mercado de electricidad • electricity market
electricity market
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evolution of the electricity market in 2005
The Spanish electricity market now has over eight years experience of normal and effective operation, providing seven electricity trading sessions to market participants: the first and main daily market and six subsequent intraday throughout the 24 hours of each day.

Market settlements, collections and payments referring to final energy prices on the market for supplies and productions, representing the results of transactions in the daily and intraday markets and the technical operating processes of the system and metering data, have all been carried out during 2005 in accordance with the Electricity Market Rules. Since February 1999, OMEL has also been providing market participants with a monthly billing service for energy purchased and sold on the market. This service was adapted in 2003 to meet the requests of the special regime producers, with two ways of settlement and invoicing, either by aggregator or individual seller, when the seller acts exclusively as the owner’s representative in the presentation of bids or bilateral contract declarations.

The progress made in the reception and incorporation of electricity production metering data during 2005, which are available the day after the supply, has made possible that settlement incorporating the measurements of the producers are available monthly.

During 2005 analysis and debate have taken place at the European Union level on the development of the internal electricity and gas market. Reports from the European Commission (fifth report on progress in creating the internal market and green book on energy) placed special emphasis on the need to eliminate the existing obstacles in the fulfilment of the second electricity and gas directives, as well as in the encouragement of investment in transport interconnections between Member States.

In this context, the price increase of the primary energy resources, oil, gas and coal in international markets, has been reflected in wholesale electricity prices, which in 2005 were higher than in 2004. This evolution has focused attention to the level of competition in said markets, given the high level of concentration in electricity production in most Member States. These questions have also arisen in our country with the completion of the “white book”, the publication of Royal Decree-Law 5/2005, which include provisions for the adequacy to the Iberian Market, the publication of the Royal Decree-Law 3/2006 and the expected adaptations of our legal framework so as to comply with the Directives 2003/54/EC and 2003/55/EC of 26 June on common rules for the internal electricity and natural gas market, respectively.

In terms of market evolution, this year was characterised by the incorporation into the market of new production capacity, under the ordinary regime (4,800 MW) and the special regime (9,745 MW), as well as, by the progress in representation activities in the market of small producers and, since the second half of 2005, a return to the convergence of our price with the prices of the Central European markets. It should also be emphasised that the retail activity, which had been very dynamic until April 2005, suffered since this date a decline deriving from the return to the integral tariff of many consumers. This is the consequence of the integral tariff, not incorporating electricity market prices and thus, being more attractive than liberalised prices for consumers.

Regarding the regulatory framework evolution, mention should be done to the publication of Royal Decree Law 5/2005. Among its main contents are, in particular, provisions assigning to the system operator part of the responsibilities corresponding to the market operator relating to economic management of the electric system. It is indicated that the purpose is to adapt the electricity market to the International Agreement on the Iberian Market. In March 2006, OMEL sent to the Ministry of Industry, Tourism and Commerce a draft Market Operating Rules for the daily and intra-day market which, in line with Royal Decree 1454/2005, 2 December, which modifies certain provisions relating to the electricity sector (Royal Decree 2009/1997 among others) and developing said legal rules, enabling full application of the modifications made to the market and management of the same.

Royal Decree Law 5/2005 incorporates, as well, new rules of transparency and, in particular, the determination of relevant events in the formation of prices. When this Decree is fully developed, the information provided by the Company will be adapted to meet its requirements. The aforementioned proposed market operating rules contain a chapter specifically dedicated to public and confidential market information.

It is also worth mentioning the work underway for the implementation of Royal Decree 1747/2003, of December 19th 2003, which completes the regulatory framework of the Electricity Sector Law 54/1997 and establishes an electricity model in the Spanish islands and extra-peninsular systems that enables the development of activities in free competition. Under this legislation, consumers are, for the first time, allowed to freely choose their suppliers, in the same conditions as those enjoyed by consumers in the peninsular system. Orders from the Ministry of Industry, Tourism and Commerce (Order ITC/913/2006 and Order ITC/914/2006, both 30 March), will allow the full application of this new regime during 2006.
Order ITC/4112/2005 on international electricity exchanges establishes new regulations, especially for the interconnection with France, applicable in three successive phases, for energy exchanges and the management of congestions on the Spain-France interconnection. For the adoption of the first phase of this regime, on January 31st, OMEL sent to the Ministry of Industry, Tourism and Commerce a proposal for modification of the Market Operating Rules so as to fulfill the said Order.

Within the institutional area, it is important to note that the Market Participants' Committee has operated normally and effectively, publishing all relevant information about its functioning through OMEL's public website.

In 2005, 256,620 GWh of energy were traded on the market, for a value of 15,792 million euros, a rise of 6.4% in energy and 89.6% in economic value over the previous year.

The final weighted average hourly price was 6.049 c€/kWh in 2005, the highest in the last five years, with the following evolution.

In the 2005 financial year, prices in the European organised markets and known OTC transactions stood at around 50 Euros/MWh. During the first part of the year, our price stood above the prices of the main organised European markets, during this period low water levels and the unavailability of some nuclear power stations happen in the Spanish system, to move during second quarter up to now, progressively to a level located in the mid-low band of the Central-Europe prices.

Spain's convergence to the European prices is the result of the fact that our market is fully open to trading for external agents from other countries, together with the Spain's increasing electricity production capacity process since 1999, and to the continually more flexible response of the international exchanges to the price differences between the markets, always within the trading constraints consequence of the limitations of the physical interconnections between Spain and the rest of northern Europe through France.

In terms of the increase in production capacity in Spain, it is important to note the numerous new gas combined cycle plants existing in the Spanish system, which reached 13,249 MW at the end of 2005, contributing to 18% of the electricity demand coverage as an average during 2005. Forecasts indicate that at the end of 2006 of the total combined cycle plants in operation (19,800 MW), 33% will be owned by new entrants in the sector, with the subsequent positive effect that the entrance of new suppliers has on any market. On this point, it is worth noting that this policy of building combined cycle plants makes it necessary to coordinate gas infrastructures and gas supply, with the construction of new electricity infrastructures, so as to guarantee the availability of sufficient reserve of raw materials for these electricity production units. The price of natural gas, as in other European countries, or even to a greater extent due to the proportion of new combined cycle gas plants in the Spanish system, is currently a significant factor in the formation of electricity market prices.

With respect to the renewable energies, the effort undertaken this year to incorporate new facilities, particularly in wind power, has been outstanding. This type of energy, in addition to being environmentally friendly and therefore facilitating the compliance with the commitments made in terms of greenhouse gas emissions, also contributes substantially to the supply of electrical energy, providing coverage of 19% of the electricity demand as an average in 2005. The installed wind power currently is over 10,020 MW, more than 94% of this capacity participates in the organised market directly or through production aggregators.

At the same time, cogeneration power participating in the market amounts to 2,326 MW, representing 40% of the total.

350 producers under the special regime entered the market as market participants; most were cogeneration and wind facilities presenting bids either directly or through production aggregators, with an installed capacity of 11,762 MW. An additional 775 MW correspond to production facilities previously under the special regime, with installed capacities exceeding 50 MW, who therefore must be consider as producers under the ordinary regime according to legislation currently in force.
During 2005, some 87.6% of production has been traded through the organized market. This level of participation is different as of 3 March 2006 in relation to settlement, with the application of the provisions of Royal Decree-Law 3/2006 on the assimilation to bilateral contracts of energy purchased in the daily and intraday markets by the 5 main distributors. The incorporation of new generation and new producers into the market continues to stimulate competition and enables coverage of the requirements of the electricity demand, which showed a growth rate of 4.8% in the peninsular system in 2005.

From January 2003 onwards, all consumers have become qualified consumers. There are now over 88,800 consumers connected to high voltage and 23.3 million low voltage domestic and commercial consumers. All of them may now choose to acquire the electricity
under any of the forms of free trading through contracts with resellers, by going directly to the organised market or through bilateral contracts with producers. This opening up of the market places Spain within the group of 9 EU countries that have given all of their consumers free choice of supplier, going further than the situation envisaged in Directive 2003/54/EC, which establishes full deregulation in 2007 (DO 15/7/03).

This capacity to choose was used very differently during 2005. Until March, in which 48% of the market demand was acquired under the free contractual regime, almost 2.6 million consumers were outside the integral tariff. From this date, the market saw a continued decline in free price contracts by consumers, that currently stand at around 32% of total the energy demanded in the market.

With this, retail activities slowed down, although electricity trading continued existing. Both activities will be encouraged in the future, if as a result of consumer freedom to choose suppliers and improved conditions for the international trade in electricity, this sluggish phase is overcome and integral tariffs reflect price variations seen in free markets.

There are currently 390 companies authorised to participate on the market as sellers, 16 of which are external agents. The number of agents empowered to act as purchasers totals 94, and there are now 60 resellers, the majority of which are non incumbents.

In terms of international activities, mention must be made of OMEL’s participation in APEx, the world market operators’ association, and in its role as President of the aforementioned organisation, which held its tenth annual conference in Orlando. Once again, this annual meeting enabled the organisation’s members to exchange experiences and analyse relevant issues relating to different kind of transactions, the formation of prices under nodal or zonal regime, the relation between markets and investment in generation and the status of competition in organised markets.

Within the context of the European Union, special mention must also be made to OMEL’s participation in EuroPEX, the European Association of Market Operators, which, at the request of the European Commission, has developed a methodology of cooperation between European markets to solve international congestions based on implicit auction methods and coupling of different markets. This work, which lead to the presentation at the Florence Forum in September 2004 of a joint document drawn up by EuroPEX and the Association of Transmission System Operators, ETSO, has been the object of a new analysis within the Association, as well as in the regional mini-fora promoted by the Florence Forum and under the responsibility of national regulators. The analysis of the regional mini-fora has shown the superiority of implicit auction methods over the explicit auction ones, although the latter were considered by the regulators affected as easier to apply, mainly in systems bordering France.

Organised spot markets have now become widespread throughout the European Union and their efficiency and liquidity are also considered to be important. In this context, the European Union is showing greater interest in regional markets as a means of fostering the evolution towards a more integrated European market.

On October 1st 2004, a new international agreement was signed for the creation of the Iberian Electricity Market (Mibel), which sets out the general lines for the development of such market on an Iberian scale, based on a spot market managed by OMEL, on the basis of its current operation as a physical electricity market, and a futures market managed by the Portuguese Operador do Mercado Ibérico, OMIP.
The image contains two line graphs. The first graph is titled "Production in Ordinary Regime, Special Regime and Import" and shows data from 1998 to March 2006. The second graph is titled "Peninsular Demand, Export and Pumping Consumption" and also covers the same period. Both graphs display data in GWh and include various categories such as Ordinary Regime, Special Regime, and Import for production, and Demand, Pumping Consumption, and Export for consumption. The graphs are labeled with data points for specific years and regimes, showing trends and changes in energy production and consumption over the specified period.
The agreement envisages that in the future the market will be managed by a single Iberian Market Operator (OMI), the result of the merger of OMEL and OMIP. Article 22 of Royal Decree Law 5/2005, mentioned above establishes modifications to the electricity production market considered necessary for the establishment of the Iberian market. The Spanish-Portuguese Évora summit, which took place on November 19th and 20th 2005, set the starting date for the market as July 1st 2006.

The full operation of the organised market managed by OMEL since its establishment and the adaptation of our activities to the latest information technologies available, to the deregulation process in contracting, and to the relationship with agents within the scope of information and training, has continued to improve making it a useful and efficient instrument for the development of competitive trading.
2.1 European Union Legislation on the Internal Market in Electricity
2.2 Legal dispositions that regulate the electricity sector in Spain
2.3 Regulatory development
2.4 Market Activity Rules
2.5 Energy planning
2.6 Renewable Energies Plan 2005 – 2010
2.7 Energy saving and efficiency
2.8 The Kyoto Protocol
2.9 White Paper on reform of the regulatory framework for the generation of electricity
2.10 Functions of OMEL
electricity market regulatory framework
The legal provisions that affect the deregulation of the electricity sector and the creation and regulation of the electricity market, are based on Directive 96/92/EC concerning the common rules for the internal market in electricity and on the electricity protocol subscribed on November 11th 1996.

The Electricity Sector Act 54/1997 is the regulatory basis for the creation and development of the electricity market and the rules governing the transposition of the aforementioned community directive to the Spanish legal system. Other subsequent legislation complements, reinforces and expands some aspects of the previous legislation.

2.1 European Union Legislation on the Internal Market in Electricity


The approval of Directive 96/92/EC on the Internal Market in Electricity, which provided the basis for the Electricity Sector Act, established basic rights including freedom to install production plants, freedom to choose suppliers even through international trade (at least for industrial consumers - up to an annual consumption of 9 GWh/year in line with a staggered schedule), and freedom of access to transmission and distribution systems to make this free trade possible.

Like its fellow Member States, Spain has had to make a number of changes to its electricity regulations and introduce new guidelines for the business development of the industry.

After studying the experience of implementing the First Directive, the European Commission considered that this provision was insufficient to ensure full development of the internal electricity and gas market, and accordingly, on July 15th 2003, the Official Journal of the European Union published Directive 2003/54/EC discussed below.


With the entry into force of Directive 2003/54/EC, the most pressing issues arose out from the need to expand and broaden the electricity market. The most important aspects included the effective integration of small consumers in the deregulation scheme and the exercising of their right to change suppliers, the inadequacy of the interconnection infrastructures in relation to an increasingly free transaction culture, the problems generated by dominant position and its impact on the guarantee on free trade, and the need for coordination to ensure that supply security levels increase thus promoting trade.

The second Directive sets forth a timetable for opening up the market to the demand side, as a result of which all Member States should have given their consumers the freedom to choose their supplier (Article 21) by 2007.

In addition to security of supply and environmental protection, Article 3 of Directive 2003/54/EC concerning regulation of the public service and the protection of consumers also comprises requirements covering the provision of information to consumers and the protection of vulnerable customers. Consumer protection also extends to the safeguarding of their effective right to change suppliers, a right that Member States must guarantee by introducing the measures set out in Annex A, at least for domestic consumers.

It has been decided to regulate third-party access to transmission and distribution systems, with their operators prohibited from any involvement in other electricity-related activities, particularly the buying and selling of electricity.

With regard to energy generation the general procedure is one of authorisation (Article 6), and a tender process for the adjudication of new installations (Article 7) can only be instigated if the authorisation procedure does not lead to the incorporation of generating capacity.

In order to apply the second EC Directive on the Internal Market in Electricity and Directive 2003/55/EC concerning common rules for the Internal Market in Natural Gas, the European Commission’s Directorate General for Energy and Transport has published eight interpretative notes, one of which refers to the security of supply. In the event of market failures this interpretative note proposes the application of demand management measures and exceptional measures concerning energy generation. The latter can only be applied following notification to the Commission and proving of the market failure, i.e. the lack of sufficient generating capacity.

The other interpretative notes refer to the division in the management of distribution systems, practical measures for the opening up of markets to competition, public service obligations, exceptions to the system of third-party access to the system, security of the gas supply, and the role of regulators in adopting the new gas and electricity directives.

The second Directive on the internal market repealed the existing Directive on transits via large electricity networks, and was implemented at the same time as the approval of Regulation 1228/2003/EC concerning conditions of access to the network for cross-border exchanges in electricity, which sets out the most efficient cross-border tariffication and congestion management methods, allowing international transactions to occur in a similar way to national ones.

The fundamental principles concerning the freedom of transactions applicable to international trade are as follows:

Article 4 states that national network access charges must be transparent, take into account the need for network security, reflect the actual costs incurred and must be applied in a non-discriminatory way. Under no circumstances can these charges be distance-related, and they must be applied regardless of the countries of origin and destination of the electricity. Paragraph 2 of the same article refers to the fact that Member States can provide incentives for companies to locate in their territory or apply mechanisms to guarantee that network access charges applied to consumers are the same throughout their territory.

Article 5 requires that transmission system operators make public information concerning issues as important as their safety, operational and planning standards in addition to the transmission capacity of the interconnections including any available transmission capacity already reserved, and the scheme used in its calculation.

A second area of regulation concerns the general principles of congestion management included in Article 6, which sets out that congestion must be addressed with non-discriminatory, market-based solutions. In addition, the maximum capacity of the interconnections must be made available to market participants, and any allocated capacity not used must be reattributed to the market. The regulation thus enables the maximum number of viable transactions to be conducted and sets out to ensure that all available transmission capacity is used.

As a result of the work conducted by the Florence Forum, the European Commission has created seven mini-fora to apply this regulation in the most effective manner and, where appropriate, to amend the guidelines contained in its annex.

Other provisions

July 15th 2003 saw the publication of Decision 1229/2003/EC of the European Parliament and of the Council laying down guidelines for trans-European energy networks and repealing Decision 1254/96/EC. Its aim is to promote the interconnection, interoperability and development of trans-European energy networks to reach an interconnection capacity of 10% between Member States. This Decision will most likely be repealed in 2006 and replaced by the Decision of the European Parliament and Council, currently nearing completion of the relevant formalities, which establishes certain orientations in trans-European power networks, and which will supersede Decisions 96/391/EC and 1229/2003/EC, given the need to include the ten new Member States and particularly with a view to the supply to the European Union with gas from Russia and other Eastern European countries.

The regulatory order includes the following directives and decisions:


■ Acceleration of the opening timetable:
  - July 1st 2004, all non-domestic consumers will be able to choose their supplier.
  - July 1st 2007, all consumers will be able to choose their supplier.
  - A progress tracking and control procedure will be established for both the opening of the market and the application of public service conditions.

■ Further legal separation. The basic elements are as follows:
  - Of transmission system operators and distributors regarding activities that are not related to transmission and distribution.
  - Functional separation of TSO and the DSO with views to ensuring their independence in the vertically integrated company. This independence must be legal, functional, and include decision-making activities that are not related to transmission and distribution. This, however, does not imply the separation of property in vertically integrated companies.
  - In the case of distribution systems, systems that supply less than 100,000 customers or serve small, isolated systems may be exempt. This threshold is subject to review.
  - Unbundled accounts will be kept for transmission and distribution activities.

■ Clearly defined Public Service Obligations relating to supply and which do not affect European Union interests should be transparent, verifiable and non-discriminating.
  - High level of protection for end users.
  - Specifications that should at least include a supply contract.
  - Obligation to inform consumers about modifications to the conditions of the contract.
  - Receiving transparent information on prices, tariffs and general conditions that should be reasonable and transparent.
  - There will be no charge for changing suppliers.
  - Complaint procedures will be transparent, simple and hassle-free.
  - Domestic consumers and, at the discretion of member states that consider it opportune, small companies, will also enjoy universal service.

■ Demand management. Member states will apply the opportune measures to achieve the objectives of economic and social cohesion, the security of supply, and protection of the environment - which could include energy efficiency measures and demand management, in addition to measures to combat climatic change.

■ Electricity suppliers must indicate in their bills and promotional material, the contribution of each energy source to the company’s overall energy mix during the previous year, information sources on the impact of CO2 emissions and radioactive waste on the environment. If the electricity was subject to transaction in the markets, the cumulative figures issued by the body in question may be used. If it was obtained through import, the figures provided by the company during the previous year can be used.
REGULATION (EC) N° 1228/2003 REGARDING CONDITIONS OF SYSTEM ACCESS OR CROSS BORDER TRADE IN ELECTRICITY (EEE)

- Establishes reasonable regulations for cross border electricity trade, promoting competition in the internal market in electricity and taking into account the comparison of efficient system operators:
  - Involves the establishment of a compensation mechanism for cross border electricity flows.
  - Sets harmonised principles on cross border transmission tariffs.
  - Congestion will be resolved in a non-discriminating manner and in keeping with the logic of the market.
  - Sets harmonised principles for the allocation of available interconnection capacity between national transmission networks.

- The Commission, with the report of a Regulatory Committee, may adopt decisions on:
  - The compensation amounts that must be paid, that must be paid periodically or at the end of the period, following the directives established by the regulation itself. The flows will be effectively measured.
  - Directives relating to the compensation mechanism and its modification, including detailed information on the payment procedure.
  - The directives will provide appropriate and efficient incentives that are harmonized at the European Union level.
  - Directives relating to capacity allocation of available trade.
  - Guarantees that the congestion management mechanisms evolve in compatibility with the objectives of the internal market.
  - Establishment of common security and operations standards.

