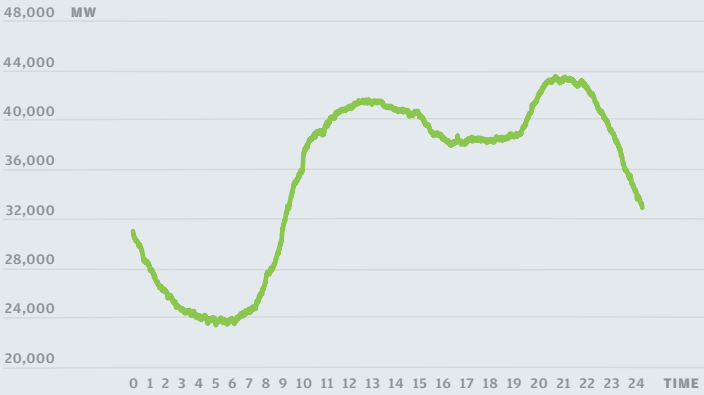
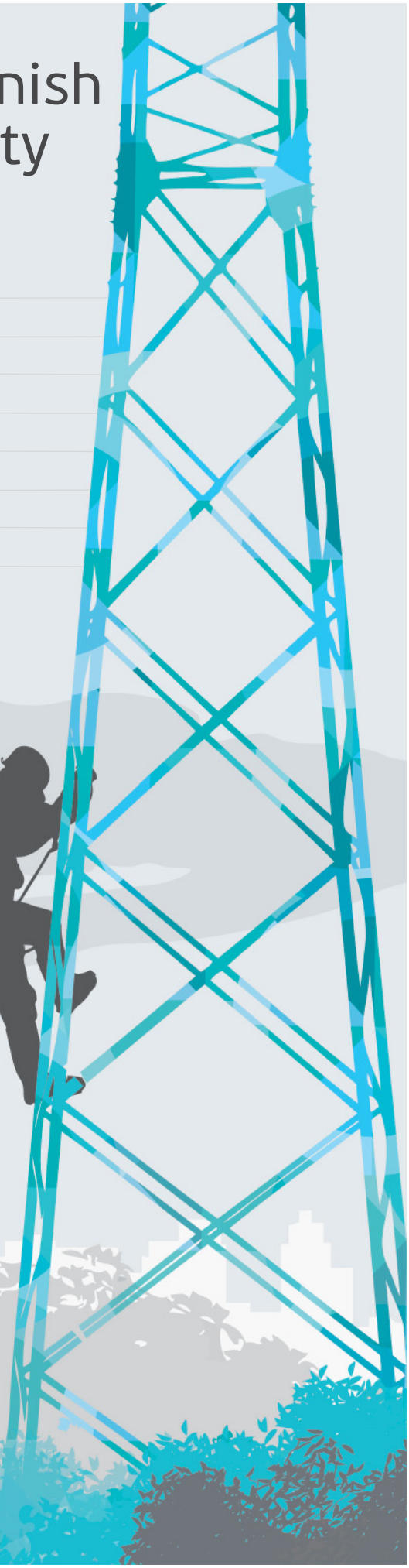
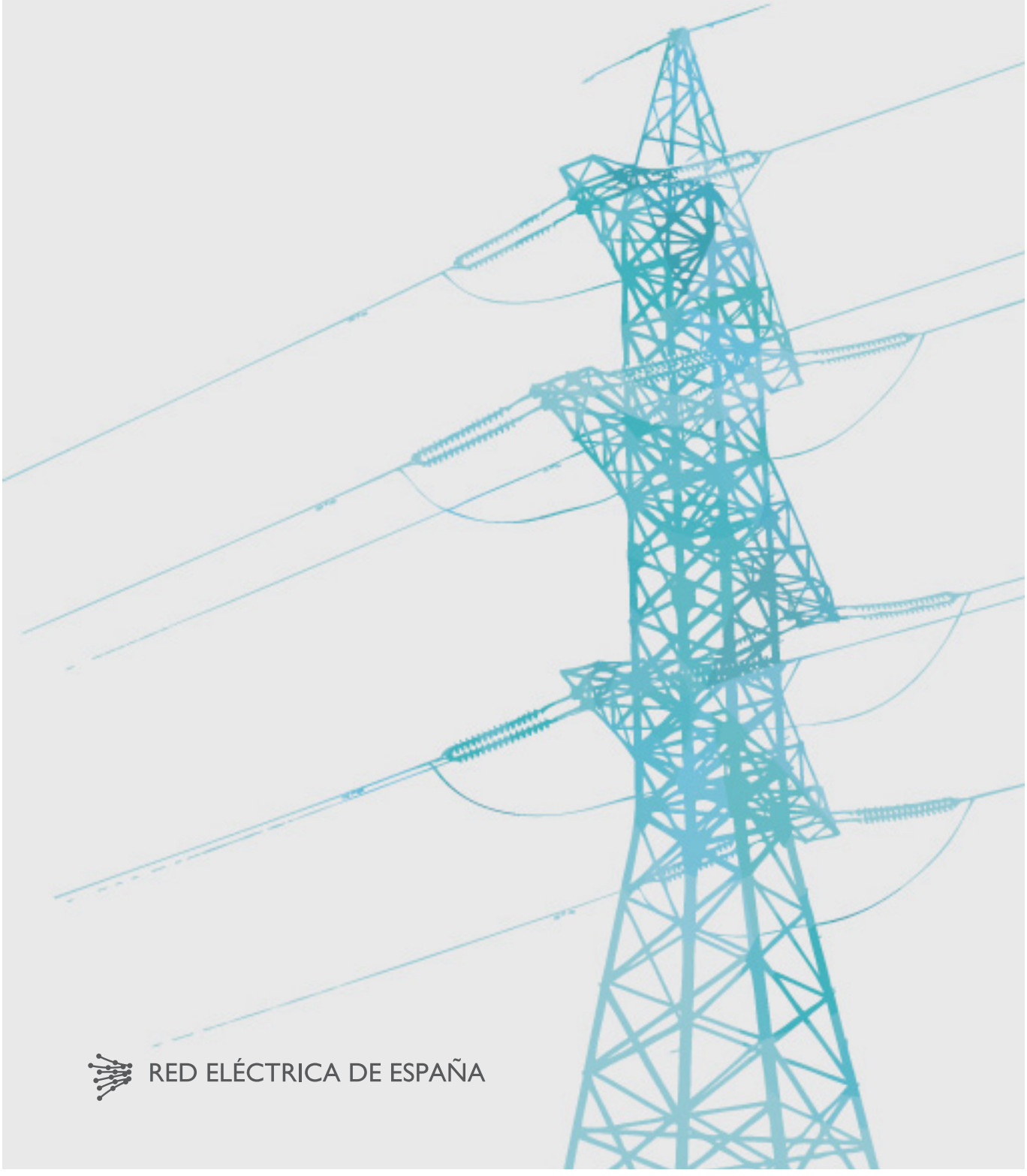
2012 The Spanish Electricity System





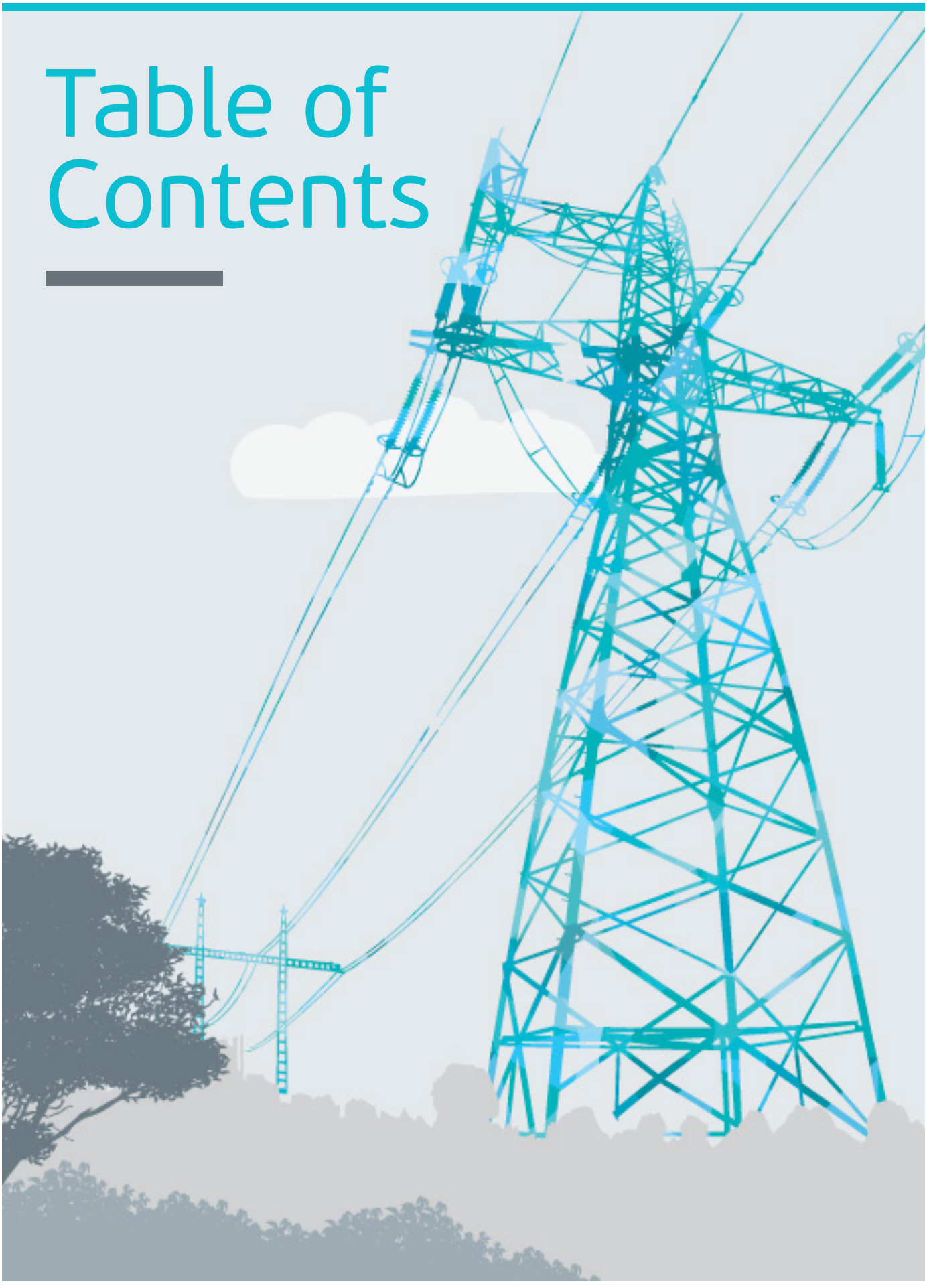
RED ELÉCTRICA DE ESPAÑA

2012 The Spanish Electricity System

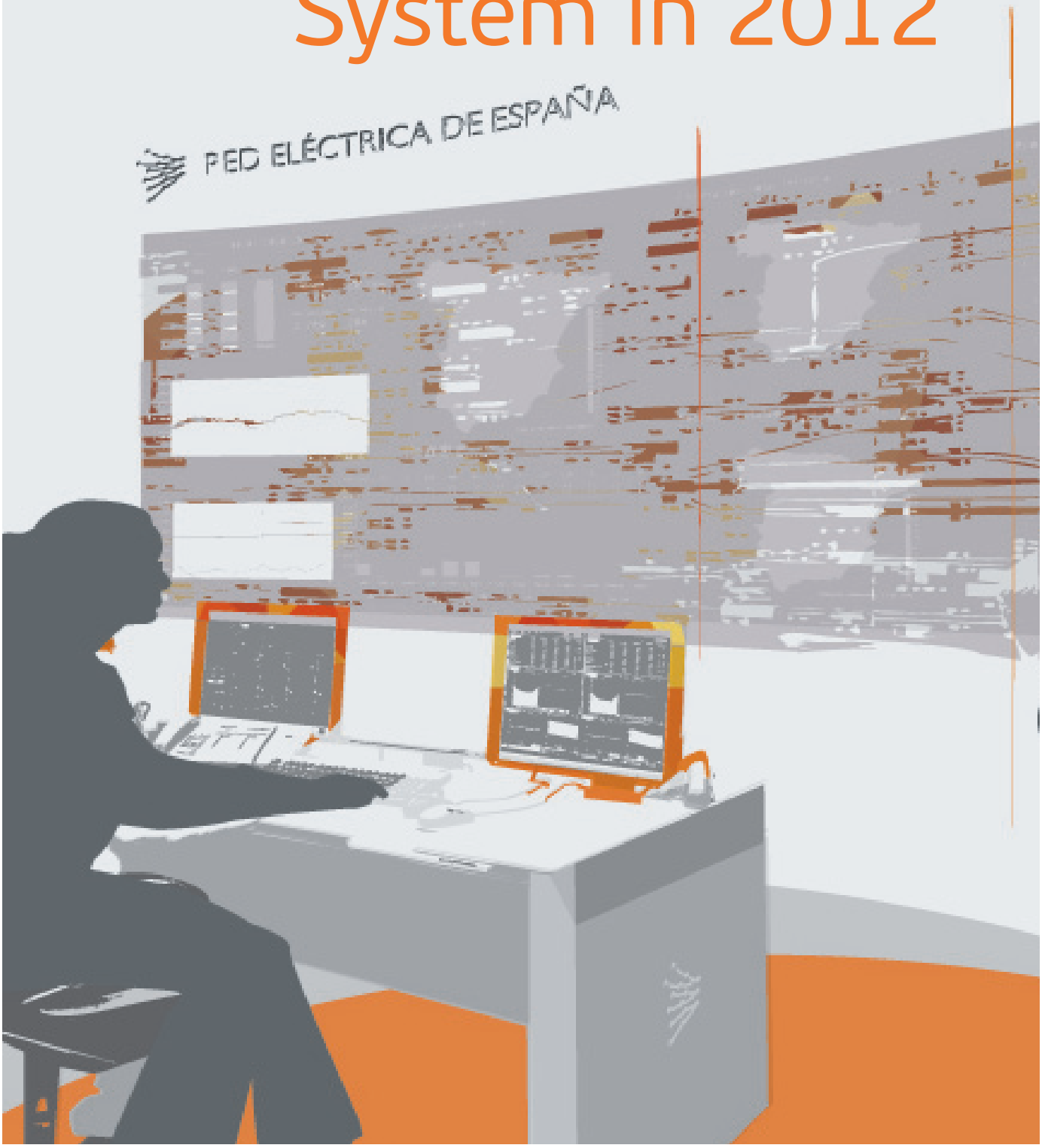


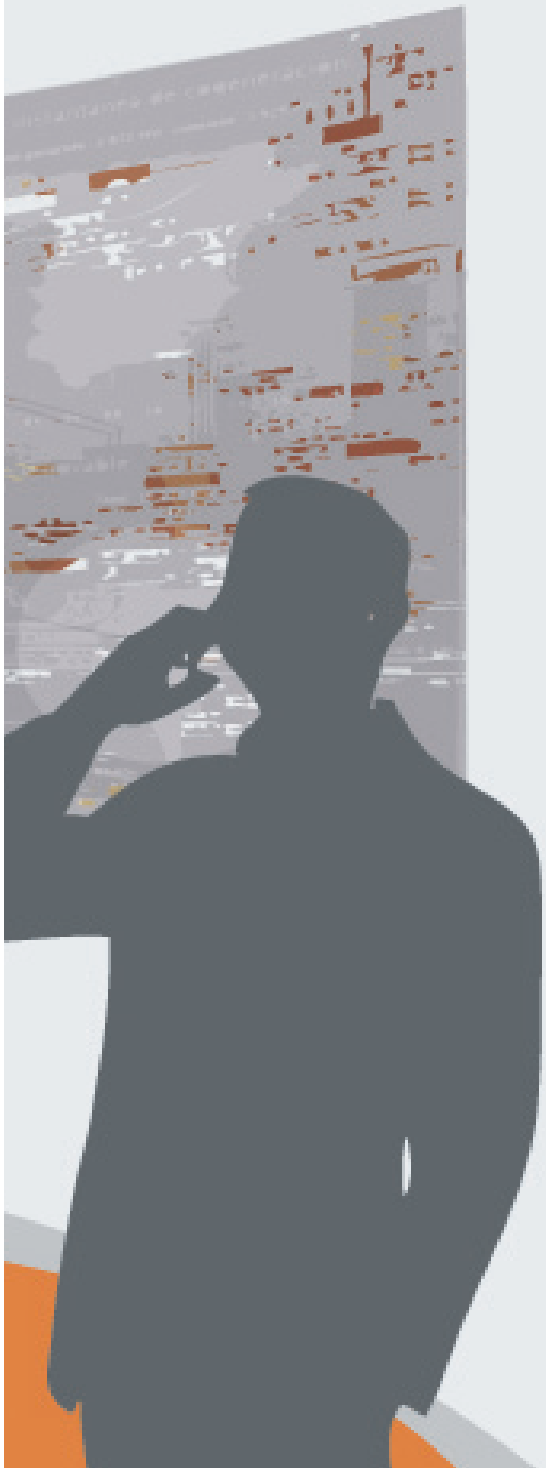
RED ELÉCTRICA DE ESPAÑA

Table of Contents



00 The Spanish Electricity System in 2012





The most significant aspect of the performance of the Spanish electricity system in 2012 was once again the behaviour of the demand for electricity which continues at a level comparable to that of 2006. This situation is consistent with the downward trend of the economic activity in Spain, which closed the year with an overall fall of 1.4 % in Gross Domestic Product (GDP).

Specifically, the annual national electricity demand recorded a decline throughout the year of 1.4 % compared to 2011, representing an accumulated decrease of 5.1 % in the last four years. Additionally, on average, the downward trend in electricity consumption was similar to that of other EU countries belonging to the Continental Europe Group of ENTSO-E (European Network of Transmission System Operators for Electricity), although in the case of Spain, the drop was more moderate, recording a fall of 0.7 % as compared to 2011 and an overall fall of 3.0 % for the 2008-2012 period.

Despite the decline in demand, total national production increased 1.1 % compared to 2011 due primarily to increased energy exports to other countries. As for the generation mix, for yet another year, the growth of renewable energy, especially

00 The Spanish Electricity System in 2012

wind energy and the increase in coal-fired generation are worth highlighting. By contrast, combined cycle has continued the line of descent began in 2009. Additionally, in a context of an extremely dry year, hydroelectric registered the lowest annual production since 2005.

In line with that of recent years, 2012 saw quite a bit of activity within the regulatory scope, with the approval of numerous regulations relevant to the functioning of the electricity sector, both at the EU level and within the framework of the Spanish regulation.

Regulatory framework

In the framework of the European Union regulation, the main rule approved in 2012 was *Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC.* This directive, adopted with Spain's vote against, establishes a common framework of measures for the promotion of energy efficiency within the Union in order to ensure the achievement of the Union's 2020 20 % headline target on energy efficiency and to pave the way for further energy efficiency improvements beyond that date.

With respect to the Spanish regulation, during 2012 numerous provisions developing Law 54/1997 were published, many of them focused on providing measures to correct the structural imbalance between revenues and costs in the electricity sector, of these, the following are noteworthy:

- *Royal Decree-Law 1/2012, of 27 January, suspends the remuneration pre-assignment procedure and removes incentives for new electricity facilities using co-generation, renewable energy and waste,* and eliminates the incentives contemplated in Royal Decree 661/2007 for all those special regime facilities that had not already been registered in the remuneration pre-assignment registry, and also suspends the remuneration pre-assignment procedures for all facilities in 2012.

- *Royal Decree-Law 13/2012, of 30 March, transposes directives on domestic electricity and gas markets and electronic communications. It also introduces measures to correct deviation in imbalances between costs and revenues in the electricity and gas sectors.* This decree has a double objective: firstly, comply with the obligation to transpose the latest EU directives on electricity, gas and electronic communications, thus closing those disciplinary proceedings that had been initiated by the Commission resulting from deadlines for transposition being exceeded, and avoiding significant financial penalties that could result from these proceedings based on the provisions of the Lisbon Treaty, and secondly, to establish, as a matter of urgency, a battery of measures that ultimately aim to eliminate the imbalances between revenues and costs of electricity and gas systems.

- *Royal Decree-Law 20/2012, of 13 July, on measures to ensure budgetary stability and the promotion of competitiveness,*

The Spanish Electricity System in 2012 00

which establishes numerous provisions regulating different areas of economic activity both in the public sector as well as the private sector, amongst which the electricity sector is included, and for which new measures are set out aimed at achieving the revenue adequacy to cover the regulated costs in 2012.

- *Law 15/2012, of 27 December, on tax measures for energy sustainability*, which regulates the new taxes that will be levied on the power generation activity and the green cents on the consumption of certain fuels, the proceeds shall go to finance regulated costs of the electricity system. For this latter purpose, it includes an additional provision related to the costs of the electricity system, which aims to ensure that the annual General State Budgets incorporate, as another expense item, the estimated revenue to be collected through those taxes and green cents regulated by Law 15/2012.

  Also, the final provision of Law 15/2012 amends paragraph 2 of article 15 of Law 54/1997 to determine that the costs of regulated activities no longer be funded exclusively with access toll revenues collected but that they may also be funded through allotments included in the General State Budgets. Thus, adapting Law 54/1997 to make it consistent with the transfer of funds from the General State Budgets to the settlement system of regulated costs, regulated by Law 15/2012.

- *Law 17/2012, of 27 December, on the General State Budgets for 2013*, with regard to the electricity sector regulates the monthly transfer of the actual taxes collected on the power generation activity and green cents regulated by Law 15/2012 to the settlement system of regulated electricity system costs.

- *Royal Decree Law 29/2012, of 28 December, on enhancing the management of the Special Household Employee Scheme, the social protection afforded and other measures of a financial and social nature*, and which amends two sections of the twenty-first additional provision of Law 54/1997, so that the new wording allows both regulatory and numerical fitting of imbalances between revenues and costs in 2012 and 2013 and beyond, with full legal guarantees.

  Royal Decree-Law 29/2012 also provides for the possibility of not applying the economic premium regime to the facilities listed in the pre-assignment register that are not completely finalized upon the expiration of the deadline established for it to be registered in the special regime.

Lastly, although with a lower regulatory status than those aforementioned, among the relevant provisions regarding the electricity sector published in 2012, also noteworthy is Order IET/2598/2012, of 29 November, which initiates the procedure for making proposals for the development of the electricity transmission grid, and in turn starts a new planning process for the gas and electricity sectors, after dropping, as a result of changing macroeconomic scenario, the current procedure for the period 2012-2020, in accordance with that set out in Royal Decree-Law 13/2012.

00 The Spanish Electricity System in 2012

Demand for electrical energy

Electricity demand on the Spanish peninsular stood at 251,710 GWh at the end of 2012, 1.5 % below that registered in 2011. After having factored in seasonal and working patterns, the decline attributable to economic activity stood at 2 %. This decrease is the result of a continued decline in electricity consumption throughout the year, in line with the pace of contraction of the Spanish economy over the same period.

In the extra-peninsular systems as a whole – Balearic Islands, Canary Islands, Ceuta and Melilla – electricity demand recovered slightly in 2012 after three consecutive years of decline, reaching 15,139 GWh, an increase of 0.7 % compared to 2011. On an individual basis, the Balearic Islands' system grew 1.3 %, the Canary Islands' grew by 0.2 %, Ceuta by 4.5 % and Melilla by 1.1 %.

As a result, overall electricity demand in Spain registered a rate of decrease of 1.4 % compared to 2011, with a total of 266,849 GWh.

COMPONENTS OF THE PENINSULAR DEMAND VARIATION AT POWER STATION BUSBARS. (%)

	%11/10	%12/11
Demand at power station busbars	**-1.9**	**-1.5**
Components (1)		
Temperature effect (2)	-1.0	0.7
Working pattern effect	0.1	-0.3
Economic activity effect and others	-1.0	-2.0

(1) The sum of the effects is equal to the percentage of variation in the total demand. (2) Average daily temperatures below 15º C in winter and above 20º C in summer produce an increase in demand.

ANNUAL EVOLUTION OF THE SPANISH GDP AND THE DEMAND FOR ELECTRICAL ENERGY ON THE PENINSULAR (%)

		Δ Demand	
	GDP	Per economic activity	Δ Demand
2008	0.9	0.7	1.1
2009	-3.7	-4.7	-4.7
2010	-0.3	2.7	3.1
2011	0.4	-1.0	-1.9
2012	-1.4	-2.0	-1.5

The annual maximum of instantaneous, hourly and daily demand for the peninsular system again stood below the all-time maximums recorded five years ago. On 13 February at 8:21 pm there was maximum demand for instantaneous power of 43,527 MW (the all-time record of 45,450 MW was set in 2007). On the same day in February, between 8:00 pm and 9:00 pm, the maximum hourly demand was set at 43,010 MWh (the all-time record of 44,876 MWh was set in 2007). Also, on 8 February the annual maximum of daily energy of 873 GWh was reached (the all-time record of 906 GWh was set in 2007).

Regarding the summer period, on 28 June at 1:23 pm the maximum annual demand for instantaneous power was registered at 39,124 MW, which is below the all-time maximum record of 41,319 MW set in July 2010.

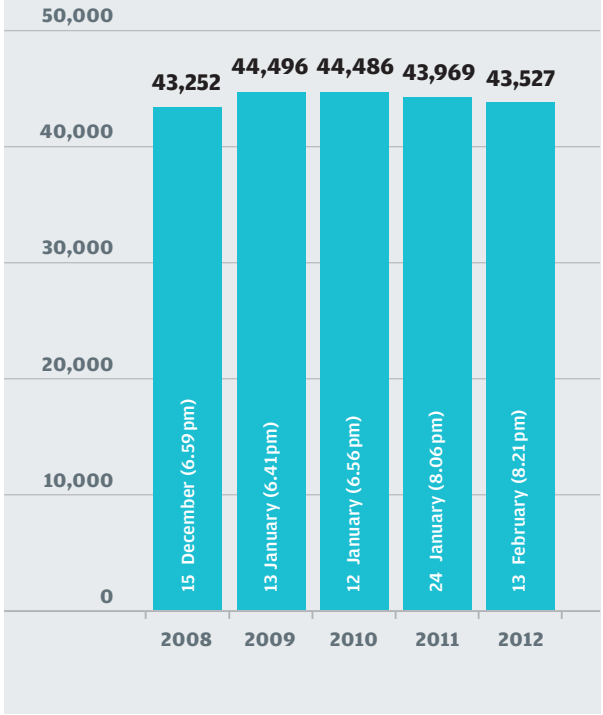
In 2012, in the extra-peninsular systems, a maximum average hourly power demand of 1,206 MW was set for the Balearic Islands (the all-time record of 1,226 MW was set in 2008) and 1,439 MW for the Canary Islands

The Spanish Electricity System in 2012 00

(all-time record of 1,752 MW set in 2010). In Ceuta, the maximum hourly demand reached recorded in the year was 39 MWh (the all-time record of 41 MWh was set in 2008).

Regarding Melilla, on 14 February 2012 new all-time records for instantaneous power and hourly energy were set. The record for instantaneous power was set at 9:35 pm with a value of 40.95 MW, representing an increase of 0.7 % with respect to the previous record of 40.67 MW set on 5 February, 2012 at 9:19 pm. The record for hourly energy was set between 9:00 pm and 10:00 pm with 39.92 MWh, 1.4 % above the previous record of 39.37 MWh, recorded at the same time on February 5, 2012.

MAXIMUM INSTANTANEOUS POWER ON THE PENINSULA (MW)



00 The Spanish Electricity System in 2012

POWER BALANCE AS AT 31.12.2012. NATIONAL ELECTRICITY SYSTEM

	Peninsular system		Extra-peninsular systems		National total	
	MW	%12/11	MW	%12/11	MW	%12/11
Hydroelectric	17,761	1.1	1	0.0	17,762	1.1
Nuclear	7,853	0.0	-	-	7,853	0.0
Coal (1)	11,248	-3.2	510	0.0	11,758	-3.1
Fuel/gas	520	-37.6	2,909	0.9	3,429	-7.8
Combined Cycle	25,340	0.1	1,854	0.0	27,194	0.1
Total ordinary regime	**62,722**	**-0.7**	**5,274**	**0.5**	**67,996**	**-0.7**
Hydroelectric	2,042	-0.1	0.5	0.0	2,042	-0.1
Wind	22,573	7.4	149	0.0	22,722	7.4
Solar photovoltaic	4,298	5.8	240	18.1	4,538	6.4
Solar thermoelectric	2,000	100.3	-	-	2,000	100.3
Renewable thermal	953	9.9	3	167.5	957	10.2
Non-renewable thermal	7,240	-0.4	121	2.9	7,361	-0.3
Total special regime	**39,106**	**7.9**	**514**	**9.0**	**39,620**	**7.9**
Total	**101,828**	**2.4**	**5,787**	**1.2**	**107,615**	**2.3**

(1) As of 1 January 2011, GICC (Elcogás) has been included in the National coal figures as, in accordance with Royal Decree 134/2010, this power station is obliged to participate, as a selling unit that uses local coal as fuel, in the process of resolving restrictions regarding the guarantee of supply.

NATIONAL ELECTRICITY BALANCE

	Peninsular system		Extra-peninsular systems		National total	
	GWh	%12/11	GWh	%12/11	GWh	%12/11
Hydroelectric	19,455	-29.4	0	-	19,455	-29.4
Nuclear	61,470	6.5	-	-	61,470	6.5
Coal (1)	54,721	25.8	2,941	-3.0	57,662	24.0
Fuel/gas (2)	0	-	7,541	0.8	7,541	0.8
Combined Cycle	38,593	-23.9	3,917	-11.1	42,510	-22.9
Ordinary regime	**174,239**	**-2.9**	**14,399**	**-3.5**	**188,638**	**-3.0**
Generation consumption	-7,889	8.8	-850	-3.5	-8,739	7.5
Hydroelectric	4,633	-12.5	2	6.9	4,635	-12.5
Wind	48,103	14.2	369	2.4	48,472	14.1
Solar photovoltaic	7,803	10.0	368	10.3	8,171	10.0
Solar thermoelectric	3,443	87.9	-	-	3,443	87.9
Renewable thermal	4,729	10.4	8	-76.9	4,736	9.7
Non-renewable thermal	33,442	4.3	274	2.4	33,716	4.3
Special regime	**102,152**	**10.2**	**1,020**	**2.4**	**103,172**	**10.2**
Net generation	**268,502**	**1.3**	**14,569**	**-3.1**	**283,071**	**1.1**
Pumped storage consumption	-5,023	56.2	-	-	-5,023	56.2
Peninsula-Balearic Islands' link (3) (4)	-570	-	570	-	0	-
International exchanges (4)	-11,200	83.9	-	-	-11,200	83.9
Demand (at power station busbars)	**251,710**	**-1.5**	**15,139**	**0.7**	**266,849**	**-1.4**

(1) As of 1 January 2011, GICC (Elcogás) has been included in the National coal figures as, in accordance with Royal Decree 134/2010, this power station is obliged to participate, as a selling unit that uses local coal as fuel, in the process of resolving restrictions regarding the guarantee of supply.
(2) Generation from auxiliary generating units is included In the Balearic Islands' electricity system. (3) Testing phase. (4) Positive values indicate an import exchange balance and negative values show an export exchange balance.

The Spanish Electricity System in 2012 00

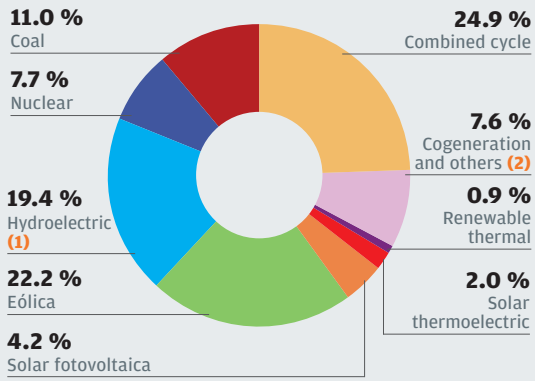
Demand coverage

The installed **power capacity** in the Spanish peninsular system stood at 101,828 MW at year end, 2.4 % more than in December 2011. On one hand, a total of an additional 3,080 MW of renewable energy was installed, a figure that includes the commissioning of a new 192 MW hydroelectric power station and on the other hand, the decommissioning of two coal facilities and one of fuel-gas with a combined capacity of 686 MW .

At year end, renewables represented 46 % of the total power on the peninsula, two points more than the previous year. Within this type of energy, it should be noted that the upward trend of wind power has been maintained and closed the year with 22,573 MW of installed power (1,562 MW more than in 2011), this represents 22 % of total capacity on the Spanish peninsula. Similarly, solar technologies have continued to increase their production capacity compared with the previous year (an additional 237 MW of photovoltaic and an additional 1,001 MW of thermoelectric) together with the previously existing capacity this exceeded 6,000 MW of installed capacity by the end of 2012.

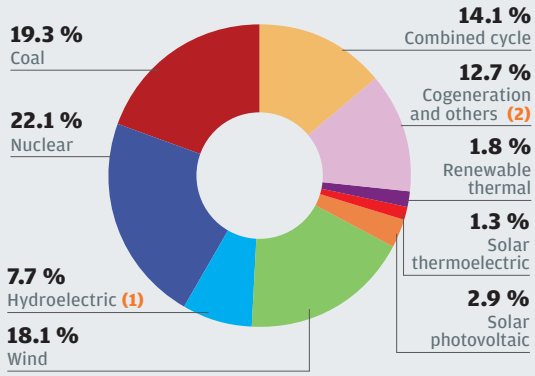
Regarding **demand coverage on the Spanish peninsula,** for yet another year, nuclear headed the list covering 22.1 % of demand (21 % in 2011), followed by coal-fired power stations that increased their contribution to 19.3 % (15.4 % in 2011) and wind power with a share of 18.1 % (16 % in 2011). In contrast, combined cycle and hydroelectric reduced their contributions to 14.1 % and 7.7 % respectively (18.8 % and

INSTALLED POWER AS AT 31.12.2012. SPANISH PENINSULA ELECTRICITY SYSTEM



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

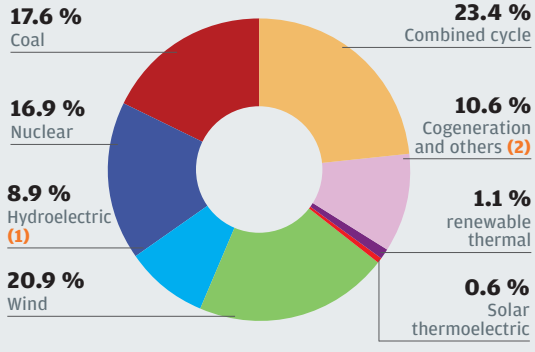
ANNUAL DEMAND COVERAGE OF PENINSULAR ELECTRICITY DEMAND



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

COVERAGE OF PENINSULAR MAXIMUN HOURLY DEMAND 43,010 MWH

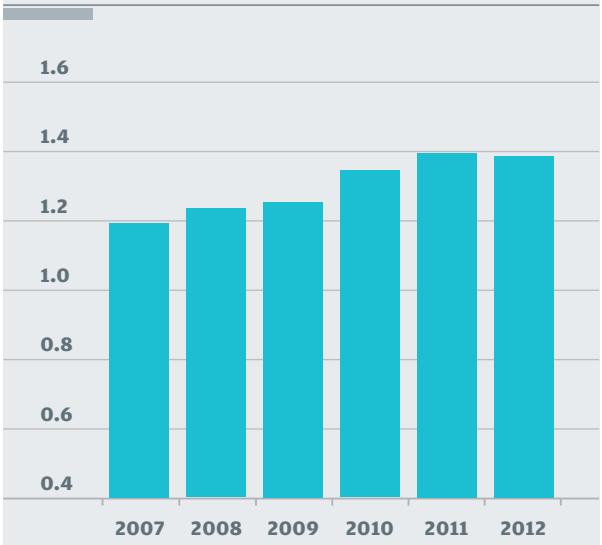
13 February 2012 (9:00 pm -10:00 pm)



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

00 The Spanish Electricity System in 2012

EVOLUTION OF THE COVERAGE INDEX ON THE PENINSULA



IC = Pd/Ps
IC: Coverage index
Pd: Available power in the system
Ps: Peak level of power demanded from the system

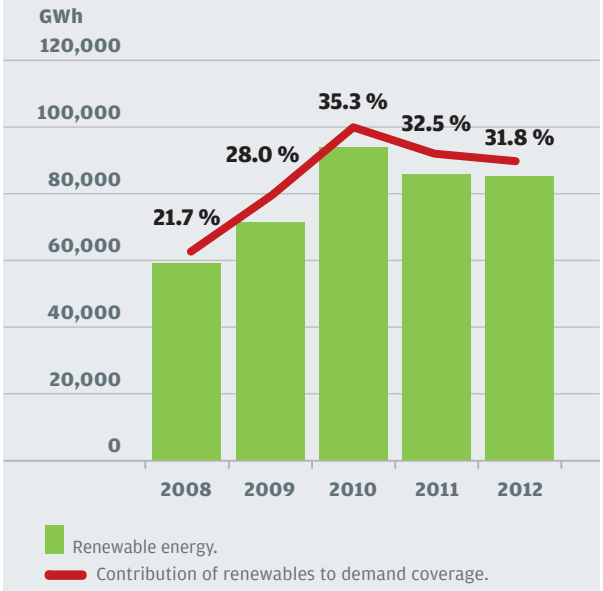
11.5 % in 2011).The remaining technologies have maintained a similar contribution, or have registered slight variations of less than one point on the previous year.

In 2012, as a whole technologies classified as renewables covered 31.8% of the demand on the peninsula. This value highlights the important role played by these energies to meet demand, although the level is below that of the previous years due to a marked decline in hydroelectric generation.

In 2012, CO_2 emissions from the electricity system on the Spanish were estimated at 80 million tonnes, 10 % higher than the previous year, this is mainly due to increased coal-fired generation.

Regarding energy exchanges between the peninsular system and other electricity systems; in August 2012, the exchange of electrical energy between the electricity system on the peninsula and that of the Balearic Islands commenced, registering a net transfer balance of electricity to the latter of 570 GWh. As for international exchanges, a net export balance

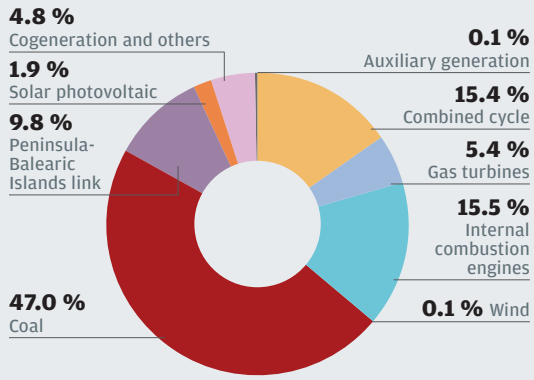
EVOLUTION OF RENEWABLE ENERGIES ON THE PENINSULA



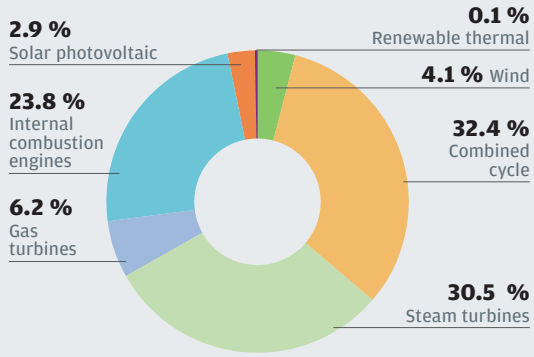
EVOLUTION OF THE EMISSIONS FACTOR ASSOCIATED TO ELECTRICITY GENERATION ON THE PENINSULAR (tCO_2/MWh)

The Spanish Electricity System in 2012 00

ANNUAL ELECTRICITY DEMAND COVERAGE OF THE BALEARIC ISLANDS



ANNUAL ELECTRICITY DEMAND COVERAGE OF THE CANARY ISLANDS



of 11,200 GWh was covered with 4.2 % of the overall peninsular generation.

In the extra-peninsular systems, the energy transferred from the Spanish peninsula to the Balearic Islands covered 9.8 % of the demand for these Islands, thus reducing the contribution of coal to 47 % (49 % in 2011) and that of combined cycle to 15.4 % (23.1 % in 2011). As for the Canary Islands' electricity system, demand coverage was very similar to that of 2011, with combined cycle and steam turbine systems covering over 60 % of global demand.

Ordinary regime

In terms of electricity generation, for yet another year, those power stations classified as ordinary regime continued on a downward trend that began in 2008. In 2012, a gross electricity production was registered of 174,239 GWh, a figure comparable to that recorded in 2000 and 2.9 % lower than that of 2011.

- In 2012, the hydroelectric power stations generated 19,455 GWh, 29.4 % lower than in 2011. This notable fall reduced the contribution of hydroelectricity towards the gross generation from ordinary regime to 11.1 % (15.4 % in 2011).

- The production from combined cycle has continued to fall since 2009 and registered 38,593 GWh in 2012, down 23.9 % on the previous year. This decline reduces its share in the gross generation from ordinary regime to 22.1 % compared to 28.3 % in 2011.

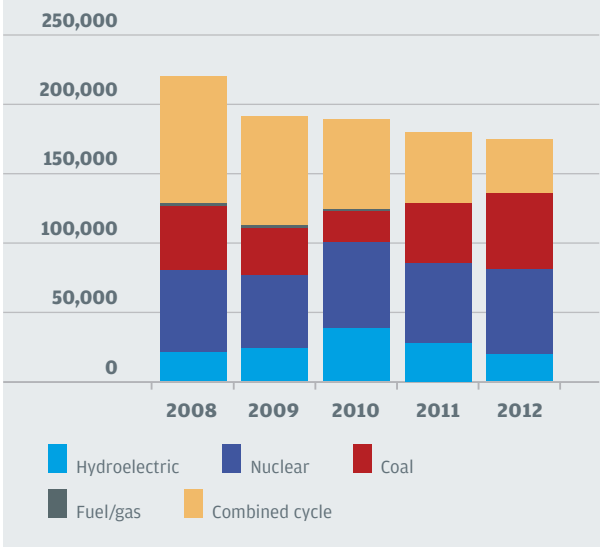
- Nuclear power stations increased production to 61,470 GWh, which is up 6.5 % compared to 2011. This technology ranks first place amongst the ordinary regime generating facilities providing 35.3 % of the annual gross production (32.2 % in 2011).

- Coal-fired generation increased by 25.8 % with respect to the previous year, to reach 54,721 GWh, contributing 31.4 % of the gross production from ordinary regime (24.2 % in 2011).

From a hydrological point of view, 2012 has been extremely dry as a whole resulting in the lowest producible hydroelectric in the last fifty years, 12,640 GWh. This producible figure

00 The Spanish Electricity System in 2012

EVOLUTION OF GROSS PRODUCTION (MEASURED AT POWER STATION BUSBARS) FROM ORDINARY REGIME ON THE PENINSULA (GWh)



is 54 % lower than the all-time average value and 44 % lower than that recorded in 2011.

The hydroelectric reserves in the set of reservoirs on the peninsula, as a whole, finished the year at 38 % of their total capacity, compared to 52 % of reserves existing at the end of 2011.

Special regime

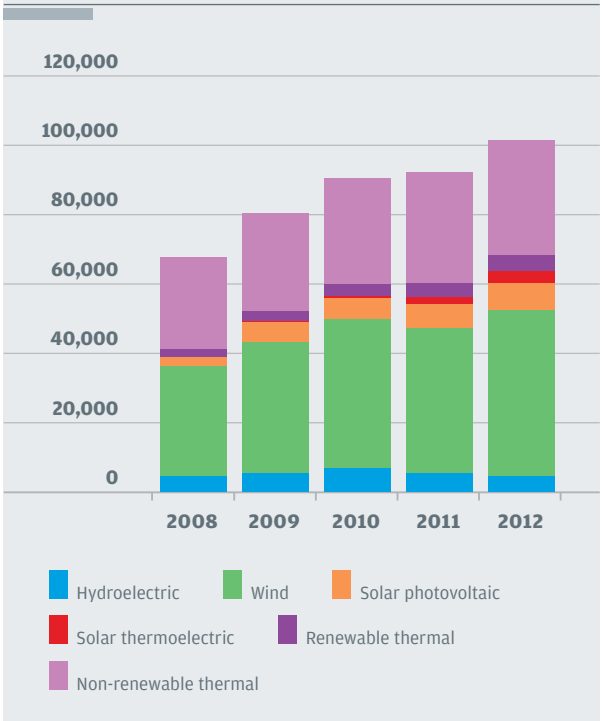
Energy produced by facilities classified as special regime has been increasing year on year, reaching in 2012 a total of 102,152 GWh. This amount of energy exceeded the previous year's figure by 10.2 % and represented 38% of the overall energy production of the peninsular system in 2012.

The continued growth in the volume of special regime generation is mainly due to the progressive increase of renewable energy, with an installed capacity which stood at 31,866 MW at the end of 2012 (2,885 MW more than in 2011).

Regarding these energies noteworthy for yet another year is wind power, with an installed capacity at year end of 22,573 MW, registering a production of 48,103 GWh, an increase of 14.2 % compared to 2011, and a contribution to the annual energy production on the Spanish peninsula of 18.1 %, two points higher than in 2011.

In 2012, maximum wind power production values reached in previous years were exceeded. On 24 September at 3:03 am the contribution of wind power exceeded

EVOLUTION OF NET PRODUCTION FROM SPECIAL REGIME ON THE PENINSULA (GWh)



The Spanish Electricity System in 2012 00

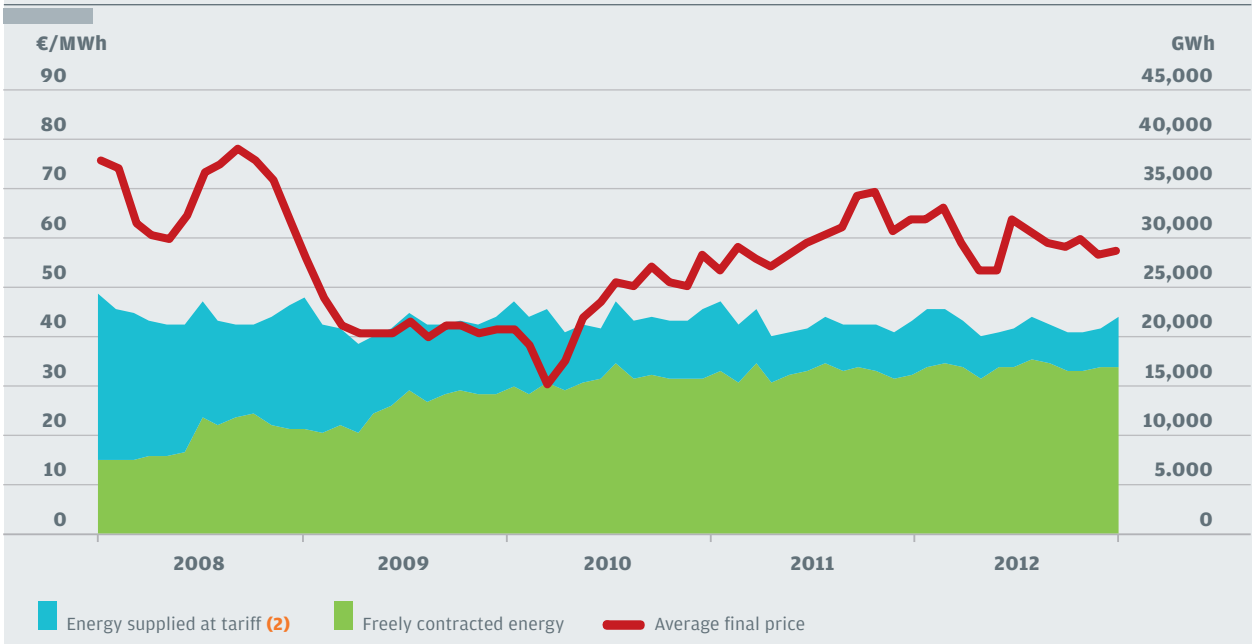
64 % of demand coverage and on 18 April at 4:41 pm instantaneous wind power production reached 16,636 MW. That same day, new all-time records of wind power generation were reached for hourly energy (16,455 MWh) and daily energy (334, 850 MWh). Similarly, in April, November and December wind power generation technology was the biggest contributor to monthly energy production in the Spanish peninsula electricity system, reaching 25.5 %, 21.7 % and 24.1 %, respectively.

