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1 INTRODUCTORY REMARKS

2010 was characterised by a positive behaviour in the electricity and natural gas markets which represented a sustained contribution from Portugal in the creation of the European Union's Internal Energy Market.

In this report, we will try to briefly underline the occurrences which justified the abovementioned expectations, taking into account the main developments which occurred in Portugal in both markets.

In relation to electricity, the wholesale market operations benefited from more favourable price forming conditions on the organised market which occurred for two reasons: (i) occasional factors, which led to fewer price differences between the two MIBEL price areas, as is the case with hydraulicity, which allowed for less use of fossil fuels in a year where increases were registered in primary energy in international markets and (ii) structural factors, such as the entry of new standard regime and special regime generation capacity which allowed the reduction in structural differences between the power plant generation systems of the two MIBEL countries.

During the year in question, a high level of concentration was maintained in the wholesale electricity and natural gas markets, which points towards the need for the implementation of further measures to foster competition and promote transparency.

As for the retail electricity and natural gas markets, 2010 was marked by the deepening of the liberalised market. In the case of electricity, there was a greater dispersion of market shares and, consequently, a reduction in the market concentration indicators.

Where natural gas is concerned, the opening of the market to all consumers is one of the achievements to be highlighted for this year. However, at the end of 2010, more than 1 400 consumers migrated to another supplier through the respective platform and, of these, more than 1 100 correspond to consumers from the industrial market, which translates into 1/3 of the total number of consumers in this segment.

In terms of the supplier switching process, the 2010 electricity market was characterised by significant penetration by open market suppliers in the segments encompassing consumers with the highest consumption levels ("large customers" and "industrial customers"), approximately 60% and 67% respectively of total consumption in each segment.

Regarding natural gas, during 2010, the supplier switching platform was improved with the introduction of functionalities which allow agents to make supplier changes through automated procedures, and the inclusion of the tools needed to produce information so that the process could be monitored by ERSE.

Another significant milestone in the dynamisation of the retail markets in 2010 was the Government's decision to extinguish End User tariffs charged to customers, for both electricity and natural gas, with

differentiated timetables and covering consumption segments which, in both markets, impacted only large customers.

In the case of electricity, this decision led to the extinction of End User tariffs charged to consumers in mainland Portugal from the 1st of January 2011 for the supply of VHV, HV, MV and SpLV with a contracted power greater than 41.4 kW.

For natural gas, as from the 1st of July 2010, there was an extinction of the regulated End User tariffs applicable to customers with an annual consumption of over 10 000 m^3. For this consumption segment, ERSE published transitory tariffs for the 2010-2011 gas year, to promote the transfer of clients to the market.

To complement the increasingly dynamic market activity, ERSE stepped up its monitoring by reinforcing mechanisms to keep a check on retail market prices and also providing information to consumers and market agents.

In terms of public service obligations, which include consumer protection, the main initiatives undertaken by ERSE during 2010 relate to: (i) Revision of natural gas sector regulations; (ii) Inspection of natural gas company customer services and (iii) the Energy Consumer Programme 2010-2011.

Still on the subject of consumer protection, the "economically vulnerable" client figure was established, for whom a social tariff for the supply of electricity was created in line with the guidelines given in Directive 2009/72/EC, of the 13th of July.

Lastly, in terms of the works carried out by CEER/ERGEG/ACER regarding the 3rd Package on the Internal Energy Market, it is important to mention the continuing active role played by ERSE in the dynamisation of workshops aimed at promoting the analysis of the main subject matters related to transposition. Additionally, ERSE has been taking steps internally in preparation for the transposition of electricity and natural gas directives into Portuguese law.

In the context of the transposition of these guidelines, many of the innovative measures in the 3rd Package have already been implemented in Portugal, among which the unbundling of the electricity and natural gas transmission network operators is particularly worthy of note.

In terms of the increased autonomy of the regulators ERSE's expectations include greater independence in budget management, a wider range of powers and the implementation of the fines and penalties scheme which will have to be exercised through a specific legal instrument published by the Government.

ACRONYMS

- ACE – Energy Consumers Support office.
- ACER - Agency for the Cooperation of Energy Regulators
- CCGT – Combined Cycle Gas Turbine
- CEER – Council of European Energy Regulations.
- CNE – Comisión Nacional de Energía (Spain).
- CRE – Commission de Régulation de l'Énergie (France).
- DGEG – Directorate-General for Energy and Geology.
- DSO - Distribution System Operator.
- DUoN – Distribution Use of Network.
- DUoN (HV) – Distribution Use of Network in HV.
- DUoN (LV) – Distribution Use of Network in LV.
- DUoN (MV) – Distribution Use of Network in MV.
- ERGEG – European Regulators Group of Electricity and Gas.
- ERI - Electricity Regional Initiative
- ERSE – Energy Services Regulatory Authority (Portugal).
- GRI – Gas Regional Initiative
- GUoS – Global Use of System.
- HP – High pressure (pressure of more than 20 bar in relation to atmospheric pressure)
- HV – High Voltage (RMS voltage between phases greater than 45 kV and equal to or lower than 110 kV).
- LNG – Liquefied Natural Gas.
- LP – Low pressure (pressure of less than 4 bar in relation to atmospheric pressure).
- LRS – Last Resort Supplier.
- LV – Low Voltage (RMS voltage between phases equal to or lower than 1 kV).
- MIBEL – Iberian Electricity Market.
- MP – Medium pressure (pressure of 4 bar or more and equal to or less than 20 bar in relation to atmospheric pressure).

- MV – Medium Voltage (RMS voltage between phases greater than 1 kV and equal to or lower than 45 kV).
- NES - National Electricity System.
- OMEL – Operador del Mercado Ibérico de Energia – Pólo Español, SA (spot market).
- OMIP – Operador do Mercado Ibérico de Energia – Polo Português, (derivatives market).
- OTC – Over The Counter
- PPA – Power Purchase Agreement
- PDIR - RNTIAT Development and Investment Plan.
- RNT – National Electricity Transmission Network (Mainland Portugal).
- RNTGN – National Natural Gas Transmission Network.
- RNTIAT – National Transmission, Storage Infrastructure and LNG Terminal Networks.
- SNGN – National Natural Gas System.
- SpLV – Special Low Voltage (LT supply or delivery where subscribed power is (i) Mainland Portugal - above 41.4 kW, (ii) Autonomous Region of the Azores – equal to or above 20.7 kW and is achieved by way of maximum power at 15 minute intervals, (iii) Autonomous Region of Madeira - above 62.1 kW).
- SRG – Special Regime Generation.
- StLV – Standard Low Voltage (LT supply or delivery where subscribed power is (i) Mainland Portugal - 41.4 kW or lower, (ii) Autonomous Region of the Azores – 215 kW or lower and is not achieved by way of maximum power at 15 minute intervals, (iii) Autonomous Region of Madeira - 62.1 kVA or lower).
- TSO – Transmission System Operator.
- TUoN – Transmission Use of Network.
- VHV – Very High Voltage (effective voltage between phases greater than 110 kV).

2 KEY DEVELOPMENTS IN THE ELECTRICITY AND IN THE NATURAL GAS SECTORS

2.1 WHOLESALE MARKET

DEGREE OF CONCENTRATION AND MARKET POWER

There was a slight fall in the concentration in the electricity generation market in 2010 in terms of both installed capacity and also energy generated. The increase in installed production capacity under the special regime and the corresponding energy produced, above all from the use of wind, a segment in which the incumbent is not the largest participant, as well as the increase in capacity due to the entry of a new agent, contributed decisively to this evolution.

The evolution in terms of the reduction in concentration in production is underlined by the fact that 2010 was a year with a high hydroelectric production, a segment where the incumbent holds a larger relative share.

The more favourable development of free trading led to greater dispersion of energy contracting resources, particularly to an increase in the amount of energy contracted bilaterally, although part of the contracting undertaken in the spot market remains at proportionally high values.

Wholesale market operations in 2010 also benefited from better price forming conditions on the organised market: on the one hand, there were occasional factors which led to fewer price differences between the MIBEL price areas (which Portugal is part of), such as the favourable evolution of hydraulicity which allowed for less use of fossil fuels in a year when these rose in price in international markets; and on the other, there were structural factors, such as the entry of the new production capacity under a standard regime and a special regime which allowed structural differences in the power plant generation system between the two MIBEL areas to be reduced.

In this context, the number of hours of market splitting declined in line with the evolution of the price difference between the two markets. Early 2010 was characterised by the existence of congestion both in the Portugal-Spain direction, and vice-versa. The growing integration of the markets allowed for more efficient competition.

From the regulatory point of view, the development of market supervision mechanisms by ERSE sought to strengthen the transparency and integrity of the electricity wholesale market.

In relation to the natural gas sector, it should be noted that the liberalisation of the quantities in the wholesale market, which had begun in 2009, was not continued in 2010 due to the excess stocks of natural gas held by most agents.

On the whole, therefore, the electricity wholesale market developed favourably in 2010, as did the natural gas wholesale market, albeit to a lesser degree, and this caused a reduction in the overall concentration of electricity generation and of the supply of natural gas. Even so, a high level of concentration persists in both markets (electricity and natural gas) and the implementation of further measures to foster competition and promote transparency should follow on from the developments already achieved.

MARKET INTEGRATION

With a view to increasing market integration in the context of creating the Internal Energy Market, two regional ERGEG initiatives are particularly worth mentioning, the South-West Electricity Regional Initiative (South-West ERI) for the electricity sector and the Gas Regional Initiative for Southern Europe (South GRI) for the natural gas sector, alongside the Iberian Natural Gas Market (MIBGAS).

The South-West ERI is one of the seven regional electricity markets set up under the ERGEG regional initiatives. The purpose of the South-West ERI is to integrate the French and Iberian Peninsula (MIBEL) electricity markets into a single regional electricity market. The Spanish regulator for the sector, CNE, is coordinating the activity of the South-West ERI in collaboration with ERSE, in Portugal, and the French regulator, CRE. A number of steps were taken in 2010 to consolidate this market, which are explained in greater detail in point 3.2.1.

Various measures were undertaken to strengthen this market in 2010 under the Natural Gas Regional Initiative for South Europe (South GRI), established in 2006, particularly by allocating short and long term capacity in the interconnection between France and Spain, as described in point 4.2.1.

In terms of the Iberian Natural Gas Market (MIBGAS), in early 2010, ERSE and CNE presented their respective Governments with a proposal for the mutual recognition of natural gas market supply licences within the scope of MIBGAS, as explained in point 4.2.1. In relation to the harmonisation of the access tariffs, a preliminary study was initiated to characterise the current situation and possible tariff obstacles in the transmission of gas in the Iberian Peninsula. This joint ERSE/CNE study, due for conclusion in 2011, will serve as starting point for the public discussion of tariff harmonisation.

2.2 RETAIL MARKET

2.2.1 ELECTRICITY SECTOR

MARKET DEVELOPMENT

In 2010 the retail market saw the consolidation of the liberalised segment in terms of global electricity consumption, prompted by the differences in energy prices in the wholesale market and the rate implicit in the regulated tariffs for the supply to end users. The decision to end the regulated tariffs for the supply to end users with a contracted power greater than 41.4 kW, for 2011, reduced the uncertainty for market agents which in turn contributed to reinforcing the objective conditions for the development of the market.

In consonance, the reduction of energy price differences between Portugal and Spain in the wholesale market, which had already been noted in 2009, encouraged the perception of lower commercial risks among suppliers competing against the Portuguese market leader.

The evolution of the electricity retail market (whose liberalised segment rose significantly in volume) was characterised in 2010 by a greater dispersion of market shares and, consequently, by the reduction in the indicators of market concentration.

Still on the subject of the electricity market, in 2010 the supplier switching process was characterised by a significant penetration by suppliers operating in the consumer segments with larger consumption ("large customers" and "industrial customers") amounting to approximately 60% and 67% respectively of total consumption in each segment.

END USER TARIFFS

Between 2009 and 2010, last resort tariffs for the sale of electricity to end users (consumers who have not yet chosen the liberalised market) in the electricity sector in mainland Portugal rose 2.9% for all voltage levels.

ERSE is responsible for monitoring the retail price of electricity in the liberalised markets and for informing consumers and the other market agents. In this context it is responsible for overseeing the market at various levels, including those relating to prices. This monitoring of market prices is supplemented by the reports issued by the official bodies (INE and EUROSTAT).

As will be seen in point 3.2.2, in 2009 ERSE began procedures to set up a database to analyse retail market operations, and in 2010 reviewed the procedures for provision of information by suppliers.

At the same time, the reference prices sent by the various suppliers operating in the market in mainland Portugal allowed ERSE to provide a price simulator for StLV facilities on its website. The new rules which were approved at the end of 2010 will also allow the provision of information on SpLV reference prices.

2.2.2 NATURAL GAS SECTOR

MARKET DEVELOPMENT

The opening of the natural gas market to all consumers was a significant occurrence in 2010. A change in the legislation, introduced before the year was half-way through, determined the extinction of the regulated tariffs charged to industrial customers (those with an annual consumption greater than 10 000 m^3). In real terms, at the end of the year, more than 2/3 of natural gas consumers, excluding the combined cycle power plants, were being supplied by market regime suppliers.

The number of customers who transferred from tariff supply to the portfolio of a market supplier or who began consuming directly in the liberalised market went from 322 customers in 2009 to 1 452 customers in 2010. Of these, more than 1 100 were customers from the industrial market which translates into 1/3 of the total number of customers in this segment.

During 2010, the supplier switching platform was gradually improved, with the introduction of functions which allowed agents to make supplier changes through automated procedures, and the inclusion of the tools needed to produce information so that the process could be monitored by ERSE.

END USER TARIFFS

The End User tariffs charged to natural gas end users consuming over 10 000 m^3 annually were extinguished on the 1st of July 2010. ERSE therefore published transitory sales tariffs to be applied to these same end users during the 2010-2011 gas year, and which are calculated by applying an aggravating factor to the sum of the grid access tariffs, the average cost of energy and the regulated supply cost. The abovementioned aggravating factor is applied so as to motivate the transfer of consumers from the transitory tariff to the market tariff.

The table below shows the average price trend for the End User tariffs for the 2010-2011 gas year.

Table 2-1 - Nominal Change in End User Tariffs

End User Tariffs	Variation TVCF 2010-2011/2009-2010
Consumption < 10 000 m^3/year	3.2%

End User Tariffs (transitory)	Var Transitory Tariff 2010-2011/2T2010
Consumption > 2 000 000 m^3/year	13.7%
10 000 m3/year < Consumption < 2 000 000 m^3/year	26.6%

ERSE is responsible for monitoring the price of retail natural gas and for informing consumers and market agents. In this context it is responsible for overseeing the market evolution at various levels, including those relating to prices. This monitoring of market prices is supplemented by the reports issued by the official bodies (INE and EUROSTAT).

As will be seen in point 3.2.2, in 2010 ERSE began the constitution of a database to analyse retail market operations.

2.3 PUBLIC SERVICE OBLIGATIONS

In terms of public service obligations, which include consumer protection, the main initiatives undertaken by ERSE during 2010 were:

- Revision of the natural gas sector regulations.
- Inspections of the personal and telephone customer services provided by the natural gas companies.
- Energy Consumer Programme 2010-2011.

In 2010 the regulations applicable to the natural gas sector underwent review as published in the official Portuguese Gazette (Diário da República) on the 18th of March 2010. The resulting changes to the Regulation of Commercial Relations and the Regulation of Quality of Service are the most significant for consumers, seeking, as they do, to introduce improvements in communication with consumers, to reinforce the legal separation of the activities, with measures to differentiate images and operating methods, and to include rules on the labelling of natural gas.

In the scope of its inspecting role, ERSE made two inspections, one on telephone service and another on personal customer services provided by the natural gas companies. The inspections allowed for the collection of information on content and how information was provided to consumers, as well as on the

procedures and deadlines used in handling complaints, with reference to applicable public service obligations.

The Energy Consumer Programme 2010-2011, launched for the World Consumer Rights Day (15th of March 2010), committed to the continuity of the actions undertaken in the scope of the previous programme but looked at new challenges in the reference table forecast for the electricity and natural gas markets which were motivated by the publication of the 3rd EU energy package. One of the main objectives of the programme consists of achieving greater proximity to energy consumers, providing information which suits their real needs and promoting safer and more sustainable behaviours. ERSE's major areas of intervention as outlined in this energy consumer programme are information, education, prevention and conflict management, in addition to the promotion of a more active participation by consumers in the regulation of the energy sector. Emphasis was given to the continuation of the ERSEFORMA programme which regularly informs and instructs consumers and their representatives on various subjects related to regulation and occasionally organises events focusing on more specific topics.

COMPLAINTS AND REQUESTS FOR INFORMATION

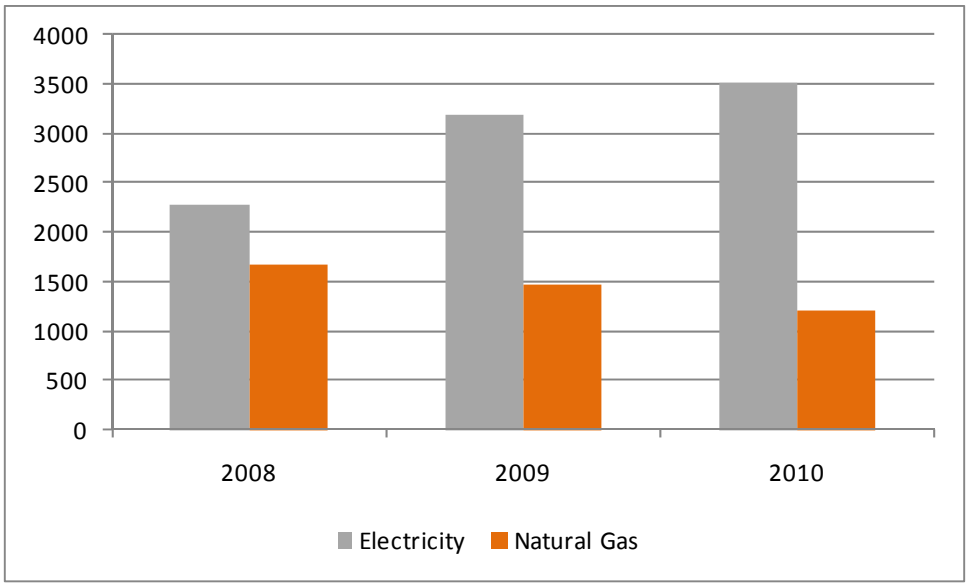
ERSE receives, processes and answers complaints and requests for information from all energy consumers who contact it.

The main objective of ERSE's intervention in the resolution of complaints and requests for information from consumers is to contribute to the resolution of differences between the parties involved. In this context, ERSE's intervention uses tools of a voluntary nature with a view to resolving disputes through alternative methods such as mediation and conciliation.

ERSE's intervention is free of charge; it must be requested by the interested party and is processed within a maximum of 120 days. The interested parties may appeal against ERSE's decisions in the civil courts.

In 2010, ERSE received 4 750 complaints, 3 517 of which related to the electricity sector and 1,205 to the natural gas sector, representing 74% and 26% respectively of total complaints. The evolution in the number of complaints in the last three years can be seen in Figure 2-1 (note that the customer bases are not identical: there are approximately 6 times more electricity consumers than natural gas consumers).

Figure 2-1 - Evolution in the Number of Complaints since 2008



Billing and service quality are the topics most commonly requiring intervention by ERSE in both the regulated sectors. Billing complaints involve such matters as adjustments, frequency of issue, amounts billed and questions related to prices and tariffs.

Where service quality is concerned, matters raised include customer service, friendliness and the quality of the service provided by operators and suppliers at service desks and over the telephone, in addition to issues related to the characteristics of the voltage and the continuity of the supply of electricity (interruptions).

In 2010, the number of complaints related to suppliers in the market regime was still residual. Therefore, the main companies complained about are the operator of the distribution network and the last resort supplier.

ERSE also received 846 requests for information, 274 of which (approximately 32%) related to the electricity sector, 71 (approximately 8%) to the natural gas sector, 38 (approximately 4%) to propane gas and the remainder (55%) to areas outside of ERSE's responsibility.

It is worth noting that ERSE provides information in an indirect manner through its internet page, through contents adapted to the most asked about situations. ERSE also provides daily telephone customer service, staffed by a team of technicians, whose primary goal is to improve consumers' access to information and prevent conflicts.

2.4 INFRASTRUCTURES

2.4.1 ELECTRICITY SECTOR

ACCESS TARIFFS

In 2010, the method for calculating the Grid Access tariffs, mentioned in point 3.1.2.1, remained unchanged.

INVESTMENT IN DIRECT LINES (ARTICLE 22)

There was no investment in direct customer supply lines from dedicated generating plants in 2010.

ALLOCATION OF INTERCONNECTION CAPACITY

During 2010, in the Iberian Electricity Market area, the allocation of capacity was carried out in an implicit manner through the daily market. No explicit auction of capacity was carried out.

In comparison to 2009, there was a reduction of 334 hours (15%) where the interconnections between Portugal and Spain were used 100%, with an average monthly congestion rate in 2010 of 1836 hours (38%) and an annual rate of 21%.

In relation to the price differential between Portugal and Spain, there was an increase in the average value, from 1.27 €/MWh in 2009 to 1.95 €/MWh in 2010.

The trend for a convergence in market prices in Portugal and Spain continued in 2010 with an associated reduction in the total number of congestion hours in both directions, further marking the reversal of the transit directions in the interconnection on a number of occasions.