- It establishes the principles for information exchange and coordination between transmission system operators with the aim of guaranteeing system security in relation to congestion management.

- Establishes the conditions that must be met for establishing interconnectors, which, being exempt from fulfilling certain obligations of the Regulation and Directive (tolls, access, etc.), promote competition in electricity supply.
  - The exemptions affect the following issues, among others:
    - Allocation of derived income.
    - The right to charge levies that are different to the access tariffs.
    - Exoneration from the obligation of free system access, established in art. 20 of the Directive.
    - The effective operation of the internal market and the efficiency of the regulated system.

- Exemption is granted by the national regulatory authorities that may impose conditions and approve or set regulations, management mechanisms and allocation of capacity. The owner of the interconnector should be a private individual or an legal entity independent, at least in legal form, of the system operators of the systems where the interconnector will be built.

- Notification of exemption will be communicated without delay to the Commission, along with all the necessary information. The Commission may request the cancellation or modification of the decision to grant an exemption. If the regulating authority does not obey this request, the Commission will make a final decision, upon receiving the report of the Advisory Committee.

- Investment will only be granted if the exemption is obtained.
As regards the security of supply in the event of growing demand for energy, the European Commission has reached the conclusion that a regulatory framework ensuring a general policy of transparency and non-discrimination compatible with the nature of a single competitive market must be created to reach the following objectives:

Directives on the management and allocation of transmission capacity available in interconnections between national systems:
- Congestion management methods will be dealt with according to the laws of the market.
- System operators or the member state will establish non-discriminating and transparent regulations.
- Differences between bids to the market and bilateral contracts will be reduced to a minimum.

Long-term contracts:
- Priority capacity access rights cannot be allocated to contracts that infringe articles 81 and 82 of the Treaty.
- Existing long-term contracts will not have priority right at the time of renewal.

Principles for managing congestion:
- Will be resolved using methods that are not contemplated in the contracts of the different power exchanges.
- The advantages of combining market splitting and other market-based mechanisms will be studied as soon as possible.

Guidelines for explicit auctions:
- Action system should be defined in a way that all the available capacity will be offered to the market.
- Total interconnection capacity will be offered in several auctions with different time horizon, for example yearly, monthly, weekly, daily and intraday. In each of them will be offered a selected net capacity plus the capacity not assigned in previous auctions.
- The explicit auctions procedures will be defined in such way that will be possible to participate in all the daily sessions of the organized markets in the interested countries.
- All adopted auction procedures will permit send the market operators price signals depending of the electricity flow.
- To mitigate related problems with dominant positions from one or other operator, auction mechanisms, should provide the possibility to limit the capacity that can buy or use a market operator in an auction.

Directives


Decision of the Commission of November 11th 2003 establishing the European Energy Regulators Group for Electricity and Gas (text with EEA relevance), (OJ 14/11/03).
ANNEX TO REGULATION (EC) NO 1775/2005 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 28th SEPTEMBER 2005 ON CONDITIONS FOR ACCESS TO THE NATURAL GAS TRANSMISSION NETWORKS

- Principles underlying third party access services:
  - Transmission system operators shall develop information systems and electronic communication means to provide adequate data to network users and to simplify transactions.
  - Transmission system operators shall not separately charge network users for information requests and transactions associated with their transportation contracts.

- Principles underlying the capacity allocation mechanisms, congestion management procedures and their application in the event of contractual congestion:
  - Capacity allocation mechanisms and congestion management shall facilitate the development of competition and liquid trading of capacity, and shall be compatible with market mechanisms including spot markets and trading hubs.
  - These mechanisms and procedures shall provide appropriate economic signals for efficient and maximum use of technical capacity.
  - Transmission system operators shall make the unused capacity available on the primary market.
  - Transmission system operators shall make reasonable endeavours to offer at least parts of the unused capacity to the market as firm capacity.

- Definition of the technical information necessary for network users to gain effective access to the system, the definition of all relevant points for transparency requirements and the information to be published at all relevant points and the time schedule according to which this information shall be published:
  - Transmission system operators shall publish information about the capacity situation down to daily periods on the Internet on a regular/rolling basis in a user-friendly, standardised manner.
  - Transmission system operators shall publish historical maximum and minimum monthly capacity utilisation rates.
  - Transmission system operators shall provide user-friendly instruments for calculating tariffs for the service available.

- The development of a market for energy services, the supply of energy-saving programmes, and improved efficiency in the use of energy.

- Improvement in conditions of access to the gas transmission network.

- Encouragement of the necessary investment in trans-European energy networks.

With regard to this area the following communications and proposals have been issued:


- Communication from the Commission to the European Parliament and the Council on energy infrastructure and security of supply COM (2003)743 final, these communications proposals were formulated, that have become communitarian normative texts.


Investment decisions should respond to price signals. The nature of electricity may make prices volatile and security of supply involves the public interest. Accordingly, Member States should avoid a climate of insecurity.

Events affecting the markets in 2002 and 2003 have revealed problems that could lead to insufficient investment. The blackouts in the EU and the US serve to highlight the need for clear operational rules on transmission systems and the need for proper upgrading and maintenance of the system.

Objectives for Member States
- Safeguard the security of the electricity supply and ensure the proper functioning of the internal market and to ensure:
  - adequate level of generation capacity;
  - adequate balance between supply and demand;
  - appropriate level of interconnection between Member States for the development of the internal market.
- Define transparent, stable and non-discriminatory policies on security of electricity supply compatible with the requirements of a competitive internal market for electricity.

Member States shall ensure a high level of security of electricity supply by taking the necessary measures to facilitate a stable investment climate, and by defining the roles and responsibilities of competent authorities, including regulatory authorities where relevant and all relevant market actors. To this effect, Member States shall take account of:
- the need to ensure sufficient transmission and generation reserve capacity for stable operation
- the importance of encouraging the establishment of liquid wholesale markets
- the importance of reducing the long-term effects of the growth of electricity demand
- the importance of encouraging energy efficiency and the adoption of new technologies, in particular demand management technologies, renewable energy technologies and distributed generation
- the importance of removing administrative barriers to investments in infrastructure and generation capacity.

Member States shall ensure that any measures adopted are non-discriminatory and do not place an unreasonable burden on the market actors, including market entrants and companies with small market shares.

Member States shall ensure that the existing interconnectors are used as efficiently as possible.

With respect to operational network security, Member States:
- shall require transmission system operators to maintain an appropriate level of operational network security
- shall ensure that transmission system operators meet the quality of supply and network security performance objectives. These shall be objective, transparent and non-discriminatory and shall be published.
- shall not discriminate between cross-border contracts and national contracts.
- shall ensure that curtailment of supply in emergency situations shall be based on predefined criteria.

With regard to maintaining balance between supply and demand, Member States shall:
- encourage the establishment of a wholesale market framework that provides suitable price signals for generation and consumption.
- require transmission system operators to ensure that an appropriate level of generation reserve capacity is available for balancing purposes and/or to adopt equivalent market based measures.
- remove barriers that prevent the use of interruptible contracts.
- encourage the adoption of real-time demand management technologies, such as advanced metering systems.

In reference to network investment, the Member States:
- shall establish a regulatory framework that provides investment signals for both the transmission and distribution network operators to develop their networks.
- may allow for merchant investments in interconnection.

As regards reporting:
- Member States may require transmission system operators to provide information on investments related to the building of internal lines that materially affect the provision of cross-border interconnection.
- The Commission shall report to the Member States on the investments planned and their contribution to the objectives set out in Article 1 of the Directive.
2.2 Legal dispositions that regulate the electricity sector in Spain

Electricity Sector Act 54/1997, November 27th.

The Electricity Sector Act represented a deep change of the operation of the Spanish electricity system by declaring that electricity should be freely traded and establishing the organized electricity market as the economic basis for the deregulation of the sector. This resulted in the separation of the economic and technical management of the system, which were entrusted to a market and system operator.

The fundamental objective of the Electricity Law is stated in the preamble, as follows: “The basic objective of this Act is to state the regulation of the electricity sector, with the triple and traditional objective of assuring the supply, the quality of the said supply and guaranteeing it at the lowest possible cost, all of which are to be accomplished without neglecting the protection of the environment, an aspect which has acquired special importance in view of the characteristics of this industry”.

Further on in the text, the Law announces a progressive reduction of government involvement: “However, in contrast to previous regulations, this Law is founded on the conviction that guaranteeing the supply, quality and cost of electricity does not require more government intervention than that envisaged in the specific regulation itself. It is not considered necessary for the government to reserve for itself the exercise of any of the activities comprising the supply of electricity”.

“The unified operation of the domestic electricity system shall therefore cease to be a public service provided by the State through a State-owned corporation. The functions of the State shall be taken over by two private companies incorporated in accordance with mercantile legislation. These companies shall respectively be responsible for the economic and technical management of the system”.

The wording that follows explicitly states the deregulatory philosophy that shapes the reform and creation of the electric power market: “The deregulatory proposal of this Law is not limited to restricting the government’s role in the electricity sector. Changes are introduced in the regulation of this industry through the appropriate vertical segmentation of the different activities required for supplying electricity. In the generation of electric power, the right to free installation is recognised, as is its operation under the principle of free competition. The activity retribution is based on a wholesale market”.

The principles of deregulation underlying the sector’s reform and its new operational model are set out below:

- Freedom to establish new generating capacity.
- Supply from primary power sources for the production of electricity, negotiated on the basis of voluntary agreements.
- Establishment of a competitive electricity market.
- Progressive introduction of deregulation of supply contracts and of the market opening, a process that ended on 1 January 2003.
- Regulated access by third parties to the transportation and distribution networks, qualified consumers and distributors.
- Freedom to establish retailing companies.

- Compatibility of deregulation measures with the promotion of renewable energies and of installations using waste materials, or co-generation.
- Establishment of the transitory periods needed for producers and customers to make the transition to competition.
- Unbundling of deregulated activities (generating and retailing) and regulated activities.

Significant provisions of the Act in relation to creation and operation of the electricity market are as follows:

- Regulation of supply, establishing the basis for the operation of the system of electricity purchase and sale bids (article 11).
Principles for the economic regime to serve as the basis for the remuneration of the participants in the sector. The market remunerates deregulated activities, while regulated activities are remunerated on the basis of administrative regulation criteria (article 16).

Creation of the electricity production market, criteria for the dispatch of generating plants, which will be effected basically in accordance with economic precedence, declaration of the freedom of trading and the integration of the demand side into the organised market and the principles of communication of the bilateral contracts to the Market Operator (articles 23 and 24).

Establishment of the bases for the economic and technical management of the electricity system, to be entrusted to a Market and a System Operator, respectively (article 32).

Characteristics and functions of the Market Operator (article 33).

The Law pays particular attention to retailers and final consumers, especially with regard to freedom of access to supply, to the market and to transmission grids, as well as to supply quality (article 44 and following).

Law 34 of October 7th 1998 governing the hydrocarbons sector (Official State Gazette 08/10/98).

The Law repeals articles 6, 7 and 8 of Law 54/1997 governing the electricity sector, which regulated the Spanish Electricity System Commission, and replaced them with the eleventh, twelfth and thirteenth additional provisions regulating the new National Energy Commission, which was assigned the same powers and functions in the electricity sector. The transition between these two commissions is regulated in the tenth and eleventh transitory provisions.
Law 50 of 30 December 1998 implementing Tax, Administrative and Social Measures (Official State Gazette 31/12/98).

Article 106 concerning the modification of the Electricity Sector Law 54 of 27 November 1997 amends the wording of section 1 of article 33 regarding the market operator, particularly with reference to the ownership of the company incorporated to carry out the functions of market operator. Article 107 also modifies the Law by establishing the framework for the possible securitisation of a portion of the costs of transition to the competition. The thirteenth transitory provision restores the powers and functions of the National Electricity System Commission until such time as the new National Energy Commission is duly formed. The thirtieth additional provision establishes conditions designed to facilitate the unbundling of regulated and unregulated activities.

Royal Decree Law 6/1999 of 16 of April 1999 establishes urgent deregulation and competition measures (Official State Gazette 24/6/00).

This Royal Decree Law is part of an important and broad package of measures aimed at deregulating different sectors of the Spanish economy. The provisions governing the electricity sector are contained in Chapter III of Heading I:

- Treatment, for specific production installations under the special regime entitled to incentives, similar to the production units under the ordinary regime in terms of their participation in the market for unloading their electricity supply surpluses (those with an installed power of more than 50 MW, availing themselves of Royal Decree 2366/1994).
- Full deregulation of electricity supply starting from 1 January 2003. To adapt the structure and prices of the access tariffs to the new deregulation framework, these were modified by Royal Decree 1164/2001, as will be detailed subsequently.
- Simplification of the requirements governing the exercise of the condition of qualified consumer.
- Elimination of the high-voltage tariff initially envisaged to commence on 1st January 2007, but postponed until 1st January 2010 by Law 24/2005, of 18th November.
- Enable retailers to purchase energy from producers under the special regime and from external agents, and to trade through the organised market, enabling this energy to be incorporated through bids in the aforementioned market, or sold directly to qualified consumers. Starting from 2003, retailers may also purchase electricity from any producer.
- Reduction of the average price for guaranteed power charged by producers and paid by consumers.

Law 55 of 29 December 1999 establishing tax, administrative and social measures (Official State Gazette 31/12/99).

Article 71 of this Law modifies certain provisions of Law 34/1998 relating to the Spanish Energy Commission. Also, additional provision 27 of the Law establishes certain conditions for public share holdings in the electricity sector.

6/1999 also establishes an average reduction of 1.5% in tariffs in addition to the 2.5% reduction provided for in Royal Decree 2821/1998. The effect of this reduction is particularly significant for domestic consumers.

Law 55 of 29 December 1999 establishing tax, administrative and social measures (Official State Gazette 31/12/99).

Article 71 of this Law modifies certain provisions of Law 34/1998 relating to the Spanish Energy Commission. Also, additional provision 27 of the Law establishes certain conditions for public share holdings in the electricity sector.


This Royal Decree Law establishes a series of measures in various sectors of the economy with the objective of achieving a positive impact on prices and the conditions of competition within the domestic economy. Insofar as they refer to the electricity sector, the measures implemented in this Royal Decree Law further deregulation by lowering the threshold to acquire the condition of qualified consumer. Accordingly, as of 1 July 2000, all consumers supplied over networks with a nominal voltage exceeding 1,000 volts will be considered qualified consumers. Royal Decree Law 6/1999 also establishes an average reduction of 1.5% in tariffs in addition to the 2.5% reduction provided for in Royal Decree 2821/1998. The effect of this reduction is particularly significant for domestic consumers.

As far as the electricity sector is concerned this act removes the possibility of securitization of the stranded costs included in the 50/1998 act. Electricity imports through other member countries of the EU are excluded and, in case that a production unit is sold, it states that the corresponding transmission rights of the stranded costs, be also transferred, maintaining the 6 ptas/kWh in such transmission.


In order to promote the development of renewable energies, article 13 of this law establishes specific modifications to article 35 of Corporate Income Tax Law 43, of 27 December 1995, extending the eligibility for tax relief on investments made to acquire new equipment for exploiting these energies to all entities, thus eliminating the previous restriction on small companies. Moreover, in order to promote the use of solar energy for own consumption, article fourteen amends article 75 of Local Tax Administration Law 30 of 28 December 1998, establishing a Property Tax rebate for installations of systems used for the thermal and electric exploitation of solar energy production for consumption by home owners or tenants.

Article twenty refers to forward contracting of electric energy. It establishes modifications to articles 16, 23, 24 and 33 of Electricity Sector Law 54/1997, eliminates article 26 of Royal Decree Law 6/2000, of 23 June on Urgent Measures for Intensifying Competition in Goods and Services Markets, and introduces an additional provision - provision seventeen - to Law 54/1997, authorising the government to establish, by regulatory means, market mechanisms to promote forward contracting of electric power, and which would consist of a primary emission of a certain amount of electric power equivalent to constant power during a period not longer than one calendar year.

Law 62 of 30 December 2003, governing administrative tax and social order measures (Official State Gazette 31/12/03).

Article 9.1 of this Law introduces the following modifications to Electricity Sector Law 54/1997:

■ Article 9.1.b is modified after the incorporation of a second paragraph that reads as follows:

“Self-producers of electric power are all individuals or legal entities that produce electricity fundamentally for their own use. Self-producers are considered to produce electricity for their own use it when such producer consumes at least 30% of the total electric power that it produces, if its installed power is less than 25 MW and at least 50% of its installed power is equal to or greater than 25 MW.

In the case of self-producers of electric power using cogeneration facilities with high levels of energy efficiency as a method of producing electricity, the percentage of self-consumption referred to in the previous paragraph shall be 10%, regardless of their installed power capacity”.

■ Article 33.1 is modified by reducing to 5% the maximum direct or indirect participation of individuals or legal entities in the capital stock of the market operator (OMEL).

■ The paragraph drafted in accordance with article 20.5 of Law 50, of 30 December 1998, is eliminated from article 33.1 of Electricity Sector Law 54/1997. This paragraph reads as follows: “In the event of the capital increase scenarios referred to in the previous paragraph, share subscriptions shall be executed at the higher of the following two values: five thousand pesetas or the theoretical value resulting from the company’s last approved balance sheets”.

■ It is hereby established, through the introduction of additional provisions sixteen and seventeen, that late payment interest shall accrue in the event of default in payment of quotas by electricity system agents with specific destinations, or due to default in payments of settlements by the aforementioned agents.

Transitory provision eighteen, relating to the market operator, is hereby added to Electricity Sector Law 54/1997, with the following text:

“Adaptation of the market operator.

1. Until 30 June 2006, the maximum participation limit of 5 per cent of the capital stock, established in section 1 of article 33 of this Law, shall not apply to participations corresponding to other entities managing the electricity markets and subject to international commitments with Spain, and which may participate in up to 10 per cent of the capital stock. Until the aforementioned date, 40 per cent of this participation shall not compute for tax purposes in the case of individuals engaging in activities in the electricity sector established in section 1 of Article 33 of this Law.

Moreover, until the abovementioned date, and after authorisation from the National Energy Commission, the market operator may participate in up to 10 per cent of the capital stock of other entities managing the electricity markets subject to international commitments with Spain.
2. Other shareholders with stakes in the market operator who, as at 31 December 2003, exceeded the limits governing the maximum participation of 5 per cent of the capital stock established in section 1 of Article 33 of this Law, must adjust their stakeholdings to the aforementioned limit before 30 June 2004.

3. As from 30 June 2004, the company "Operador del Mercado Ibérico de Energía-Polo español Sociedad Anónima" shall be entrusted with the execution of the functions entrusted to the market operator in this Law.

Royal Decree Act 5/2005 of March 11th concerning urgent reforms promoting productivity and the improvement of public trading (Official State Gazette 14/03/05).

This Royal Decree Act forms part of a broad raft of measures designed to make the Spanish economy more dynamic, productive and competitive, and focuses on five different areas: antitrust, product and services markets, factors of production markets, Research & Development & Innovation, and the quality and effectiveness of public finance, the regulatory framework and transparency.

The Royal Decree Act concerning urgent reforms to promote productivity contains measures relating to the electricity sector can be summarised as follows:

**Definition of a main operator**

The concept of Main Operator is modified in line with restrictions on cross-shareholding. Main Operators are those operators who hold the five largest shares of the energy market or industry (within the Iberian Electricity Market) and the telecommunications sector. The National Energy Commission and the Telecommunications Market Commission are responsible for the online publication of the list of main operators in their respective areas.

**Definition of a dominant operator**

The concept of Dominant Operators applies to the energy sector only. These are operators who hold a market share in excess of 10%. The National Energy Commission is responsible for the online publication of the list of dominant operators.