Solar farm generating facilities as a whole maintained their strong growth reaching 6,298 MW of power by the end of 2012 (photovoltaic 4,298 MW and thermoelectric 2,000 MW). Photovoltaic energy stood at 7,803 GWh (10 % more than the previous year) and thermoelectric energy at 3,443 GWh compared to 1,832 GWh in 2011). These increases have raised the overall participation of these technologies in the global generation of the Spanish peninsula electricity system to 4.2 % (3.4 % in 2010).

System operation

During 2012, the energy contracted in the electricity market (national demand – energy supply at tariff plus free market contracting – and the balance of exchanges) was 1 % lower than the previous year. Of this total, 79.6 % corresponded to free market contracting and 20.4 % to energy supply at tariff.

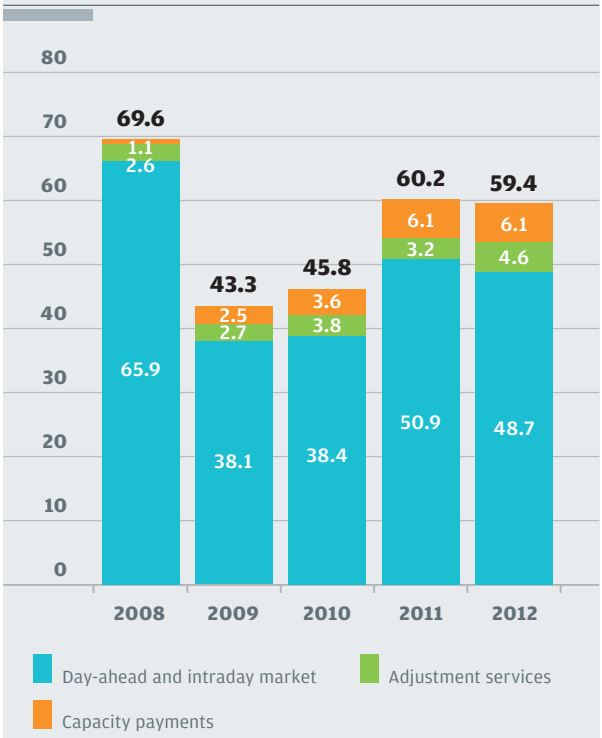
EVOLUTION OF MONTHLY ENERGY AND PRICES IN THE ELECTRICITY MARKET (1)



(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, as of that date, of the Last Resort Tariff.

00 The Spanish Electricity System in 2012

EVOLUTION OF THE COMPONENTS OF THE AVERAGE FINAL PRICE IN THE ELECTRICITY MARKET (€/MWh)



The average final purchase price of energy in the electricity market was € 59.42 / MWh, 1.3 % lower than in 2011.

The overall price of the day-ahead and intraday markets represented 82 % of the total price, whilst the resultant cost of the system adjustment services represented 7.8 % and the remaining 10.2 % from costs derived from capacity payments.

In the day-ahead market a total of 178,337 GWh was managed, with a weighted average price of € 48.42 /MWh. Compared to the previous year, the price decreased by 4.6 %, whilst the energy acquired showed a negative growth of 2.2 %.

In the intraday market, the volume of energy traded reached 47,342 GWh. The weighted average price of managed energy in the intraday market stood at € 48.05 /MWh, 0.8% below that of the day-ahead market.

The energy managed in the system adjustment services markets in 2012 was 31,333 GWh, 13 % lower than that registered in the same period the previous year. The impact of these services in the final price of energy (excluding the restrictions regarding the security of supply) was of €4.61/MWh, 43.6 % higher than in 2011.

During 2012, the energy scheduled to resolve restrictions regarding security of supply reached a total of 12,008 GWh, which represented 53.97 % of the maximum volume of authorised production during 2012 from power stations sined up for this procedure.

The energy scheduled to resolve technical restrictions of the Daily Base Operating Schedule (PDBF) was 6,162 GWh upward and 61 GWh downward, with an impact on the final average price of € 2.09 /MWh compared to € 1.85 /MWh in the previous year.

The annual volume of additional upward power reserve stood at 1,635 GW with an impact on the final average price of energy of € 0.25 / MWh.

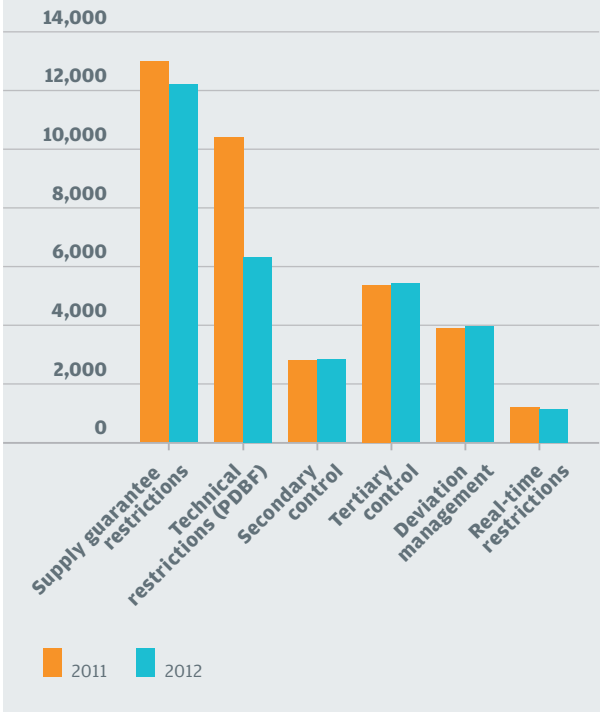
This new market mechanism, regulated by Operating Procedures P.O. 3.9 “Contracting and managing additional upward power reserve” approved by Resolution of the Secretary of State for Energy, of

The Spanish Electricity System in 2012 00

24 February, 2012, came into force on 10 May, 2012 for the scheduling as of 11 May, 2012.This management tool is essential for the Spanish electricity system due to the growth of unmanageable renewable energy (mainly wind and photovoltaic). Moreover, this new mechanism encourages the flexibility of the electricity production facilities, so that they are able to adapt as quickly as possible to the needs of demand in each moment.

In 2012, the average hourly power band for secondary control grew to 1,231 MW, with an impact on the final average price of € 1.35/ MWh, which is 77.9 % higher than the previous year.

ENERGY MANAGED IN THE SYSTEM ADJUSTMENT SERVICES (GWh)



The management of ancillary services and deviation management, plus real-time constraints, meant an impact of € 0.91/MWh on the average final price of energy, a value above that of € 0.60 /MWh in 2010.

The energy managed in the secondary control market in 2012 reached 2,773 GWh, tertiary control energy stood at 5,322 GWh, energy for deviation management was 3,890 GWh and that for real-time constraints at 1,117 GWh.

The net deviations measured (difference between the energy measured at the power stations busbars and the scheduled energy in the market) that the system had to manage through market adjustment services reached a total of 6,818 GWh upward and 7,507 GWh downward, with an average price of € 38.56 /MWh upward and € 53.18 /MWh downward.

00 The Spanish Electricity System in 2012

International exchanges

The volume of energy traded through exchange schedules with other countries stood at 23,731 GWh, representing an increase of 29.2% compared to 2011. Exports grew to 17,459 GWh (an increase of 42.7 % compared to 2011), while imports stood at 6,722 GWh (up 2.3 % on that reached in 2011).

As a result, the balance of the electricity exchange schedules continued, for the ninth consecutive year, to be as an exporter, reaching a value of 11,187 GWh in 2012, a figure that represents a growth of 83.5 % with regard to 2011.

The monthly evolution of the net balance of scheduled electricity exchanges of the Spanish interconnections was as an exporter in every month of the year, reaching an all-time monthly record in February (1,380 GWh), which was later exceeded in October (1,457 GWh).

EVOLUTION OF SCHEDULED INTERNATIONAL EXCHANGES (GWh)

NET SCHEDULED INTERNATIONAL EXCHANGES (GWh)

	2012
Transactions (market + physical bilateral contracts)	**-11,194**
Traders/retailers	-3,292
Interconnection balance with Portugal	-7,902
Counter-Trading France – Spain	**2**
Counter-Trading Portugal - Spain	**5**
Support exchanges	**0**
Total	**-11,187**

Import balance (positive value). Export balance (negative value).

In 2012, the scheduled annual balance of electricity exchanges, broken down by interconnection, showed increases on the previous year, in the cases of France, Portugal and Morocco, with values of 25.3 %, 181 % and 9% respectively, and the interconnection with Andorra registered a fall of 6.2 %.

The net balance of electricity exchanges regarding the interconnection with France was that of importer, whilst it was that of exporter regarding the rest of the interconnections.

The commercial capacity utilisation rate in the interconnection with France increased in the import direction, reaching a value close to 50 %, and decreased by 17.5 % in the export direction with respect to 2011.

The Spanish Electricity System in 2012 00

The interconnection with Portugal reached an average utilisation rate of 58 % in the export direction and 2 % in the import direction. Lastly, in comparison to 2011, there was a slight increase in the average exchange capacity utilisation rates in the export direction for the interconnection with Morocco (63 % compared to 60 % in 2011).

Exchange capacity management system of the Spain-France interconnection

During 2012, the number of agents authorised to participate in the explicit cross-border capacity auction system reached in this interconnection reached a total of 24, by 31/12/2012.

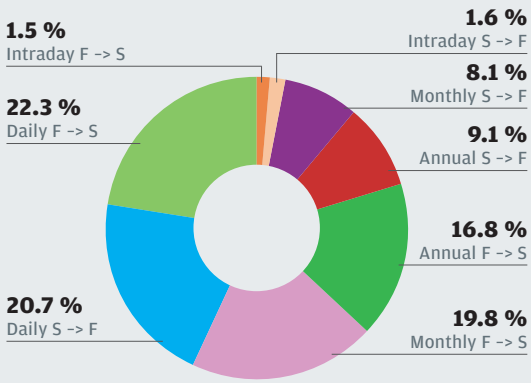
The amount of congestion revenues collected during 2012 was € 78.4 million, with 50 % of this amount corresponding to the Spanish electricity system.

The marginal price of the annual capacity auction for 2012 in the direction Spain to France registered a value of € 4.47 /MW, representing a decrease of 33.2 % with respect to the price recorded in the annual capacity auction for 2011 (€ 6.69 /MW). For the first time since the start of the auction system in 2006, the price of annual capacity in the direction France to Spain exceeded the price in the direction Spain to France. Hence, the resulting marginal price of the annual capacity auction for 2012 in the direction France to Spain was € 5.52 /MW, a value 2.6 times higher than the € 2.11 /MW registered in the annual capacity auction for 2011 for the direction France to Spain.

The maximum price of the capacity allocation in the monthly auctions, in the direction Spain to France, was € 16.07 /MW, registered in July and was the maximum value reached in that direction. In the direction France to Spain the maximum price was set at € 9.92 /MW, registered in November.

In 2012, it was deemed necessary to apply countertrading measures (establishment of exchange schedules, in a counter direction, when faced with reductions in capacity in order to assure already established commercial schedules), in a coordinated manner, between the electricity operators of Spain and France for a total of 21,413 MWh.

CONGESTION RENTS FROM CAPACITY AUCTIONS IN THE INTERCONNECTION WITH FRANCE
(78,413 € thousand)



00 The Spanish Electricity System in 2012

Exchange capacity management system of the Spain-Portugal interconnection

In 90 % of the hours in 2012, the daily MIBEL market price was the same in both directions owing to the fact that there was no congestion in the interconnection between Spain and Portugal. In those cases where congestion was identified in this interconnection, they corresponded to the Spain to Portugal direction (higher price in Portugal). The maximum price difference reached a value of € 48.09 /MWh on 15 April at 1:00 pm, registering a higher price in the area corresponding to the Portuguese system.

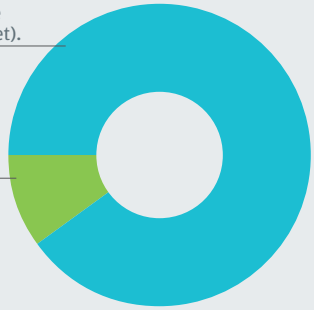
Congestion rents collected in this interconnection in 2012 amounted to € 8.7 million, with 50 % of this amount corresponding to the Spanish electricity system.This figure is more than double the congestion rents value registered in 2011 (€ 4.2 million).

HOURS WITH/WITHOUT CONGESTION IN THE INTERCONNECTION WITH PORTUGAL

90 %
Hours without congestion (same price in both directions in the day-ahead MIBEL market).

10 %
Hours with congestion (price in Spanish zone < price in Portuguese zone).

0 %
Hours with congestion (price in Spanish zone > price in Portuguese zone).



CONGESTION RENTS FROM MARKET SPLITTING IN THE INTERCONNECTION WITH PORTUGAL

	Thousands of €	(%)
Day-ahead market	7,774	89.06
Intraday market	955	10.94
Total	**8,729**	**100.00**

In 2012, it was deemed necessary to apply countertrading measures in this interconnection by establishing coordinated exchange schedules between the electricity operators of Spain and Portugal, always in the Portugal to Spain direction, for a total of 5,360 MWh.

INTERRUPTIBLE POWER IN PERIODS OF MAXIMUM DEMAND (MW)

Demand-side management

The demand-side management interruptibility service came into force on 1 July 2008, pursuant to that set out in ITC Order 2370/2007, of 26 July, which regulates the demand-side management interruptibility service for consumers that purchase their energy in the electricity generation market.

The Spanish Electricity System in 2012 00

In this way, industrial consumers who satisfy the pre-requisites established by law, become suppliers of this system operation service, after passing a prequalification and authorisation process by the system operator and subsequent formalisation of a contract between the parties.

At the end of 2012, there were 146 interruptibility contracts in force, of which 132 correspond to the Spanish peninsular system, 13 to the Canary Island system and 1 to the Balearic Island system.

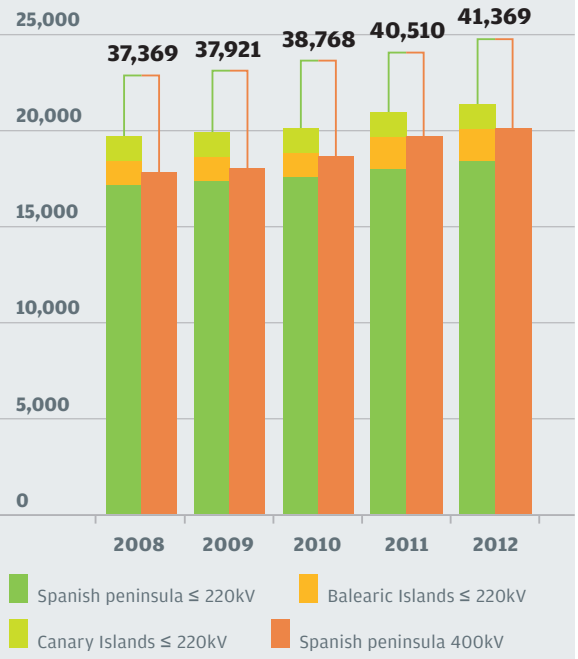
The total interruptible power manageable by the system operator during periods of maximum demand reaches 1,969.7 MW, of which 1,916.1 MW correspond to the peninsular system, 50.1 MW to the Canary Islands' system and 3.5 MW to the Balearic Islands' system.

Transmission grid

In 2012, the electricity transmission grid again experienced a significant boost in its development with the commissioning of facilities that strengthen the reliability and the degree of meshing of the grid and that allow new renewable energy to be incorporated.

During 2012, 860 km of new circuit was put in service, meaning that at the end of the year the national transmission grid totalled

EVOLUTION OF THE TRANSMISSION GRID IN SPAIN (km)



TRANSMISSION GRID FACILITIES IN SPAIN

	400 kV	≤ 220 kV			
	Peninsula	Peninsula	Balearic Islands	Canary Islands	Total
Total lines (km)	**20,104**	**18,429**	**1,544**	**1,293**	**41,369**
Overhead lines (km)	20,049	17,757	1,089	1,023	39,918
Submarine lines (km)	29	236	306	30	601
Underground lines (km)	26	436	149	240	850
Transformer capacity (MVA)	**73,834**	**63**	**2,498**	**1,625**	**78,020**

Accumulated data regarding km of circuit and transformer capacity as at 31 December 2012.

00 The Spanish Electricity System in 2012

41,369 km of circuit. Additionally, transformer capacity grew by 4,800 MVA, increasing the total national installed transformer capacity to 78,020 MVA.

Service quality

The results of the service quality indicators registered for 2012 demonstrate the good performance of the transmission grid, evaluated according to the availability of facilities that make up the grid and the electricity supply interruptions due to incidents in said grid.

The availability rate of transmission grid facilities on the Spanish peninsula, a figure which provides data regarding the how long each element of the transmission grid is available for service, was 97.79 % in 2012, a value slightly higher than that of 2011 which was 97.73 %. Regarding the electricity systems on the Balearic Islands and the Canary Islands, the availability rate in 2012 was 98.07 % and 98.83, respectively.

Regarding the continuity-of-supply indicators, 24 market outages in the peninsular transmission grid were registered during 2012, bringing the total figure of energy not supplied to 133 MWh for the year. Meanwhile, the average interruption time value stood at 0.278 minutes, the lowest level since 1992 and well below the reference value of 15 minutes established in article 26.2 of Royal Decree 1955/2000 of 1 December 2000.

With regard to the electricity systems of the Canary Islands and the Balearic Islands, the continuity-of-supply indicators showed a significant improvement compared to previous years. The values corresponding to energy not supplied and average interruption time on the Balearic Islands stood at 7 MWh and 0.62 minutes respectively, and on the Canary Islands at 10 MWh and 0.61 minutes.

TRANSMISSION GRID QUALITY

	ENS (MWh)			AIT (minutes)		
	Peninsula	Balearic Islands	Canary Islands	Peninsula	Balearic Islands	Canary Islands
2008	574	7	1,043	1.15	0.64	58.94
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	0.62	0.61

ENS: Energy not supplied. **AIT:** Average interruption time.

The Spanish Electricity System in 2012 00

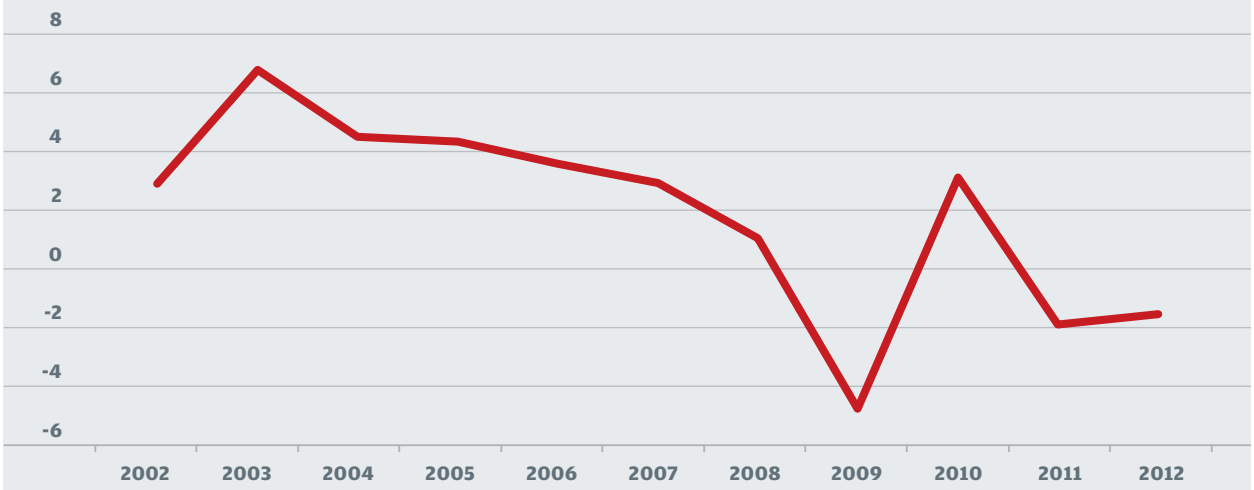
01 Electricity Demand

Peninsular system

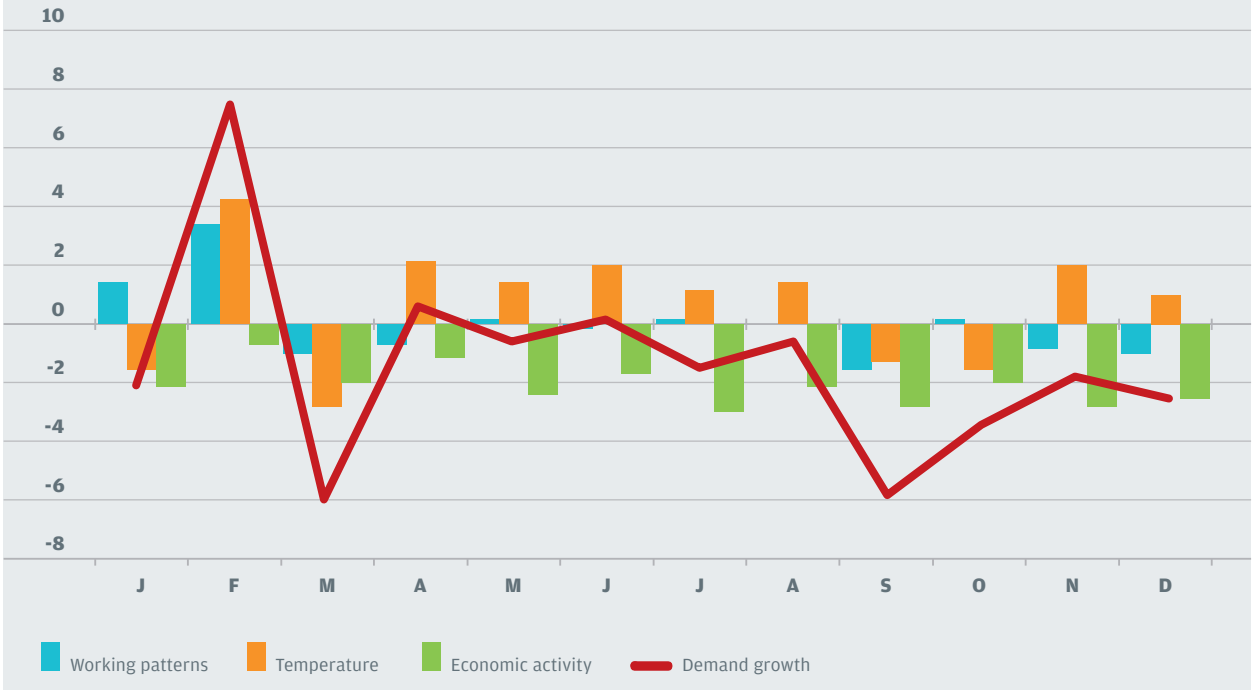
01 Electricity Demand

Peninsular system

EVOLUTION OF THE ANNUAL GROWTH OF THE ELECTRICITY DEMAND AT POWER STATION BUSBARS (%)



COMPONENTS OF THE MONTHLY GROWTH IN DEMAND (%)

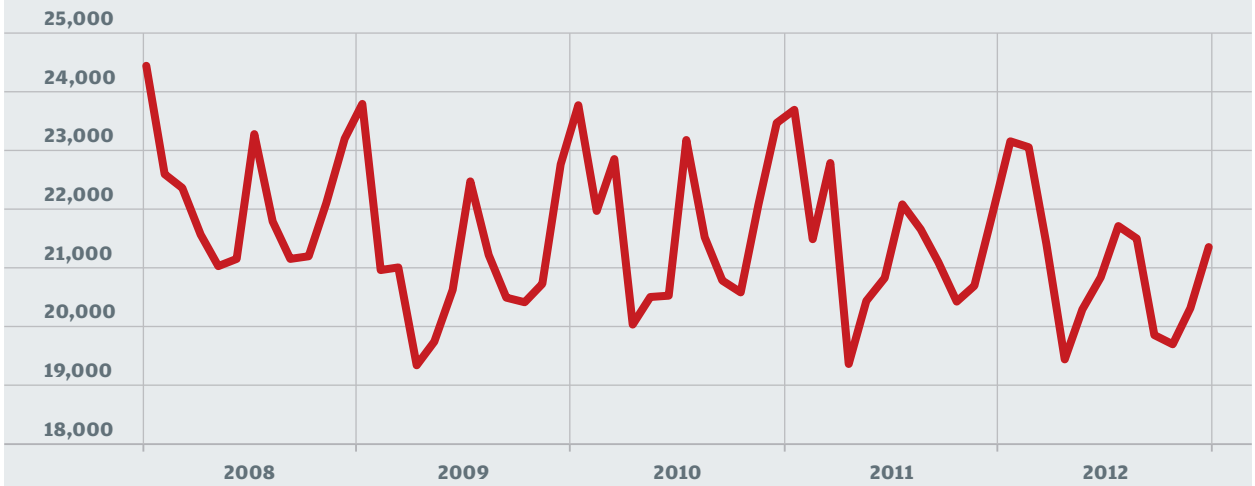


Electricity Demand 01
Peninsular system

MONTHLY DISTRIBUTION OF THE ELECTRICITY DEMAND AT POWER STATION BUSBARS

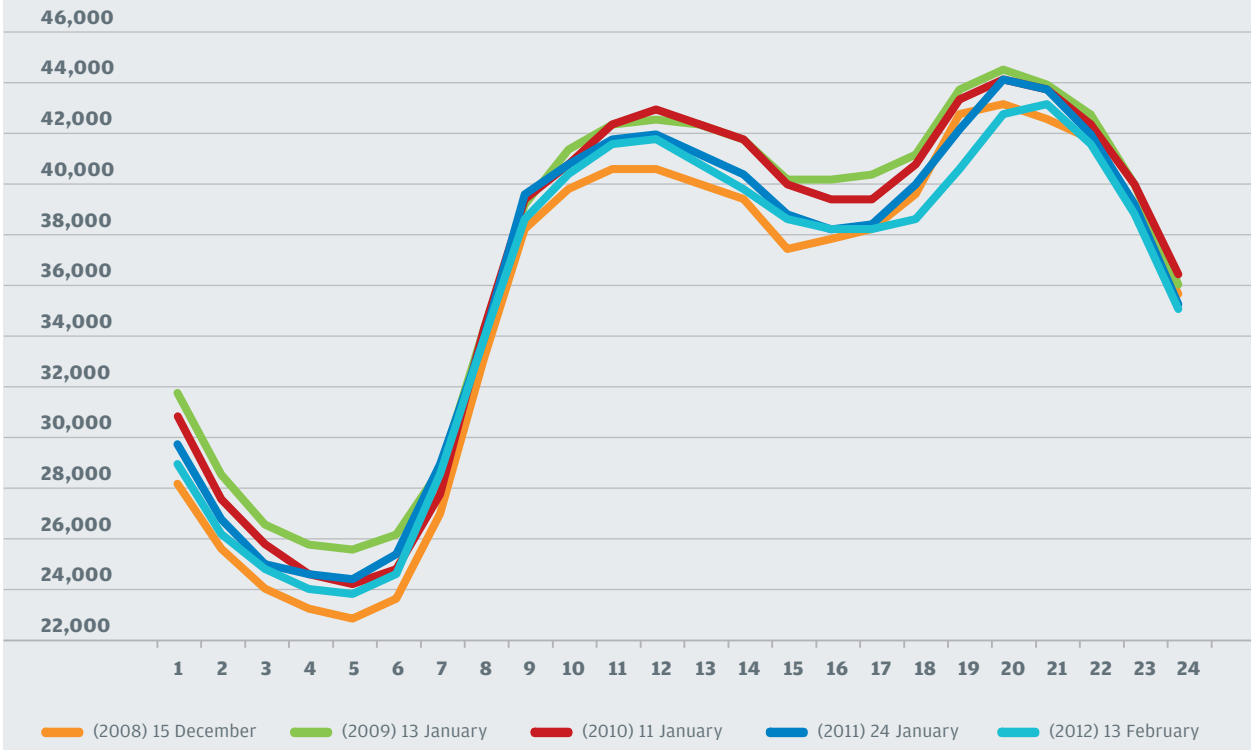
	2008		2009		2010		2011		2012	
	GWh	%	GWh	%	GWh	%	GWh	%	GWh	%
January	24,433	9.2	23,771	9.4	23,751	9.1	23,668	9.3	23,120	9.2
February	22,547	8.5	20,885	8.3	21,911	8.4	21,415	8.4	23,018	9.1
March	22,312	8.4	20,926	8.3	22,816	8.8	22,737	8.9	21,344	8.5
April	21,496	8.1	19,228	7.6	19,935	7.7	19,255	7.5	19,332	7.7
May	20,951	7.9	19,642	7.8	20,423	7.8	20,347	8.0	20,196	8.0
June	21,081	7.9	20,540	8.1	20,439	7.8	20,743	8.1	20,757	8.2
July	23,240	8.8	22,425	8.9	23,145	8.9	22,023	8.6	21,649	8.6
August	21,730	8.2	21,149	8.4	21,456	8.2	21,592	8.4	21,435	8.5
September	21,082	7.9	20,401	8.1	20,702	7.9	21,021	8.2	19,759	7.9
October	21,124	8.0	20,325	8.0	20,499	7.9	20,339	8.0	19,592	7.8
November	22,047	8.3	20,644	8.2	22,012	8.4	20,615	8.1	20,227	8.0
December	23,164	8.7	22,725	9.0	23,444	9.0	21,877	8.6	21,280	8.5
Total	**265,206**	**100.0**	**252,660**	**100.0**	**260,530**	**100.0**	**255,631**	**100.0**	**251,710**	**100.0**

MONTHLY EVOLUTION OF THE ELECTRICITY DEMAND AT POWER STATION BUSBARS (GWh)

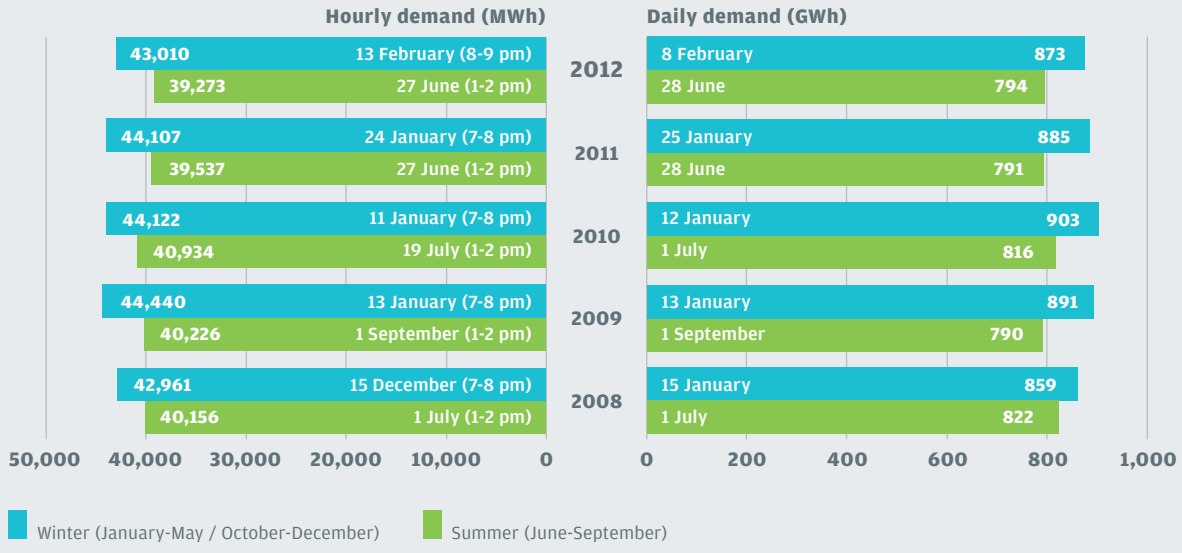


01 Electricity Demand
Peninsular system

LOAD CURVES FOR THE DAYS OF MAXIMUM HOURLY DEMAND (MWh)

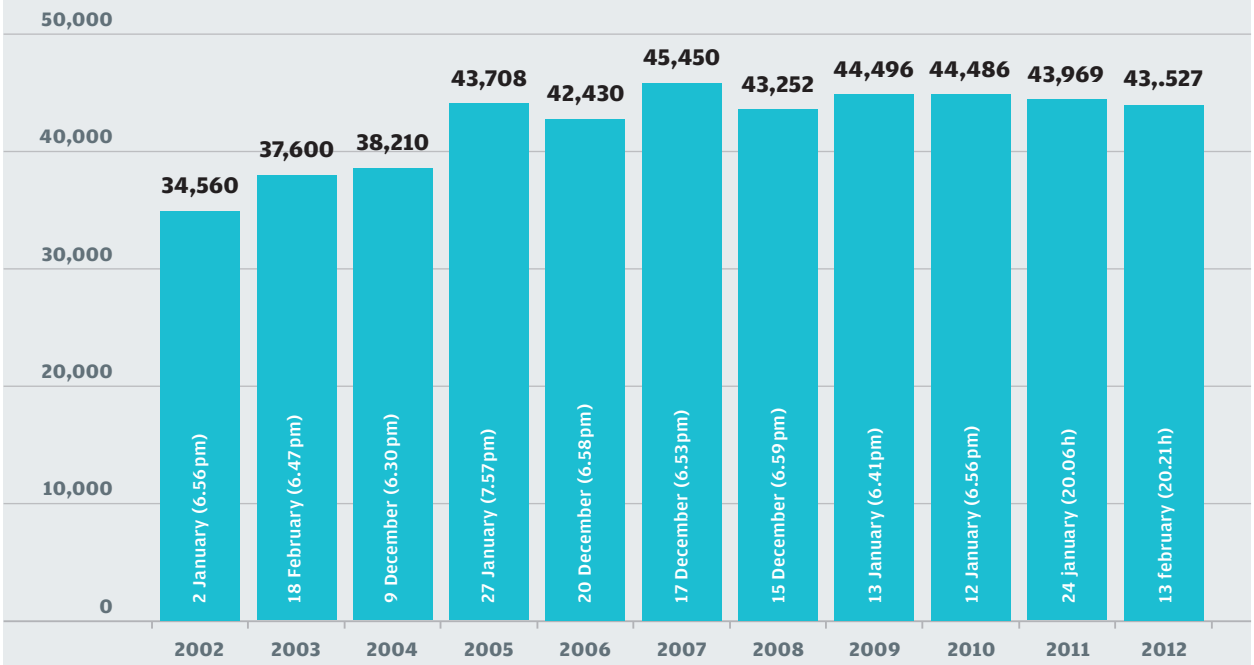


MAXIMUN HOURLY AND DAILY ELECTRICITY DEMAND



Electricity Demand 01
Peninsular system

INSTANTANEOUS PEAK POWER DEMAND (MW)



02 Demand Coverage

Peninsular system

02 Demand Coverage
Peninsular system

COVERAGE OF MAXIMUN HOURLY DEMAND (MWh)

	2008 15 December 7-8pm	2009 13 January 7-8pm	2010 11 January 7-8pm	2011 24 January 7-8pm	2012 13 February 8-9pm
Hydroelectric	4,683	4,306	6,946	8,469	3,435
Pumped storage	1,257	1,641	1,566	1,264	1,537
Hydroelectric	**5,940**	**5,947**	**8,512**	**9,733**	**4,972**
Nuclear	6,367	7,344	5,410	6,486	7,463
Coal	7,121	7,633	5,021	2,878	7,789
Fuel / gas	350	264	389	0	0
Combined cycle	12,052	17,038	16,284	11,586	10,331
Thermal	**25,891**	**32,279**	**27,104**	**20,951**	**25,583**
Total scheduled production	**31,831**	**38,226**	**35,616**	**30,683**	**30,555**
Total ordinary regime	**31,831**	**38,226**	**35,616**	**30,683**	**30,555**
Total special regime	**12,812**	**7,809**	**10,010**	**14,091**	**15,165**
Andorra	-82	-59	-23	-59	-30
France	-400	-400	-500	-300	-1,000
Portugal	-500	-435	-381	442	-930
Morrocco	-700	-700	-600	-750	-750
International physical energy exchange balance (1)	**-1,682**	**-1,594**	**-1,504**	**-667**	**-2,710**
Demand at power station busbars	**42,961**	**44,440**	**44,122**	**44,107**	**43,010**

(1) Positive value: import balance; Negative value: export balance.

ANNUAL EVOLUTION OF INSTALLED POWER (MW)

	Installed power as at 31 December				
	2008	2009	2010	2011	2012
Conventional and mixed hydroelectric	14,808	14,808	14,817	14,820	15,015
Pumped storage	2,747	2,747	2,747	2,747	2,747
Hydroelectric	**17,554**	**17,554**	**17,564**	**17,567**	**17,761**
Nuclear	**7,716**	**7,716**	**7,777**	**7,853**	**7,853**
Coal (1)	**11,359**	**11,359**	**11,380**	**11,620**	**11,248**
Fuel / gas	**4,401**	**3,008**	**2,282**	**833**	**520**
Combined cycle	**21,726**	**23,116**	**25,285**	**25,319**	**25,340**
Total ordinary regime	**62,757**	**62,752**	**64,288**	**63,192**	**62,722**
Hydroelectric	1,981	2,024	2,038	2,043	2,042
Wind	15,977	18,722	19,569	21,011	22,573
Solar photovoltaic	3,207	3,248	3,656	4,061	4,298
Solar thermoelectric	61	232	532	999	2,000
Renewable thermal	595	723	761	867	953
Non-renewable thermal	6,797	7,019	7,183	7,265	7,240
Total special regime (2)	**28,617**	**31,969**	**33,739**	**36,246**	**39,106**
Total	**91,374**	**94,721**	**98,026**	**99,438**	**101,828**

(1) As of 1 January2011 GICC (Elcogas) in included in national coal as according to RD 134/2010 this power station is obliged to participate, as a selling unit that uses local coal as fuel, in the resolution process of restrictions for guaranteeing supply.
(2) Provisional data. Source: Comisión Nacional de Energía (CNE) - Spanish National Energy Commission.

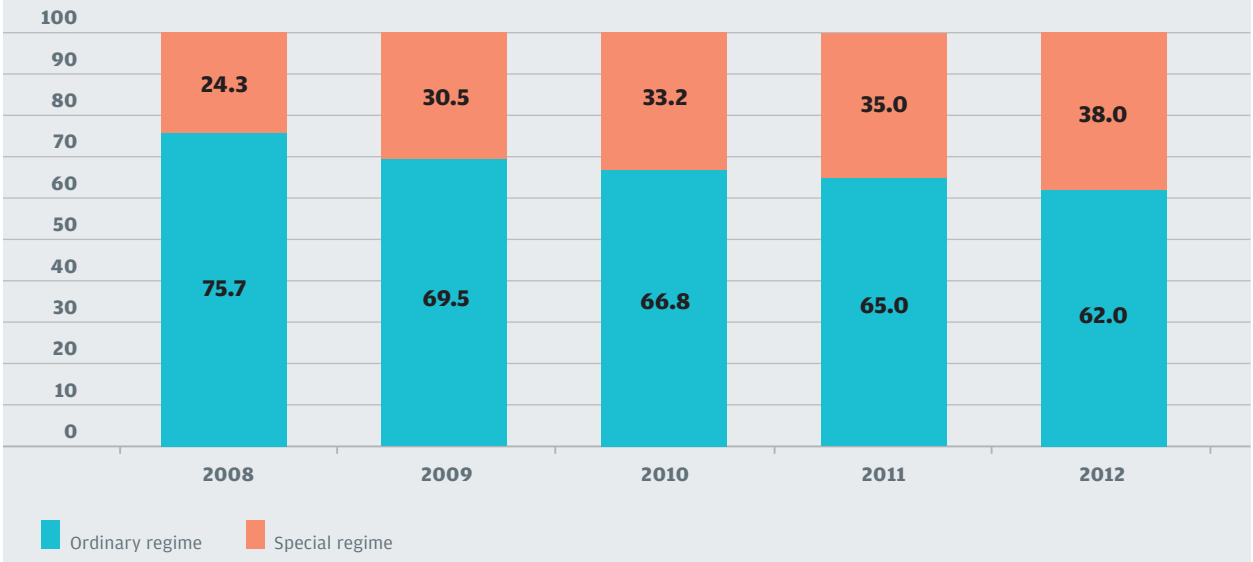
Demand Coverage 02
Peninsular system

ANNUAL EVOLUTION OF ELECTRICITY DEMAND COVERAGE (GWh)

	2008	2009	2010	2011	2012	%12/11
Hydroelectric	21,428	23,862	38,653	27,571	19,455	-29.4
Nuclear	58,973	52,761	61,990	57,731	61,470	6.5
Coal (1)	46,275	33,862	22,097	43,488	54,721	25.8
Fuel / gas	2,378	2,082	1,825	0	0	-
Combined cycle	91,286	78,279	64,604	50,734	38,593	-23.9
Ordinary regime	**220,341**	**190,846**	**189,169**	**179,525**	**174,239**	**-2.9**
Generation consumption	-8,338	-7,117	-6,673	-7,247	-7,889	8.8
Hydroelectric	4,638	5,454	6,824	5,294	4,633	-12.5
Wind	31,758	37,889	43,208	42,105	48,103	14.2
Solar photovoltaic	2,406	5,829	6,140	7,092	7,803	10.0
Solar thermoelectric	15	130	692	1,832	3,443	87.9
Renewable thermal	2,651	3,044	3,172	4,285	4,729	10.4
Non-renewable thermal	26,576	28,466	30,789	32,051	33,442	4.3
Special regime	**68,045**	**80,811**	**90,825**	**92,660**	**102,152**	**10.2**
Net generation	**280,048**	**264,540**	**273,321**	**264,937**	**268,502**	**1.3**
Pumped storage consumption	-3,803	-3,794	-4,458	-3,215	-5,023	56.2
Pumped storage consumption (2) (3)	-	-	-	-0.5	-570	-
International exchanges (3)	-11,040	-8,086	-8,333	-6,090	-11,200	83.9
Demand at power station busbars	**265,206**	**252,660**	**260,530**	**255,631**	**251,710**	**-1.5**

(1) As of 1 January2011 GICC (Elcogas) in included in national coal as according to RD 134/2010 this power station is obliged to participate, as a selling unit that uses local coal as fuel, in the resolution process of restrictions for guaranteeing supply.
(2) Peninsula-Balearic Islands link working at minimum technical level until 13 August 2012.
(3) Positive value: import balance; Negative value: export balance.

DEMAND COVERAGE STRUCTURE AT POWER STATION BUSBARS (%)



02 Demand Coverage
Peninsular system

MONTHLY EVOLUTION OF ELECTRICITY DEMAND COVERAGE (GWh)

	Jan	Feb	Mar	Apr	May	Jun
Hydroelectric	1,634	1,179	1,274	1,606	2,147	1,889
Nuclear	5,413	5,389	5,728	5,442	4,692	3,682
Coal (1)	5,513	5,643	4,763	2,713	4,052	5,409
Fuel / gas	0	0	0	0	0	0
Combined cycle	4,349	3,969	3,161	2,292	2,464	3,178
Ordinary regime	**16,910**	**16,179**	**14,926**	**12,053**	**13,355**	**14,158**
Generation consumption	-731	-680	-676	-670	-577	-633
Hydroelectric	336	331	324	468	642	438
Wind	3,649	5,016	3,810	5,304	3,706	3,426
Solar photovoltaic	481	634	736	626	824	839
Solar thermoelectric	117	200	235	178	348	415
Renewable thermal	394	373	382	372	361	406
Non-renewable thermal	2,942	2,810	2,943	2,814	2,863	2,693
Special regime	**7,918**	**9,364**	**8,430**	**9,762**	**8,744**	**8,216**
Net generation	**24,097**	**24,863**	**22,680**	**21,145**	**21,523**	**21,741**
Pumped storage consumption	-449	-444	-429	-566	-360	-322
Peninsula-Balearic Islands link (2) (3)	-3	-25	-37	-35	-27	-36
International exchanges (3)	-525	-1,376	-870	-1,212	-940	-625
Demand at power station busbars	**23,120**	**23,018**	**21,344**	**19,332**	**20,196**	**20,757**

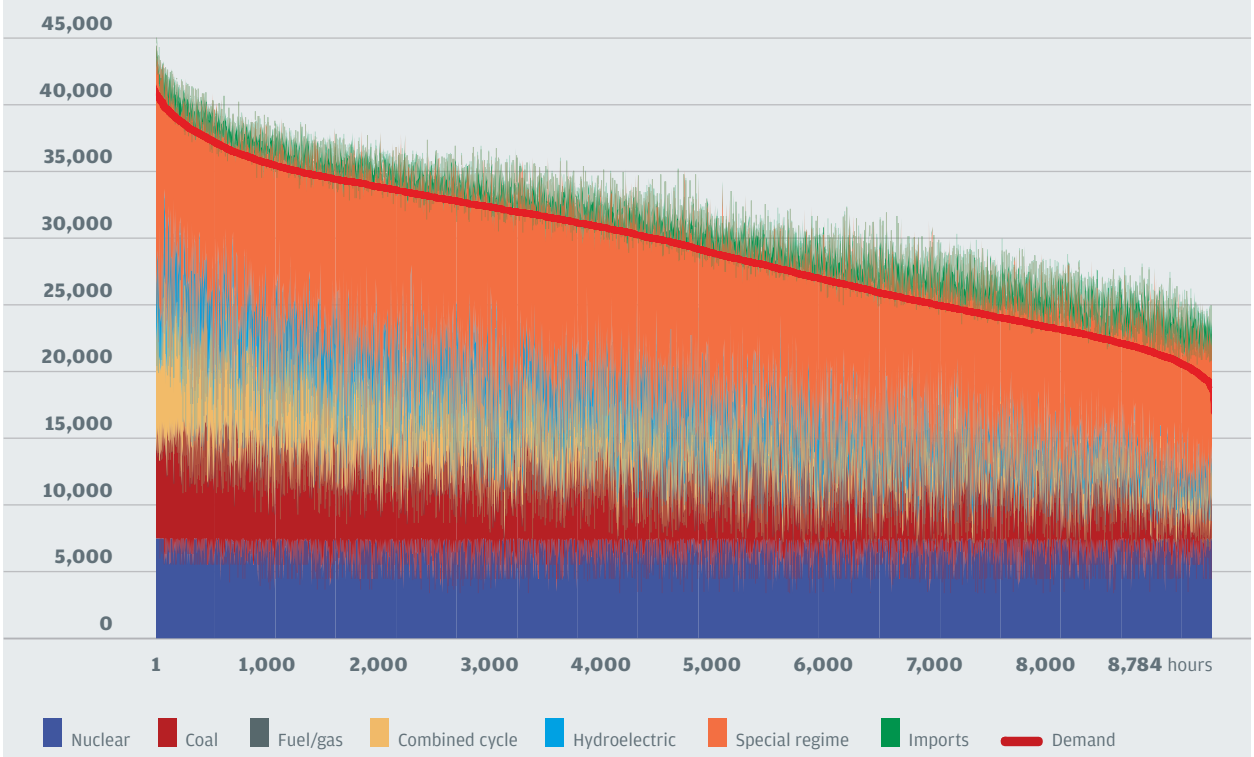
(continues...)