Table 2-2 - Monthly Congestion Figures for the Portugal-Spain Interconnection in 2010

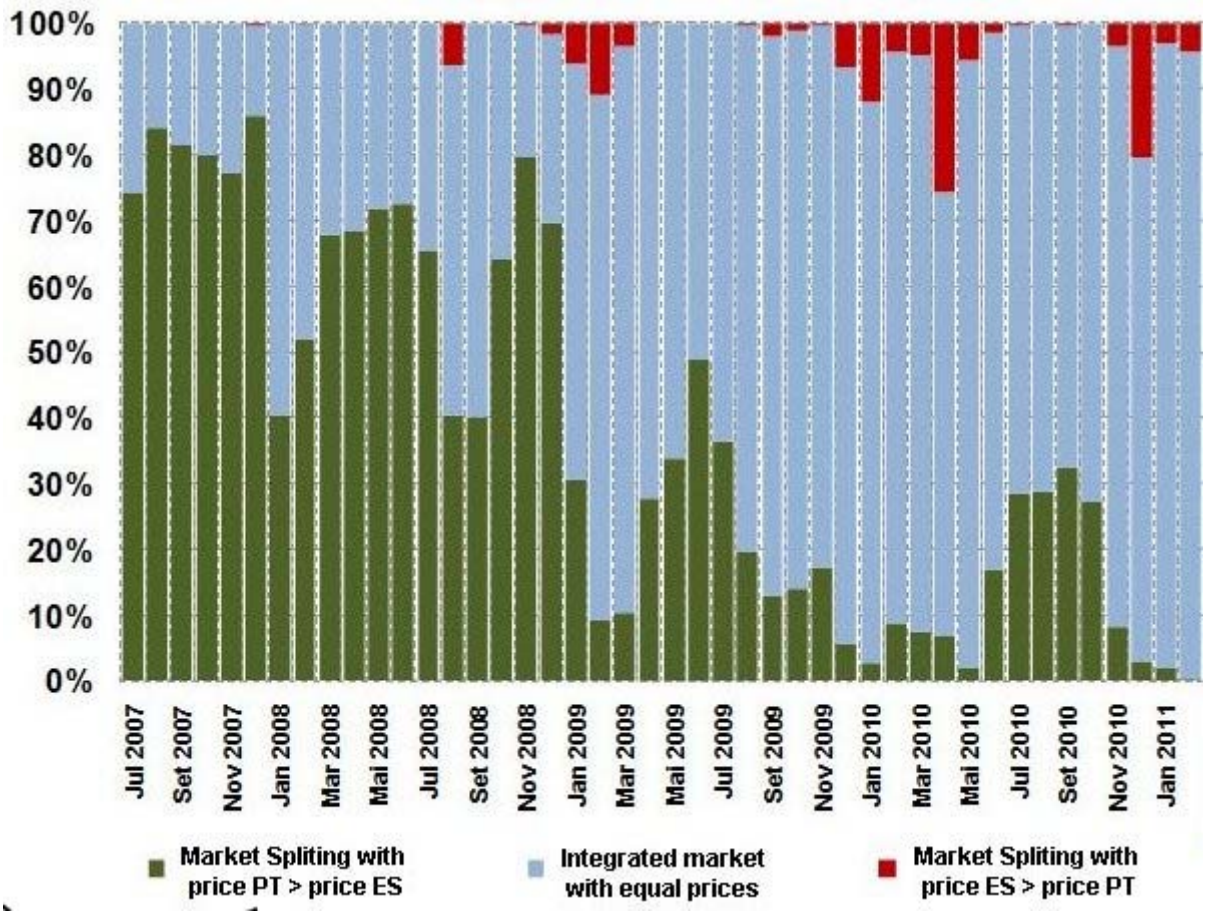
Month	Congestion		Price Differential (€/MWh)
	No. of Hours	% Hours per Month	Average
January	108	15%	2.25
February	87	13%	2.50
March	92	12%	3.07
April	233	32%	0.36
May	56	8%	0.48
June	131	18%	0.89
July	216	29%	1.18
August	214	29%	1.36
September	236	33%	1.71
October	203	27%	2.22
November	85	12%	1.61
December	175	24%	-0.23
Average 2010	**153**	**21%**	**1.95**
Average 2009	**181**	**25%**	**1.27**

Total 2010	**1836**
Total 2009	**2172**

Source: ERSE: ERSE, OMEL

The figure below shows the use of available capacity, in both directions, for the Portugal-Spain interconnection.

Figure 2-2 - Use of Portugal-Spain Interconnection Capacity



Separation of the market with PT price > SP price
Integrated market with equal prices
Separation of the market with SP price > PT price

Source: ERSE, OMEL

Throughout 2010, we continue to see a trend for the total number of hours of congestion to drop in both directions. However, the number of hours of congestion increased in the Portugal - Spain export direction (around 570 hours), which is a significant growth in comparison to the 223 hours registered in 2009.

2.4.2 NATURAL GAS SECTOR

ACCESS TARIFFS

The method for calculating the infrastructure access tariffs remained unchanged in 2010, as explained in point 4.1.2.1.

INTERCONNECTION USE AND CAPACITY

As in 2009, long-term supply contracts of the “take-or-pay” type continued to predominate the natural gas markets of the Iberian Peninsula.

INVESTMENTS (ARTICLE 22)

The scheme for accessing the infrastructure of the SNGN is regulated and no derogation pursuant to Article 22 of Directive 2003/55/EC of the European Parliament and Council, of the 26th of June, has been applied.

ALLOCATION OF CAPACITY

The natural gas infrastructure is recent in Portugal and its capacity exceeds current requirements. Accordingly, no congestion has been recorded in the National Natural Gas System (SNGN) infrastructures. Nevertheless, the regulatory framework in force includes mechanisms for allocating capacity available in the SNGN infrastructure and provides for the adoption of market mechanisms for coping with any congestion.

2.5 SECURITY OF SUPPLY

2.5.1 ELECTRICITY SECTOR

POWERS OF THE REGULATORY BODY

Under Portugal’s legal framework, published in 2006, it is the Government’s responsibility to ensure the security of the supply.

INVESTMENT DEVELOPMENT

In terms of power plants, there was a recent reinforcement in combined cycle power plants in Portugal’s central region (2 x 419 MW). Additionally, 465 MW of capacity came into operation under the special regime.

In recent years, there has been a significant growth in the weight of production under the special regime, both in terms of installed power and in terms of national consumption satisfaction, growing from 2.4 GW in 2005 (13% of consumption) to 5.9 GW at the end of 2010 (34% of consumption). Wind power

generation, in particular, more than doubled in terms of installed capacity (3 750 MW in 2010), contributing 17% to the supply of national consumption.

As for investment in the national transmission network, the coming into operation of the Armamar sub-station and the expansion of Lagoaça, both with 400/220 kV autotransformers, the entry into service of the 400 kV Lagoaça - Armamar and Lagoaça – Aldeadávila lines, and the change in the Armamar – Bodiosa – Paraimo axis to 400 kV, contributing to an increase in the reception capacity of renewable production in the Douro area and in the interconnection capacity with the Spanish network, are all worthy of note.

The Serra de Lousã axis was boosted to 220 kV with the new Penela – Tábua line, contributing to the reception of new renewable energy in the region, and the 400 kV Batalha – Lavos line entered into service, which is important to the production flow of new thermal groups in the Central Coastal area.

In the south, the Sines – Portimão 3 line came into operation, at 400 kV, thereby improving supply conditions in the Algarve.

DEVELOPMENT OF THE DEMAND/SUPPLY BALANCE

Over the last year, the capacity margin, which is defined as the difference between installed generation capacity and the maximum peak load for the year, referred to as installed capacity, grew to 48% compared with 45% in 2009 and 40% in 2008. The coming into operation of 2 new combined cycle thermal groups, totalling 838 MW contributed to this improvement. For more detailed information, see section 5.1.1., "Brief characterisation of 2010".

DIVERSIFICATION OF ENERGY SOURCES AND ORIGINS

In 2010, the electricity consumed was supplied in the following proportions: natural gas (20%), import balance (5%), fuel oil (0%), coal (13%), hydroelectric (28%) and production under the special regime (34%), including 17% from wind power generation.

2.5.2 NATURAL GAS SECTOR

POWERS OF THE REGULATORY BODY

Under Portugal’s legal framework, it is the Government’s responsibility to ensure the security of the supply.

INVESTMENT DEVELOPMENT

In 2010, investment to boost the capacity of the Carriço natural gas underground storage infrastructure was maintained and the REN-4 cavern[1] was completed and entered into operation. The project for a new cavern, TGC-2, was also developed and this should enter into operation at the end of 2012. Investment was initiated for the development of 7 new caverns for natural gas underground storage.

At the infrastructures of the LNG terminal at Sines, the investment in the expansion project also continued, consisting in the construction of a third LNG storage tank, increasing the natural gas injection capacity into the RNTGN and the construction of a new loading bay for tanker trucks.

The underground storage infrastructure and the LNG terminal will be enough to supply households for 20 days and two natural gas combined cycle power plants for 15 days.

For detailed information on sources of supply, see point 5.2.

2.6 REGULATION/UNBUNDLING

In similar fashion to the electricity sector in 2009, in 2010 natural gas companies adopted measures leaning towards the differentiation of the image of network operators and last resort suppliers when they belonged to a vertically integrated company. The need to reinforce the legal separation of activities in the SNGN and the image associated with each company is a direct result of the revision of the regulations carried out by ERSE through Order no. 4878/2010 of the 18th of March. Under this regulatory framework, Codes of Conduct were provided for network operators and last resort suppliers with a view to excluding discriminatory behaviour. These Codes of Conduct must include a set of procedures to be used when serving customers that must be clearly published on the Internet pages of the respective companies and in the places where customers are attended to personally. Other forms of image separation were also added, including the identification of each specific company and their activity in the various forms of communication with consumers (bills, headed letter paper, information leaflets, etc.).

2.7 GENERAL CONCLUSIONS

In 2010, we once again highlight the active role that ERSE played in the work carried out by CEER/ERGEG concerning the 3rd Package on the Internal Energy Market.

[1] The projects for the construction of the natural gas underground storage caverns are coded by RENC-xx or TGC-xx, the supplier which holds the asset being REN Armazenagem or Transgás Armazenagem, respectively.

In Portugal, many of the innovative measures contained in the 3rd Package related to the Directives in force have already been implemented, in particular the unbundling of the transmission network operators in the electricity and the natural gas sectors. This does not mean that the basis for the separation of activities established in Portuguese law cannot be improved.

Directive 2009/72/EC, which includes the 3rd Package, establishes principles that aim to fortify the independence of the TSOs, in particular by implementing ownership unbundling for the transmission network operators, by laying down that Member States should ensure that control of the TSO is not directly or indirectly exercised by whoever produces or supplies energy. This new reality should be taken into account in the evolution of the company's shareholder capital structure.

In the natural gas sector, as with electricity, the new Directive 2009/73/EC has established principles that are designed to strengthen the independence of the TSOs, particularly by implementing ownership unbundling. The operators of the RNTGN, the LNG terminal and the underground natural gas storage infrastructure that are part of the REN group, have been independent from market agents in operational, legal and ownership terms since 2006.

In terms of the increased autonomy of the regulators set forth in the new directives, ERSE's expectations include greater independence in budget management, a wider range of powers and the implementation of the fines and penalties scheme which will have to be exercised through a specific legal instrument published by the Government.

ERSE has played a role which goes beyond that of regulating natural monopolies. Market consolidation requires that the exercising of regulatory activities be realigned, which, in addition to the need to guarantee the efficient performance of regulated activities, requires a permanent effort to supervise the various aspects of the markets.

In addition to its own measures, the regulator must guarantee that governmental decisions are properly reflected in sectorial regulations. In this context, 2010 was characterised by the following legislative alterations:

- Power Guarantee: Order no. 765/2010, of the 20th of August, establishes the attribution, for a period of 10 years, of an investment incentive for electricity production centres which have an installed power greater than or equal to 50 MW, which entered into operation less than 10 years ago and which are not subject to costs from the maintenance of the contractual balance (CMEC).
- Social tariff: Decree Law no. 138-A/2010, of the 28th of December, establishes the creation of a social tariff applicable to electricity customers who are in a needy socio-economic situation in line with the guidelines given in Directive 2009/72/EC of the 13th of July. This tariff is financed by the electricity production centres under the standard regime in proportion to the installed power.

- Extinction of the regulated tariffs applied to natural gas and electricity end users: (i) Decree Law no. 66/2010, of the 11th of June, establishes the extinction of end user tariffs charged to customers with annual natural gas consumption greater than 10,000 m^3, as from the 1st of July 2010; (ii) Decree Law no. 104/2010, of the 29th of September, establishes the extinction of End User tariffs charged to consumers of VHV, HV, MV and SpLV electricity, and the LRS is obliged to supply electricity to consumers who have not yet chosen a market supplier, delivering low voltage with a contracted power of up to 41.4kW.

3 REGULATION AND PERFORMANCE IN THE ELECTRICITY MARKET

3.1 REGULATION MATTERS

3.1.1 MECHANISMS FOR CONGESTION MANAGEMENT AND ALLOCATION OF THE CAPACITY AVAILABLE AT THE INTERCONNECTIONS

There were no changes made to the management model for interconnections between Portugal and Spain in 2010. This means that the model for the assignment of physical capacity is the same, with capacity being assigned solely via a “market splitting” mechanism implemented in the MIBEL daily and intraday markets.

MIBEL began operating on 1 July 2007 and is based on a single daily market (OMEL) which sustains the Mechanism for Joint Management of the Portugal-Spain Interconnection. This is regulated by the rules and principles established in the following laws:

- EC Regulation no. 714/2009 of the European Parliament and Council.
- Access to Grids and Interconnections Regulations (RARI).
- Procedures Manual for the Mechanism for Joint Management of the Portugal-Spain Interconnection.
- Joint Rules for Contracting Capacity in the Portugal–Spain Interconnection.

At the request of the governments of the two countries, the Council of Regulators proposed implementing a mechanism for assigning physical interconnection capacity rights through specific capacity auctions in a time frame preceding the daily time frame. This proposal was rejected by the Spanish government, which published Order ITC/1549/2009 in 2009. This establishes an auction mechanism for financial derivatives to cover the price difference between the Portuguese and Spanish MIBEL zones, to apply in Spain, and which differs from the mechanism published earlier by ERSE.

3.1.2 REGULATION OF TRANSMISSION SYSTEM OPERATORS AND DISTRIBUTION SYSTEM OPERATORS

3.1.2.1 ACCESS TO GRIDS TARIFF

PROCEDURES AND METHODOLOGY FOR CALCULATING ELECTRICITY GRID ACCESS TARIFFS

ERSE is responsible for preparing and publishing the Tariff Regulation Code which establishes the methodology to be used for calculating tariffs and prices and the ways of regulating the allowed revenues. Before approval, the Tariff Regulation Code must be submitted for public consultation and be the subject of an opinion from the Tariff Board.

The tariff fixing process, including the time frame, is also defined in the regulations.

In order to explain the adopted tariff calculation methodology, there follows a brief description of the existing Portuguese tariff system.

The Grid Access Tariffs charged to all electricity consumers for using the infrastructure are considered. Generally speaking these Grid Access Tariffs are paid by suppliers on behalf of their customers. They may also be paid directly by customers that also function as market agents (i.e. customers that buy energy directly in the market and are responsible for managing their scheduling imbalances).

TARIFFS AND REGULATED ACTIVITIES OF THE ELECTRICITY SECTOR

The revenue generated by regulated activities is recovered by way of specific tariffs, each with its own tariff structure and characterised by a given set of billing variables.

The following tariffs are approved for each regulated activity: Global Use of System, Use of Transmission Network, Use of HV and MV Distribution Networks, Use of LV Distribution Network and Network Commercial Management.

Tariff prices are established in each activity so as to ensure that their structure follows the structure of the marginal costs and also enables the recovery of the allowed revenues in each activity.

Tariff charging and billing are based on the principle of non-discrimination as regards the energy's end use. The tariff options are available to all consumers.

TARIFF ADDITIVITY APPLIED TO GRID ACCESS TARIFFS

Grid access paid by all electricity consumers includes the following tariffs: Global Use of System, Use of Transmission Network, Use of Distribution Network and Network Commercial Management. Prices of access tariffs for each billing variable are determined by adding up the corresponding tariff prices per activity.

Calculation of End User tariffs charged by the LRS is based on the tariffs per activity included in grid access, plus the Energy Tariff and the Supply Tariff.

Insofar as the tariffs making up the sum are based on marginal costs, this situation prevents cross-subsidisation between customers and ensures an efficient allocation of resources.

This tariff calculation methodology allows for detailed knowledge of the various tariff components by activity or service. Thus, customers know exactly how much they pay and how that value is considered in terms of billing.

FORMS OF REGULATION

At the beginning of the 2009-2011 regulation period, ERSE re-evaluated the regulation models in force. 2010 was the second year during which the new methodologies were used. In short, the current regulatory model applied to regulated companies consists of:

- Transmission system operator – shifted from a model based on rate of return on investment and costs accepted on an annual basis to a model based on economic incentives: (I) application of a revenue cap type methodology to operational costs; (II) incentive for efficient investment in the transmission system through the use of reference prices in valuing new equipment to be incorporated into the system, whose greatest risk is offset by a differentiated rate of return; (III) the incentive to increase availability of the elements of the RNT; (IV) incentive for maintaining equipment in operation at the end of its useful life.
- Distribution system operator – continuation of regulation by incentives, taking the form of: (I) incentive for efficient management of operating costs via a price cap methodology; (II) incentive to improve quality of service; (III) loss reduction incentive; (IV) incentive to improve environmental performance.
- Companies holding the electricity transmission and distribution concessions in the Autonomous Regions of the Azores and Madeira – consolidated application of regulation by economic incentives: (I) the electricity distribution activity came to be regulated via a price cap methodology

for calculating allowed revenues; (II) definition of reference costs of fuel oil consumed in electricity generation[2].

As mentioned in last year's report, the economic targets were set on the basis of benchmarking studies of international scope, in the case of electricity transmission, and national scope for electricity distribution. In relation to transmission, parametric (COLS and SFA) and non-parametric (DEA) methods were used. In relation to distribution, parametric (SFA) and non-parametric (DEA) methods were used. The annual efficiency factors applied to unit costs were 3% for transmission and 3.5% for distribution. A fixed and a variable component were considered with the following cost drivers: the average length of the networks in Km and the number of sub-station panels, for transmission, and the energy delivered, for distribution.

In the Supply activity, a price-cap[3] regulation was also applied plus a remuneration which is aimed at compensates the working capital needs. These working capital needs arise from the differential between the average payment period and the average billing period. The annual efficiency factor applied to unit costs was 3% and the cost driver used was the average number of customers.

The studies initiated in 2009 as a result of the new methodologies of the new regulatory period, namely the study related to the definition of reference costs to be applied to investments in the electrical energy transmission network and the study related to fuel oil reference prices in the Autonomous Regions were finalised during 2010. The results from these studies are aimed at defining the parameters to be applied retroactively to 2010 and 2011, and to tariffs for 2012.

In the case of the valorisation mechanisms for new RNT investments, the unit reference costs for the lines and substations were published in 2010. Types and variants were also established.

REVENUE FROM CONGESTION ON INTERCONNECTIONS

Revenue from congestion on interconnections between Portugal and Spain arising from the price zone difference after the application of market splitting rose slightly in 2010, to stand at 11.9 million Euros compared with 10.7 million Euros in 2009.

In spite of the increase in income in comparison to 2009, this value is well below the 2008 figures (64 million Euros) and it results from the convergence of prices between Portugal and Spain and the increased use of the interconnection in the export direction (Portugal > Spain).

[2] Electricity generation in the Autonomous Regions of the Azores and Madeira is regulated, and it is not liberalised because these regions have benefited from a derogation of the application of Directive 2003/54/EC.
[3] Due to the dimension of the Supply activity, the application of efficiency targets arose from a specific study of the company's historical data but no benchmarking study was carried out.

However, there were some interconnection congestion situations caused by network operating safety issues, associated with regimes of heavy wind power generation.

Table 3-1 - Monthly evolution of congestion incomes for 2010

Month	Congestion (hrs/month)		Average price PT	Average price ES	Average price differential	Import (ES->PT)	Export (PT->ES)	Congestion income
	no. of hours	**% hours**	**(€/MWh)**	**(€/MWh)**	**(€/MWh)**	**(MWh)**	**(MWh)**	**(thous. €)**
January	108	15%	27,71	29,06	2,25	167 410	341 392	1 676
February	87	13%	27,80	27,68	2,50	303 753	165 881	552
March	92	12%	20,10	19,62	3,07	276 689	151 589	734
April	233	32%	26,16	27,42	0,36	187 694	95 487	425
May	56	8%	37,14	37,28	0,48	236 045	170 897	273
June	131	18%	40,80	40,12	0,89	519 154	61 268	768
July	216	29%	43,98	42,91	1,18	647 304	32 127	1 061
August	214	29%	44,45	42,94	1,36	645 581	8 409	1 270
September	236	33%	48,40	46,44	1,71	550 085	26 412	1 454
October	203	27%	44,19	42,63	2,22	645 398	18 980	1 041
November	85	12%	41,50	40,93	1,61	401 389	144 974	772
December	175	24%	44,98	46,34	-0,23	135 525	489 090	1 863
Total						4 716 027	1 706 504	11 890

Source: ERSE, OMEL

3.1.2.2 BALANCING

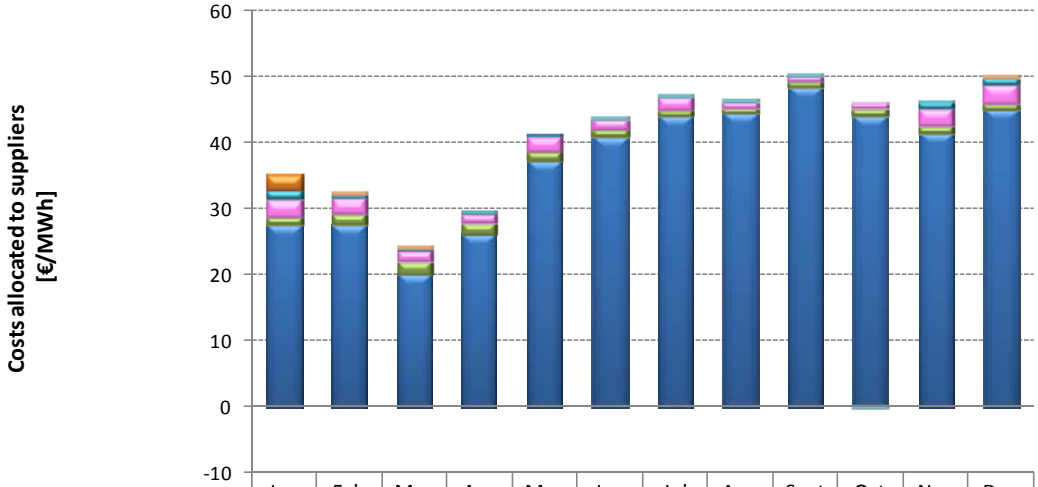
As in the previous year, in 2010 the service to compensate electricity generation and consumption imbalances and to resolve technical constraints was mobilized in accordance with the system services market. With respect to this, REN, in its capacity as Global Technical Manager of the System, is responsible for the operationalisation of this market.

The energy mobilised to resolve technical constraints and the secondary regulation band contracted involves costs that are paid by all customers. In addition to these, the costs of secondary regulation

energy and regulated reserve energy mobilisation used to cancel the agents' imbalances in real time are paid by all the market agents that have deviated in a certain period.

Figure 3-1 shows the impact of the daily markets and the system services on the costs allocated to the suppliers in 2010. In addition to the portion related to the daily market, therefore, there is another that is related to the system services markets, which is composed by contracting the secondary band and the extraordinary band, by mobilising energy to cope with technical constraints in real time (RT) and under the validation of the daily market programme (Functioning Base Daily Programme – FBDP), and by the agents' imbalances (secondary regulation and regulated reserve energy mobilisation).

Figure 3-1 - Impact of daily markets and ancillary services on the costs allocated to suppliers operating in Portugal, in 2010



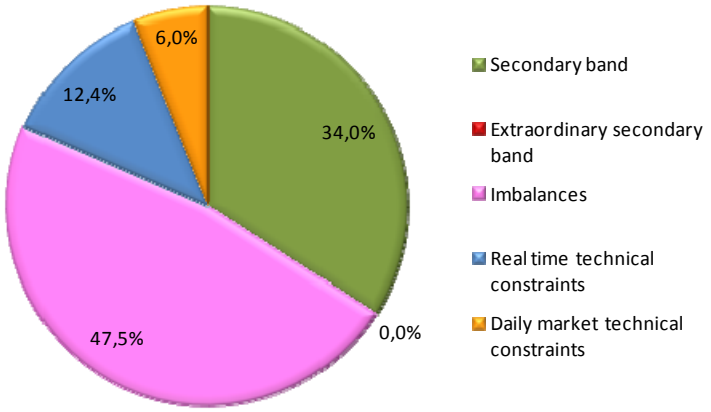
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Total ancillary services markets	7,44	4,38	4,04	3,45	4,19	3,03	3,09	2,06	1,91	1,81	4,67	5,11
Daily market technical restrictions	2,41	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,05
Real time technical restrictions	1,26	0,56	0,42	0,30	0,33	0,14	0,12	0,14	0,15	0,00	0,98	1,06
Imbalances	2,57	2,20	1,52	1,28	2,37	1,68	1,94	1,02	0,83	0,68	2,51	2,93
Extraordinary secondary band	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Secondary band	1,20	1,61	2,09	1,87	1,50	1,21	1,03	0,89	0,93	1,14	1,18	1,07
Daily market	27,7	27,8	20,1	26,2	37,1	40,8	44,0	44,5	48,4	44,2	41,5	45,0

In 2010 the system services markets represented a weighted average cost of around EUR 3.8/MWh supplied relative to an average annual price on the daily market of around EUR 37/MWh.

