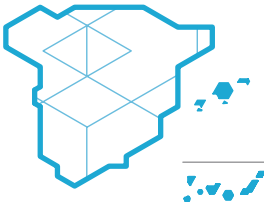
INSTALLED POWER CAPACITY AS AT 31 DECEMBER

	Peninsular system		Non-peninsular system		National total	
	MW	% 15/14	MW	% 15/14	MW	% 15/14
Hydro	18,668	4.9	1	0.0	18,669	4.9
Nuclear	7,866	0.0	-	-	7,866	0.0
Coal	10,972	0.0	510	0.0	11,482	0.0
Fuel / gas	0	-100.0	2,784	-0.2	2,784	-15.8
Combined cycle (1)	25,348	0.0	1,851	0.0	27,199	0.0
Hydro-wind	-	-	12	0.0	12	0.0
Other hydro (2)	2,109	0.0	0,5	0.0	2,109	0.0
Wind	22,845	0.0	158	0.0	23,003	0.0
Solar photovoltaic	4,423	0.5	244	0.3	4,667	0.5
Solar thermoelectric	2,300	0.0	-	-	2,300	0.0
Renewable thermal	984	0.0	5	0.0	989	0.0
Cogeneration and other	7,098	0.0	121	0.0	7,219	0.0
Total	102,613	0.4	5,686	-0.1	108,299	0.4

(1) Includes operation in open cycle mode. (2) Includes all those units less than 50 MW that do not belong to a hydro unit (UGH).
 // Source: National Commission for Markets and Competition (CNMC) on data regarding power of other hydro, wind, solar photovoltaic, solar thermoelectric, renewable thermal, cogeneration and other.

443 km

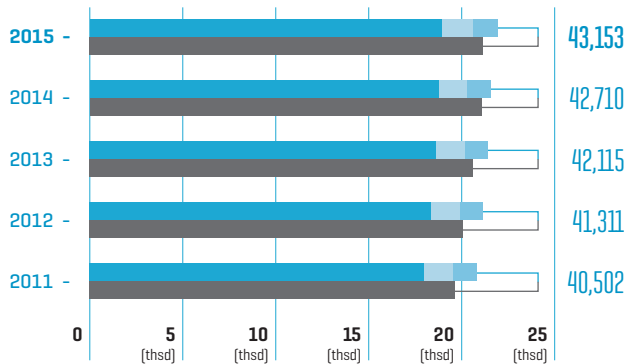
OF NEW CIRCUIT
HAVE BEEN
COMMISSIONED



Transmission grid development was given new impetus in 2015 as a result of putting into service of 443 km of circuit and 605 MVA of transformer capacity that enhance the reliability, the degree of the grid meshing, the interconnections between islands and enable a greater amount of renewable power to be incorporated into the electricity system.

EVOLUTION OF THE TRANSMISSION GRID IN SPAIN

(km of circuit)

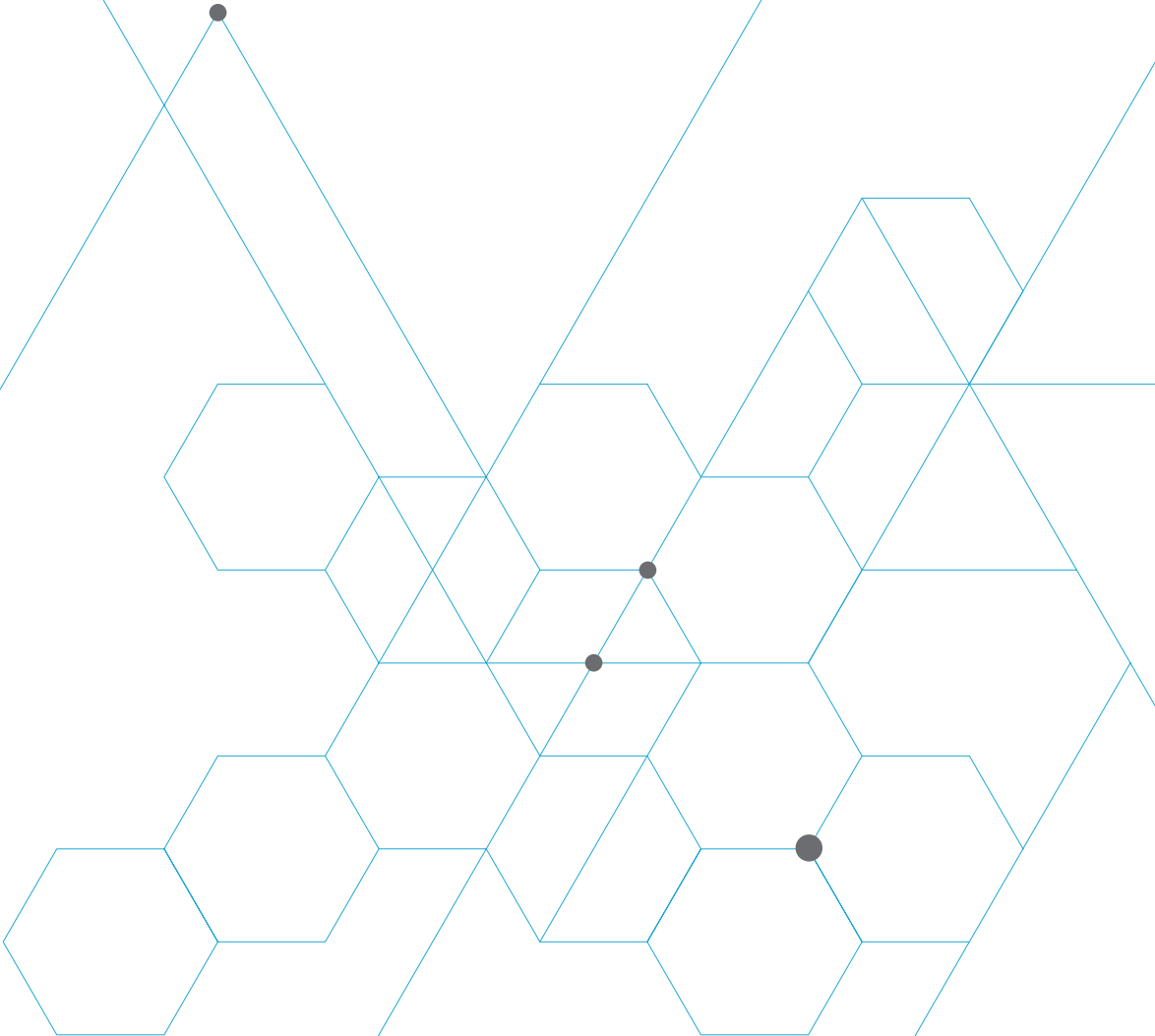


■ Peninsula <= 220 kV ■ Balearic Islands <= 220 kV ■ Canary Islands <= 220 kV ■ Peninsula > 220 kV