	Jul	Aug	Sep	Oct	Nov	Dec	Total
Hydroelectric	1,552	1,346	1,124	1,422	1,875	2,407	19,455
Nuclear	5,352	5,731	5,563	5,657	4,258	4,563	61,470
Coal (1)	5,000	5,153	4,088	4,345	4,190	3,851	54,721
Fuel / gas	0	0	0	0	0	0	0
Combined cycle	3,438	3,562	2,956	3,306	3,033	2,885	38,593
Ordinary regime	**15,342**	**15,792**	**13,731**	**14,730**	**13,356**	**13,707**	**174,239**
Generation consumption	-705	-718	-634	-718	-570	-577	-7,889
Hydroelectric	336	265	198	268	408	618	4,633
Wind	2,980	3,112	3,931	3,121	4,602	5,447	48,103
Solar photovoltaic	901	821	655	564	348	374	7,803
Solar thermoelectric	541	484	368	286	134	136	3,443
Renewable thermal	421	400	373	413	401	433	4,729
Non-renewable thermal	2,784	2,359	2,712	2,854	2,809	2,860	33,442
Special regime	**7,963**	**7,441**	**8,238**	**7,505**	**8,703**	**9,868**	**102,152**
Net generation	**22,601**	**22,515**	**21,335**	**21,517**	**21,489**	**22,997**	**268,502**
Pumped storage consumption	-286	-366	-455	-397	-403	-546	-5,023
Peninsula-Balearic Islands link (2) (3)	-36	-68	-74	-70	-67	-91	-570
International exchanges (3)	-630	-646	-1,047	-1,457	-791	-1,080	-11,200
Demand at power station busbars	**21,649**	**21,435**	**19,759**	**19,592**	**20,227**	**21,280**	**251,710**

(1) As of 1 January2011 GICC (Elcogas) in included in national coal as according to RD 134/2010 this power station is obliged to participate, as a selling unit that uses local coal as fuel, in the resolution process of restrictions for guaranteeing supply.
(2) Link working at minimum technical level until 13 August 2012.
(3) Positive value: import balance; Negative value: export balance.

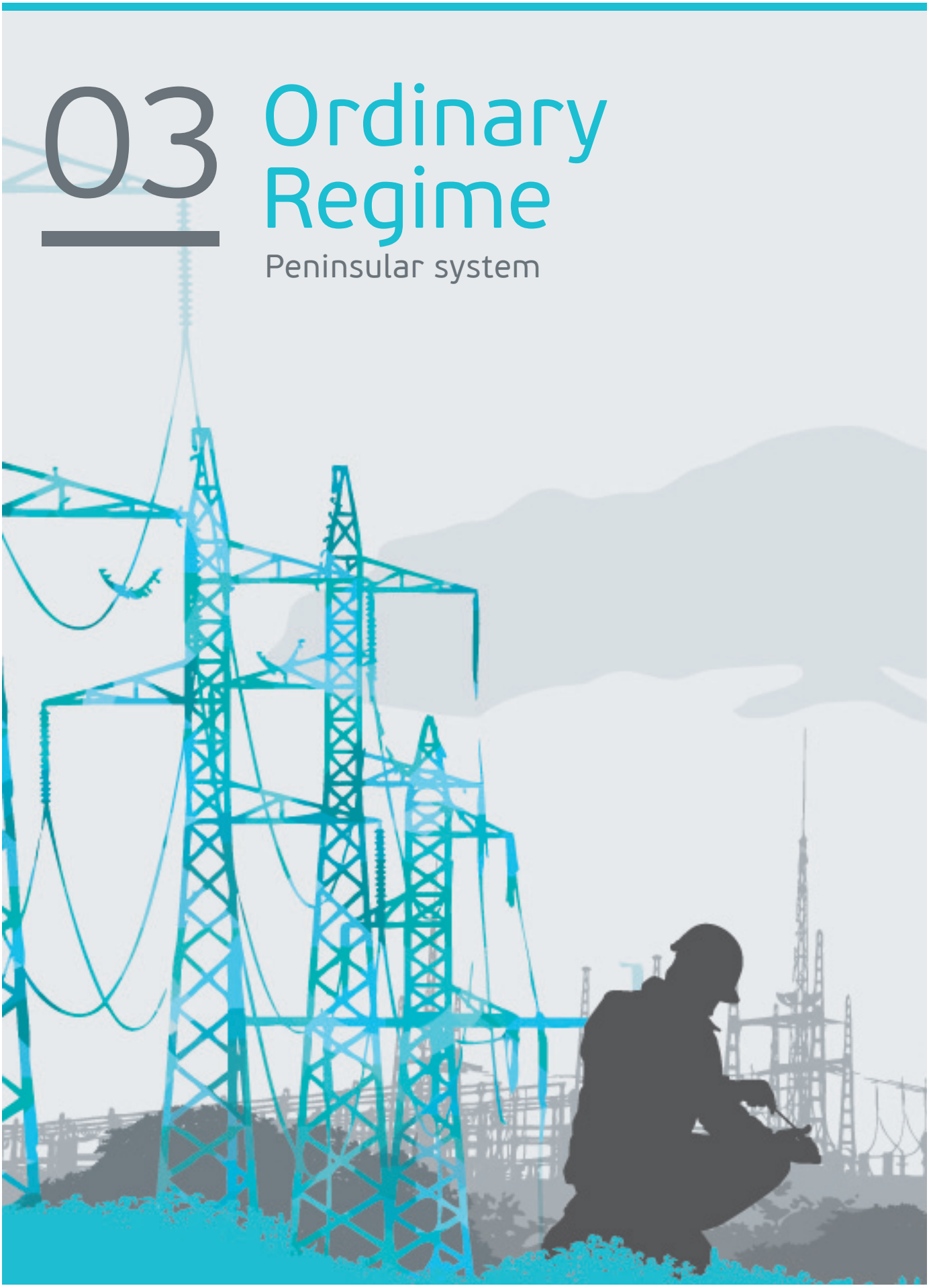
Demand Coverage 02
Peninsular system

MONOTONE LOAD CURVE (MW)



03 Ordinary Regime

Peninsular system



03 Ordinary Regime
Peninsular system

POWER VARIATIONS IN GENERATOR EQUIPMENT

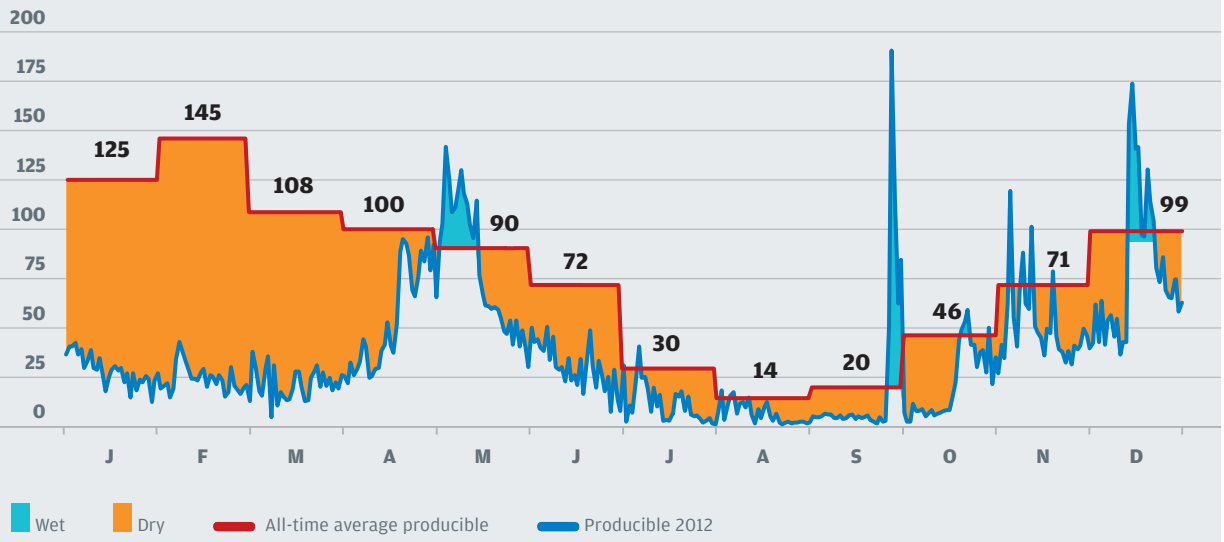
Power station	Type	Date	Power (MW)
Puentes García Rodríguez 5	Combined cycle	January-12	21
San Esteban II	Hydroelectric	November-12	192
San Juan	Hydroelectric	January-12	3
Total commissioned			**216**
Aceca 1	Fuel/gas	December-12	314
Lada 3	Coal	December-12	155
Pasajes	Coal	December-12	217
Total decommissioned			**686**
Balance			**-470**

HYDROELECTRIC PRODUCTION PER BASIN

Basin	Power MW	Production (GWh)			Producible (GWh)		
		2011	2012	%12/11	2011	2012	%12/11
Norte	4,863	7,529	5,878	-21.9	6,575	4,798	-27.0
Duero	3,887	8,061	5,098	-36.7	6,675	2,500	-62.5
Tajo-Júcar-Segura	4,335	5,525	2,728	-50.6	4,108	934	-77.3
Guadiana	226	274	184	-32.8	209	58	-72.1
Guadalquivir-Sur	1,025	1,073	773	-27.9	712	367	-48.5
Ebro-Pirineo	3,425	5,110	4,793	-6.2	4,226	3,982	-5.8
Total	**17,761**	**27,571**	**19,455**	**-29.4**	**22,506**	**12,640**	**-43.8**

Ordinary Regime 03
Peninsular system

DAILY PRODUCIBLE HYDROELECTRIC ENERGY DURING 2012 COMPARED WITH THE ALL-TIME AVERAGE PRODUCIBLE (GWh)



MONTHLY PRODUCIBLE HYDROELECTRIC ENERGY

	2011				2012			
	GWh		Index		GWh		Index	
	Monthly	Cumulat.	Monthly	Cumulat.	Monthly	Cumulat.	Monthly	Cumulat.
January	4,965	4,965	1.28	1.28	850	850	0.22	0.22
February	2,906	7,871	0.71	0.99	670	1,520	0.16	0.19
March	3,555	11,426	1.05	1.01	632	2,151	0.19	0.19
April	3,029	14,456	1.01	1.01	1,601	3,753	0.54	0.26
May	2,129	16,584	0.76	0.97	2,404	6,157	0.86	0.36
June	1,131	17,715	0.52	0.92	870	7,027	0.41	0.37
July	354	18,069	0.38	0.89	322	7,349	0.35	0.37
August	267	18,335	0.59	0.89	173	7,522	0.39	0.37
September	467	18,802	0.78	0.88	581	8,103	0.97	0.38
October	530	19,332	0.37	0.85	643	8,746	0.45	0.39
November	1,903	21,235	0.89	0.86	1,522	10,269	0.71	0.42
December	1,271	22,506	0.41	0.81	2,371	12,640	0.78	0.46

03 Ordinary Regime
Peninsular system

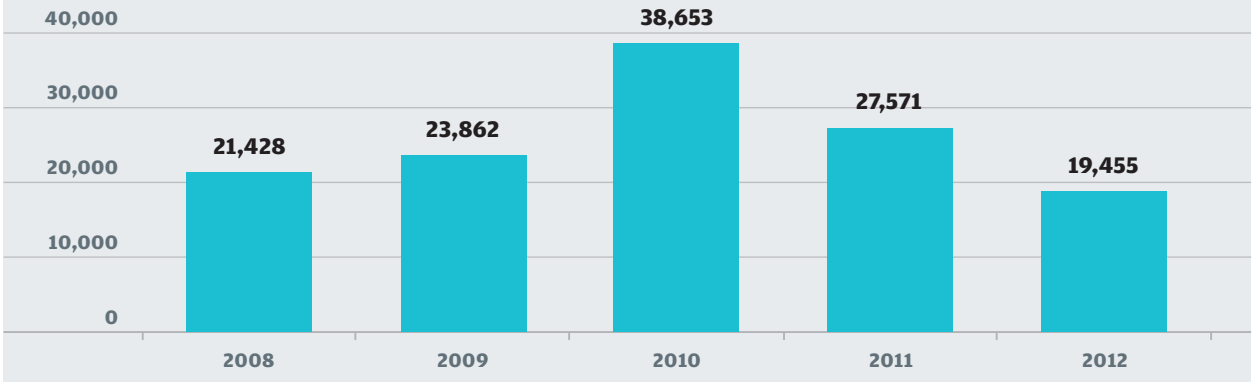
MONTHLY EVOLUTION OF HYDROELECTRIC RESERVES

	2011						2012					
	Annual		Hiperannual		Overall		Annual		Hiperannual		Overall	
	GWh	%	GWh	%	GWh	%	GWh	%	GWh	%	GWh	%
January	5,987	67	6,884	72	12,872	69	3,696	41	5,562	58	9,258	50
February	6,307	70	7,089	74	13,396	72	3,847	43	5,327	56	9,174	49
March	6,550	73	7,262	76	13,812	75	3,718	41	5,104	53	8,822	48
April	6,498	72	7,442	78	13,940	75	4,278	48	5,150	54	9,428	51
May	6,362	71	7,447	78	13,809	74	5,187	58	5,114	53	10,301	56
June	5,992	67	7,273	76	13,265	72	4,803	54	4,714	49	9,516	51
July	5,274	59	7,013	73	12,287	66	4,067	45	4,314	45	8,381	45
August	4,537	51	6,689	70	11,226	61	3,335	37	3,977	42	7,312	39
September	3,970	44	6,526	68	10,497	57	2,827	32	3,838	40	6,666	36
October	3,534	39	6,352	66	9,885	53	2,841	32	3,608	38	6,449	35
November	4,034	45	6,153	64	10,188	55	3,108	35	3,438	36	6,546	35
December	3,834	43	5,856	61	9,691	52	3,672	41	3,407	36	7,079	38

EXTREME VALUES OF RESERVES

		2012			All-time values	
		GWh	Date	%	Date	%
Maximum	Annual	5,228	28 May	58.3	May de 1969	92.0
	Hiperannual	5,877	2 January	61.4	April de 1979	91.1
	Overall	**10,412**	**27 May**	**56.2**	**April de 1979**	**86.6**
Minimum	Annual	2,609	18 October	29.1	January de 1976	24.9
	Hiperannual	3,274	13 December	34.2	November de 1983	17.6
	Overall	**6,335**	**18 October**	**34.2**	**October de 1995**	**23.6**

ANNUAL EVOLUTION OF HYDROELECTRIC PRODUCTION AT GENERATOR TERMINALS (GWh)

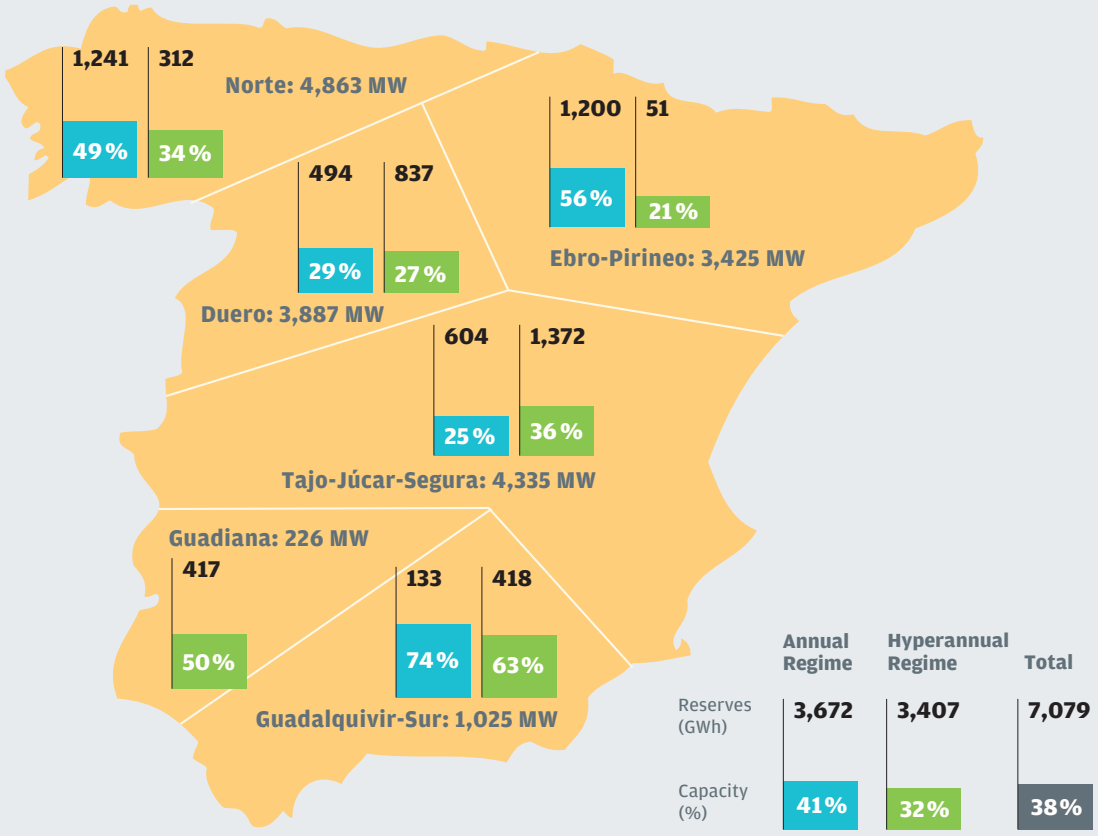


Ordinary Regime 03
Peninsular system

ANNUAL EVOLUTION OF PRODUCIBLE HYDROELECTRIC ENERGY

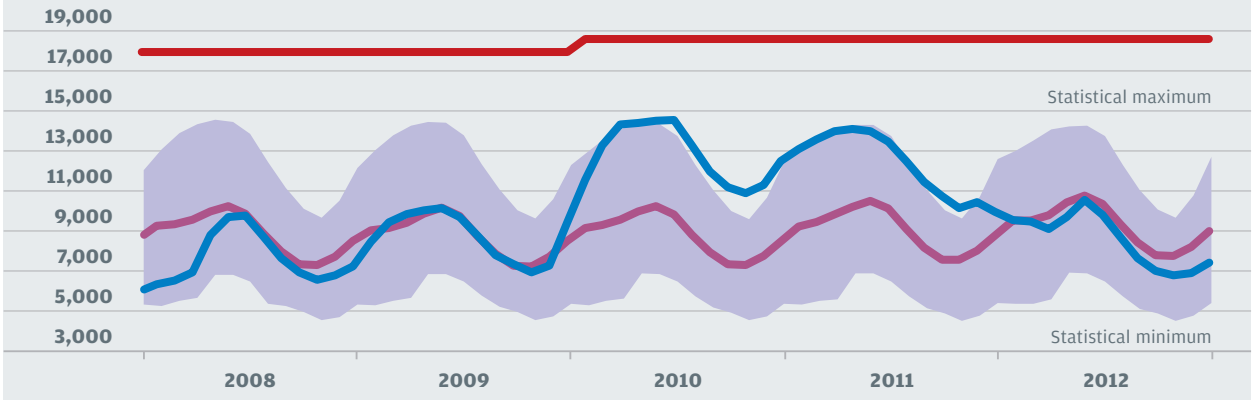
Year	GWh	Indice	Probability of being exceeded
2008	18,945	0.67	90%
2009	22,262	0.79	76%
2010	36,174	1.29	16%
2011	22,506	0.81	74%
2012	**12,640**	**0.46**	**100%**

INSTALLED POWER AND HYDROELECTRIC RESERVES AS AT 31 DECEMBER PER DRAINAGE BASIN



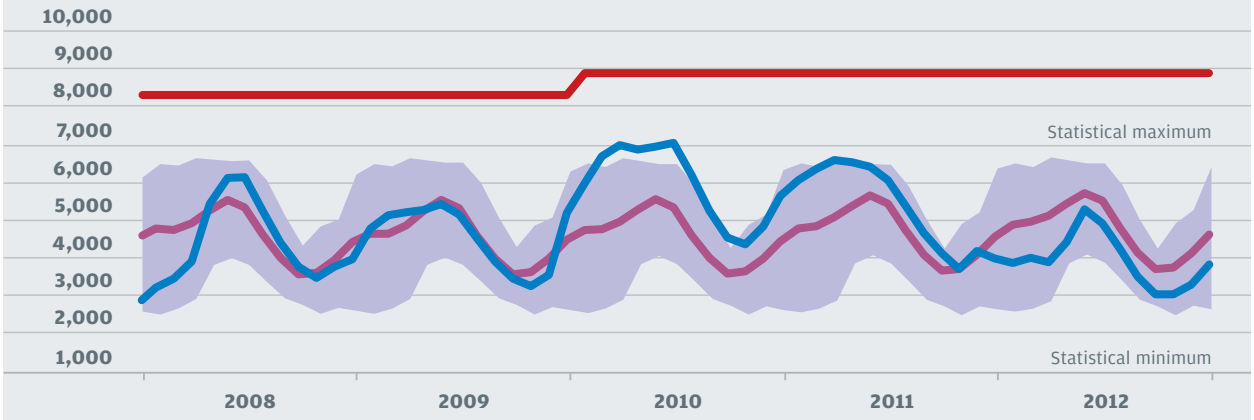
03 Ordinary Regime
Peninsular system

ANNUAL EVOLUTION OF HYDROELECTRIC RESERVES (GWh)



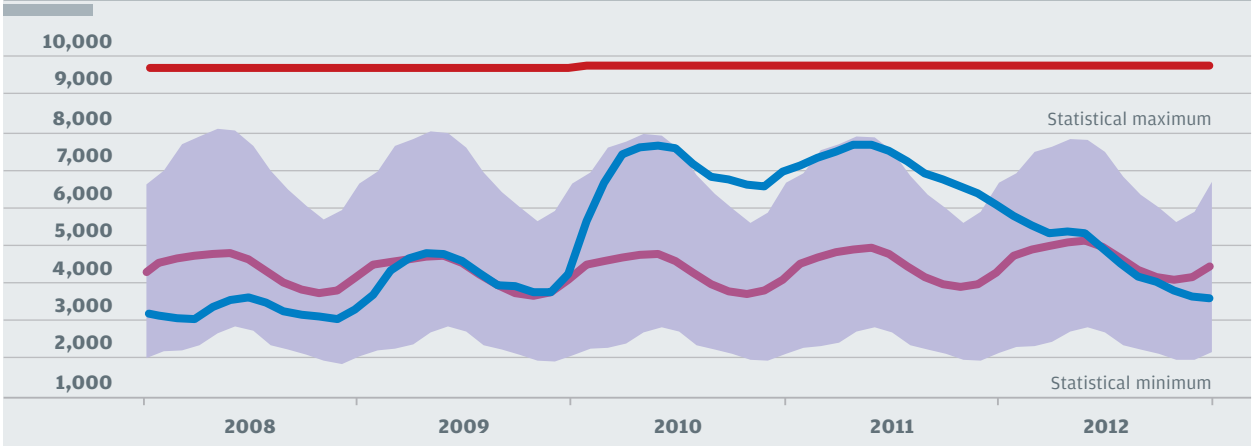
Statistical maximum and minimum: based on average of maximum and minimum values registered in the last 20 years.

ANNUAL EVOLUTION OF HYDROELECTRIC RESERVES UNDER SPECIAL REGIME (GWh)



Statistical maximum and minimum: based on average of maximum and minimum values registered in the last 20 years.

ANNUAL EVOLUTION OF HYDROELECTRIC RESERVES UNDER HYPERANNUAL REGIME (GWh)



Statistical maximum and minimum: based on average of maximum and minimum values registered in the last 20 years.

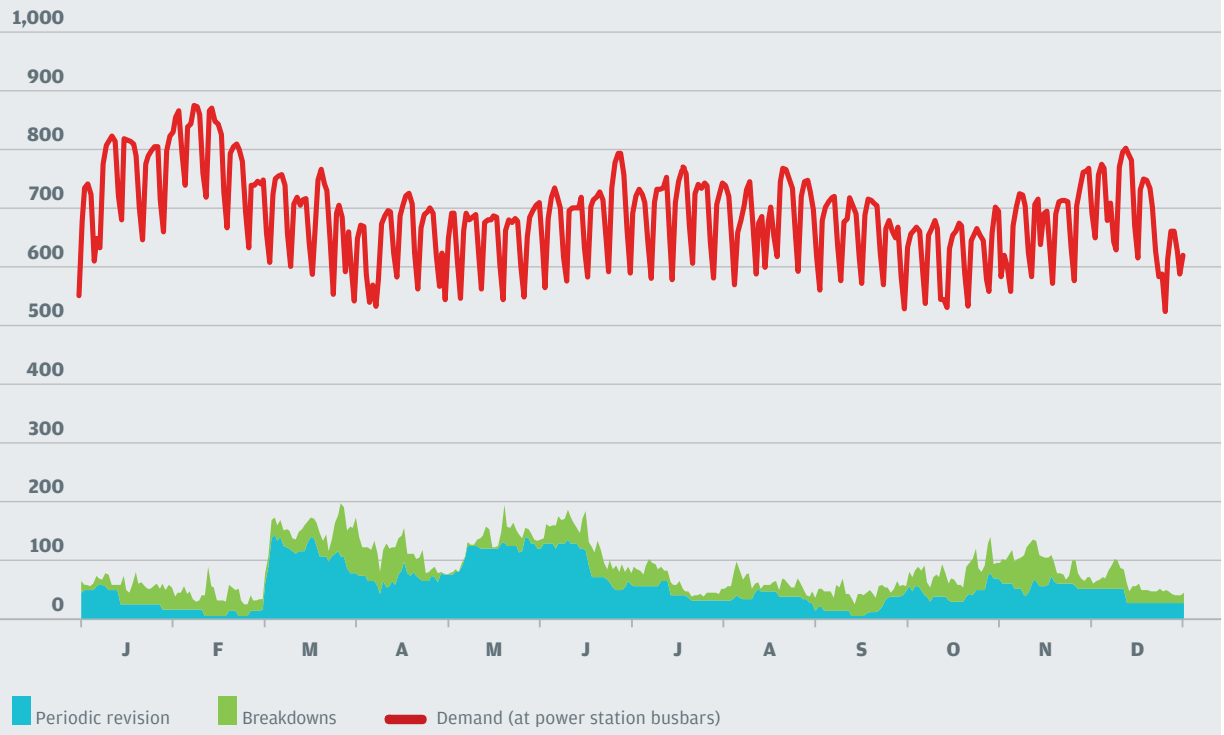
Ordinary Regime 03
Peninsular system

UTILISATION AND AVAILABILITY OF THERMAL POWER STATIONS (%)

	Coal		Fuel/Gas		Combined cycle		Nuclear	
	2011	2012	2011	2012	2011	2012	2011	2012
Power (MW)	11,620	11,248	833	520	25,319	25,340	7,853	7,853
Production (GWh)	43,488	54,721	0	0	50,734	38,593	57,731	61,470
Hours in operation	4,759	5,686	0	0	3,254	2,489	7,573	7,954
Utilisation coefficients (%)								
Over available (1)	46.0	60.7	0.0	0.0	25.1	18.8	97.3	98.5
In No. of hours connected to grid (2)	78.7	85.6	-	-	61.6	61.2	97.1	98.4
Non-Availability(%)								
Periodic revision	2.0	4.0	2.3	0.0	6.6	5.1	12.6	8.4
Breakdowns	5.0	4.7	37.7	1.2	2.3	2.7	1.1	1.1
Availability (%)	**93.0**	**91.3**	**60.0**	**98.8**	**91.2**	**92.2**	**86.3**	**90.5**

(1) This is the coefficient between the real production and the available production or maximum production that the power station can reach operating at nominal power during the hours it is available. **(2)** This is the coefficient between the real production and the total that the power station could have reached operating at nominal power in the set of hours in which it has been connected to the grid (producing).

COMPARISON OF DAILY DEMAND AT POWER STATION BUSBARS WITH THE DAILY NON-AVAILABILITY OF THE THERMAL POWER STATIONS (GWh)

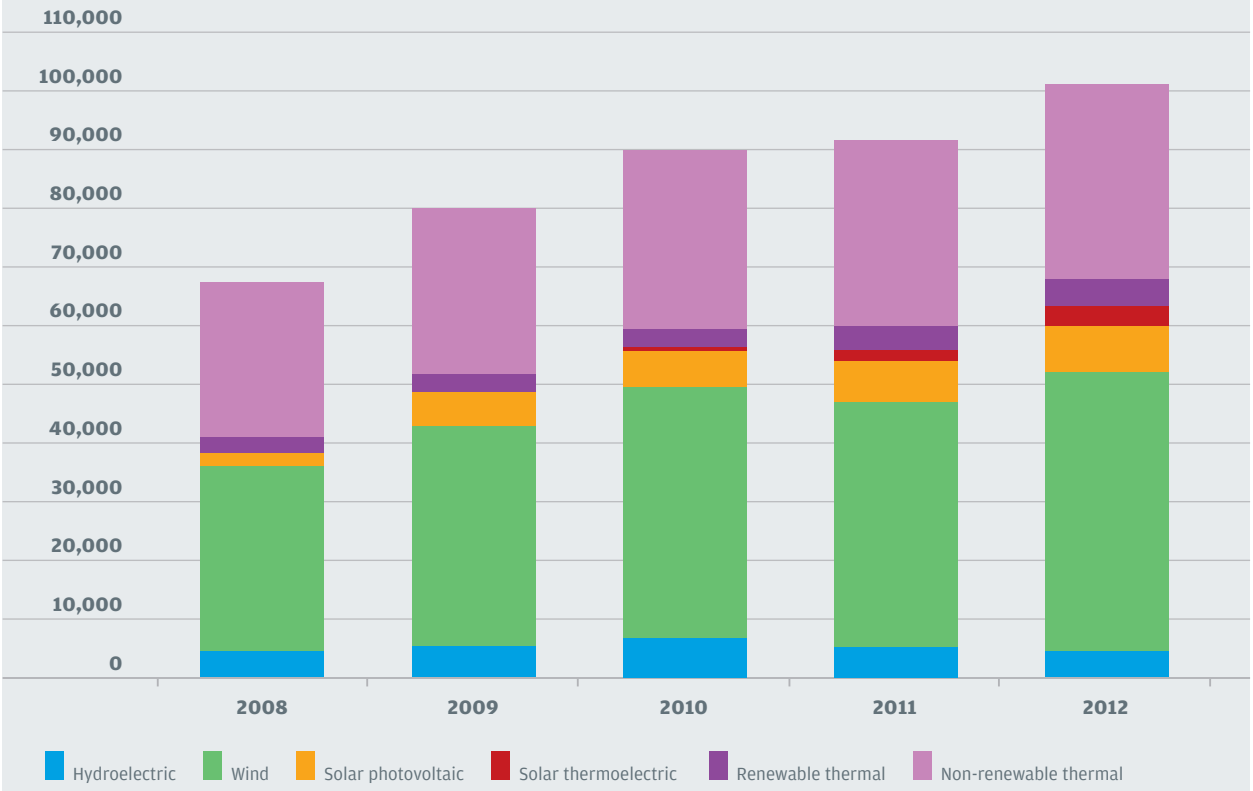


04 Special Regime

Peninsular system

04 Special Regime
Peninsular system

EVOLUTION OF THE ENERGY ACQUIRED FROM SPECIAL REGIME (GWh)



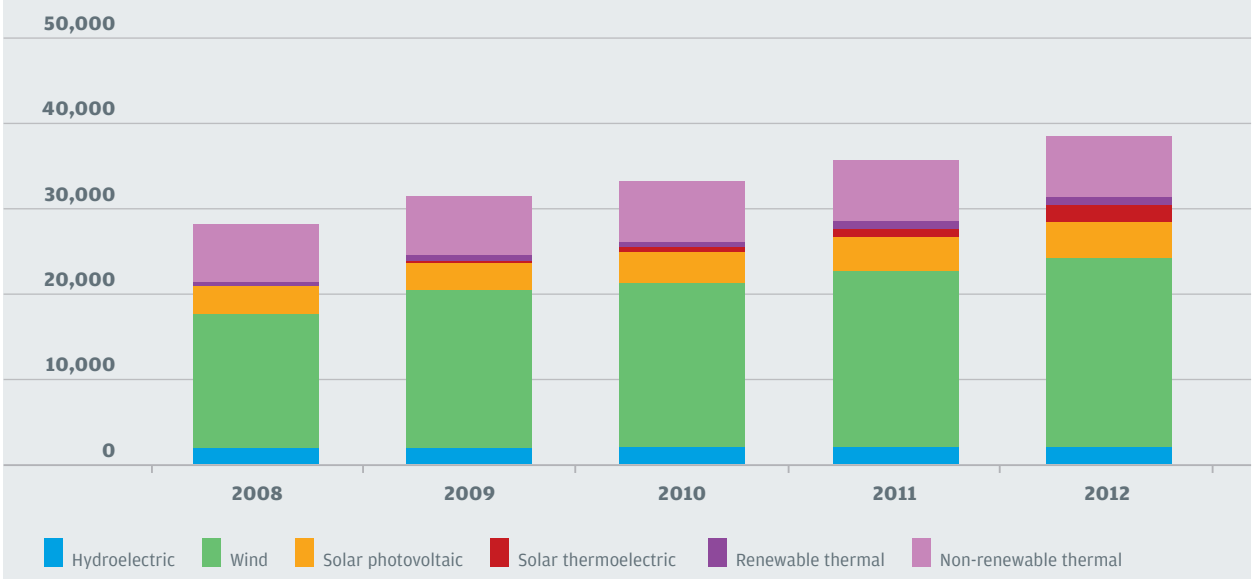
EVOLUTION OF THE ENERGY ACQUIRED FROM SPECIAL REGIME (GWh)

	2008	2009	2010	2011	2012	%12/11
Hydroelectric	4,638	5,454	6,824	5,294	4,633	-12.5
Wind	31,758	37,889	43,208	42,105	48,103	14.2
Solar photovoltaic	2,406	5,829	6,140	7,092	7,803	10.0
Solar thermoelectric	15	130	692	1,832	3,443	87.9
Renewable thermal	2,651	3,044	3,172	4,285	4,729	10.4
Non-renewable thermal	26,576	28,466	30,789	32,051	33,442	4.3
Total	**68,045**	**80,811**	**90,825**	**92,660**	**102,152**	**10.2**

Provisional data.

Special Regime 04
Peninsular system

EVOLUTION OF SPECIAL REGIME INSTALLED POWER (MW)



EVOLUTION OF SPECIAL REGIME INSTALLED POWER (MW)

	2008	2009	2010	2011	2012	%12/11
Hydroelectric	1,981	2,024	2,038	2,043	2,042	-0.1
Wind	15,977	18,722	19,569	21,011	22,573	7.4
Solar photovoltaic	3,207	3,248	3,656	4,061	4,298	5.8
Solar thermoelectric	61	232	532	999	2,000	100.3
Renewable thermal	595	723	761	867	953	9.9
Non-renewable thermal	6,797	7,019	7,183	7,265	7,240	-0.4
Total	**28,617**	**31,969**	**33,739**	**36,246**	**39,106**	**7.9**

Provisional data. Source: Comisión Nacional de Energía (CNE) - Spanish National Energy Commission.

05 System Operation

Peninsular system

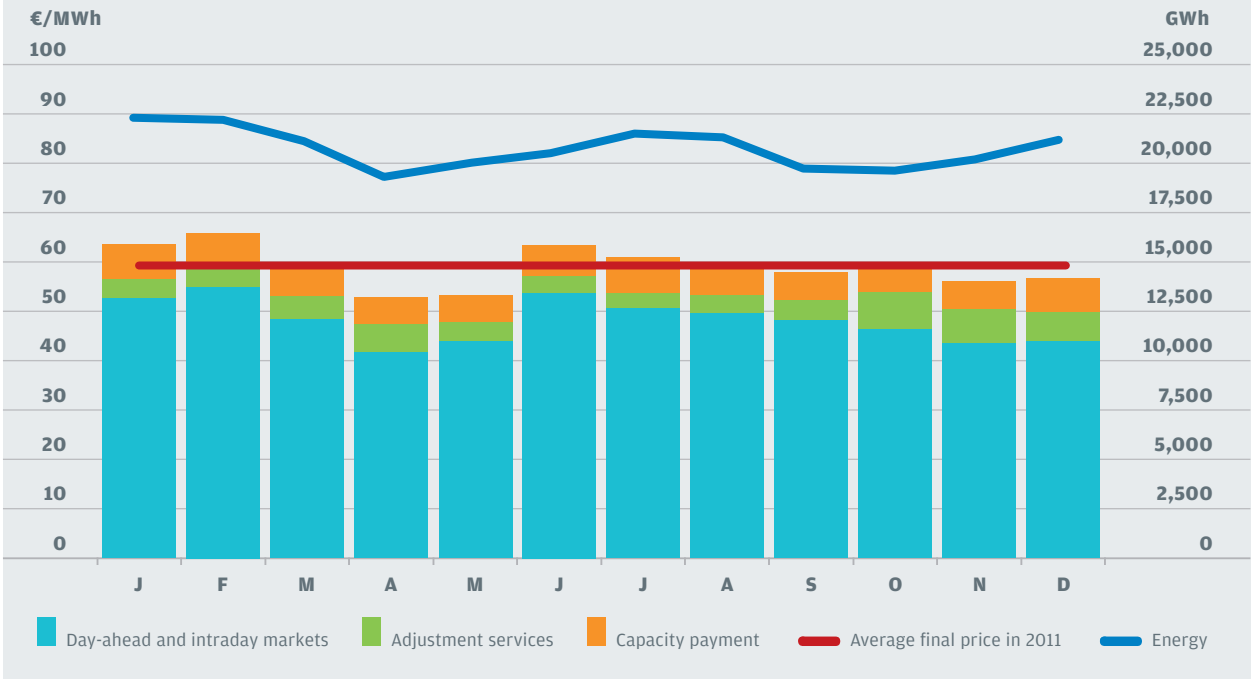
05 System Operation
Peninsular system

NATIONAL DEMAND (LAST RESORT SUPPLY + FREE CONTRACTING). COMPONENTS OF THE AVERAGE FINAL PRICE (€/MWh)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	% 12/11
Day-ahead market	**53.09**	**55.34**	**49.06**	**42.19**	**44.62**	**54.23**	**51.11**	**50.09**	**48.73**	**47.06**	**43.83**	**44.50**	**48.79**	**-4.3**
Intraday market	**0.00**	**-0.04**	**-0.05**	**-0.03**	**-0.07**	**-0.07**	**-0.08**	**0.00**	**-0.03**	**-0.10**	**0.00**	**-0.03**	**-0.04**	**-29.3**
System adjustment services	**3.68**	**3.84**	**4.58**	**5.66**	**3.77**	**3.22**	**3.06**	**3.63**	**4.03**	**7.41**	**7.08**	**5.76**	**4.61**	**43.6**
Technical restrictions (PDBF)	2.13	1.97	2.44	2.85	2.08	1.55	1.73	1.63	1.35	2.27	2.61	2.56	2.09	13.0
Power reserve	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.01	0.04	0.85	1.49	0.69	0.25	-
Secondary control band	0.92	1.17	1.40	2.01	1.11	1.04	0.99	1.35	1.64	1.89	1.58	1.29	1.35	77.9
Real-time restrictions	0.18	0.19	0.28	0.36	0.31	0.29	0.16	0.30	0.41	1.86	0.97	0.59	0.48	102.7
Deviations	0.32	0.28	0.32	0.34	0.24	0.25	0.22	0.38	0.77	0.79	0.55	0.83	0.44	34.3
Deviations surplus	0.13	0.23	0.14	0.10	0.00	0.09	-0.04	-0.04	-0.18	-0.25	-0.12	-0.20	-0.01	-125.0
Capacity payment	**7.08**	**7.08**	**5.64**	**5.59**	**5.43**	**6.30**	**7.20**	**4.83**	**5.45**	**5.47**	**5.58**	**6.90**	**6.07**	**-0.5**
Final price 2012	**63.85**	**66.22**	**59.23**	**53.41**	**53.75**	**63.68**	**61.29**	**58.55**	**58.18**	**59.84**	**56.49**	**57.13**	**59.42**	**-1.3**
Final price 2011	**53.74**	**58.21**	**56.05**	**53.99**	**56.69**	**58.82**	**60.80**	**62.06**	**68.45**	**68.94**	**61.64**	**63.62**	**60.22**	

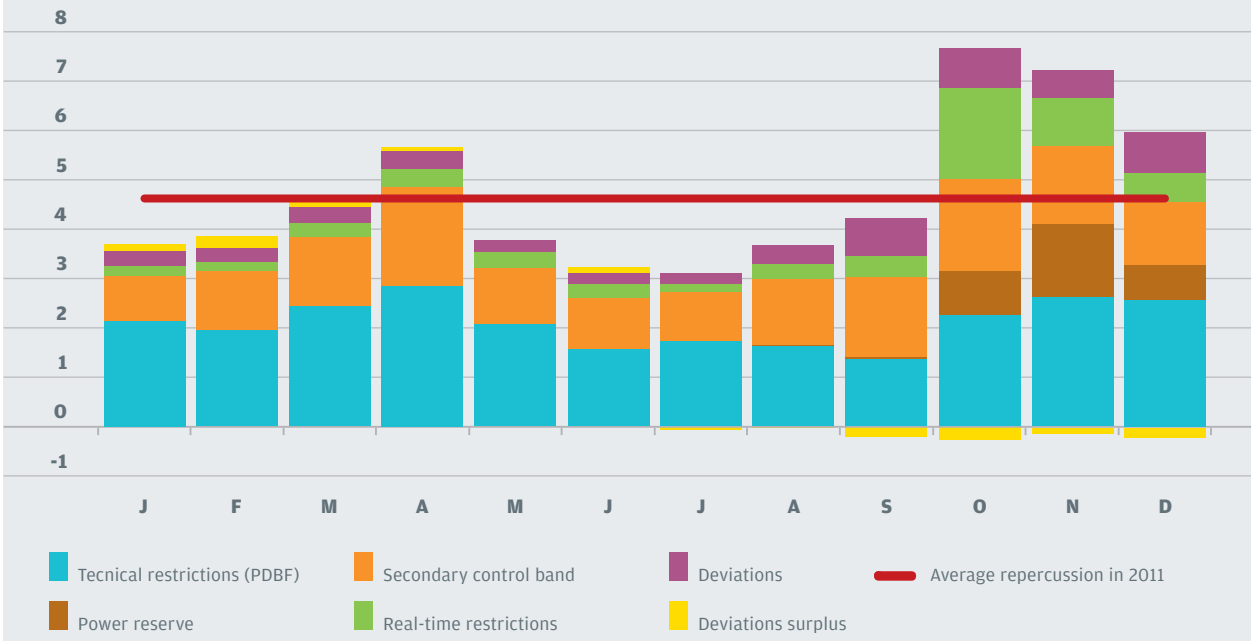
Note: The prices are calculated using the latest settlements available from the System Operator.

NATIONAL DEMAND (LAST RESORT SUPPLY + FREE CONTRACTING). FINAL PRICES AND ENERGY



System Operation 05
Peninsular system

REPERCUSSION OF THE ADJUSTMENT SERVICES IN THE AVERAGE FINAL PRICE (€/MWh)



ENATIONAL DEMAND (LAST RESORT SUPPLY + FREE CONTRACTING). EVOLUTION OF THE AVERAGE PRICE (€/MWh)

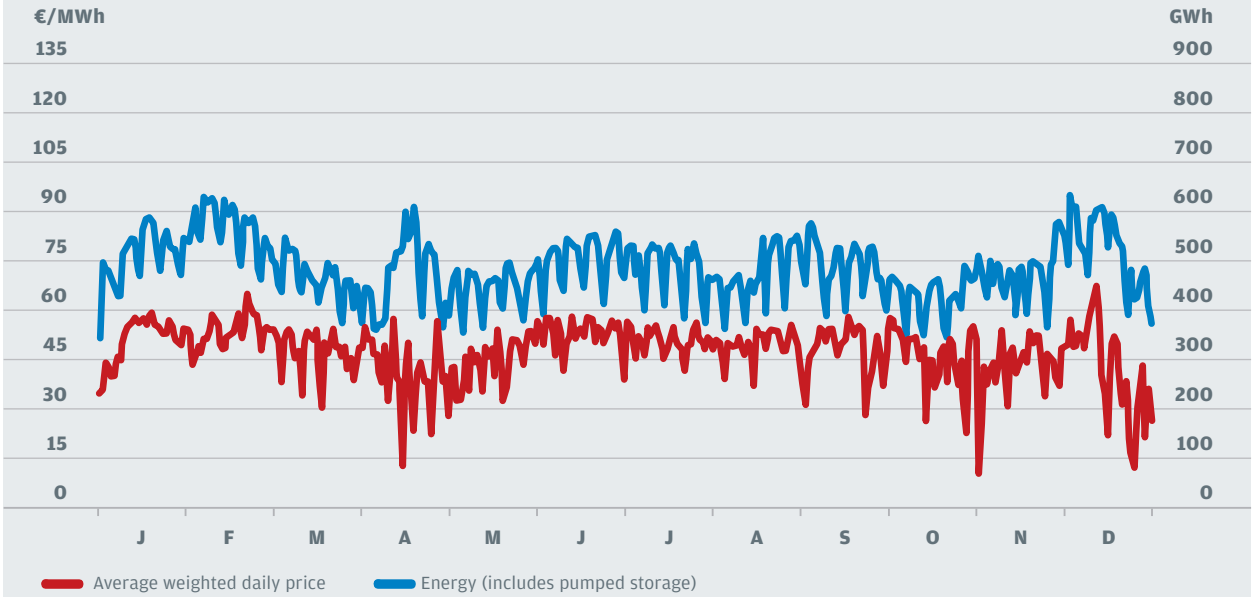
05 System Operation
Peninsular system

ENERGY AND AVERAGE WEIGHTED PRICES IN THE DAY-AHEAD MARKET

	Energy (*) (GWh)	Price (€/MWh) Hourly minimum	Monthly avg.	Hourly max.
January	15,876	0.00	52.83	79.00
February	16,592	0.10	54.89	90.13
March	14,479	5.00	48.72	73.25
April	13,990	0.00	41.07	70.52
May	13,805	7.07	44.33	63.36
June	15,190	22.06	54.25	70.20
July	15,143	15.07	51.16	70.00
August	14,712	10.06	50.16	66.10
September	14,689	0.00	48.48	70.01
October	13,332	0.00	46.30	75.90
November	14,263	0.00	42.82	76.37
December	16,267	0.00	44.01	84.20
Annual	**178,337**	**0.00**	**48.42**	**90.13**

(*)Includes pumped storage.

DAY-AHEAD MARKET. AVERAGE WEIGHTED DAILY PRICE AND ENERGY



System Operation 05
Peninsular system

ENERGY AND AVERAGE WEIGHTED PRICES IN THE INTRADAY MARKET

	Negotiated volume(GWh)	Energy (1) (2) (GWh)	Average price (€/MWh) Monthly avg.	Hourly max.
January	4,047	1,115	52.55	82.18
February	4,073	1,356	54.35	87.42
March	4,173	1,439	48.26	80.15
April	3,054	1,072	42.56	80.00
May	3,740	1,232	43.61	69.00
June	4,058	1,242	52.16	77.20
July	4,048	1,232	48.69	68.50
August	4,163	1,368	49.63	75.00
September	3,677	1,079	48.18	79.19
October	4,342	1,274	45.30	90.02
November	4,191	1,252	44.73	115.00
December	3,776	1,101	45.00	82.13
Annual	**47,342**	**14,762**	**48.05**	**115.00**

(1) Includes pumped storage. **(2)** Negotiated net result.