Analysis of Figure 3-1 also shows the high costs of these markets in January, which is due largely to the portions related to technical constraints due to the weather conditions in December 2009 which caused a lack of availability on transmission lines, systematically requiring the resolution of technical constraints.

Figure 3-2 shows the breakdown of the system services markets' costs, and it is clear that the most important components relate to imbalances and secondary band contracting.

Figure 3-2 – Breakdown of the ancillary services markets' costs in 2010



The valuation of the imbalances for each hour corresponds exactly to the variable costs of regulation payable to those agents that rectify the imbalance by participating in the system services markets. Figure 3-3 shows the evolution of the energy imbalances throughout 2010, with the representation of the imbalances by default and imbalances by excess.

Figure 3-3 - Evolution of Imbalances in 2010

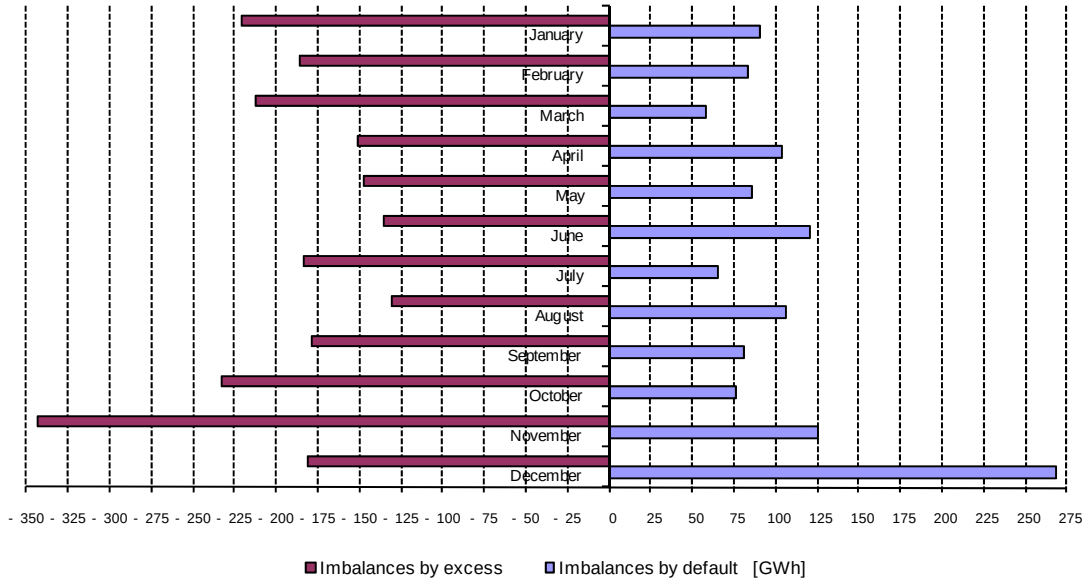


Table 3-2 presents the total annual value of the energy imbalances by excess and by default, as well as their valuation. Note that the valuation of the imbalances is taken directly from the costs identified from

the mobilised regulated energy. The unit imbalance showed an average annual value of 16.46 €/MWh and 50.52 €/MWh, respectively, for imbalances by excess and by default.

Table 3-2 - Total annual imbalance and unit values (2010)

	Unit	Value
Imbalance by excess	MWh	1 615 843
Valuation of imbalances by excess	EUR	26 599 189
Unit imbalance by excess	€/MWh	16.46
Imbalance by default	MWh	2 429 979
Valuation of imbalances by default	EUR	122 770 930
Unit imbalance by default	€/MWh	50.52

3.1.2.3 QUALITY OF SERVICE

Both the Tariff Regulation Code and the Quality of Service Regulation Code have provisions for regulating continuity of supply in Mainland Portugal. With respect to the quality of service of the electricity supply in the Autonomous Regions, the respective codes applicable to Madeira and the Azores were published in 2004.

INCENTIVE TO IMPROVE CONTINUITY OF SUPPLY

The Tariff Regulation Code establishes an incentive to improve continuity of supply, with repercussions on the allowed revenue for the MV and HV distribution system operator in Mainland Portugal. The value of the incentive depends on the annual value of energy not distributed and is determined by a method established in the regulations.

In 2009, the value of energy not distributed was greater than the reference value fixed for the regulation period resulting in a reduction in the value of allowed revenue in the distribution activity of MV in 2011 representing a penalty to the value of 522 799 Euros.

On the basis of the information available to date, in 2010, the value of energy not distributed will also lead to a decrease in allowed revenue in the MV and HV distribution systems in 2012, representing a penalty of 908 202 Euros.

CONTINUITY OF SUPPLY IN 2010

The transmission and distribution systems are described in terms of the continuity of supply, based on four indicators for each system (transmission and distribution):

- EIT – Equivalent Interruption Time: indicator applying to the transmission system. This expresses the system interruption time based on the average expected annual capacity (P_{me}).
- ICEIT – Installed Capacity Equivalent Interruption Time: indicator applying to the MV distribution system. It shows the duration of the interruption of installed capacity in the transformer stations.
- SAIDI – System Average Interruption Duration Index: indicator applying to the transmission and distribution systems.
- SAIFI – System Average Interruption Frequency Index: indicator applying to the transmission and distribution systems.

The delivery points (PdE) are the points on the system where electricity is delivered to customers' premises or to another system. The transmission system indicators are calculated taking into account all interruptions at the points of delivery and the distribution system indicators take into account interruptions lasting more than 3 minutes.

Table 3-3 shows the figures for continuity of supply indicators registered in Mainland Portugal, in 2010.

Table 3-3 - Continuity of supply indicators for Mainland Portugal, 2010

Voltage	Indicator	Scheduled	Accidental
Transmission	EIT (min)		1.158
	SAIFI		0.105
	SAIDI (min)		0.682
MV Distribution	ICEIT (min)	0.073	150.603
	SAIFI (int/PdE)	0.004	4.151
	SAIDI (min/PdE)	0.248	252.762
LV Distribution	SAIFI (int/customer)	0.010	4.324
	SAIDI (min/customer)	1.569	276.039

Note: Provisional figures

Source: REN, EDP Distribuição

In 2010, 77,041 instances of non-compliance with the individual standards of continuity of supply were recorded. The total value of compensation to customers was €747,543.

Table 3-4 shows the figures for continuity of supply indicators for the main islands in the Autonomous Region of the Azores. The indicators are calculated on the basis of interruptions lasting more than 3 minutes.

Table 3-4 - Continuity of supply indicators for the main islands in the Autonomous Region of the Azores comprising a transmission and distribution system, 2010

Island	Voltage	Indicator	Scheduled	Accidental
São Miguel	Transmission	EIT (min)		78.40
		SAIFI (int/PdE)		1.25
		SAIDI (min/PdE)		61.88
	MV Distribution	ICEIT (min)	80.10	233.68
		SAIFI (int/PdE)	1.22	9.03
		SAIDI (min/PdE)	132.45	312.68
	LV Distribution	SAIFI (int/customer)	n/a	n/a
		SAIDI (min/customer)	n/a	n/a
Terceira	Transmission	EIT (min)		0.00
		SAIFI (int/PdE)		0.00
		SAIDI (min/PdE)		0.00
	MV Distribution	ICEIT (min)	118.04	255.13
		SAIFI (int/PdE)	1.15	14.19
		SAIDI (min/PdE)	133.07	310.53
	LV Distribution	SAIFI (int/customer)	n/a	n/a
		SAIDI (min/customer)	n/a	n/a
Pico	Transmission	EIT (min)		427.02
		SAIFI (int/PdE)		6.00
		SAIDI (min/PdE)		612.17
	MV Distribution	ICEIT (min)	358.88	308.78
		SAIFI (int/PdE)	2.67205784	18.184631
		SAIDI (min/PdE)	385.6849989	946.28798
	LV Distribution	SAIFI (int/customer)	3.15	17.42
		SAIDI (min/customer)	423.79	998.93

Note: Provisional figures.

Source: EDA

In all, 4,143 instances of non-compliance with the individual standards of continuity of supply were recorded in 2010, affecting about 3.5% of customers in the Autonomous Region of the Azores. The total value of compensation to customers was €25,047. When this report was written, the respective information was still being analysed.[4]

Table 3-5 shows the figures for continuity of supply indicators for the islands in the Autonomous Region of Madeira. The indicators are calculated on the basis of interruptions lasting more than 3 minutes.

[4] The results for the previous years are available on the "National Reports – Indicators" database, on the CEER website.

Table 3-5 - Continuity of supply indicators for the islands in the Autonomous Region of Madeira, 2010

Island	Voltage	Indicator	Scheduled	Accidental
Madeira	Transmission	EIT (min)	114.20	18.53
		SAIFI (int/PdE)	2.29	0.15
		SAIDI (min/PdE)	109.56	28.02
	MV Distribution	ICEIT (min)	406.10	87.06
		SAIFI (int/PdE)	3.66	0.36
		SAIDI (min/PdE)	372.26	73.49
	LV Distribution	SAIFI (int/customer)	3.93	0.52
		SAIDI (min/customer)	6.37	1.21
Porto Santo	Transmission	EIT (min)	148.61	39.09
		SAIFI (int/PdE)	4.50	1.00
		SAIDI (min/PdE)	136.50	57.75
	MV Distribution	ICEIT (min)	156.80	237.92
		SAIFI (int/PdE)	5.79	1.14
		SAIDI (min/PdE)	155.26	231.87
	LV Distribution	SAIFI (int/customer)	5.57	1.23
		SAIDI (h/customer)	2.42	4.02

Note: Provisional figures.

Source: EEM

A total of 596 instances of non-compliance with the individual standards of continuity of supply were recorded in 2010 affecting customers in the Autonomous Region of Madeira. The total value of compensation to customers was €5,288.63. When this report was written, the respective information was still being analysed.

3.1.3 SEPARATION OF SYSTEM OPERATORS

3.1.3.1 TRANSMISSION SYSTEM AND DISTRIBUTION SYSTEM OPERATOR

ACTIVITY UNBUNDLING

In the electricity sector, there is one transmission system operator, separate in both legal and ownership terms from the other entities which operate in the National Electricity System. The MV and HV electricity distribution activity is exclusively attributed to a vertically integrated company which is also responsible for ensuring the majority of the distribution of LV electricity. The legal unbundling of this distribution activity is also guaranteed pertaining to the trading activity carried out by the same corporate group, whether it is through a last resort supplier which still has electricity supply contracts with the majority of StLV customers, or market regime suppliers. The distribution system operators which serve fewer than 100 000

customers are exempt from the obligation to legally unbundle their activities, simultaneously carrying out the last resort trading activity. There are ten companies which have these characteristics serving around 30 000 customers.

CODES OF CONDUCT

With a view to independent and responsible performance, in 2009 the transmission system operator, the distribution system operator and the last resort supplier adopted, Codes of Conduct which identify the measures deemed necessary to prevent discriminatory behaviour and for its appropriate control. The Codes of Conduct provided by the distribution system operator and the last resort supplier, as entities which work directly with electricity customers, include a set of procedures to be used in customer service departments which are intended to protect consumer rights, particularly with respect to access to commercially sensitive information, protecting personal information and unfair trading practices. These procedures are clearly published and highlighted in the Code of Conduct to which they belong, on the Internet pages of the companies and in the places where electricity customers are attended to personally. Compliance with the Codes of Conduct is checked by means of annual audits.

INDEPENDENT WEBSITES AND IMAGE DIFFERENTIATING

In the electricity sector, there are also other measures intended to strengthen the real unbundling of activities. To this end, the distribution system operator and last resort supplier, belonging to the same vertically integrated company, have Internet pages which are autonomous between themselves and in relation to the mother company, and also look to develop a policy of greater image differentiating in the various means of contact that they have with customers. For example, the name of each company appears on the bills sent to customers, on letters replying to requests for information and answering complaints, on information leaflets and in the shops with personalised customer service.

3.1.3.2 AUTONOMOUS REGIONS OF THE AZORES AND MADEIRA

ACTIVITY UNBUNDLING

EDA and EEM are the companies responsible for the purchase, distribution and last resort supply of electricity in the Autonomous Region of the Azores and the Autonomous Region of Madeira, respectively.

The Autonomous Regions of the Azores and Madeira were granted a derogation of the terms established in Directive 2003/54/EC of the European Parliament and of the Council of 26 July, through Commission Decisions no. 2004/920/EC of 20 December and no. 2006/375/EC of 23 May. Considering the terms of the aforementioned laws and decisions, the activities referred to above are subject only to unbundling in accounting terms, observing the rules established in the Tariff Regulations Code.

CORPORATE IMAGE OF SYSTEM OPERATORS

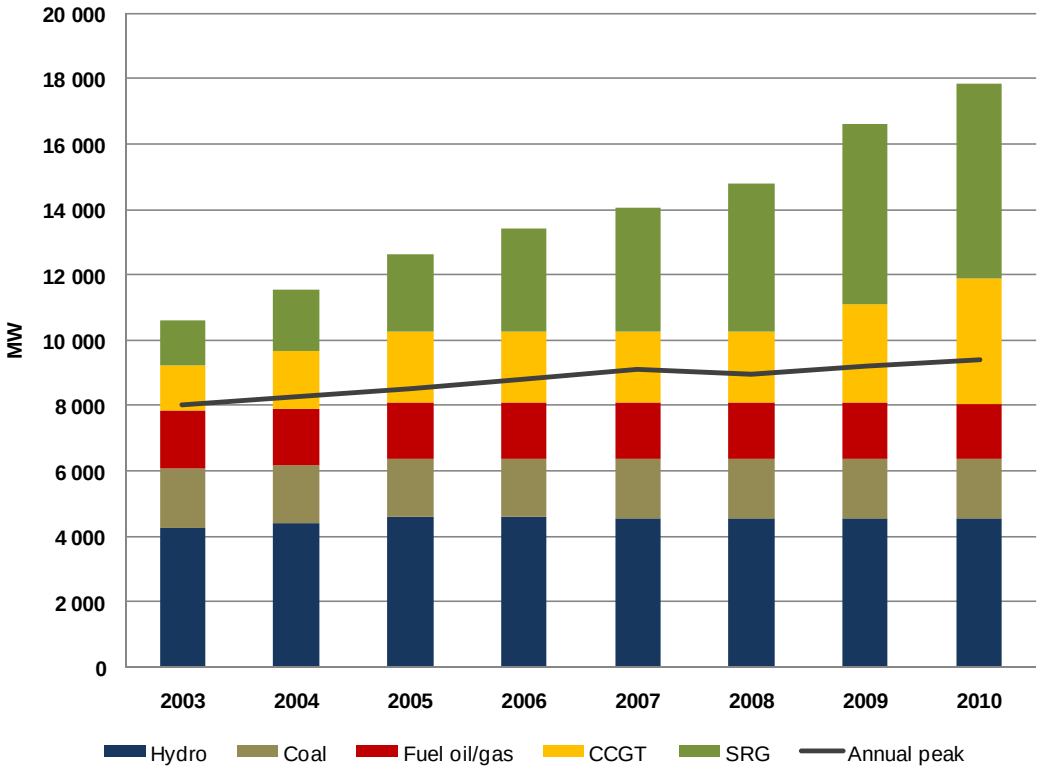
Both EDA and EEM have their own websites, www.eda.pt and www.eem.pt respectively.

3.2 COMPETITION

3.2.1 CHARACTERISATION OF THE WHOLESALE MARKET

The wholesale market can be characterised through its installed power plant generation system and its actual generation. For this purpose, it is important to analyse the evolution of the installed power plant system by technology. Figure 3-4 shows the evolution in installed capacity in Portugal between 2003 and 2010.

Figure 3-4 - Characterisation of the power plant generation system in Portugal
By technology and installed capacity



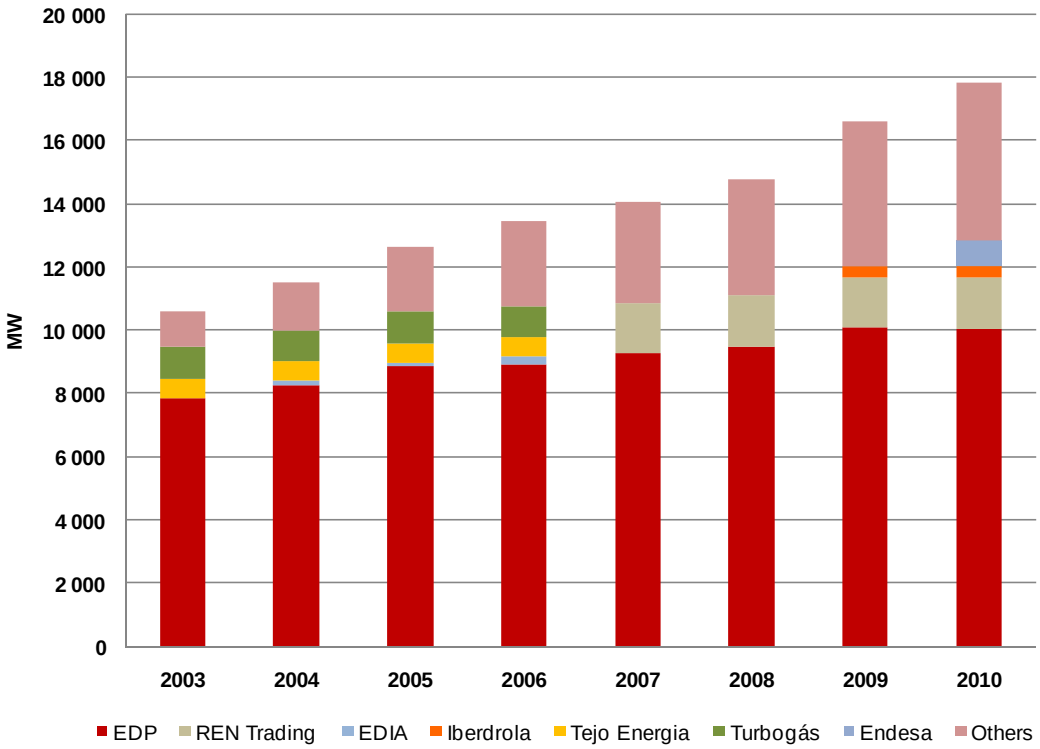
Source: REN

The composition of the Portuguese power plant generation system has experienced two major changes in the last few years: (i) a strong growth in the installed capacity in generation in special regime, a fact which translates into the increase in the share from approximately 13% of installed capacity in special regime in

2003 to approximately 33% in 2010; and (ii), in the standard regime segment (thermal and large hydropower) the make-up also underwent change, although not as marked, with the natural gas unit (CCGT) representing, in 2010, approximately 33% of the standard regime, when, in 2003, it represented only 15%. Regarding this, 2010 is marked by the entry of nother natural gas combined cycle power plant belonging to the company ENDESA, with 2 groups totalling an installed capacity of 830 MW. In 2010, there was an increase of 460 MW in new capacity in the special regime, of which almost 345 MW relates to wind farms.

In spite of an increase in the value of the annual maximum peak load, the value of the quotient between the maximum peak verified and the installed capacity in the power plant generation system fell from 83% to 79% due to the entry of the new capacity based on natural gas combined cycles (Pego Plant). However, the increase in installed capacity related to special regime power plants, particularly wind farms, although helping to increase the system's overall margin, significantly accentuates the volatility of exploration of the installed capacity in the other primary energy units, since the remuneration from the special regime power plants is guaranteed through administrative mechanisms and their energy has priority access to the transmission and distribution systems.

Figure 3-5 - Characterisation of the power plant generation system in Portugal
By agent and installed capacity

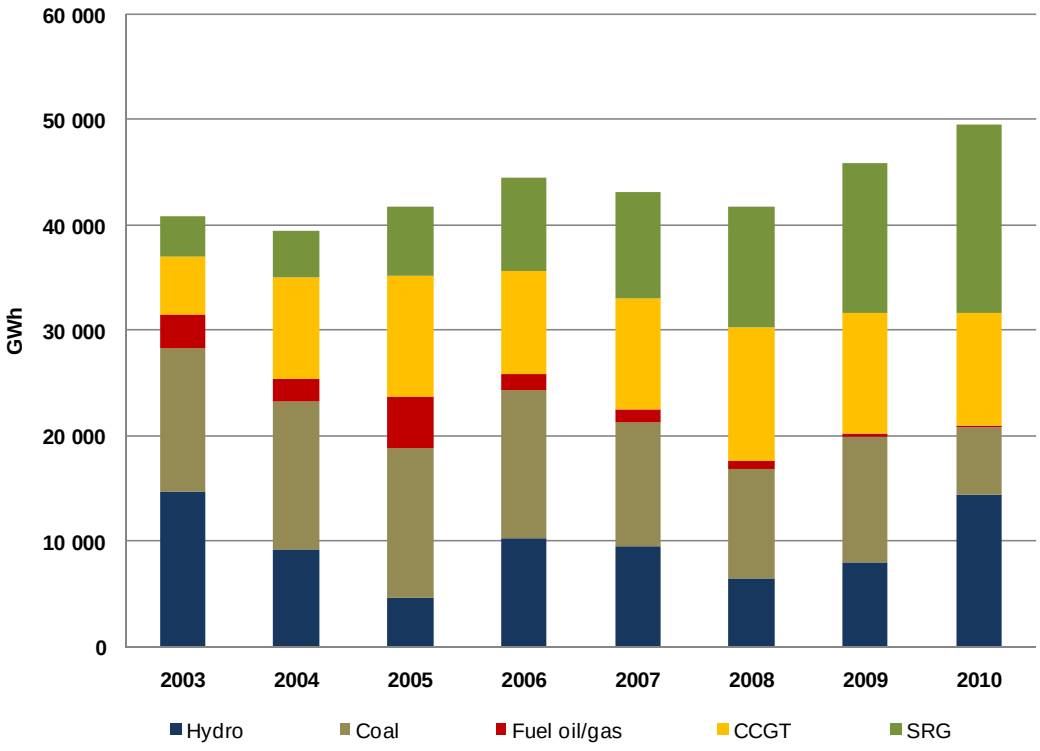


Source: REN

As a complement to the analysis of the breakdown of installed capacity by technology, it is also important to characterise the breakdown of the power plant generation system by owning or managing company, as in Figure 3-5, from which it can be seen that EDP owns most of Portugal's power plant generation system. However, its weight was reduced in 2010 mainly because of the new Pego combined cycle power plant which began operating during the month of July. The EDP Group share in terms of installed capacity has been falling, mostly due to the growth in the special regime generation segment in which EDP has an individual minority position. Also worthy of mention is the still ongoing measure to reduce competition risks decided on by the Competition Authority, related to a merger process involving EDP, which led to the assignment of operating rights of the Aguieira-Raiva hydropower plant for a 5-year period. Iberdrola was the company which, through an international tender, obtained the respective operating rights.

During the period 2003 to 2010, the EDP share in total installed capacity fell approximately 18%, with a reduction between 2009 and 2010 of approximately 4%.