**Transparency of information in the electricity production market.**

The measures incorporate a series of obligations governing the provision of information on factors impacting on price formation in the market, the aim being to make this information more transparent. These include:

- Information impacting on price formation in the organised markets encompassed within the Iberian Electricity Market must be communicated.
- The system operator must publish forecasts for electricity demand, the net transmission capacity in the interconnections, and the situation with regard to dams used to produce hydroelectricity.
- The operator of the daily market must publish the results of the matching procedures, and the system operator the results of the operational processes within its competence.
- The Directorate General for Energy and Mining Policy shall specify the factors and information considered relevant to price formation in the market and the requirement to communicate them when they occur.

The provision of extensive and consistent information on price formation based on objective classification criteria and shared by all actors will prevent distortions of competition and ensure the transparency of the price formation process.

**Rationalisation of costs in the electricity sector.**

The distribution of electricity is seen as constituting a natural monopoly and, as a result, certain articles relating to the distribution of electricity in Act 54/1997 have been amended to prevent cascade distribution and to bring about smaller average distribution costs for the system as a whole.

In addition, to promote forward trading it is established that primary energy output shall be provided by electricity producers considered as dominant operators in the electricity sector.

**Creation of the Iberian Electricity Market (Mibel)**

A series of measures have been approved with a view to starting up the Iberian Electricity Market. These include:

- The recognition of permits issued by both countries and the creation of a single registry of entities and generating plants authorised to operate in the Iberian Electricity Market. The
objective is to enable actors to operate directly in the markets irrespective of which country has awarded them their permit, thereby avoiding the duplication of administrative procedures. At the same time, all levels of government and all authorities are given access to comprehensive information on actors and installations.

- **Regulatory control of representatives.** Representatives shall be regulated according to the terms set out in the Iberian Electricity Market Agreement.

- **Bilateral trading.** As a result of the new trading opportunities opened up by the Iberian Electricity Market, in the case of bilateral contracts and for each of the energy programming periods the System Operator must be notified of the specific generating and consumption units covered by a bilateral contract. The System Operator must have access to this information before technical restrictions can be dealt with.

- **Payment for technical management processes.** It is thus established that it is the System Operator who must settle payments corresponding to guaranteed power, the settlement of deviations and additional services, in accordance with all the energy programmed in each hourly period for each generating unit or unit of energy consumption, and with the actual amount of energy generated or consumed.

- **Expansion of trading and operating opportunities open to market actors.** The entry into force of the Iberian Electricity Market means that all actors, including distributors, must be given the opportunity to buy and sell on the daily market, or the domestic market or to conduct intra-Community or international trade in electricity by purchasing or, where appropriate, selling energy. All actors must also be allowed to engage in all kinds of contracts, including bilateral ones.

In this respect, distributors will be permitted to enter into bilateral contracts with physical delivery, although they must go to the market to purchase the energy needed by their customers at regulated rates, not covered by the aforementioned bilateral contracts.

- **As regards the international electricity trade,** it is established that operators deemed to be dominant in the electricity industry cannot purchase energy in other Community countries outside the Iberian Electricity Market or in third countries.

- **Modification of the maximum shareholding limits in Red Eléctrica de España.**

Entities operating in the electricity industry can hold only a 1% stake in Red Eléctrica de España, except the state-owned holding company, Sociedad Estatal de Participaciones Industriales, which must hold a stake in the company of no less than 10%. The total amount of direct and indirect shares held by entities operating in the electricity industry must not exceed 40%.

The shares must be adjusted before 1 January 2008.
Fund for financing activities envisaged in the General Radioactive Waste Plan

The sums set aside for funding the management of radioactive waste and spent fuel generated by nuclear plants, and their dismantling and closure shall be provided from 31 March 2005 onwards by the owners of the nuclear plants at the time they were operational.

Amendment of Act 1/2005 of March 9th regulating the greenhouse gas emissions allowance trading scheme.

The provisions of Article 1 of the European Community Decision of 27 December concerning the Spanish National Greenhouse Gas Emissions Allowance Allocation Plan have been fulfilled. The aim is to increase the amount of allowances available, specify the allocations for those installations that have not received any consignments, and prevent competition-related problems in the Community market, in view of the fact that the later these allocations are publicised the less opportunities they would have to plan their investments and gain access to competitive prices.

Payment of “Stranded or CTC Costs”

Exceptionally, in 2004 payment by the National Energy Commission of “stranded” or “CTC costs” shall not be conducted in the final provisional payment but as part of the annual payment. In any case, this shall not be effected until January 1st 2006.

Law 24/2005, of 18th November, on reforms to promote productivity (Official State Gazette 19/11/2005)

This Law regulates a series of aspects essentially comprised of liberalising reforms in the goods and services markets which endeavour, through effective competition, to stimulate increased production, along the same lines as Royal Decree-Law 5/2005 discussed above.

As a horizontal-type measure, it empowers the Government to update the remuneration regime established for the National Energy Commission. This measure will facilitate the adaptation of Commission revenues to its duly justified financial needs.

As regards the Electricity Sector, with a view to encouraging fulfilment of the Plan for the Promotion of Renewable Energies in Spain for 2000 – 2010, the measures adopted address encouragement in the development of biomass, allowing combustion of this raw material in facilities operating under the ordinary regime. Likewise, and exceptionally, biomass may exceed the general limits envisaged in Law 54/1997 of 27th November, on the Electricity Sector, for the production of electricity under the special regime.

The use of biofuels is also endorsed. To this effect, the Government is commissioned to draw up a plan of urgent measures to meet the objective for the year 2010 established in Directive 2003/30/EC related to the use of biofuels (5.75 percent of the market share).

As regards the tariff system, the existence of integral high-voltage electricity supply tariffs will be maintained until 1st January 2010, when they will be withdrawn.

In reference to environmental protection, and in line with the provisions of section 6 of article 3 of Directive 2003/54/EC concerning the common rules for the internal market in electricity, and which establishes that electric bills must show the power source, the Government is commissioned to oversee the inclusion of systematic information in each bill, in a uniform format used by all the companies, with sections that enable understanding of the environmental impact related to each such source, limiting the percentages of unknown sources and ensuring the rigorous accuracy of this data.

With a view to strengthening the stability and coherency of the system, a new state-owned company is established to replace the current Empresa Nacional de Residuos Radioactivos, S.A., and is equipped with sufficient resources to finance the activities of the General Radioactive Waste Plan.

Moreover, reforms are introduced to upgrade the regulatory framework for the generation of nuclear power. In this respect, it is clearly established that the instructions set out by the Nuclear Safety Council are binding; certain articles of Law 25/1964, of 29th April, on Nuclear Energy, are reworded and a market mechanism put into place to evaluate the locations of the nuclear energy plants currently under moratorium.

Royal Decree-Law 3/2006, of 24th February, which modifies the matching mechanism for electricity sale and purchase bids submitted simultaneously to the daily and intraday markets by electricity sector players belonging to the same corporate group (Official State Gazette 28/02/2006).

This Royal Decree-Law basically contains two provisions addressed at reducing the tariff deficit which will eventually arise in 2006.

The first of these refers to matching bids on the daily and intraday markets. The Royal Decree-Law establishes that, until the implementation of rules governing distributors trading electricity through bilateral contracts with physical delivery, once the matching has been completed, the market operator will relate those bids issued and matched by players belonging to the same corporate group that coincide in sale and purchase quantities in the same hourly
programme to physical bilateral contracts, thereby determining the
group's net position after the matching process, which will be
alternatively seller or purchaser.

To the effects of settlement of the activities regulated by the National
Energy Commission, the Government will determine the definitive
price at which such acquisitions are recognised, based on electricity
market prices. In 2006, the provisional price will be the average cost
forecast in the 2006 tariff for power generated under the ordinary
regime in the peninsula, including the cost of adjustment and
guaranteed power services, established at 42.35 €/MWh.

The second provision refers to the free emission rights granted to
companies through the National Emission Allotment Plan. These
rights, assessed at market prices for the corresponding period, will be
deducted from the remuneration for the production of electricity
referred to in article 16.1 a) of Law 54/1997, on the Electricity Sector.

Royal Decree-Law 4/2006, of 24th February, which modifies the
duties of the National Energy Commission.

This Royal Decree-Law establishes that the companies issuing public
acquisition bids on the energy markets are required to obtain
authorisation from the National Energy Commission prior to
authorisation of the bid, in accordance with securities market regulations.

In addition, it alters duty 14 of the CNE, contained in Additional
Provision Eleven, Three 1, of the Hydrocarbons Sector Law, extending
the requirement for authorisation from the National Energy
Commission to include the acquisition of holdings by companies
engaged in regulated activities or activities subject to government
administration, such as nuclear power plants, coal-powered thermal
power stations, plants of particular relevance in the Coal Mining Plan,
or which are undertaken in the island or peninsular systems, as well as
the storage of natural gas or its transport through international
pipelines leading to a final destination in Spain.

Authorisation will likewise be required when any party intends to
acquire holdings in a company engaged in any of the activities
mentioned above, and when the assets required to undertake the
aforementioned activities are acquired directly.

International Agreement on the constitution of an Iberian Electricity
Market between the Kingdom of Spain and the Republic of Portugal
(OSG 1/6/2004).

The Agreement creating the Iberian Electricity Market - a single
market for both countries - was signed on January 20th 2004. Its
introduction was scheduled for April 22nd 2004.

However, a few months after the provisional application of the
aforementioned Agreement, the Governments of both countries
realised that the necessary reforms could not be implemented
within the scheduled period, stressing the need for the Iberian
Electricity Market to be compatible with the provisions set out in
the second Community Directive concerning common rules for
the internal market in electricity. As a consequence, Spain and
Portugal decided to sign a new Agreement regulating the
aforementioned aspects. The new Agreement was signed on
October 1st 2004.

The Agreement follows the same lines as those adopted to date
between the two countries and takes into account both Community
regulations and the need to set a realistic deadline June 30th 2005 for
the Iberian Electricity Market to begin operating, once the necessary
legislative issues have been dealt with in both countries.

The Agreement encompasses a series of specific provisions that relate
to the creation of an Iberian Market Operator (IMO), the operation of
the system, the types of electricity trading markets and the schemes
governing them, in addition to the economic management of the
interconnection between Spain and Portugal and tariffs.

It also refers to the regulation, consultation, supervision and
management mechanisms of the Iberian Electricity Market. A
Regulatory Council will be set up and steps shall be taken to create
the Market Agents' Committee. The Agreement also provides for
the creation of the Mibel Technical and Economic Management
Committee that will be responsible for overseeing the
communication and flow of necessary information between the
various operators.

The administrative procedures applying to the issuing of permits, the
registration of actors operating in the market, and to the guarantee of
supply based on the principle of solidarity are also regulated. The
possible breaches incurred by entities are also considered and the
applicable penalties defined.

The Convention establishes an effective term of two years from
the date of reception of the last notification indicating that the
internal legal requirements in both countries have been duly
fulfilled. Such two-year period will be automatically renewed,
except where otherwise communicated by either of the Parties in
writing or by diplomatic channels, with a minimum prior notice of
six months.
2.3 Regulatory development

The normative development of the aforementioned legal dispositions are outlined as the following.

2.3.1. The Electricity Market

Royal Decree 2019 of 26 December 1997, which organises and regulates the electricity production market (Official State Gazette 27/12/97).

The aim of this piece of secondary legislation is to develop the contents of Law 54/1997, with respect to those aspects that refer to the production market. Royal Decree 2019/97 therefore constitutes the nucleus of the regulations governing the production market, as complemented by subsequent provisions with a more limited scope.

Firstly, the Decree establishes the basic structure for the electricity market, setting out five internal units: forward markets, the daily market, the intraday market, deregulated markets and system adjustment services.

The Royal Decree then provides a classification of the market participants and sets out the requirements for them to carry out activities in any of the segments forming the production market.

After describing the way in which bids are presented and matched and results communicated, it sets out the general principles for the resolution of technical constraints, the provision of ancillary services, the intraday market and its final programming. All these matters are subject to subsequent detailed development.

It mentions bilateral trading as an unorganised part of the market, detailing the existing modes and establishing the need for communicating such contracts to the System Operator.

A chapter is devoted to the settlement of transactions carried out in the electricity production market. This function is entrusted to the Market Operator.

Article 27 completes and extends the set of functions assigned to the Market Operator by the Electricity Sector Law. These functions are described further on in this document, duly ordered and grouped.

The Royal Decree also regulates the Market Participants Committee, the System Operator and, in particular, the basis for international exchanges with European Union member States and third countries.

The First Additional Provision of the Royal Decree entrusts the functions of Market Operator to Compañía Operadora del Mercado Español de Electricidad.

The Transitory Provisions establish certain temporary provisions relating to Administrative Registers, the intraday market, international exchanges already in effect prior to the enactment of the Electricity Sector Law and other matters.

The Second Final Provision establishes the basic nature of the Royal Decree in accordance with terms 13 and 25 of article 149.1 of the Spanish Constitution.

This Royal Decree was adapted to the provisions of Royal Decree-Law 5/2005 of 11th March and Royal Decree 2351/2004 of 23rd December, in Royal Decree 1454/2005 of 2nd December, the basic aspects of which are discussed below.

Royal Decree 1747 of 19 December 2003, regulating the island and extrapeninsular electricity systems (Official State Gazette 29/12/03).

This Royal Decree completes the reglamentary implementation of the Electricity Sector Law and establishes an electricity model in the island and extrapeninsular systems (SEIES) enabling the development of activities in conditions of free competition, and for the first time making it truly viable for consumers to freely choose their supplier in conditions equivalent to those enjoyed by consumers on the peninsula.

The Royal Decree contains integral regulations governing all electric power supply activities, encompassing electricity generation, transport, distribution and marketing, as well as the economic management corresponding to the market operator (OMEL) and technical management corresponding to the system operator for each of the electric systems in these territories, establishing existing specificities prompted by the isolation of the territories concerned; all aspects that are the same as those envisaged in the peninsular system are governed by the general regulations.

In terms of generation, a variable costs dispatch/clearance system is created. Under this system, power plants will start operating on an economic merit order basis; this differs significantly from the peninsular market system.

In order to promote installations with new generation capacity, a system is introduced for approving the new capacity to be installed based on the remuneration parameters of the activity, thus ensuring a acceptable return on the investments.
In terms of marketing activities, the same requirements are established as those applicable in the peninsular system, with the exception of the guarantee accrediting economic capacity for resellers who decide to participate exclusively in the SEIES (Island and Extrapeninsular Electricity Systems); this is fixed in a smaller amount (120,000 euros) given the territorial scope in which this activity is carried out.

Purchases by resellers, qualified consumers accessing the office directly and distributors are settled by the market operator. Consequently, the treatment given to these agents can therefore be similar to the treatment given to agents performing their activities in the peninsular system.

Order ITC 913/2006 of 30th March, approving the method for calculating the cost of each of the fuels used and the procedure for sending and paying for energy in insular and non peninsular electric systems (BOE 31/03/06)

This order develops the content of Royal Decree 1747/2003, in the following points:

- Method for calculating the cost of each of the fuels used in insular and non peninsular electric systems
- The procedure for sending and paying for energy for these systems
- Information that the system operator must regularly make available to the market operator so it can carry out the tasks pursuant to Royal Decree 1747/2003, of 19th December, namely:
  a. Receiving from the system operator the hourly cost, availability and energy generated by each group, as well as the hourly demand of distributors and resellers, consumers as applicable.
  b. The determination and publication of the final hourly generation price in each SEIE for energy production and notification to all agents involved.
  c. The settlement and notification of payments and charges that must be made by virtue of the final energy price resulting from each system, the effective operation of production units, the availability of production units in each scheduling period and any other costs determined pursuant to regulations.

- d. Publicly reporting on the development of final generation prices in each SEIE with the frequency determined.
- e. Managing the guarantees of the agents intervening in each SEIE through buying and selling energy in line with regulations.
- f. Carrying out any other functions pursuant to regulations on these systems.

- Information that the system operator and market operator must make available to the National Electric System Commission for additional payments made by the same, pursuant to article 18 of Royal Decree 1747/2003, of 19th December.
- System of charges and payments necessary for the materialisation of charges and payments resulting from the energy payment procedure.

Order ITC/914/2006, of 30th March, establishing the method for calculating power guarantee repayments for generating installations under the ordinary regime of insular and non peninsular electric systems (BOE 31/03/06).

The Order develops the contents of Royal Decree 1747/2003, relating to the calculation of repayment for power guarantee, setting the initial value for 2001 for installations under the ordinary regime at
31st December 2001 and the calculation method applicable to installations commencing operation or which will have commenced operation at 1st January 2002.

Royal Decree 2351/2004 of December 23rd amending the procedure resolving technical constraints and other regulatory standards of the electricity market (OSG 24/12/04).

The new procedure comprises the following:

Submission of specific bids: The first objective of the new procedure is to enable producers to participate in the technical constraints solution process to submit specific bids to the system operator for this service. Bids must be submitted in two separate phases: the technical constraints phase and the subsequent rebalance between supply and demand phase.

As part of the first phase it is also established that the system operator shall specify modifications to the basic daily operating programme that are absolutely essential in complying with the safety criteria set out in the system operating procedures.

Allocation of excess costs: Another objective is to allocate excess costs generated by the resolution of restrictions on all demand units in accordance with their final metered consumption, as is the case with other fixed system operating costs, instead of allocating them only to the demand units participating in the daily market.

Finally, the system operator is the responsible of the technical restrictions settlement.

Furthermore, certain amendments are made to Royal Decree 1955/2000 of December 1st regulating transmission, distribution, marketing and supply activities and authorisation procedures for electricity plants, and Royal Decree 436/2004 of March 12th establishing the methodology for updating and systematising the legal and financial system of the production of electricity under the special regime, summarising the provisions of both Royal Decrees.

Royal Decree 1454/2005 of 2nd December, which amends certain provisions related to the electricity sector (Official State Gazette of 23/12/2005).

This Royal Decree developed the regulations of the Royal Decree-Law of 2005 on Urgent Reform Measures to Promote Productivity in the Electricity Sector and fulfils sections 1 through 6 of order thirty-two of the Resolution of the Council of Ministers dated 25th February 2005, which sets out various orders addressed at implementing measures to promote productivity.

The Decree delves further into the deregulation of the sector and contains, amongst other measures, a reorganisation of the structure of the electricity market, rationalisation in the development of distribution facilities, the harmonisation of trading conditions in the free and regulated markets, the requirement for guarantees to formalise authorisation for generation facilities, the rationalisation of incentives for cogeneration facilities with installed power of over 50MW, and consumer protection measures.

Electricity Market


The text of the regulations defines the structure of the electricity market, including the forward markets, the daily market, the intraday market, the deregulated markets and system adjustment services, understood as the resolution of system technical constraints, ancillary services and the management of deviations. Accordingly, the operation of the daily and intraday markets, bilateral trading systems and system adjustment services are adapted to this structure.

The primary goals of the new structure are to fully recognize the forward markets and facilitate the application of the adjustments necessary to accommodate the different markets and optimize their operation. In this respect, the system adjustment services are adapted to the new operational market scheme, assigning its management to the system operator.

The new regulations extend the possibility of market participation to all parties, broadening the scope of action of representatives, which to date only operated under the special regime, and which can now function within the ordinary regime. Moreover, they establish the requirements that must be met to be able to undertake sale and purchase transactions on the different markets.

As regards distributors, and given that such activity is regulated, the Royal Decree sets out the provision that in order to be able to trade power in other trading systems, the conditions of distributor participation must first be authorised by Order of the Ministry of Industry, Tourism and Commerce.
Furthermore, the management and settlement duties entrusted to the market operator (daily and intraday markets) and the system operator (adjustment services and system technical management) are re-assigned. In addition, the system operator is empowered to make the settlements corresponding to capacity payment.

The retribution for capacity payment is extended to the generation units adhering to bilateral contracts, given that regardless of whether their production is linked to a physical bilateral contract or sold on the organised market, these units are effectively providing power capacity for the Spanish grid. This measure places the various trading systems under the same operating conditions and remedies the discrimination that penalised the bilateral contract system, which now operates in equal conditions to market trading.

A transition period of five months is established to enable all the system participants to adapt to the new requirements, both with regards to the operation of the daily and intraday production market and to the system operational procedures.