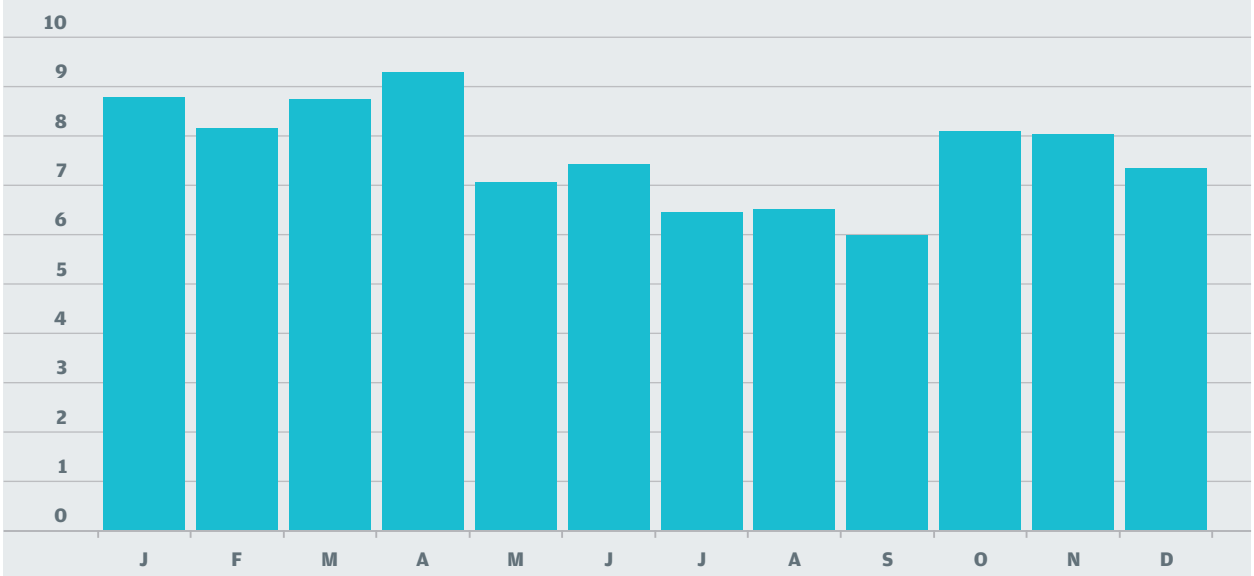
ENERGY MANAGED IN THE SYSTEM ADJUSTMENT SERVICES (GWh) (1)

	2011		2012		% 12/11	
	Upward	Downward	Upward	Downward	Upward	Downward
Security of supply restrictions (2)	12,773	-	12,008	-	-6.0	-
Technical restrictions (PDBF) (3)	9,998	228	6,162	61	-38.4	-73.3
Secondary control	1,213	1,514	1,510	1,262	24.6	-16.6
Tertiary control	2,694	2,591	2,992	2,330	11.1	-10.1
Deviation management	1,775	2,046	2,658	1,232	49.8	-39.8
Reat-time restrictions (4)	657	509	633	484	-3.7	-5.0
Total energy managed	**35,999**		**31,333**		**-13.0**	

(1) Does not include power reserve and secondary control reserves. **(2)** Energy increased in phase 1 of the resolution of security of supply restrictions (Royal Decree 134/210 modified by RD 1221/2010) (P.O.3.10). **(3)** Energy increased or reduced in phase 1 of the resolution of technical restrictions of the PDBF (P.O.3.2). **(4)** Does not include energy redispatched through the link between the Spanish peninsular electricity system and the Balearic Islands' electricity system.

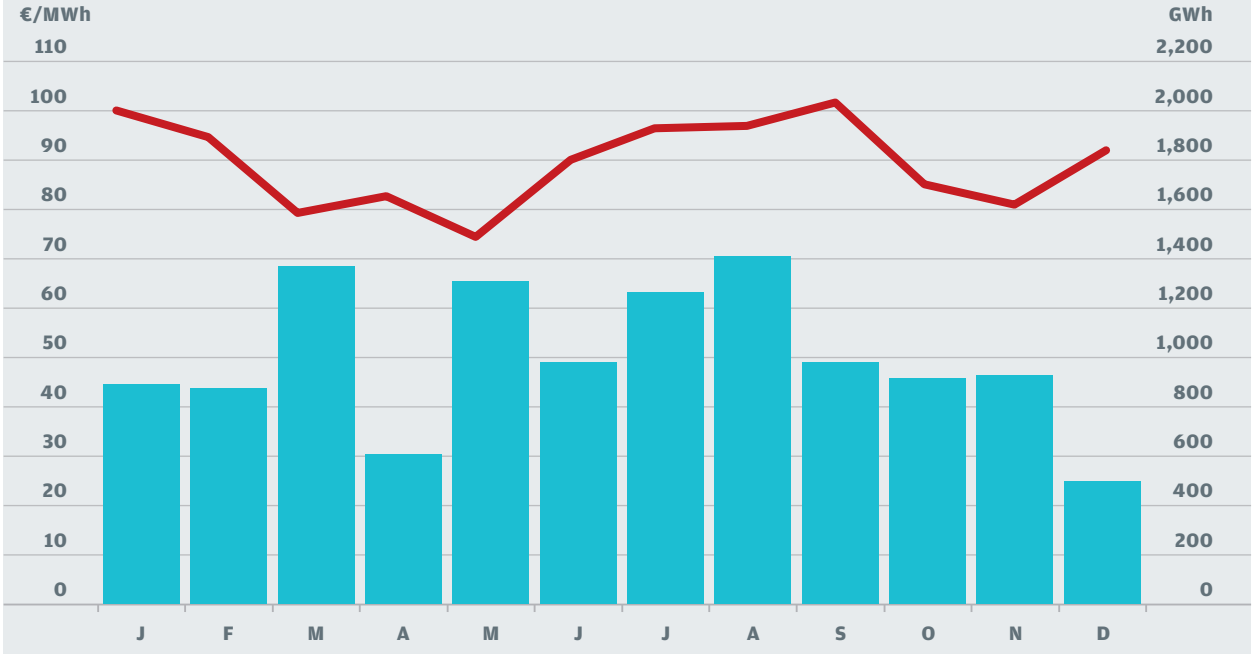
05 System Operation
Peninsular system

ENERGY MANAGED IN THE PENINSULAR SYSTEM ADJUSTMENT SERVICES WITH REGARD TO DEMAND (LAST RESORT SUPPLY + FREE CONTRACTING) (%)



Note: does not include restrictions due to security of supply.

RESOLUTION OF SECURITY OF SUPPLY RESTRICTIONS (GWh) (1)



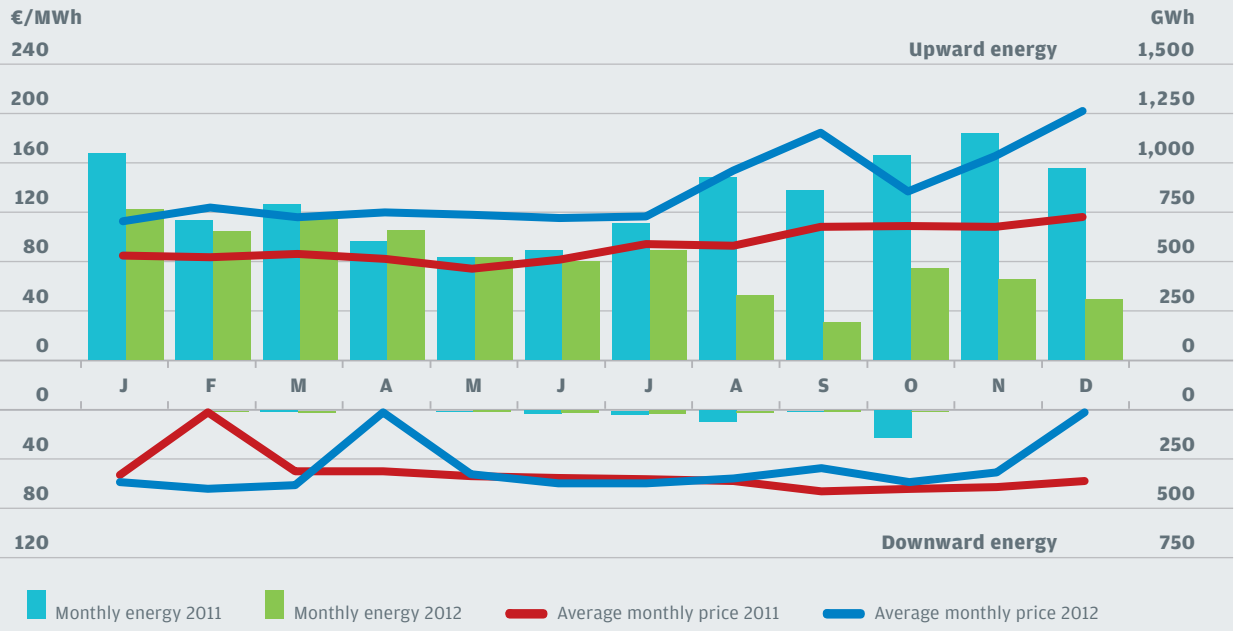
(1) Energy increased in phase I of the resolution of security of supply restrictions (RD 134/2010 modified by RD 1221/2012 (P.O.3.10).

System Operation 05
Peninsular system

RESOLUTION OF TECHNICAL RESTRICTIONS (PDBF) (Phase I)

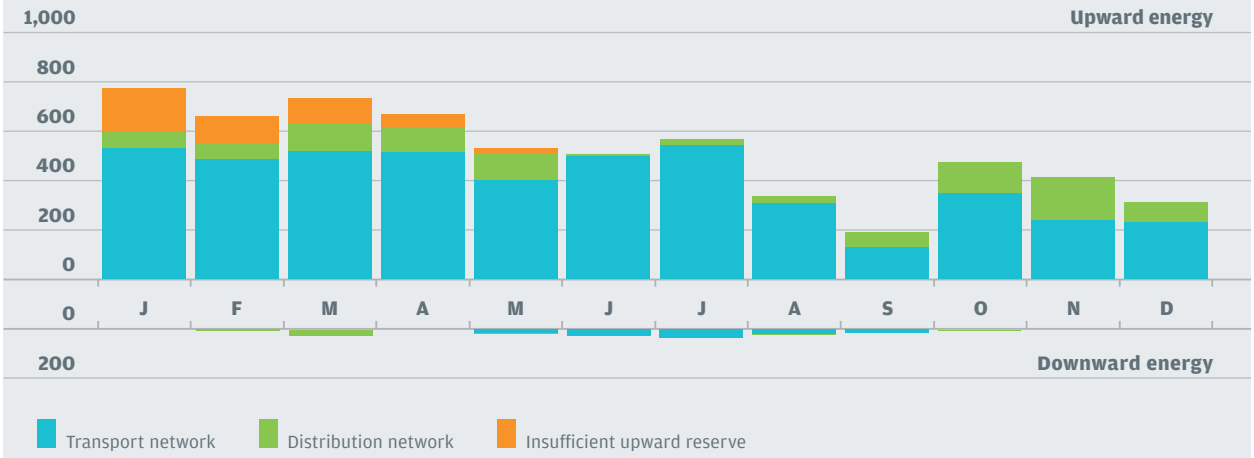
	Upward energy			Downward energy		
		Price (€/MWh)			Price (€/MWh)	
	Energy (GWh)	Weighted average	Max.	Energy (GWh)	Weighted average	Max.
January	773	112.17	219.43	0.6	56.01	60.24
February	659	123.04	193.65	3	61.24	71.66
March	734	115.26	229.82	9	58.33	73.25
April	670	119.38	330.92	0	-	0.00
May	527	117.65	418.97	7	49.87	57.53
June	508	114.85	378.72	11	56.89	70.00
July	566	115.87	228.12	14	56.91	67.80
August	335	153.49	1,253.00	8	53.04	66.10
September	190	184.22	4,057.00	5	44.78	65.10
October	474	136.24	4,333.33	3	55.98	62.00
November	414	165.24	7,011.41	0.1	48.52	51.23
December	313	201.35	15,334.50	0	-	0.00
Annual	**6,162**	**129.94**	**15,334.50**	**61**	**54.88**	**73.25**

RESOLUTION OF TECHNICAL RESTRICTIONS (PDBF). AVERAGE WEIGHTED PRICES AND ENERGIES



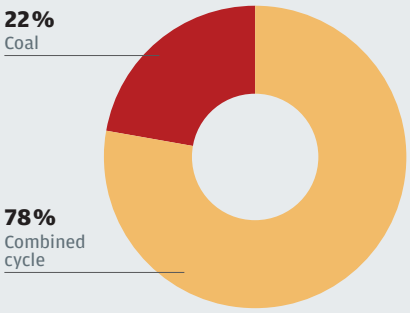
05 System Operation
Peninsular system

RESOLUTION OF TECHNICAL RESTRICTIONS (PDBF). BREAKDOWN BY RESTRICTION TYPE (GWh)



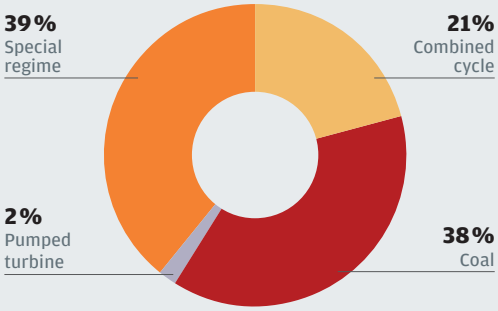
RESOLUTION OF TECHNICAL RESTRICTIONS (PDBF). BREAKDOWN BY TECHNOLOGY. ANNUAL TOTAL (%)

Phase I Upward

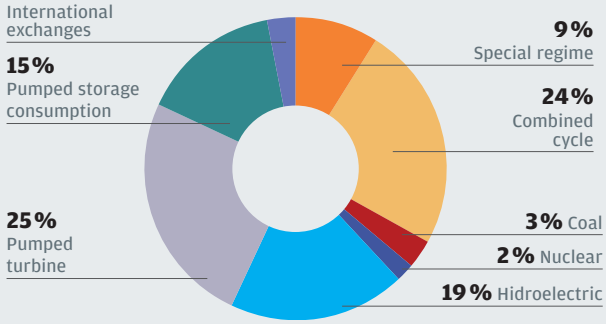


Phase II Upward

Phase I Downward

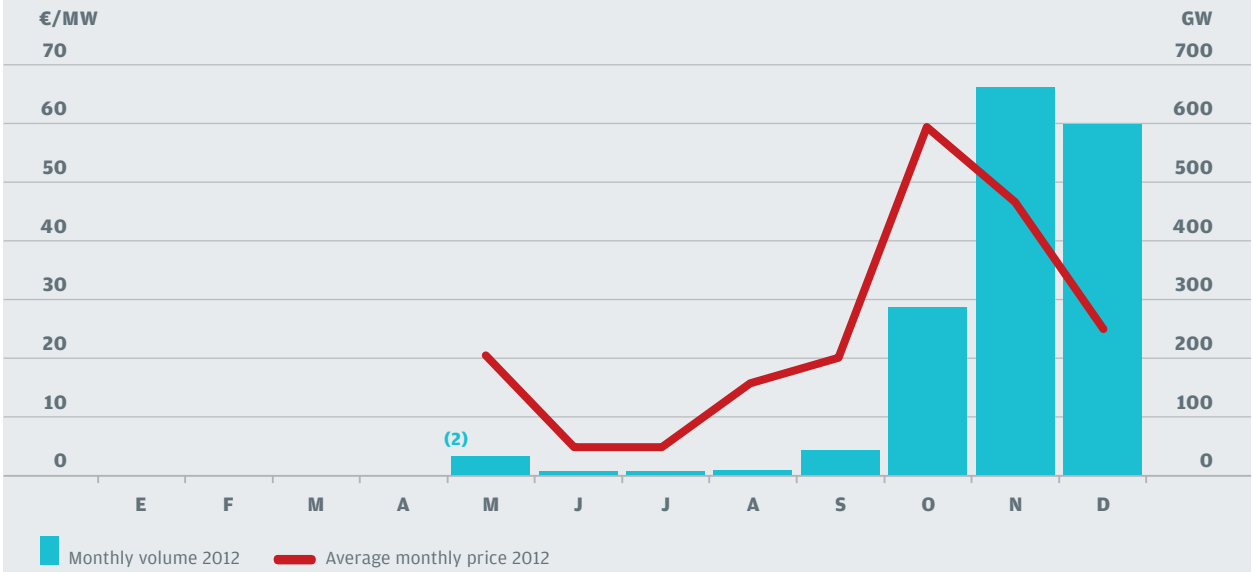


Phase II Downward



System Operation 05
Peninsular system

ADDITIONAL UPWARD POWER RESERVE ALLOCATED (1)



(1) Operating Procedures P.O. 3.9 "Contracting and managing additional upward power reserve" approved by Resolution of the Secretary of State for Energy, of 24 February, 2012. **(2)** Scheduling process began as of 11 May, 2012.

ADJUSTMENT SERVICES MARKET. ENERGY MANAGED (GWh) (1)

(1) Does not include restrictions due to security of supply nor PDBF techincal restrictions.

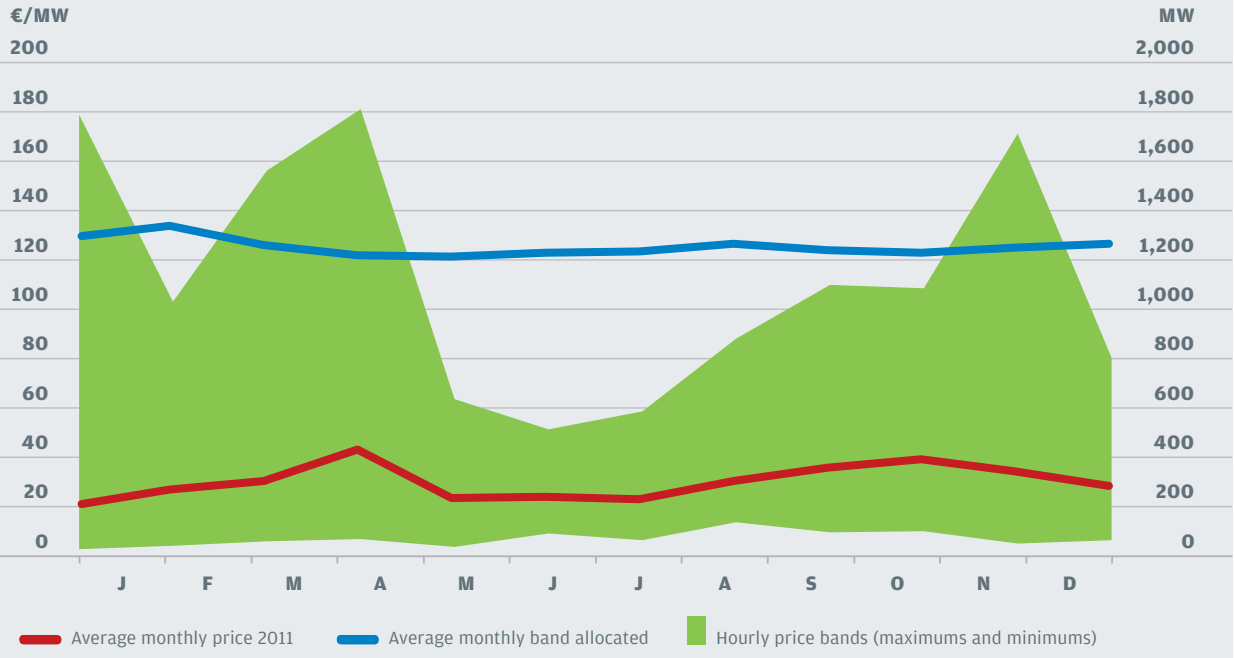
05 System Operation
Peninsular system

SECONDARY CONTROL

	Average band					Energy					
						Upward			Upward		
	Power (MW)			Price (€/MW)			Price (€/MWh)			Price (€/MWh)	
	Up-ward	Down-ward	Total	Weighted average	Max.	Energy (GWh)	(1) Avg.	Max.	Energy (GWh)	(2) Avg.	Max.
January	729	540	1,269	19.71	177.77	96	54.76	100.00	125	38.12	100.00
February	756	550	1,306	25.29	102.50	104	56.24	100.03	125	38.19	180.30
March	707	530	1,237	28.54	155.24	137	51.09	138.72	108	31.31	65.00
April	691	510	1,201	40.37	180.00	150	50.08	119.01	82	24.49	85.00
May	688	510	1,198	22.30	63.30	161	47.76	140.00	78	26.81	62.14
June	694	516	1,210	22.58	51.00	103	54.21	80.00	104	37.72	180.00
July	693	523	1,216	21.47	58.04	110	47.56	73.50	115	32.75	60.00
August	719	525	1,244	28.66	87.77	88	53.32	89.50	131	36.16	310.00
September	702	515	1,217	33.53	109.37	104	50.39	83.85	121	26.63	61.62
October	702	509	1,210	36.57	108.00	129	46.65	104.20	119	30.30	90.00
November	709	521	1,230	32.18	170.01	144	54.43	319.44	88	32.96	60.00
December	719	521	1,240	26.42	80.00	184	49.29	144.00	66	34.88	81.54
Annual	**709**	**522**	**1,231**	**28.06**	**180.00**	**1,510**	**50.98**	**319.44**	**1,262**	**32.86**	**310.00**

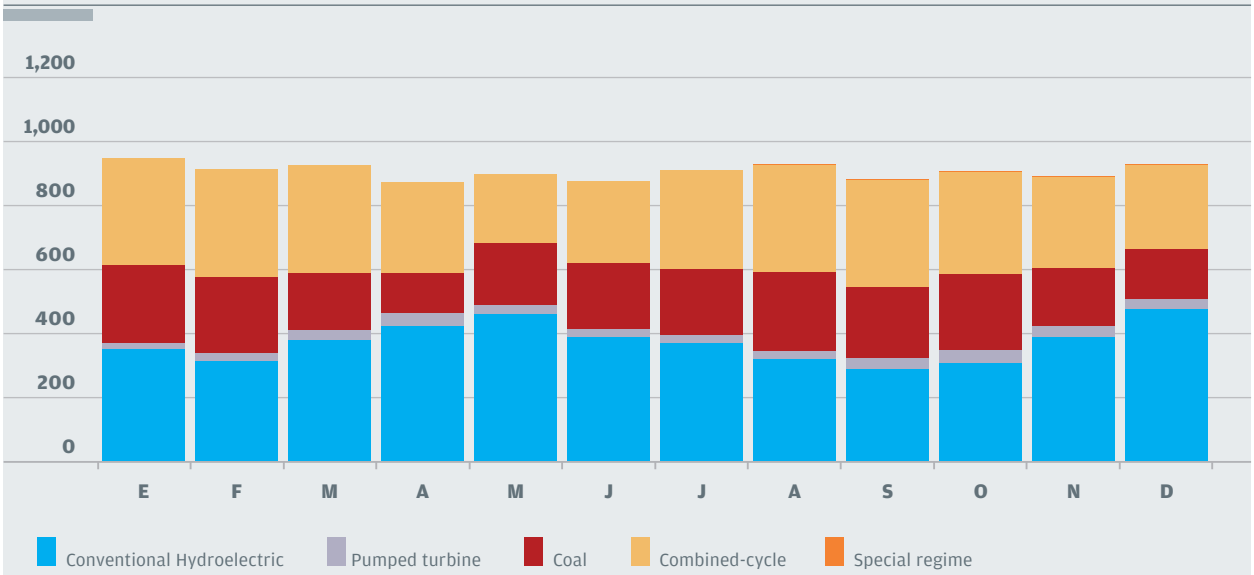
(1) Average weighted sell price. **(2)** Average weighted buy back price.

SECONDARY CONTROL BAND. AVERAGE WEIGHTED PRICE AND AVERAGE BAND

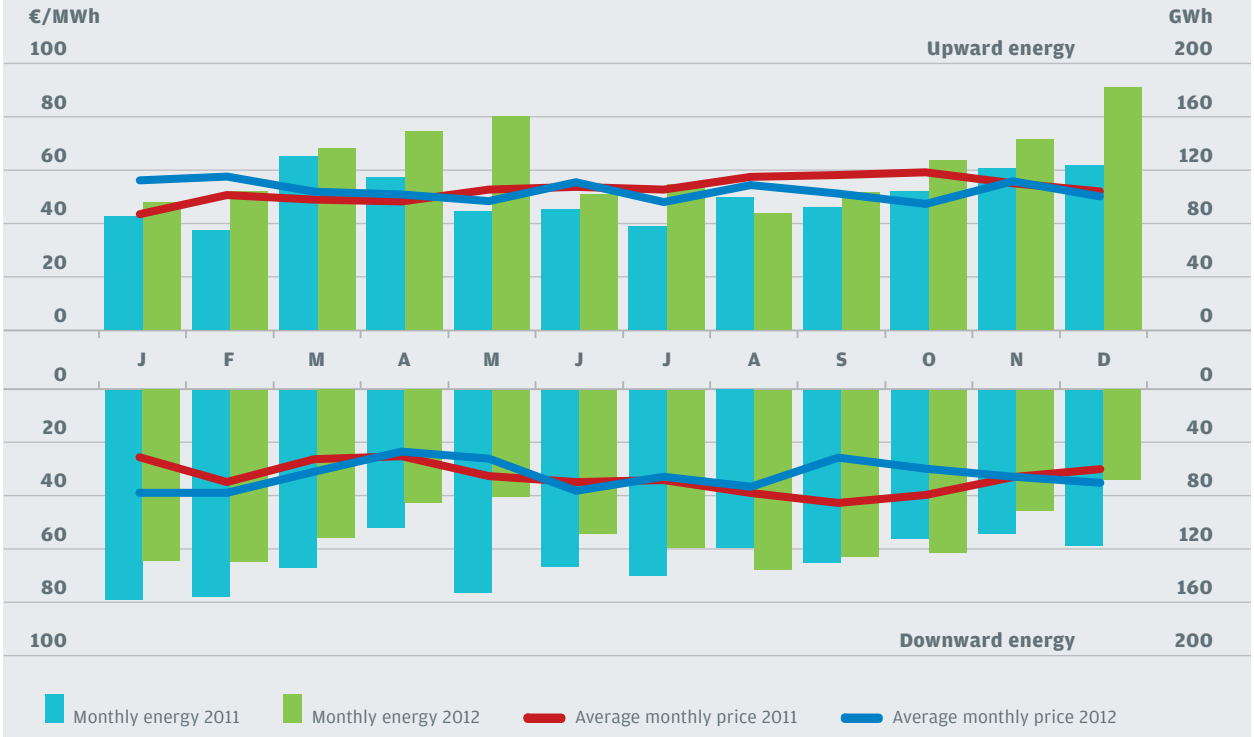


System Operation 05
Peninsular system

MONTHLY TOTAL FOR SECONDARY CONTROL RESERVES ALLOCATED. BREAKDOWN BY TECHNOLOGY (GW)



SECONDARY CONTROL. AVERAGE WEIGHTED PRICES AND ENERGIES



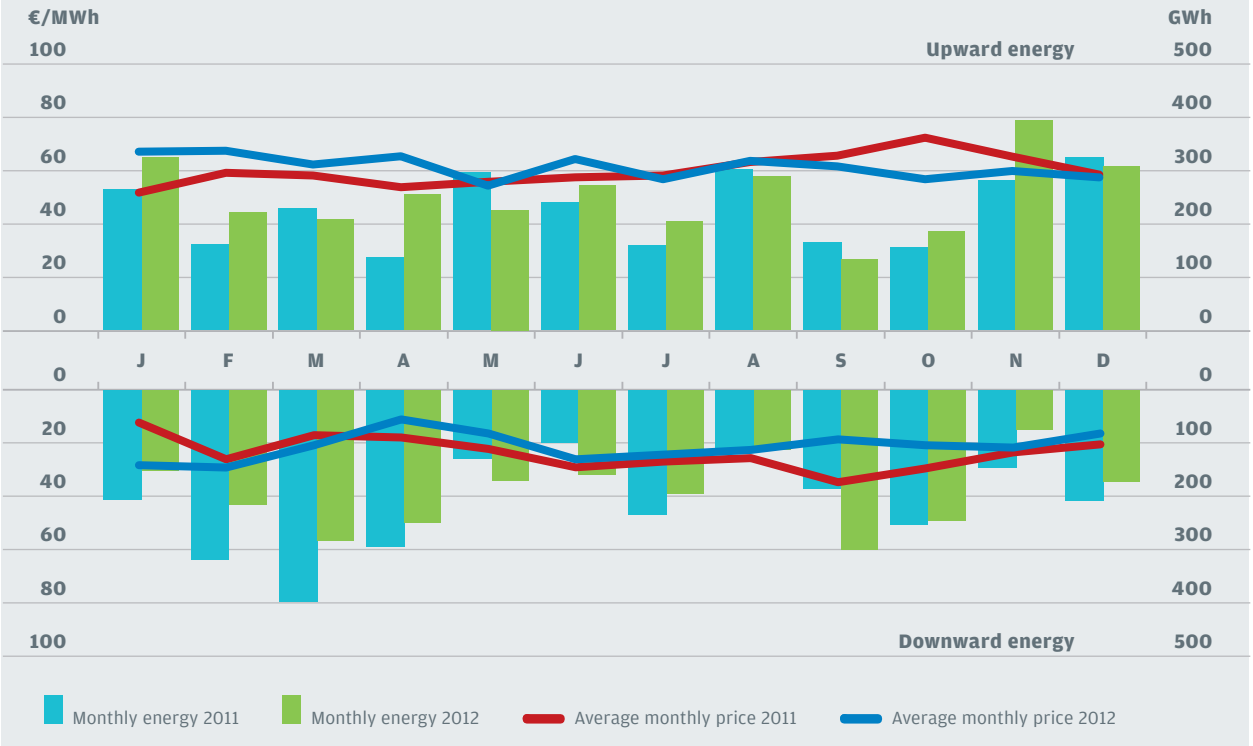
05 System Operation
Peninsular system

TERTIARY CONTROL

	Upward energy			Downward energy		
	(1) Energy (GWh)	Price (€/MWh) Avg. (2)	Max.	(1) Energy (GWh)	Price (€/MWh) Avg. (3)	Max.
January	322	64.78	98.93	152	29.00	61.57
February	218	65.15	100.02	216	29.59	65.00
March	206	60.27	122.04	282	22.07	61.68
April	253	63.29	105.50	249	13.59	50.00
May	224	53.07	85.50	171	18.10	46.00
June	269	62.45	79.32	160	26.81	59.00
July	203	55.16	73.47	195	25.48	56.00
August	285	61.70	86.81	113	23.59	49.00
September	131	59.59	95.00	300	19.97	52.40
October	183	55.34	95.00	246	22.05	53.82
November	391	58.08	180.30	74	22.74	49.98
December	306	55.68	123.40	172	18.18	54.69
Annual	**2,992**	**59.73**	**180.30**	**2,330**	**22.17**	**65.00**

(1) Includes emergency tertiary control energy. (2) Average weighted sell price. (3) Average weighted buy back price.

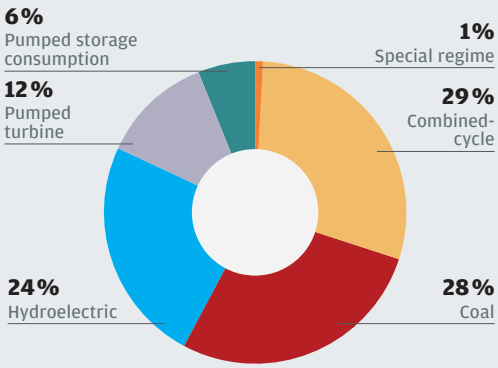
TERTIARY CONTROL. AVERAGE WEIGHTED PRICES AND ENERGIES



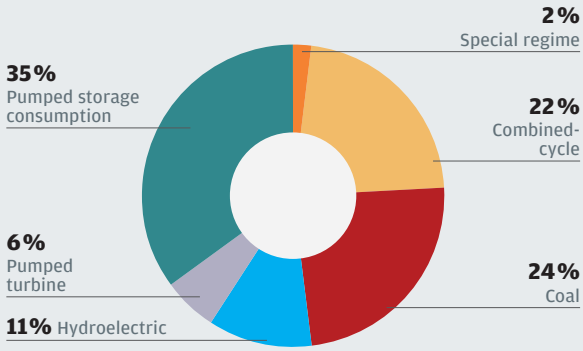
System Operation 05
Peninsular system

TERTIARY CONTROL. BREAKDOWN BY TECHNOLOGY. ANNUAL TOTAL (%)

Upward Energy



Downward Energy



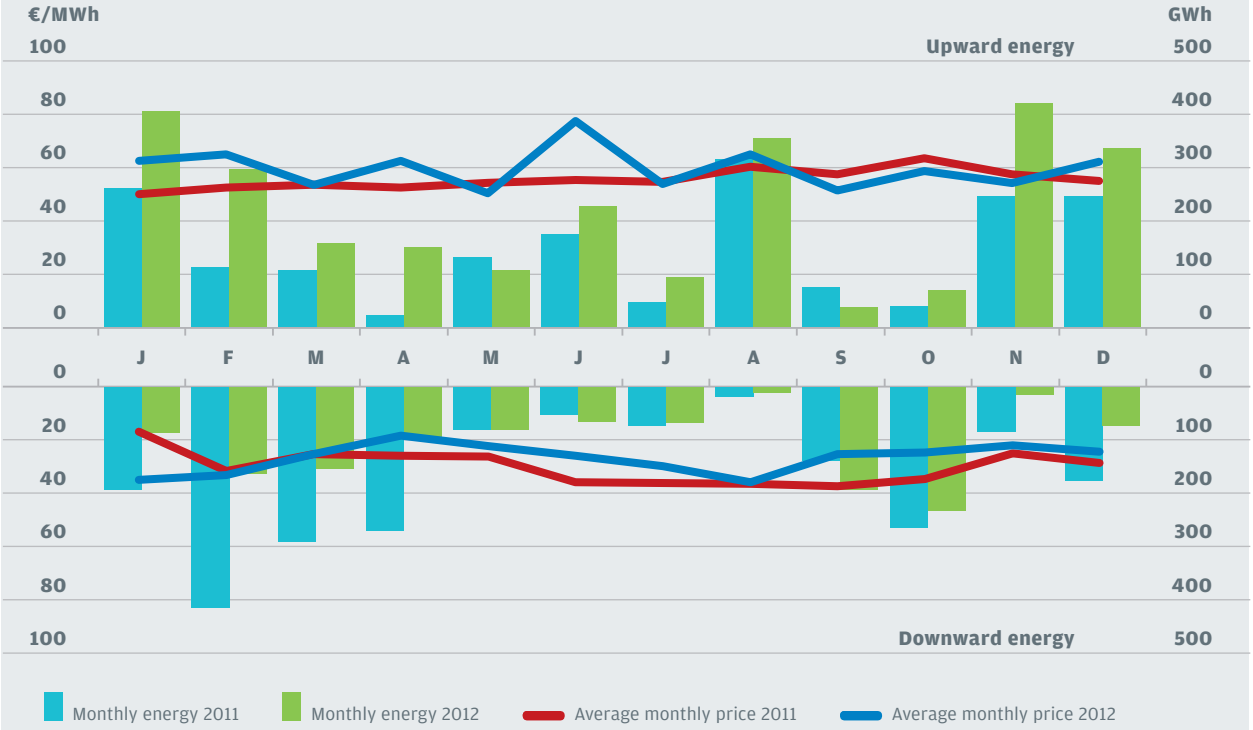
DEVIATION MANAGEMENT

	Upward energy			Downward energy		
		Price (€/MWh)			Price (€/MWh)	
	Energy (GWh)	Avg. (1)	Max.	Energy (GWh)	Avg. (2)	Max.
January	406	61.15	88.00	86	35.76	59.91
February	297	63.64	161.74	163	34.12	66.00
March	157	52.34	76.00	152	26.24	47.00
April	151	61.28	103.04	97	19.34	43.36
May	106	49.21	70.00	81	23.19	40.24
June	228	76.18	658.00	65	26.72	50.90
July	95	52.64	71.95	67	30.84	47.00
August	357	63.79	244.00	11	36.73	47.00
September	37	50.26	70.00	193	26.21	51.54
October	68	57.65	95.00	233	25.74	57.00
November	421	53.13	95.00	14	23.10	44.47
December	336	60.95	600.00	71	25.43	57.50
Annual	**2,658**	**60.24**	**658.00**	**1,232**	**27.39**	**66.00**

(1) Average weighted sell price. **(2)** Average weighted buy back price.

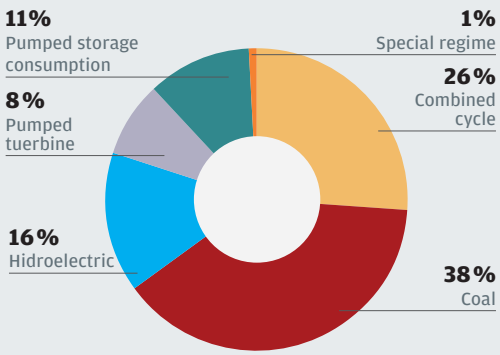
05 System Operation
Peninsular system

DEVIATION MANAGEMENT. AVERAGE WEIGHTED PRICES AND ENERGIES

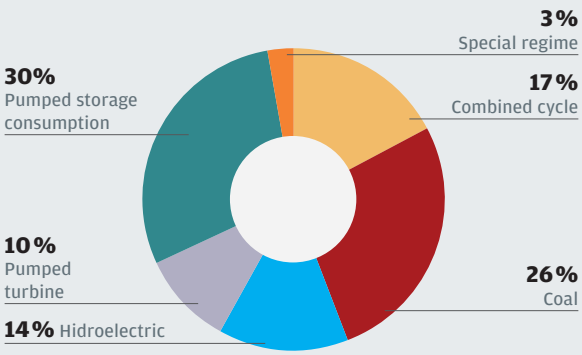


DEVIATION MANAGEMENT. BREAKDOWN BY TECHNOLOGY. ANNUAL TOTAL (%)

Upward energy



Downward energy



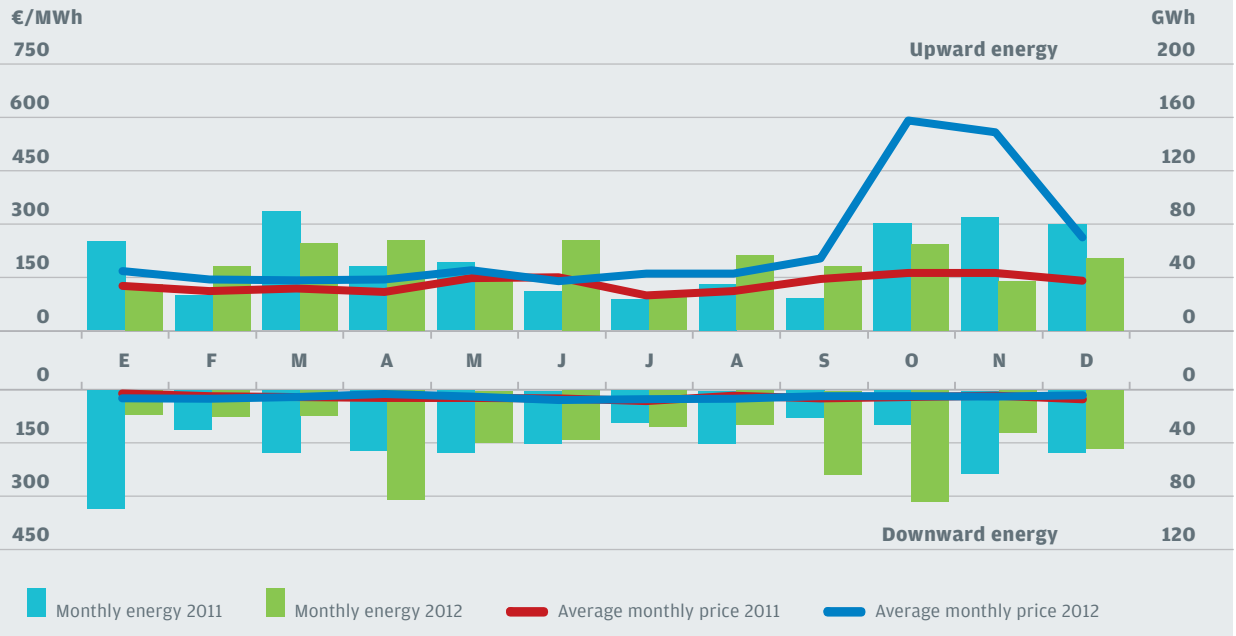
System Operation 05
Peninsular system

REAL-TIME RESTRICTIONS (1)

	Upward energy			Downward energy		
		Price (€/MWh)			Price (€/MWh)	
	Energy (GWh)	Avg. (2)	Max.	Energy (GWh)	Avg. (3)	MAx.
January	36	162.53	608.56	18	28.69	53.78
February	50	139.79	956.39	19	29.39	64.17
March	68	135.29	594.90	19	23.75	61.60
April	70	138.44	635.19	81	12.98	65.17
May	45	158.45	1,412.93	38	22.69	53.65
June	70	133.51	1,087.65	36	34.85	64.50
July	29	156.89	1,760.44	27	30.75	55.51
August	58	154.70	1,117.84	26	29.01	58.16
September	49	200.60	1,471.60	62	21.04	58.03
October	65	600.11	3,501.46	83	20.51	55.93
November	38	565.91	2,806.48	31	22.85	52.90
December	55	260.24	2,668.25	43	17.25	53.11
Annual	**633**	**231.27**	**3,501.46**	**484**	**22.24**	**65.17**

(1) Does not include energy redispatched through the link between the Spanish peninsular electricity system and the Balearic Islands' electricity system. **(2)** Average weighted sell price. **(3)** Average weighted buy back price.

REAL-TIME RESTRICTIONS. AVERAGE WEIGHTED PRICES AND ENERGIES

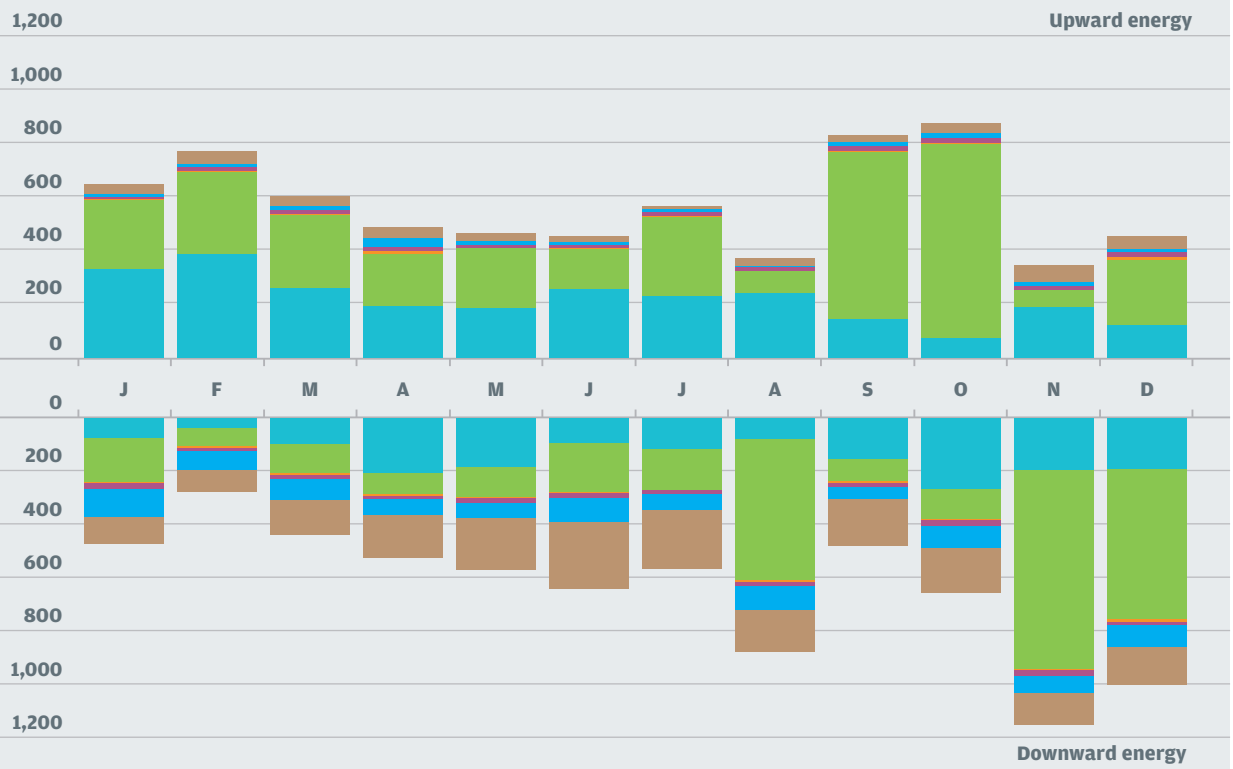


05 System Operation
Peninsular system

MEASURED NET DEVIATIONS. AVERAGE MONTHLY WEIGHTED PRICES AND NET ENERGY OF THE BALANCE MARKETS

	Upward energy		Downward energy	
	Energy GWh	Price (€/MWh)	Energy GWh	Price (€/MWh)
January	643	44.35	463	57.04
February	766	43.21	272	59.61
March	597	36.74	431	52.17
April	483	30.52	512	49.38
May	462	35.36	560	48.24
June	448	45.36	629	59.04
July	560	41.59	558	52.24
August	370	43.72	859	55.34
September	825	33.85	471	50.92
October	870	33.77	642	49.84
November	343	39.07	1,130	52.19
December	450	35.19	982	52.21
Annual	**6,818**	**38.56**	**7,507**	**53.18**

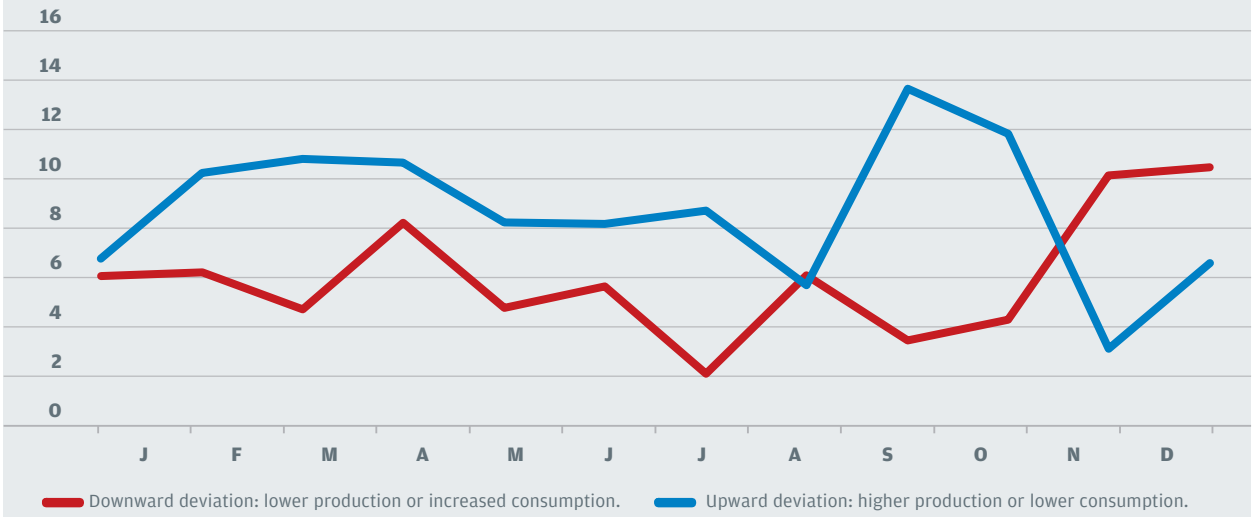
MEASURED NET DEVIATIONS (GWh)



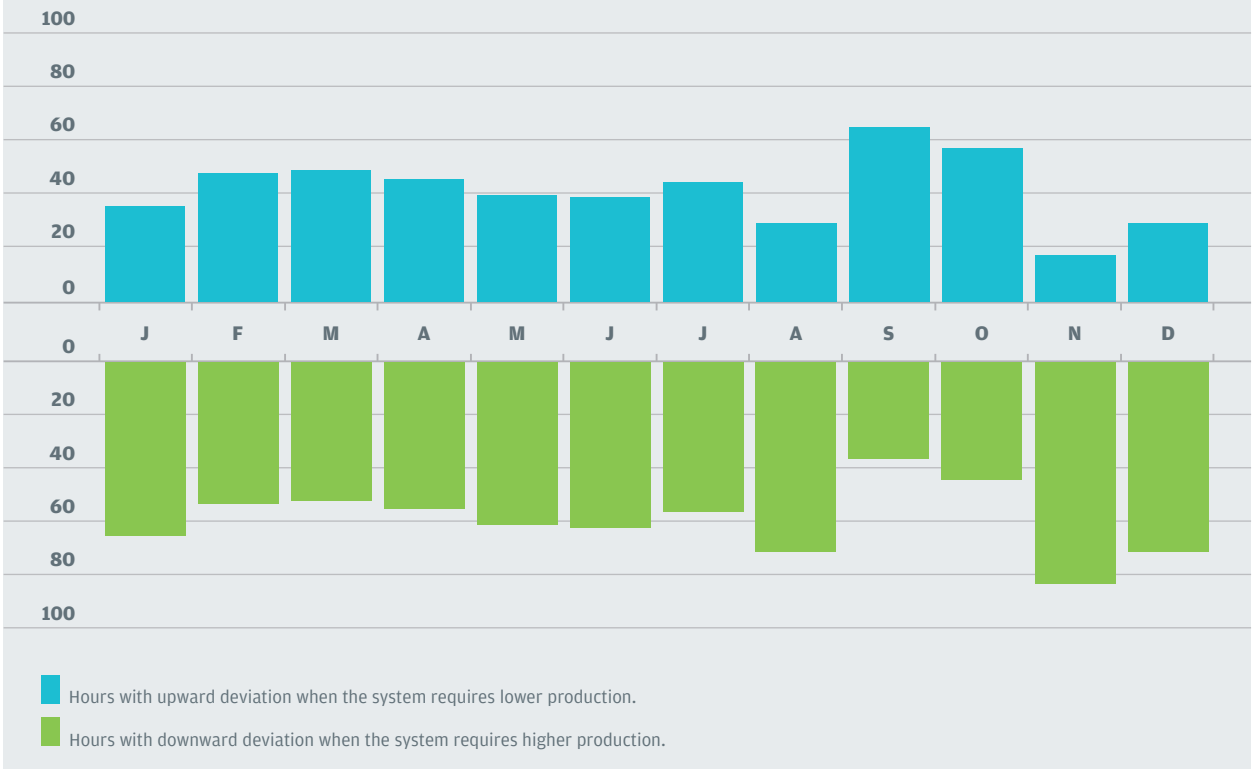
S.R.: Special regime. **Other technologies:** Importation (without rights). Exportation (without rights), SR Hydroelectric, SR Solar, SR.