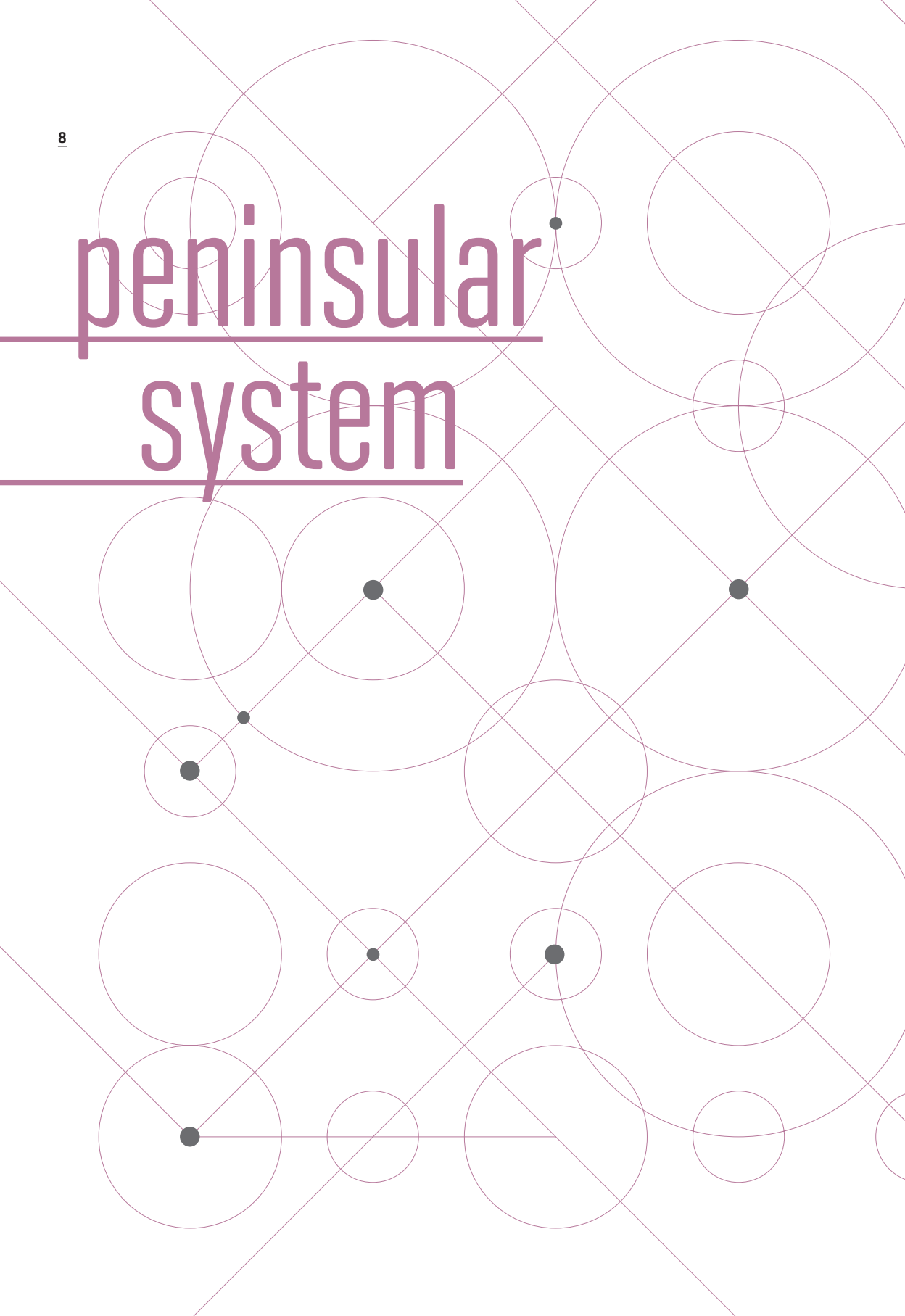
TRANSMISSION GRID INSTALLATIONS IN SPAIN

	400 kV		≤ 220 kV		TOTAL
	Peninsula	Peninsula	Balearic Isl.	Canary Isl.	
Total lines (km)	21,179	18,954	1,673	1,347	43,153
Overhead lines (km)	21,062	18,216	1,089	1,075	41,442
Submarine cable (km)	29	236	423	30	718
Underground cable (km)	88	501	161	242	993
Transformer capacity (MVA)	79,208	63	3,273	2,000	84,544

Data relating to km of circuit and transformer capacity as at 31 December 2015.



peninsular system



Peninsular electricity demand grows and the generation mix sees an increase in coal and combined cycle which offset the drop in hydro and wind





EVOLUTION OF DEMAND

Year	GWh	Δ Annual (%)	Δ Adjusted annual [%] (1)
2011	255,597	-1.9	-1.0
2012	252,014	-1.4	-1.8
2013	246,368	-2.2	-2.2
2014	243,544	-1.1	-0.1
2015	248,181	1.9	1.5

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

MONTHLY DEMAND GROWTH

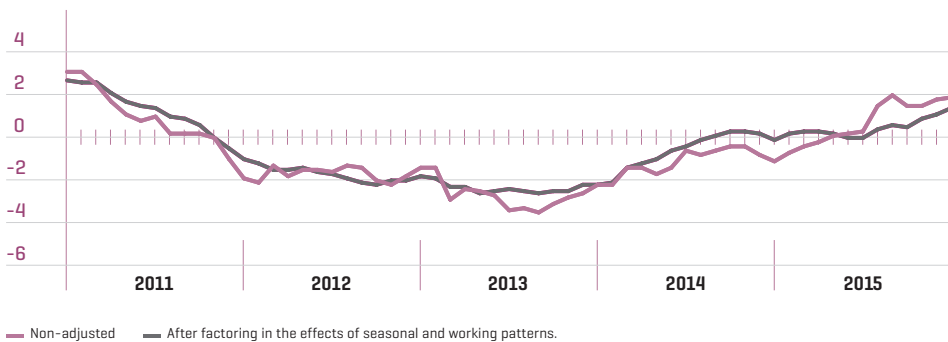
(%)

	J	F	M	A	M	J	J	A	S	O	N	D
Monthly	2.8	2.7	0.8	-0.2	1.8	3.9	11.1	3.5	-3.3	0.2	0.4	-1.3
Cummulative	2.8	2.7	2.1	1.6	1.6	2.0	3.3	3.4	2.6	2.4	2.2	1.9

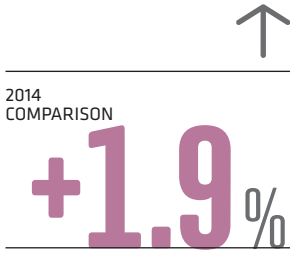
Variations as compared to same month of previous year.

ANNUAL DEMAND GROWTH (ROLLING YEAR)

(%)

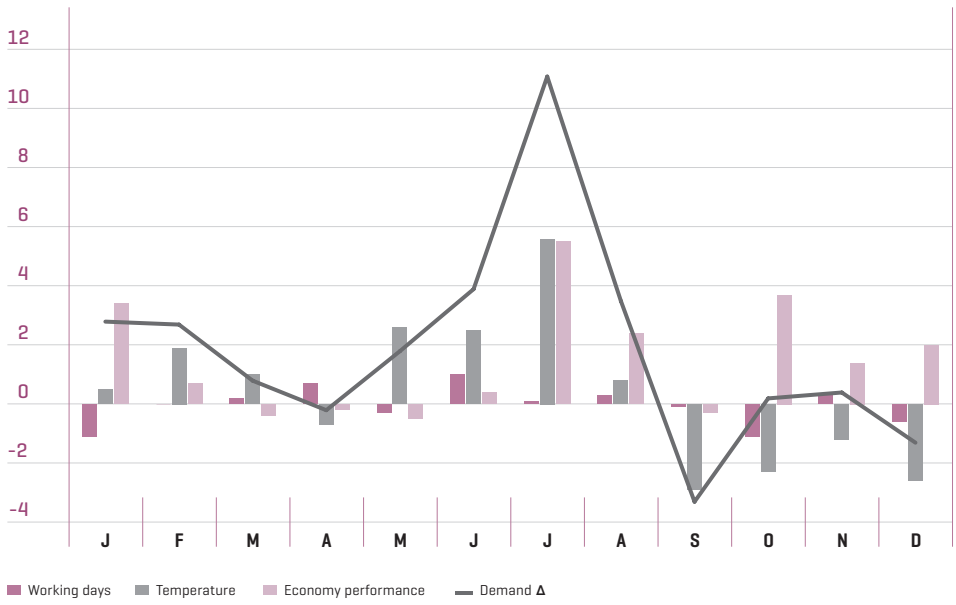


The peninsular demand for electrical energy closed the year at 248,181 GWh, a value 1.9% higher than in 2014. Factoring in the effects of seasonal and working patterns, the growth in demand attributable mainly to economic activity on the mainland stood at 1.5%, a growth that contrasts with the 0.1% drop recorded in 2014.