Figure 3-6 - Characterisation of the power plant generation system in Portugal
By technology and energy produced



Source: REN

A breakdown of electricity generation in recent years is shown in Figure 3-6. Analysis of this figure shows the variable character of generation in special regime and of hydropower generation, highly dependent on

the existence of the respective renewable resource, compared with the greater stability of thermal power generation. The trend towards abandoning fuel oil based generation, and increasing generation in special regime was more marked in 2010.

2010 saw a strong increase in hydroelectric generation, becoming the year with the largest hydropower generation in the last 7 years.

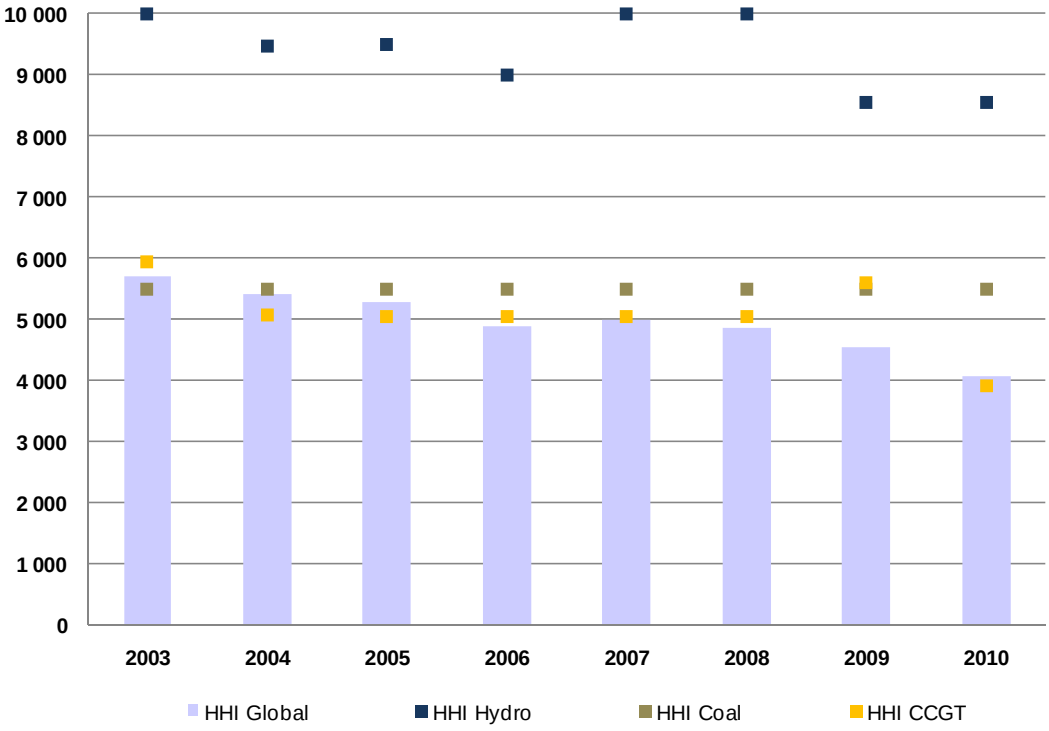
At the thermal power generation plant, in spite of the increase in installed capacity registered in 2010, the share of generation of the combined cycles fell slightly in comparison to 2009. However, the thermal coal plants suffered a significant reduction in generation of approximately 77% in comparison to the total generation verified in this technological unit during 2009. This reduction is the result of a significant increase in standard regime hydropower generation and the increase in generation of a renewable origin. Where the natural gas unit is concerned, the reduction was less than in the coal unit due to the restrictions in the contract clauses of the supply contract in the take-or-pay regime which requires a minimum shipment from combined cycle power plants.

Special regime generation grew significantly between 2003 and 2010, representing approximately 36% of energy produced in 2010, while in 2003 it represented only 9%. Within special regime generation, wind power generation presented a very significant growth, representing more than half of special regime generation in 2010, and increasing its contribution to the total value of generation from approximately 1.2% in 2003 to 16.4% in 2009 and 18.2% in 2010.

Analysing the market shares of the different agents, it can be concluded that the concentration in the electricity generation segment in Portugal is high in terms of installed capacity, as can be seen in Figure 3-7 showing the Hirschman-Herfindall Index (HHI), which measures market concentration.

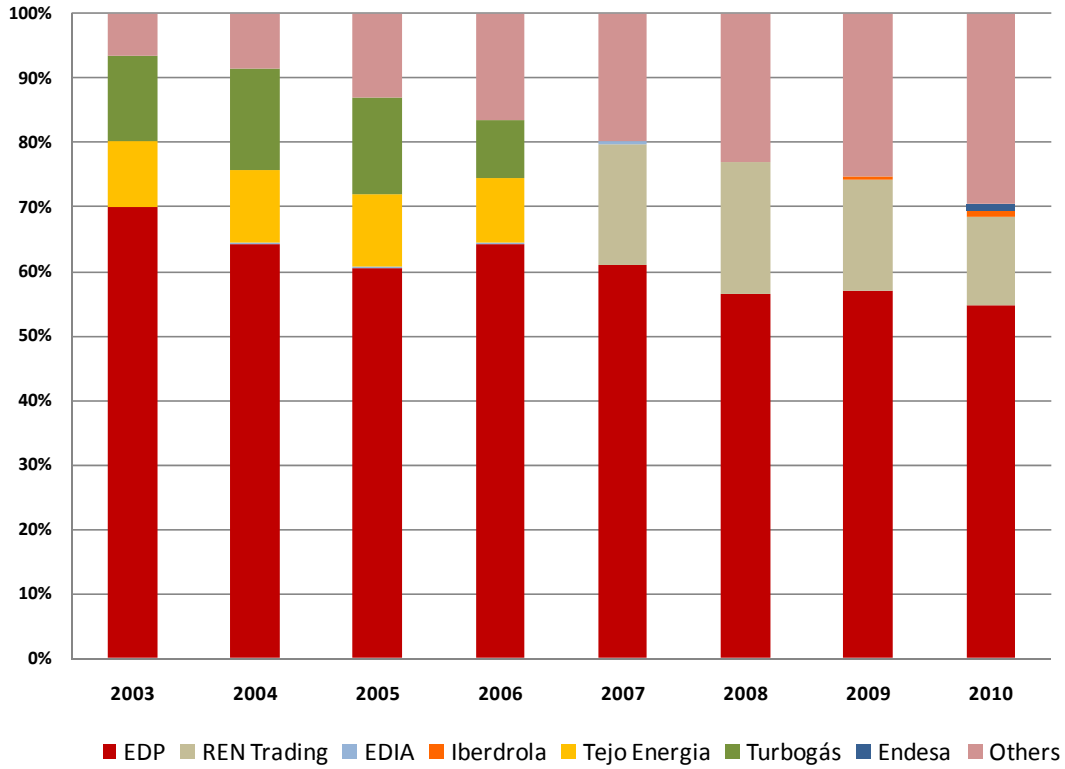
The HHI figures for installed capacity show an evolution, between 2003 and 2010, reducing the overall concentration of capacity supply in the Portuguese system, particularly via the above-mentioned increase in SRG capacity. Between 2009 and 2010 a new CCGT power plant belonging to a corporate group competing with the EDP Group began operating, leading to a reduction in the market concentration in this sector and also resulting in this generation segment becoming slightly less concentrated in terms of business than the coal segment whose generation assets are distributed between the EDP Group and REN Trading.

Figure 3-7 - Concentration in generation in terms of installed capacity



The change in shares of electricity generation by agent is shown in Figure 3-8.

Figure 3-8 - Quotas of electricity generated by agent



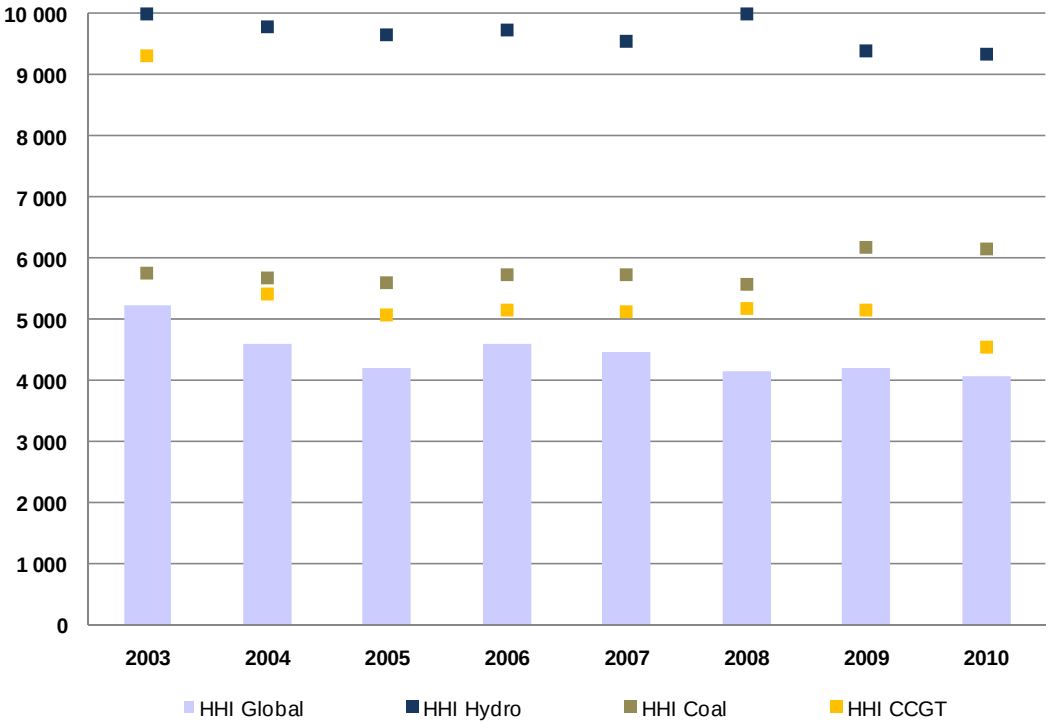
Source: REN, prepared by ERSE – does not include figures for imported energy.

Overall, in 2010 there was a slight fall in the EDP group's participation in total generation in Mainland Portugal, basically because of the increased contribution of other agents in the standard regime generation segment and the entry into operation of a new combined cycle plant owned by Endesa. The opening of the new plant and the awarding, in 2009, of the management of a hydropower plant formerly in the EDP group's portfolio to Iberdola, jointly contributed to the reduction in the share of the incumbent operator. Occurring, as it did, in a year with strong hydraulicity, this reduction is even more remarkable as the hydropower segment is the most concentrated of the electricity generation segments in standard regime.

In terms of electricity generated, the trend seen between 2003 and 2010 points towards distinct evolution in EDP's share of generation in the main technologies. A relative stabilisation of the incumbent's shares in the hydropower and coal segments was also registered.

The concentration indicators for electricity generation given in Figure 3-9 show that, overall, in 2010 generation was less concentrated compared with 2009 or in 2003, being the lowest figure recorded in the said period (2003-2010). This is due to the reduction in the concentration in the CCGT units, while the position of the EDP group in special regime generation remains a minority in relation to the segment as a whole.

Figure 3-9 - Concentration in generation in terms of electricity generation

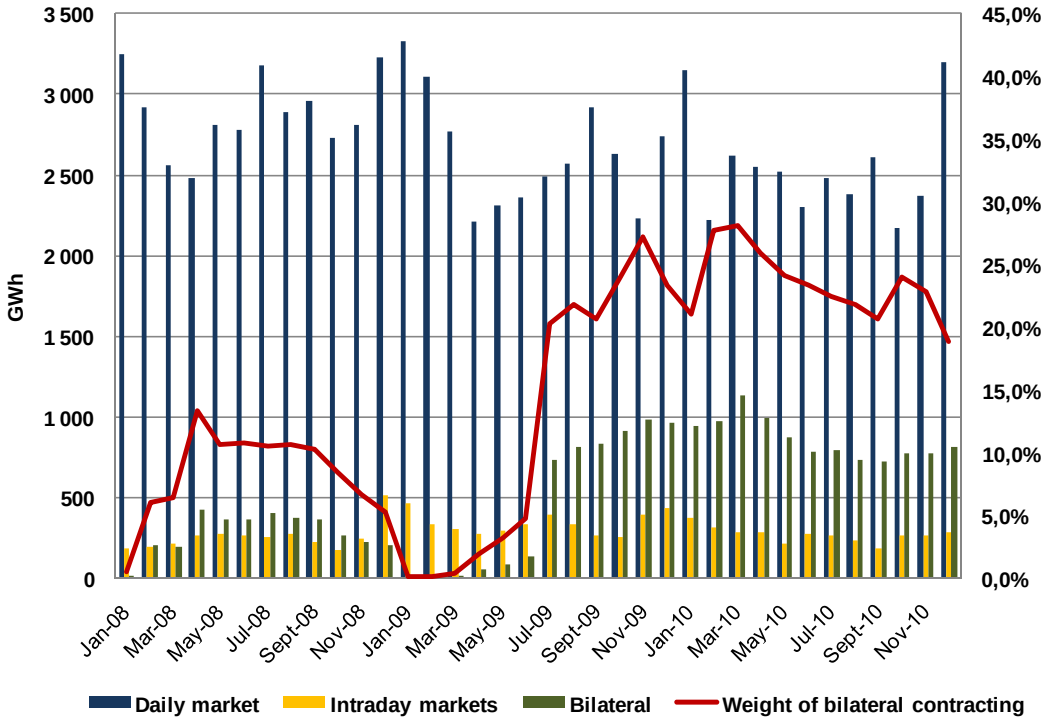


The impact of the capacity release auctions conducted in 2007 and 2008 was not taken into account in this analysis of the concentration for either installed capacity or actual generation. These auctions allowed the release of capacity from a power plant run by REN Trading in a first phase, and in a second phase extra capacity was released from the incumbent itself. The fact that none were held from 2009 onwards was not taken into account either.

At the same time, one should bear in mind that, as a more detailed analysis is not possible, the special regime generation not controlled by EDP is, for the purposes of calculating the concentration indicators, wholly in the hands of a single entity (a single market share). Accordingly, on the one hand, the true development of corporate concentration in the special regime generation cannot be seen and, on the other, the figures for global concentration will be mostly those that actually exist in the current market structure.

Spot market (daily and intraday markets) trading in Portugal is much higher than trading in bilateral contracts, as shown in Figure 3-10. It is useful, however, to bear in mind that the acquisition of term products listed on the MIBEL futures market is settled in cash through the daily market.

Figure 3-10 - Breakdown of energy supplies between markets



Nevertheless, for 2010, the average value of the weight of the bilateral contracting in the total volume of contracting can be seen to be greater than the value recorded in the recent past. Indeed, even though the trend throughout the year has been the reduction in the weight of bilateral contracting, its magnitude is more stable than it was in 2009 and is greater than that recorded in 2008. Some of the increase in the spot market contracting (daily market) can be explained by the year's high hydraulicity as the total generated in national hydroelectric power plants is supplied to this market.

The figures for the spot market demand and overall consumption in Mainland Portugal are given in Figure 3-11, where it can be seen that the majority of consumption is met by purchases on the spot market, a tendency that has been diminishing throughout 2010. During 2010, an increase was noted in the frequency of periods where special regime generation exceeded the needs of the last resort suppliers. This was due to the joint actions of the reduction in consumption of energy supplied by this agent and the increase in the SRG itself.

Figure 3-11 - Spot market demand and total monthly consumption

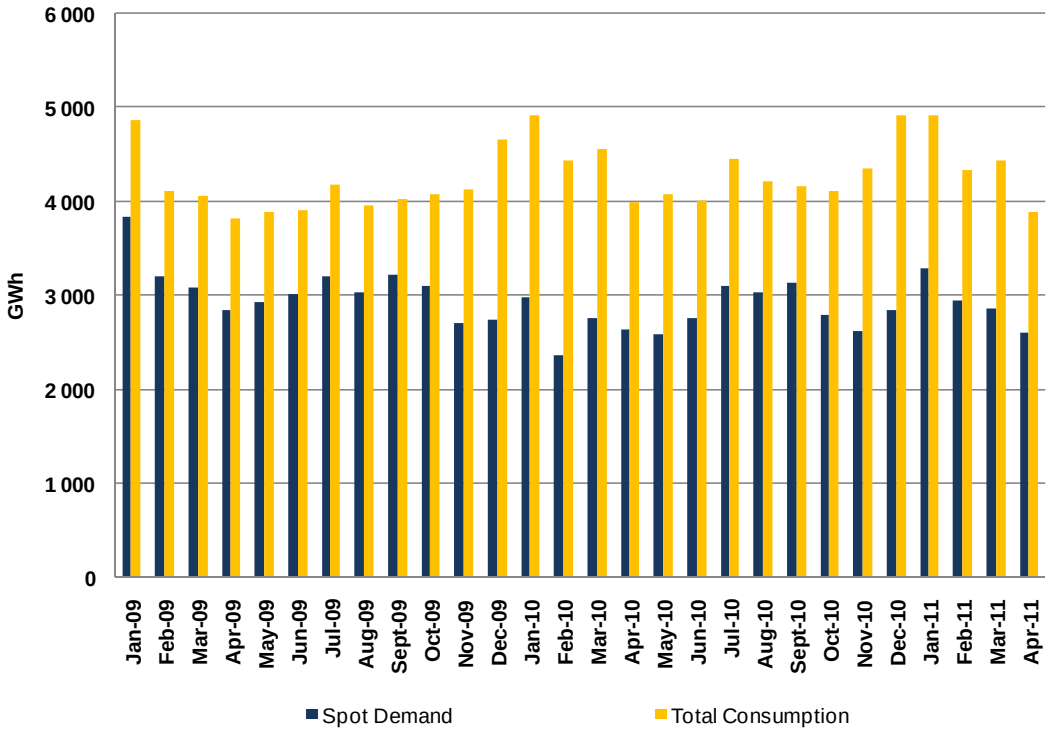
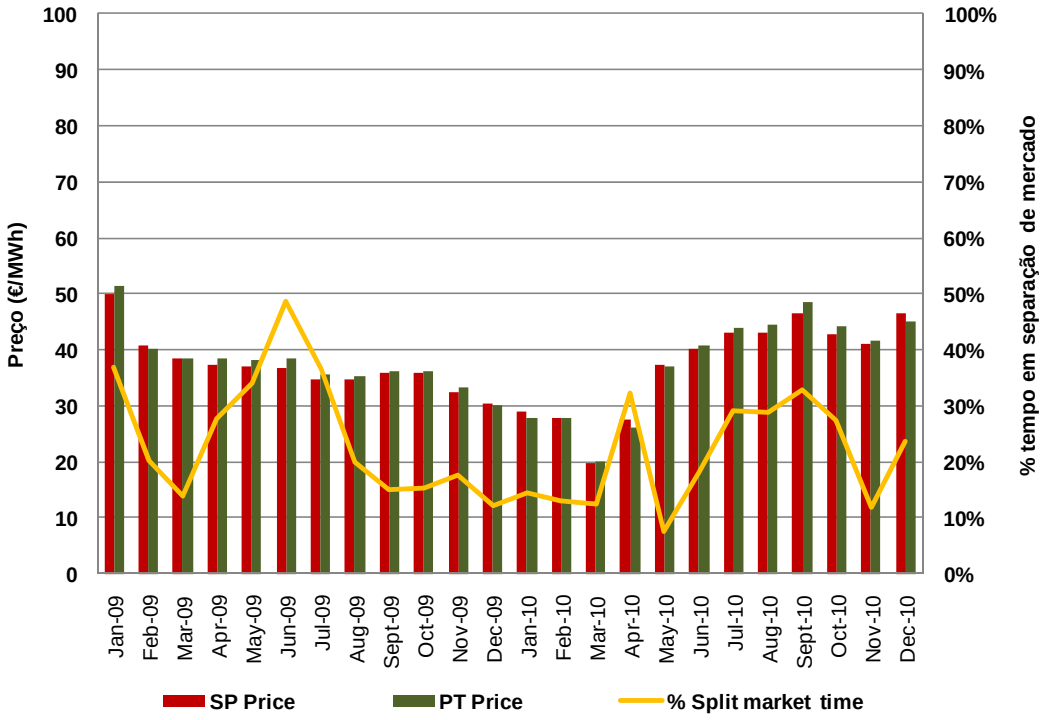


Figure 3-12 shows the evolution of prices in Portugal and Spain and the percentage of periods of market splitting. We can see (i) a very slight reduction in the average of annual market price comparing to what happened in 2009; (ii) a reduction of the spreads between the two countries during 2010; (iii) a reduction of approximately 15% in the periods of market splitting in comparison to 2009 and (iv) the occurrence of some congestion periods in the Portugal Spain direction. Several one-off factors played a role in this, such as the reduction in consumption due to the economic crisis and the strong hydraulicity of 2010, and also structural factors such as the expansion of installed capacity in combined cycle plants and the present harmonisation of generation structures in Portugal and Spain whose growth is based on a specialisation pattern of renewable energy and natural gas.

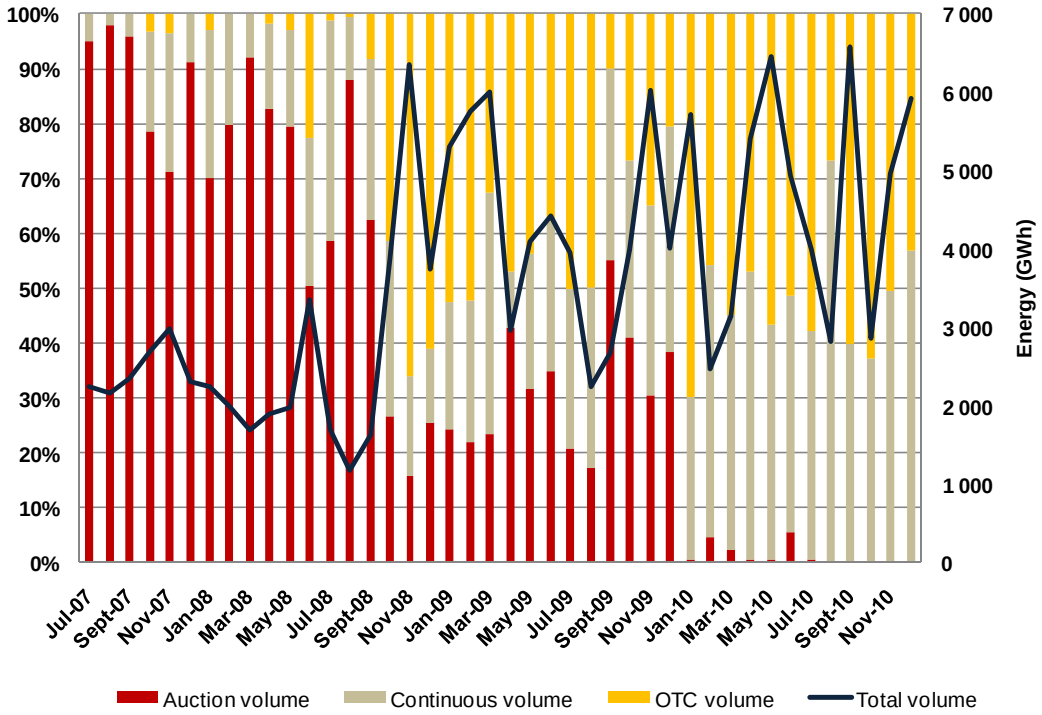
Figure 3-12 - Spot market price and split market time



The MIBEL operating model provides for the existence of future contracting in an organised market regime where agents can place part of their electricity needs, namely to cover the price risk of the electricity to be supplied to end customers.