System Operation 05
Peninsular system

AVERAGE COST OF DEVIATIONS (€/MWh)

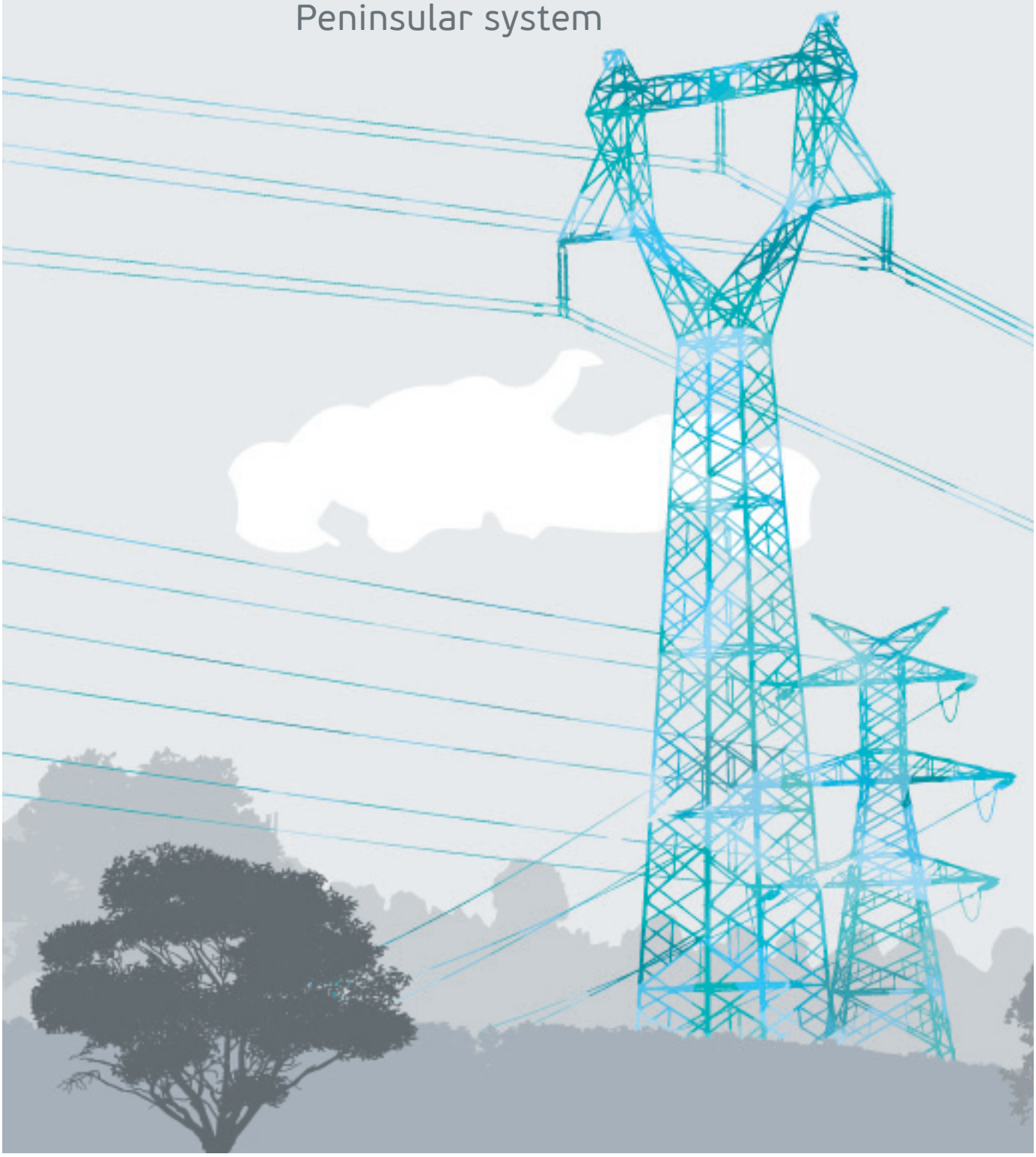


DEVIATION HOURS AGAINST THE SYSTEM (%)



06 Transmission Grid

Peninsular system



06 Transmission Grid
Peninsular system

EVOLUTION OF THE TRANSMISSION SYSTEM AND TRANSFORMER CAPACITY

		2008	2009	2010	2011	2012
km of 400 kV circuit	Red Eléctrica	17,727	18,019	18,792	19,671	20,104
	Other companies	38	38	0	0	0
	Total	**17,765**	**18,056**	**18,792**	**19,671**	**20,104**
km of ≤ 220 kV circuit	Red Eléctrica	16,675	16,806	17,291	17,893	18,317
	Other companies	500	501	112	112	112
	Total	**17,175**	**17,307**	**17,403**	**18,005**	**18,429**
Transformer capacity (MVA)	Red Eléctrica	62,772	65,547	67,547	69,347	73,897
	Other companies	800	800	0	0	0
	Total	**63,572**	**66,347**	**67,547**	**69,347**	**73,897**

400 KV TRANSMISSION LINES COMMISSIONED IN 2012

Line	Company	No. of circuits	km	MVA*km
E/S Archidona L/Caparacena-Tajo	Red Eléctrica	2	2.5	6,039
E/S Brazatortas L/Guadame-Valdecaballeros	Red Eléctrica	2	0.3	627
E/S Conso L/Trives-Aparecida	Red Eléctrica	2	1.9	4,682
E/S Peñarrubia L/Pinilla-Rocamora	Red Eléctrica	2	0.1	197
E/S Sax L/Benejama-Rocamora	Red Eléctrica	2	2.8	5,110
E/S Soto de Cerrato L/Grijota-S.S. Reyes	Red Eléctrica	2	5.1	12,410
E/S Xove L/Aluminio-Boimente	Red Eléctrica	2	1.3	2,340
E/S Xove L/Aluminio-Boimente	Red Eléctrica	1	0.7	1,352
E/S Xove L/Aluminio-Puentes	Red Eléctrica	1	0.8	1,524
L/ Brazatortas-Manzanares	Red Eléctrica	2	229.2	559,355
L/ Tabernas-Benahadux	Red Eléctrica	2	64.6	117,062
L/ Trives-Aparecida	Red Eléctrica	2	123.4	301,219
Total			**432.7**	**1,011,918**

Transmission Grid 06
Peninsular system

220 kV TRANSMISSION LINES COMMISSIONED IN 2012

Line	Companies	No. of circuits	km	MVA*km
E/S Algete L/S.S. Reyes-Villaverde	Red Eléctrica	2	3.4	2,696
E/S Balsicas L/ EL Palmar-Fausita	Red Eléctrica	2	13.7	10,928
E/S Esquedas L/ Gurrea-Sabiñánigo	Red Eléctrica	2	0.4	318
E/S Hijar L/ Escatron-Escucha	Red Eléctrica	2	2.6	2,339
E/S La Espluga L/Mangraners-Montblanc	Red Eléctrica	2	1.3	1,178
E/S Manzanares L/Alarcos-La Paloma	Red Eléctrica	2	9.1	8,107
E/S Manzanares L/Madridejos-La Paloma	Red Eléctrica	2	11.9	10,667
E/S Nudo Viario L/Hospitalet-Viladecans (S)	Red Eléctrica	2	0.3	162
E/S Parla L/Almaraz-Villaverde	Red Eléctrica	2	0.1	99
E/S Parque Ingenieros L/Ventas-Villaverde (S)	Red Eléctrica	2	0.2	112
E/S Talavera L/Azutan-Villaverde	Red Eléctrica	2	24.5	19,629
E/S Trujillo L/ Almaraz-Mérida	Red Eléctrica	1	0.5	367
E/S Trujillo L/ Almaraz-Mérida	Red Eléctrica	2	3.1	2,443
E/S Trujillo L/ Almaraz-Mérida (S)	Red Eléctrica	2	0.5	296
E/S Valle Arcipreste L/Majadahonda-Fuencarral (S)	Red Eléctrica	2	0.7	406
E/S Valparaiso L/Aparecida-Tordesillas	Red Eléctrica	2	1.7	4,150
L/ Alcira-Bernat 1	Red Eléctrica	1	0.6	495
L/ Alcira-Bernat 2	Red Eléctrica	1	0.9	767
L/ Antonio Leyva (previously Pradolongo)-Arganzuela (1.er circuit) (S)	Red Eléctrica	2	0.5	286
L/ Antonio Leyva (previously Pradolongo)-Parque Ingenieros (S)	Red Eléctrica	1	0.5	278
L/ Bernat Valldigna (1.er circuit)	Red Eléctrica	2	18.1	11,765
L/ Bernat-Catadau	Red Eléctrica	2	31.0	27,671
L/ Brazatortas-Puertollano	Red Eléctrica	2	22.8	20,403
L/ Brazatortas-Puertollano (S)	Red Eléctrica	2	0.7	454
L/ Calamocha (REE)-Calamocha (Endesa) (1.er circuit)	Red Eléctrica	2	0.2	152
L/ Caparacena-Fargue	Red Eléctrica	2	39.7	35,474
L/ Catadau-Valle del Carcer (previously Vilanova)	Red Eléctrica	2	51.7	33,637
L/ Catadau-Valle del Carcer (previously Vilanova) (S)	Red Eléctrica	2	1.2	588
L/ El Palmar 400-El Palmar 220 (2.º circuit)	Red Eléctrica	2	0.4	354
L/ El Palmar 400-El Palmar 220 (2.º circuit) (S)	Red Eléctrica	2	0.3	212
L/ Galapagar (Iberdrola) - Galapagar (REE) (S)	Red Eléctrica	2	0.2	101
L/ La Cereal-Tres Cantos (S)	Red Eléctrica	2	7.6	4,536
L/ María-Fuendetodos	Red Eléctrica	2	59.8	53,492
L/ Mérida-Vaguadas (S)	Red Eléctrica	1	0.3	94
L/ Mezquita-Calamocha	Red Eléctrica	2	95.3	85,170
L/ Parque Ingenieros-Villaverde (S)	Red Eléctrica	1	0.1	51
L/ Santa Engracia -El Sequero	Red Eléctrica	2	16.3	14,553
L/ Sentmenat-Can Vinyals (S)	Red Eléctrica	2	1.4	696
Fuencarral: connection from AT1 a GIS (S)	Red Eléctrica	2	0.4	254
Tres Cantos: fed from GIS a TR3 (S)	Red Eléctrica	1	0.1	69
Tres Cantos: fed from GIS a TR4 (S)	Red Eléctrica	1	0.1	75
Vilanova: connection from AT4 a GIS (S)	Red Eléctrica	1	0.1	6
Vilanova: connection from AT5 a GIS (S)	Red Eléctrica	1	0.1	8
Vilanova: connection from AT6 a GIS (S)	Red Eléctrica	1	0.1	9
Total			**424.2**	**355,546**

(S) underground; AT: autotransformer; GIS: substation equiped with gas insulated switchgear; TR: transformer; L/: line; E/S: incoming/outgoing.

06 Transmission Grid
Peninsular system

INCREASE IN LINE CAPACITY IN 2012

Line	Voltage (kV)	km	Increase in capacity (MVA)	MWA*km
L/ Mudarra-Tordesillas	400	33.6	240	8,064
L/ Guillena-Casaquemada	220	32.6	105	3,421
Total		**66.2**	**345**	**11,485**

SUBSTATION SWITCHYARDS COMMISSIONED IN 2012

Substation	Company	Voltage (kV)
Archidona	Red Eléctrica	400
Brazatortas	Red Eléctrica	400
Manzanares	Red Eléctrica	400
Peñarrubia	Red Eléctrica	400
Sax	Red Eléctrica	400
Soto de Cerrato	Red Eléctrica	400
Xove	Red Eléctrica	400
Antonio Leyva (previously Pradolongo)	Red Eléctrica	220
Bernat	Red Eléctrica	220
Brazatortas	Red Eléctrica	220
Can Vinyals (Electra Caldense)	Red Eléctrica	220
Cicero	Red Eléctrica	220
Esquedas	Red Eléctrica	220
Gramanet	Red Eléctrica	220
Hijar	Red Eléctrica	220
La Espluga	Red Eléctrica	220
Manzanares	Red Eléctrica	220
Parque Ingenieros	Red Eléctrica	220
Plasencia	Red Eléctrica	220
Santa Engracia	Red Eléctrica	220
Santa Pola	Red Eléctrica	220
Trujillo	Red Eléctrica	220
Valle Arcipreste	Red Eléctrica	220

Transmission Grid 06
Peninsular system

TRANSFORMERS INVENTORIED IN 2012

Substation	Company	Voltage kV	Transformer capacity kV	Transformer capacity MVA
Catadau	Red Eléctrica	400	400/220	600
Escatrón	Red Eléctrica	400	400/220	600
Itxaso	Red Eléctrica	400	400/220	300
La Espluga	Red Eléctrica	400	400/220	600
Manzanares	Red Eléctrica	400	400/220	600
Pinar del Rey (strategic reserve)	Red Eléctrica	400	400/220	200
Puebla Guzmán	Red Eléctrica	400	400/220	600
Trafo móvil	Red Eléctrica	400	400/220	250
Vic (strategic reserve)	Red Eléctrica	400	400/220	200
Vitoria	Red Eléctrica	400	400/220	600
Total				**4,550**

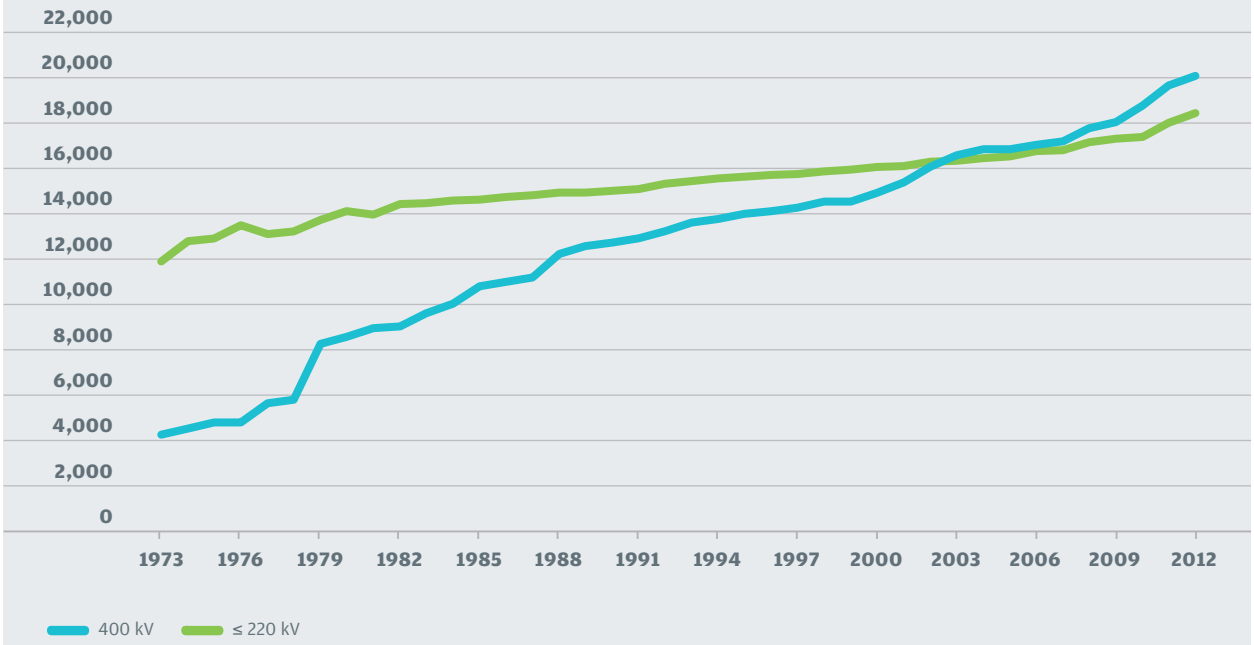
EVOLUTION OF THE 400 kV AND ≤ 220 kV TRANSMISSION GRID (km)

Year	400 kV	≤ 220 kV	Year	400 kV	≤ 220 kV
1973	4,175	11,923	1993	13,611	15,442
1974	4,437	12,830	1994	13,737	15,586
1975	4,715	12,925	1995	13,970	15,629
1976	4,715	13,501	1996	14,084	15,734
1977	5,595	13,138	1997	14,244	15,776
1978	5,732	13,258	1998	14,538	15,876
1979	8,207	13,767	1999	14,538	15,975
1980	8,518	14,139	2000	14,918	16,078
1981	8,906	13,973	2001	15,364	16,121
1982	8,975	14,466	2002	16,067	16,296
1983	9,563	14,491	2003	16,592	16,344
1984	9,998	14,598	2004	16,841	16,464
1985	10,781	14,652	2005	16,846	16,530
1986	10,978	14,746	2006	17,052	16,753
1987	11,147	14,849	2007	17,191	16,817
1988	12,194	14,938	2008	17,765	17,175
1989	12,533	14,964	2009	18,056	17,307
1990	12,686	15,035	2010	18,792	17,403
1991	12,883	15,109	2011	19,671	18,005
1992	13,222	15,356	2012	20,104	18,429

06 Transmission Grid

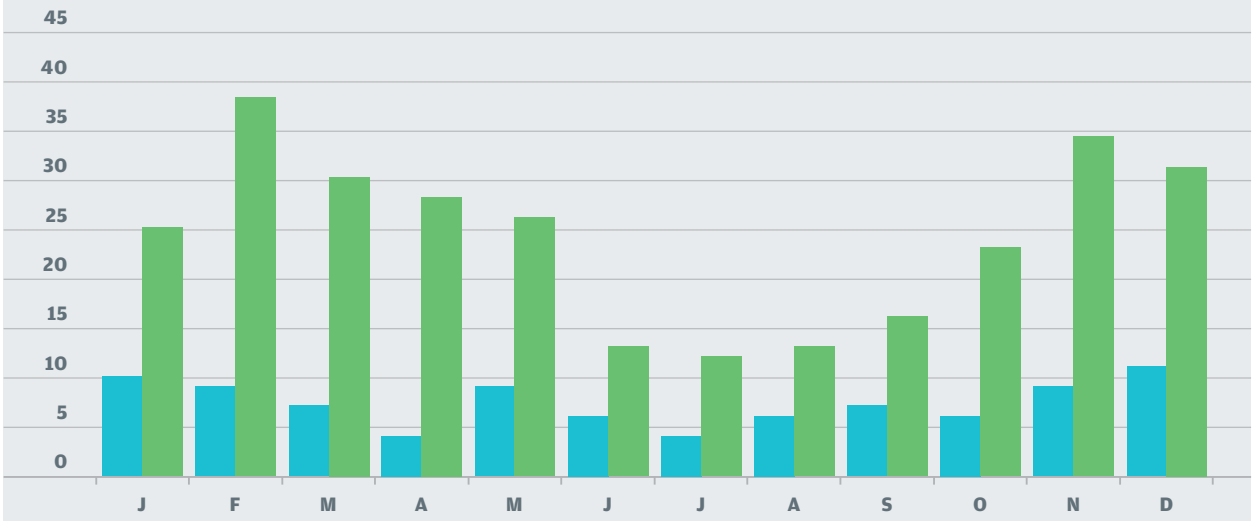
Peninsular system

EVOLUTION OF THE 400 kV AND ≤ 220 kV TRANSMISSION GRID (km)



Transmission Grid 06
Peninsular system

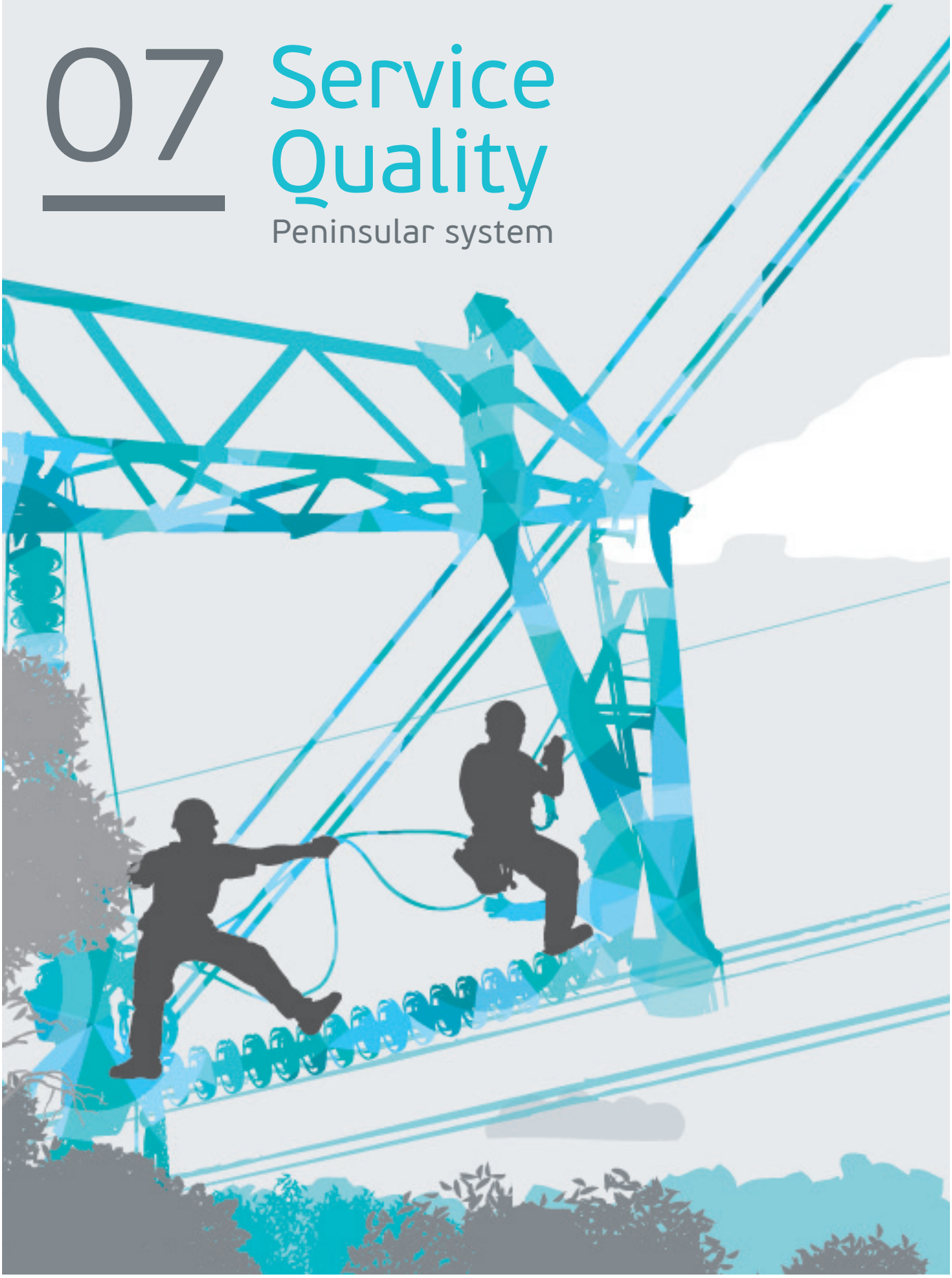
TRANSMISSION GRID LINES WITH LOAD ABOVE 70%

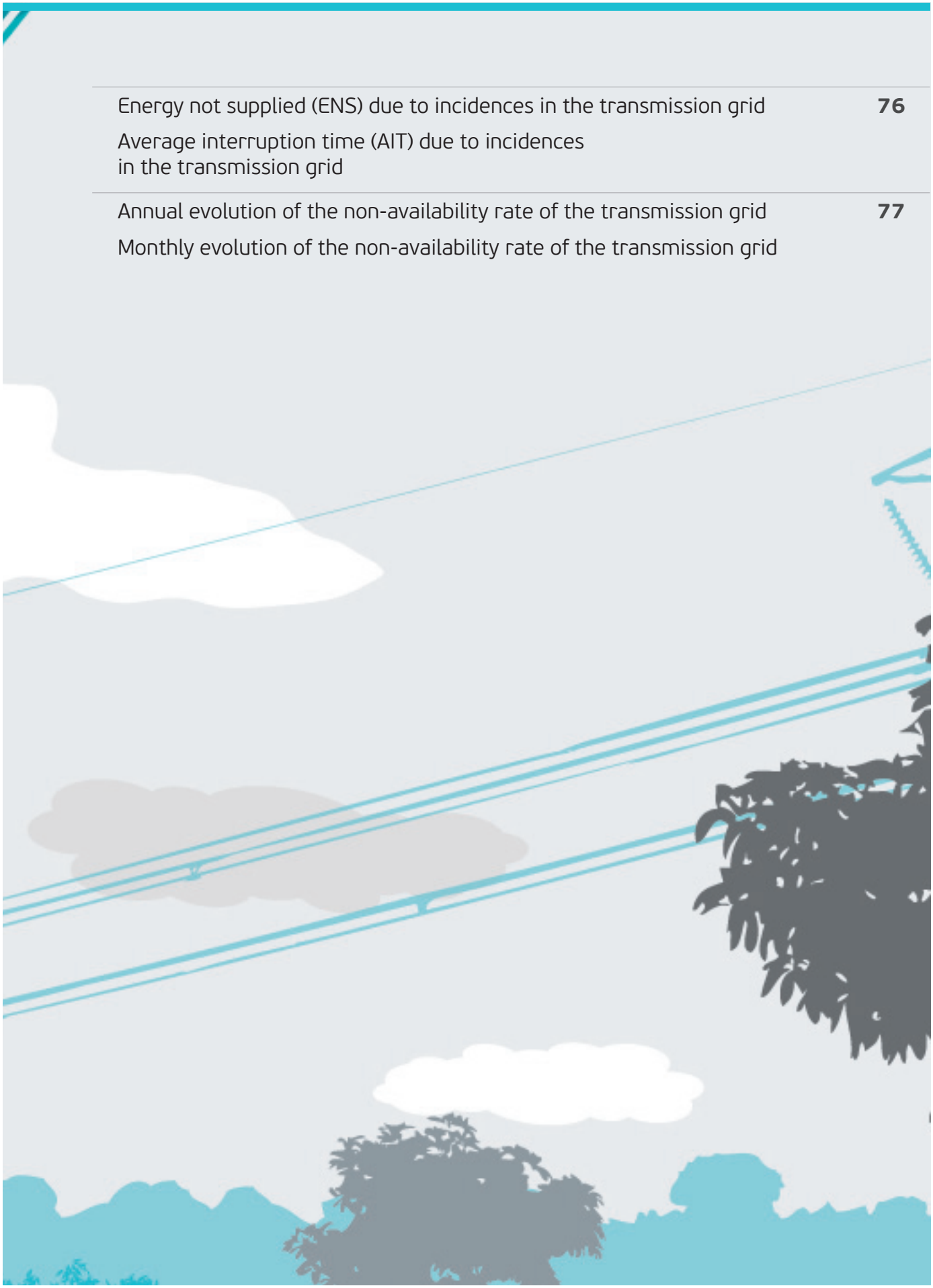


No. of lines that at any moment exceed the 70% of the thermal capacity of winter transmission

07 Service Quality

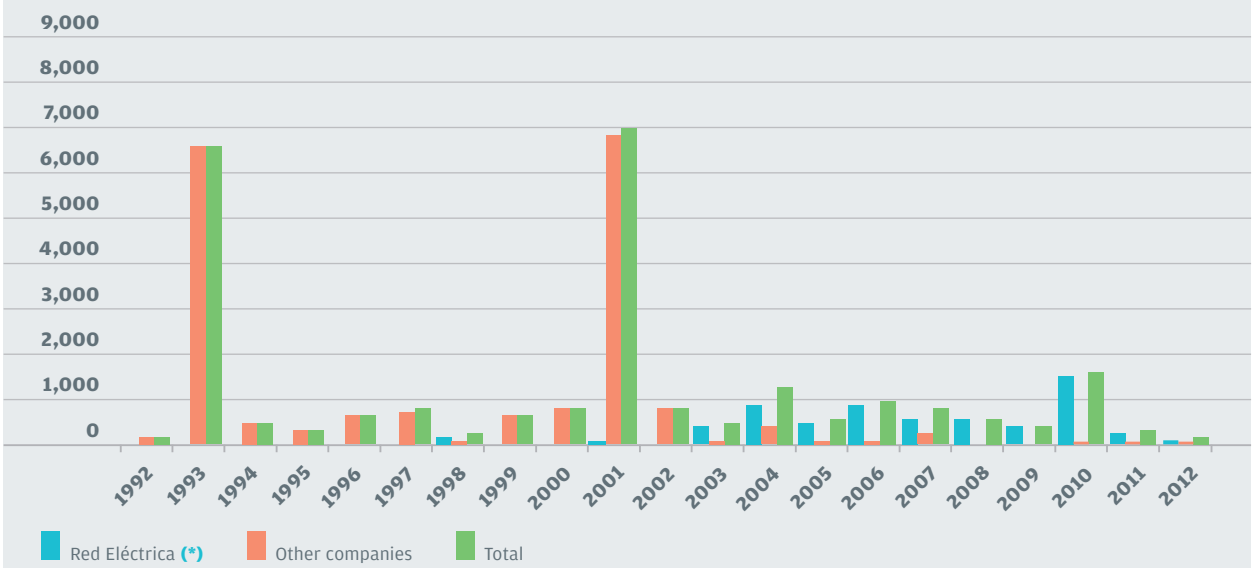
Peninsular system





07 Service Quality
Peninsular system

ENERGY NOT SUPPLIED (ENS) DUE TO INCIDENCES IN THE TRANSMISSION GRID (MWh)



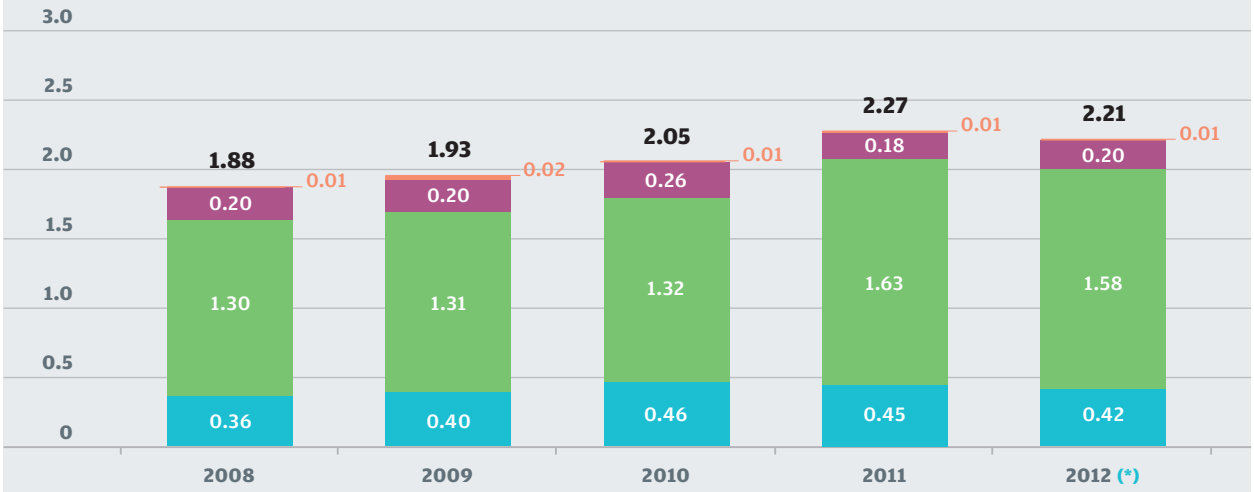
(*) As of 2003, the data of Red Eléctrica includes transmission assets acquired from other companies.

AVERAGE INTERRUPTION TIME (AIT) DUE TO INCIDENCES IN THE TRANSMISSION GRID (minutes)

(*) As of 2003, the data of Red Eléctrica includes transmission assets acquired from other companies.
Average Interruption Time (AIT) = Energy Not Supplied (ENS)/Average Power of the system.

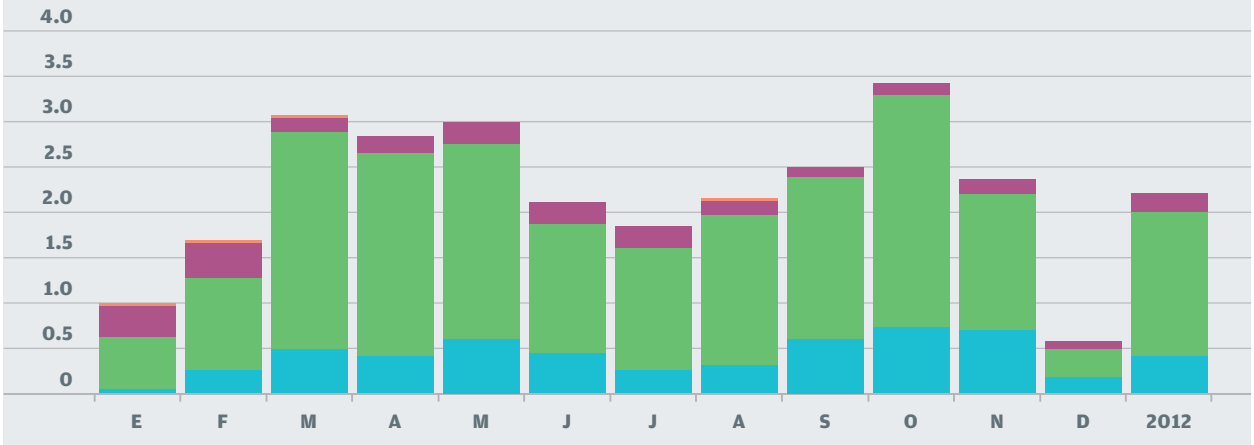
Service Quality 07
Peninsular system

ANNUAL EVOLUTION OF THE NON-AVAILABILITY RATE OF THE TRANSMISSION GRID (%)



Note: Classification according to RD 1955/2000.
The total non-availibility rate of the transmission grid does not include non-availibilities due to force-majeure or third party actions.
(*) Provisional data pending auditing.

MONTHLY EVOLUTION OF THE NON-AVAILABILITY RATE OF THE TRANSMISSION GRID (%)



Note: Classification according to RD 1955/2000.
The total non-availibility rate of the transmission grid does not include non-availibilities due to force-majeure or third party actions.
Provisional data pending auditing.

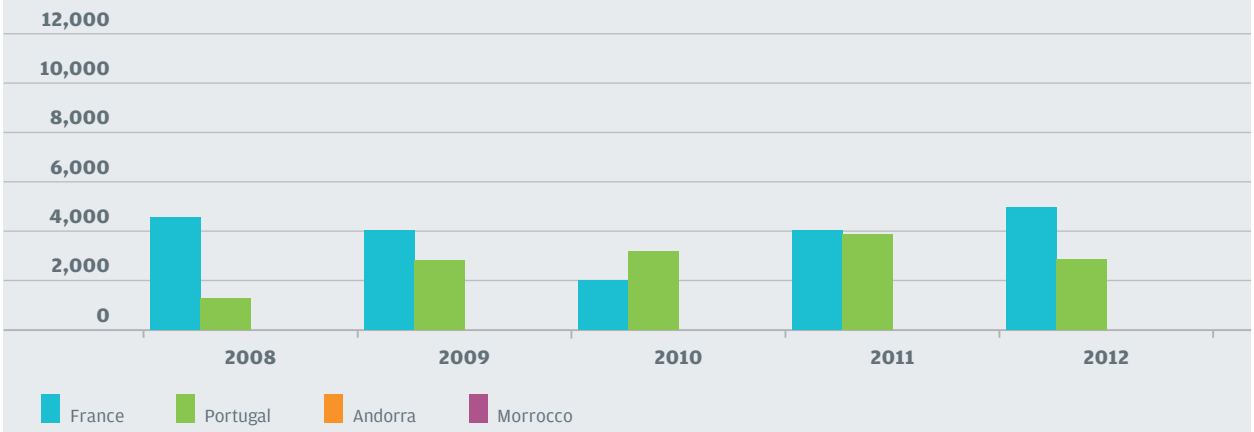
08 International Exchanges

Peninsular system

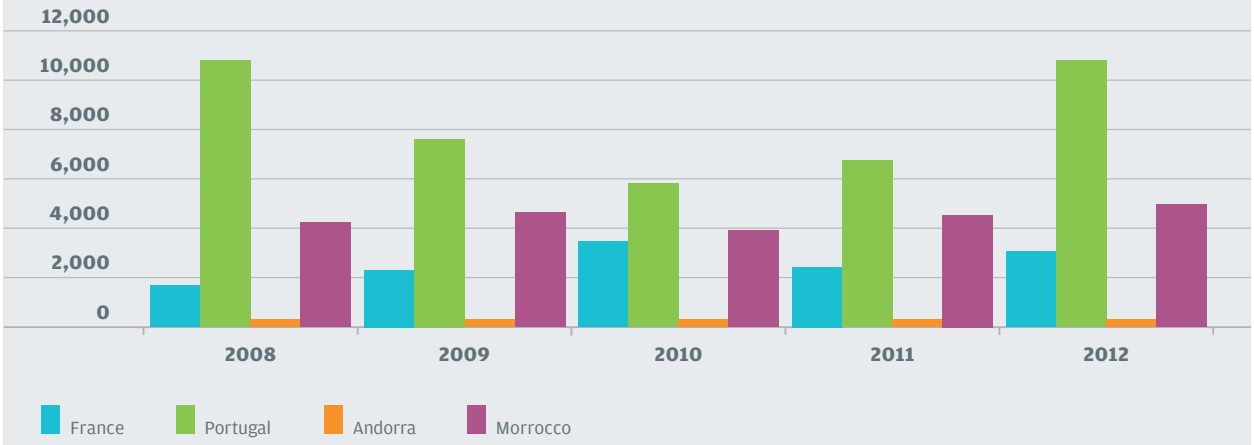
08 International Exchanges

Peninsular system

EVOLUTION OF IMPORTS IN INTERNATIONAL PHYSICAL ENERGY EXCHANGES (GWh)

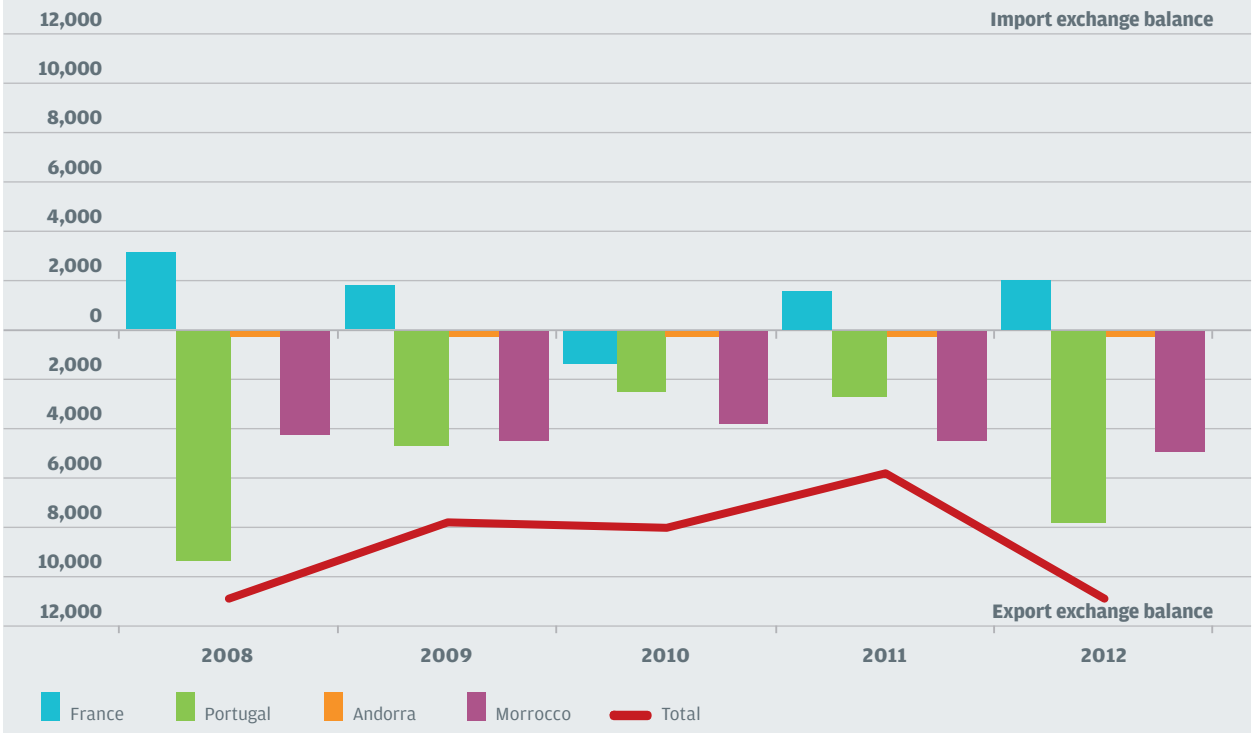


EVOLUTION OF EXPORTS IN INTERNATIONAL PHYSICAL ENERGY EXCHANGES (GWh)

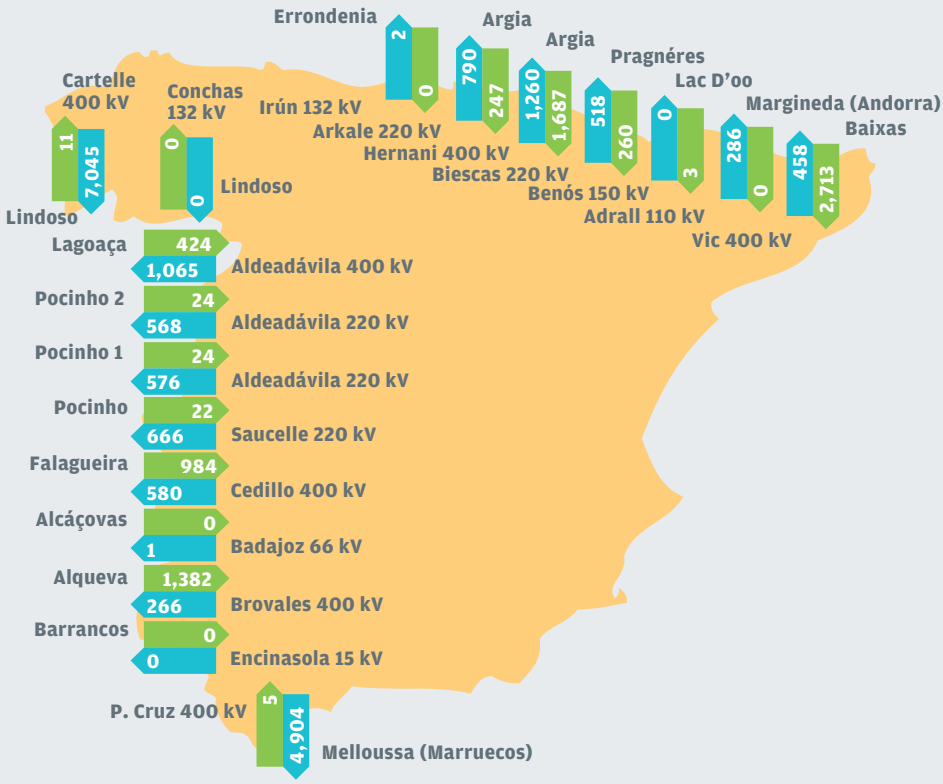


International Exchanges 08
Peninsular system

EVOLUTION OF THE NET INTERNATIONAL PHYSICAL ENERGY EXCHANGES (GWh)



MAP OF INTERNATIONAL PHYSICAL ENERGY EXCHANGES (GWh)



08 International Exchanges
Peninsular system

INTERNATIONAL PHYSICAL ENERGY EXCHANGES (GWh)

	Incoming		Outgoing		Balance (1)		Volume	
	2011	2012	2011	2012	2011	2012	2011	2012
France	3,987	4,911	2,463	3,028	1,524	1,883	6,450	7,938
Portugal	3,930	2,871	6,744	10,768	-2,814	-7,897	10,674	13,638
Andorra	0	0	306	286	-306	-286	306	286
Morrocco	16	5	4,510	4,904	-4,495	-4,900	4,526	4,909
Total	**7,932**	**7,786**	**14,023**	**18,986**	**-6,090**	**-11,200**	**21,955**	**26,771**

(1) Positive value: import exchange balance. Negative values: export exchange balance.

SCHEDULED INTERNATIONAL ENERGY EXCHANGES (GWh)

	Importation		Exportation		Balance (1)	
	2011	2012	2011	2012	2011	2012
France (2)	4,493	5,864	2,982	3,971	1,511	1,893
Portugal (3)	1,635	408	4,445	8,305	-2,810	-7,897
Andorra	0	0	305	286	-305	-286
Morrocco	6	0,4	4,499	4,897	-4,493	-4,897
Total	**6,134**	**6,272**	**12,231**	**17,459**	**-6,097**	**-11,187**

(1) Positive value: import exchange balance. Negative values: export exchange balance. **(2)** Includes exchanges with other European countries.
(3) As of 1 July 2007, with the launch of the MIBEL market (day-ahead and intraday), the management of the Portugal-Spain interconnection is carried out via a market splitting mechanism where the Market Operator performs a joint matching of the Iberian market and calculates the prices for each one of the areas in the event of congestion. The exchange capacity is not allocated to any particular market agent/participant nor to a specific transaction but, as a result of this process, a balance of energy exchange schedules through this interconnection is established.