COMPONENTS OF THE MONTHLY DEMAND GROWTH

(%)

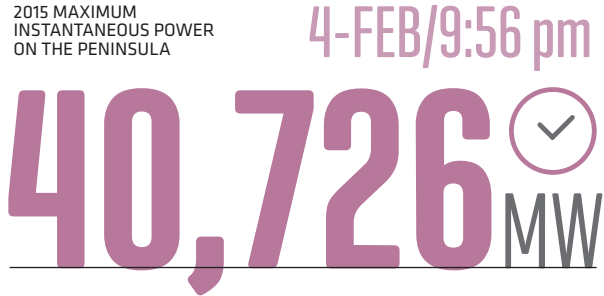


The maximum **instantaneous power** recorded in the year occurred at 7:56 pm on 4 February when it reached a value of 40,726 MW, a value 4.6% higher than the maximum recorded the previous year and 10.4% below the record of 45,450 MW reached on 17 December 2007. The maximum hourly demand was also recorded on 4 February (between 8:00 pm and 9:00 pm) when it reached 40,324 MWh, a value 4.3% higher than the 2014 maximum and 10.1% below the all-time high recorded in 2007.

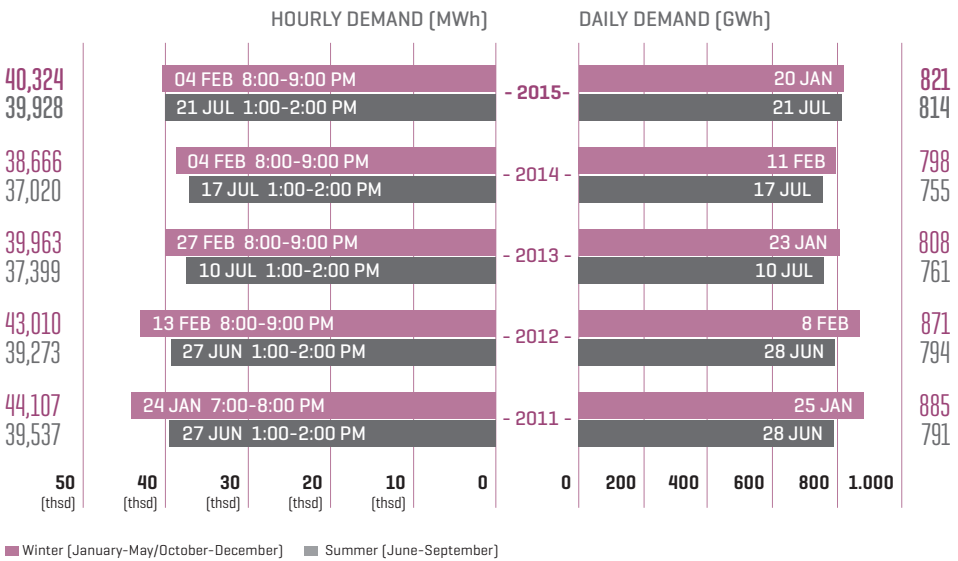
2007 ALL-TIME HIGH COMPARISON



2015 MAXIMUM INSTANTANEOUS POWER ON THE PENINSULA



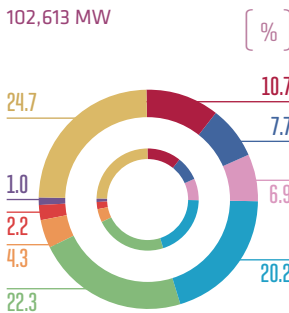
MAXIMUM HOURLY AND DAILY DEMAND





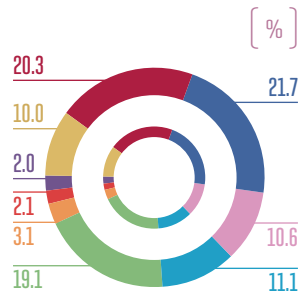
Installed power capacity on the Spanish peninsula maintains a similar structure as in 2014 with the only variations registered in hydro, which has represented 20.2% of the total on the Peninsula compared to 19.5% in 2014, and fuel-gas which no longer exists in the power structure. As for **demand coverage**, noteworthy was the rise in coal-fired generation which, with a contribution of 20.3% to demand coverage [16.5% in 2014], placed second in the generation mix displacing wind energy to third place.

INSTALLED POWER CAPACITY AS AT 31 DIC 2015



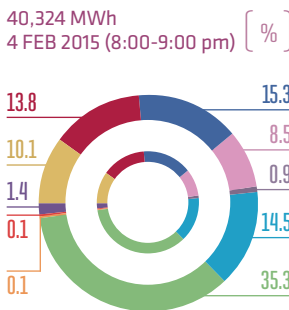
[1] Includes pure pumped storage (3,371 MW).

SPANISH PENINSULA ELECTRICITY DEMAND COVERAGE



[1] Pumped storage not included.

MAXIMUM HOURLY DEMAND COVERAGE



[1] Pumped storage not included.

- Combined cycle
- Coal
- Nuclear
- Cogeneration and other
- Hydro [1]
- Wind
- Solar photovoltaic
- Solar thermoelectric
- Renewable thermal
- Importer balance regarding international exchanges

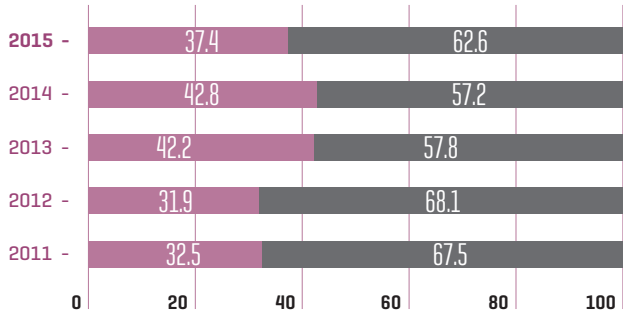
PERCENTAGE OVER TOTAL ELECTRICITY GENERATION ON THE PENINSULA

RENEWABLES
37.4%

Renewable energies continue to maintain a prominent role in the overall production of electricity despite a fall of around 5 points compared to 2014 due mainly to the variability of hydro and wind power generation, which in 2015 fell 28.2% and 5.3% respectively. Despite this decline, it should be noted that wind power was the technology that most contributed to total energy production in the Spanish Peninsula in the months of February and May.