Rationalisation in the development of distribution facilities

The new rules amend Royal Decree 1955/2000 with a view to avoiding the emergence of new distributors connected to already existing distribution networks, but to instead strengthen the obligation of the distributor already operating in the area to extend such networks.

Harmonisation of trading conditions on the deregulated and regulated markets

The harmonisation of conditions between the deregulated and regulated markets proposed in these regulations constitutes one of the primary purposes of the measures, and its effect is to increase the number of consumers who buy their energy on the deregulated market.

The specific measures refer to the installation of power control equipment, the unification of processing reactive power consumption and capacity payment by consumers both on the deregulated and regulated markets.

■ The measures eliminate the situation where consumers may choose between various tariffs for the same consumption characteristics, thereby ensuring that each type of consumer covers the system costs.

■ Distributors are obligated to provide more information with a view to enabling resellers to make their customers better offers. Furthermore, distributors are obliged to facilitate telematic access to this information by resellers, which will have two positive effects: it will decrease the cost of the transactions and eliminate errors in requests for access to the deregulated market or for reseller change.

■ Moreover, the measures aim to make all distributors standarize their contracted low-voltage power uniformly, based on a table set by the General Directorate of Energy and Mining Policy, thus ensuring that consumers are not forced to pay more for voltage standardisation.

The obligation to present guarantees when formalising authorisations for generation facilities.

The deposit of a guarantee reduces uncertainty about the future existence of a new production unit at a particular network hub. This allows for better planning in the transmission and distribution networks and a more accurate estimation of coverage of demand.

Rationalisation of the incentive for cogeneration facilities with installed power of over 50 MW.

The establishment of incentives and premiums for high-efficiency production units generally guarantees the owners of such facilities reasonable remuneration for their investments.

The size of these facilities is taken into consideration to determine the amount of such incentives and premiums. Generally speaking, this production regime is given individual incentives up to 50 MW in power under what is known as the special regime. However, certain high-efficiency production units with more power, although not encompassed in this regime, may also require some type of incentives or premiums to make investments feasible.

Consumer protection measures.

With the aim of fulfilling the EU Directive of 26th June 2003, the measures envisage a series of requirements regarding the information to be furnished to consumers with respect to the source of the electricity and its impact on the environment, while also regulating the minimum requirements to be met by contracts entered into with domestic customers, in keeping with the provisions set out in Annex A of the aforesaid Directive.
Order of 29 December 1997 developing certain aspects of Royal Decree 2019 of 26 December 1997 by which the electricity production market is organised and regulated (Official State Gazette 31/12/97).

The Royal Decree 2019/1997 developed the Electricity Sector Act with regard to certain matters relating to the formation of the market. The above-mentioned Ministerial Order subsequently establishes specific regulations for:

- Bid presentation.
- Remuneration and allocation of the capacity payment.
- Treatment for bid matching and settlement purposes, of international agreements entered into by REE before the Electricity Sector Law entered into force Law.

Order of 17 December 1998 amending the Order of 29 December 1997, which develops certain aspects of Royal Decree 2019 of 26 December 1997, which organises and regulates the electricity production market (Official State Gazette 28/12/98).

This Order modifies the Order of 29 December 1997 afore mentioned, which develops certain aspects of Royal Decree 2019/1997, by reducing the capacity payment for qualified consumers and simplifying its application.

Order 14 July 1998, which establishes the legal regime applicable to external agents in order to enable intra-EU and international power exchanges (Official State Gazette 23/07/98).

Order 14 July 1998, which establishes the legal regime applicable to external agents, their registration in the Register and the following matters:

- Form of participation in the electricity production market.
- Remuneration of sales and payment of purchases, including tolls.
- Resolution of technical constraints in the Spanish electricity system

The regulation of physical bilateral contracts and the procedure for resolution of congestion at the international tie-ins contained in this Order were repealed by Order ITC/4112/2005, of 30th December, discussed below, and given a new focus.

Order ITC/4112/2005, of 30th December, which establishes the regime applicable for trans-European and international exchanges of electricity (Official State Gazette of 31/12/2005).

The purpose of this Order is to establish the regime applicable to trans-European and international exchanges of electricity through Spanish tie-ins with France, Morocco and Portugal.

In the case of the interconnector between Spain and France, different allocation mechanisms have been in use at both sides of the tie-in. The new mechanism is comprised of two complementary procedures, one based on the allocation of physical capacity rights through explicit auction with different time horizons, and the other is a short-term mechanism based on Coupling of the Daily organised Markets in France and Spain.

The first stage envisages applying only the explicit auction mechanism, and within the term of six months from the date such first stage comes into effect, the system and market operators, with the cooperation of their respective French counterparts, must furnish the Spanish Ministry of Industry, Tourism and Commerce with their proposal for modification of the operational procedures and market rules for the application of the complete congestion management mechanism, including coupling of the daily organised markets in France and Spain.

With respect to the interconnector between Spain and Morocco, the current system is maintained, but includes the modifications deemed advisable based on the experience acquired since its application.

This same system will continue to be applied to the interconnector between Spain and Portugal until a common position is taken by both systems to enable the establishment, as in the case of the interconnector with France, of a single mechanism that will be applied by both countries.

This Order repeals sections seven (physical bilateral contracts) and nine (technical constraints at international tie-ins) of the aforementioned Order of 14th July 1998, which establishes the legal regime applicable to external agents making trans-European and international exchanges of electricity.

2.3.2. The special regime

Royal Decree 436, of 12 March 2004, establishing the methodology for updating and systematising the legal and economic regime of reselling activity (Official State Gazette 27/3/04).

The aim of this Royal Decree is to unify the regulations implementing Law 54/1997, which governs electric power production under the special regime, specifically in terms of the economic regime applicable to such installations.
The Royal Decree defines a system that allows the installation owner to sell its production or surplus to a distributor and receive compensation in the form of a single regulated tariff for all the programming periods, and which is defined as a percentage of the average electricity tariff, or by selling its production or surpluses directly on the daily market, on the forward market or under a bilateral contract. In the case of bilateral contracts, the producer will receive the market price plus a incentives for participating in that market and a premium if the producer is entitled to receive the same for the specific installation in question. Through this provision it aims to make this system compatible with Directive 2004/8/EC on cogeneration formats.

The transitory provisions of this Royal Decree maintain the provisions established in Royal Decrees 2366/1994 and 2818/1998, mentioned previously; the term of the latter Royal Decree ends in 2007.

Royal Decree 2351, of 23 December 2004, that modifies the procedure of resolution of technical constraints and other regulations of the electricity market, makes the following modifications to Royal Decree 436/2004:

- To allow that the solar power plants can use in a limited form a support fuel when does not exist sufficient solar irradiation.
- To update the premiums of the co-generation facilities that use fuel-oil and waste so that it has a greater weight in its update of the gas price increment, to improve the operativity of the facilities in special regime.
- To increase, on the one hand, the premiums corresponding to the facilities types a.1 and a.2, of co-generation with fuel and in operation, to avoid its discrimination as opposed to the ones that use natural gas and, by another one, those of the group d.1, facilities of treatment and reduction of purines that are in operation, to make its yield possible.

Royal Decree 1556/2005, of 23rd December, on tariffs for 2006, postpones the deadline for certain facilities under the special regime to commence payment of deviation costs until 1st January 2007.

Resolution of 25 February 2003 of the General Directorate of Energy and Mining Policy, establishing deadlines for notification to the market operator of the surplus forecasts of specific installations under the special regime (Official State Gazette 13/3/03).

This Resolution complements the provisions established in the preceding Royal Decree 841/2002; it establishes that distributing companies must notify the Market Operator of the surplus forecasts for each programming period of which they have been informed by producers under the special regime included in article 10, sections 1 and 2, of the aforementioned Royal Decree 841/2002. This information will be sent to the Market Operator before the end of the bid reception period of the corresponding daily market session and within the bid reception period of each of the sessions of the intraday market.

2.3.3. Billing

Royal Decree 215, of 5 February 1999, which modifies Pension Scheme and Pension Fund Rules, Income Tax, Value Added Tax and other tax regulations (Official State Gazette 09/02/99).

This legislation does not initially appear to be related to the electricity sector. Nevertheless, Article 3 contains the fifth additional provision to Royal Decree 2402, of 18 December 1985, which establishes the obligation of companies and professionals to issue and deliver invoices. The additional provision refers exclusively to deliveries of electricity through the Market Operator. As a consequence the billing of purchase and sale transactions carried out through the organised market has been considerably simplified as OMEL now issues an invoice, on behalf of the market participants, for each seller (all sales made in the market) and an invoice for the purchaser (again for all purchases made). This avoids the need to cross the invoices of all sellers with all purchasers.
2.3.4. Measurement and determination of power consumed


This Royal Decree and the Ministerial Order of 12 April 1997, which sets out complementary technical instructions, regulate the operating conditions of the measurement system on the basis of which settlements for energy and related services will be made and the equipment forming a part of the system, from both an administrative and a technical standpoint.

The Royal Decree basically stated the general characteristics of the equipment and the associated communications systems and protocols, as well as the treatment of information.

The Ministerial Order sets out the principles in accordance with which boundaries between electricity activities and measurement points will be determined, as well as required technical aspects and conditions relating to equipment, transformers and metering apparatus, data transmission, principal and secondary concentrators, etc.


This Royal Decree modifies the Royal Decree 2018/1997 and envisages a new, but still unpublished, Ministerial Order, that will develop its content and modify the content of the Order dated 12 April 1999.

Royal Decree 1433, of 27 December 2002, which establishes the metering requirements for low voltage consumers and electricity installations under Special Regime (Official State Gazette 31/12/02).

This Decree completes the contents of the aforementioned Decrees (2018/1997 and 385/2002), facilitating full deregulation and making it possible for low voltage consumers who do not possess hourly meters to access the market.

Resolutions of 30 December 2002, 26 December 2003 and 28 December 2004 and 28th December 2005 from the Office of Energy and Mining Policy, which approves the applicable consumption profile and the calculation method regarding energy settlement for those type 4 and type 5 consumers who do not have an hourly meter (Official State Gazette 1/1/03, 30/12/03 and 30/12/04).

In an annex it includes the initial profiles for each category of consumer in 2003, 2004 and 2005 and 2006 respectively.

Resolution of 30 December 2002 from the Office of Energy and Mining Policy, which approves the transitory procedure on the calculation of the applicable access tariff in force, based on the measurement data taken from the existing equipment for the type 4 measuring point (Official State Gazette 1/1/03).

2.3.5. Tariffs

Royal Decree 1164, of 26 October 2001, which sets out access tariffs to the electricity transmission and distribution networks (Official State Gazette 8/11/01).

Royal Decree 2820, of 23 December 1998, which sets out access tariffs, and was superseded by Royal Decree 1164/2001, set high voltage tariffs with a two-tier structure, consisting of a fixed part and a variable part in each of the six tariff periods into which the 8760 hours per year can be divided. This structure made it possible to apply the access tariffs for large consumers; for low voltage consumers, the existing tariff structure was maintained.

This Royal Decree sets out a simple structure to permit the application of access tariffs and, therefore, high voltage consumers whose consumption is less than 1 GWh can also claim the status of qualified consumer, a status that was acquired on 1 July 2000. For low voltage consumers, who as of 1 January 2003 will become qualified tariffs have been designed to suit their special nature.

Royal Decree 1432, of 27 December 2002, which sets out the approval or modification methodology for the average or reference electricity tariffs and modifies certain articles of Royal Decree 2017, of 26 December 1997, which organizes and regulates the procedure for settling the costs of transmission, distribution and retailing, and permanent system costs, as well as costs of diversification and security of supply (Official State Gazette 31/12/02).

As laid out in the Royal Decree, tariffs will increase at a rate below the forecasted inflation until 2010, tending to decrease in the final years. The increases will never exceed the 2% inflation rate forecasted for the said period. This will benefit consumers by reducing rates in real terms relative to the evolution of prices. The average estimated increase for the current decade is 1.4%. When the application period ends for the new methodology, electricity tariffs will have fallen, in nominal terms, almost 10% below 1995 tariffs.

The new methodology pretends to ensure macroeconomic stability, setting up a stable and predictable scenario for the electricity system, identifying its costs in a transparent, objective and non-discriminatory manner for consumers. Moreover, the new electricity system includes
the nature of the essential and universal service, as defined by the European Union. At the same time this new system tries to provide a framework of predictability for the continuity of the investment processes already under way.

The establishment of revising criteria related to circumstances beyond the control of market participants is the essential element of the new methodology, which ensures that the maximum limit of 2% is in line with macroeconomic stability.

**Royal Decree 1556/2005 of 23rd December, which establishes electricity tariffs for 2006 (Official State Gazette 28/12/2005).**

Electricity tariffs for 2006 are up an average of 4.48%. This 4.48% rise is distributed between the sale price of electricity, or integral tariff, which is up by an average of 4.68%, and transport and distribution network access fees, which are up an average of 2.86%. The reduced social tariff remains under a price freeze.

With a view to encouraging energy saving, an additional payment of 1.3 c€/kWh for excess over a bimonthly ceiling is established for domestic consumers.

For small industries and companies in the service sector, the price rise is also 4.48%, while for medium-sized and large corporations it is 5.05%.

The prices of equipment rental remain stable, pending the report requested by the National Energy Commission on the market cost of these services. Connection, hook-up and verification rights are modified in accordance with the average variation in sale prices, and are up 4.48%.

The tariff prices for the sale of power produced by special regime production units (renewable energy and cogeneration) vary depending on the system to which they belong.

**Methodology applied in calculating the tariffs**

The calculation of tariffs was done by applying the methodology currently in effect established in Royal Decree 1432/2002, of 27th December, which establishes the Methodology for Electricity Tariffs for the 2003 – 2010 period. The application of this system has enabled an objective, stable estimation of the variables involved in the formation of tariffs, taking into account both costs and revenues.

The most relevant factors considered in generation costs encompass the 4,000 million euros of the special regime (30% of the total), which include increased production at facilities (hydraulic, solar, wind, biomass, cogeneration, etc.), as this represents 20.6% of the total energy supplied, the possible effect of the commitments arising from adherence to the Kyoto protocol on market prices, and the increased cost of combined cycle generation bearing in view of the evolution of gas prices.

Transport and distribution costs are updated by application of the calculation procedure established in Royal Decree 2819/1998, of 23rd December, which regulates electricity transport and distribution activities.

Furthermore, 90 million euros were included under the heading of distribution costs, specifically for plans to upgrade the quality of services to be undertaken through co-financing agreements signed by the electric companies with the Autonomous Region Governments which, will enable investment in distribution networks that will bring service up to a suitable level in areas where it is still deficient.


The percentages to be applied over billing due to the moratorium on nuclear power have been reduced from 3.04% to 1.724%, given that over 50% the total sum pending compensation has been amortized.

On the other hand, the surcharge arising from special regime generation going to the market, the cost of applying the aforementioned Energy Savings and Efficiency Strategy in Spain Action Plan, and the surcharge for extra-peninsular remuneration are envisaged as modifications in the regulations. The latter of these arises from the specific new rules governing island and extra-peninsular electricity systems, which will culminate in the approval of the regulations expected at the end of the first quarter of 2006, and will definitively allow the effective deregulation in these systems in the same conditions as those existing on the peninsula. The final result shows that the total costs calculated amount to 19.086 million euros, a sum that involves the necessary 4.48% increase in the average or reference price of electricity over the 2005 price.

**Key Highlights**

- Supplementary reactive power tariffs are moved closer to supply and access tariffs
The National Energy Commission is ordered to send a report to the General Directorate of Energy and Mining Policies before the end of March 2006, which establishes a plan for the implementation of hourly metres that distinguish consumption in different hourly periods for the domestic sector, as well as the relevant cost in function of the load curve for this type of consumers, with a view to enabling these consumers to use electric power more efficiently.

The Ministry of Industry, Tourism and Commerce is empowered to undertake a new revision of the average or reference tariff on 1st July 2006. This innovation is envisaged due to the special circumstance of the existence of negative balances in the settlements made in 2005 for each of the electric companies listed in section 1.9 of Annex I of Royal Decree 2017/1997 of 26th December, which organises and regulates the settlement procedure for transport, distribution and tariff sale costs, the permanent system overhead and the costs of diversification and supply security, pending establishment, in the legal context of the current tariff framework.

2.3.6. Transport and distribution activities

Royal Decree 2017, of 26 December 1997, which sets out the organisation and regulation of the procedure for settling the costs of transmission, distribution and retailing according to established tariffs, the settlement of the permanent costs of the system and the cost of diversification and supply guarantee (Official State Gazette 27/12/97).

The regulation and remuneration of the transmission and distribution activities are also dealt with in Royal Decree 2819 of 23 December 1998 (regulation of the transmission and distribution activities) and the Ministerial Order published on 14 June 1999 (remuneration of the distribution activity).

This Ministerial Order establishes the remuneration of distributors for the former electricity sub-systems, as well as the basis for the remuneration of the distributors referred to in the eleventh transitory provision of the Electricity Sector Law and those incorporated subsequent to the effective date.

The National Electricity System Commission circulars dated 17 February and 30 July 1998 also refer to this matter, and set out certain detailed regulations for collections and revenues from charges established for specific purposes, as well as the collection of annual information regarding the settlement function for regulated costs and activities within the electricity system.

Order ECO/2714/2003 of 25 September, which implements Royal Decree 1432 of 27 December 2002, in connection with the transfer and/or securitization of costs corresponding to imbalances in income obtained from activities regulated prior to 2003 and the cost corresponding to revisions arising from extrapeninsular costs (Official State Gazette 3/10/03).

In the preceding Royal Decree (1432/2002), a definition was provided of one of the cost components to be included in the calculation of the average or reference tariff; this was the cost corresponding to the imbalance of income obtained from activities regulated prior to 2003 and the cost corresponding to revisions arising from extrapeninsular generation costs corresponding to the years 2001 and 2002.

This order establishes the characteristics of the compensation rights for the two items indicated above; these rights will be recovered by their owners in subsequent years until 31 December 2010.

The annuity payment corresponding to each year, and in order to include it in the calculation of the corresponding tariff, is determined as the total annual constant quota payable for recovery on the aforementioned date, i.e. on 31 December 2010, of the amount pending compensation at 31 December in the previous year.

The base value for the tariff imbalance, at 31 December 2002, is provisionally established in the amount of 1,522M euros; the value corresponding to the revised extrapeninsular costs is calculated later. The applicable interest rate will be the three-month EURIBOR corresponding to the average price in November in the year prior to the year in which the tariff is to be calculated.

The initial owners of these rights may totally or partially transfer the same to third parties, including the securitization funds corresponding to assets or entities with a similar function.

Royal Decree 1955, of 1 December 2000, which governs transmission, distribution, retailing and supply activities and the procedures for authorising electricity installations (Official State Gazette 27/12/00).

The aim of this Royal Decree is to develop the legal framework in which electricity sector activities must be developed, under the model established in Electricity Sector Law 54, of 27 November 1997.

The planning of electricity transmission installations is regulated under Heading II of this Royal Decree; it takes into account the following objectives:
• Maintain an appropriate level of connection between production centres and points of supply.
• Guarantee consumers the security and quality of electricity supply at the lowest cost possible.
• Ensure compatibility with respect for the environment.

Heading III develops the regulatory framework in which the distribution of electricity will be carried out. For this purpose, common principles are established that guarantee their proper relationship with other electricity activities, determining the transit conditions of electricity through distribution networks, establishing sufficient equality among agents that perform these activities throughout the entire territory and establishing common conditions on an equal basis for all users of this energy. Criteria are also established for defining and delimiting the electricity transmission network.

In terms of the quality of electricity supply, a series of representative level parameters are defined, which serve to establish suitable incentives and penalties applicable to electricity companies, in order to encourage the adequate quality levels.

Heading VII introduces new aspects in terms of the regime governing the authorisation electricity installations, envisaging the possibility of authorising installations by means of a procedure that ensures concurrence. The procedures regulated under this Heading maintain the structure of those previously in force and established in Decree 2617, of 20 October 1966, which governs the authorisation of electricity installations, as well as in Decree 2619, of 20 October 1966, which implements the Regulations of Law 10, of 18 March 1966, which governs compulsory purchase and penalties in terms of electricity installations.