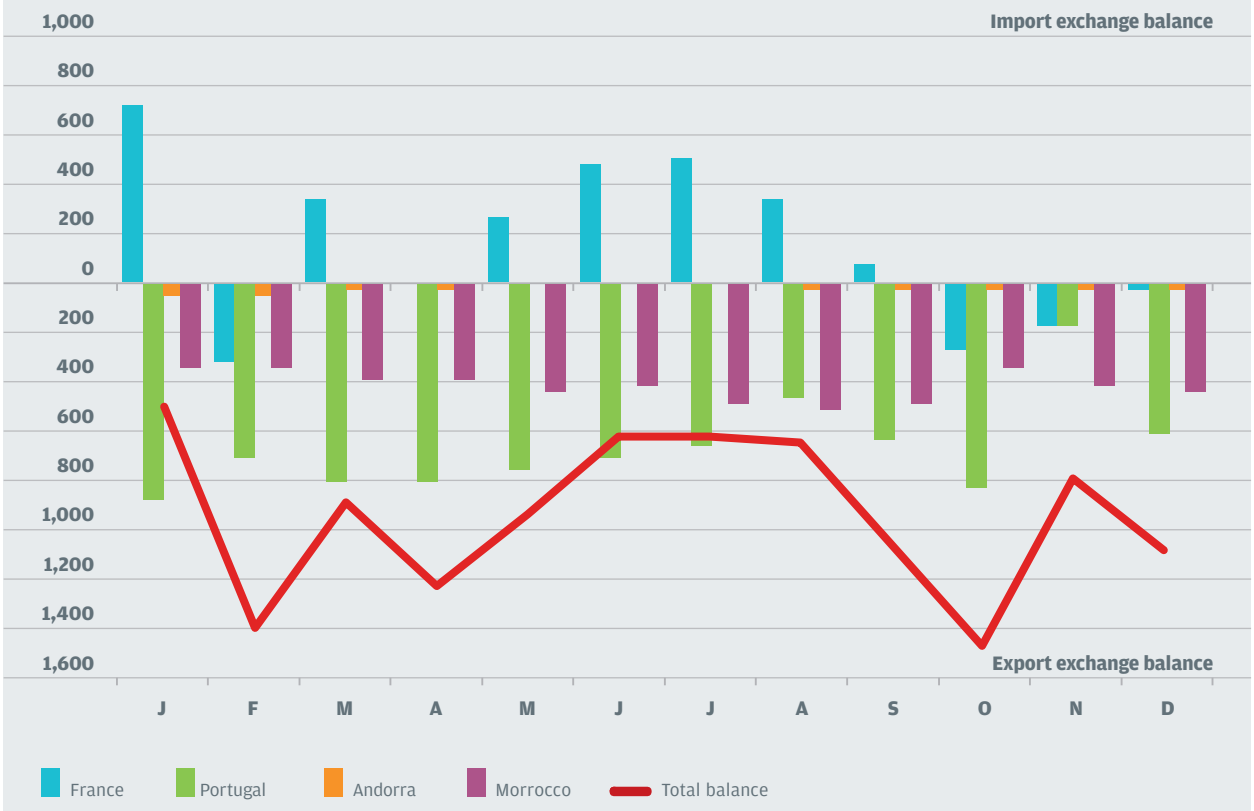
International Exchanges 08
Peninsular system

SUMMARY OF INTERNATIONAL ENERGY EXCHANGES (GWh)

	Importation	Exportation	Balance
Transactions (market + physical bilateral contracts)	**6,255**	**17,449**	**-11,194**
France (1)	5,852	3,961	1,891
Portugal	402	8,305	-7,902
Andorra	0	286	-286
Morrocco	0	4,897	-4,897
Counter-Trading France – Spain	**12**	**10**	**2**
Counter-Trading Portugal – Spain	**5**	**0**	**5**
Support exchanges	**0**	**0**	**0**
Total scheduled exchanges	**6,272**	**17,459**	**-11,187**
Frequency control deviations compensated for			**-13**
Physical balance of international exchanges			**-11,200**

(1) Includes exchanges with other European countries.

MONTHLY NET SCHEDULED INTERNATIONAL ENERGY EXCHANGES (GWh)



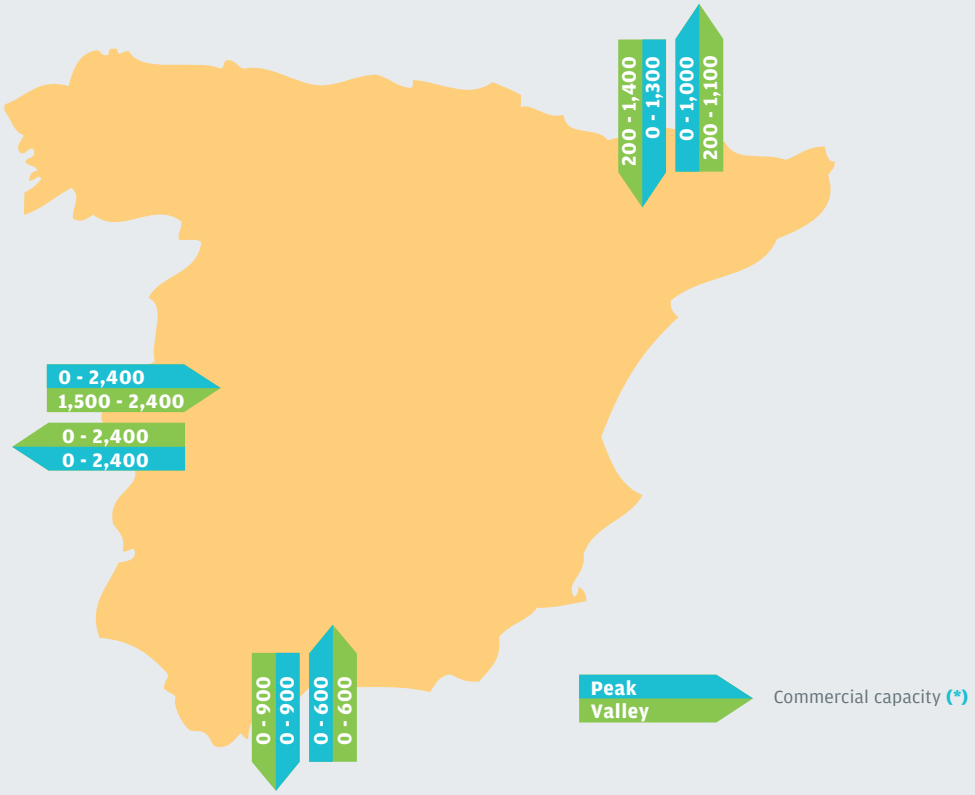
08 International Exchanges
Peninsular system

SCHEDULED INTERNATIONAL TRANSACTIONS BY TYPE OF MARKET AGENT AND INTERCONNECTION (GWh)

	Traders/ Resellers		Exchange schedules Spain-Port (2)		Support exchanges		Counter-trading actions		Total		
	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Balance
France (1)	5,852	3,961	0	0	0	0	12	10	5,864	3,971	1,893
Portugal (2)	0	0	402	8,305	0	0	5	0	408	8,305	-7,897
Andorra	0	286	0	0	0	0	0	0	0	286	-286
Morocco	0.4	4,897	0	0	0	0	0	0	0	4,897	-4,897
Total	**5,852**	**9,145**	**402**	**8,305**	**0**	**0**	**17**	**10**	**6,272**	**17,459**	**-11,187**

(1) Includes exchanges with other European countries. **(2)** As of 1 July 2007, with the launch of the MIBEL market (day-ahead and intraday), the management of the Portugal-Spain interconnection is carried out via a market splitting mechanism where the Market Operator performs a joint matching of the Iberian market and calculates the prices for each one of the areas in the event of congestion. The exchange capacity is not allocated to any particular market agent/participant nor to a specific transaction but, as a result of this process, a balance of energy exchange schedules through this interconnection is established.

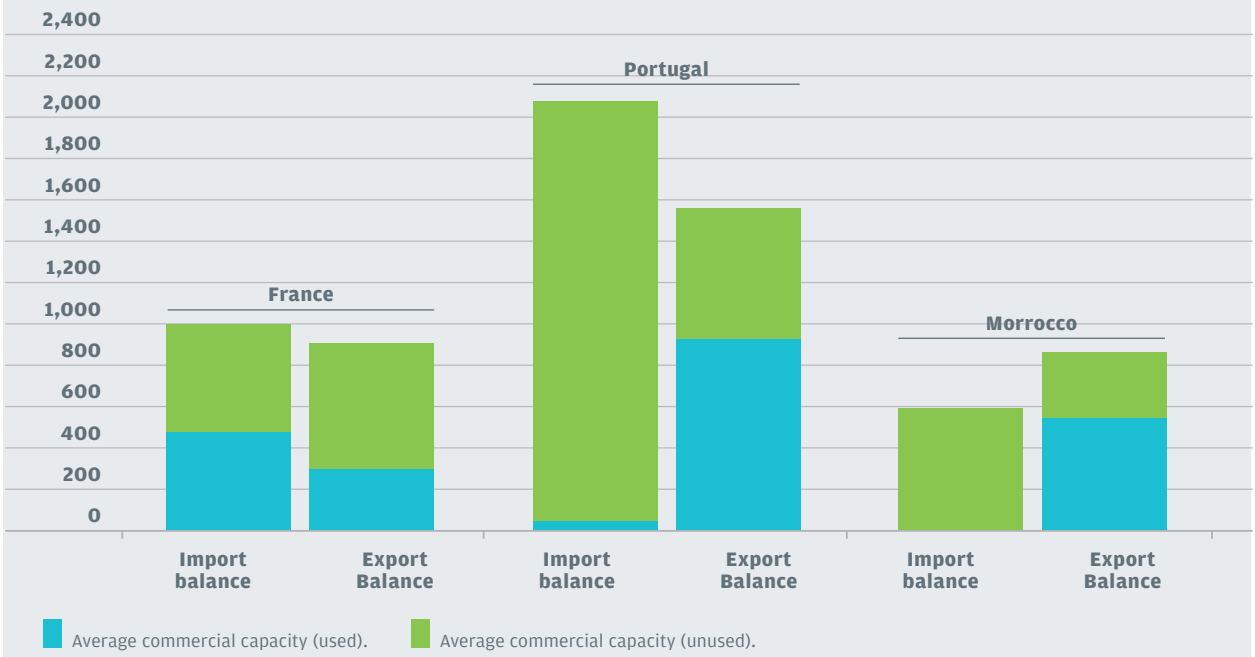
COMMERCIAL EXCHANGE CAPACITY OF THE INTERCONNECTIONS (MW)



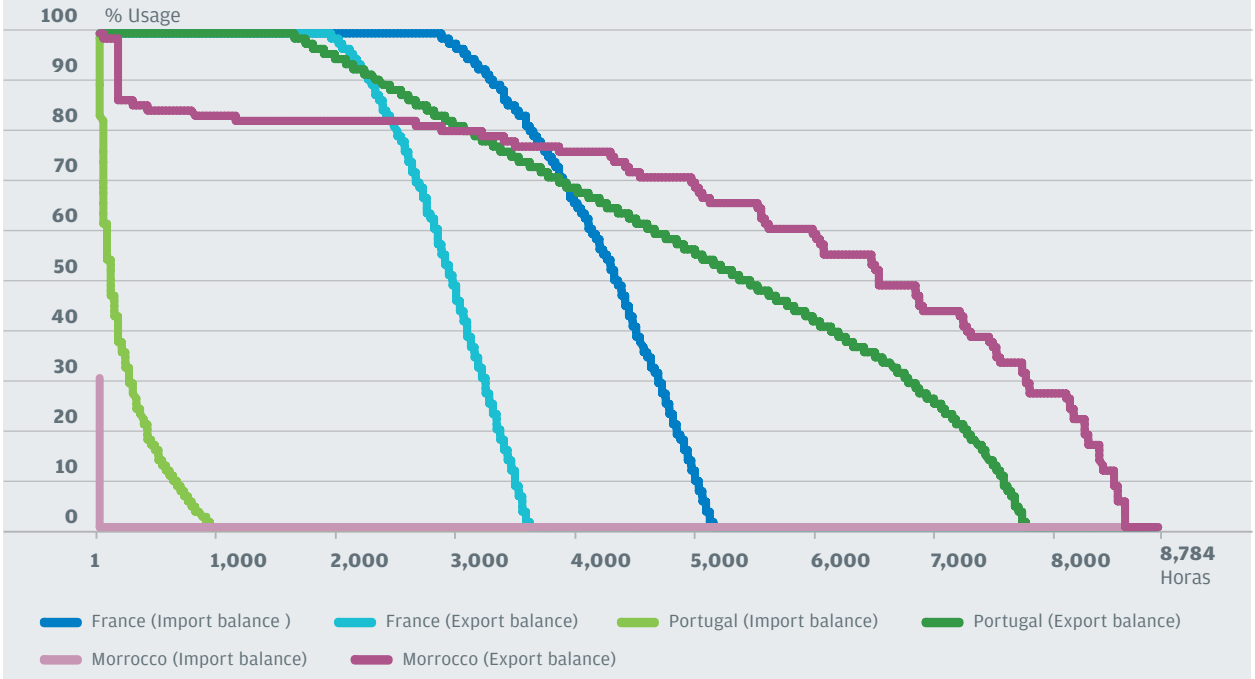
(*) Extreme hourly values considering non-availibilities of the grid and generation elements.

International Exchanges 08
Peninsular system

AVERAGE USAGE OF COMMERCIAL EXCHANGE CAPACITY OF THE INTERCONNECTIONS (MW)



UTILIZATION RATE OF THE COMMERCIAL EXCHANGE CAPACITY OF THE INTERCONNECTIONS

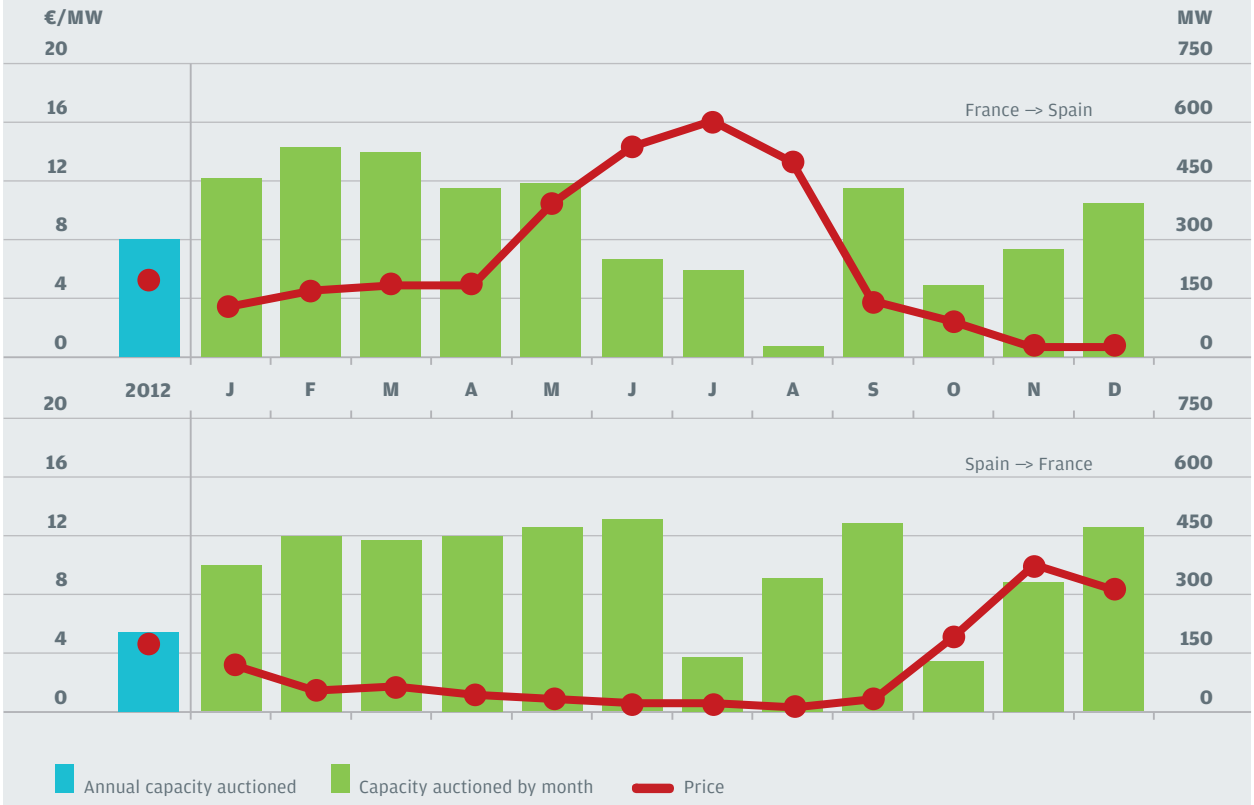


Commercial exchange capacity usage sorted in decreasing order (monotone curves).

08 International Exchanges

Peninsular system

EVOLUTION OF RESULTS OF THE CAPACITY AUCTIONS FOR THE INTERCONNECTION WITH FRANCE



The result of the annual / monthly capacity auction (carried out in December last year / late previous month) applies for each hour of the year / month except for the periods reflected in the published specifications for said auction.

International Exchanges 08
Peninsular system

CAPACITY NEGOTIATED IN EXPLICIT AUCTIONS FOR THE INTERCONNECTION WITH FRANCE (IFE) (1)

(1) Includes annual, monthly and daily capacities.

CAPACITY NEGOTIATED IN EXPLICIT INTRADAY AUCTIONS FOR THE INTERCONNECTION WITH FRANCE (IFE) (GW)

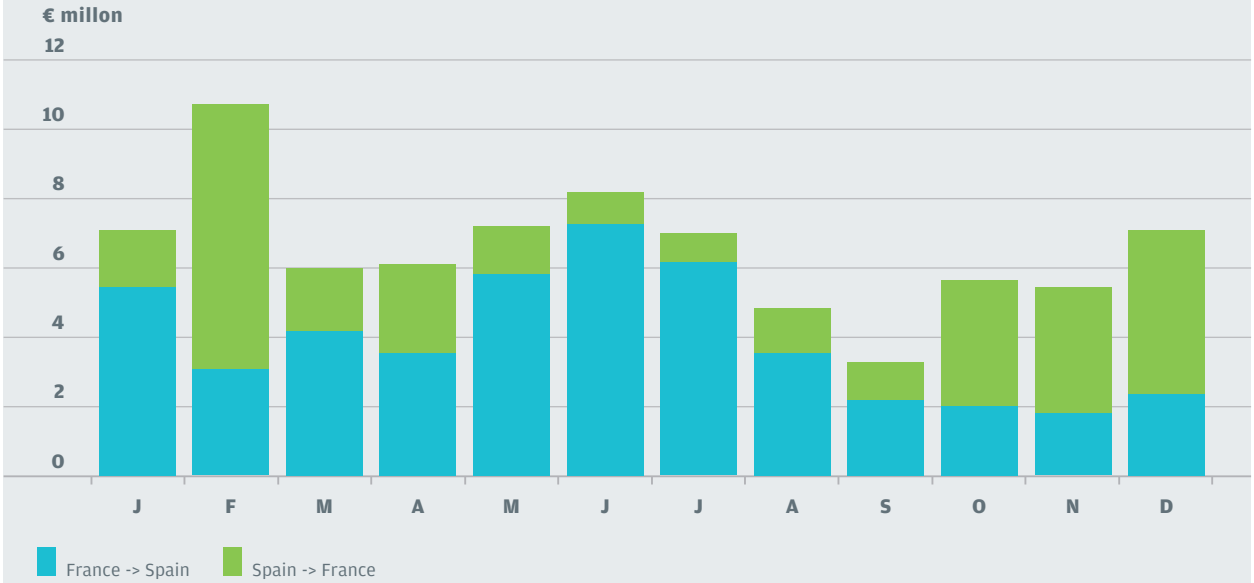
08 International Exchanges
Peninsular system

CONGESTION RENT DERIVED FROM THE CAPACITY AUCTIONS FOR THE INTERCONNECTION WITH FRANCE (IFE) (1)

	France –> Spain		Spain –> France		Total	
Subastas	€ thousand	%	€ thousand	%	€ thousand	%
Annual	13,195	16.8	7,166	9.1	20,361	26.0
Monthly	15,506	19.8	6,323	8.1	21,829	27.8
Daily	17,508	22.3	16,267	20.7	33,775	43.1
Intraday	1,164	1.5	1,285	1.6	2,449	3.1
Total	**47,372**	**60.4**	**31,041**	**39.6**	**78,413**	**100.0**

(1) Does not include the costs of counter-trading actions nor other costs.

MONTHLY EVOLUTION OF CONGESTION RENT DERIVED FROM THE CAPACITY AUCTIONS FOR THE INTERCONNECTION WITH FRANCE (IFE) (1)



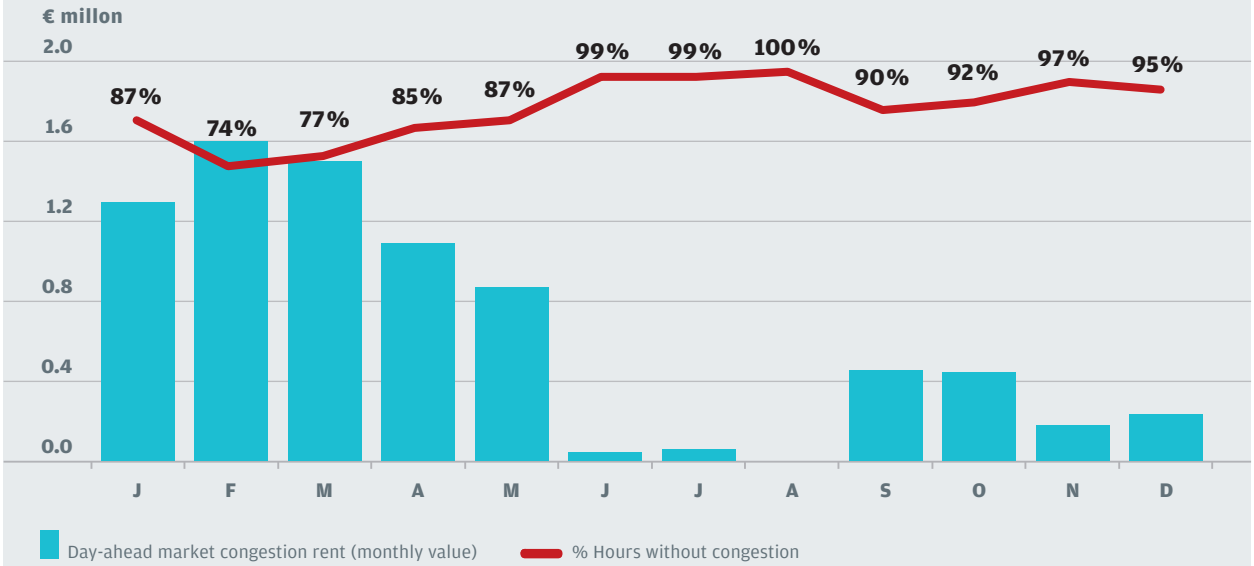
(1) Does not include the costs of counter-trading actions nor other costs.

International Exchanges 08
Peninsular system

COUNTER-TRADING SCHEDULES APPLIED FOR THE INTERCONNECTION WITH FRANCE

Month	Day	Direction	MWh
February	8	France –> Spain	5,100
March	9	France –> Spain	5
June	14	Spain –> France	7,036
August	23	France –> Spain	94
October	16	France –> Spain	3,900
	17	France –> Spain	2,050
	27	France –> Spain	600
November	17	France –> Spain	124
		Spain –> France	2,504
Total Spain –> France			**9,540**
Total France –> Spain			**11,873**

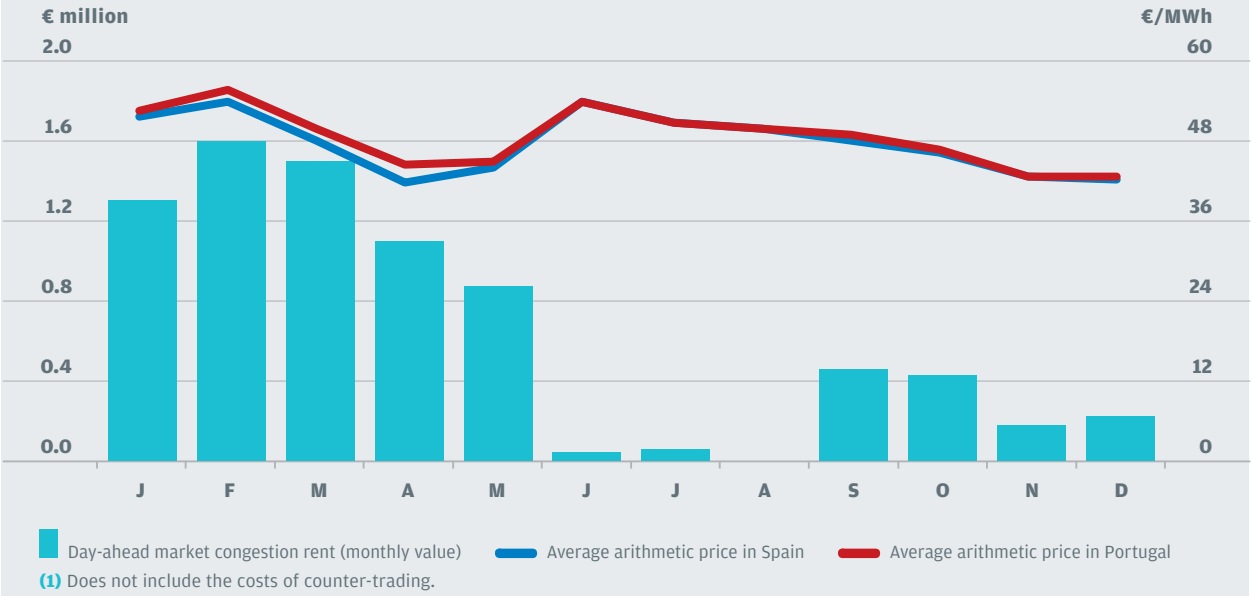
CONGESTION RENT AND COUPLING RATE DERIVED FROM MARKET SPLITTING IN THE DAY-AHEAD MARKET FOR THE INTERCONNECTION WITH PORTUGAL (1)



(1) Does not include the costs of counter-trading.

08 International Exchanges
Peninsular system

CONGESTION RENT AND PRICES OF MARKET SPLITTING IN THE DAY-AHEAD MARKET FOR THE INTERCONNECTION WITH PORTUGAL (1)



(1) Does not include the costs of counter-trading.

CONGESTION RENT AND PRICES OF MARKET SPLITTING FOR THE INTERCONNECTION WITH PORTUGAL

Month	Spain average arithmetic price (€/MWh)	Portugal average arithmetic price (€/MWh)	Difference in average price (€/MWh)	Congestion rent in the day-ahead market (1) (€ million)	Congestion rent in the intraday market (1) (€ million)
January	51.06	51.95	-0.88	1.30	0.03
February	53.48	55.26	-1.78	1.60	0.14
March	47.56	49.12	-1.56	1.50	0.25
April	41.21	43.98	-2.77	1.09	0.08
May	43.58	44.52	-0.94	0.87	0.01
June	53.50	53.53	-0.03	0.04	0.01
July	50.29	50.35	-0.06	0.06	0.01
August	49.34	49.34	0.00	0.00	0.03
September	47.59	48.49	-0.90	0.46	0.13
October	45.68	46.14	-0.45	0.44	0.08
November	42.07	42.39	-0.32	0.18	0.05
December	41.73	42.18	-0.45	0.23	0.13
Total				**7.77**	**0.96**

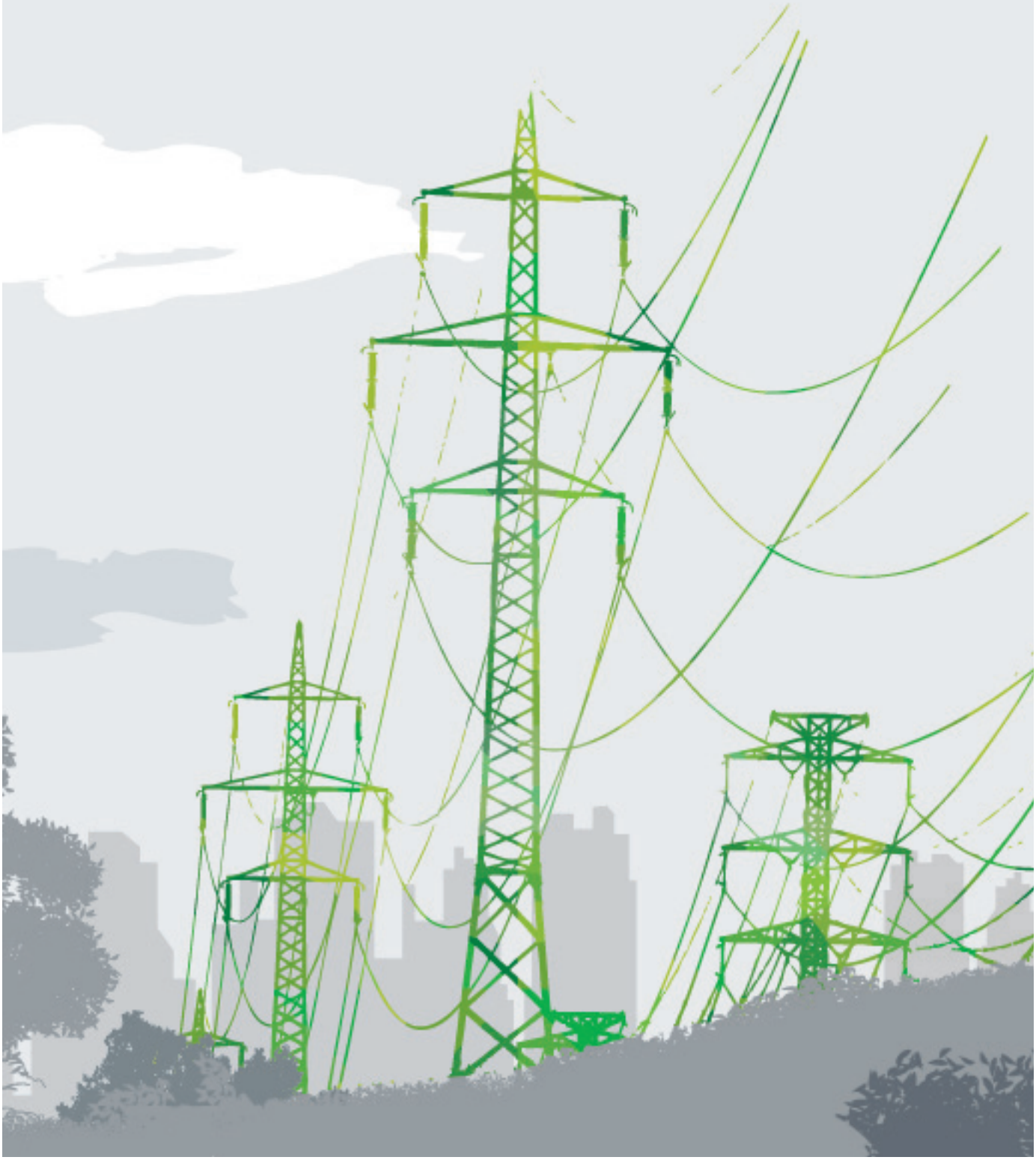
(1) Does not include the costs associated to countertrading.

International Exchanges 08
Peninsular system

COUNTER-TRADING SCHEDULES APPLIED FOR THE INTERCONNECTION WITH PORTUGAL

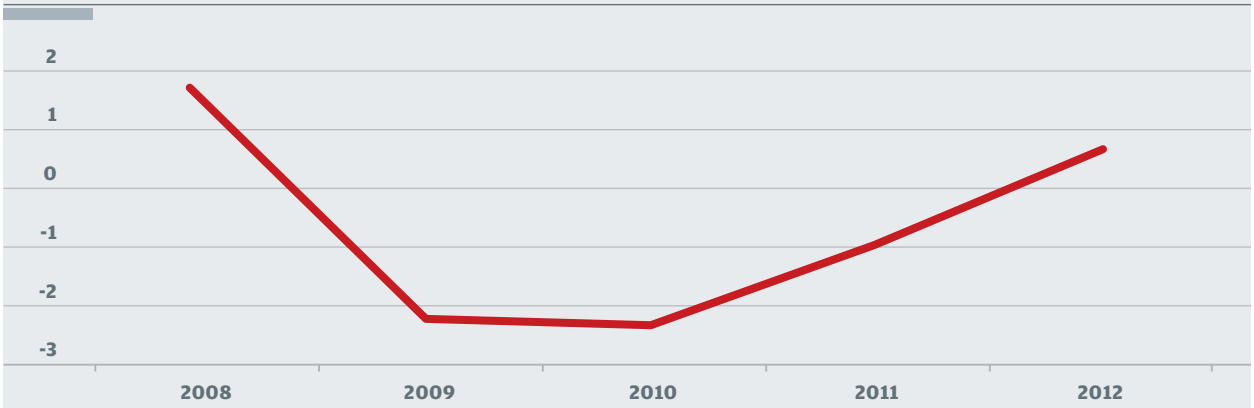
Month	Day	Direction	MWh
April	10	Portugal –> Spain	2,219
	24	Portugal –> Spain	200
June	10	Portugal –> Spain	576
December	25	Portugal –> Spain	2,365
Total Portugal –> Spain			**5,360**
Total Spain –> Portugal			**0**

ES Extra-peninsular Systems



ES Extra-peninsular Systems

ANNUAL GROWTH OF THE ELECTRICITY DEMAND AT POWER STATION BUSBARS (%)

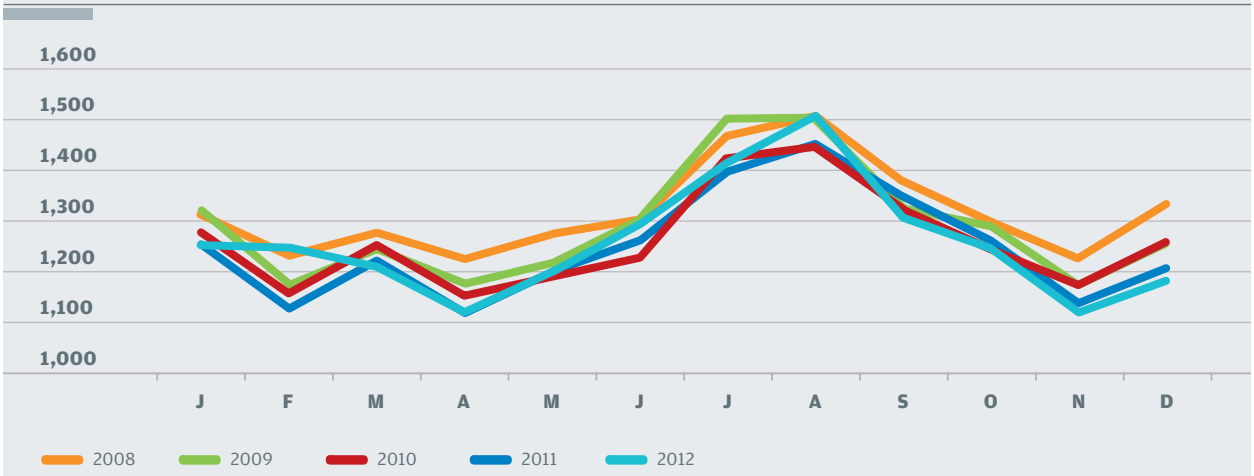


MONTHLY DISTRIBUTION OF THE ELECTRICITY DEMAND AT POWERSTATION BUSBARS

	2008		2009		2010		2011		2012	
	GWh	%	GWh	%	GWh	%	GWh	%	GWh	%
January	1,317	8.3	1,324	8.5	1,281	8.4	1,258	8.4	1,255	8.3
February	1,234	7.8	1,176	7.6	1,160	7.7	1,132	7.5	1,251	8.3
March	1,280	8.1	1,249	8.0	1,258	8.3	1,225	8.2	1,214	8.0
April	1,227	7.7	1,179	7.6	1,156	7.6	1,122	7.5	1,124	7.4
May	1,276	8.0	1,220	7.9	1,192	7.9	1,205	8.0	1,203	7.9
June	1,305	8.2	1,305	8.4	1,231	8.1	1,266	8.4	1,296	8.6
July	1,470	9.3	1,505	9.7	1,426	9.4	1,399	9.3	1,418	9.4
August	1,508	9.5	1,504	9.7	1,449	9.6	1,456	9.7	1,511	10.0
September	1,382	8.7	1,327	8.6	1,325	8.7	1,352	9.0	1,311	8.7
Octubre	1,302	8.2	1,292	8.3	1,248	8.2	1,265	8.4	1,250	8.3
November	1,230	7.8	1,177	7.6	1,177	7.8	1,141	7.6	1,124	7.4
December	1,335	8.4	1,259	8.1	1,262	8.3	1,210	8.1	1,185	7.8
Total	**15,866**	**100.0**	**15,518**	**100.0**	**15,166**	**100.0**	**15,031**	**100.0**	**15,139**	**100.0**

Extra-peninsular Systems ES

EVOLUTION OF THE MONTHLY ELECTRICITY DEMAND AT POWER STATION BUSBARS (GWh)



ANNUAL EVOLUTION OF ELECTRICITY DEMAND COVERAGE (GWh)

	2008	2009	2010	2011	2012	%12/11
Hydroelectric	0	0	0	0	0	-
Coal	3,372	3,450	3,381	3,031	2,941	-3.0
Fuel / gas (1)	8,217	7,934	7,721	7,471	7,533	0.8
Combined cycle	4,243	3,961	3,991	4,406	3,917	-11.1
Auxiliary generation (2)	96	39	7	9	9	0.6
Ordinary regime	**15,928**	**15,384**	**15,100**	**14,916**	**14,399**	**-3.5**
Consumption in generation	-919	-882	-899	-882	-850	-3.5
Hydroelectric	2	0	0	2	2	-
Wind	402	364	337	360	369	2.4
Solar photovoltaic	92	243	283	333	368	10.3
Thermal renewable	217	273	161	33	8	-76.9
Thermal non-renewable	145	135	184	268	274	2.4
Special regime	**858**	**1,016**	**965**	**996**	**1,020**	**2.4**
Net generation	**15,866**	**15,518**	**15,166**	**15,031**	**14,569**	**-3.1**
Balearic Islands link (3)	-	-	-	0.5	570	-
Demand at power station busbars	**15,866**	**15,518**	**15,166**	**15,031**	**15,139**	**0.7**

(1) Includes generation obtained from internal-combustion engines, gas turbine and steam turbine.
(2) Emergency generators installed temporarily in specific zones to cover a deficit in generation.
(3) Test phase. Positive value: import balance; Negative value: export balance.

ES Extra-peninsular Systems

ANNUAL BALANCE OF ELECTRICAL ENERGY

	Balearic Islands		Canary Islands		Ceuta		Melilla		Total	
	GWh	%12/11	GWh	%12/11	GWh	%12/11	GWh	%12/11	GWh	% 12/11
Hydroelectric	-	-	0	-	-	-	-	-	0	-
Coal	2,941	-3.0	-	-	-	-	-	-	2,941	-3.0
Fuel / gas	1,314	-0.6	5,757	0.9	232	4.5	230	3.4	7,533	0.8
Internal-combustion engines (1)	966	0.2	2,233	-2.3	232	4.4	229	3.6	3,660	-0.9
Gas turbine	348	-2.7	600	10.0	1	83.1	0.1	-73.4	949	4.9
Steam turbine	-	-	2,924	1.8	-	-	-	-	2,924	1.8
Combined cycle	944	-32.1	2,974	-1.4	-	-	-	-	3,917	-11.1
Auxiliary generation (2)	9	0.6	0	-	-	-	-	-	9	0.6
Ordinary regime	**5,207**	**-9.5**	**8,731**	**0.1**	**232**	**4.5**	**230**	**3.4**	**14,399**	**-3.5**
Consumption in generation	-349	-7.1	-466	-1.3	-20	4.4	-15	3.3	-850	-3.5
Hydroelectric	-	-	2	6.9	-	-	-	-	2	6.9
Wind	6	11.2	362	2.2	-	-	-	-	369	2.4
Solar photovoltaic	113	11.1	255	9.9	-	-	0.1	16.7	368	10.3
Thermal renewable	0	-	8	-76.9	-	-	-	-	8	-76.9
Thermal non-renewable	272	4.3	0	-	-	-	2	-67.2	274	2.4
Special regime	**391**	**6.3**	**627**	**0.9**	**0**	**-**	**2**	**-66.3**	**1,020**	**2.4**
Net generation	**5,249**	**-8.6**	**8,891**	**0.2**	**212**	**4.5**	**217**	**1.1**	**14,569**	**-3.1**
Peninsula-Balearics link (3)	570	-	-	-	-	-	-	-	570	-
Demand at power station busbars	**5,819**	**1.3**	**8,891**	**0.2**	**212**	**4.5**	**217**	**1.1**	**15,139**	**0.7**

(1) Includes generator units whose primary fuel is fuel-oil, gas-oil or natural gas.
(2) Emergency generators installed temporarily in specific zones to cover a deficit in generation.
(3) Peninsula-Balearic Islands link working at minimum technical level until 13 August 2012. Positive value: import balance; Negative value: export balance.

Extra-peninsular Systems ES

INSTALLED POWER AS AT 31.12.2012

	Balearic Islands		Canary Islands		Ceuta		Melilla		Total	
	MW	%12/11	MW	%12/11	MW	%12/11	MW	%12/11	MW	% 12/11
Hydroelectric	-	-	1	0.0	-	-	-	-	1	0.0
Coal	510	0.0	-	-	-	-	-	-	510	0.0
Fuel / gas	827	3.1	1,899	0.0	99	0.0	85	0.0	2,909	0.9
Internal-combustion engine (1)	199	0.0	546	0.0	83	0.0	70	0.0	898	0.0
Gas turbine	628	4.1	639	0.0	16	0.0	15	0.0	1,298	2.0
Steam turbine	-	-	713	0.0	-	-	-	-	713	0.0
Combined cycle	934	0.0	920	0.0	-	-	-	-	1,854	0.0
Auxiliary generation (2)	0	-	0	-	-	-	-	-	0	-
Total Ordinary regime	**2,271**	**1.1**	**2,820**	**0.0**	**99**	**0.0**	**85**	**0.0**	**5,274**	**0.5**
Hydroelectric	-	-	0.5	0.0	-	-	-	-	0.5	0.0
Wind	4	0.0	145	0.0	-	-	-	-	149	0.0
Solar photovoltaic	77	22.7	162	16.0	-	-	0.1	0.0	240	18.1
Thermal renewable	2	-	1	0.0	-	-	-	-	3	167.5
Thermal non-renewable	86	4.2	33	0.0	-	-	2	0.0	121	2.9
Total Special regime (3)	**169**	**13.4**	**343**	**7.0**	**-**	**-**	**2**	**0.0**	**514**	**9.0**
Total	**2,439**	**1.9**	**3,162**	**0.7**	**99**	**0.0**	**87**	**0.0**	**5,787**	**1.2**

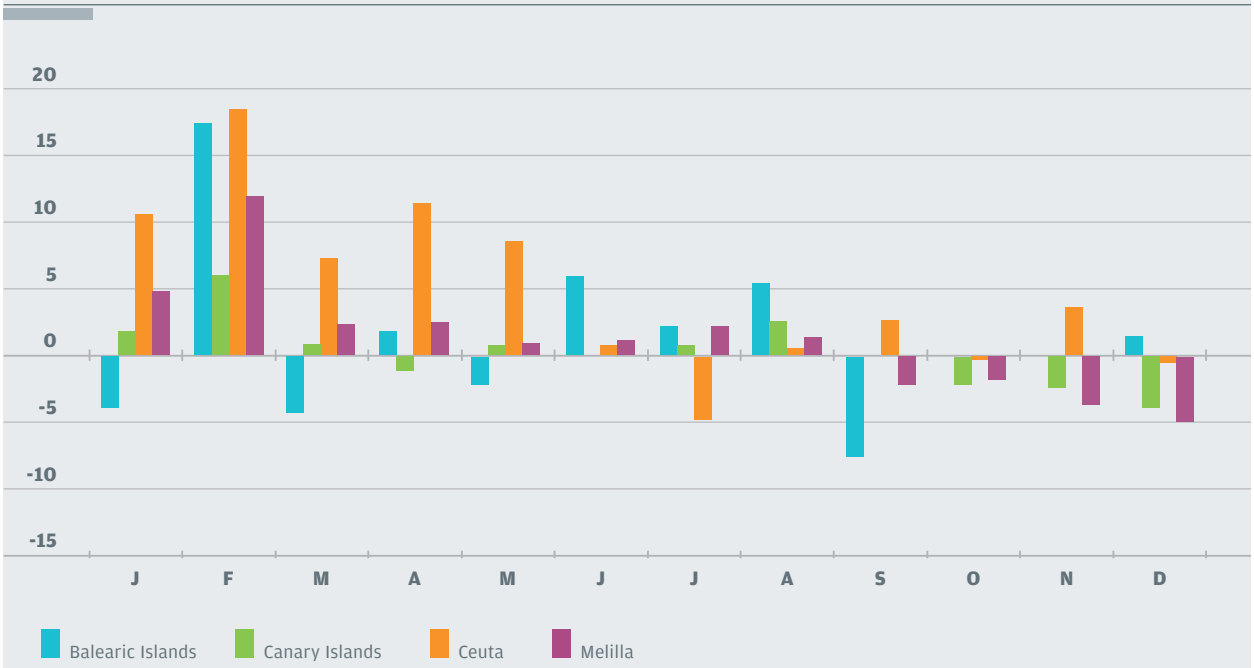
(1) Includes generator units whose primary fuel is fuel-oil, gas-oil or natural gas.
(2) Emergency generators installed temporarily in specific zones to cover a deficit in generation.
(3) Provisional data. Source: Comisión Nacional de Energia (CNE) - Spanish National Energy Commission

ANNUAL EVOLUTION OF ELECTRICAL ENERGY DEMAND

	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	201	4.2
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	5,819	1.3	8,891	0.2	212	4.5	217	1.1

ES Extra-peninsular Systems

MONTHLY GROWTH OF ELECTRICAL ENERGY DEMAND AT POWER STATION BUSBARS (%)



MAXIMUN HOURLY AND DAILY ELECTRICITY DEMAND

	Hourly demand (MWh)			Daily demand (MWh)	
Balearics	1,100	14 February (8-9 pm)	Balearics	14 February	19,999
	1,206	23 August (9-10 pm)		24 August	23,514
Canaries	1,439	15 February (8-9 pm)	Canaries	15 May	26,418
	1,402	25 September (8-9 pm)		22 August	27,703
Ceuta	39	13 February (9-10 pm)	Ceuta	9 February	699
	35	27 June (1-2 pm)		3 August	663
Melilla	40	14 February (9-10 pm)	Melilla	14 February	687
	38	27 August (1-2 pm)		10 August	743

Winter (January-May / October-December)

Summer (June-September)

Extra-peninsular Systems ES

VARIATIONS IN GENERATOR EQUIPMENT WITHIN ORDINARY REGIME

	Commissioned			Decommissioned		
	Type	Date	MW	Type	Date	MW
Balearic Islands						
Ibiza TG6B	Gas turbine	May-12	25			
Formentera AUX	Emergency generators	Jun-12	8	Emergency generators	Sept-12	8
Total			**33**			**8**

NEW TRANSMISSION LINES

Line	Company	Voltage kV	No. of circuits	km
Balearic Islands				
L/ Santa Ponsa-Andraxt (underground)	Red Eléctrica	66	1	1.6
L/ Santa Ponsa-Calviá 2 (underground)	Red Eléctrica	66	1	1.4
Total				**3.0**

NEW SUBSTATIONS

		Voltage	Transformer capacity	
Substation	Company	kV	kV	MVA
Balearic Islands				
Trafo 3 Cas Tresorer	Red Eléctrica	220	220/66	160
Trafo Móvil	Red Eléctrica	220	220/132	90
Total				**250**

ES Extra-peninsular Systems

EVOLUTION OF THE TRANSMISSION SYSTEM AND TRANSFORMER CAPACITY

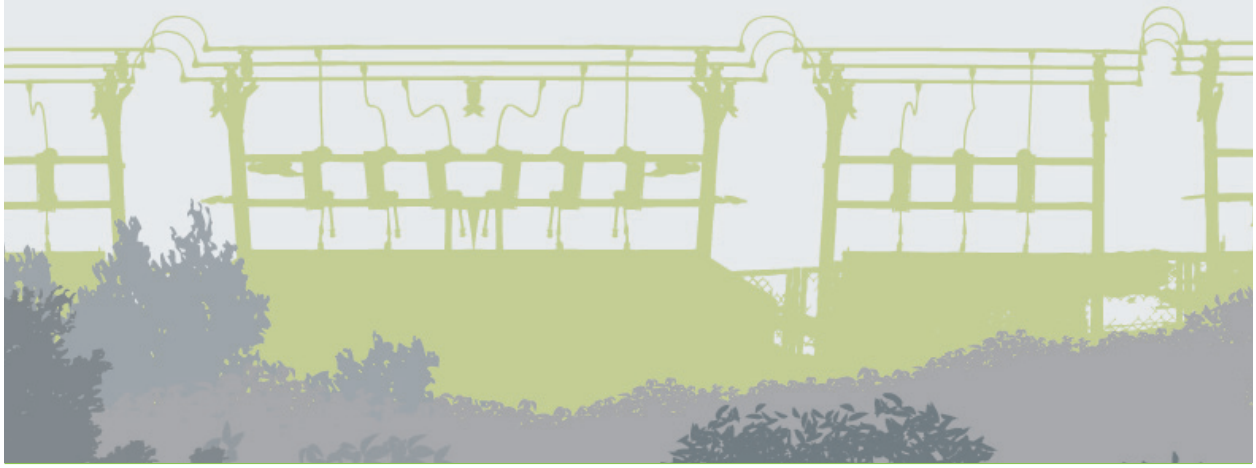
		2008	2009	2010	2011	2012
km of 220 kV circuit	Balearics	177	185	185	430	430
	Canaries	163	163	163	163	163
	Total	**340**	**348**	**348**	**594**	**594**
km of ≤ 132 kV circuit	Balearics	1,075	1,083	1,095	1,110	1,113
	Canaries	1,015	1,127	1,129	1,129	1,129
	Total	**2,090**	**2,210**	**2,224**	**2,240**	**2,243**
Transformer capacity (MVA)	Balearics	1,998	1,998	1,998	2,248	2,498
	Canaries	1,250	1,375	1,625	1,625	1,625
	Total	**3,248**	**3,373**	**3,623**	**3,873**	**4,123**

Includes submarine links.