EVOLUTION OF RENEWABLE AND NON-RENEWABLE GENERATION

(%)

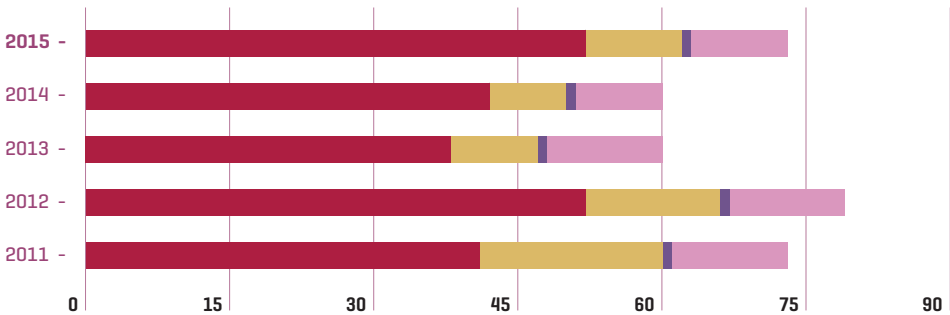


■ Renewable: hydro (1), wind, solar and renewable thermal
■ Non-renewable: nuclear, coal, fuel/gas, combined cycle and cogeneration and other

(1) Pumped storage not included.

EVOLUTION OF CO₂ EMISSIONS ASSOCIATED TO ELECTRICITY GENERATION ON THE PENINSULA

(Mt CO₂)

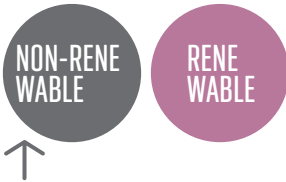


■ Coal ■ Fuel / gas ■ Combined cycle ■ Renewable thermal ■ Cogeneration and other



CO₂ emissions of the electricity sector rise as a result of the increase in coal-fired generation

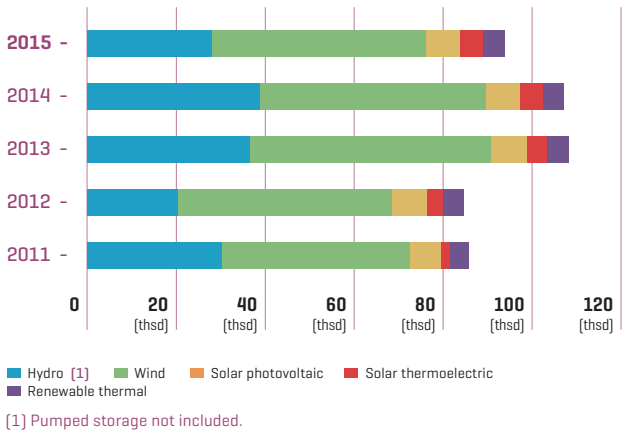
EVOLUTION 2015



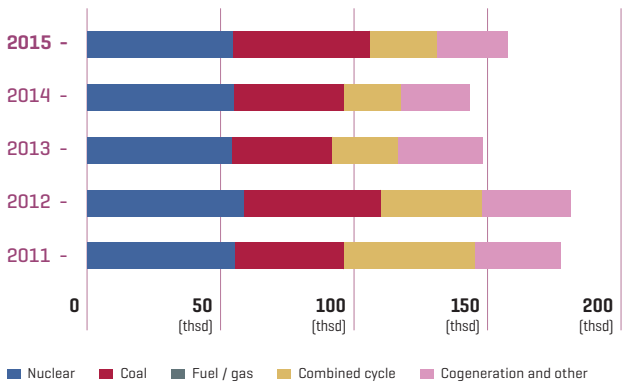
WIND ENERGY

THIRD SOURCE OF ELECTRICITY GENERATION

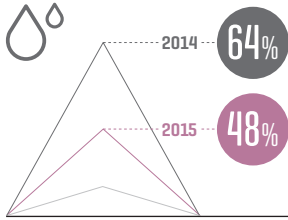
EVOLUTION OF PRODUCTION FROM RENEWABLE ENERGY SOURCES [GWh]



EVOLUTION OF PRODUCTION FROM NON-RENEWABLE ENERGY SOURCES [GWh]



HYDROELECTRIC RESERVES



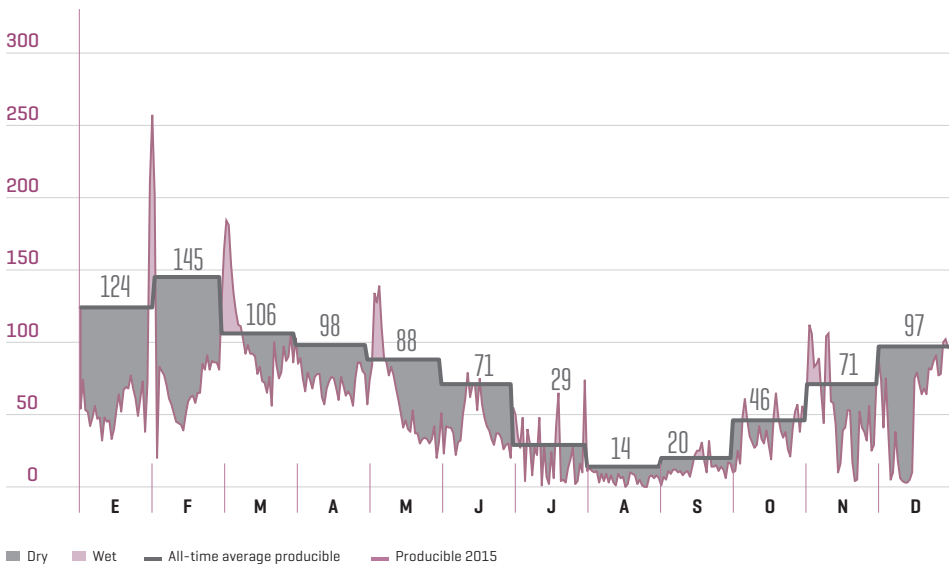
Producible hydroelectric registered a very low value with 18,430 GWh, a figure 33% lower than the average historical value and 43.1% below that registered in 2014. **Hydroelectric reserves**, for the complete set of reservoirs, ended 2015 with a fill level close to 48% of their total capacity compared to 64% last year.

ANNUAL PRODUCIBLE HYDROELECTRIC ENERGY

Year	GWh	Index	Probability of being exceeded [%]
2011	22,575	0.81	74
2012	12,722	0.46	100
2013	32,631	1.18	25
2014	32,408	1.17	26
2015	18,430	0.67	90

DAILY PRODUCIBLE HYDROELECTRIC ENERGY COMPARED WITH THE ALL-TIME AVERAGE PRODUCIBLE

[GWh]





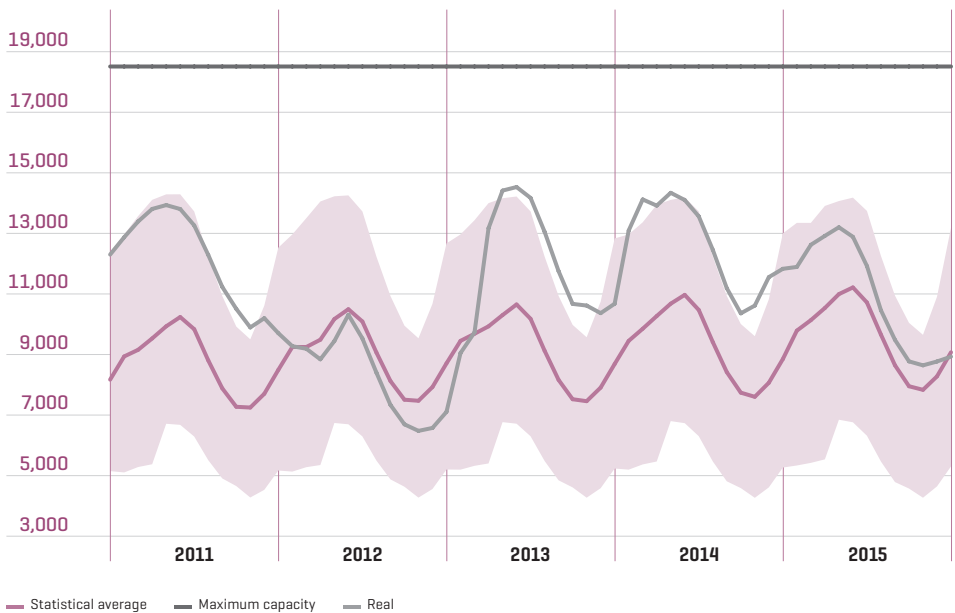
The producible hydroelectric has fallen far below the average historical value

HYDROELECTRIC RESERVES AS AT 31 DECEMBER

	Capacity	2014		2015	
		GWh	% of maximum capacity	GWh	% capacity
Annual regime	8,967	5,550	61.9	3,999	44.6
Hyperannual	9,571	6,276	65.6	4,913	51.3

HYDROELECTRIC RESERVES AS AT 31 DECEMBER

[GWh]



Statistical maximum and minimum: average of the maximum and minimum values of the last 20 years.