Figure 3-13 shows the amounts recorded on the future organised market. We can see a trend towards the significant increasing of operations in the continuous market and OTC operations. This trend is particularly evident in 2010. The increase in the OTC operations in the organised market is a positive indicator in the market's operations, explaining a series of operations which would otherwise not be easily identifiable. Parallel to this, during 2010, the amount of energy associated with the holding of mandatory auctions for the LRS was practically residual in comparison with the trend that had been registered since 2008.

Figure 3-13 - Amounts in the MIBEL futures market



The overall volume of trading on the futures market controlled by OMIP (including the registered operations corresponding to OTC) rose, in 2010, to over 55 TWh, which means a growth of approximately 8% on 2009.

MARKET INTEGRATION

Alongside the consolidation of MIBEL, there were other initiatives to create the Single Electricity Market, such as the South-West ERI. The South-West ERI is one of the seven regional electricity markets set up under the ERGEG regional initiatives. The purpose of the South-West ERI is to integrate the electricity markets of France and the Iberian Peninsula (MIBEL) into a single regional electricity market. The Spanish regulator for the sector, CNE, is coordinating the activity of the South-West ERI in collaboration with ERSE, in Portugal, and the French regulator, CRE. A number of steps were taken in 2010 with a view to developing this market.

In 2010, ERSE, as a member of the regional Coordination Committee, participated in the discussion and approval of the South-West ERI's Action Plan for the three-year period 2010-2012, which, continuing with the previous work and in line with the other regional initiatives for electricity, is based on the following areas: (1) Interconnections and calculation of their available capacity; (2) Analysis of the convergence with respect to demands for transparency of information provided by transmission system operators; (3) Congestion management, including long term attribution, coupling of daily markets, improvements in

intraday markets and integration of system services markets; (4) Report on the Management and Use of the interconnections.

Following the publication of the 1st South-West Europe Regional Report on the Management and Use of Interconnections in 2008, a 2nd Report, relating to 2009, was prepared in 2010.

3.2.2 CHARACTERISATION OF THE RETAIL MARKET

In Mainland Portugal the retail market is based on the co-existence of a public system with regulated tariffs practised by LRS and a market-driven system in which the energy is freely contracted. As grid access tariffs are paid by all customers, or by suppliers on their behalf, they are incorporated into either the End User tariffs practised by the LRS or the tariffs practised freely by market suppliers. The inclusion in the retail customer tariffs, regulated by ERSE, is done directly via the tariff additivity method.

CHARACTERISATION OF ELECTRICITY DEMAND

Table 3-6 characterises electricity demand in Mainland Portugal. For this purpose it shows consumption and the number of customers by type of supply. The figures in this table are those forecast by ERSE for 2010, i.e. they provide the basis for determining the tariffs for that year.

Table 3-6 - Characterisation of demand by type of supply

Type of Supply	Energy (GWh)	Number of customers
VHV	**1 577**	**53**
HV	**5 610**	**207**
MV	**14 239**	**22 946**
LV	**23 720**	**6 079 729**
SpLV	3 456	32 617
StLV (c/ IP)	20 264	6 047 112
Total	**45 146**	**6 102 935**

TARIFF ADDITIVITY APPLIED TO TARIFFS FOR END USERS OF ELECTRICITY

The End User tariffs charged to customers by the LRS are calculated by adding together the grid access tariffs and the energy and supply tariffs practised by the LRS. Prices of End User tariffs for each billing variable are obtained by adding the corresponding prices of the said tariffs.

This method of determining the tariffs applied by the LRS makes it possible to prevent cross-subsidisation between:

- Monopoly activities (i.e. grid activities) and market activities (supply and generation of electricity).
- LRS Customers with different consumption profiles.
- LRS Customers and customers who participate in the market.
- LRS and market suppliers.

Moreover, and insofar as the tariffs which make up the above-mentioned sum are based on marginal costs, in terms of structure, and on total costs in terms of level, this situation not only avoids cross-subsidisation but also induces an efficient resource allocation.

AVERAGE PRICE STRUCTURE OF LRS END USER TARIFFS IN 2010

The figures below give the breakdown and structure of the average price of the LRS End User tariffs for each voltage level, by regulated activity.

Figure 3-14 - Average price of LRS End User tariffs in 2010

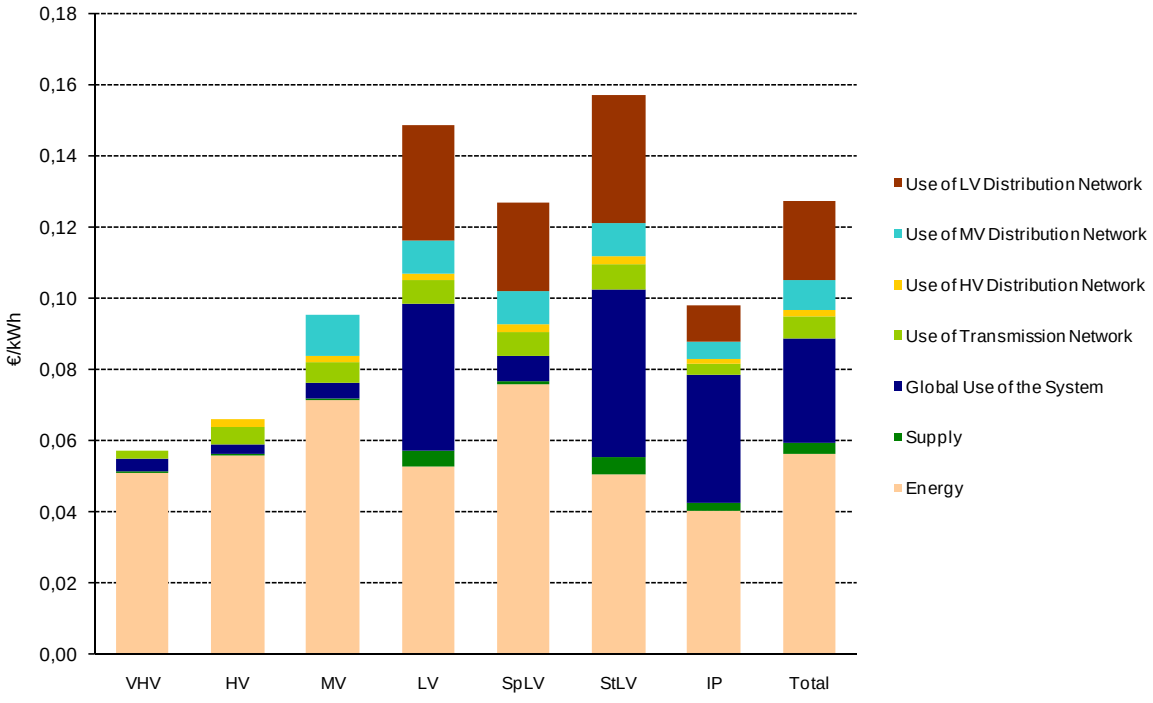
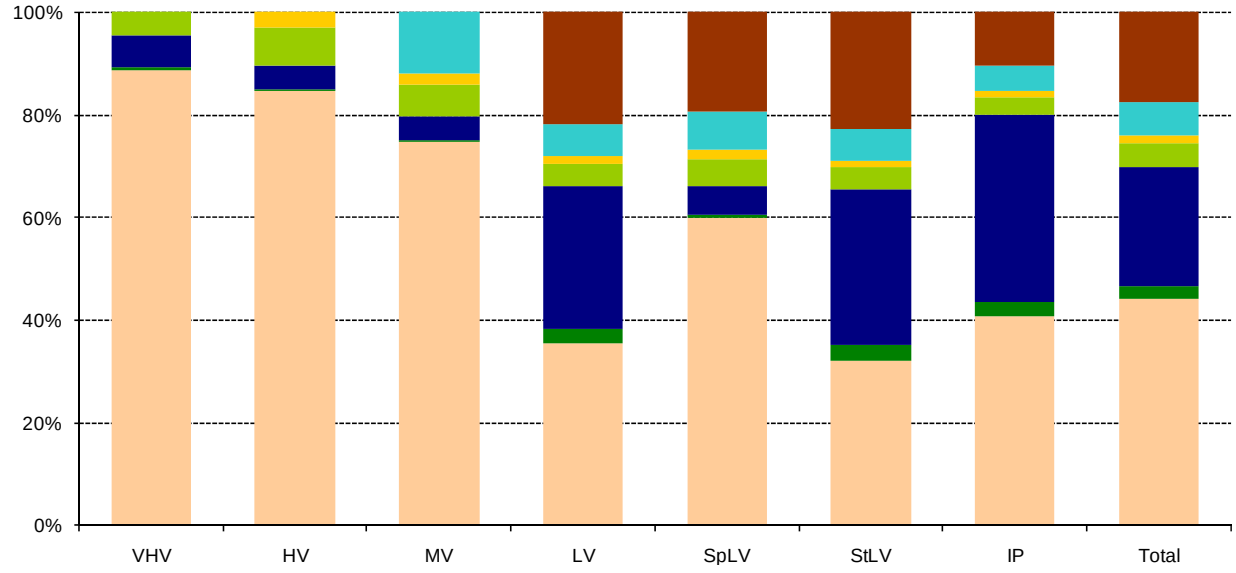


Figure 3-15 - Average price structure of LRS End User tariffs in 2010



EVOLUTION OF LRS END USER TARIFFS BETWEEN 1998 AND 2010

The table below shows the average price trend for the End User tariffs in Mainland Portugal since 1998.

Table 3-7 - LRS End User tariffs by voltage level

Tariffs		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Change 2010/1998
VHV	**real**	**100**	**87**	**85**	**82**	**71**	**67**	**69**	**77**	**76**	**79**	**81**	**84**	**85**	**-15%**
	nominal	100	90	90	90	82	79	83	95	97	104	108	115	118	18%
HV	**real**	**100**	**87**	**84**	**81**	**76**	**72**	**73**	**83**	**81**	**84**	**86**	**89**	**90**	**-10%**
	nominal	100	90	89	90	87	85	89	104	103	111	115	122	126	26%
MV	**real**	**100**	**87**	**84**	**82**	**77**	**76**	**77**	**86**	**85**	**87**	**87**	**91**	**92**	**-8%**
	nominal	100	90	89	91	89	89	93	106	109	114	117	124	128	28%
SpLV	**real**	**100**	**93**	**90**	**87**	**86**	**85**	**85**	**85**	**94**	**96**	**96**	**102**	**103**	**3%**
	nominal	100	95	95	96	97	100	102	105	119	125	128	135	139	39%
StLV	**real**	**100**	**93**	**90**	**87**	**86**	**86**	**86**	**86**	**84**	**86**	**86**	**91**	**92**	**-8%**
	nominal	100	95	95	96	98	101	103	106	107	112	115	120	124	24%

METHODOLOGY FOR GATHERING REFERENCE PRICES AND AVERAGE PRICES PRACTISED ON THE RETAIL MARKET

ERSE monitors the retail electricity market and informs customers and other agents in order to foster market transparency.

In this framework, electricity suppliers have to send ERSE the reference prices[5] each year, inform consumers of them and also send, quarterly, the average prices actually practised.

In 2010, ERSE published the new rules for the monitoring of reference prices and average prices practised in the retail electricity market. This process is based on consulting electricity suppliers operating in Mainland Portugal with a view to improving the collection process established in 2009.

The reference prices sent by the various suppliers operating in the market regime enable ERSE to provide a price simulator for StLV facilities on its website. The average prices practised, which ERSE only began receiving in 2009, enabled a database to be set up in order to analyse retail market operations. In the scope of the new rules which were approved at the end of 2010, suppliers will also send ERSE the reference prices for facilities in SpLV, which will allow the provision of information to all those who are interested.

SIMULATORS

With the aim of continuing to provide information to electricity consumers on the reference prices practised on the market, as well as the computer tools to help customers choose a supplier, ERSE continues to update and offer simulators on its website that will give electricity consumers objective information to help them make an informed choice, such as:

- Simulation of power to subscribe to.
- Market price comparison simulator for StLV supplies in Mainland Portugal.
- Billing simulator for VHV, HV, MV and SpLV electricity in Mainland Portugal.
- Billing simulator for MV and SpLV electricity in the Autonomous Region of the Azores.
- Billing simulator for HV, MV and SpLV electricity in the Autonomous Region of Madeira.

EVOLUTION OF ELECTRICITY SUPPLY (RETAIL MARKET)

The liberalisation of the electricity sector in Mainland Portugal followed exactly the same methodology as that used in most other European countries. The market was opened up gradually, starting with the biggest customers and the highest voltages.

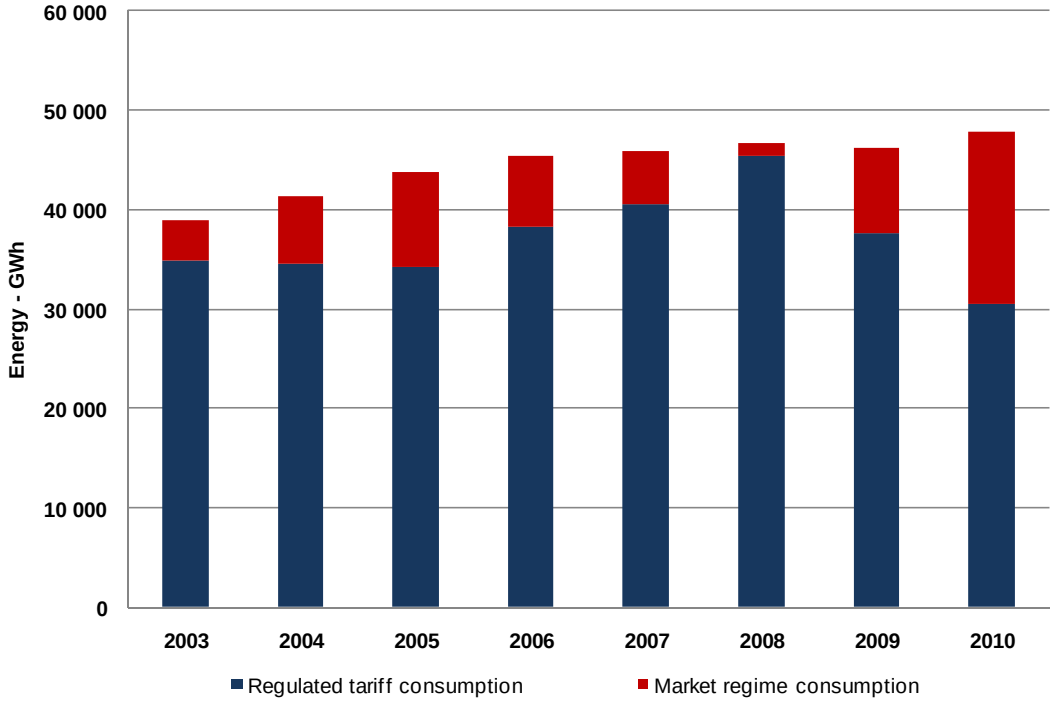
Currently, the liberalised market (LM) and the regulated market (RM) co-exist. Therefore, all customers can negotiate their electricity contracts with suppliers on the LM or continue with the RM.

[5] Reference prices are the tariffs, tariff options and the respective prices and reference rates for each billing variable offered by suppliers to their customers, as well as the conditions for applying the tariffs, i.e. minimum consumption characteristics, durations of contracts and price revision conditions.

The Portuguese electricity market was opened up in stages and the process was completed in 2006, when it was opened up to all customers.

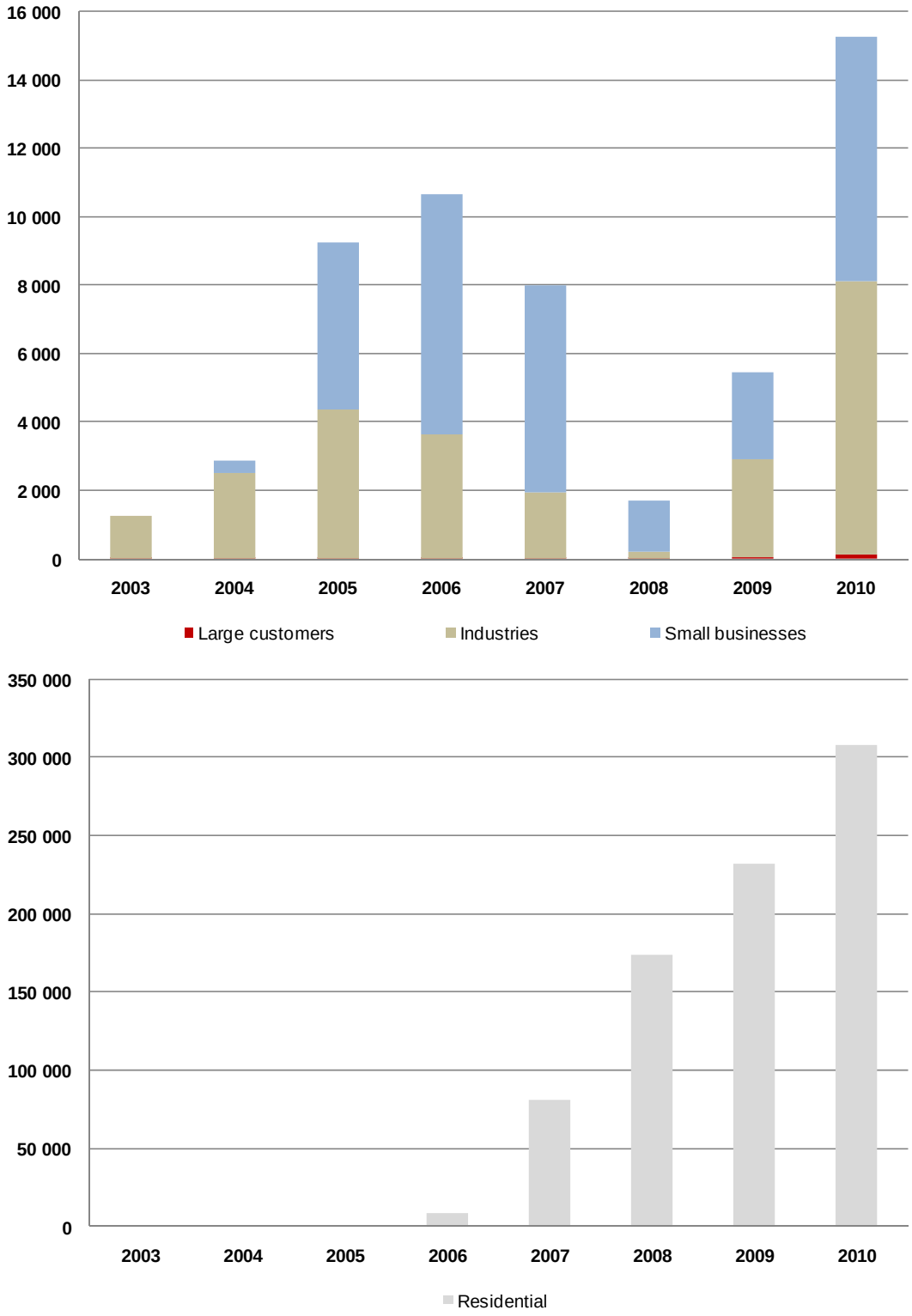
The evolution of the liberalised market in Portugal has not been linear, with some relevant factors standing out throughout this process which have limited its operation, namely those pertaining to the future forming of the price to define the regulated tariff and the prices practised by suppliers.

Figure 3-16 - Division of consumption between the regulated and the liberalised market



2010 consolidated the trend from 2009 when the cost of electricity implicit in the last resort tariff exceeded the price that the market developed during 2009, thereby dictating the existence of conditions conducive to customers supplied at the tariff migrating to the liberalised market. This evolution meant that consumption in the market regime represented approximately 36% of total consumption in 2010. In addition, the operating conditions of the wholesale market resulted in a smaller spread of prices between Portugal and Spain and less congestion time on the interconnection (reflected in the lower percentage of market splitting), and so the trading risk for vendors decreased resulting in the retail market becoming more competitive.

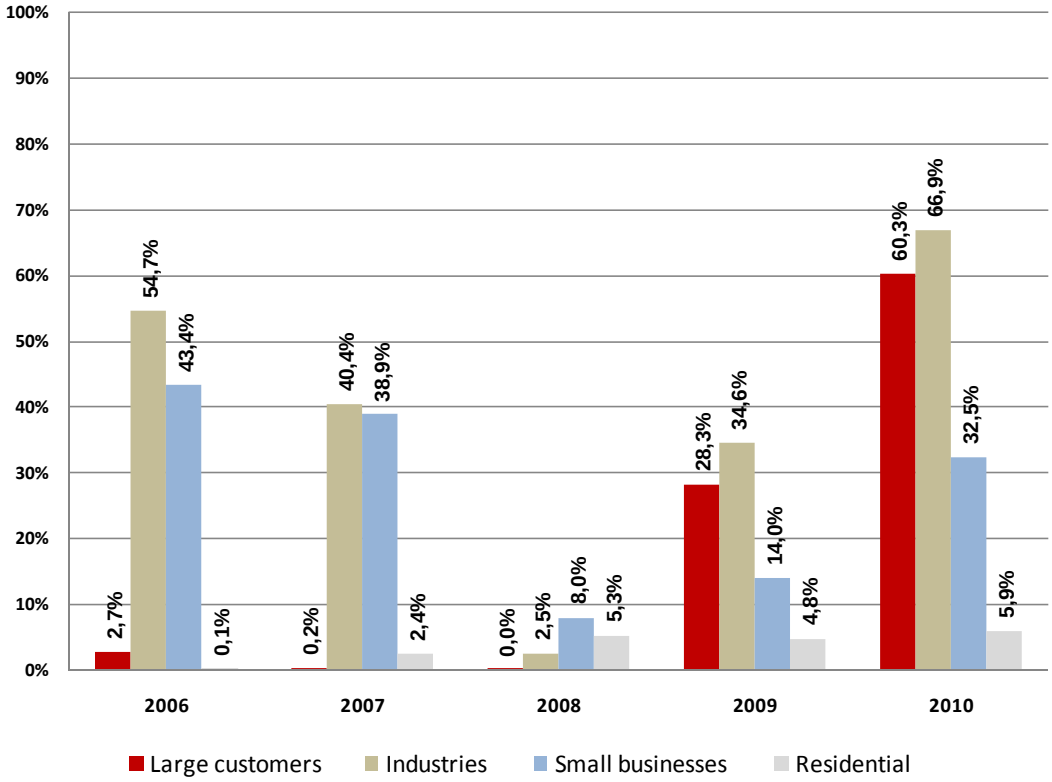
Figure 3-17 - Evolution of the liberalised market in Mainland Portugal (no. of customers in the LM)



The increase in the size of the liberalised market, in terms of the total number of customers, can mostly be put down to the entry of residential customers, for whom liberalisation started in September 2006, even though it is clear that in 2010 a large swathe of industrial customers returned to the liberalised

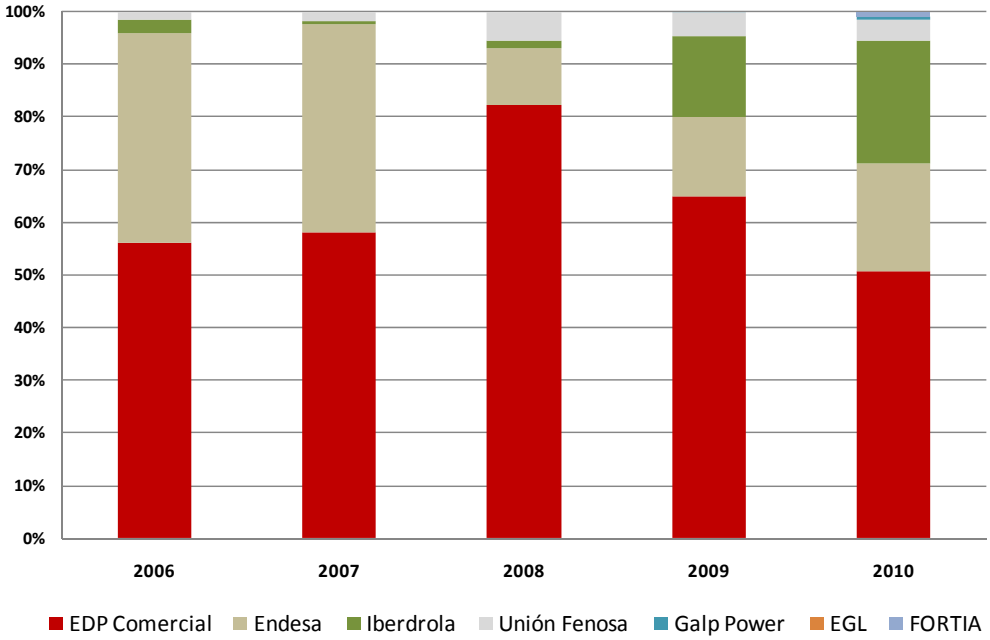
market, along with a number of customers from the small business segment. The number of large customers in the market regime more than doubled from 2009 to 2010. Figure 3-18 shows the part of the consumption from each segment of customers that can be found in the liberalised market, and in 2010, it can be seen that approximately 67% of consumption by industrial customers was guaranteed by market regime suppliers. The same occurred with 60% of consumption by large customers.