QUALITY OF THE TRANSMISSION GRID

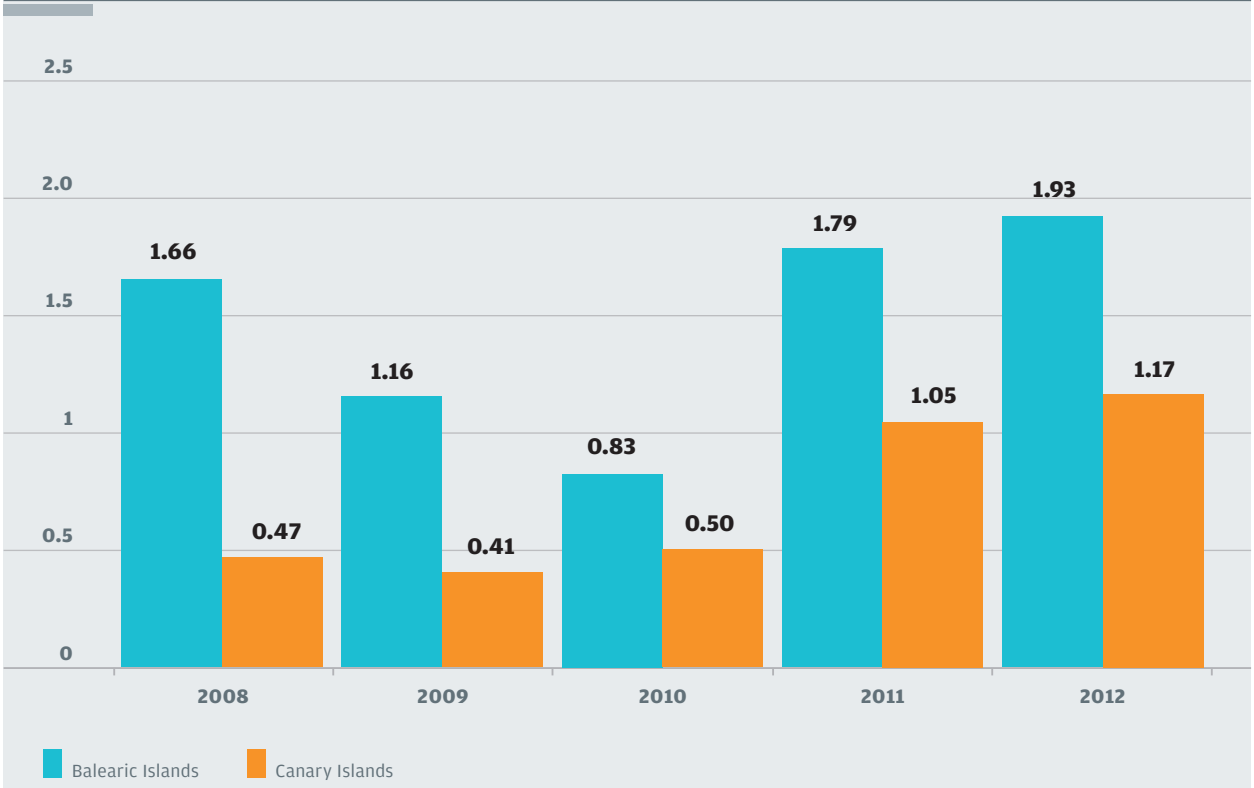
	ENS (MWh)		AIT (minutes)	
	Balearic Islands	Canary Islands	Balearic Islands	Canary Islands
2008	7	1.043	0,64	58,94
2009	39	1.679	3,41	96,89
2010	9	4.090	0,77	241,68
2011	39	17	3,54	1,02
2012	7	10	0,62	0,61

ENS: Energy not supplied. **AIT:** Average interruption time



Extra-peninsular Systems ES

ANNUAL EVOLUTION OF THE NON-AVAILABILITY RATE OF THE TRANSMISSION GRID (%)



AC The Electricity System per Autonomous Community

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ELECTRICAL BALANCE (GWh)

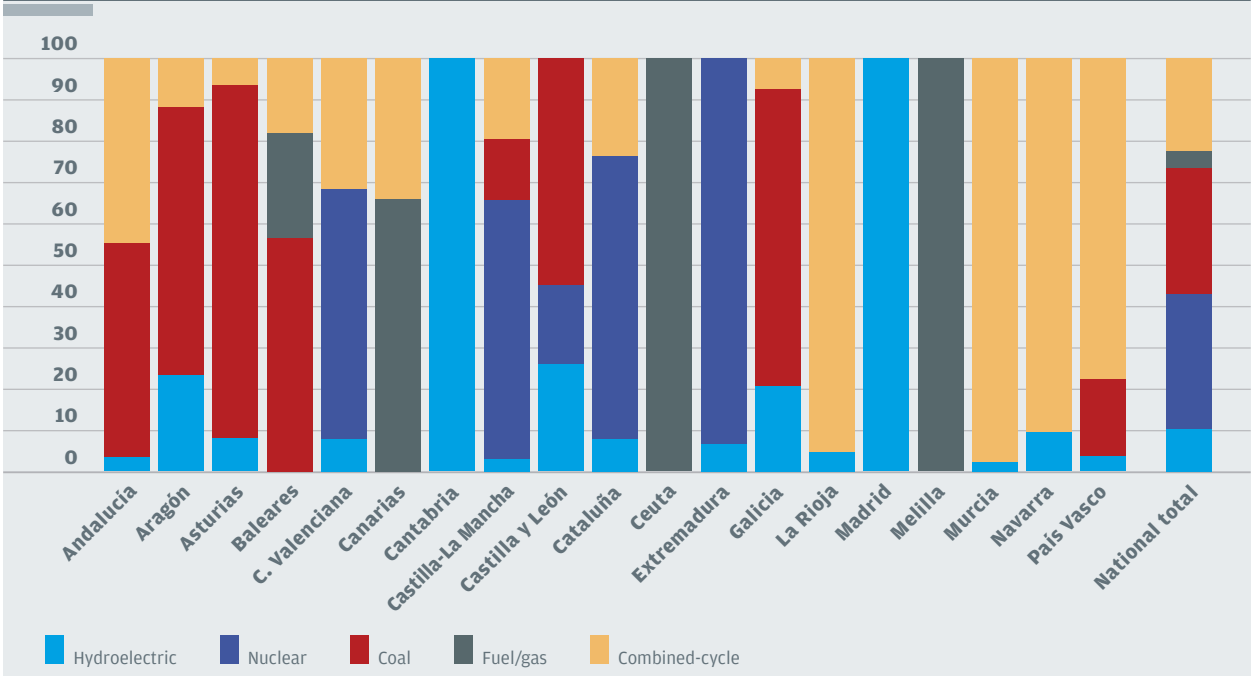
	Andalucía	Aragón	Asturias	Baleares	C. Valenciana	Canarias	Cantabria	Castilla-La Mancha	Castilla y León	Cataluña
Hydroelectric	809	1,919	1,031	0	1,209	0	643	400	5,299	2,852
Nuclear	0	0	0	0	9,378	0	0	8,502	3,873	24,068
Coal (1)	11,529	5,303	10,836	2,941	0	0	0	2,004	11,195	0
Fuel / gas (2)	0	0	0	1,322	0	5,757	0	0	0	0
Combined-cycle	10,001	972	802	944	4,904	2,974	0	2,625	0	8,307
Ordinary regime	**22,339**	**8,194**	**12,669**	**5,207**	**15,492**	**8,731**	**643**	**13,531**	**20,368**	**35,227**
Generation consumption	-882	-523	-818	-349	-510	-466	-9	-892	-1,100	-1,514
Special regime	**16,583**	**8,938**	**2,499**	**391**	**5,257**	**627**	**1,816**	**12,327**	**16,016**	**10,276**
Net generaion	**38,040**	**16,609**	**14,350**	**5,249**	**20,239**	**8,891**	**2,449**	**24,966**	**35,284**	**43,990**
Pumped consumption	-435	-352	-52	0	-1,114	0	-796	-156	-1,401	-381
Energy exchange bal. (3)	-1,067	-6,177	-4,195	570	6,991	0	2,930	-13,216	-19,700	5,876
Demand at power station busbars 2012	**36,539**	**10,080**	**10,103**	**5,819**	**26,115**	**8,891**	**4,583**	**11,593**	**14,182**	**49,485**
Demand at power station busbars 2011	**37,409**	**10,170**	**10,577**	**5,743**	**26,730**	**8,870**	**4,687**	**12,501**	**14,357**	**49,506**
% 12/11	**-2.3**	**-0.9**	**-4.5**	**1.3**	**-2.3**	**0.2**	**-2.2**	**-7.3**	**-1.2**	**-0.04**

	Ceuta	Extremadura	Galicia	La Rioja	Madrid	Melilla	Murcia	Navarra	País Vasco	Total
Hydroelectric	0	1,107	3,730	65	24	0	73	93	200	19,455
Nuclear	0	15,649	0	0	0	0	0	0	0	61,470
Coal (1)	0	0	12,827	0	0	0	0	0	1,027	57,662
Fuel / gas (2)	232	0	0	0	0	230	0	0	0	7,541
Combined-cycle	0	0	1,343	1,342	0	0	3,185	863	4,248	42,510
Ordinary regime	**232**	**16,756**	**17,900**	**1,407**	**24**	**230**	**3,258**	**956**	**5,475**	**188,638**
Generation consumption	-20	-615	-683	-32	0	-15	-88	-31	-192	-8,739
Special regime	**0**	**2,365**	**12,020**	**1,384**	**1,646**	**2**	**3,242**	**4,634**	**3,149**	**103,172**
Net generaion	**212**	**18,506**	**29,236**	**2,760**	**1,669**	**217**	**6,413**	**5,560**	**8,433**	**283,071**
Pumped consumption	0	-15	-320	0	0	0	0	0	0	-5,023
Energy exchange bal. (3)	0	-14,247	-8,914	-1,057	28,943	0	1,275	-610	11,399	-11,200
Demand at power station busbars 2012	**212**	**4,244**	**20,002**	**1,703**	**30,612**	**217**	**7,687**	**4,949**	**19,832**	**266,849**
Demand at power station busbars 2011	**203**	**4,486**	**20,262**	**1,707**	**30,819**	**215**	**7,783**	**5,081**	**19,557**	**270,662**
% 12/11	**4,5**	**-5,4**	**-1,3**	**-0,3**	**-0,7**	**1,1**	**-1,2**	**-2,6**	**1,4**	**-1,4**

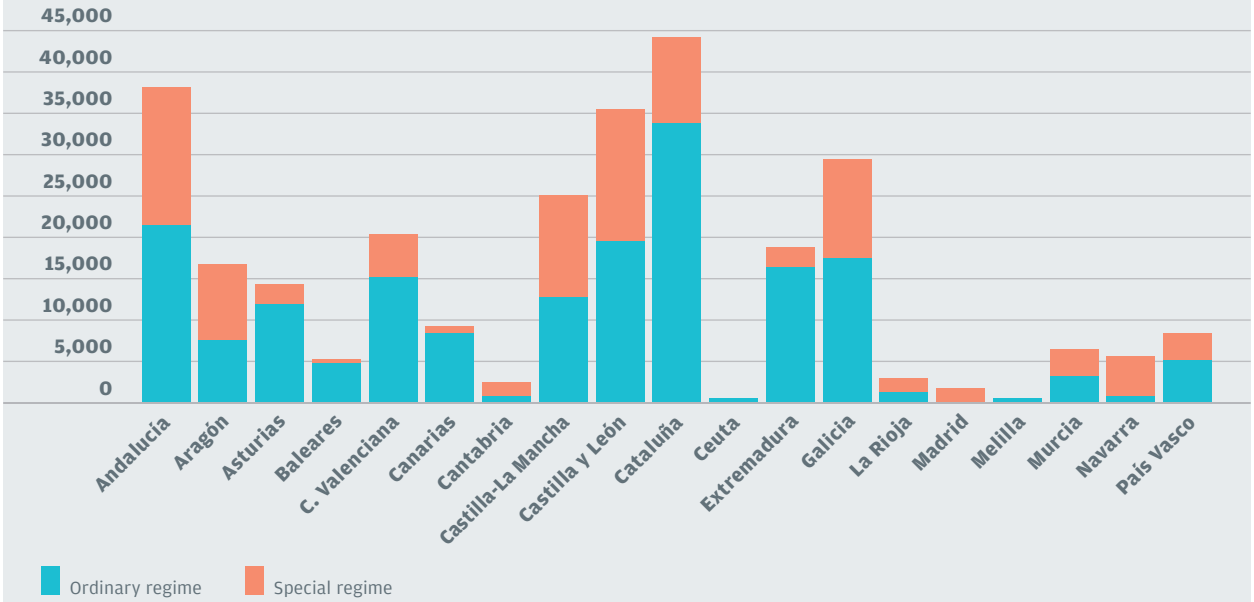
(1) As of 1 January 2011, GICC (Elcogás) has been included in the National coal figures as, in accordance with Royal Decree 134/2010, this power station is obliged to participate, as a selling unit that uses local coal as fuel, in the process of resolving restrictions regarding the security of supply. **(2)** Generation by auxiliary units is included in the Balearic Islands electricity system. **(3)** 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.

The Electricity System per AC Autonomous Community

ORDINARY REGIME PRODUCTION STRUCTURE BY POWER STATION TYPE (%)



ORDINARY REGIME AND SPECIAL REGIME GENERATION (GWh)



AC The Electricity System per Autonomous Community

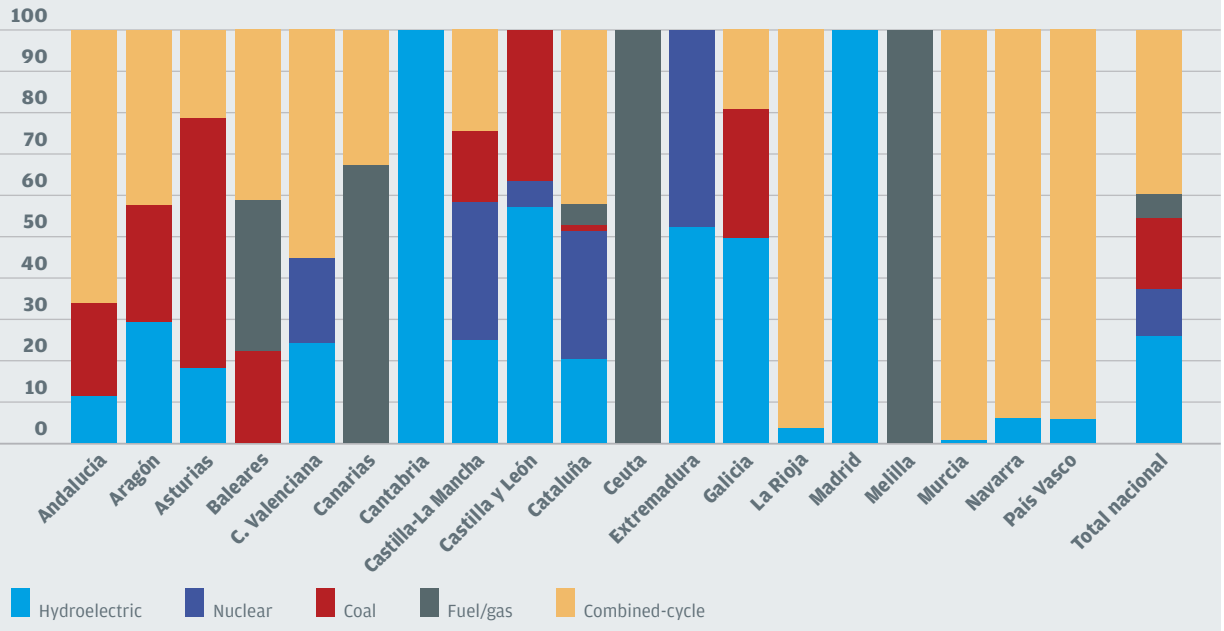
INSTALLED POWER ORDINARY REGIME (MW)

	Andalucía	Aragón	Asturias	Baleares	C. Valenciana	Canarias	Cantabria	Castilla-La Mancha	Castilla y León	Cataluña
Hydroelectric	1,051	1,310	748	0	1,279	1	389	781	4,247	2,104
Nuclear	0	0	0	0	1,085	0	0	1,066	466	3,142
Coal (1)	2,072	1,261	2,473	510	0	0	0	541	2,707	162
Fuel/gas	0	0	0	827	0	1,899	0	0	0	520
Combined-cycle	6,043	1,898	865	934	2,909	920	0	774	0	4,240
Total 2012	**9,165**	**4,470**	**4,087**	**2,271**	**5,273**	**2,820**	**389**	**3,162**	**7,420**	**10,168**
Total 2011	**9,165**	**4,470**	**4,242**	**2,246**	**5,273**	**2,820**	**389**	**3,475**	**7,420**	**10,168**
% 12/11	**0.0**	**0.0**	**-3.7**	**1.1**	**0.0**	**0.0**	**0.0**	**-9.0**	**0.0**	**0.0**

	Ceuta	Extremadura	Galicia	La Rioja	Madrid	Melilla	Murcia	Navarra	País Vasco	Total
Hydroelectric	0	2,292	3,252	30	58	0	24	77	120	17,762
Nuclear	0	2,094	0	0	0	0	0	0	0	7,853
Coal (1)	0	0	2,031	0	0	0	0	0	0	11,758
Fuel/gas	99	0	0	0	0	85	0	0	0	3,429
Combined-cycle	0	0	1,259	799	0	0	3,318	1,236	1,998	27,194
Total 2012	**99**	**4,386**	**6,542**	**829**	**58**	**85**	**3,342**	**1,313**	**2,118**	**67,996**
Total 2011	**99**	**4,386**	**6,329**	**829**	**56**	**85**	**3,342**	**1,313**	**2,335**	**68,441**
% 12/11	**0.0**	**0.0**	**3.4**	**0.0**	**4.9**	**0.0**	**0.0**	**0.0**	**-9.3**	**-0.7**

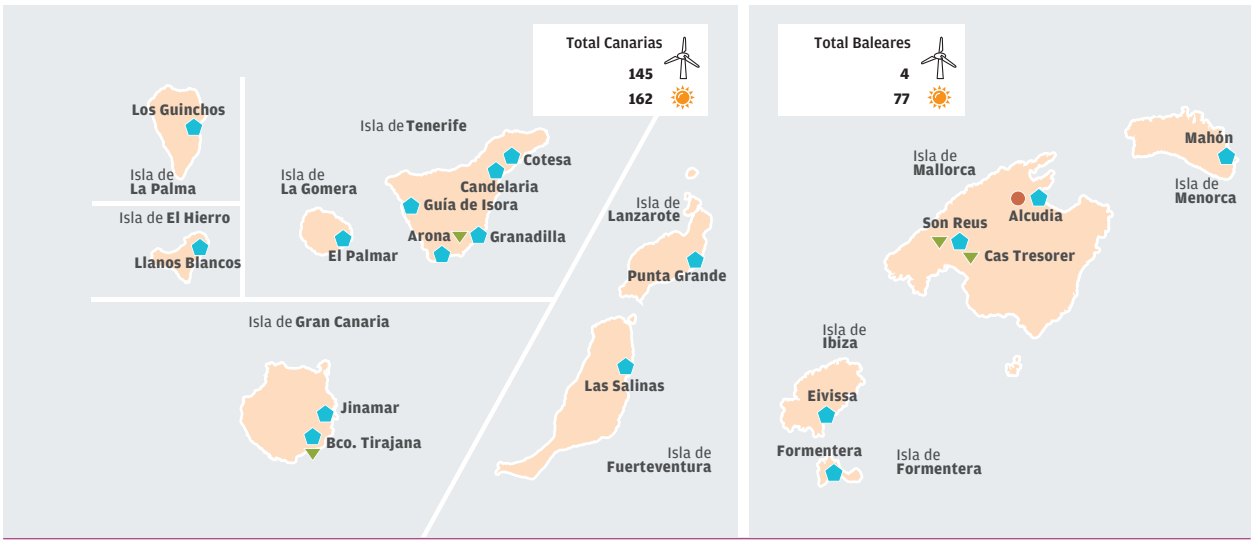
(1) As of 1 January2011 GICC (Elcogas) in included in national coal as according to RD 134/2010 this power station is obliged to participate, as a selling unit that uses local coal as fuel, in the resolution process of restrictions for guaranteeing supply.

ORDINARY REGIME INSTALLED POWER STRUCTURE BY POWER STATION TYPE (%)



The Electricity System per AC Autonomous Community

LOCATION OF THE MAIN ELECTRICITY POWER STATIONS



AC The Electricity System per Autonomous Community

INSTALLED POWER SPECIAL REGIME (1) (MW)

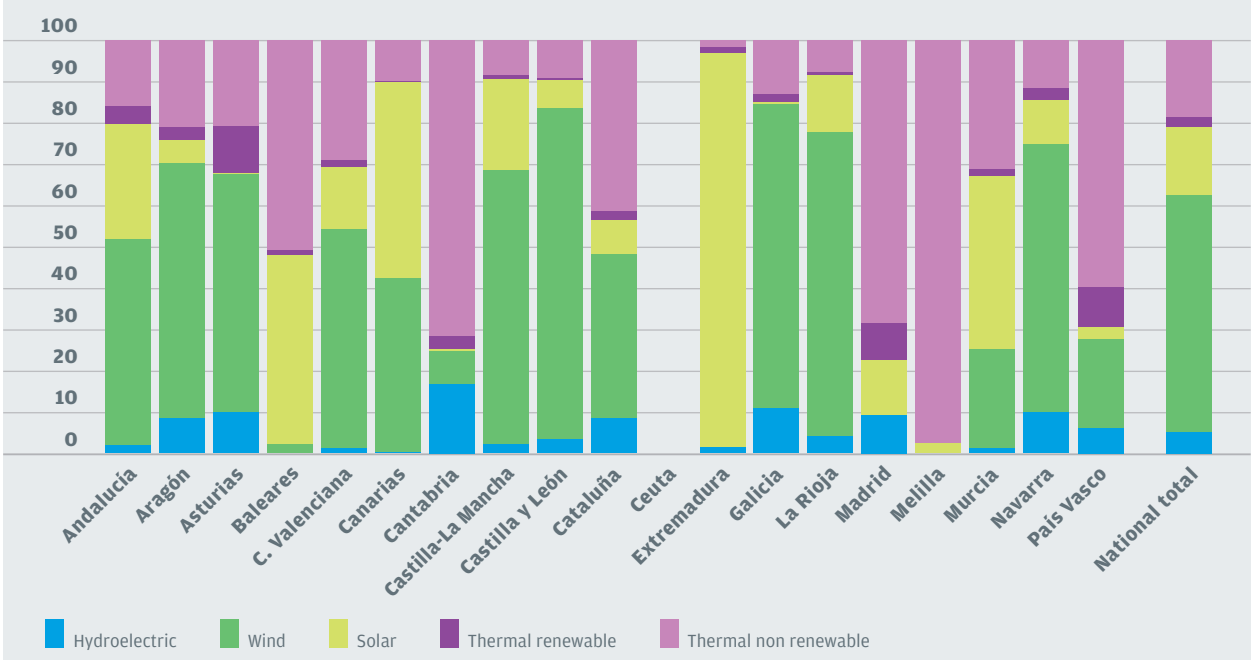
	Andalucía	Aragón	Asturias	Baleares	C. Valenciana	Canarias	Cantabria	Castilla-La Mancha	Castilla y León	Cataluña
Hydroelectric	143	256	77	0	31	0.5	74	126	250	281
Wind	3,233	1,797	434	4	1,193	145	35	3,784	5,597	1,284
Solar photovoltaic	838	164	1	77	338	162	2	906	485	248
Solar thermoelectric	947	0	0	0	0	0	0	349	0	23
Thermal renewable	289	87	86	2	33	1	13	58	27	67
Thermal non renewable	1,024	615	156	86	651	33	314	475	633	1,339
Total 2012	**6,474**	**2,920**	**754**	**169**	**2,246**	**343**	**438**	**5,699**	**6,992**	**3,241**
Total 2011	**5,832**	**2,825**	**706**	**149**	**2,102**	**320**	**427**	**5,343**	**6,277**	**2,929**
% 12/11	**11.0**	**3.4**	**6.8**	**13.4**	**6.9**	**7.0**	**2.4**	**6.7**	**11.4**	**10.7**

	Ceuta	Extremadura	Galicia	La Rioja	Madrid	Melilla	Murcia	Navarra	País Vasco	Total
Hydroelectric	0	20	493	27	44	0	14	151	55	2,042
Wind	0	0	3,324	448	0	0	263	987	194	22,722
Solar photovoltaic	0	539	15	85	64	0.1	426	160	27	4,538
Solar thermoelectric	0	649	0	0	0	0	31	0	0	2,000
Thermal renewable	0	17	78	4	43	0	20	46	84	957
Thermal non renewable	0	19	590	46	328	2	341	174	535	7,361
Total 2012	**0**	**1,245**	**4,500**	**611**	**479**	**2**	**1,095**	**1,519**	**895**	**39,620**
Total 2011	**0**	**888**	**4,496**	**612**	**467**	**2**	**938**	**1,506**	**898**	**36,718**
% 12/11	**0**	**40.1**	**0.1**	**-0.1**	**2.6**	**0.0**	**16.8**	**0.8**	**-0.4**	**7.9**

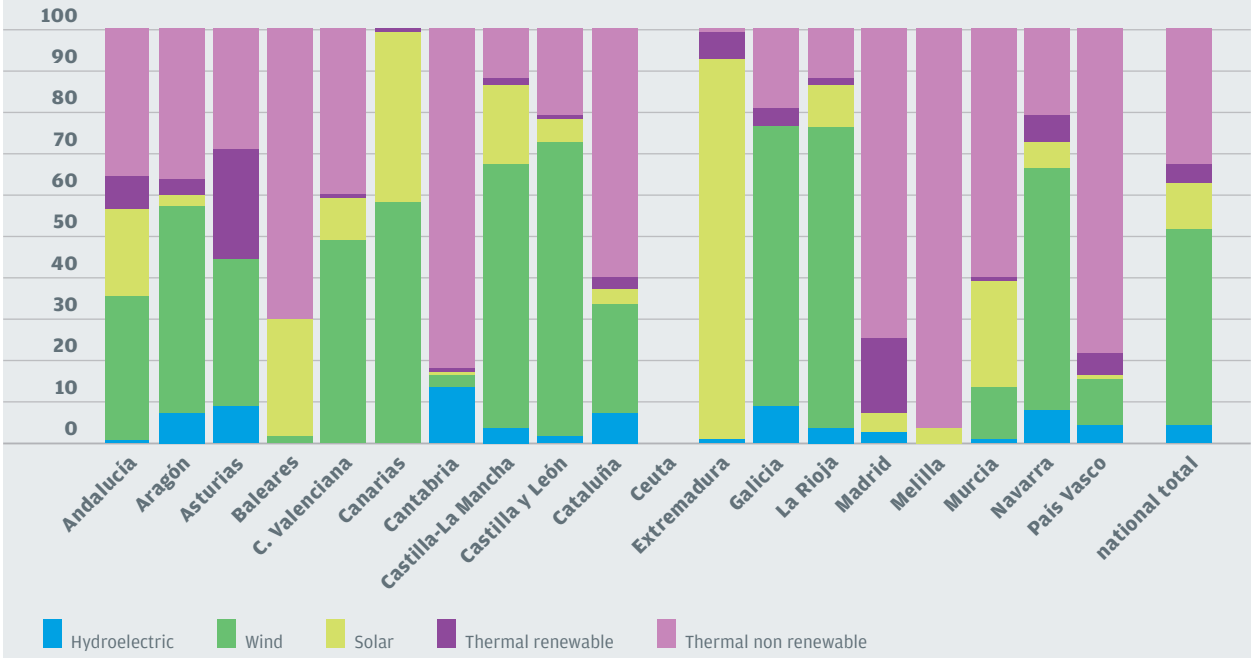
(1) Provisional data. Source: Comisión Nacional de Energía (CNE) - Spanish National Energy Commission

The Electricity System per AC Autonomous Community

SPECIAL REGIME INSTALLED POWER STRUCTURE (%)



STRUCTURE OF THE ENERGY ACQUIRED FROM SPECIAL REGIME (%)



AC The Electricity System per Autonomous Community

ENERGY ACQUIRED FROM SPECIAL REGIME (1) (GWh)

	Andalucía	Aragón	Asturias	Baleares	C. Valenciana	Canarias	Cantabria	Castilla-La Mancha	Castilla y León	Cataluña
Hydroelectric	216	632	234	0	16	2	243	402	343	788
Wind	5,731	4,447	883	6	2,548	362	62	7,944	11,350	2,647
Solar photovoltaic	1,526	279	1	113	525	255	2	1,751	829	408
Solar thermoelectric	1,837	0	0	0	0	0	0	525	0	1
Thermal renewable	1,458	316	656	0	53	8	16	247	172	256
Thermal non renewable	5,814	3,264	724	272	2,116	0	1,493	1,459	3,321	6,176
Total 2012	**16,583**	**8,938**	**2,499**	**391**	**5,257**	**627**	**1,816**	**12,327**	**16,016**	**10,276**
Total 2011	**15,654**	**8,318**	**2,274**	**368**	**4,576**	**621**	**1,643**	**11,202**	**13,803**	**9,016**
% 12/11	**5.9**	**7.5**	**9.9**	**6.3**	**14.9**	**0.9**	**10.5**	**10.0**	**16.0**	**14.0**

	Ceuta	Extremadura	Galicia	La Rioja	Madrid	Melilla	Murcia	Navarra	País Vasco	Total
Hydroelectric	0	20	1,079	54	42	0	41	388	136	4,635
Wind	0	0	8,066	1,006	0	0	401	2,678	340	48,472
Solar photovoltaic	0	1,108	18	141	79	0.1	788	317	29	8,171
Solar thermoelectric	0	1,056	0	0	0	0	23	0	0	3,443
Thermal renewable	0	150	582	16	298	0	29	291	189	4,736
Thermal non renewable	0	30	2,276	168	1,226	2	1,959	961	2,455	33,716
Total 2012	**0**	**2,365**	**12,020**	**1,384**	**1,646**	**2**	**3,242**	**4,634**	**3,149**	**103,172**
Total 2011	**0**	**1,963**	**11,064**	**1,314**	**1,613**	**7**	**2,626**	**4,373**	**3,220**	**93,656**
% 12/11	**0**	**20.5**	**8.6**	**5.3**	**2.0**	**-66.3**	**23.4**	**6.0**	**-2.2**	**10.2**

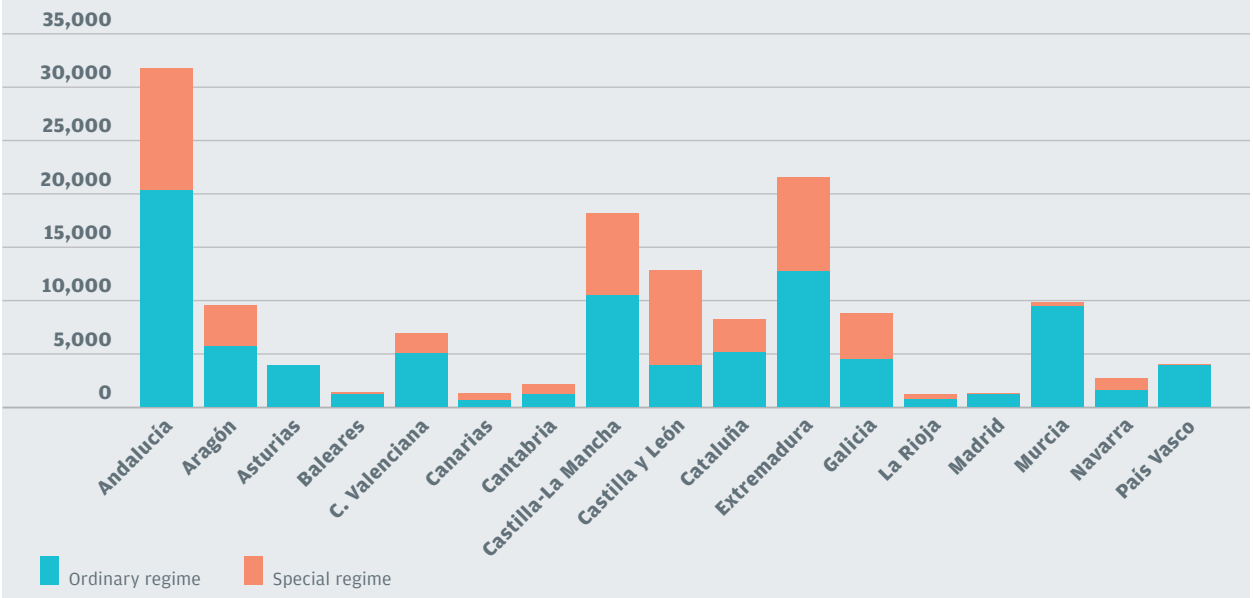
(1) Provisional data. Energy actually evacuated into the electricity system by special regime generators. Does not include the generation destined to the auto-consumption of the power station owners.

The Electricity System per AC Autonomous Community

ENERGY EXCHANGE BALANCE PER AUTONOMOUS COMMUNITY (GWh)

AC The Electricity System per Autonomous Community

TRANSMISSION GRID ACCESS REQUESTS FROM NEW GENERATION 1999-2013 (MW)



ACCESS TO THE TRANSMISSION GRID. NEW ORDINARY REGIME GENERATION 1999-2013 (1)

	Number of requests received	Requests received (MW)	Requests managed (MW)	Requests pending reply complete document. (MW)	Requests pending reply incomplete document. (MW)
Andalucía	55	20,244	14,043	150	6,052
Aragón	10	5,694	5,444	0	250
Asturias	5	3,823	3,823	0	0
C, Valenciana	9	5,041	5,041	0	0
Cantabria	3	1,169	1,169	0	0
Castilla-La Mancha	31	10,445	5,437	0	5,008
Castilla y León	7	3,938	3,421	0	517
Cataluña	10	5,122	5,122	0	0
Extremadura	38	12,724	8,870	990	2,865
Galicia	12	4,514	4,514	0	0
La Rioja	1	785	785	0	0
Madrid	1	1,200	1,200	0	0
Murcia	22	9,414	6,962	0	2,452
Navarra	4	1,641	1,641	0	0
País Vasco	5	3,920	3,920	0	0
Peninsular total	**213**	**89,674**	**71,392**	**1,140**	**17,143**
Baleares	25	1,210	1,210	0	0
Canarias	16	584	295	0	289
Extra-peninsular total	**41**	**1,794**	**1,505**	**0**	**289**
National total	**254**	**91,468**	**72,897**	**1,140**	**17,432**

(1) Data as at 31 March 2013. Current magnituds that show for each of the indicated facilities the available updated values that take into account power cancellations and variations.

The Electricity System per AC Autonomous Community

ACCESS TO THE TRANSMISSION GRID. NEW SPECIAL REGIME GENERATION 1999-2013 (*)

	Number of requests received	Requests received (MW)	Requests managed (MW)	Requests pending reply complete document. (MW)	Requests pending reply incomplete document. (MW)
Andalucía	170	11,294	6,739	0	4,554
Aragón	41	3,759	3,149	0	611
Asturias	1	7	7	0	0
C, Valenciana	8	1,880	1,880	0	0
Cantabria	4	923	923	0	0
Castilla-La Mancha	37	7,569	7,369	0	200
Castilla y León	69	8,768	8,041	0	726
Cataluña	23	3,114	2,471	0	644
Extremadura	116	8,668	3,834	0	4,834
Galicia	62	4,203	4,193	0	10
La Rioja	7	415	374	0	41
Madrid	2	77	77	0	0
Murcia	1	309	309	0	0
Navarra	16	1,062	857	0	205
País Vasco	1	36	36	0	0
Peninsular total	**558**	**52,083**	**40,259**	**0**	**11,824**
Baleares	5	162	162	0	0
Canarias	27	655	648	0	7
Extra-peninsular total	**32**	**817**	**810**	**0**	**7**
National total	**590**	**52,900**	**41,069**	**0**	**11,831**

(*) Data as at 31 March 2013. Current magnituds that show for each of the indicated facilities the available updated values that take into account power cancellations and variations.

AC The Electricity System per Autonomous Community

ACCESS TO THE TRANSMISSION GRID. DEMAND AND DISTRIBUTION 1999-2013 (*)

	Number of requests received	Requests received (MW)	Requests managed (MW)	Requests pending reply complete document. (MW)	Requests pending reply incomplete document. (MW)
Andalucía	93	13,162	12,876	0	286
Aragón	30	4,206	4,106	0	100
Asturias	13	3,095	3,095	0	0
C, Valenciana	80	11,160	11,110	0	50
Cantabria	11	931	931	0	0
Castilla-La Mancha	26	3,515	3,515	0	0
Castilla y León	30	3,165	3,165	0	0
Cataluña	111	13,563	13,283	0	280
Extremadura	22	3,043	2,893	0	150
Galicia	34	3,658	3,128	0	530
La Rioja	6	505	505	0	0
Madrid	91	12,220	12,040	0	180
Murcia	12	2,685	2,685	0	0
Navarra	11	1,055	1,055	0	0
País Vasco	22	1,750	1,750	0	0
Peninsular total	**592**	**77,713**	**76,137**	**0**	**1,576**
Baleares	40	1,720	1,720	0	0
Canarias	41	1,611	1,491	120	0
Extra-peninsular total	**81**	**3,331**	**3,211**	**120**	**0**
National total	**673**	**81,044**	**79,348**	**120**	**1,576**

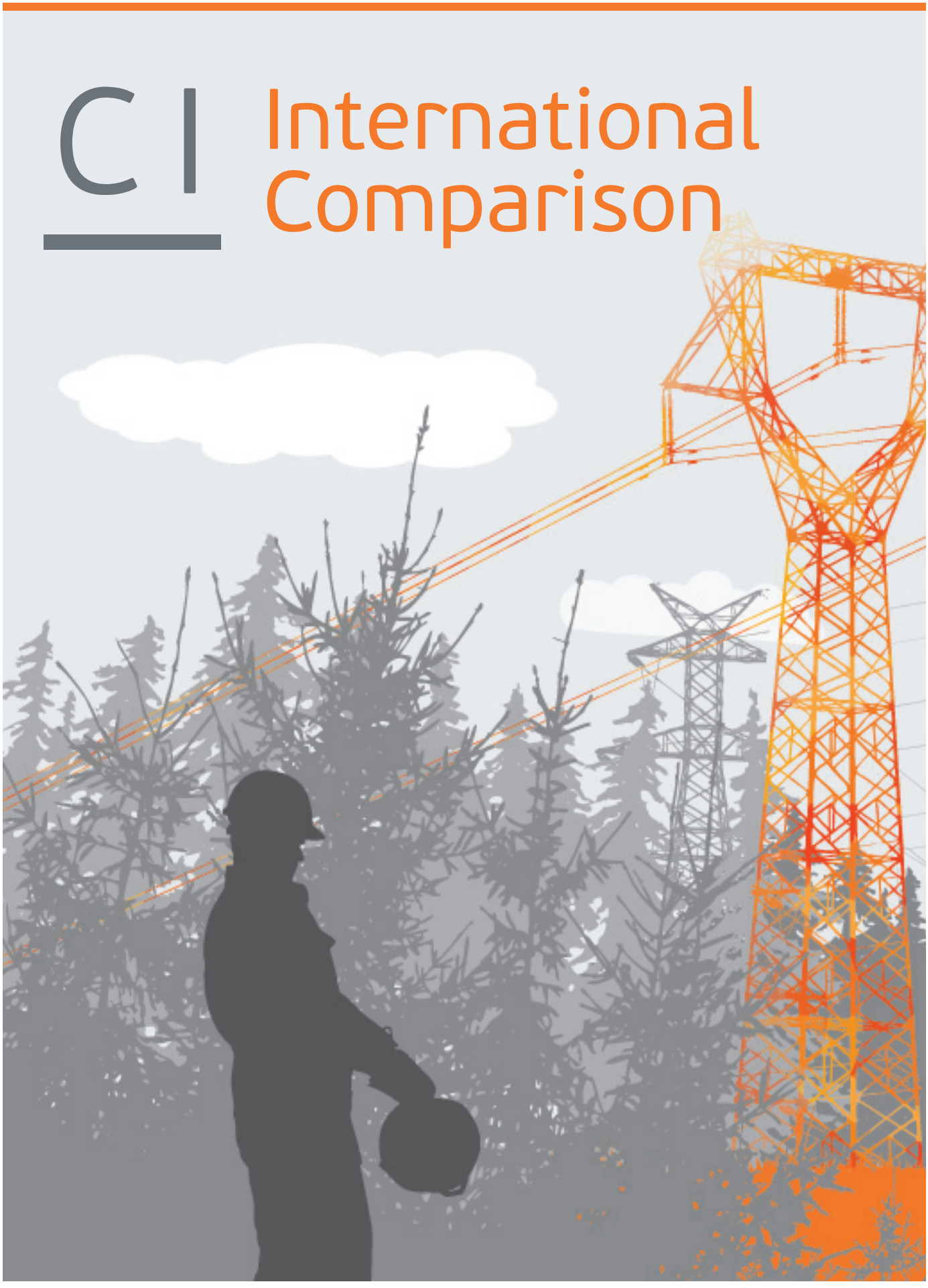
(*) Data as at 31 March 2013. Current magnituds that show for each of the indicated facilities the available updated values that take into account power cancellations and variations.

The Electricity System per AC Autonomous Community

ENERGY NOT SUPPLIED AND AVERAGE INTERRUPTION TIME

	ENS (MWh)		AIT (minutes)	
	Red Eléctrica	Transmission Grid	Red Eléctrica	Transmission Grid
Andalucía	0.0	0.0	0.00	0.00
Aragón	1.0	1.0	0.05	0.05
Asturias	4.7	4.7	0.25	0.25
Baleares	6.9	6.9	0.62	0.62
C. Valenciana	4.1	4.1	0.08	0.08
Canarias	10.3	10.3	0.61	0.61
Cantabria	0.0	0.0	0.00	0.00
Castilla-La Mancha	1.5	1.5	0.07	0.07
Castilla y León	4.5	4.5	0.17	0.17
Cataluña	6.4	6.4	0.07	0.07
Extremadura	66.9	66.9	8.30	8.30
Galicia	5.0	5.0	0.13	0.13
La Rioja	0.0	0.0	0.00	0.00
Madrid	19.3	38.6	0.33	0.66
Murcia	0.0	0.0	0.00	0.00
Navarra	0.0	0.0	0.00	0.00
País Vasco	0.0	0.0	0.00	0.00

C I International Comparison



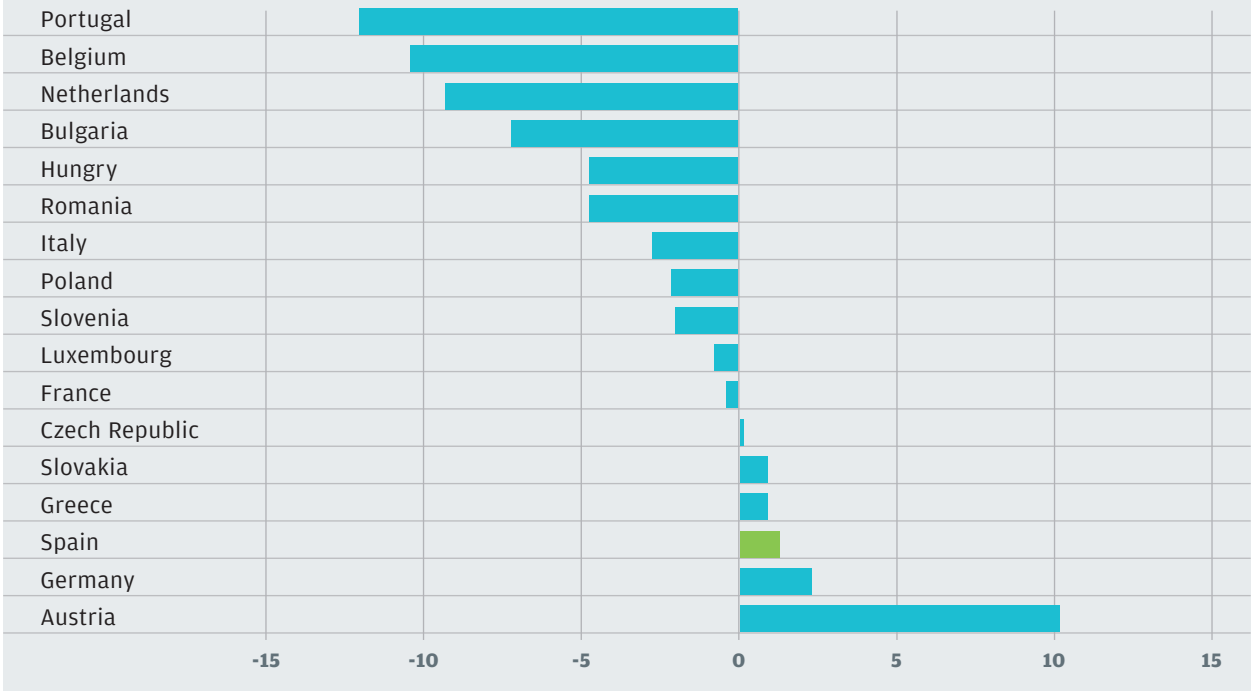
CA International Comparison

TOTAL NET ELECTRICITY GENERATION OF EUROPEAN UNION COUNTRIES MEMBERS OF THE CONTINENTAL EUROPE (ENTSO-E) (TWh)

	2011	2012	% 12/11
Austria	65,4	72,0	10,1
Belgium	85,6	76,6	-10,5
Bulgaria	45,1	41,9	-7,2
Czech Republic	81,0	81,1	0,1
France	542,9	541,4	-0,3
Germany	557,9	570,8	2,3
Greece	50,1	50,5	1,0
Hungary	33,5	31,9	-4,7
Italy	291,4	283,4	-2,7
Luxembourg	3,7	3,6	-0,6
Netherlands	109,0	98,8	-9,4
Poland	151,6	148,4	-2,1
Portugal	48,4	42,6	-12,1
Romania	57,0	54,3	-4,6
Slovakia	26,5	26,8	0,9
Slovenia	13,9	13,6	-1,9
Spain	280,0	283,1	1,1
Total	**2,443.1**	**2,420.9**	**-0.9**

Source: ENTSO-E, Spain REE.