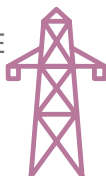


A peninsular electricity transmission grid of over 40,000 km of circuit

During 2015, a total of 257 km of new circuit were commissioned in the peninsular system (85 km of 400 kV and 172 km of 220 kV), bringing the total km of line in the peninsular transmission grid to 40,132 km at the end of 2015.

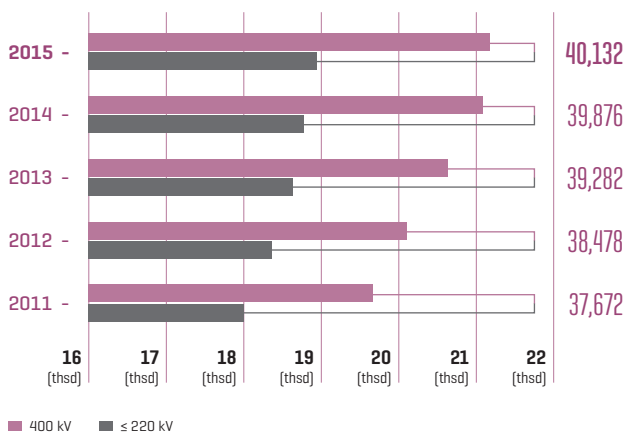
257 km

OF NEW CIRCUIT IN THE PENINSULAR GRID SYSTEM



EVOLUTION OF THE TRANSMISSION GRID

(km of circuit)



EVOLUTION OF THE TRANSMISSION SYSTEM AND TRANSFORMER CAPACITY

	2011	2012	2013	2014	2015
Km of 400 kV circuit	19,671	20,109	20,639	21,094	21,179
Km of ≤ 220 kV circuit	18,001	18,370	18,643	18,782	18,954
Transformer capacity [MVA]	68,996	74,596	76,871	79,271	79,271

BALANCE OF INTERNATIONAL PHYSICAL ENERGY EXCHANGES

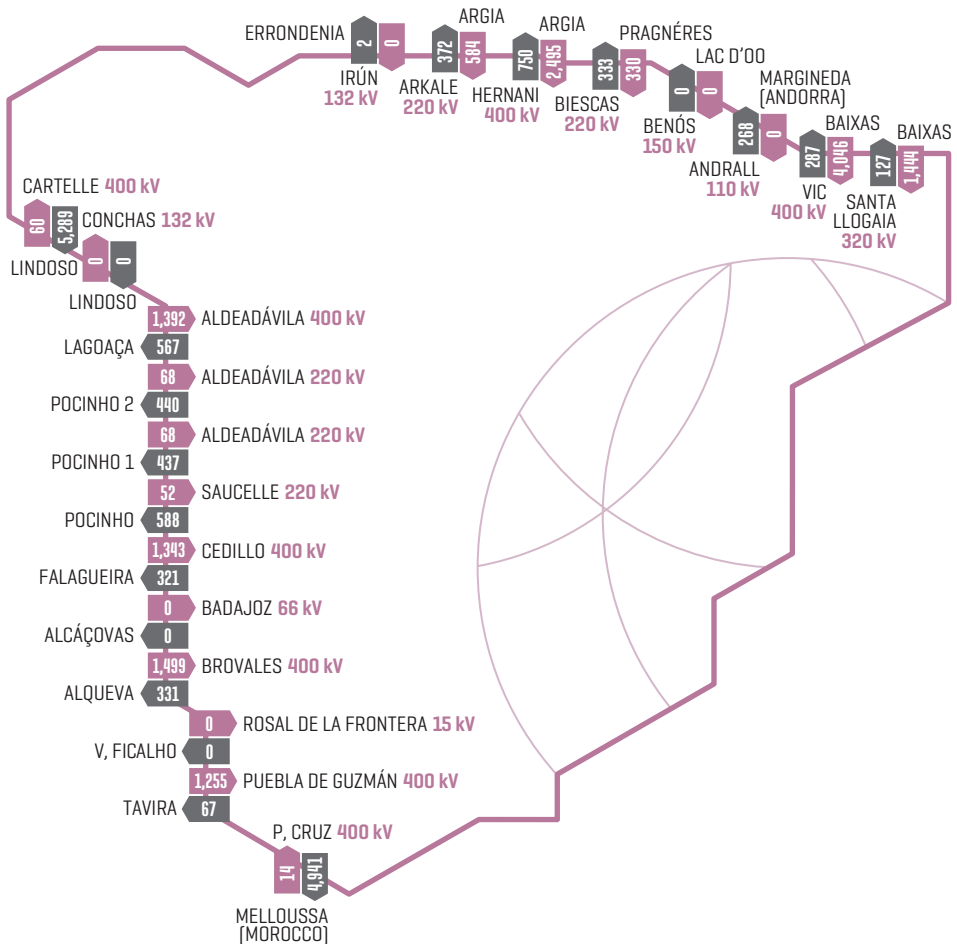
[GWh]

	France	Portugal	Andorra	Morocco	Total
2011	1,524	-2,814	-306	-4,495	-6,090
2012	1,883	-7,897	-286	-4,900	-11,200
2013	1,708	-2,777	-287	-5,376	-6,732
2014	3,567	-903	-235	-5,836	-3,406
2015	7,029	-2,302	-268	-4,927	-467