Another aspect which required development, and which is covered under Heading VIII, concerns the different Registries established by

Heading IV establishes the conditions applicable to both generators and consumers for obtaining access to transmission and distribution networks, protecting the rest of consumer interests through the proper development and use of the transmission and distribution networks.

Heading V refers to retailing operations, to the requirements for engaging in this activity and to qualified consumers.

Heading VI focuses on electricity supply and its quality. The supply may be achieved through tariff-based supply contracts or by means of the free trading of energy and the corresponding network access contract, regulating the minimum requirement that these contracts must include.
Royal Decree 1435, of 27 December 2002, which regulates the basic conditions for contracts concerning energy acquisition and low voltage network access (Official State Gazette 31/12/02).

The Royal Decree establishes basic measures to facilitate full deregulation of the electricity supply by 1 January 2003. Specific criteria allows low voltage consumers to expedite the execution of contracts of access tariffs and energy acquisition, as well as changes in contract modes.

Resolution on 30 December 2002, from the Office of Energy and Mining Policy, which establishes the procedure on measuring estimates applicable to supplier changes (Official State Gazette 1/1/03).

This Resolution is a complementary regulation of the Royal Decree 1435/2002 and both regulations make available the switching of supplier by consumers.

2.3.7 Market information

As regards the market, mention should be made of the regulation concerning the requesting of market information set out in the Directorate General for Energy’s Resolution of July 14th 1998 regarding access to electricity market information in the possession of OMEL and Red Electrónica de España, and in Circular 2/1999 of the National Electricity System Commission of February 16th.

Article 28 of Royal Decree Act 6/2000 of June 23rd concerning urgent measures to intensify competition in product and services markets relating to the publication of information by market and system operators, in its new draft contained in Royal Decree Act 5/2005 of March 11th, should also be taken into account.

The said article establishes that the market operator shall receive information from the entities defined in Article 9 of Act 54/1997 of November 27th that impacts on price formation in the organised markets within the Iberian Electricity Market, and is obliged to make this information immediately available online to all the participants in said market. Furthermore, the market operator must also publish the results of the matching procedures occurring within its jurisdiction.

For its part, the system operator shall publish on a regular basis forecasts for electricity demand, the net transmission capacity in the interconnections, information on the situation with regard to dams used to produce hydroelectricity as well as the results of the operational processes within its remit.

The Ministry of Industry, Tourism and Trade’s Directorate General for Energy and Mining Policy, at the suggestion of the National Energy Commission, will specify the factors and information considered relevant to price formation in the market as well as the procedure for communicating the same, and shall ensure that confidential information is not disclosed. These factors must be communicated to the Ministry of Industry, Tourism and Commerce and the National Energy Commission in the manner specified.

2.3.8. System operational procedures


- Operation of the system.
- Forecast and coverage guarantee of demand.
- Operations programming.
- Technical management of international tie-lines.
- Calculation of transmission losses.
- Management of ancillary services.
- Operation of transmission network.
- Flow of technical information on the system.
- Valuation of the electrical measures.
- Access to the transmission grid.
- Universal codes for consumer border points.
2.4. Market Activity Rules

In fact, in order to ensure the economic management aimed at the effective development of the market, both Law 54/1997 and Royal Decree 2019/1997 stipulate that the Ministry of Economy must approve the rules and terms governing the operation and settlement of the production market, and to which the buyers and sellers in the market must expressly adhere by signing the corresponding contract of adherence.

Pursuant to Royal Decree 2019/1997, the Market Activity Rules contain the procedures and general conditions necessary for the efficient development of the electricity market and specifically for its financial management and the participation of the players engaging in electricity supply activities and qualified consumers, in particular referring to:

a) The definition, development and operation of the computer systems required to guarantee transparency in the transactions carried out in the electricity production market, which include:
   - the submission of purchase and sale bids for electricity;
   - the procedure for matching electricity purchase and sale bids in the daily and intraday markets;
   - determining and providing the system operator with information regarding the results of matching the bids in the daily and intraday markets, and providing participants with information regarding their production and purchase units;
   - determining and providing the system operator with the base daily operating schedule derived from matching in the daily market the bilateral contracts notified by the participants and the excess production of the self-producers; providing participants with information regarding their production and purchase units; and providing distributors with information regarding only their distribution network, aggregated for each of their electricity hubs defined and notified by the system operator.
   - determining and providing the system operator with the final hourly schedule derived from each intraday market session; providing participants with information regarding their production and purchase units; and providing the distributors with information regarding only their distribution network, aggregated by each of their electricity hubs defined and notified by the system operator;

b) The terms of adherence to the Electricity Market Activity Rules.

c) The procedure for revising the Market Activity Rules.

On proposal from OMEL, the Market Activity Rules have undergone various changes, on the one hand to adapt to the new legislation coming into force and, on the other, to reflect modifications to their initial content arising as a result of experience.

The Rules in effect, with the exception of the modification referred to in the following paragraph, were approved by Resolution 5 April 2001, from the State Secretariat of the Economy of Small and Medium Sized Businesses (State Official Gazette 20/4/01).

Resolution of February 14 was published by the State Secretariat of Energy, Industrial Development and Small and Medium Sized
Businesses, which modifies Rule 23 of the Electricity Production Market (State Official Gazette 26/2/03), whose basic variations can be summarized as follows:

- Improving of the treatment of sellers and buyers concerning the valuation of energy bought and sold as regards the calculation of their payment obligations and, therefore, their guarantees and collection rights to be assigned.

- For both selling agents as well as buying agents the regulation of the guarantees associated with pending settlements that arise due to the lack of measurements. This circumstance requires that selling agents, which may be debtors in the market when unable to fulfill their production programs, as well as buying or external agents provides guarantees for planned deviations.

- For generators under ordinary and special regime, provision of a guarantee associated with the monthly collection, in the event that measurements are not available on the date of collection and payment.

As a result of the publication of the aforementioned Royal Decree 2351/2004 of December 23rd amending the procedure for the resolution of technical restrictions and other regulatory standards pertaining to the electricity market, the Market Rules were reviewed and the amendments to the aforementioned Royal Decree 2351/2004 incorporated along with certain specific adjustments relating to Royal Decree Act 6/2000, Royal Decree 436/2004, Royal Decree 1432/2002 and Royal Decree 385/2002 in addition to other improvements identified as desirable.

The revised project was sent to the Ministry of Industry, Tourism and Commerce on 24th February 2005 and was approved by Resolution of 24th June 2005 of the Secretary General for Energy, which amends certain Electricity Market Activity Rules and adds new rules. The Resolution was published in the Official State Gazette on 30th June.

In January 2006, the Ministry of Industry, Tourism and Commerce was sent the proposed amendments to the Market Activity Rules required by Final Provision One of Order ITC/4112/2005, of 30th December, which establishes the regime applicable to trans-European and international exchanges of electricity.

Likewise, in the month of March 2006 a new proposal was sent for amendment of the Rules required by Temporary Provision Six of Royal Decree 1454/2005, of 2nd December, which modifies certain provisions related to the electricity sector. The aforesaid Royal Decree constitutes the legal development of Royal Decree-Law 5/2005, which grants the market operator competency in the daily and intraday production markets and the corresponding settlements.

### 2.5 Energy planning

Article 4 of Electricity Sector Act 54/1997 sets out the general principles governing electricity planning, which shall be indicative except in the case of transmission installations. Chapter II of Title II (Articles 8 to 16) of Royal Decree 1955/2000 on transmission, distribution, marketing and supply activities and authorisation procedures for electricity plants regulates the procedures for planning the electricity transmission network.

Energy planning is mandatory for regulated activities (transmission and distribution) managing the basic infrastructures for energy development. This has clear implications in the market because it constitutes the market’s physical support and guarantees free access to these networks.

The planning phase represents an indicator for deregulated energy generation and is a decision-making tool at the service of government and sector companies. This type of planning encompasses the growth in demand and the need for coverage. The document “Planning of the Electricity and Gas Sectors: The Development of Transmission Networks 2002-2011”, published in October 2002, details planning principles and objectives.

### PLANNING PURSUIT

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<th>Planning 2005–2011 (MW)</th>
<th>Executed at 01-04-06 (MW)</th>
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<td>26,000–30,000</td>
<td>14,903</td>
<td>57.3–49.7</td>
</tr>
<tr>
<td>Cogeneration</td>
<td>9,100</td>
<td>5,773</td>
<td>63.4</td>
</tr>
<tr>
<td>Wind Power</td>
<td>20,155</td>
<td>10,020</td>
<td>49.7</td>
</tr>
</tbody>
</table>

Source: Ministry of Industry, Tourism and Trade
The document provided for the updating of forecasts at least once every two years for the purposes of adjusting them in line with the demand identified and the emergence of new circumstances.

On 5th December 2003, the Council of Ministers approved the Addendum to Planning for the Electricity and Gas Sectors, related to the infrastructures for Electricity Supply to the Balearic Islands. The aforesaid document, “Planning for the Electricity and Gas Sectors. Development of the transmission systems 2002 – 2011” sets out the need to draw up a detailed proposal in 2003 to offer the optimal solution to energy supply for the Balearic Islands, including the interconnector between the islands and the Peninsular Electricity System.

Review of Energy Planning


The planning document approved in October 2002 established forecasts for growth in gas and electricity demand between 2002 and 2011. Since then, differences have become clear between forecasts for growth in supply and demand established in the document, both for electricity and natural gas, taking the form of higher growth in demand and an acceleration of the incorporation of combined cycle plants and renewable energies to the energy mix.

Therefore, as envisaged in the planning document approved in 2002, it was necessary to update forecasts with the aim of correcting not only any abnormalities detected but also the appearance of new requirements. The projections of the review document were for consumption of primary energy in Spain to grow at an average annual rate of 2.0% between 2005 and 2011, reaching a total of 164.735 ktep in the final year of the period.

The framework considered took account of the Renewable Energy Plan, the Spanish Energy Saving and Efficiency Plan (E4) and the Emissions Reduction Plan, meaning a significant change in trends relating to the development of energy intensity, from the continuous growth experienced between 1990 and 2004 to a slowdown of same and even a decline in primary energy intensity during the forecast period.

In the supply structure it was possible to observe a significant change with respect to the current situation, with significant growth in the weighting of natural gas and renewable energies and a decline in coal, oil and nuclear energy, all basically deriving from the change in the electricity generation structure.

Renewable energies, including hydro-electrics, will in 2001 contribute to the total balance with 20.552 ktep. This figure means 12.5% of all energy demanded in said year, in line with the policy target set in the Renewable Energies Plan 2005-2010 of 12.6% in 2010, against a backdrop of energy efficiency.
Forecast energy demand in power station busbars on a peninsular level is estimated at 290 TWh in 2011, meaning an 18% rise over 2005. This value is 19 TWh lower than that which would have been reached if the energy saving and efficiency measures had not been taken into account.

The forecast growth in electricity demand leads to the consideration that, for the period under review, it will be necessary to install at least a further 12,000 MW of power in combined cycles as well as a significant development in renewable power.

The upgrading of a large quantity of existing lines is envisaged, with the aim of increasing their use and delaying the need for new installations. Thus, the October 2002 Plan provides for the construction of 7,680 km. of 400 kV circuits and 3,573 km. of 220 kV circuits, while in the review document the projects planned for the 2005-2011 period mean a reduction in the length of overhead lines of 757 km. of 400 kV and 439 km. of 220 kV, meaning reductions compared to the 2002 plan of 10% and 12% respectively.

Also increased in the planning review were the infrastructures necessary to facilitate better integration of wind power in the system, rising from 13,000 MW to 20,000 MW, as well as the reduction of imbalances between generation and demand in different geographical areas, avoiding transport losses and the need for new transport infrastructures.

Total gas demand forecast for 2011 is estimated at 508,000 GWh to meet domestic, commercial and industrial demand and for combined cycles. Gas demand for generation of electricity in combined cycle plants, which showed the greatest growth, is forecast to reach 148,000 GWh at the end of the period, multiplying by 2.7 times the value of demand in this segment during 2004.

2.6 Renewable Energies Plan 2005 – 2010

On 26th May 2005, the Council of Ministers approved the Renewable Energies Plan for the 2005 – 2010 period. Forecasts in the new regulations estimate that 12.1 percent of the consumption of primary energy will be supplied by renewable energies in 2010.

The Plan was drawn up with the aim of strengthening the priority goals set out in the Government’s energy policy, which are guarantee security and quality in electricity supply and respect for the environment, and with the intention of meeting Spain’s international commitments (Kyoto Protocol, National Allocation Plan) and those arising from our membership of the European Union.

The rapid growth in the use of energy in recent years was also a compelling additional reason to draw up the new Plan which, when put in place together with the 2005 – 2007 Action Plan for the Energy Savings and Efficiency Strategy approved by the Council of Ministers on 8th July 2005, will bring about a marked reduction in energy consumption and decrease Spain’s dependence on external energy sources, whilst contributing significantly to lowering pollution levels.

The new plan replaces the Plan for the Promotion of Renewable Energies 2000 – 2010, the results of which fell short of expectations. Only three sources of renewable energy have developed satisfactorily to date: wind power, biofuels and biogas. Mini-hydraulic power is progressing more slowly than expected, and biomass and solar energy are developing at far below the pace needed to reach the objectives established in the Plan.

With respect to biomass, the results obtained clearly indicate the need to make urgent and substantial changes, without which the goals set for 2010 will not be met. These goals envisage a 63% rise in overall consumption of renewable energies as compared to the previous plan, while at the end of 2004 the progress made in this area had only reached 9%.

Details of the Plan

The authors of the Plan considered various possible scenarios for the general energy context, its forecasted evolution, the development possibilities in each area and the overall objective for the consumption of renewable energies.

According to the most likely energy scenario, the so-called “Tendential” scenario, the objectives of the Renewable Energies Plan for 2005 – 2010 call for 12.5% of primary energy in 2010 to be supplied by renewable energies, as well as the production by these sources of 30.3% of gross electricity consumption, while 5.83% of gasoline and diesel consumption for transport is to be replaced by biofuels.

The provisions highlight the significant contribution expected from wind power, which raises its installed power goal to 20,155 MW in 2010 (with an estimated production of 45,511 GWh); an increase in the goals to be reached for biofuels, from 0.5 million tons oil equivalent to 2.2 million tons oil equivalent in 2010, thermo-electric solar energy, expected to reach 500 MW, and biogas.

With respect to biomass, the objectives distinguish between the goal for electricity generation and that related to thermal uses. For the former, the goal for growth in the period envisaged in the Renewable Energies Plan is 1,695 MW, which includes putting a co-combustion programme into operation (joint combustion of biomass and coal in
already existing plants), an increase in remuneration for electricity generated (at the biomass plants proposed by the Plan) and the promotion of the International Biomass Commission, with a view to levering the potential market. As regards thermal biomass, the objective increase until the end of the period amounts to 582 kTOE, which will involve improvements in supply logistics and a new non-recoverable investment support line proposed by the Plan.

**Financing of the Plan**

The total amount of investment for the Plan for the 2005 – 2010 period is 23,600 million euros. The majority of the funds will come from outside investment, 77.1% of the total cost. The remaining financing will be comprised of 20% from the developers and 2.9% government funding.

The total government funding involves three different categories:

1. Government investment subsidies: conventional non-recoverable aid and funds allotted to improve investment financing conditions.

2. Tax incentives for biofuel exploitation: exemptions from the Hydrocarbons Tax in sale price throughout the duration of the Plan.


The Plan proposes that part of the funding be financed voluntarily by the Autonomous Regional Governments in decreasing proportion throughout the period, going from 19% in 2005 to 4% in 2009 and 2010. Collaboration agreements will be established with the Autonomous Regional Governments for this purpose.

**Supplementary Effects**

The significant growth of renewable energies envisaged in this Plan represents a challenge and an opportunity for technological innovation in Spain. Promotion for technological innovations will include IDEA funds for R+D+i, in accordance with a series of priorities, as well as funds from the Programme for the Promotion of Technical Research (Programa de Fomento de la Investigación Técnica - PROFIT).

The diversification of energy sources in Spain and the subsequent reduction of our dependence on outside sources, the CO2 emissions eliminated by the Plan and the socio-economic benefits that will be attained, including the generation of net employment, are other supplementary effects envisaged in the Plan.

**2.7 Energy saving and efficiency**

The strategy for energy saving and efficiency.

The Council of Ministers meeting held on November 28th 2003 approved the 2004-2012 Energy Saving and Efficiency Strategy for Spain (E4), the aim of which is to foster sustainable development through public funding aid compatible with the objective of achieving a balanced budget.

From a methodological standpoint, the strategy has been based on the current economic, energy-related and environmental context and draws on the energy consumption forecasts of the base scenario, which have also served as a reference framework for the document "Planning of the Electricity and Gas Sectors" (the exception being that in this strategy the analysis period is extended until 2012).
The improvements arising from the measures envisaged in the Strategy give rise to the so-called efficiency scenario, designed to encompass the forecast development of energy consumption once the measures proposed in each of the sectors analysed have been implemented.

The Strategy estimates a 7.2% reduction in energy intensity (energy consumption per product unit) and, as a result, energy savings for the years in question amounting to €12.853bn, equivalent to current crude oil imports in one year. These savings will be the result of both technological development and the measures adopted by government and production sectors to encourage energy saving.

In turn, it aims to make this economic growth compatible with sustainable energy development, reducing CO2 emissions, promoting clean energies and fostering the diversification of energy sources. A fundamental aim of the Strategy is to contribute to the objectives of the Kyoto Protocol. Other instruments for achieving these objectives include the Renewable Energies Promotion Plan and the commitment to gas combined cycles in current network planning. The Strategy analyses the following sectors: industry (divided into eleven subsectors), transport, building, household and office equipment, public services, energy transformation and agriculture and fisheries. It outlines the objectives set for each of these sectors, details the proposed measures and defines the instruments considered suitable, quantifying the energy costs and savings arising from them.

The measures envisaged amount to overall investment of approximately 26,000 M€ for the entire period. Approximately 2,000 M€ of this total corresponds to public funding provided by the various levels of government. The remaining 24,000 M€ comes from private investment connected to the measures envisaged.

In terms of the electricity market, it should be highlighted that apart from the specific measures for the different subsectors, the Strategy Document states that “the promotion of energy saving and efficiency is clearly reliant upon strengthening the energy markets, on making them as transparent as possible”, and that one of the most positive measures for improving energy efficiency involves “bringing about the complete deregulation of electricity and gas supply, which will help send the price signal to consumers, enabling them to manage demand more efficiently”.

The electricity market provides suitable price signals, with much higher prices in peak hours of consumption than at other times. However, these signals may not be reaching domestic consumers and

**DIRECTIVE 2003/87/EC ESTABLISHING A SCHEME FOR GREENHOUSE GAS EMISSION ALLOWANCE TRADING**

- **Emission allowances**: From 1 January 2005, owners of the activities encompassed that produce greenhouse gas emission related to such activity shall be required to hold an emission permit issued by the competent authorities to this effect.

- **National Allocation Plan**: Shall determine the total emission allowances foreseen for allocation for the period and the allocation procedure. It shall be based on objective, transparent criteria, and shall include a list of the installations encompassed by the Directive and the figures for the corresponding allowances. It shall also envisage allowances for new entrants. The Plan shall be published and reported to the Commission and Member States with eighteen months prior notice.

- **Allocation method**: It is established that for the three-year period beginning on 1 January 2005, at least 95% of the allowances shall be allocated free of charge for at least, and for the five-year period beginning on 1 January 2008, at least 90% of the allowances are free of charge.

- **Agreements with third countries**: Agreements may be entered into with third countries with emission allowance trade regimes provided such countries have ratified the Kyoto Protocol and in accordance with the stipulations set out in Article 200 of the Treaty.

- **Registries**: The Member States shall provide for the establishment and maintenance of a registry in order to ensure the accurate accounting of the issue, holding, transfer and cancellation of the emission allowances.