INCREASE IN TOTAL NET ELECTRICITY GENERATION 2012/2011 (%)



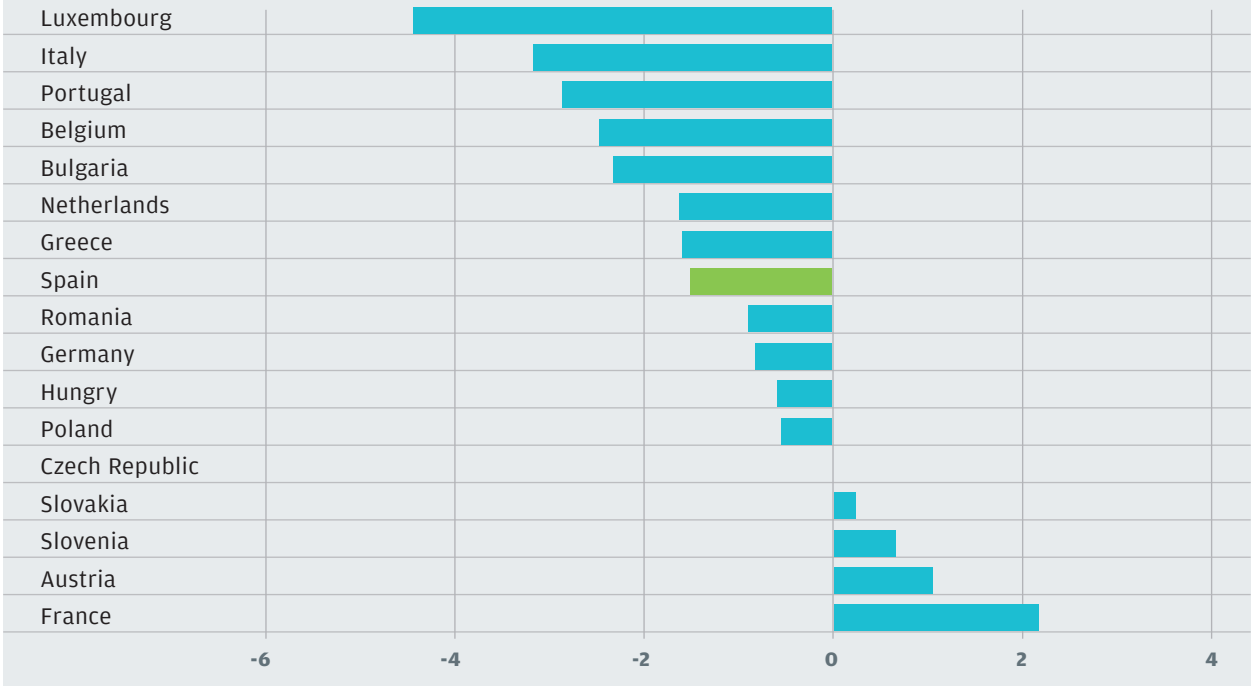
International CA Comparison

ELECTRICITY DEMAND OF EUROPEAN UNION COUNTRIES MEMBERS OF THE CONTINENTAL EUROPE (ENTSO-E) (TWh)

	2011	2012	% 12/11
Austria	68,6	69,3	1,0
Belgium	87,0	84,9	-2,5
Bulgaria	33,2	32,5	-2,3
Czech Republic	63,0	63,0	0,0
France	479,2	489,5	2,1
Germany	544,3	539,9	-0,8
Greece	52,9	52,1	-1,6
Hungary	40,1	39,9	-0,6
Italy	334,6	324,0	-3,2
Luxembourg	6,6	6,3	-4,4
Netherlands	117,8	115,9	-1,6
Poland	145,7	144,9	-0,6
Portugal	50,5	49,1	-2,9
Romania	54,9	54,4	-0,9
Slovakia	26,8	26,8	0,2
Slovenia	12,6	12,6	0,6
Spain	270,7	266,8	-1,4
Total	**2,388.,6**	**2,371.8**	**-0.7**

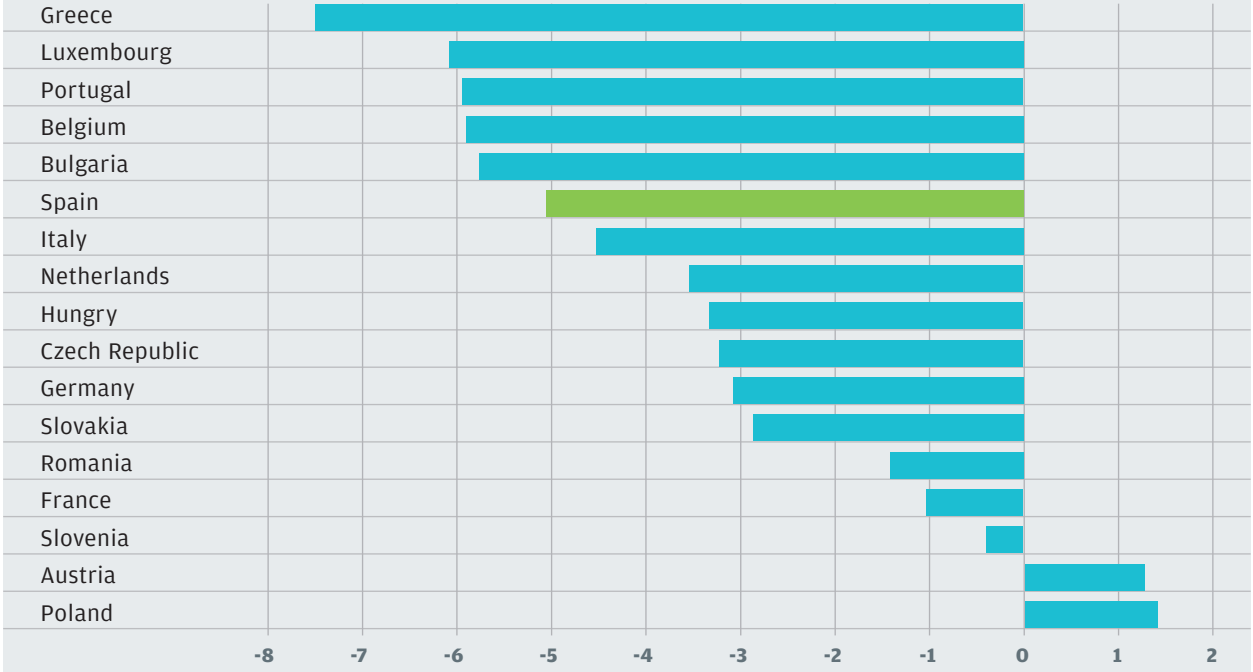
Source: ENTSO-E, Spain REE.

INCREASE IN ELECTRICITY DEMAND 2012/2011 (%)



CA International Comparison

INCREASE IN ELECTRICITY DEMAND 2012/2008 (%)



International CA Comparison

CONSUMPTION PER CAPITA OF EUROPEAN UNION COUNTRIES MEMBERS OF THE CONTINENTAL EUROPE (ENTSO-E) (kWh/hab.)

	2011	2012	% 12/11
Austria	8.159	8.203	0,5
Belgium	7.910	7.648	-3,3
Bulgaria	4.510	4.430	-1,8
Czech Republic	6.011	6.000	-0,2
France	7.373	7.493	1,6
Germany	6.658	6.596	-0,9
Greece	4.679	4.611	-1,4
Hungary	4.020	4.007	-0,3
Italy	5.520	5.327	-3,5
Luxembourg	12.813	11.940	-6,8
Netherlands	7.075	6.929	-2,1
Poland	3.781	3.759	-0,6
Portugal	4.777	4.654	-2,6
Romania	2.565	2.549	-0,6
Slovakia	4.966	4.967	0,0
Slovenia	6.125	6.149	0,4
Spain	5.864	5.776	-1,5
Total	**5,866**	**5,814**	**-0.9**

Consumption per capita = Total consumption / nº inhabitants. Population data: Eurostat; consumption data: ENTSO-E, Spain REE.

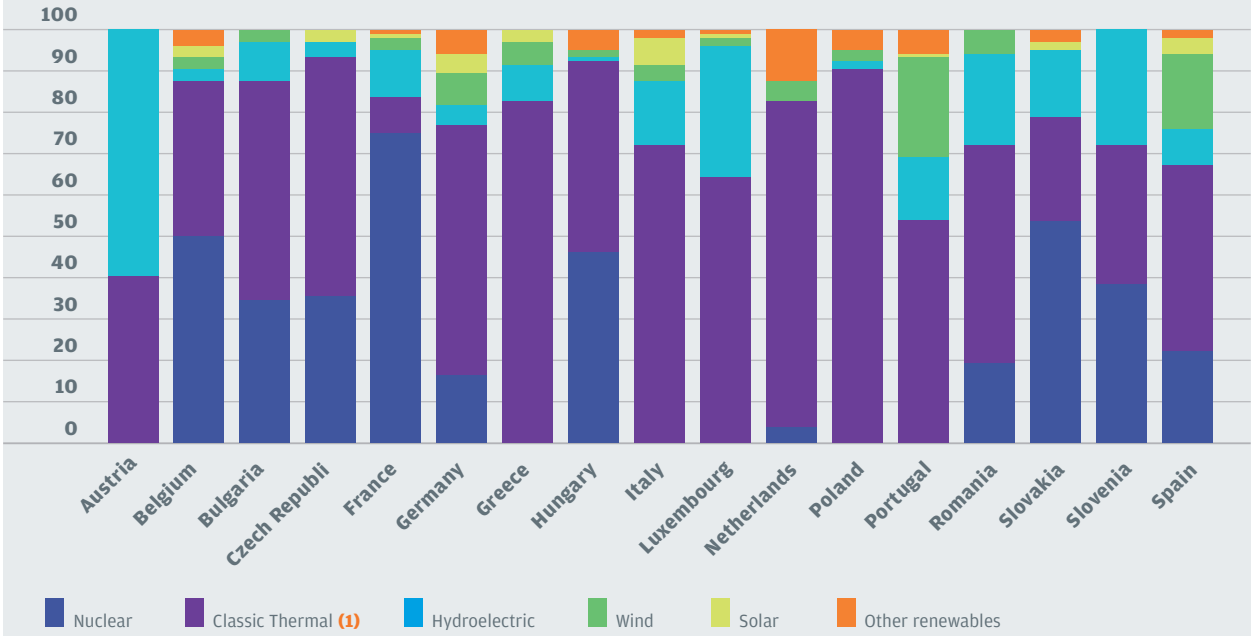
ORIGIN OF TOTAL NET GENERATION OF EUROPEAN UNION COUNTRIES MEMBERS OF THE CONTINENTAL EUROPE (ENTSO-E) (TWh)

	Nuclear	Classic Thermal (1)	Hydroelectric	Wind	Solar	Other renewables	Total
Austria	0,0	29,2	42,8	0,0	0,0	0,0	72,0
Belgium	38,5	28,8	1,7	2,9	1,6	3,2	76,6
Bulgaria	14,7	22,1	3,8	1,1	0,2	0,0	41,9
Czech Republic	28,6	47,0	3,0	0,4	2,2	0,0	81,1
France	404,9	48,0	63,8	14,9	4,0	5,9	541,4
Germany	94,6	346,6	23,4	46,0	27,6	32,5	570,8
Greece	0,0	41,8	4,6	2,8	1,2	0,2	50,5
Hungary	14,8	14,7	0,2	0,7	0,0	1,5	31,9
Italy	0,0	203,4	43,3	13,1	18,3	5,2	283,4
Luxembourg	0,0	2,3	1,2	0,1	0,0	0,1	3,6
Netherlands	3,8	78,0	0,0	5,0	0,0	12,0	98,8
Poland	0,0	134,2	2,4	4,4	0,0	7,4	148,4
Portugal	0,0	23,1	6,4	10,0	0,4	2,6	42,6
Romania	10,5	28,6	12,2	2,7	0,0	0,2	54,3
Slovakia	14,5	6,8	4,3	0,0	0,6	0,7	26,8
Slovenia	5,2	4,6	3,7	0,0	0,0	0,0	13,6
Spain	58,5	135,9	23,8	48,5	11,6	4,7	283,1
Total	**688.7**	**1,195.2**	**240.7**	**152.6**	**67.6**	**76.1**	**2,420.9**

(1) Includes combined cycle. Source: ENTSO-E, Spain REE.

CA International Comparison

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



(1) Includes combined cycle.

DEMAND COVERAGE OF ELECTRICITY OF EUROPEAN UNION COUNTRIES MEMBERS OF THE CONTINENTAL EUROPE (ENTSO-E) (TWh)

	Hydroelectric and other	Nuclear	Classic Thermal (1)	Total net generation	Comsumption of pumps	Exchange balance	Electrical demand
Austria	42,8	0,0	29,2	72,0	5,6	2,8	69,3
Belgium	9,4	38,5	28,8	76,6	1,7	9,9	84,9
Bulgaria	5,1	14,7	22,1	41,9	1,1	-8,4	32,5
Czech Republic	5,6	28,6	47,0	81,1	1,0	-17,1	63,0
France	88,5	404,9	48,0	541,4	6,7	-45,2	489,5
Germany	129,6	94,6	346,6	570,8	7,8	-23,1	539,9
Greece	8,8	0,0	41,8	50,5	0,3	1,8	52,1
Hungary	2,4	14,8	14,7	31,9	0,0	8,0	39,9
Italy	80,0	0,0	203,4	283,4	2,6	43,2	324,0
Luxembourg	1,3	0,0	2,3	3,6	1,5	4,1	6,3
Netherlands	17,0	3,8	78,0	98,8	0,0	17,1	115,9
Poland	14,2	0,0	134,2	148,4	0,6	-2,8	144,9
Portugal	19,4	0,0	23,1	42,6	1,4	7,9	49,1
Romania	15,2	10,5	28,6	54,3	0,1	0,2	54,4
Slovakia	5,6	14,5	6,8	26,8	0,3	0,4	26,8
Slovenia	3,7	5,2	4,6	13,6	0,0	-1,0	12,6
Spain	88,6	58,5	135,9	283,1	5,0	-11,2	266,8

(1) Includes combined cycle. Source: ENTSO-E, Spain REE.

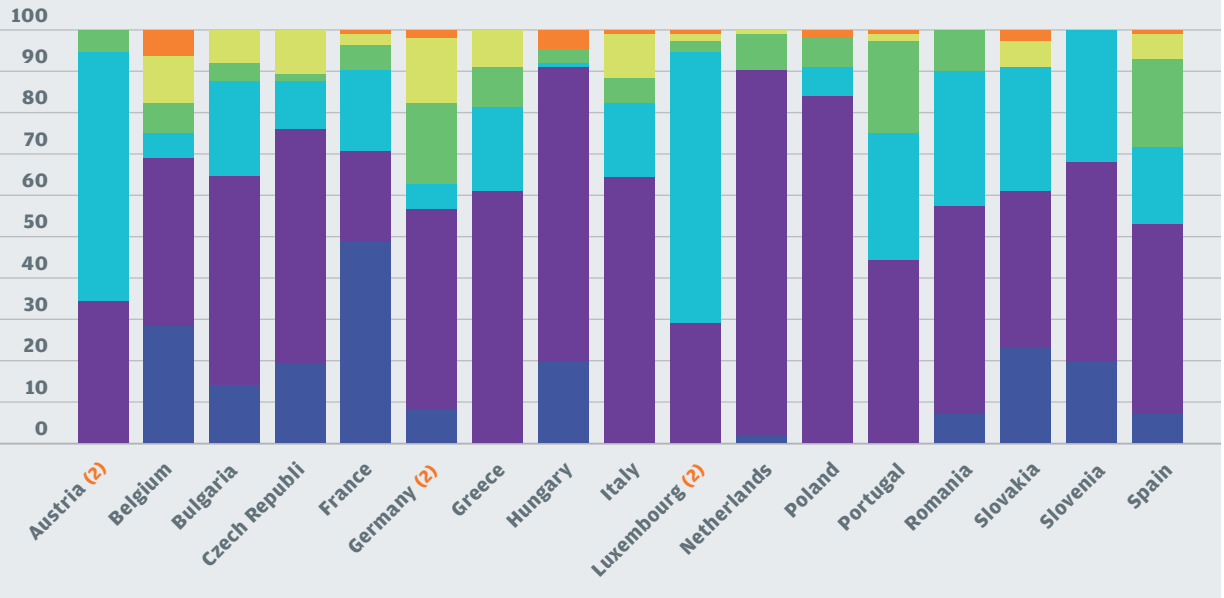
International CA Comparison

NET INSTALLED POWER IN EUROPEAN UNION COUNTRIES MEMBERS OF THE CONTINENTAL EUROPE (ENTSO-E) (GW)

	Nuclear	Classic Thermal (1)	Hydroelectric	Wind	Solar	Other renewables	Total
Austria (2)	0,0	7,4	12,9	1,0	0,0	0,0	21,4
Belgium	5,9	8,4	1,4	1,3	2,5	1,2	20,8
Bulgaria	2,0	6,9	3,2	0,7	1,0	0,0	13,8
Czech Republic	3,8	11,0	2,2	0,3	2,1	0,0	19,3
France	63,1	27,8	25,4	7,4	3,5	1,4	128,7
Germany (2)	12,0	70,2	9,2	28,3	22,3	3,0	145,0
Greece	0,0	9,7	3,2	1,5	1,4	0,0	15,9
Hungary	1,9	6,9	0,1	0,3	0,0	0,4	9,6
Italy	0,0	76,4	21,7	7,0	12,9	0,7	118,7
Luxembourg(2)	0,0	0,5	1,1	0,0	0,0	0,0	1,7
Netherlands	0,5	23,3	0,0	2,5	0,1	0,0	26,4
Poland	0,0	29,4	2,3	2,6	0,0	0,6	34,9
Portugal	0,0	8,3	5,7	4,2	0,2	0,2	18,5
Romania	1,3	9,5	6,2	1,8	0,0	0,0	18,8
Slovakia	1,9	3,2	2,5	0,0	0,5	0,2	8,4
Slovenia	0,7	1,8	1,1	0,0	0,0	0,0	3,6
Spain	7,6	47,9	19,3	22,5	6,5	0,9	104,6
Total	**100.8**	**348.4**	**117.7**	**81.3**	**53.1**	**8.9**	**710.1**

(1) Includes combined cycle. **(2)** 2011 Data. Source: ENTSO-E, Spain REE.

STRUCTURE OF NET INSTALLED POWER IN EUROPEAN UNION COUNTRIES MEMBERS OF THE CONTINENTAL EUROPE (ENTSO-E) (%)



(1) Includes combined cycle. **(2)** 2011 Data.

CA International Comparison

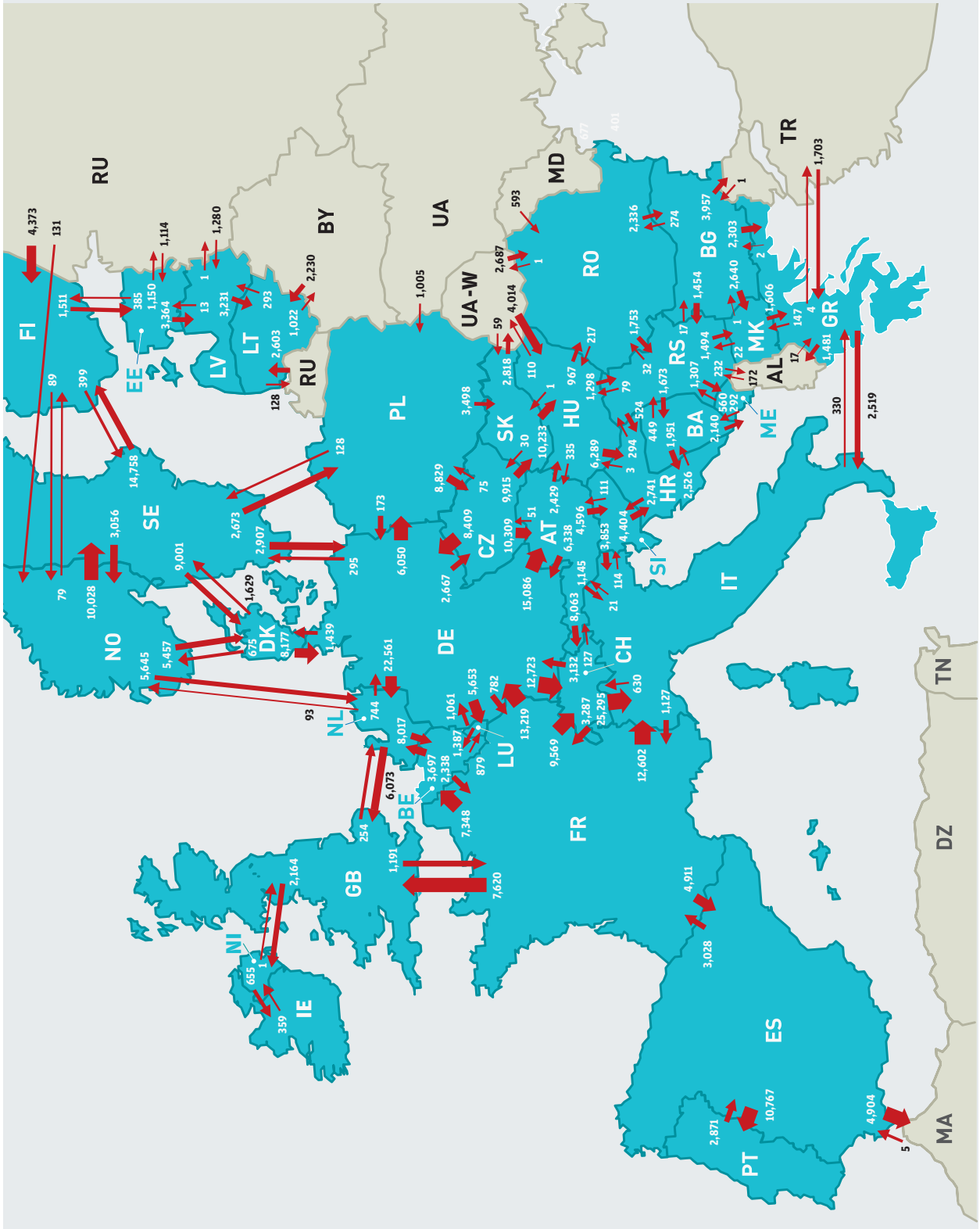
INTERNATIONAL PHYSICAL ENERGY EXCHANGES IN ENTSO-E MEMBER COUNTRIES AND NEIGHBOURING COUNTRIES (1) (GWh)

	Importations	Exportations	Balance
Albania (AL)	1.713	189	1.524
Austria (AT)	25.989	22.622	3.367
Belarus (BY)	1.022	2.230	-1.208
Belgium (BE)	16.752	6.914	9.838
Bosnia-Herzegovina (BA)	4.491	4.540	-49
Bulgaria (BG)	2.357	10.628	-8.271
Croatia (HR)	13.168	5.564	7.604
Czech Republic (CZ)	11.577	28.708	-17.131
Denmark (DK)	15.897	10.481	5.416
Estonia (EE)	2.638	4.899	-2.261
Finland (FI)	19.595	1.999	17.596
France (FR)	11.753	55.269	-43.516
FYROM (MK)	4.281	1.629	2.652
Germany (DE)	44.160	67.256	-23.096
Great Britain (GB)	13.694	3.609	10.085
Greece (GR)	5.959	4.153	1.806
Hungry (HU)	16.975	9.000	7.975
Ireland (IE)	655	359	296
Italy (IT)	45.414	2.222	43.192
Latvia (LV)	4.937	3.245	1.692
Lithuania (LT)	8.064	1.443	6.621
Luxembourg (LU)	6.532	2.448	4.084
Moldava (MD)	0	593	-593
Montenegro (ME)	3.447	852	2.595
Morocco (MA)	4.904	5	4.900
Netherlands (NL)	32.157	14.927	17.230
North Ireland (NI)	2.523	656	1.867
Norway (NO)	4.044	21.209	-17.165
Poland (PL)	9.803	12.628	-2.825
Portugal (PT)	10.767	2.871	7.896
Romania (RO)	4.553	4.307	246
Russia (RU)	1.279	9.501	-8.222
Serbia (RS)	6.002	5.358	644
Slovakia (SK)	13.473	13.081	392
Slovania (SI)	7.451	8.368	-917
Spain (ES)	7.786	18.699	-10.913
Sweden (SE)	12.479	32.395	-19.916
Switzerland (CH)	30.985	31.841	-856
Turkey (TR)	3.961	1.704	2.257
Ukraine (UA)	2.929	7.765	-4.836

(1) Exchanges between blocks in interconnections of no less than 100 kV. Source: ENTSO-E, Spain REE.

International CA Comparison

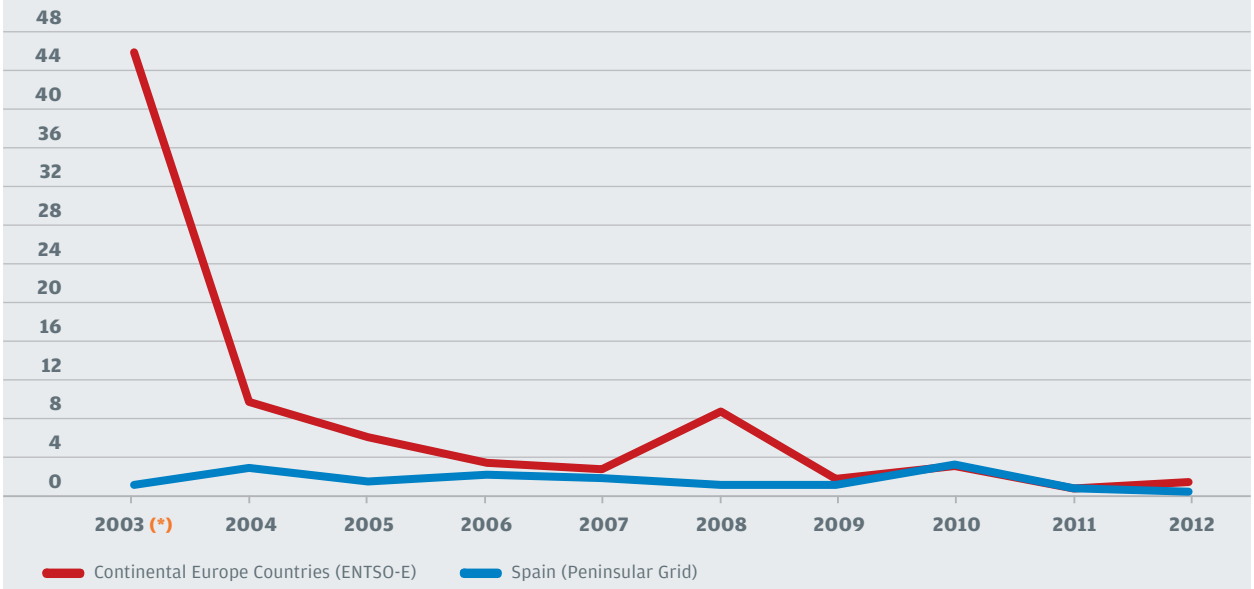
MAP OF INTERNATIONAL PHYSICAL ENERGY EXCHANGES IN ENTSO-E MEMBER COUNTRIES AND NEIGHBOURING COUNTRIES (1) (GWh)



(1) Exchanges between blocks in interconnections of no less than 100 kV. Source: ENTSO-E, Spain REE.

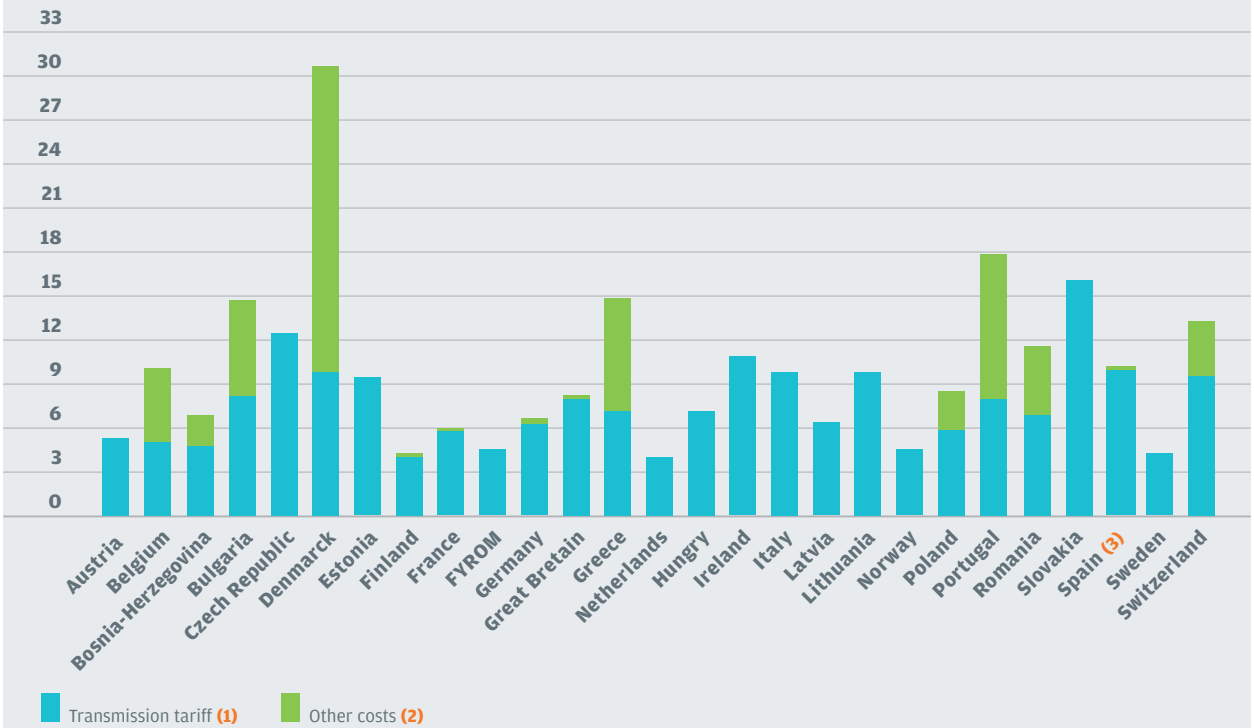
CA International Comparison

AVERAGE INTERRUPTION TIME (AIT) DUE TO INCIDENCES IN THE TRANSMISSION GRID (minutes)



AIT = ENS/Average power of the system. **(*)** Includes power outage occured in Italy in September 2003. Source: ENTSO-E, Spain REE.

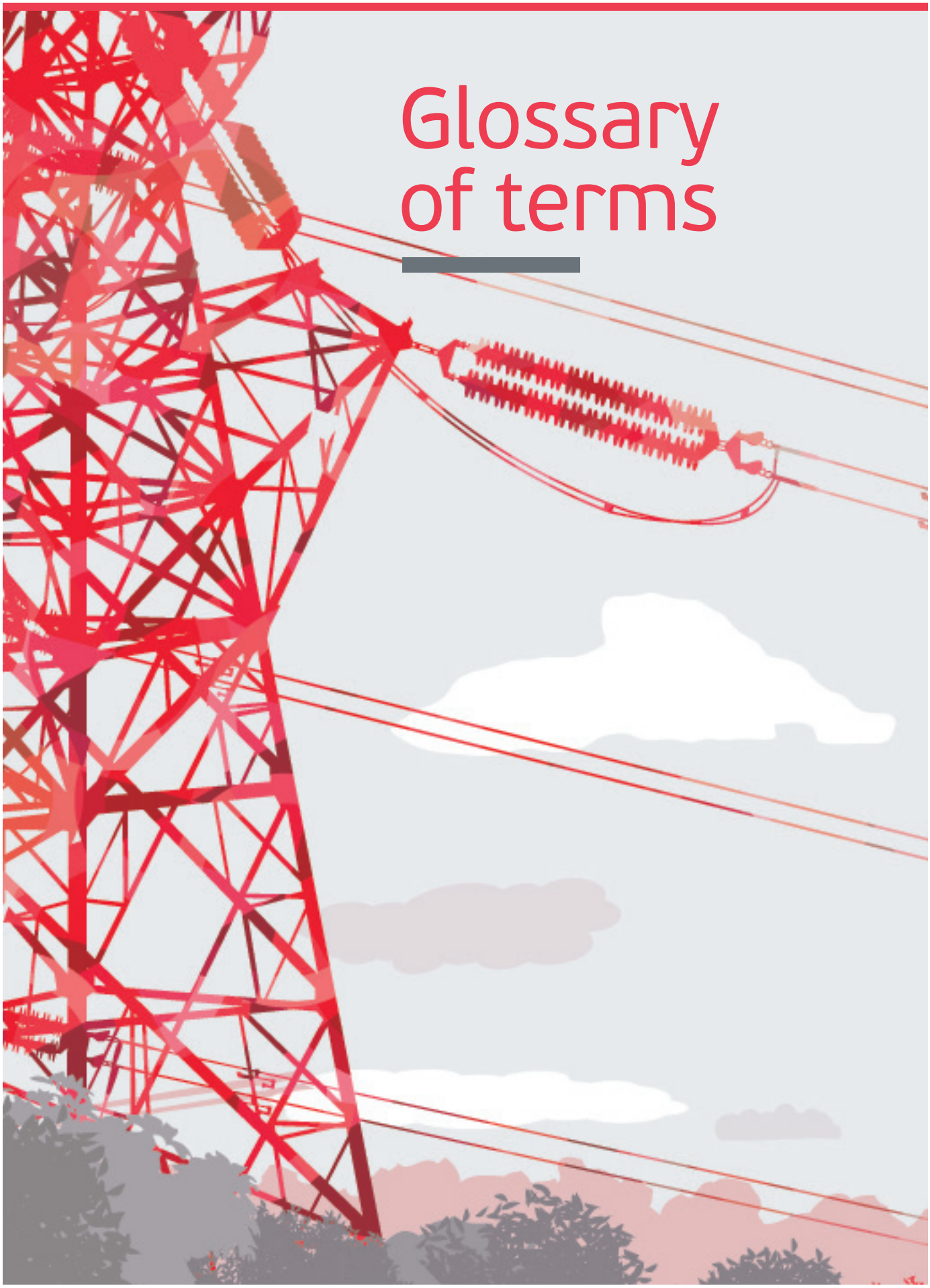
TRANSMISSION TARIFFS IN COUNTRIES BELONGING TO ENTSO-E (*) (€/MWh)



(*) Tariffs applied to consumer connected to the 400-380 kV transmission grid, with maximum power demand of 40 MW and 5,000 hours of utilization. **(1)** Costs related to activities pertinent to the TSO: infrastructure (capital and operation costs), losses and system services. **(2)** Other charges not directly related to TSO costs (e.g.: fostering of renewable energy). **(3)** In the case of Spain the figure corresponds to a fictitious transmission tariff calculated only for comparison purposes and that includes the access tariff 6.4 as well as the the other costs contemplated in the study (losses and system services) that are not included in the access tariff.
Source: ENTSO-E. Overview of transmission tariffs in Europe: Synthesis 2012.

International CA Comparison

Glossary of terms



Additional upward reserve power. Is the upward power reserve value that may be required with respect to that available in the Provisional Daily Viable Schedule (PDVP) in order to guarantee the security of the electricity system in the Spanish peninsula. The contracting and management of the additional upward power reserve is performed by the system operator, if and when the system conditions require it, through a specific market mechanism.

AIT (Average Interruption Time). Time, in minutes, which results from dividing the ENS (energy not supplied to the system due to interruptions of the service occurred in the transmission grid), by the average power of the peninsular system.

Ancillary services. Services which are necessary to ensure the electricity supply under the suitable conditions of security, quality and reliability. These include: Additional upward reserve power, primary control, secondary control, tertiary control and voltage control of the transmission grid.

Balance markets. Are those system adjustment services markets which allow the generation and demand to be balanced (deviation management services and tertiary and secondary control energy).

Bilateral contracts. The producers, auto-producers, external agents, distributors, traders, consumers or representatives of any of the aforementioned, as participants in the production market may formalise bilateral contracts regarding physical electricity delivery.

Capacity payments. Regulated payment to finance the medium and long-term power capacity service, offered by the generation facilities to the electricity system.

Closed-cycle pumped storage generation. Production of electricity 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.

Combined cycle. Technology for the generation of electricity 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 to produce steam 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.

Commercial exchange capacity. Technical maximum import and export capacity of the Spanish electricity system with that of a neighbouring country's system and that is both compatible and which complies with the security criteria established for each system.

Congestion rents. Revenues derived from the management of the interconnection capacity between electricity systems.

Congestion. A situation in which the link which interconnects two national transmission grids is not able to accept all the resulting physical flows of the international trade which has been requested by market participants. This is done through bilateral contracts or as a result of the Market Splitting process, due to an insufficient interconnection capacity of the elements and/or the own national transmission grids in question.

Glossary of terms

Consumers. Natural or legal persons who buy energy for their own use. Those consumers who acquire energy directly from the production market are known as Direct Market Consumers.

Control deviations. Deviations which occur between two electricity systems and are measured as the difference between the scheduled international exchanges and the international physical energy exchanges.

Counter-trading. Schedule for exchanging energy between two electricity systems. It is established in real time and is carried out in a coordinated way between both system operators. This is super-imposed on the pre-existing final exchange schedules, whilst maintaining these, in order to solve a congestion situation identified in real time in the interconnection.

Daily base operating schedule (PDBF). Is the daily energy schedule, broken-down in scheduled periods for the different energy generation selling and purchasing agents/units within the Spanish peninsular electricity system. This schedule is established by the System Operator based on the schedule resulting from matching the day-ahead market and the data regarding the execution of bilateral contracts with physical dispatch of energy.

Day-ahead market. This is the market in which the purchasing and sales transactions of electricty for the following day are carried out.

Demand (at power station busbars). Energy injected in to the transmission grid from the ordinary and special regime power stations and imports, after deducting the consumption of pumps and exports. In order to transport this energy to the consumption points it would be necessary to subtract the losses originated in the transmission and distribution grid.

Demand in regulated market for last resort supply. Electricity demand of the consumers on the peninsula (measured at power station busbars after subtracting standard losses) who contract energy from a last resort trader/reseller.

Deviation management. The mechanism of deviation management is an optional service managed and remunerated by market mechanisms. The objective is to resolve the deviations between generation and demand superior to 300 MWh which could appear in the period between the end of one intraday market and the beginning of the next intraday market horizon.

Distribution network technical restrictions. Are those technical restrictions, corresponding to requests sent by the distribution network managers to the System Operator, to guarantee the security of the distribution network under its management.

Distributors. Those mercantile societies which have the function of distributing electricity, as well as to construct, maintain and operate the distribution facilities required to transfer and distribute the energy at the consumption points.

Energy market balance. This is the balance resulting from the difference between the measured losses in transmission and distribution and the standard losses used in the balancing procedure of the system as a whole.

Explicit auction. A congestion management method used to allocate solely the interconnection capacity right.

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

Glossary of terms

Generation Market. This is comprised of the set of commercial purchase transactions and the sale of energy and other services related to the supply of electricity. It is structured on credit markets, day-ahead market, intraday market, non-organised markets and system adjustment services, understanding as such the resolution of technical restrictions of the system, ancillary services and deviation management.

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. Hyper-annual regime reservoirs are those in which the total drainage time takes more than one year.

Installed power. Maximum power that a production unit can reach, during a determined period of time, measured at the generator terminals.

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

International physical exchange. 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.

International scheduled exchanges. These are the schedules that are established between two electricity systems as a consequence of a set of scheduled individual transactions in the market by Market Participants, or by means of bilateral contracts.

Interruptibility. This is a demand management tool managed by Red Eléctrica as system operator and is used to provide an efficient and rapid response to the needs of the electricity system. The concept of interruptibility has changed into that of demand management in which large consumers who acquire energy through the electricity market can take part and can establish the corresponding service level contracts with the system operator. These companies obtain discounts on their invoices in exchange for a reduction in their electrical consumption, upon demand, and under special circumstances as determined by the system operator. In any case, the reductions of consumption to which these consumers must agree to are typified in the regulation and have as fundamental variables, the notice period, its duration and the number of times it can happen in an electrical year (November 1 - October 31).

Intraday market. The objective is to manage the adjustments occurring in the generation and demand of energy which may be produced after having fixed the day-ahead market.

Last resort supply. Electricity power supply scheme that replaces the integral tariffs, and that is established for specific consumers who, owing to their characteristics, may have trouble contracting their consumption in the free market, and to whom last resort tariffs (TUR) would be applied. The TUR sets out the maximum and minimum prices which may be charged by traders/resellers assigned the role of last resort supply (also called last resort traders/resellers), to consumers who meet the established criteria that allow power supply under this scheme and who willingly choose

Glossary of terms

to sign-up to this regime. As of July 1, 2009, last resort consumers are those low-voltage electricity consumers whose contracted power is less than or equal to 10KW.

Market Operator. A mercantile society which assumes the management of the bid system for the purchase and sale of electricity in the day-ahead and intraday market under the established regulations.

Market splitting. Management mechanism for the exchange capacity between two or more electricity systems which is carried out simultaneously with the Iberian generation market and uses as its criteria the economic efficiency of the spare capacity between the electricity systems. In the case of congestion between the systems, the market splits into zones of differing price. In the contrary case, an overall unique price for the market exists.

Measured deviation. Difference between the energy measured at the power station busbars and the energy scheduled in the market.

Measured downward deviations. Measured downward deviations are those which result when the production measured at the power station busbars is smaller than that scheduled in the market, or when the consumption measured at the busbars is higher than that scheduled in the market. Therefore, the system must manage that difference by increasing production through the adjustment markets in real time.

Measured upward deviations. Measured upward deviations are those which result when the production measured at the power station busbars is greater than that scheduled in the market, or when the consumption measured at the busbars is lower than that scheduled in the market: Therefore, the system must manage that difference by reducing production through the adjustment markets in real time.

National demand in free market. Electricity demand of the consumers on the peninsula (measured at power station busbars) who directly contract energy from a trader or in the market.

Net energy. Maximum energy which a production unit can reach measured at outgoing feeder connections of the power station, that is to say, subtracting the power consumed in any way in electricity generation.

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

Net production. The electricity production of a generation unit, measured at the generator terminals, having subtracted that consumed by the auxiliary services and transformer losses.

Non-renewable energies. Those obtained from fossil fuels (liquid or solid) and their derivatives.

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

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.

Producible hydroelectric. Maximum quantity of electricity 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 generation of electricity have been subtracted.

Glossary of terms

Production (at generator terminals). The electricity production of a generation unit, measured at the outgoing generator terminals.

Production (at power station busbars). Energy measured at the generator terminals having deducted the consumption required for generation and pumped storage.

Programming unit. Minimum element with capacity to bid in a market.

Pumped storage consumption. Electrical energy used by pumped storage hydroelectric power stations for elevating water from the lower to the upper reservoir for the generation of electricity.

Real time restrictions. The process carried out by the System Operator consisting of the resolution of the technical restrictions identified during real-time operation of the system by means of the modification of the schedules of the Programming Units.

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.

Restrictions due to security of supply. A security of supply restriction is understood as the generation from thermal electricity production sources using local primary energy fuel deemed necessary to ensure security of supply in the Spanish electricity system, taking into account the limit established in Article 25 of Law 54/1997 of November 27, and taking into account the possible safety limitations for energy delivery schedules that, in accordance with the system operation procedures, might be necessary to apply. To solve security of supply restrictions, power delivery schedules of certain production units can be modified to contemplate the thermal production of those power stations using local coal as fuel, whereby only enabled power stations as providers of this service can participate in this process.

Secondary capacity market. A mechanism which allows the transfer and resale, on behalf of a participant, of acquired physical capacity rights in the annual and monthly auctions, or by means of transfers.

Secondary control band and secondary control. Secondary control is an optional ancillary service with the objective of maintaining the generation-demand balance, correcting deviations with respect to the anticipated power exchange schedules between Spain and France, and frequency deviations. Its temporary action horizon stretches from 20 seconds to 15 minutes. This service is remunerated by means of market mechanisms via two concepts: availability (control band) and usage (energy).

Solar photovoltaic. Sunlight converted into electricity through the use of solar cells, generally made of semiconductor material that, when exposed to sunlight, generates electricity.

Solar thermoelectric. Heat produced by solar radiation that can be taken advantage of for the production of mechanical energy and, subsequently, electricity.

Special regime. Production of electricity 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-

Glossary of terms

electrical activities, if and when they entail a high energy yield: Groups 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.

Support exchanges. Schedules which are established between two electricity systems to guarantee the conditions for the security of supply of either of the two interconnected systems. This is done in case of emergency to solve a specific risk situation in the operation of one of the systems and with the previous agreement between the respective operators and in the absence of alternative means of resolution in the system requiring support.

Surplus/deficit of deviations. Difference between the amount of the settlements of the deviations and the energy used to maintain the generation-demand balance.

System adjustment services. Services required to ensure the electricity supply under the necessary conditions of quality, reliability and security. The adjustment services can be of an obligatory or optional character. Resolution of restrictions due to guarantee of supply, resolution of technical restrictions of the system, ancillary services and deviation management are all considered adjustment services.

System operation processes. Those system adjustment services which are necessary to assure the electricity supply under the necessary conditions of quality, reliability and security. The adjustment services can have obligatory or optional character. Adjustment services are understood as the resolution of technical restrictions of the system, ancillary services and deviation management.

System Operator. A mercantile society whose main function is to guarantee the continuity and security of the electricity supply, as well as the correct coordination of the generation and transmission system. It carries out its functions in coordination with the operators and particpants of the Iberian Electricity Market under the principles of transparency, objectivity and independence. Under the current Spanish model, the system operator is also the manager of the transmission grid.

Technical restrictions due to upward reserve to raise. Are those technical restrictions associated to the existence of insufficient upward energy reserve in the system.

Technical restrictions PDBF. A mechanism integrated in the electricity production market carried out by the System Operator consisting of the resolution of the technical restrictions identified in the Daily Base Operating Schedule by means of the modification of the schedules of the Programming Units and the subsequent process of re-balancing generation-demand.

Tertiary control. An optional ancillary service that, if subscribed to, is accompanied by the obligation to bid and is managed and compensated by market mechanisms. Its objective is to resolve the deviations between generation and consumption and the restitution of the secondary control reserve which has been used. This is done by means of the adaptation of the operating schedules of the programming units corresponding to generation stations and pumped storage consumption facilities. The tertiary reserve is defined as the maximum

Glossary of terms

variation of power generation that a generation unit can carry out within a maximum of 15 minutes, and which can be maintained for at least 2 hours.

Thermal line rating. The maximum energy which can be transported by an electricity line without breaking the established safety distances. This value depends on the characteristics of the line and on the environmental characteristics (temperature, wind and solar heating).

Traders/Retailers. Those mercantile societies that, accessing the transmission grid or distribution network, acquire energy to sell to consumers, to other system participants or to carry out international exchange transactions under the terms established in Law 54/1997.

Transmission grid availability rate. Indicates the percentage of total time in which each element of the transmission grid has been available for service. It is calculated from the nominal power of each installation once the downtime due to preventive and corrective maintenance, unforeseen unavailability, or other causes (such as the construction of new facilities, renovations and improvements) have been subtracted.

Transmission grid technical restrictions. Are those technical restrictions identified within the global system (generation-transmission grid), that require a modification to the schedules in order to comply with the operation and security criteria for operating the system.

Transmission grid. The complete set of lines, facilities, transformers and other electrical elements with volatages 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 extra-peninsular power systems.

Unavailability of the production units. A production unit is completely available if it can participate in production without any limitation in generation capacity or, when applicable, pumped storage consumption. Otherwise, it is considered unavailable, such unavailability being of a partial or total nature. The net unavailable power of a generation unit is determined by the difference between the installed net power at the power station busbars and the net power truly available.

Voltage control. This is an ancillary system service whose aim is to guarantee the suitable voltage control in the nodes of the transmission grid, so that the operation of the system meets the established security and reliability requirements, to ensure that the energy supplied to the final consumers is in compliance with the required quality and that the generators can work in the established conditions for its normal operation.

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