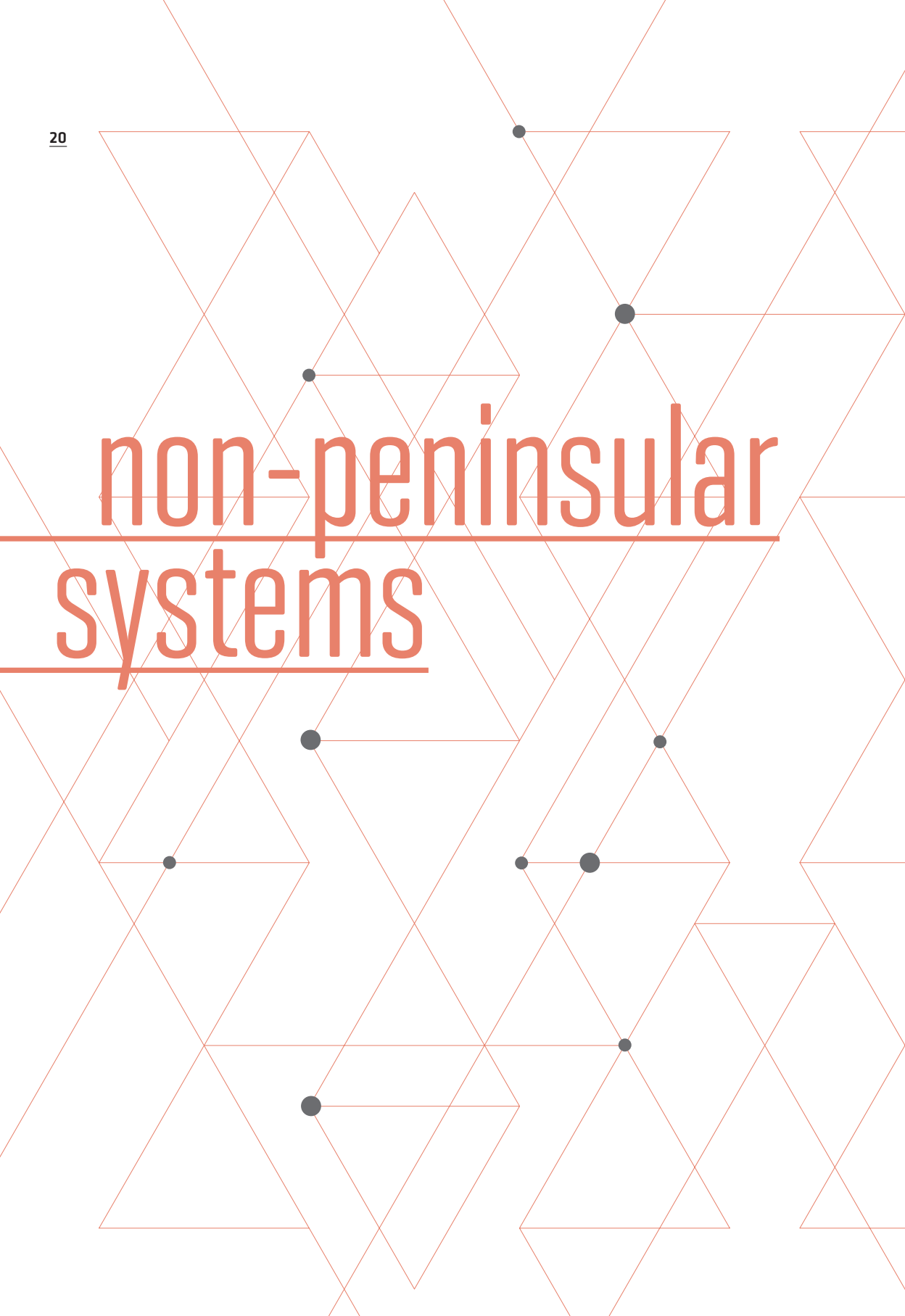
Positive value: import balance; negative value: export balance.

MAP OF INTERNATIONAL PHYSICAL ENERGY EXCHANGES

[GWh]



non-peninsular systems



Electricity consumption in non-peninsular systems recovers and the first submarine circuit linking the islands of Mallorca and Ibiza has been laid

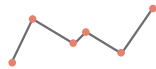




2014 COMPARISON

+2.2%

Annual demand for electricity in the set of **non-peninsular systems** closed 2015 at 14,193 GWh, representing a growth of 2.2% compared to the previous year. The demand by system was as follows: Balearic Islands, Canary Islands and Melilla increased by 4.1%, 1.1% and 2.5% respectively, while Ceuta registered a fall of 2.6%.

DEMAND
NON-PENINSULAR
SYSTEMS

14.9 TWh

ELECTRICAL ENERGY BALANCE ^[1]

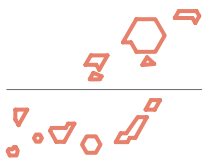
	Balearic Islands		Canary Islands		Ceuta		Melilla	
	GWh	% 15/14	GWh	% 15/14	GWh	% 15/14	GWh	% 15/14
Hydro	-	-	-	-	-	-	-	-
Coal	2,119	-12.3	-	-	-	-	-	-
Diesel engines	767	10.5	2,331	2.9	221	-4.1	219	2.3
Gas turbines	600	0.6	342	-8.0	1	730.4	1	-18.0
Steam turbines	-	-	2,399	5.2	-	-	-	-
Fuel / gas	1,367	5.9	5,072	3.1	222	-3.9	220	2.3
Combined cycle ^[2]	821	79.2	3,310	-2.7	-	-	-	-
Auxiliary generation ^[3]	11	37.5	-	-	-	-	-	-
Consumption in generation ^[4]	-291	-2.1	-432	1.5	-15	-18.3	-13	-5.0
Wind-hydro	-	-	9	-	-	-	-	-
Other hydro	-	-	4	2.2	-	-	-	-
Wind	6	-1.7	426	9.2	-	-	-	-
Solar photovoltaic	124	1.3	278	-1.5	-	-	0,1	-18,8
Térmica renovable	2	-5.5	8	-11.1	-	-	-	-
Renewable thermal	330	17.3	-	-	-	-	9	-3.9
Net production	4,488	4.7	8,675	1.1	207	-2.6	215	2.5
Península-Balearics link ^[5]	1,328	2.3	-	-	-	-	-	-
Demand (b.c.-at power station busbars)	5,816	4.1	8,675	1.1	207	-2.6	215	2,5.

[1] Allocation of generation units based on primary fuel. [2] Uses fuel oil and diesel as primary fuel. Includes operation in open cycle mode. [3] Emergency generators installed temporarily in specific zones to cover a deficit in generation. [4] Consumption in generation corresponding to hydro, coal, fuel+gas, combined cycle and auxiliary production. [5] Positive value: incoming energy; negative value: outgoing energy.



Installed power capacity in non-peninsular systems remained stable with regards to the previous year

INSTALLED POWER CAPACITY IN NON-PENINSULAR SYSTEMS



5,686 MW

INSTALLED POWER CAPACITY AS AT 31 DECEMBER

	Balearic Islands		Canary Islands		Ceuta		Melilla	
	MW	% 15/14	MW	% 15/14	MW	% 15/14	MW	% 15/14
Hydro	-	-	1	0.0	-	-	-	-
Coal	510	0.0	-	-	-	-	-	-
Diesel engines	199	0.0	566	0.0	83	0.0	70	0.0
Gas turbines	678	0.0	638	-0.7	16	0.0	15	0.0
Steam turbines	-	-	520	0.0	-	-	-	-
Fuel / gas	877	0.0	1,724	-0.3	99	0.0	85	0.0
Combined cycle ⁽¹⁾	934	0.0	918	0.0	-	-	-	-
Auxiliary generation ⁽²⁾	-	-	-	-	-	-	-	-
Wind-hydro	-	-	12	0.0	-	-	-	-
Other hydro	-	-	0.5	0.0	-	-	-	-
Wind	4	0.0	154	0.0	-	-	-	-
Solar photovoltaic	78	0.0	166	0.4	-	-	0.1	0.0
Renewable thermal	2	0.0	3	0.0	-	-	-	-
Cogeneration and other	86	0.0	33	0.0	-	-	2	0.0
Total	2,490	0.0	3,011	-0.1	99	0.0	87	0.0

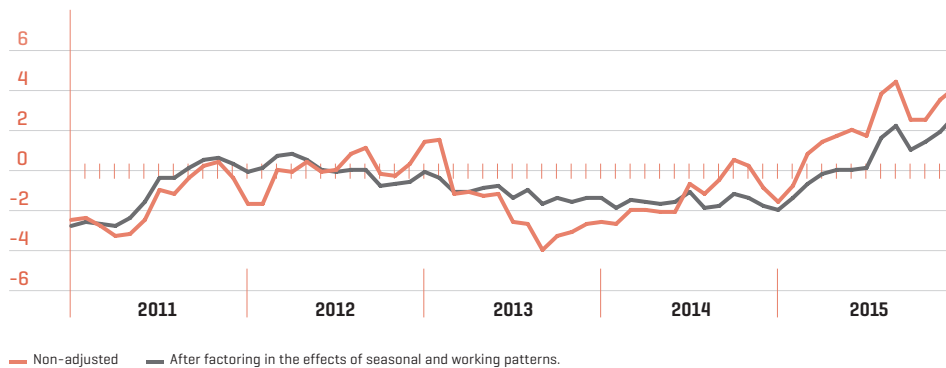
[1] Includes operation in open cycle mode. [2] Emergency generators installed temporarily in specific zones to cover a deficit in generation. // Source: National Commission for Markets and Competition (CNMC) on data regarding power of other hydro, wind, solar photovoltaic, renewable thermal, cogeneration and other.