- **Central Administrator**: The Commission shall designate a Central Administrator, who shall maintain an independent transaction log recording the issue, transfer and cancellation of allowances.
PYMEs correctly. The following observation, made at the end of section 4.1 of the chapter on "Household and Office Equipment" is therefore extremely interesting:

"Lastly, it must be stressed that improved energy efficiency also depends on more effective participation of the demand side in the electricity market. In this sense, the implementation of demand management programmes targeted at the least flexible sectors in terms of energy prices is recommendable. This will improve price formation based on opportunities for shifting consumption to other hours and provide incentives for the purchase of more efficient equipment"


On 8th July 2005 the Council of Ministers approved the Energy Savings and Efficiency Strategy in Spain for the 2004 – 2012 period. It is expected that when put into operation, it will generate:

- Aggregate primary energy savings of twelve million tons oil equivalent, i.e., 8.5% of the total current consumption of primary energy in 2004, and 20% of oil imports for that year.
- A reduction of 32.5 million tons in CO2 emissions into the atmosphere.

The 2004 – 2012 Strategy approved in November 2003 does not contemplate the details of specific actions, terms, responsibilities of the government bodies involved and the identification of the financing lines and budget allotments related to each step. The 2005 – 2007 Action Plan endeavours to detail the undefined areas of the Strategy: it contains an inventory and specific indications of actions that should be put into place at the short and medium-terms in each sector, detailing objectives, terms, resources and responsibilities and assessing the overall impact of such actions.

Goals

Based on these principles, the following four goals are defined in the Action Plan:

- Specify the measures and instruments necessary to launch the Strategy in each sector.
- Define the precise lines of responsibility and collaboration amongst the bodies involved in its execution, specifically referring to the Central State Administration, the Autonomous Regional Governments and Local Entities. The related budgets and government costs will be specified in each case.
- Plan the implementation of the measures, identifying the means of financing, budget requirements, priority actions and the pace for such implementation.
- Assess the related energy savings, the costs and CO2 emissions eliminated for each measure and for the entire Plan.

Content of the 2005 – 2007 Action Plan

The 2005 – 2007 Action Plan focuses its efforts on Industry, Transport, Building, Public Services, Residential and Office Equipment, Agriculture and Energy Transformation, and includes a series of urgent measures for each sector as well as additional measures to increase the reduction in greenhouse gas emissions. The
identification of the measures to be put into operation in the various sectors was carried out according to criteria such as the sector’s potential savings and the government and private cost per ton of oil equivalent saved.

As regards the energy sector, the foremost measures may be summarised as follows:

Industry

- Energy audits: co-financing aids from the Government of up to 75% of the cost of the aforesaid audits, which will preferably be carried out in the chemical, food, beverages and tobacco, iron and steel and non-metallic mineral sectors.

- Programme of government subsidies: support lines and approval of the funds necessary to finance energy saving and efficiency projects in the Industrial Sector.

Building


- Upgrade of the energy performance of the thermal facilities in existing buildings: replacement of boilers, air cooling equipment and fluid treatment and transport equipment.

- Improved energy performance in interior lighting equipment in existing buildings: replacement of 7 million incandescent bulbs with low-consumption bulbs in the domestic sector and actions encompassing a surface area of 30 million m2 for the renewal of lighting systems in the tertiary sector.

Public Services

- Greater efficiency in the new exterior public lighting equipment: including the replacement of mercury vapour bulbs with sodium vapour bulbs in 840,000 street lamps.

- Higher energy performance of the current exterior public lighting systems: approval by City Governments of ordinances setting minimum energy performance standards for public lighting.

Residential and office equipment

- Government Equipment Plan for the Efficient Use of energy: an energy efficiency plan for the Central State Administration will be drawn up.

Transformation of energy

- Greater cogeneration potential: raise the objective for new cogeneration power set out in the Energy Savings and Efficiency Strategy by an additional 750 MW, to be put into operation in 2006 and 2007.

European Regulations on Energy Performance

In the field of energy saving and efficiency, it will also be important to bear in mind the transposition of the two directives mentioned below into Spanish law.


The Directive concerning the energy performance of buildings will guarantee the regulations to ensure that the construction of buildings all over Europe leads to a significant reduction in energy consumption without involving high additional costs, while at the same time substantially upgrading user comfort. These measures will comprise a key component in the EU strategy to meet the commitments of the Kyoto Protocol.

It is likely that application of this Directive will enable savings of one fifth of the energy consumed until 2010 in the buildings it encompasses.

Its transposition into Spanish law is nearing readiness and will be based on the Technical Building Code (approved by Royal Decree 314/2006, of 17th March and published in the Official State Gazette on 28/03/06), the revision of the Regulations on Thermal Building Facilities (RITE) and on the Rules for Building Energy Certification.

The purpose of this directive lies in its contribution to greater security of supply, a reduction in energy consumption and, therefore, in energy dependence, as well as in polluting and greenhouse gas emissions. Its effects will supplement those that promote renewable energies and cogeneration. The directive pursues the attainment in the EU of greater energy performance in the final use of energy with economic criteria and progress in the development of energy services. The Member States will propose reaching a national energy saving goal of 9% by the ninth year of application of the Directive, which will be achieved by the provision of energy services and the establishment of other measures to upgrade energy performance. National energy savings will be measured as of 1st January 2008.

Reasonable measures will be adopted to contribute to reaching the aforementioned goal. To this effect, the Member States shall:

- Facilitate the process by publishing guidelines serving as criteria for the assessment of public procurement.
- Guarantee that energy distributors and distribution systems operators provide authorities with the necessary information about their customers with a view to promoting energy efficiency.
- Submit to the Commission the first Action Plan for Energy Efficiency on 30th June 2007 and subsequently in 2011 and 2014, which shall include the measures planned to reach the established goals.

Member States will have two years from the date of entrance into effect for transposition of the Directive into their national legislation.

2.8 The Kyoto Protocol

With regard to EU regulations, the progress made on environmental protection in line with the Kyoto Protocol should be highlighted. The Protocol impacts deeply on the electricity industry as it is a key sector among those listed in Annex I of Directive 2003/87/EC of October 13th 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community.

The most important aspects of Directive 2003/87/EC and the principles governing its application, published by the Commission in COM (2003) 830 final, are summarised below.

Directive 2003/87/EC of October 13th was transposed by virtue of Act 1/2005 of March 9th regulating the scheme for greenhouse gas emission allowance trading (OSG 10/03/2005), previously published as Royal Decree Act 5/2004 of August 27th. Its objective is to contribute to reducing emissions causing climate change in compliance with Spain’s commitment to the Kyoto Protocol.

The Royal Decree Act responds to the pressing need to comply with the EC Directive’s implementation schedule which requires that installations falling within its remit have a greenhouse gas emissions permit before January 1st 2005, and that the National Emission Allowance Registry is operational by October 1st 2004.

Chapter I provides for the creation of a cross-departmental committee to coordinate policies on climate change. The Committee will act as a national authority approving the clean development and joint implementation mechanisms detailed in the Kyoto Protocol.

It will be made up of representatives from the Spanish president’s Office of Finance and the Ministries of Foreign Affairs, the Treasury, Environment and Industry, and Commerce and Tourism, and will be chaired by the Environment Ministry’s Secretary General for the Prevention of Pollution and Climate Change.
Chapter II regulates the greenhouse gas emission permit scheme by virtue of which all installations falling within the remit of the Royal Decree Act must have a greenhouse gas emissions permit by January 1st 2005, issued by the authority appointed by the autonomous government of the region in question.

Chapter III details the scheme applicable to permits for the pooling of installations, establishing that installations devoted to the same activity must respond to the legal liability to surrender allowances jointly, provided that the impact of pooling on the internal market does not lead to distortions of competition.

Chapter IV defines the nature and contents of the National Allocation Plan in addition to its approval procedure.

Chapter V outlines the emission allowance regulatory scheme, and defines it as the transferable subjective allowance that permits the holder to emit into the atmosphere one ton of carbon dioxide equivalent from an installation covered by this Royal Decree Act.

Chapter VI regulates the information-related obligations of the installation owners, who are required to implement and maintain the greenhouse gas emissions monitoring system in accordance with the provisions set out on the emissions permit. They are also required to submit a report on the previous year’s greenhouse gas emissions to the competent regional government authority before February 28th.

Chapter VII provides for the creation of the National Emissions Allowance Registry. All operations relating to the issue, holding, transmission, transfer, surrender, removal and cancellation of emission allowances must be recorded in this registry, which is used to ensure that auditing of these allowances is kept up to date at all times.

The penalty scheme is outlined in chapter VIII and describes very serious, serious and minor infringements. Very serious infringements will be penalised with fines of up to €2M and the closure of the installation unless the operator remedies the problem. These fines will be imposed by regional governments except in those cases where the breach involves deliberate withholding of information required to allocate allowances or the failure to comply with the requirement to surrender emission allowances, in which cases fines will be imposed by the Spanish Council of Ministers.

Installations exceeding their emission allowances, either allocated free of charge or purchased on the market, must pay €40 for each extra ton emitted in the period 2005-2007 and €100 for each extra ton emitted in the period 2008-2012.

Royal Decree 1866/2004 of September 6th approving the 2005-2007 National Emission Allowance Allocation Plan (OSG 07/09/04) was subsequently published.

The National Plan lays the foundations for the individual allocation of allowances to all installations prior to the European Market coming into operation on January 1st 2005.

In accordance with Annex I of the European Directive and the Royal Decree Act, in 2005-2007 the emission allowance trading scheme will apply to CO₂ emissions from installations conducting the following activities: electricity generation, and the refining, production and processing of iron and steel, cement, lime, glass, tiles, paper and card.

The target set by the government is for emissions in Spain to stabilise in 2005-2007 at the average for the last three years in which official records were kept (2000-2002), with an additional increase of 3.5% in CO₂ emissions in sectors affected by the Directive for new entrants.

The additional work required to comply with Kyoto and the Directive must be carried out in 2008-2012. At the end of this period emissions must not exceed 24% more than 1990 levels. This percentage has been calculated by adding the Kyoto limit (15%) to the forecast for removals by sinks (a maximum of 2%) and the credits available on the international market (7%).

For this purpose the 2005-2007 National Emission Allowance Allocation Plan proposes sharing the workload in bringing about this reduction between the sectors listed in the Directive and those that are not (transport, housing, etc.) based on their corresponding share in the country’s overall emissions - 40 and 60% respectively. As regards overall emissions in Spain, the 2005-2007 target is an annual average of 400.7 million ton of CO₂, a reduction of 0.2% on 2002 levels (401.34 million ton of CO₂/year).

The National Allowance Allocation Plan also lays down the methodology for individual allocations to each installation, both for existing ones for new entrants joining the system in 2005-2007.

On December 27th 2004, the European Commission’s “college” of commissioners adopted the Decision approving the National Allocation Plan for Spain following its submission. An objection was raised, however, concerning the definition of combustion installation given in the Royal Decree Act, with the Spanish authorities urged to take the relevant steps to include all combustion plants with a rated thermal input of over 20 MW. Furthermore, the Commission’s Decision states that “the National Allocation Plan can be amended if the amendment involves changing the allowances allocated to certain installations within the overall quota that must be allocated to the installations detailed in the Plan as a result of improved data quality.”

Royal Decree Act 5/2005 of March 11th provides for some amendments to Act 1/2005 of March 9th concerning information on holding, transmission, control, updating and registration in the emission allowances registry.

Finally, Royal Decree 1264/2005, of 21st October, which regulates the organisation and operation of the National Emission Rights Registry (Official State Gazette 22/10/2005).

The purpose of this Royal Decree is to establish the rules for the organisation and operation of the National Emission Rights Registry (Renade) in implementation of Law 1/2005, of 9th March, which regulates the regime for the trade in greenhouse gas emission rights.

2.9 White Paper on reform of the regulatory framework for the generation of electricity

In October 2004, the Ministry of Industry, Commerce and Tourism stated that after seven years in force certain aspects of Act 54/1997 regulating the generating of electricity in Spain generated doubts as to whether objectives on securing a quality supply at competitive prices were being met.

With a view to initiating a participative process to generate reform proposals aimed at improving quality and the security of supply and promoting effective competition in the market, the Ministry began drafting a white paper on reform of the regulatory framework of the Spanish electricity generation industry, appointing José Ignacio Pérez Arriaga, a professor of electrical engineering, to oversee the process.

In July 2005, the Minister of Industry made the contents of this White Paper public, thanked Pérez Arriaga’s team for drawing up the document, while reminding all involved that their proposals were merely advisory in nature. He commented that he had already requested that the National Energy Commission (CNE) evaluate the proposals put forward in the White Paper to add them to the opinions of other participants in the electricity system with a view to upcoming changes in the sector.
Diagnosis of the situation

The authors’ diagnosis of the situation, as set out in the White Paper, may be summarised as follows:

■ In Spain, certain participants hold a dominant position.
■ The existing institutions and regulations supervising competition in Spain are ineffective in counteracting the aforementioned dominant position.
■ The CTC recovery mechanism, while distorting market prices, tends also to establish price ceilings.
■ Given the minimal interconnection capacity with France, and the end of the application period of the current CTC recovery mechanism, prices could rise on the Spanish market with no clear limit in view.
■ The integral tariffs do not take market prices into account.
■ Flexibility of the demand in electricity prices is very limited.
■ The document recognises that there has been a reasonable amount of investment, although it considers that current regulations do not ensure the necessary pace of investment at all times.

Proposed Solution

The authors of the White Paper believe that the solution to the problems detected should run along the following lines:

■ Restriction of the effective market power of each participant to 22% of the demand in peak periods and 19% in flat periods. To achieve this, the Paper proposes three solutions, one of which encompasses two similar alternatives:
  - Voluntary divestment by the largest producers to reach these limits.
  - Forward bilateral trading of the power above those limits, which should be subject to conditions of transparency and equal opportunity not explicitly described in the White Paper.
■ Establishment of regulated prices and quantities for power in excess of the aforementioned percentages. This proposal has two variations:
  1 Virtual forward auction of the power exceeding the indicated limits. Contracts would be regulated in quantity, but not in price.
  2 Regulated forward contracts for the excess power. The contracts would be regulated both in quantity and price.
■ Solution for CTC’s pending payment. The general lines of the solution are outlined in the following points.
  - To determine the amounts payable it recommends extending the calculation to the entire useful life, incorporating all cost items, maintaining the efficiency factor recalculated by the National Energy Commission and eliminating the write-off established by Royal Decree-Law 2/2001, of 2nd February.
  - To distinguish the CTC’s pending payment from the collection of market prices, it establishes the possibility of creating contracts regulated by differences in function of the power in the CTC’s pending payment which, at the same time, could limit the power offered on the market to the aforementioned percentages, thus counteracting the power of the market.
  - It distinguishes two periods: up to 2010 and from that year on. This method maintains the reference prices and allocates each participant an amount of power determined on the basis of its average production, endeavouring to maximise the power exposed to market prices. This would only be applied to nuclear and hydraulic power and would exclude coal and fuel.
■ New formulation of guaranteed power:
  - This involves two regulated factors, one comprising a price to cover fixed overhead and the other to act as the maximum market price.
  - The regulated price would be charged for generators and would bear a heavy penalty for unavailability when prices exceed the maximum ceiling.
- The mechanism for application of maximum price consists of a type of contract for differences which the owners of such plants enter into with “the system as a whole” (regulated settlement) establishing a ceiling on maximum price. This mechanism does not guarantee minimum market revenue, but rather the system executes the contract whenever the price rises above the maximum regulated ceiling.

- To guarantee investment, the guaranteed power mechanism proposed envisages that, once the new amount of power necessary is determined, if the regulated coverage mark comprising guaranteed power is insufficient, this fixed price charged by generators will be auctioned. The marginal auction prices would be applied to the awardees for 5 years, subsequently returning to the general regulated price.

**Market organisation**

As regards organisation of the electricity market, the authors put forward the following possibilities:

- Free organisation by market participants, as they deem appropriate. In this case, participants would pay a charge for trading on this market.

- Regulated organisation, as currently in place. The market would be organised by the Government in the manner established in the relevant regulations.

**2.10 Functions of OMEL**

Pursuant to Law 54/1997, of 27th November, amended by Royal Decree-Law 5/2005 of 11th March, the market operator undertakes management of the system for issuing bids for the sale and purchase of electricity on the daily market.

Furthermore, according to Royal Decree 2018/1997 of 26th September, amended by Royal Decree 1454/2005 of 2nd December, the market operator is responsible for undertaking all other duties that arise from the operation of the daily and intraday electricity markets, as well as any others entrusted to it by the said Royal Decree in matters of settlements.

Additionally, Royal Decree 1747/2003, of 19th December entrusts the market operator with carrying out certain tasks related to the application of deregulation in the island and extra-peninsular systems.

In development of these general duties, the aforementioned laws assign the market operator a series of detailed functions that may be classified as follows:

**a) Functions related to operation of the markets**

- Receive the sale bids issued for each scheduling period by the various agents participating in the daily and intraday electricity markets.

- Receive power purchase bids.

- Receive from electricity market participants the information necessary to ensure that their power is taken into consideration in the matching process and in the relevant settlements.

- To receive guarantees, when appropriate. The management of such guarantees may be undertaken directly or by authorised third parties.

- Match the sale and purchase bids starting with the lowest bid until matching the demand in each scheduling period.

- Determine the various energy prices resulting from the matching processes on the daily and intraday electricity markets for each scheduling period and subsequent communication to the participants involved.
Settle and report payments and collections to be carried out in accordance with the final energy price resulting from the matching processes and other costs determined by the relevant regulations.

Provide the system operator with information on power sale and purchase bids issued by the various participants in the relevant electricity markets for each scheduling period.

Inform the system operator of new entrants, participants leaving the markets, any changes in the participants and, if appropriate, bid units, with sufficient prior notice to enable the suitable updating of information systems.

Define, develop and operate the computer systems required to guarantee the transparency of the transactions performed on the daily and intraday electricity markets.

b) Functions relating to the island and extrapeninsular systems.

Receive from the system operator details of the hourly cost, hourly availability and hourly power generated by each group, as well as the hourly demands of distributors and consumer resellers, accordingly.

The determination and publication of the final hourly price for generated electricity in each SEIE of power production and communication of the same to all the agents involved.

The settlement and communication of payments and collections that must be made according to the final electricity price resulting from each system, the effective operation of the production units, the availability of production units in each programming period and other costs specified in applicable regulations.

To inform publicly of the evolution of final generation prices in each SEIE with the frequency that is deemed appropriate.

To manage the guarantees of agents involved in each SEIE for electricity purchases and sales in accordance with the provisions established in applicable regulations.

c) Functions relating to Market Activity Rules and Contracts of Adherence

Submission of all modifications in contracts of adherence for Ministry approval.

Propose to the Ministry of Industry, Tourism and Commerce for its subsequent approval, rules of activity for the daily and intraday electricity markets. The approval of the Ministry will be subject to prior favourable report from the National Energy Commission.

Require daily and intraday electricity market participants to show their compliance with all the conditions established to this effect.

d) Functions related to information to be provided to market participants

Providing owners of the productions units, distributors, resellers, qualified consumers, external agents and system operators within the scope of the Iberian Electricity Market of the results of the bid matching process.

Make all information related to transactions matched and the unmatched purchase and sale bids for each of the daily and intraday market sessions available to daily and intraday electricity market participants.

Ensure the secrecy of the confidential information made available to it by the daily and intraday electricity market participants, in accordance with the legislation in effect.

Provide agents, by telematic media, of the relevant information affecting the formation of prices on the MIBEL organised markets, which must be furnished by the parties defined in article 9 of Law 54/1997 on the Electricity Sector.

e) Functions related to information given to third parties

Publish information on the evolution of the market with the frequency established.

Publish the average price rates on the Daily and Intraday Markets on an hourly basis.

Publish the results of the matching processes that take place within the sphere of their competence.

f) Functions related to the principles of independence, transparency and objectivity

Adopt any measures and agreements that may be necessary in order to ensure effective compliance with the limitations on direct or indirect capital stock holdings in the company established in article 33.1 of Act 54/1997, on the Electricity Sector, including via purchases of stock, obligatory for the affected party, of the capital stock that constitutes a breach of this legal provision.

Prepare and publish the market operator’s code of conduct.