Figure 3-18 - Penetration of the liberalised market by customer segment



The evolution in the liberalised market in 2010 also corresponded to a reduction in the corporate concentration in this market. There has been a reduction in the market share of the EDP Group, the main operator, from 2008 until 2010 which, in the last year, represented approximately 50% of supplies in the liberalised market, as can be seen in Figure 3-19.

Figure 3-19 - Supply structure in the liberalised market by supplier



COMPLAINTS AND REQUESTS FOR INFORMATION

Matters related to complaints and requests for information are dealt with in point 2.3.

3.2.3 MEASURES FOR PROMOTING COMPETITION

Pursuant to the respective legal provisions, the Competition Authority must be notified of any business transaction that is classified or could be classified as a market concentration operation. In such cases, the opinion issued by the competition regulator must be prepared in cooperation with the regulatory body responsible for the sector. ERSE is therefore called upon to issue a formal opinion in all such notifications involving entities from the energy sector.

During 2010, the Competition Authority issued one single decision on operations notified by entities connected to the electricity sector, and ERSE was requested to issue an opinion. This decision is available on the Competition Authority's website.

The operation analysed and decided on in 2010 relates to a corporate concentration involving the main generation operator (EDP), pertaining to an acquisition on exclusive control of a hydroelectric power plant, which has not yet been built, integrated in the national hydroelectric development plan.

The operation in question underwent specific analysis in relation to the market for the rendering of secondary regulated services in which the EDP group would reinforce its dominant position in the geographic market with national relevance. To this end, the final decision was that the participation of this

plant in this specific market should be as a price taker so as not to jeopardise the competition conditions in the sector.

Further, where the promotion of measures to stimulate competition in the electricity retail market is concerned, legislation determining the extinction of the regulated tariffs for the supply to end users in the electricity market, for customers in SpLV, MV, HV and VHV (contracted power > 41.4kW) was published. The regime for the extinction of tariffs is applicable from the 1st of January 2011.

4 REGULATION AND PERFORMANCE OF THE NATURAL GAS MARKET

4.1 REGULATION MATTERS

4.1.1 MECHANISMS FOR MANAGING CONGESTION AND ALLOCATING AVAILABLE CAPACITY IN THE INFRASTRUCTURE

AVAILABLE CAPACITY AND RULES OF ACCESS TO THE INFRASTRUCTURE

Allocation of capacity in the national natural gas system's infrastructure is based on prior scheduling and assignment processes for the said infrastructure.

The scheduling involves regular information processes whereby market players inform the national natural gas system infrastructure operators of the capacities they wish to use over a given period of time. The regulatory framework currently in force provides for the existence of annual, monthly and weekly scheduling processes encompassing the transmission system, the distribution grids, the LNG terminal and the underground storage infrastructure.

The assignments correspond to communication processes wherein the forecasts of use the national natural gas system's infrastructures capacity relate to the following day. They must therefore reflect a very accurate forecast of consumption. Capacities scheduled and assigned by the market players must be justified according to the forecast portfolio consumption.

Checking mechanisms are linked to the scheduling and assignment processes with a view to checking the overall feasibility of the scheduling carried out by the market agents. The infrastructure operators allocate the programmed and assigned capacities under the coordination of the transmission system operator, in its role as Global Technical Manager of the National Natural Gas System, after the checking mechanisms have confirmed the global feasibility of all scheduling and assignments. If such feasibility is not confirmed, then the congestion management mechanism described below must be set in motion.

The market players should be sequentially involved in scheduling until assignment takes place, inasmuch as capacities allocated under a scheduling process need to be confirmed in the subsequent processes in the event that the market player really wants to use such capacity. Previously allocated capacities that have not been confirmed in the subsequent scheduling and assignment processes are once again made available to the market players (use it or lose it).

The regulatory framework currently in force safeguards the allocation of capacity in the national natural gas system's infrastructures in connection with long-term natural gas supply contracts of the take-or-pay type signed prior to the publication of Directive 2003/55/EC of the European Parliament and Council,

dated 26 June, for supplying customers in the national territory. This provision does not exempt market operators holding such contracts from participating in the scheduling and assignment processes.

The congestion management mechanism is activated whenever the market players' overall scheduling and assignments are not feasible. In these circumstances the areas of the SNGN infrastructure where congestion is predictable are pinpointed and capacity is allocated by means of capacity auctions.

The congestion management mechanism applies to specific areas in the infrastructure and safeguards two fundamental principles:

- Allocation of capacity shall be by way of market mechanisms.
- Charges arising from capacity allocation only come into effect if the forecast congestions are confirmed.

The mechanism adopted for allocating capacity in the natural gas underground storage facilities provides for scheduling plans, which are open to all market players with natural gas underground storage contracts, under which capacities available for commercial purposes within specific timeframes are allocated. If demand exceeds supply in terms of the capacity made available by the underground storage infrastructure operators, then such capacity will be allocated by means of auctions.

4.1.2 REGULATION OF THE PUBLIC NATURAL GAS SYSTEM OPERATORS

4.1.2.1 TARIFFS FOR ACCESS TO NATURAL GAS INFRASTRUCTURE

PROCEDURES AND METHODOLOGY FOR CALCULATING TARIFFS FOR ACCESS TO NATURAL GAS INFRASTRUCTURE

Tariff calculations must comply with the methodology previously established in the Tariff Regulation Code. ERSE is responsible for compiling and publishing the Tariff Regulation Code, and it must be submitted to public consultation and be the subject of an opinion from the Tariff Board prior to its approval.

The tariff fixing process, including the time frame, is also defined in the regulations.

The following brief characterisation of the new Portuguese tariff system serves to contextualise the tariff calculation methodology.

Thus, the infrastructure access tariffs that apply to all natural gas consumers for access to the infrastructures in question are considered, more specifically the Grid Access tariffs, Use of the LNG Reception, Storage and Regasification Terminal Tariff and Use of Underground Storage Tariff.

Generally speaking, these infrastructure access tariffs are paid by suppliers on behalf of their customers. In addition they may be paid directly by customers benefiting from the status of Market Agent (i.e. customers buying energy directly on the market, and who are responsible for managing their programming imbalances).

TARIFFS AND REGULATED ACTIVITIES OF THE NATURAL GAS SECTOR

Various regulated activities are envisaged in the natural gas sector, and ERSE establishes the profit permitted for each activity and the corresponding annual tariff that is applied.

The following tariffs are approved for each regulated activity: Global Use of System, Use of Transmission Network, Use of the LNG Reception, Storage and Regasification Terminal, Use of Underground Storage, Use of MP Distribution Network, Use of LP, Energy and Supply Distribution Network.

The tariffs for each activity are established in such a way that their structure reflects the structure of marginal or incremental costs and also enables the recovery of allowed revenue in each activity.

TARIFF ADDITIVITY APPLIED TO THE NATURAL GAS INFRASTRUCTURE ACCESS TARIFFS

Grid access is paid by all consumers of natural gas. Grid access tariffs are calculated by adding the following tariffs together: Global Use of System, Use of Transmission Network and Use of Distribution Network. Access tariffs for each billing variable are obtained by adding up the corresponding tariff prices per activity.

The End User tariffs charged by the LRS to its customers are calculated on the basis of the tariffs per activity included in grid access, plus the Energy Tariff and the Supply Tariff.

Tariffs for the Use of the LNG Reception, Storage and Regasification Terminal and the Use of Underground Storage are paid only if the customer wants to use the respective infrastructures.

FORMS OF REGULATION

2010 was the first year of application of the new forms of regulation established in 2009 for the three-year period running from 2010/2011 to 2012/2013. As mentioned in the report for the previous year, ERSE decided to assess the forms of regulation of the natural gas sector's activities which resulted in some alterations reported in last year's report:

The definition of the efficiency targets of natural gas distribution companies was based on a benchmarking nationwide study using parametric (OLS with panel data) and non-parametric (DEA)

methods. In the case of the Trading activity, as this is a smaller activity, the definition of the efficiency targets did not require any specific study but rather an analysis of the company's historical data.

The annual efficiency factors applied to unit costs vary between 0.5% and 3.8% by company in the case of distribution and 3% for all last resort suppliers. A fixed and a variable component were considered with the following cost driver: electricity distribution and supply locations, for distribution, and quantities consumed and average number of customers, for trading.

As mentioned in the electricity sector, there were also regulatory and legislative alterations in the natural gas sector which had to be reflected in the definition of the allowed revenues for this sector.

The natural gas sector in Portugal became fully liberalised on the 1st of January 2010, resulting in the co-existence of a regulated market with a liberalised market in all segments, reinforcing the need to implement measures that would ensure the efficient and sustained operation of both markets. In addition to this scenario, Decree Law no. 66/2010, of the 11th of June, established the extinction of the regulated natural gas tariffs for end users with annual consumption of over 10 000m^3.

4.1.2.2 QUALITY OF SERVICE

The Quality of Service Regulations for the natural gas sector were first applied in July 2007. The information in this report relates to the 2009-2010 gas year, which covers the period 1st July 2009 to 30th June 2010.

The Quality of Service Regulations for the natural gas sector envisage monitoring the quality of service in this sector provided by the various infrastructure operators. Three areas are covered: continuity of service, natural gas attributes, and the pressure of natural gas supplied to customers.

CONTINUITY OF SERVICE

LNG Terminal

The continuity of service provided by the LNG terminal is characterised on the basis of the five indicators defined below:

- Average real time for unloading LNG tankers (h): the quotient of the sum of the effective unloading times and the total number of unloadings.
- Average delay of LNG carrier unloading (h): the quotient of the sum of the delays in unloading and the number of delayed unloadings.
- Average time for loading LNG tanker trucks (h): the quotient of the sum of the effective loading times and the total number of loadings.

- Average delay of LNG tanker truck loading (h): the quotient of the sum of the delays in loading and the number of delayed loadings.
- Compliance with the natural gas injection assignments: the quotient of the number of assignments fulfilled and the total number of assignments in relation to the injection of natural gas into the transmission network.

In relation to the unloading times for LNG tankers and loading times for tanker trucks, delays are considered to have occurred whenever the unloading time is longer than 24 hrs and the loading time is longer than 2 hrs.

Table 4-1 shows the indicators established for the 2009-2010 gas year.

Table 4-1 - Characterisation of quality of service of the LNG terminal, gas year 2009-2010

	Gas Year					
	2008-2009	**2009-2010**				
		Quarter				**Annual**
		1st Jul - Sept 2009	**2nd** Oct – Dec 2009	**3rd** Jan - Mar 2010	**4th** Apr – Jun 2010	
Number of unloadings from LNG carriers	39	8	7	6	10	31
Number of tanker truck loading operations	2136	394	575	725	442	2136
Average real time for unloading LNG carriers (hh:mm)	19:08	19:56	18:49	19:28	28:50	22:28
Average delay in unloading LNG carriers (hh:mm)	0:00	0:00	0:00	0:00	93:20	93:20
Average real time for loading tanker trucks (hh:mm)	1:42	1:39	1:41	1:40	1:41	1:40
Average delay in loading tanker trucks (hh:mm)	0:31	0:24	0:31	0:29	0:37	0:31
Compliance with the NG injection assignments (%)	100	100	100	100	100	100
Compliance with the NG energy injection assignments	0.995	0.996	0.998	0.998	0.996	0.997

Source: REN Atlântico

Transmission system

Continuity of supply of the transmission network is assessed according to the following indicators:

- Average number of interruptions per exit point: quotient of the total number of interruptions at the exit points over a specific period and the total number of exit points at the end of the period considered.
- Average duration of interruptions per exit point (min/exit point): the quotient of the overall duration of interruptions at the exit points over a specific period and the total number of exit points at the end of the period considered.
- Average duration of the interruption (min/interruption): quotient of the overall duration of interruptions at the exit points and the total number of interruptions at the exit points over the period considered.

No interruptions to the transmission system service were registered in the 2009-2010 gas year.

Distribution networks

Continuity of supply of the distribution networks is given by means of the three indicators established for the 2009-2010 gas year:

- Average number of interruptions per customer: quotient of the total number of interruptions to customers over a specific period and the total number of customers at the end of the period considered.
- Average duration of interruptions per customer (min/customer): quotient of the overall duration of interruptions to customers over a specific period and the total number of customers at the end of the period considered.
- Average duration of interruptions (min/interruption): quotient of the overall duration of interruptions to customers and the total number of interruptions to customers over the period considered.

Table 4-2 - Characterisation of quality of service of the distribution networks, 2009-2010 gas year

Network operator	Number of interruptions					General indicators		
	Type of interruption				Total			
	Not controllable		Controllable					
	Scheduled *Reasons of public interest*	Accidental *Security reasons Unforeseeable /force majeure*	Scheduled *Supply reasons*	Accidental *Other reasons e.g. breakdown*		Average number of interruptions per thousand customers (interruptions/1000 customers)	Average duration of interruptions per customer (minutes/ customer)	Average duration of interruptions (minutes/ interruption)
Beiragás	0	0	0	0	0	0	0	0
Dianagás	0	0	0	0	0	0	0	0
Sonorgás	0	0	0	0	0	0	0	0
Paxgás	0	0	0	0	0	0	0	0
Lusitaniagás	0	0	0	0	0	0	0	0
Duriensegás	0	1	0	0	1	0.04	0.0044	100
Medigás	0	32	0	0	32	2.21	0.13	60
Tagusgás	0	314	0	0	314	11.49	1.42	124
Portgás	0	1 417	0	0	1 417	6.21	1.04	167
Setgás	0	1 678	93	0	1 771	12.33	2.37	192
Lisboagás GDL	0	2 485	4 929	0	7 414	15.00	4.85	324
Total	0	5 927	5 022	0	10 949	-	-	-

Source: Companies

During this gas year, more than 99% of natural gas customer facilities were not affected by interruptions to supply.

SUPPLY PRESSURE

In the 2009-2010 gas year, the distribution system operators monitored the pressure at certain points on the distribution networks. Depending on the type of points defined, the monitoring was either permanent or not, i.e. was conducted continually over the entire gas year or only for a fixed period of time.

In this gas year there were one-off situations of non-compliance with the regulated pressure limits which, according to the distribution network operators, had no impact on the supply of natural gas to customers.

4.1.2.3 BALANCING

The opening of the market on the 1st of January 2007, initially covering the electricity generation centres, resulted in the publication of a new legislative and regulatory framework in 2009 which included the main guidelines for the management of balancing between the supply and demand of natural gas in the system.

Market players must manage the balance between the natural gas supply and demand within the leeway margin resulting from the maximum and minimum stock allocated to each of them. The violation of maximum and minimum stock limits attributed to market players in the transmission network creates a situation of individual imbalance, which is subject to a penalty scheme, approved by ERSE, and designated as the incentive mechanism to restore the individual balance. The penalties were established following a proposal made by the transmission system operator in the scope of the technical management activity of the entire system. The application of penalties does not exempt market players from their obligation to correct their individual imbalances and they must restore their stock to within the established limits.

The creation of an operational reserve has been provided for with a view to securing the integrity of the national natural gas system's infrastructures, particularly the transmission network. This operational reserve is the amount of natural gas required to meet short-term needs, resulting from possible differences between the profiles of injection into and extraction from the transmission network in the intra-day period and the restoration of natural gas amounts due to minimum stock infringements by the market players, which could put the integrity of the transmission network at risk.

Operational reserves must be constituted by the market players and use thereof is the exclusive responsibility of the transmission system's network operator in its activity as overall technical manager of the system. The amounts of natural gas allocated to the operational reserve, as well as the methodology for determining the tranche corresponding to each market player, are approved by ERSE through a proposal made by the transmission system operator in its activity as overall technical manager the system.

4.1.3 SEPARATION OF INFRASTRUCTURE OPERATORS

In Mainland Portugal, the natural gas sector has operators in the following infrastructures: one LNG reception, storage and regasification terminal operator, two underground storage operators, one transmission system operator, eleven distribution system operators and eleven last resort suppliers. Only four of these suppliers are separate in legal terms from the distribution system operators (they serve more than 100 000 customers).

All the infrastructure operators referred to comply with the legal unbundling criteria for the activities established in both European and National law.

With the regulatory revision of the natural gas sector implemented by ERSE Order no. 4878/2010, the Regulations for Commercial Relations established a set of obligations for distribution system operators and retail last resort suppliers for issues related to image differentiating. In this scope, the regulation establishes the need for distribution system operators and retail last resort suppliers (with more than 100 000 customers) to prepare and publish Codes of Conduct, including, as an appendix, a set of procedures to be used in customer services, the obligation to provide websites which are independent of each other and other entities which operate in the SNGN, and also the implementation of other measures which allow for the effective separation of activities. The activities undertaken by companies to obtain a differentiation in their images in the natural gas sector were submitted for prior analysis by ERSE.

Currently, all distribution system operators and retail last resort suppliers have Codes of Conduct but only two have the commercial procedures to be used in customer services. Regarding the autonomous websites, only two, one distribution system operator and one retail last resort supplier, belonging to the same vertically integrated company, have implemented this measure.

4.2 COMPETITION

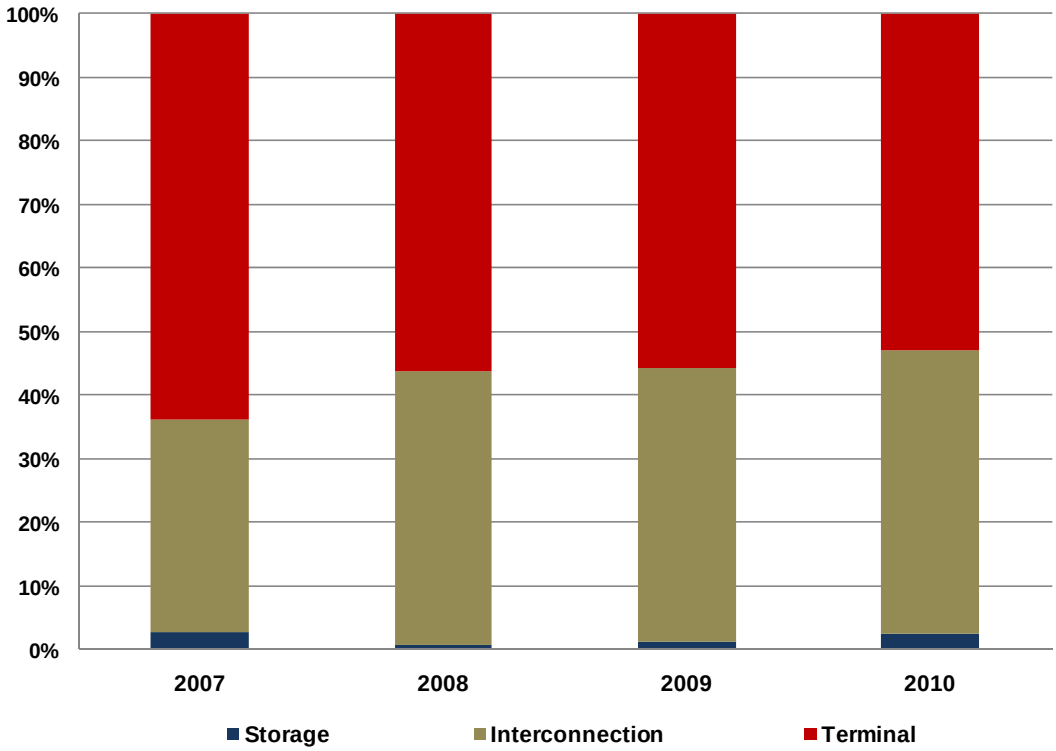
4.2.1 CHARACTERISATION OF THE WHOLESALE MARKET

The Portuguese market is supplied with natural gas through entries into the system via the interconnectors with Spain (Campo Maior and Valença) and the port terminal at Sines, by means of long-term contracts.

The characterisation of the natural gas wholesale market cannot fail to meet these specific operating characteristics in which bilateral and long term contracting prevails over a visible market negotiation.

The main countries which supply natural gas are Algeria and Nigeria. This is done mainly through long term take-or-pay contracts. The characterisation of the breakdown of the supply is presented in Figure 4-1, where it can be seen that, for the past four years, the terminal, whose value in 2010 amounted to around 53% of the total amount of gas contracted (contracts for LNG from Nigeria) was responsible for supplying of most of the natural gas to the Portuguese market. Although it is still part of the main supply chain, the gradual reduction in the importance of the terminal as opposed to the use of the interconnections, both at the Campo Maior and Valença entrances, is worth noting. Moreover, in relation to the latter, at the start of the decade of 2000, it was essentially used for continuous outgoing international traffic to Spain, a situation which has been inverted over the last three years.

Figure 4-1 - Breakdown of supply by infrastructure



The legal framework for the sector, namely that created by the laws published in 2006, has since established both the unbundling of activities and the operation of the sector on a market-driven basis.

MARKET INTEGRATION

The integration of the natural gas market has been achieved through two initiatives, the Iberian Natural Gas Market (MIBGAS) and South GRI.

The proposed organisational model and operating principles for MIBGAS[6], presented to the Portuguese and Spanish Governments by ERSE and CNE in 2008, describes the plan of action for the creation and future development of this market:

- Harmonisation of licences for supplying natural gas in Iberia: CNE and ERSE should produce a study with a comparative analysis of the conditions for obtaining a supplier's licence in both countries and recommendations for regulatory harmonisation.
- Convergence in the access tariff structure. In order to ensure access to the Iberian infrastructure, there has to be convergence in the access tariff structure and systems, especially with respect to

[6] http://www.erse.pt/pt/consultaspublicas/historico/Paginas/19.aspx

the transit of natural gas between Spain and Portugal, given its importance in the establishment of the Iberian market.

- Joint planning of the Iberian natural gas system: REN and ENAGAS should draw up an investment plan to strengthen the interconnectors and storage capacity for natural gas.

In light of the positive outcome of the public consultation, which ended on the 15th of April 2009, ERSE and CNE submitted a proposal for the mutual recognition of licences to supply natural gas under MIBGAS to their governments. The proposal included a joint analysis of the comments received.