24 COGENERATION AND OTHER

	Balearic Islands		Canary Islands		Ceuta		Melilla	
	GWh	Δ Annual [%]	GWh	Δ Annual [%]	GWh	Δ Annual [%]	GWh	Δ Annual [%]
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	8,624	-3.0	202	-4.8	210	-3.5
2014	5,585	-1.6	8,580	-0.5	212	5.1	210	0.1
2015	5,816	4.1	8,675	1.1	207	-2.6	215	2.5

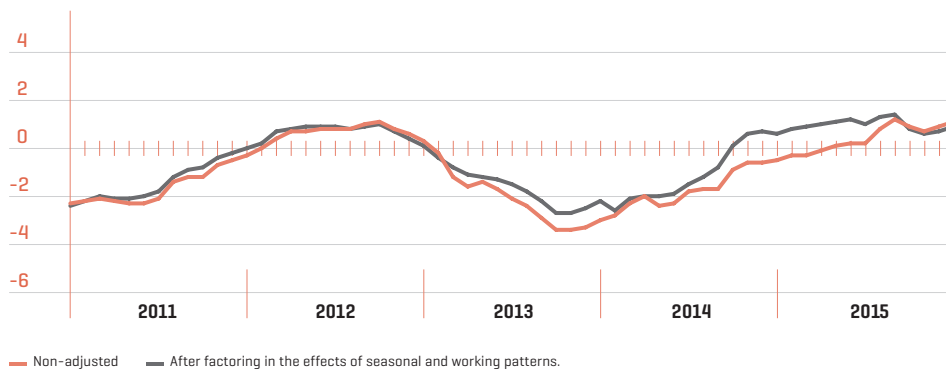
ANNUAL DEMAND GROWTH:
BALEARIC ISLANDS (ROLLING YEAR)

[%]



ANNUAL DEMAND GROWTH:
CANARY ISLANDS (ROLLING YEAR)

[%]





Electrical energy demand in the Balearic Islands closed the year at 5,816 GWh, a value 4.1% higher than in 2014. Factoring in the effects of seasonal and working patterns, the growth in demand attributable mainly to economic activity on the Balearic Islands stood at 2.7%.



2014
COMPARISON

+4.1%

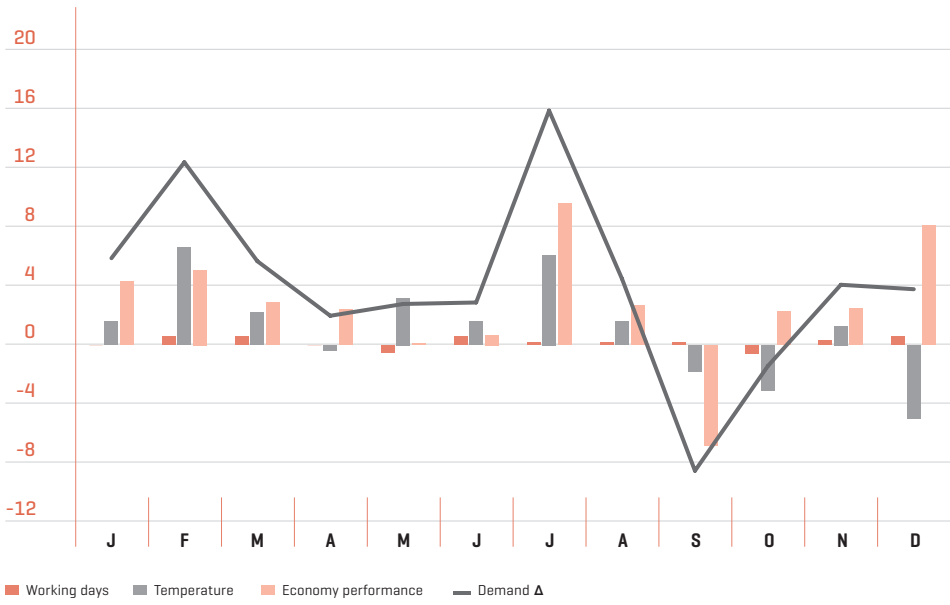
BALEARIC ISLANDS
DEMAND



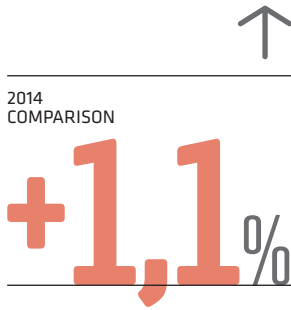
5.8 TWh

COMPONENTS OF THE MONTHLY DEMAND GROWTH: BALEARIC ISLANDS

(%)



Electrical energy demand in the Canary Islands closed the year at 8,675 GWh, a value 1.1% higher than in 2014. Factoring in the effects of seasonal and working patterns, the growth in demand attributable mainly to economic activity on the Canary Islands stood at 0.9%.

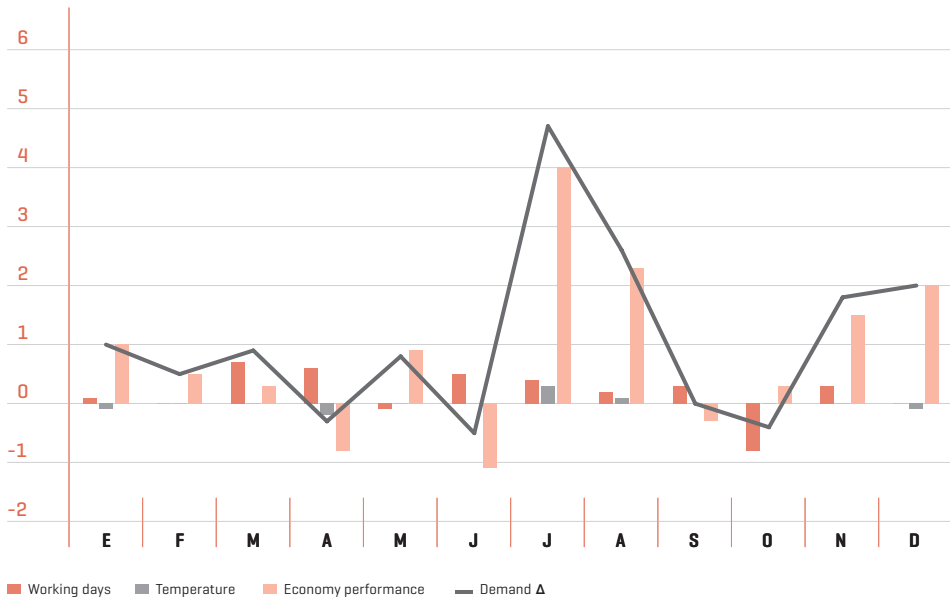


CANARY ISLANDS
DEMAND



COMPONENTS OF THE MONTHLY DEMAND GROWTH: CANARY ISLANDS

%





The maximum hourly demand in the Balearic Islands was recorded on 29 July [between 1:00 pm and 2:00 pm] when it reached 1,205 MWh, a value 4.8% higher than the 2014 maximum recorded on 11 August between 9:00 pm and 10:00 pm. The maximum hourly demand in the Canary Islands was reached on 5 October [between 8:00 pm and 9:00 pm] when it reached 1,400 MWh, a value 1.7% higher than the 2014 maximum recorded on 31 December between 7:00 pm and 8:00 pm.