Notify the Ministry of Industry, Tourism and Commerce and the National Energy Commission of any behaviour exhibited by the market participants on the daily and intraday markets that may disrupt the proper operation of the market.
■ Notify the Ministry of Industry, Tourism and Commerce and the National Energy Commission of any facts and information deemed relevant for the formation of market prices, guaranteeing the secrecy of all confidential data.

g) Information envisaged in article 3.6 of Directive 2003/54/EC on common rules for the internal electricity market.

■ The transposition of this Directive requires, in terms of the electricity negotiated through the organised market and importable through companies positioned outside the Community, the use of accumulated figures facilitated in the year, in the previous year, so that the factors indicate the contribution of each energy source to the global mix of fuels of the aforementioned amount of negotiated power.

Until the amendments introduced by Royal Decree-Law 5/2005 and Royal Decree 1454/2005 enter into effect, OMEL is also entrusted with the function of determining the final price of power on the market, which includes not only the results of the matching processes on the daily and intraday markets, but also those components of the price arising from the resolution of technical constraints, ancillary services, management of deviations and capacity payment. OMEL is also responsible for settlement, billing and notification to market participants of their payment obligations and collection rights in function of the aforementioned final market power price.

Pursuant to article 25.3 of Royal Decree 2019/1997, amended by article 1.30 of Royal Decree 1454/2005, the market operator and system operator may settle the payment obligations and collection rights falling within their spheres of relevance and require the corresponding guarantees either directly or through third parties.

Accordingly, and as mentioned previously, the appropriate agreements between the market and system operator could give rise to single billing on the electricity market, which would include all the components of the final market price, encompassing both those that fall under the responsibility of the market operator pursuant to the new regulations and those entrusted to the system operator.
3.1 Electricity market organisation
3.2 Principles governing the electricity market in accordance with established Regulations
3.3 Market sequence and processes
3.4 Daily and intraday markets
3.5 System technical management processes
3.6 Information flows
3.7 Settlements
3.8 Extrapeninsular systems
3.9 Extension of deregulation to all consumers
electricity market organisation and characteristics
The basic principle governing the organisation of the electricity market is the freedom for producers, resellers, and consumers to contract their supplies, according to Law 54/1997, which incorporated to the Spanish legal system the first directive on the electricity internal market.

In order to make the principle of contracting freedom viable and applicable, the abovementioned Law creates the electricity market and Royal Decree-Law 6/2000 strengthens the deregulation process, coming fully into force on 1 January 2003. It offers resellers the possibility of purchasing power from national producers and from producers from the European Union or third countries, as well as to sell it to other resellers or to the market itself, in addition to their original function in terms of purchasing electricity on the market and selling it to consumers. The aforementioned Royal Decree-Law sets out the market publicity and information regime to be applied by the market operator and the system operator.

The regime established for forward contracting in RDL 6/2000 has been replaced by the provisions established in Law 36/2003, of 11 November, on economic reform measures, which envisages the establishment of market mechanisms to promote forward contracting, as well as contracting on the organised market. In turn, the International Iberian Market Convention complements and modifies this regulation.

The Iberian electricity market envisages that this forward contracting will be performed in OMIP and incorporated in the organised market, managed by OMEL for Spain and Portugal.

Mention must be made of Royal Decree 1747 of 19 December 2003, which extends competition to the islands and extrapeninsular territories; the regime applicable to resellers, qualified consumers and distributors is similar to that adopted in the organised market being the reference for the settlements the final price of the electric power production market.

The regulation established by this Royal Decree is complemented by Order ITC/913/2006, of 30 March, approving the method for calculating the costs of each of the fuels used and the procedure for dispatching and paying for energy in insular and non-peninsular electric systems, and Order ITC/914/2006, of 30 March, establishing the method for calculating the capacity payment for ordinary regime generation installations extrapeninsular electric systems, both published in the BOE of March 31st 2006.

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**ECONOMIC AND TECHNICAL MANAGEMENT OF THE SPANISH SYSTEM**

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<th>ECONOMIC MANAGEMENT</th>
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| Notification to competence authorities of any exceptional situation or emergency | }
Finally, mention must be made to article 22 of the Royal Decree Law 5/2005, on the creation of the Iberian Electricity Market, which will begin its operation according to current forecasts in July 2006.

In development of the aforementioned Royal Decree Law 5/2005, 23 December, Royal Decree 1454/2005, of 2 December, was published. It introduces a significant range of modifications to electrical regulations, in particular Royal Decree 2019/1997 on the market, and will enter into force probably in the second half of 2006.

3.1 Electricity market organisation

The management of the Spanish Electricity System is entrusted to two independent but interactive entities, the Market Operator and the System Operator. The distribution of functions between both operators once the modifications introduced by Royal Decree 1454/2005 have entered into force will be those indicated below.

Management of daily and intraday markets is the responsibility of the Operador del Mercado Ibérico de la Energía-Polo Español, S.A. (OMEL), which is also responsible for settlement and communication of payment obligations and collection rights deriving from the energy contracted in the aforementioned daily and intraday electricity production markets.

The technical management of the electric system is the responsibility of the system operator, Red Eléctrica de España, S.A., which is responsible for carrying out all those functions deriving from the operation of ancillary services, abnormalities in the electric energy market, as well as the settlement and communication of payment obligations and collection rights deriving from ancillary services and the capacity.

In relation to its organisation, the electric energy production market involves the conjuncture of economic transactions deriving from the participation of market subjects in daily and intraday market sessions, bilateral contracts and forward contracting, as well as the application of ancillary services and deviations.

System agents are companies authorised to act directly in the electricity market as sellers and/or purchasers of electricity. Producers, self producers, external agents, distributors and suppliers of electricity can act as market subjects, as well as consumers of electricity and the representatives of any of the aforementioned subjects.

The denomination of agents in the daily production market is reserved for market subjects who participate in the daily or intraday production markets. As such, market subjects may act as daily market agents or sign bilateral contracts, maintaining in both cases the same rights and obligations.

In this way, the deregulation model in Spain is configured as a model that enables trading in an official organised market (forward supply, daily market and intraday market) and trading outside of it (bilateral contracts between producers, retailers and its qualified consumers including financial contracts). A key aim of the aforementioned model is to provide different trading possibilities on equal terms for all, providing the right price determination.

Most transactions are carried out in the daily market. All available production units, which are not bound by other contractual types (bilateral), participate in the market. These include production units from the special regime who so desire, for the sale of their electricity surplus or the acquisition of required electricity, as well as suppliers, external or authorised agents, distributors by necessary net energy and it is planning in the future for the sale of energy, which must be acquired from special-regime producers not covered by bilateral contracts, or for the acquisition of energy necessary to supply customers at a rate not covered by bilateral contracting systems with physical delivery, and qualified consumers.  

<table>
<thead>
<tr>
<th>ELECTRICITY PRICE COMPONENTS</th>
<th>2005</th>
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<tr>
<td><strong>Final market price</strong></td>
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<td>Daily and intraday market prices</td>
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<td>Prices/cost of technical operation processes managed by the system operator</td>
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<td>Capacity payment</td>
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<tr>
<td>Surcharges and taxes: Nuclear moratorium (1.724%), electricity tax (4.864%) and V.A.T.</td>
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<tr>
<td><strong>Access tariffs</strong></td>
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<td>Power payment</td>
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<td>Energy payment</td>
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<tr>
<td>Electricity tax (4.864%) and V.A.T.</td>
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<tr>
<td><strong>Price of electricity at supply point</strong></td>
<td></td>
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<tr>
<td>OMEL invoices the final market price</td>
<td></td>
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<tr>
<td>Distributors invoices access tariff</td>
<td></td>
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<tr>
<td>Retailers invoice either energy only or energy and access tariffs</td>
<td></td>
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<tr>
<td>When retailers contract the access tariffs they do it on behalf of consumers</td>
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<tr>
<td><strong>Collateral</strong></td>
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<tr>
<td>According to Rule 23 (BOE 14.IV.2002)</td>
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As a result of the publication of Royal Decree - Law 3/2006, until regulations under which distributors negotiate electrical energy through bilateral contracts may the market operator will, once the matching process is published of daily and intraday markets has been carried out, assimilate into physical bilateral contracts those bids presented and matched by subjects belonging to the same business group by the coinciding sale and acquisition quantities for the distributors in the same scheduling period. The net position of the group, which will be either a purchaser or vendor, will remain in the schedule resulting from the matching.

Once the daily market session has finished, the system operator studies the technical viability of the operation schedule in order to guarantee the security and reliability of supply. If the schedule resulting from the daily market plus the bilateral contracts does not meet security requirements, the system operator solves such technical constraints by modifying the production units schedule.

The intraday market currently holds six daily sessions over 24 hours, in which production unit owners, distributors, retailers and consumers may act participate as sale and purchase bidders, in case they have participated in the corresonding session of the daily market.

In addition, production units which have notified the system operator its unavailability prior to the closing of the daily, but which become available again, may present sale bids on the corresponding session of the intraday market.

Moreover all agents, even without participating in the daily market, which had previously communicated to the system operator the existence of a bilateral contract for the hours included in the corresponding intraday session, are also allowed to present bids to the intraday market.

The management of ancillary services have the object of ensure that energy is supplied under established conditions of quality and reliability, and that production and consumption are always balanced. The system operator controls these aspects through production unit bidding mechanisms, whenever possible.

As a result of these transactions and processes, until the modifications introduced by Royal Decree 1454/2005 are put into operation, the market operator will carry out the complete settlement, i.e. the market operator determines the collection rights and payment obligations corresponding to each participant that has acted in the market, according to the final price assigned.

The price of electricity at the point of supply to the qualified consumer comprises two elements: the final market price, including ancillary services and the access tariff payable for the use of the transmission and distribution networks, as shown in the diagram.

Royal Decree 2019/1997, of 26 December, in the draft given by Royal Decree 1454/2005, entrusts approval of market operation rules and Contract of Adherence to the Ministry of Industry, Tourism and Commerce, subject to a report from the National Energy Commission, at the proposal of the Market operator. The new draft given by Royal Decree 1454/2005 also provides for the possibility that the National Energy Commission will make proposals to modify the rules governing the daily and intraday market.

The role of the National Energy Commission is to ensure that activities are pursued in a regime of free competition.

The Market Agents’ Commission, a private body which groups together representatives of the market agents, the market operator and the system operator, has the functions of supervise the daily and intraday market and provides advisory services to the power exchange.
3.2 Principles governing the electricity market in accordance with established Regulations

The electricity market must be managed in accordance with the principles of transparency, objectivity and independence and in compliance with the Electricity Sector Act and the regulations that developed the Act.

Participation in the market is carried out using an electronic trading system capable of handling efficiently and transparently a large number of electricity purchasers and sellers of electricity and a very high volume of transactions and resultant settlements.

3.2.1 Market characteristics

Similarity to other markets.

The electricity market is a regulated market similar to other organised markets. It guarantees the objectivity and transparency of transactions that are completed in the market.

Public market

This is a public market that can be accessed by the entities and system agents who meet the general terms and conditions established in the legislation and regulatory standards. These terms are applicable on equal basis to all participants.

Participants’ guarantee

The participants’ guarantee in the market is founded basically on the following points:

- The Market Activity Rules and, in general, all associated regulations are public and known to all participants and to those who wish to be participants. Moreover, electricity market courses organised by Operador del Mercado Ibérico de Energía-Polo Español, S.A., with the occasional involvement of other institutions, ensure that all interested parties are informed of these regulations, as does the general public information system established by OMEL, via the Internet and the public media, as described later in this document.

- The Rules are the same for all participants, regardless of their volume of business or the nature of their activity, whether this be production, distribution, retailing or final consumption.

- The rights and obligations of all the market participants are stated in the Market Activity Rules and expressly accepted in the Contract of Adherence, leaving no room for any discretionary treatment of any party by the market operator. Matters related to bids submitted and the matching of these bids and aspects related to economic rights arising in connection with bid matching, are regulated and detailed in the Rules; hence, all the actions of the Company and the market operator can be reproduced by the market participants.

- The Market Activity Rules envisage all possible contingencies in order to facilitate matching results and subsequent transactions under any circumstances. Even in force major events, emergency mechanisms are provided in order to conclude the processes.

- The collateral scheme system established in the Rules ensures the proper performance and economic effectiveness of the transaction for the benefit of all participants.
3.3 Market sequence and processes

The aim of all the sessions held on the electricity production market on the day prior to the corresponding supply, is to determine the electricity transactions and the scheduling of the production units that are required to perform the transactions.

In compliance with the Market Activity Rules and the system operating procedures, the operating scheme is as follows:

- The daily market, to which bids can be sent at any time within the limit set by the closing time of the bid reception period, publishes the results of the corresponding session before 11 a.m. The transactions derived from the daily market session, together with the bilateral contracts and the international contracts set up the base daily operating schedule.

- Once the daily market session has closed, contracts and the bilateral declarations have been received any technical constraints that may have been derived from the daily market result are studied and solved. The process is completed before 2 p.m.

- On the basis of the provisional daily viable schedule, the system operator assigns, by means of an auction based on marginal price, the secondary regulation reserve (increases and decreases) to the participating production units. The result, which is published prior to 4 p.m., is the viable daily schedule.

- At that point, the first of the intraday market sessions (currently six) start to take place. The results of each intraday session is the final hourly schedule.

- The physical balance in the network between electricity production and consumption, based on market results, is ensured at all times by the system operator through the utilisation of ancillary services.

The sequence of market operations and the related timetable are shown on the chart.

3.4 Daily and intraday markets

Both markets are based on the formation of a supply curve and a demand curve that are created on the basis of sale and purchase bids, respectively. The intersection of these two curves, determines the market breakeven point and the matching result.

3.4.1 The daily market

The purpose of the daily market, as an integral part of electricity power production market, is to handle electricity transactions for the following day through the presentation of electricity sale and purchase bids by market participants.

Submitting bids to the daily market can be done as follows:

- Owners of production units that are subject to the ordinary regime submit sales bids, as long as such units are available and their energy is not linked to a bilateral contract.
Distributors of electrical energy present specific sales bids relating to energy they are obliged to acquire under the special regime which are not covered by bilateral contracting systems with physical delivery. Currently, distributors do not present these sales bids, instead, they discount their energy to the amount they have to buy for the tariff clients.

External agents, retailers, and owners of production units subject to special regime, can also submit sale bids.

Purchase bids are submitted by owners of purchase units, be they retailers, distributors, consumers or external agents.

Sale and purchase bids can be made using between 1 and 25 energy blocks in each hour, with power and prices offered in each block. In the case of sales, the bid price increases with the block number, and it decreases in case of purchases.

### PURCHASE AND SALE BIDS

<table>
<thead>
<tr>
<th>SALES</th>
<th>PURCHASE</th>
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<tr>
<td>Simple bids</td>
<td>Unpriced bids</td>
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<td>Upward supply curve</td>
<td>Rigid demand curve</td>
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<tr>
<td>Complex bids</td>
<td>Priced bids</td>
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<tr>
<td>Indivisibility</td>
<td>Downward demand curve</td>
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<td>Minimum income</td>
<td>Does not include</td>
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<tr>
<td>Load gradient</td>
<td>complex conditions</td>
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<tr>
<td>Scheduled shutdown</td>
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</table>

The sale bids may be simple, or may include additional conditions.

Simple bids are presented for each hourly period and production unit, indicating a price and an amount of energy.

Complex bids are those which, fulfilling the simple bid requirements, also include some or all the technical or economic conditions.

OMEL matches purchase and sale bids received prior to 10 a.m. each day, whereby the price in each hour will be equal to the price of the last block of the sale bid of the last production unit whose acceptance has been required in order to meet demand that has been matched.

The interconnection capacity affected by bilateral contracts on the one part and organised market operations on the other, will be split proportionally in order to incorporate bids through interconnections with France, Portugal and Morocco, as established in Appendix II of Order ITC/4112/2005, of 30 December, which establishes the regime applicable to the implementation of international intra-community interchanges of electrical energy. In accordance with economic priority, the result of the matching will incorporate bids which do not exceed the interconnection capacity assigned to market operations.

The aforementioned Order also establishes that the mechanism for the resolution of technical congestion of the interconnection between Spain and France is governed by the provisions of its Appendix I, once the operating procedures established in said Appendix I have been approved and market operation rules have been adapted in line with it.

This international interconnection will be managed by means of a mechanism comprising two complementary processes. One of them will be based on the assignment of physical capacity rights via explicit auctions in different time periods, and the other will be the daily market process and will be included in market coupling between markets in France and Spain. The first of the processes will be managed by the system operator and the second by the market operator. The management of both processes will be carried out by
The establishment of the congestion management mechanism will be carried out in three phases:

1. **Phase 1**: Only the explicit auction mechanism will be applied. In the event that the subject who holds a capacity assignment does not notify the use of the said capacity for the scheduling of bilateral contracts in the deadlines established before the daily market for Spanish production, such capacity will be reassigned to other via explicit auctions on a daily and intraday basis. Capacity assigned on a daily basis, including reassignments referred to in the above section, may be used both for the execution of bilateral contracts with physical delivery and for the scheduling of transactions in the daily market.

2. **Phase 2**: It is characterised by limited introduction of the Market coupling process, reserving for it capacity value which in no case may be higher than 15% of total capacity in the corresponding flow direction. In the event that the capacity assigned in explicit auctions for the scheduling of bilateral contracts in the daily market remains unused, this capacity may be reassigned to other system agent in the market coupling process.

3. **Phase 3**: It is characterised by the unlimited application of both processes. The capacity split between explicit auctions and market coupling will be established in the regulation governing the entry into force of this phase.

The matching result contains the marginal price and the hourly production and demand schedules established by OMEL on the basis of the matching procedure for power purchases and sales.

The base operating schedule is drawn up by the system operator, include the result of the matching process and the notification of bilateral contracts.
3.4.2 Solution of technical constraints

If the base operating schedule does not comply with safety requirements, the system operator will modify the base operating schedule, incorporating or removing the production necessary to resolve technical problems.

The process for resolving technical restrictions in the base daily operating schedule comprises two different phases:

In the first phase, the system operator will determine the technical congestions which might affect the execution of the base daily operating schedule, establishing the schedule modifications strictly necessary to resolve the detected congestions and comply with safety criteria, as well as the limitations affecting the scheduled units. If congestions are identified in the production of several units in one area, the system operator will preferably establish a system of limitations aggregated by zone. If there are several technically equivalent modification alternatives, the cheapest are will be adopted.

All sales units will participate in this same phase of the process, except those representing imports from countries outside the European Union. With regards to acquisition units, only those corresponding to pumping units will participate in this phase and, in case there are no other means of resolving restrictions on the Spanish production system or there is a certain risk to domestic supply and acquisition, units outside the Spanish electrical system may also participate.

In the second phase, the system operator will introduce the modifications necessary to achieve a schedule which is balanced in terms of production and demand, in accordance with system operating procedures and respecting established limitations.

Sales units and acquisition units corresponding to pumping units will also participate in this phase.

System agent representing units which participate in the first or second phase of the technical constraints phase may present bids to increase or reduce their scheduled energy.

Pursuant to article 8 of Royal Decree 2019/1997, sales bid must be by system agent obliged to present bids to the daily market and representatives of pumping acquisition units respecting always the results of the base daily operating schedule.

Sales bids will be presented to the system operator once the result of the daily market is known and before any technical restrictions which might affect the execution of the base daily operating schedule is known.
The system operator will produce the settlement of this process and will inform the market operator for its inclusion in the final price of electricity and settlement of same. Costs due to schedule modifications carried out in the technical constrains process will be borne by representatives of acquisition units, in proportion to their average consumption in the corresponding scheduling period. Pumping acquisition units and acquisition units aimed at supply outside the Spanish electricity system shall be exempt from this allocation of costs.

3.4.3 The intraday market

The intraday market is currently structured in six sessions. Several sale and/or purchase bids may be presented for each production or purchasing unit.

The following market participants may submit bids in the different sessions of the intraday market:

■ Daily market agents which participated in the corresponding session of said daily production market.
■ Production units which returned to operation, which were not in operation at the time and did not participate in the daily market.
■ Holders of bilateral contracts which, without participating in the daily market, have provided notification of contract execution for the hours included in the corresponding session of the intraday market.