In relation to the harmonisation of the access tariffs, a preliminary study was initiated in an effort to characterise the current situation and possible tariff obstacles to the transmission of gas in the Iberian Peninsula. This joint study between ERSE and CNE will serve as starting point for the public discussion about tariff harmonisation. The study will be complete in early 2011.

In relation to South GRI (Portugal, Spain and France), the five priorities common to the three regions of the natural gas regional initiative, defined for 2010, were investments in new interconnections, access to the capacity of the gas pipelines, transparency, interoperability and security of supply.

In this context, in 2010, there were developments regarding transparency in the South region as a new obligation was imposed on the TSO's requiring the publication of regular updates about the interconnection capacity.

In 2010, South GRI also focused its efforts on coordinated Open Seasons (OS) which are being used to promote investment and increase the interconnection capacity in the South region. In this region, two OS are leading to a significant increase in the interconnection capacity between France and Spain through the reinforcement of existing interconnections (in Larrau and Biriatou) and the creation of a new gas line in the Eastern Pyrenees (MIDCAT).

4.2.2 CHARACTERISATION OF THE RETAIL MARKET

In Mainland Portugal, the end user sales market is based on the co-existence of a regulated system of integral tariffs practised by LRS and a market-driven system in which the energy is freely contracted. As grid access tariffs are paid by all consumers or by suppliers on their behalf, they are incorporated into either the End User Sales Tariffs practised by the LRS or the tariffs practised by market suppliers. The inclusion in the End User Sales Tariffs, regulated by ERSE, is done directly via the tariff additivity method.

As from the 1st of July 2010, there regulated End User Sales Tariffs for natural gas, applicable to annual consumption of greater than 10 000 m^3 were extinguished. Therefore, in the 2010-2011 gas year, transitory sales tariffs published by ERSE were in force for customers in this segment of consumption and which were calculated by applying an aggravating factor to the sum of the grid access tariffs, the energy

tariff and the regulated supply tariff. The abovementioned aggravation is applied so as to motivate the transfer of consumers from the transitory tariff to the market tariff.

CHARACTERISATION OF THE DEMAND FOR NATURAL GAS

The demand for natural gas in Mainland Portugal is outlined in point 5.2.1.

TARIFF ADDITIVITY APPLIED TO END USERS OF NATURAL GAS

As explained above, the End User Sales Tariffs charged to customers by the LRS are calculated by adding together the grid access tariffs and the energy and supply tariffs.

This method of determining the tariff, applicable by the LRS, makes it possible to ensure there is no cross-subsidisation between:

- Activities undertaken in a monopoly regime (network and other infrastructure activities) and activities undertaken in the market regime (supply and sale of natural gas).
- LRS Customers with different consumption profiles.
- LRS Customers and customers that participate in the market.
- LRS and market suppliers.

Insofar as the tariffs are based on marginal costs in terms of structure and on total costs in terms of level, this method allows cross-subsidies between customers to be avoided and, by reflecting the marginal costs, it also allows an efficient allocation of resources.

Additionally, since this tariff calculation method makes it possible to obtain detailed knowledge of the various tariff components by activity or service, the customer's bill can be broken down into the various applicable regulated tariff components upon request.

AVERAGE PRICE STRUCTURE OF END USER SALES TARIFFS

The figures that follow show the breakdown and average price structure of the End User Sales tariffs by the various elements comprised: Energy tariff, Use of Transmission Network tariff, Global Use of System tariff, Use of Distribution Network tariff and Supply tariff.

Figure 4-2 - Average price of End User tariffs in 2010-2011

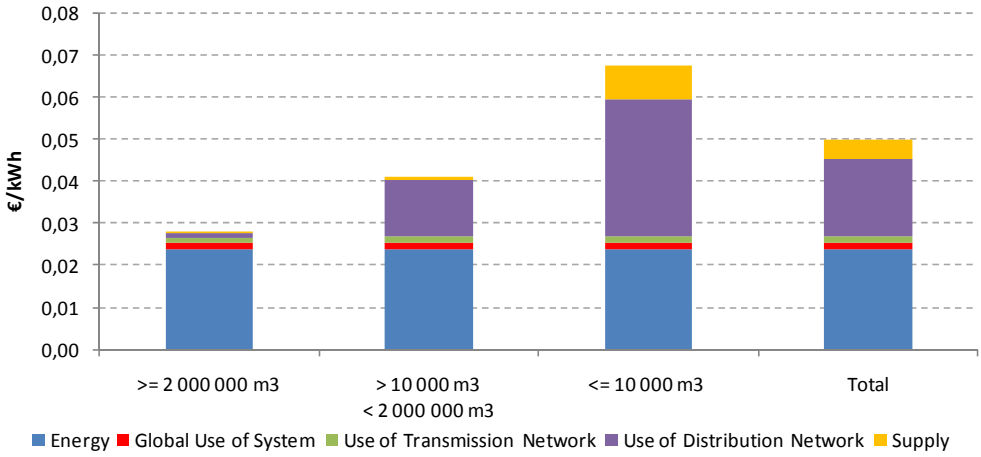
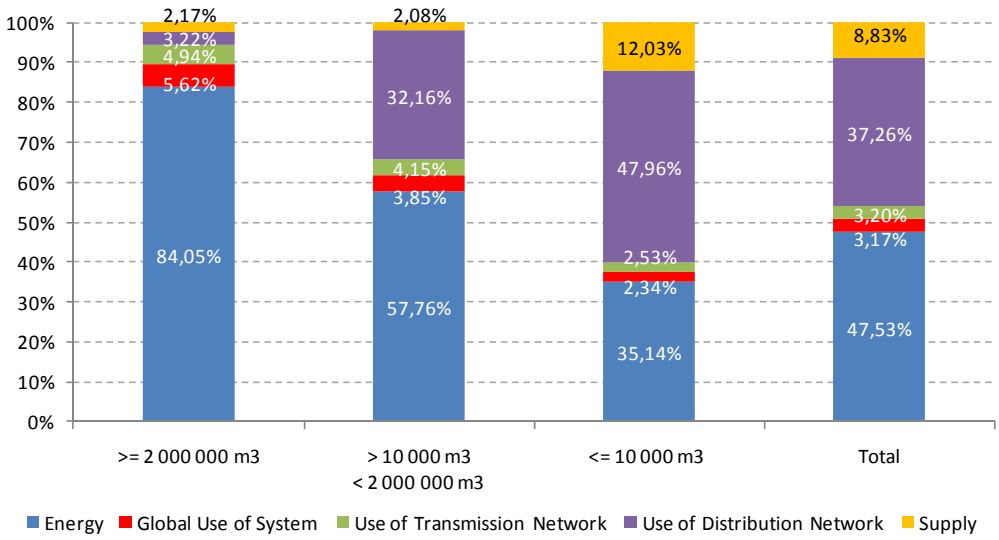


Figure 4-3 - Average price structure of End User tariffs in 2010-2011



METHODOLOGY FOR GATHERING REFERENCE PRICES AND AVERAGE PRICES PRACTISED ON THE RETAIL MARKET

In 2010, with the objective of defining a methodology for the monitoring of reference prices and average prices practised by natural gas suppliers, ERSE began the process to establish the respective monitoring rules for the natural gas retail market based on consulting natural gas suppliers in Mainland Portugal. The rules were published at the beginning of 2011.

MARKET LIBERALISATION

The timetable for market liberalisation as defined by law, through the decision taken by the Council of Ministers on the 22nd of June 2006, establishes that the following parties can freely choose their supplier:

- All producers of electricity operating under the standard regime, as of the 1st of January 2007;
- All customers whose annual consumption is over 1 million m^3 (n), as of the 1st of January 2008;
- All customers whose consumption is over 10 000 m^3 (n), as of the 1st of January 2009;
- All other customers, as of the 1st of January 2010.

Thus 2010 marks the first year of the complete liberalisation of the Portuguese natural gas market, with all customers being able to choose their supplier freely.

For the purpose of selecting a supplier, the following types of natural gas contract may be entered into:

a) A natural gas supply contract with suppliers in the liberalised market.

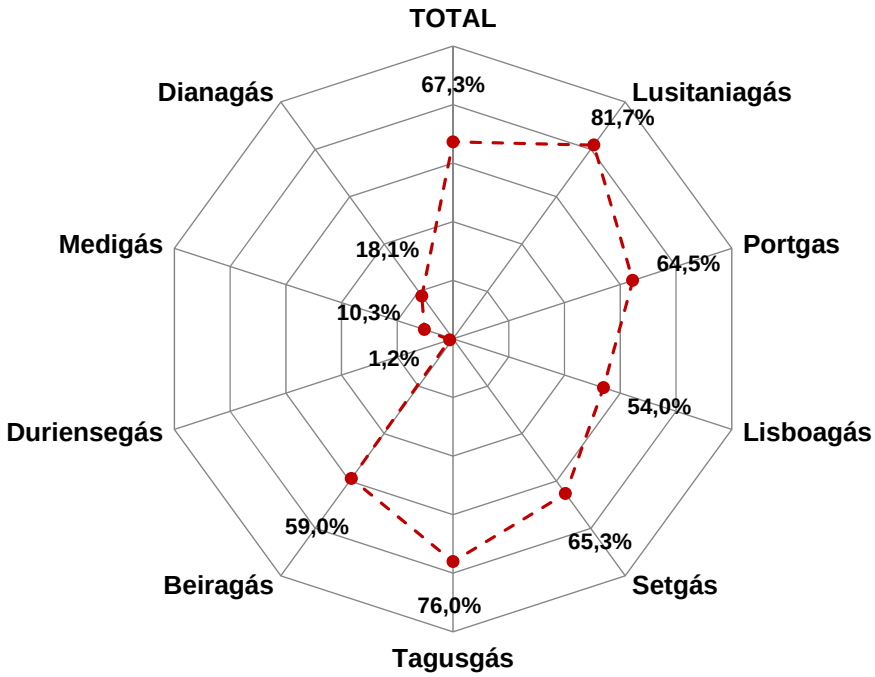
b) A natural gas supply contract with last resort suppliers.

c) A natural gas contract on the organised markets or via bilateral contracts, in the case of customers who have the status of market agents.

In terms of the effective liberalisation of the market, excluding the group of suppliers to electricity generation centres in the standard regime, Figure 4-4 presents the share of consumption supplied by suppliers in the market regime, setting out the figures for the larger Distribution system operators. It can be seen that over 2/3 of the total consumption under analysis is guaranteed by market suppliers and this value is generically higher among the leading natural gas distributors.

Figure 4-4 - Liberalisation of the natural gas market by Distribution system operator

Total customers

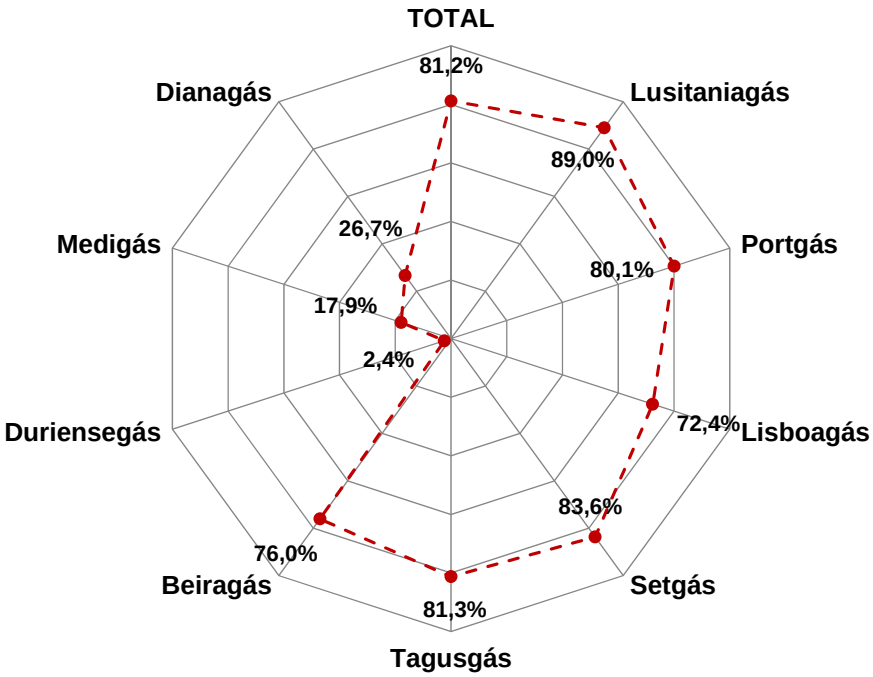


Note: does not include information from the distributors Paxgás and Sonorgás, due to the non-existence of figures.

Source: REN Gasodutos

As the extinction of the regulated tariffs for customers with annual consumption greater than 10 000 m^3 was carried out in 2010, it is also important to check the occurrence of market liberalisation in the customer segment to which the tariff extinction applies. This is described in Figure 4-5.

Figure 4-5 - Liberalisation of the natural gas market by Distribution system operator
Customers with annual consumption > 10 000m^3



Note: does not include information from the distributors Paxgás and Sonorgás, due to the non-existence of figures.

Source: REN Gasodutos

The supplier switching process is handled by the national transmission system operator (REN Gasodutos), with the procedures and timelines for the switch being approved by ERSE. To this end, said procedures were published on the 5th of March 2009 (ERSE Order no. 6973/2009, published in the *Diário da República* (the official gazette) no. 45, Series II of the 5th of March).

The current regulations in force grant customers the right to change their natural gas supplier up to 4 times in each period of 12 consecutive months. No charge may be levied for switching supplier.

As mentioned earlier, REN Gasodutos is the body entrusted with operationalisation of the supplier-switching process. It began to implement the logistical platform for this purpose in 2009. The process was phased so as to respond to the opening up of the market to all industrial consumers and to allow it to evolve and enable domestic customers to switch suppliers.

The supplier switching platform was gradually improved over the course of most of 2010, with the introduction of functionalities which allow agents to make supplier changes through automated procedures, and also include the tools needed to generate information so that the process could be monitored by ERSE.

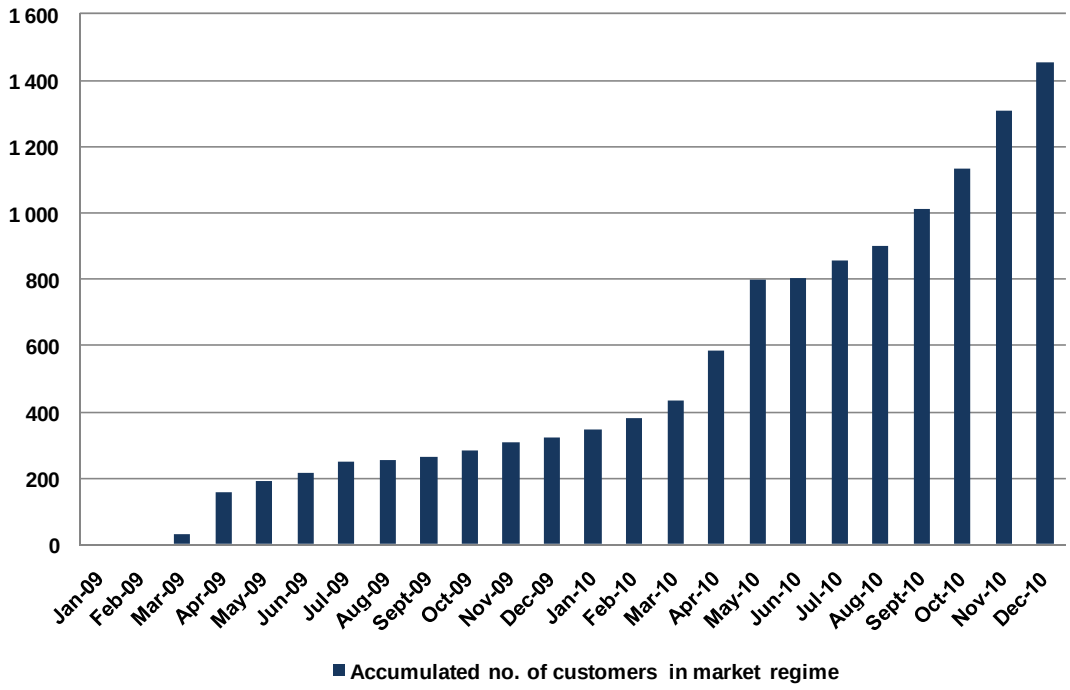
Due to the newness of the platform, the procedures and the market liberalisation process itself, it has not yet been possible to extract the information set forth in the regulation despite thorough monitoring by

ERSE. In 2010, the information obtained, namely pertaining to the structure of the market in each distribution system, did not meet the consistency and regularity required by ERSE. This fact was insistently passed onto the different parties.

However, based on the cross-referencing of a variety of data and on the preliminary information, a more in-depth characterisation of the retail natural gas market can be made for 2010 than in previous years. Based on the information processed by the supplier switching manager, the number of customers who switched from a tariff supply to the market supply or who began consumption directly in the market rose from 322 in 2009 to 1 452 in 2010.

Figure 4-6 shows the evolution in the accumulated number of customers in the liberalised market throughout 2009 and 2010, whose new supplier selection process was processed via a platform managed by REN Gasodutos. From this figure it can be seen that, at the end of 2010, more than 1 400 customers had switched supplier through the above-mentioned platform. Of these customers, more than 1 100 are customers in the industrial segment (annual consumption greater than 10 000 m^3), which is a little less than 1/3 of the total number of customers in this segment.

Figure 4-6 - Number of customers changing supplier in the scope of the platform managed by REN Gasodutos

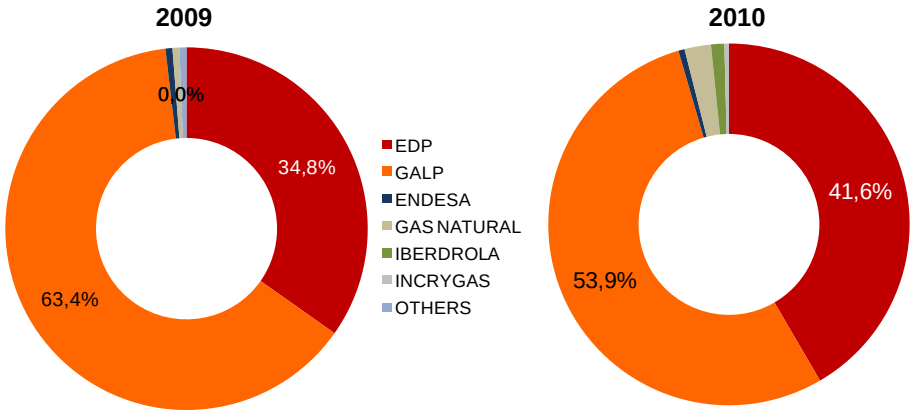


Source: REN Gasodutos

In Figure 4-7, it can be seen that around 98% of the total number of clients who switched supplier in 2009 are supplied by GALP or EDP, which also reflects a significant concentration in the natural gas market. In

any event, in 2010 there was reduction, albeit slight, in the joint share of these two operators alongside a greater levelling due to the presence of four suppliers who do not have assets in the distribution of natural gas, a fact which led to a reduction in corporate concentration in 2010.

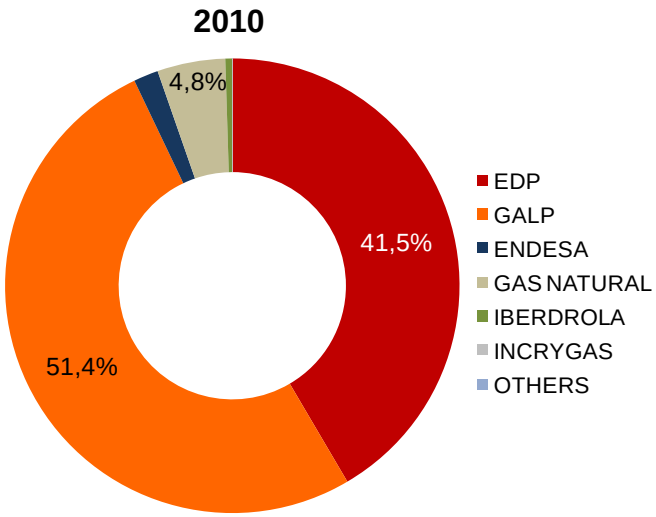
Figure 4-7 - Breakdown of customers by market supplier 2009 and 2010



Source: REN Gasodutos

Figure 4-8 shows the breakdown of consumption by supplier, explaining the market structure in 2010. Here, corporate concentration in consumption can be seen to be inferior to that identified in terms of number of customers. This information about the market structure relates to the group of customers supplied by market suppliers.

Figure 4-8 - Breakdown of consumption by market supplier 2010



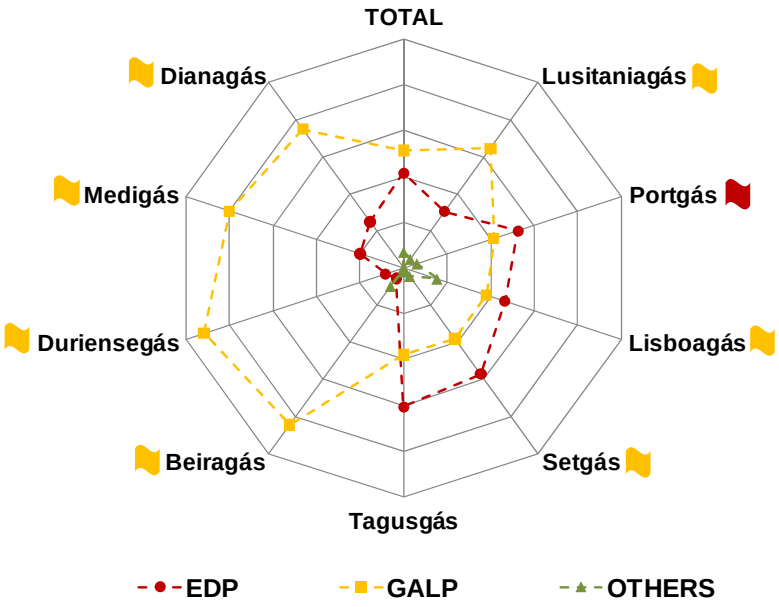
Note: does not include information from the distributors Paxgás and Sonorgás, due to the non-existence of figures.

Source: REN Gasodutos

Figure 4-9 shows the breakdown of market share by distribution system in terms of consumption supplied. The economic group relationship between distributors and suppliers in the market regime is also identified. The distributors are identified outside the system. For example, in the case of Medigás, 80% of consumption is supplied by the Galp Group and the remaining 20% (shown in red) is supplied by the EDP Group.

Figure 4-9 explains that, in spite of only holding one of the five largest distributors in consumption supplied, the EDP Group is leader in four of these five distributors.

Figure 4-9 - Breakdown of consumption supplied by suppliers in market regime in 2010 and by distribution system



Source: REN Gasodutos

4.2.3 MEASURES FOR PROMOTING COMPETITION

4.2.3.1 Extinction of regulated supply tariffs to industrial customers

In 2010, the need to boost competition in the natural gas market led the Portuguese government to go ahead with the extinction of regulated tariffs for the sale of natural gas supplied to end users with annual consumption greater than 10 000 m^3, through the publication of the Decree-Law no. 66/2010 of the 11th of June.

The extinction process of the abovementioned tariffs initiated the progressive elimination of regulated tariffs. The customers affected by the extinction of tariffs are mainly industrial customers.