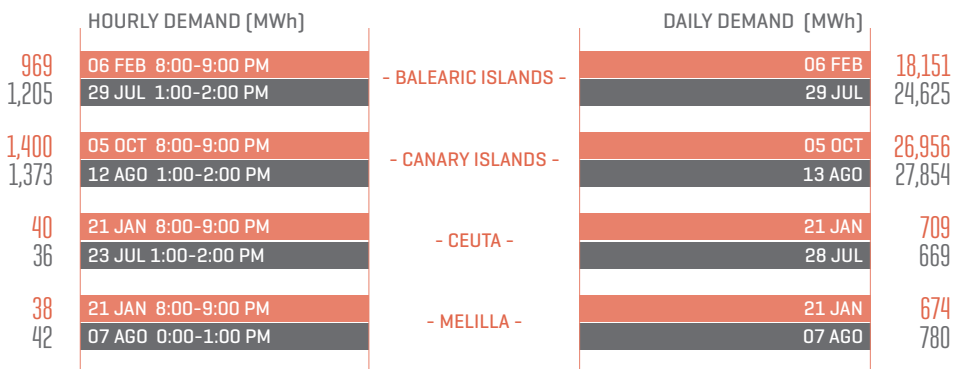
MONTHLY DEMAND GROWTH



	J	F	M	A	M	J	J	A	S	O	N	D
Balearic Islands	5.9	12.4	5.7	2.0	2.8	2.9	15.9	4.5	-8.5	-1.4	4.1	3.8
Canary Islands	1.0	0.5	0.9	-0.3	0.8	-0.5	4.7	2.6	0.0	-0.4	1.8	2.0
Ceuta	1.3	-5.7	-8.2	4.5	-0.5	-2.4	4.8	-0.1	-10.4	-6.8	-3.0	-3.3
Melilla	2.6	4.9	-1.8	0.6	1.0	0.0	15.2	6.9	-5.1	-1.7	4.3	2.0

Variations as compared to same month of previous year.

MAXIMUM HOURLY AND DAILY DEMAND



■ Winter [January-May/October-December] ■ Summer [June-September]



Installed power capacity in non-peninsular systems maintains a very similar structure to that of 2014. Regarding **demand coverage**, the differences with respect to the previous year have been minimum although noteworthy is the fact that there was a lower participation (just under six percentage points compared to 2014) of coal-fired generation in the Balearic Islands. This factor favoured combined cycle generation which increased their contribution to the demand by nearly six points on this archipelago.

INSTALLED POWER CAPACITY AT 31 DEC 2015 AND DEMAND COVERAGE

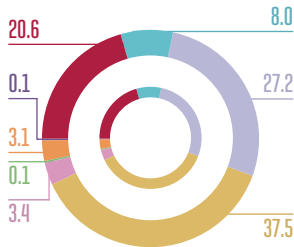


BALEARIC ISLANDS

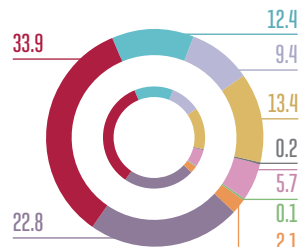


- Coal
- Diesel engines
- Gas turbines
- Combined cycle
- Auxiliary generation
- Cogeneration and other
- Wind
- Solar photovoltaic
- Renewable thermal
- Peninsula-Balearic Islands' link

INSTALLED POWER CAPACITY
2,490 MW



DEMAND COVERAGE

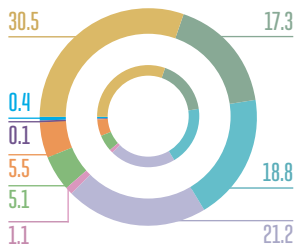


CANARY ISLANDS

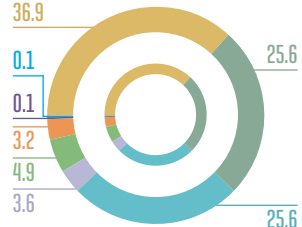


- Combined cycle
- Steam turbines
- Diesel engines
- Gas turbines
- Cogeneration and other
- Wind
- Solar photovoltaic
- Renewable thermal
- Hydro-wind

INSTALLED POWER CAPACITY
3,011 MW



DEMAND COVERAGE



186 km

OF NEW CIRCUIT
IN NON-
PENINSULAR
GRID SYSTEMS



The Majorca-Ibiza interconnection is the world's longest submarine link in alternating current and runs at a depth of up to 800 meters

During 2015, a total of 186 km of new circuit and 605 MVA of transformer capacity were commissioned in the non-peninsular systems. Among the completed projects, noteworthy is the first circuit that connects the islands of Majorca and Ibiza via a 117 km submarine cable and 8 km of underground cable which is scheduled to come into operation in late January 2016.

EVOLUTION OF THE TRANSMISSION SYSTEM AND TRANSFORMER CAPACITY

		2011	2012	2013	2014	2015
Km of 220 kV circuit	Balearic Islands	430	430	430	431	431
	Canary Islands	163	163	163	163	216
	Total	594	594	594	594	647
Km of 132 kV circuit	Balearic Islands	220	220	220	220	346
	Canary Islands	-	-	-	-	-
	Total	220	220	220	220	346
Km of < 132 kV circuit	Balearic Islands	890	893	893	894	896
	Canary Islands	1,126	1,126	1,126	1,126	1,131
	Total	2,016	2,019	2,019	2,019	2,027
Transformer Capacity [MVA]	Balearic Islands	2,248	2,408	2,793	2,793	3,273
	Canary Islands	1,625	1,625	1,625	1,875	2,000
	Total	3,873	4,033	4,418	4,668	5,273

terminology

index





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.

Consumption in generation

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 electricity that could be produced in its own power station and in all the power stations 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. Hyperannual regime reservoirs are those in which the total drainage time takes more than one year.

Hydro unit (UGH)

Each set of hydroelectric power stations belonging to the same catchment basin and to the same individual holder.

Instantaneous power

Instantaneous power is the energy absorbed by the demand at any given moment of time.

Net generation

Production of energy measured at the generator terminals, minus the consumption in the auxiliary services and the losses in the transformers.



Non-renewable energies

Those obtained from fossil fuels (liquid or solid) and their derivatives.

Physical electricity exchanges (Intl.)

The movements of energy which have taken place via international interconnection lines during a given period of time. It includes the loop flow of energy as a consequence of the grid design.

Producible hydroelectric 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.

Renewable energies

Those obtained from natural resources and also from both industrial and urban waste. These different types of energy sources include biogas, biomass, wind, hydroelectric, marine-hydroelectric, solar and industrial/urban residues.

Transmission grid

The complete set of lines, switchyards/facilities, transformers and other electrical elements with voltages greater than or equal to 220 kV, and those other facilities, regardless of their power, which fulfil transmission functions, international interconnections and the interconnections with the Spanish insular and non-peninsular electricity systems.



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