Subsequent to the abovementioned law, ERSE went ahead with the alteration of the Tariff Regulation, adapting it accordingly. As from the 1st of July 2010, customers with an annual consumption greater than 10 000 m^3 began to be subject to a transitory sales tariff set by ERSE.

4.2.3.2 Operations leading to concentration and liaison with the Competition Authority

Pursuant to the respective legal provisions, the Competition Authority must be notified of any business transaction that is classified or could be classified as a market concentration operation. This also applies to the natural gas sector. In such cases, the opinion issued by the competition regulator must be prepared in the light of the legal obligations of cooperation and coordination with the regulatory body responsible for the sector. ERSE is therefore called upon to issue a formal opinion in all such notifications involving entities from the energy sector.

During 2010, the Competition Authority asked ERSE for its opinion on two operations which related to the formal unbundling of last resort supply and natural gas distribution activities thereby complying with requirements both in legal and regulatory terms.

4.2.3.3 Natural gas release auctions

With a view to encouraging greater liberalisation of the natural gas market and thereby promoting more competition in the sector, ERSE implemented natural gas release auctions, allowing the provision of gas to the new market regime suppliers and to eligible customers.

To this end the Commercial Relations Code for the Natural Gas Sector (Article 60) establishes that GALP Gás Natural, as a supplier in the SNGN - National Natural Gas System, must organise annual auctions of natural gas in 2009, 2010 and 2011 for amounts of 300 million m^3 (n)/year.

The quantities of natural gas bought by participants in the auctions had to be consumed in Portugal, and the participation of conventional power plants in the standard regime and all entities in which the GALP Group has a majority shareholding or effectively controls were excluded.

In order to prepare for the holding of the second natural gas auction, ERSE published the conditions under which it should be held at the end of 2009, and, in January 2010, the terms and conditions for the holding of the auction and respective rules through which market agents could be provided with 300 million m^3 (n) to be delivered within the period from the 1st of July 2010 to the 30th of June 2011.

ERSE previously analysed the possibility of holding the auction in the current year in light of the existing market conditions. To this end, ERSE invited the market agents operating in Portugal to present non-

binding offers for the acquisition of natural gas so as to collect information which would allow it to assess whether the time was right in a market which has been showing an accentuated reduction in demand.

At the end of this period, the non-binding offers presented to ERSE translated into a total value of less than 25% of the total amount to the auctioned. The results obtained in the presentation phase of the non-binding offers allowed ERSE to conclude that the minimum conditions needed for the competitive functioning of the auction for the 2010-2011 gas year were not in place and that the benefits generated by the auction in favour of customers could be less than the administrative costs of its organisation. The ERSE Board decided against holding the natural gas auction for the 2010-2011 gas year.

5 SECURITY OF SUPPLY

5.1 ELECTRICITY

5.1.1 BRIEF CHARACTERISATION OF 2010

Consumption of electricity in 2010 was about 52.2 TWh, an increase of 4.7% (3.3% after correction for the effect of temperature and number of business days) in relation to the previous year.

In 2010, hydroelectric energy capability registered the first wet year since 2003, with a hydraulicity index of 1.31. Hydroelectric power plants supplied 28% of consumption and thermal power plants contributed 33%, the lowest in the last 30 years. Deliveries to the grid by special regime producers grew by 24% in relation to 2009, amounting to 34% of national consumption.

The import balance was the lowest since 2002, supplying 5% of consumption.

In 2010 the installed capacity in standard regime hydroelectric plants remained unchanged. Worthy of note are the entry into service of the Pego combined cycle power plant (2x419 MW) and the installation of 465 MW of special regime capacity, of which 67 MW were installed by thermal power generators, 5 MW by hydropower generators, 348 MW by wind power generators and 47 MW by photovoltaic generators.

In the development of the National Transmission System, focus goes to the coming into operation of the Armamar sub-station and the expansion of Lagoaça, both with 400/220 kV autotransformers, the entry into service of the 400 kV Lagoaça - Armamar and Lagoaça – Aldeadávila lines, and the passing to 400 kV of the Armamar – Bodiosa – Paraimo axis, contributing to an increase in the reception capacity of renewable generation in the Douro area and in the interconnection capacity with the Spanish network.

The Serra de Lousã axis was reinforced to 220 kV with the new Penela – Tábua line, contributing to the reception of new renewable energy in the region, and the 400 kV Batalha – Lavos line entered into service, which is important to the generation flow of new thermal groups in the central coastal area.

In the south, the Sines – Portimão 3 line came into operation, at 400 kV, thereby improving supply conditions in the Algarve.

In terms of quality of service, 3 faults in the RNT resulted in an interruption to supply, with the Equivalent Interruption Time reaching 1.15 minutes.

The breakdown of electricity generation by energy source in the last 5 years is shown in Table 5-1.

Table 5-1 - Generation details

	2010	2009	2008	2007	2006
Gas	20%	23%	24%	21%	20%
Import balance	5%	9%	19%	15%	11%
Fuel oil	0%	1%	2%	2%	3%
Coal	13%	24%	21%	23%	28%
Hydro	28%	14%	11%	19%	20%
PRE	34%	29%	23%	20%	18%

Source: REN - Data from 2010

Satisfaction of consumption requirements by the various means of supply is presented in Table 5-2.

Table 5-2 - Consumption supply

	2010 (GWh)	2009 (GWh)	Change (%)
Hydro power generation	14869	7892	88
Thermal power generation	17299	23708	-27
PRE	17924	14417	24
Import balance	2623	4777	-45
Hydro power pumping	512	929	-45
Total consumption	52204	49865	4.7

Source: REN - Data from 2010

Pertaining to the maximum power requested from the public grid, a new historical maximum occurred on the 11th of January with 9403 MW, exceeding the previous maximum recorded in January 2009 by approximately 185 MW.

The evolution in annual maximum power is shown in Table 5-3.

Table 5-3 - Maximum annual power

Year	Day	Power (MW)	Change (%)
2010	11-Jan	9403	2.01
2009	12-Jan	9217	2.72
2008	2-Dec	8973	-1.50
2007	18-Dec	9110	3.48
2006	30-Jan	8804	3.24

Source: REN - Data from 2010

The evolution in terms of installed power at the end of each year is shown in Table 5-4

Table 5-4 - Power plants

	2010 (MW)	2009 (MW)	Change (MW)
HYDROPOWER PLANTS	4578	4 578	0
THERMAL POWER PLANTS	7407	6 690	717
Coal	1756	1 776	-20
Natural gas	3829	3 036	793
Fuel oil / Natural gas	1657	1712	-55
Diesel	165	165	0
SRG INSTALLED CAPACITY	5935	5 470	465
Thermal generators	1698	1 631	67
Hydro generators	410	405	5
Wind generators	3705	3357	348
Photovoltaic generators	122	75	47
Wave power generators	0	2	-2
TOTAL	17920	16 738	1182

Source: REN - Data from 2010

The evolution in installed capacity and maximum requested power is shown in Table 5-5.

Table 5-5 - Capacity margin

	2010 (MW)	2009 (MW)	2008 (MW)	2007 (MW)	2006 (MW)	2010/2006 Change (%)
Total installed power	17920	16738	14924	14041	13621	1.32
Thermal	7407	6690	5820	5820	5852	1.27
Hydro	4578	4578	4578	4582	4582	1.00
PRE	5935	5470	4526	3639	3187	1.86
Maximum annual power	9403	9217	8973	9110	8804	1.07
Capacity margin	8517	7521	5951	4931	4817	1.77
	(48%)	(45%)	(40%)	(35%)	(35%)	

Source: REN - Data from 2010

5.1.2 NEW INVESTMENTS IN GENERATION

Pertaining to new investments in generation, there are no significant developments related to the situation described in the previous report.

In accordance with the “Report on security of supply with respect to the level of electricity generation for the period of 2009 to 2020”, published by REN, the expected evolution of the electricity generation system in the standard regime in the period 2009-2013 and up to 2020 is due, in addition to the CCGT groups of the Lares power plant (2x435 MW) and the Pego power plant (2x418.6) that came into service in 2009 and 2010, to the development of the construction projects of the other 4 new 400 MW CCGT groups already licensed.

The development of hydroelectric power generation will boost the capacity of existing plants by around 1500 MW, of which 1080 MW are reversible. In addition to this, there are two new hydroelectric power plants in the implementation phase, one in Baixo Sabor (168 MW reversible) and another in Ribeiradio (70 MW). The National Programme for Dams with High Hydropower Potential (PNBEPH) is expected to be completed by 2020. It envisages a series of another 10 new power plants with a generation capacity of 1100 MW, 810 MW of which will use reversible equipment.

As regards SRG, Table 5-6 shows the evolution forecast for installed capacity for this type of generation.

Table 5-6 - Forecast installed power for SRG generation

	2014 (MW)	2019 (MW)
Wind	5600	6950
Hydro (< 10 MW)	550	700
Biomass	913	943
Solar	580	1360
Waves	48	150
Geothermal	30	50
Cogeneration	2230	2590

Sources: "National Action Plan for Renewable Energy under Directive 2009/28/EC", DGEG.
"RNT Development and Investment Plan 2009-2014 (2019)" REN.

5.2 GAS

5.2.1 BRIEF CHARACTERISATION OF 2010

The demand for natural gas in 2010 registered an increase of 14% compared to 2009, with a growth of 26% from 2006 to 2010. In 2010, demand for natural gas in heavy industries increased by 31% compared to 2009, and this was the main reason for the increase in demand for natural gas in 2010.

The next table shows the demand for natural gas by segment since 2006:

Table 5-7 - Commercial activity

	2010	2009	2008	2007	2006	Change 2010-2009 [%]	Change 2010-2006 [%]
Electricity market [TWh]	22.3	21.9	25.3	21.4	20.1	2%	11%
Heavy Industry [TWh]	26.0	19.9	18.9	18.7	17.7	31%	47%
Regional Distribution [TWh]	9.5	8.8	9.3	8.8	8.1	8%	17%
Total Demand [TWh]	57.8	50.6	53.5	48.9	45.9	14%	26%

Source: REN Gasodutos

5.2.2 SECURITY OF SUPPLY IN THE NATIONAL NATURAL GAS SYSTEM

Decree Law no. 140/2006 of the 26th of June establishes the promotion of the conditions of guarantee and security of supply to the SNGN through the following measures:

- Establishment and maintenance of security reserves;
- Diversification of natural gas supply sources;
- Existence of long-term natural gas supply contracts;
- Development of incorruptible demand;
- Development of cooperation and mechanisms of solidarity with operators in neighbouring countries;
- Promotion of energy efficiency;
- Definition and application of emergency measures.

5.2.2.1 SECURITY RESERVES

Market agents operating in Portugal are obliged to establish and maintain security reserves of not less than 15 days of uninterruptible consumption by the standard regime electricity generators and 20 days of uninterruptible consumption of all other kinds.

The security reserves are created preferentially in natural gas storage facilities in Portugal, except where there is a bilateral contract that provides for the possibility of establishing reserves in other countries. Such a situation would require express authorisation from the minister responsible for energy.

The security reserves may include natural gas held in the underground storage facilities, the LNG terminal and on LNG tankers en route to LNG terminals in Portugal and which have a journey time of nine days.

5.2.2.2 UNDERGROUND STORAGE OF NATURAL GAS

The underground natural gas storage facility consists of four underground caverns built in natural saline rock formations, using a single surface-level station. The PDIR plans to construct five more underground caverns in addition to the four currently in use.

Table 5-8 shows the useful storage capacity of the Carriço underground storage infrastructure and the capacity of natural gas injection into the national natural gas transmission network, in 2010.

Table 5-8 - Useful storage capacity and capacity of injection into the RNTGN

Operator	Storage capacity [m^3]		Injection capacity into RNTGN [m^3(n)/h]
	GWh	**m^3**	
REN Armazenagem	1 441	121 092 437	300 000
Transgás Armazenagem	407	34 201 681	
Total	**1 848**	**155 294 118**	

Source: Transgás Armazenagem and REN Armazenagem

5.2.2.3 LNG TERMINAL

The need to have a secure natural gas supply and to diversify supply sources led to a decision in the late 1990s to build an LNG terminal in Sines. The operational start-up of this infrastructure occurred in early 2004, with a maximum LNG storage capacity of 240 000 m^3 LNG, a nominal capacity of injection into the RNTGN of 600 000 m^3(n)/h and a maximum capacity of injection of 900 000 m^3(n)/h.

Activity at the LNG Terminal in Sines in 2010 is shown in Table 5-9.

Table 5-9 - Activity at the LNG terminal – Unloading of LNG

	2010	2009	2008	2007	2006	Change 2010-2009 [%]	Change 2010-2006 [%]
Total number of LNG tankers received	37	36	35	35	28	3	32
Total LNG unloaded [Mm^3_{LNG}]	4.5	4.3	4.6	4.6	3.46	5	30
Total tanker truck loading operations	2221	2094	2097	2265	1618	6	37

Source: REN Atlântico

In 2010, REN Atlântico, the terminal operator, received and unloaded one more tanker than in 2009. However, in 2010 there was an increase of 32% in the number of tankers received in comparison with 2006, resulting in a growth of 30% in the total LNG unloaded at the terminal.

In relation to the loading of tanker trucks, there was an increase of 6% in comparison with 2010. The total LNG shipped accounted for just 2% of the total energy handled by the terminal.

5.2.2.4 IMPORT AND DIVERSIFICATION OF SUPPLY SOURCES

In 2010, 58.3 TWh (4.9 bcm[7]) entered the National Natural Gas Transmission Network. The maximum import capacity of natural gas by gas pipeline is 8.95 bcm, which shows that capacity is currently available for rapid development of the sector.

In 2010 natural gas entered the transmission network at the Sines LNG terminal connection point (54%) and the international interconnections at Campo Maior (45%) and Valença do Minho (1%). The natural gas introduced into the RNTGN mostly comes from Nigeria and Algeria and is the result of existing long-term natural gas supply contracts.

Table 5-10 shows the balance of natural gas in the transmission network since 2006.

[7] bcm (billion cubic meters) = 10^9 m^3.

Table 5-10 - RNTGN – entries and exits

	2010	2009	2008	2007	2006	Change 2010-2009 [%]	Change 2010-2006 [%]
ENTRIES [TWh]	**58.3**	**54.3**	**53.9**	**51.1**	**51.7**	7.4	12.8
Interconnections [TWh]	26.1	23.4	23.4	18.3	27.8	11.5	-6.1
▪ Internal Market	26.1	23.4	23.0	16.4	23.4	11.5	11.5
▪ Traffic	0	0.03	0.5	1.9	4.4	-100	-100
LNG Terminal [TWh]	30.8	30.2	30.1	31.5	23.1	2	33.3
Storage – Extraction [TWh]	1.4	0.68	0.3	1.3	0.8	105.9	-75.0
EXITS [GWh]	**58.3**	**54.4**	**53.9**	**51.3**	**51.9**	**7.2**	**12.3**
GRMS [TWh]	57.1	52.4	53.0	48.5	45.9	9.0	24.4
Storage – Injection [TWh]	1.2	2.0	0.4	0.9	1.5	-40.0	-20.0
Interconnections [TWh]	0	0	0.5	1.9	4.55	0	-100
▪ International Market	0	0	0	0	0.15	0	-100
▪ Traffic	0	0	0.5	1.9	4.4	0	-100

Source: REN Gasodutos

5.2.2.5 LONG-TERM SUPPLY CONTRACTS

Transgás, SA, holder of the take-or-pay contracts, was renamed Galp Gás Natural, SA in February 2007. Thus, Galp Gás Natural, SA, a member of the Galp Energia group, is the holder of the long-term take-or-pay natural gas supply contracts.

The first supply contract was signed in late 1993 between Sonatrach and Transgás. In addition to this contract, there are also three long-term LNG supply contracts with Nigeria.

The main features of these supply contracts are summarised below:

CONTRACT FOR THE PURCHASE OF NATURAL GAS FROM SONATRACH

Pursuant to this contract, Sonatrach undertakes to supply specified quantities of natural gas to Transgás, now called Galp Gás Natural. In turn Galp Gás Natural undertakes to acquire and pay for these quantities, whether or not they use them. Sonatrach must supply an annual quantity of around 2.5 bcm for the duration of the contract, i.e. until 2020.

CONTRACTS FOR THE PURCHASE OF LIQUEFIED NATURAL GAS FROM NLNG

Three contracts for the acquisition of LNG have been signed with Nigerian LNG, Limited (NLNG): NLNG I, NLNG II and NLNG Plus. These contracts have been signed for a period of 20 years, with a 6-year grace period.

The quantity of LNG contracted under NLNG I is 0.42 bcm[8] and the supply of LNG began in 2000. Deliveries can be made at Huelva, Cartagena or Sines.

The quantity of LNG contracted under NLNG II is 1 bcm and the supply of LNG began in 2002.

The quantity of LNG contracted under NLNG Plus is 2 bcm and supply began in 2006. Deliveries can be made at any Iberian terminal along the Mediterranean Coast, or at Sines.

DEFINITION AND APPLICATION OF EMERGENCY MEASURES

In the event of a disruption to the supply, the government minister responsible for energy may put emergency measures in place temporarily, determining the use of the security reserves and steps to restrict demand.

The European Commission is informed of the adoption of such emergency measures, which, wherever possible or appropriate, should involve the participation of the market operators and agents.

[8] 1 bcm (billion cubic meters) = 10^9 m^3.

6 PUBLIC SERVICE

6.1 SOCIAL TARIFF

By means of Decree Law no. 138-A/2010, of the 28th of December, the Government created a social tariff for the supply of electricity to be applied to economically vulnerable end users. This new concept is intended to meet European guidelines on protecting vulnerable customers, reinforced with the publication of the third legislative package. For the purpose of attributing the social tariff, customers considered economically vulnerable are those who benefit from the following social benefits:

- Solidarity supplement for the elderly.
- Social integration income.
- Unemployment benefit.
- Child benefit, first level.
- Disability pension.

The social tariff for electricity is calculated by applying a discount on the grid tariff for normal low voltage systems. The discount amount is determined annually by ERSE, in accordance with the Tariff Regulations, taking into account the maximum rate of change of the social tariff of sales to end users of last resort suppliers set by the Government. This tariff is financed by the electricity generation centres in standard regime in proportion to the installed power.

The procedures and other conditions necessary for the attribution, implementation and maintenance of the social tariff for electricity are set out in Order no. 1334/2010, of the 31st of December, including those applicable to the relationship developed between the suppliers, system operators, social security institutions, the Director-General for Energy and Geology and ERSE.

6.2 LAST RESORT SUPPLIERS

Last resort suppliers have a licence which is awarded by the Government. The prices practised by last resort suppliers are set by ERSE. The scope of the performance of last resort suppliers of electricity and natural gas underwent significant changes in 2010 with the publication of the Decree-Laws no. 66/2010, of the 11th of June and no. 104/2010, of the 29th of September, which respectively determined the extinction of regulated tariffs for the sale of natural gas supplied to end users with annual consumption greater than 10 000 m^3 (from the 1st of July 2010) and the extinction of electricity tariffs in SpLV, MV, HV and VHV with a contracted power of less than 41.4 kW (from the 1st of January 2010).

The last resort suppliers are only obliged to supply StLV electricity customers (with contracted power of up to 41.4 kVA) and natural gas customers with annual consumption of up to 10 000 m^3. The transitory periods associated with these new regimes are still current and during this situation, last resort suppliers will apply a transitory sales tariff set by ERSE.

6.3 INTERRUPTIONS TO SUPPLY

Interruptions to the electricity or natural gas supply for reasons attributable to the customer can only be imposed after a prior warning has been given, in writing, sent by the distribution system operator or last resort supplier, at least 10 days before the date on which the interruption will occur, except where energy has been assigned to third parties or rules relating to the safety of people and property are breached.

The notification of interruption must state the respective reason, how the customer can prevent it, the conditions for re-establishing supply and the current charges for interruption and re-establishment of the service.

There were a total of 434 763 interruptions to the electricity supply for reasons attributable to the customer in Mainland Portugal in 2010. In the natural gas sector, also in 2010 and in mainland Portugal, the number of interruptions for reasons attributable to the customer which resulted in the respective re-establishment was 74 344.

6.4 GENERAL CONTRACTUAL TERMS AND CONDITIONS

The general terms and conditions for electricity supply agreed with a last resort supplier must contain the minimum information approved by the regulator. The general terms and conditions to be included in natural gas supply agreements entered into by a last resort supplier and customers whose annual consumption is up to 10 000 m^3 must also be approved by the regulator. Furthermore, the general terms and conditions of contracts to use networks and infrastructure in the electricity and natural gas sectors must likewise by approved beforehand by the regulator.

In 2010, ERSE developed two processes which led to the approval of general contractual terms:

1. General conditions which are included in contracts for the use of electricity distribution networks.
2. General conditions which are included in the natural gas supply contracts signed between last resort suppliers and customers whose annual consumption is up to 10 000 m^3.

By means of Order no. 18899/2010, of the 21st of December, ERSE approved the general conditions which should be included in the contracts for the use of networks to be signed between the electricity distribution network operator and, on the one hand, market regime suppliers and customers with the

status of market agent (Appendices I and II) and, on the other hand, last resort suppliers (Appendices III and IV). This process was started due to the presentation of a proposal from network operators and was submitted to market regime suppliers and last resort suppliers for analysis.

The new general conditions for the natural gas supply contracts, identified in point 2, were proposed to ERSE by last resort suppliers and were submitted to consumer associations on a national level for analysis. The process which led to the approval of these general contractual conditions culminated in the publication of the respective order in 2011 (Order no. 1550/2011, of the 19th of January).

6.5 END USER TARIFFS

ELECTRICITY

The regulated End User tariffs are offered by the LRS to all electricity consumers. In addition and in accordance with Decree Law no. 104/2010, of the 29th of September, electricity end users with consumption in VHV, HV, MV and SpLV who, on the date on which this decree law came into force, were supplied by market regime suppliers, and also new customers, can no longer be supplied by last resort suppliers.

The regulated last resort tariffs are approved and published by the regulator.

The regulated costs of supplying electricity incurred by the LRS reflect the estimated wholesale market conditions. The best forecasts for the costs for the following year are considered when the annual regulated last resort tariffs are fixed.

ERSE regulates the last resort supply activity. The regulator should ensure the economic and financial viability of the LRS in efficient operating conditions.

NATURAL GAS

As from the 1st of July 2010, the regulated End User sales tariffs applicable to annual consumption of greater than 10 000 m^3 were extinguished. Therefore, in the 2010-2011gas year, transitory sales tariffs published by ERSE were applicable to end users with annual consumption of greater than 10 000 m^3.

The regulated end user sales tariffs are offered by the last resort suppliers to natural gas retail customers. Additionally, and in accordance with Decree Law no. 66/2010, of the 11th of June, natural gas end users with annual consumption greater than 10 000 m^3 who, on the date on which this decree law came into force, were supplied by market regime suppliers, and also new customers, can no longer be supplied by

last resort suppliers. Standard regime electricity generators (not including the small generators and co-generation plants) cannot be covered by the LRS tariff.

The regulated LRS tariffs are approved and published by the regulator.

The regulated costs for supplying natural gas incurred by the LRS reflect the estimated conditions for supply, which are contained in long-term supply contracts with the producers. The best forecasts for the supply costs related to these contracts are considered when the annual regulated last resort tariffs are fixed. The transitory tariffs applicable to end customers whose annual consumption is greater than 10 000 m^3 are reviewed quarterly to reflect the real evolution in supply costs.

ERSE regulates the last resort supply activity. The regulator should ensure the economic and financial viability of the LRS in efficient operating conditions.