Participation in this market is on the sole condition of respecting prior commitments relating to ancillary services.

Sale or purchase bids can include between 1 and 5 energy blocks or sections per hour, and in each of which the prices must be increasing for sale bids and decreasing for purchase bids.

Simple bids consist in a price and an amount of energy for each hour, and may also include optional additional conditions. These conditions may include the following:

■ Load gradient.
■ Minimum income or maximum payment.
Complete acceptance in the matching process of the first block of the bid.

Minimum number of consecutive hours with complete acceptance of the first block of the bid.

Maximum matched energy.

OMEL matches the purchase and sale bids so that the marginal price in each hour is equal to the price of the last sale bid block which had to be accepted in order to ensure that purchase bids were fully or partially met at a price equal to or exceeding the marginal price.

The system operator shall resolve technical restrictions resulting from the intraday market, selecting withdrawal of all bids which resolve the restrictions identified and those other additional bids necessary to restore balance between production and demand. The market operator in order to select the bid, it will use the economic order sent by the market operator.

The final schedule, whose components are included in the text box “INFORMATION OF THE FINAL DAILY SCHEDULE OF EACH SESSION OF THE INTRADAY MARKET (6 SESSIONS)”, is obtained.

3.5 System technical management processes

The system technical management processes are those that are required in order to guarantee the supply of electricity under the required conditions of quality, reliability and safety, through deviation management and ancillary services, which may be either mandatory or voluntary:

- Mandatory ancillary services: primary regulation and voltage control (minimum requirement).
- Voluntary ancillary services: secondary regulation, non spinning reserve, voltage control and black start service.

Whenever possible, these processes are managed by means of auctions of power and energy requirements requested by the system operator. Installations authorised to provide mandatory ancillary services can present bids stating the concepts, amounts and prices offered.

The system operator will assign the bids and determine the applicable retribution for the services effectively provided. This retribution will be at the marginal price.

The cost of ancillary services will be assigned only to energy consumed within the Spanish electricity system.
3.6 Information flows

In any organised market it is essential to structure and correctly manage information flows, which are set up between the entity managing the market and market participants, in order to guarantee the principles of transparency and competition. It is also essential that the market provides information, as long as it is not confidential, to the general public.

Likewise, in the case of the electric market, it is essential to have adequate and properly regulated communication between the market operator and the system operator.

OMEL’s information system, based on the applicable regulations and the Market Activity Rules, has provided, since market operations began, a high degree of efficiency and security in OMEL’s communications with market participants, the system operator, and the general public.

Royal Decree Law 5/2005 modifies Royal Decree Law 6/2000 and after July 1st, 2005 establishes that all information on the electricity market shall be transparent and published in the following way:

- The market operator:
  - Shall immediately make the information affecting the setting of prices on the organised market public to all agents.
  - Shall publicise the results of the matchings that occur within the scope of its competencies.
  - Pursuant to Royal Decree - Law 3/2006, publish joint supply and demand curves for the daily and intraday markets, as well as the schedule resulting from matching which does not incorporate bids assimilated into bilateral contracts between companies belonging to the same group, providing an explicit separation of all points which comprise them.

- The system operator:
  - Shall Publish the forecast for the demand, the commercial capacities of the interconnectors, and the situation of the hydroelectric reservoirs.
  - Shall public the results of the operation processes that fall within its competency.

- The Directorate General of Energy and Mining Policy shall determine the facts and the information considered relevant for setting the prices on the market. This relevant information will be published by the National Energy Commission, telematically, pursuant to the second additional provision of Royal Decree 1454/2005.

The aforementioned additional provision also establishes that the National Energy Commission will calculate and publish the final prices and average price indices for hourly electrical energy. In order to do so, the market operators and system operator will provide the necessary information on the markets and services managed by them.

In brief, the flow of information that is currently produced between the market operator, the system operator, the market agents, and the general public can be summarised as follows:

3.6.1 Exchange of information between the market operator and the system operator

The exchange of information between the market operator and the system operator is structured according to the following information:

- Communication by the system operator to the market operator of the following information:
  - forecast demand, for complete months, published in the first half of the month prior to the month to which the forecast refers,
  - situation of the transmission network,
  - partial or total unavailability of electricity production units,
  - interconnections capacity,
  - any other information that may be established or that the system operator or the market operator believe is relevant.

- Communication from the market operator to the system operator of the schedule system resulting from the matching of the daily market, till the entry in force of the Royal Decree 1454/2005.

- Communication from the market operator to the system operator of the daily viable schedule, which to the schedule resulting from the matching adds the resolution of technical restrictions and the result of ancillary services markets.

- Communication from the market operator to the system operator of the schedule resulting from the matching of the different session of the intraday market.

3.6.2 Exchange of information between the market operator and market participants

Until the modifications introduced in Royal Decree 1454/2005 come into force, the exchange of information between the market operators and market agents will be carried out in accordance with the following:
■ Communication by market participants to the market operator regarding the elements included in the contracts or bilateral contracts.

■ Communication to the market operator by the owners of the production units which negotiate the energy or through the forward market operator of the information necessary for this energy to be taken into account in determining the daily schedules and for the settlements that are the responsibility of the market operator.

■ Communication by the distributors to the market operator regarding the scheduled production in each programming period by the self-producers and producers subject to the special regime, within the scope of their networks.

■ Communication by the market participants whose bids have been matched, to the market operator regarding the scheduled productions for each physical production unit and the forecast supply at each of the connection nodes in the network.

■ Communication by the market operator to each of the market participants of such information regarding daily base schedule and the final hourly schedule that correspond to their production or purchase units.

■ Communication by the market operator to the market participants regarding data that correspond solely to their distribution networks, aggregated for each of their nodes defined and notified by the system operator.

3.6.3 Communications by the market operator to the public and to market participants

As a result of the requirements established in Royal Decree-Law 6/2000, which are included in Market Activity Rules, OMEL publishes information regarding prices of the daily and intraday markets, exchanged power, aggregate supply and demand curves, the bids submitted by market participants, market shares, and final prices. Details on this information may be found in Chapter 8, section 1, of this document.

It also publishes the capacity reserve displayed by market bid curves, based on the following three hypotheses:

■ First hypothesis: amount of all residual energy, excluded imports;

■ Second hypothesis: amount of residual thermal power bids. Obtained by deducting the amount of unmatched hydraulic plants from the first hypothesis;

■ Third hypothesis: amount of limit residual thermal power bid, deducing from the bids in the second hypothesis the bids of thermal plants mode at more than 9.15 ce/kWh (half of the instrumental price), although the plants that resolved technical restrictions are incorporated.

3.6.4 Communications of the market operator to the Spanish Energy Commission (CNE)

Both the Spanish Energy Commission (CNE) and the Ministry of Industry, Tourism and Commerce have access to all information available on the databases of the market operator one day after the negotiations sessions.

Notwithstanding the foregoing, OMEL systematically provides the CNE with information that can be grouped into four sections:

a) Information necessary for settlements of regulated activities performed by the CNE:

■ Amount of energy purchases from each distributor valued according to the average final hourly price of all the distributors.

■ Energy and average monthly sale price of production units that consume autochthonous coal.


- Average sale price of generating companies for their national production units.
- Amounts paid and collected as tariffs of the nuclear moratorium on invoices issued by the market operator with monthly settlement.
- Cost of deviations of special regime installations that do not make offers to the market as provided in articles 10, 11 and 12 of R.D. 841 of August 2, 2002.

b) Information on energy settlements made by OMEL. With each daily or monthly settlement, the market operator provides the CNE the hourly annotations and settlement summaries of all the market participants for each of their bid units and regulation zones.

c) Regular reports on the evolution of the market and on settlements. OMEL provides the CNE, whenever requested by the latter, with a half-yearly report on market settlements.

d) On a weekly basis, and whenever requested by the CNE, it provides the latter with information on the evolution of the market and the behaviour of the participants, in conformity with the criteria presented by OMEL for consideration by the CNE, as well as information on any anomalous situations observed by the market operator that goes against the market rules.

### RETAILERS, QUALIFIED CONSUMERS AND EXTERNAL AGENTS CAPACITY PAYMENT

#### 1, 2 and 3 hourly tariff periods

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<tr>
<th>Season</th>
<th>Tariff</th>
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<th>8</th>
<th>9</th>
<th>10-13</th>
<th>14</th>
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<th>19-22</th>
<th>23</th>
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</thead>
<tbody>
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<td>3.1 A</td>
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<td></td>
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<td></td>
<td>3.0 A</td>
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</tr>
<tr>
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<td>2.0 A</td>
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#### 6 hourly tariff periods

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<thead>
<tr>
<th>Month</th>
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<th>9</th>
<th>10-15</th>
<th>16</th>
<th>17-22</th>
<th>23-24</th>
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</thead>
<tbody>
<tr>
<td>Jan</td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
</tr>
<tr>
<td>Feb</td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
</tr>
<tr>
<td>Mar</td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
</tr>
<tr>
<td>Apr</td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
</tr>
<tr>
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<td>Sat &amp; Sun</td>
<td></td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
</tr>
<tr>
<td>July</td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
</tr>
<tr>
<td>Aug</td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
</tr>
<tr>
<td>Sept</td>
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<td>Sat &amp; Sun</td>
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<td>M to F</td>
<td>Sat &amp; Sun</td>
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</tr>
<tr>
<td>Oct</td>
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<td>Sat &amp; Sun</td>
<td></td>
</tr>
<tr>
<td>Nov</td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
</tr>
<tr>
<td>Dec</td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
<td>M to F</td>
<td>Sat &amp; Sun</td>
<td></td>
</tr>
</tbody>
</table>

Note: The table represents tariff periods and seasons with varying rates for each period.
3.7 Settlements

When the modifications introduced by Royal Decree 1454/2005 become law the total price of the production market will be broken down into two components: the final price of energy contracted on the daily and intraday markets, which is the responsibility of the market operator, and the addition of prices resulting from ancillary prices and the capacity payment, which is the responsibility of the system operator. The sum of both components is the final price. Currently the market operator calculates this final price, although in the future it will be published by the National Energy Commission.

3.7.1 Determination of the final price

OMEL calculates the final electricity price on an hourly basis that includes the following elements in its calculation:

- Daily market matching prices
- Cost or income for resulting from the process solving technical constraints
- Cost or income from the secondary regulation auction
- Intraday market matching price
- Cost or income from capacity payment
- Cost or income from the system technical operating processes required to regulate and compensate trading deviations.
- Surplus or deficit from the international contracts entered into by Red Eléctrica.

OMEL will carry out the settlement by using information resulting from the matching processes in the daily and intraday markets, from the solution of technical constraints, and from the information that the system operator places at market operator’s disposal in connection with processes for which it is responsible.

Thus, each market participant has a final hourly price that is a function of its participation in each of the markets and technical operation processes.

In the case of bilateral contracts, the settlement made by the market operator does not include the sale-purchase of power that appears in the basic matching schedule, limiting the corresponding collection rights and payment obligations to those arising from the technical constraints, from participation in intraday markets and ancillary services and of deviations.

3.7.2 Capacity payment

The costs for the capacity payment is a component of the total price of electricity on the market, the aim of which is to enable the final price to be identified as an accurate mid-term indicator for market participants, and to express the cost of guaranteeing supply to all consumers, pursuant to the Electricity Sector Law 54/1997.

For buyers on the organised market, the capacity payment is equivalent to a minimum price that must be paid in specific periods. As explained later, this minimum price is variable for distributors who supply tariff consumers and is fixed, on a period basis, for retailers, market consumers and external participants.

The total volume of collections and payments included in the regulations in force for this item is the amount resulting from applying 0.4808 € / kWh to the volume of electricity, expressed in electricity production bus bars, on the production market by domestic final consumers.
Electricity production units which are required to present bids on the electrical energy markets will have a right to receive a capacity payment. Production units will also receive capacity payment for the energy linked to the fulfilment of a bilateral contract with physical delivery. In both cases, this production unit must certify their availability as well as minimum operation, from 1st January 2005, of 50 hours a year at full load or equivalent if not running at full load.

On the other hand there imports of electrical energy or energy coming from production facilities covered by the special regime which do not sell their energy in the production market will no receive capacity payment.

The assignment to the different production units is made in proportion to the product of the following factors:

- Availability coefficient.
- Equivalent power, which is a function of net installed capacity and the capacity limited by availability of raw materials.

In the case of hydro-electric power stations, the latter term is a function of production in the last five calendar years.

### Payments by buyers

All distributors, suppliers and qualified consumers must pay the capacity payment for the energy they effectively acquire through different contract types for internal Spanish consumption.

Producers do not have to pay capacity payment for self consumption or production installations and pump consumption.

The capacity payment is proportional to the demand in power production bus bars of the different participants.

To calculate the payments, these participants are divided into two groups:

- **First group**: consumers and retailers for sale to consumers.

  System agents included in this group pay the capacity payment computed as the sum of the products of their demand on each hour multiplied by the unitary value of the capacity payment corresponding to the hour.

  The unitary value is a function of the tarification period defined on the corresponding network access tariff, being also a function of the number of periods (6, 3, 2 or 1). The attached table contains the unitary values of the capacity payments for retailers, consumers.

- **Second group**: distributors.

  System agents in the second group, i.e. distributors, pay the same unit price every hour of the month. This price is calculated by dividing the total amount to be collected each month, once the payments made by of the first group indicated are subtracted, by the demand in power production bus bars of the distributors.

  The total payment of system agents for capacity payment is calculated as the result of multiplying their monthly demand in power production bus bars by the average monthly unit price calculated as indicated in the previous paragraph. Since the total payment depends on the total payment made by the other system agent, its amount may vary each month.

### 3.7.3 Measurements and deviations

A specific characteristic of the Electricity Market is that the contracts and settlements are not definitive if the supply is not effectively produced and reflected in the corresponding meter, which should be able to send an hourly measurement in order to adapt to
## FACTURA

### DESTINATARIO ADQUIRENTE DE LA ENERGÍA

<table>
<thead>
<tr>
<th>Nombre</th>
<th>Dirección</th>
<th>Localidad</th>
<th>Provincia</th>
<th>C.I.F</th>
<th>A la Att.</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Sello</th>
<th>n° Factura</th>
<th>Vencimiento</th>
<th>Códigoóspro</th>
<th>n° Hoja</th>
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</thead>
</table>

### Otros impuestos a los efectos del art 8(1)(a) de la Directiva 77/388/EC modificada por la Directiva 2003/86/EC

<table>
<thead>
<tr>
<th>Código</th>
<th>Concepto</th>
<th>Energía [KWh]</th>
<th>Base Imponible</th>
<th>Importe</th>
</tr>
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</tbody>
</table>

### Otros conceptos

- **STO**: Subtotal
- **IVA**: IVA (
- **V.A**: IVA (IVA = [STO] * 14%)
- **EUR**: Total euros

---

*Fecha factura*
### Entidad Suministradora

<table>
<thead>
<tr>
<th>Nombre</th>
<th>Dirección</th>
<th>Localidad</th>
<th>Provincia</th>
<th>D.I.P.</th>
<th>A-la Alt.</th>
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### Mes Facturado

<table>
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<tr>
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### Total euros

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Fecha factura: [Fecha de la factura]
NOTA de CARGO o ABONO
Mes facturado

<table>
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<tr>
<th>Concepto</th>
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<th>Importe</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Entregas de electricidad realizadas por sujetos establecidos en el territorio español (CPI y CEC) y (IOC)</td>
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<tr>
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Liquidadación correspondiente al agente único vendedor.

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<td>IVA</td>
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</tr>
<tr>
<td>Total Venta</td>
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<td></td>
</tr>
</tbody>
</table>

Total meses (CARGO) o (ABONO)

(*) Las pagas deben ser efectuadas antes de las 10 horas del día de vencimiento.

Fecha facturación: __________________________

[265]
the markets mechanisms. This general standard applies to all except for resellers that contract with low-voltage consumers, that can use the profiles published in the month of December of each year to be used during the following year, according to the Resolution of the Directorate General of Energy and Mining Policy. The said profiles make it possible to convert the monthly measurements to hourly measurements.

The market operator receives the measurement date from the main electricity measurement concentrator managed by the system operator, in order to determine the final hourly price for each participant and for settlement, in accordance with the following scheme:

Prevailing measurement requirements are as follows:

- Meter reading digitally encrypted and signed on the meter, for high voltage measuring equipment, optional on low voltage, except for those that directly participation the market or subscribe a bilateral contract with a producer.

- Readings are received individually without any type of manipulation at the main electricity measurement concentrator, except for qualified consumer points with consumption levels of less than 750 MWh/year contracting with a retailer, and which can be added.

- Secondary concentrators may exist, whose owners are distributors as the entities entrusted with transferring measurements from the meter to the main electricity measurement concentrator.

- Existence of secondary concentrators that may be owned by retailers.

Deviations are defined as differences between measured power and traded power, which is the difference between traded power and actual production or consumption. Where applicable, measured power includes losses through the transmission network.

All costs arising in connection with the system technical management processes are charged to deviations, regardless of whether these are deficits or surpluses.

### 3.7.4 Monthly settlement procedure and time limits

Currently the market operator provides daily market participants with the provisional settlement corresponding to the period of the month that has elapsed. The monthly settlement is calculated at end of the period, resulting in the corresponding debit and credit notes.

Each settlement and verification of settlement performed by the market operator, and the potential disputes by a market participant, where applicable, as well as their resolution by the market operator, must be accomplished within three days.

These processes and time limits are common to daily and monthly settlement.

Collections and payments must be made on the last business day of the first fortnight of the month following the month to which the settlement corresponds.

Collections and payments are carried out through a special bank account that is completely separate from its assets, opened by OMEL for this purpose on behalf of the market participants.

### 3.7.5 Invoicing

Trading through the electricity market is deemed to be multilateral trading, whereby all sellers trade with all buyers. Consequently, each seller should issue separate invoices to all purchasers, allocating total production and sales to each purchase on a proportional basis. Nevertheless, this procedure would generate an inordinate number of invoices, some of which would be for very small amounts.

In order to resolve this problem, article 3 of Royal Decree 215, of 5 February 1999, amends Royal Decree 2402, of 18 December 1985, which established the obligation of companies and professionals to issue and deliver invoices. Royal Decree 215/1999 therefore permits
the documentation of power deliveries carried out through the market in the form of invoices issued by OMEL on behalf of power suppliers, who receive a copy while OMEL keeps the original. At the same time, OMEL issues invoices to electricity purchasers, who again receive the original while the market operator keeps a copy.

The tax obligations of market participants in terms of the issuance of invoices are therefore considerably simplified.

Facsimiles of the invoices issued to purchasers and sellers of energy are shown on the previous pages.

These characteristics of the settlement and billing processes, which incorporate all the agent transactions in the power production market, facilitate market participation for all types of agents and promote equal opportunities in contracting energy among producers, retailers and consumers.

Since November 2005 electronic billing has been available to agents on request.

### 3.8 Extrapeninsular systems

The extension of the deregulation of the electricity activities established in Electricity Sector Law 54/1997 to the extrapeninsular and island territories has been regulated by Royal Decree 1747, of 19 December 2003, which, in addition to incorporating the principles of competency, third-party access to the network and freedom of consumers to choose their electricity supplier, takes into account the specific aspects of the territorial location, in accordance with the provisions established in article 12 of the aforementioned Electricity Sector Law.

The regulation established by the aforementioned Royal Decree is complemented by Order ITC/913/2006, of 30 March, approving the method for calculating the cost of each of the fuels used and the procedure for dispatch and settlement in insular and non-peninsular electrical systems, and Order ITC/914/2006, of 30 March, establishing the calculation method for paying for the capacity payment for generating facilities covered by the ordinary regime for insular and non peninsular electrical systems, both published in the BOE of 31 March 2006.

The Royal Decree establishes a system for dispatching production based on the declaration of variable costs and on the regulation of fixed costs for producers. As regards the acquisition system agent i.e. the consumers, resellers and distributors, they are treated in the same way, from a cost standpoint, as their counterparts on the peninsula; they are entitled to exercise their right to choose supplier and participate in the market by communicating the estimated consumption paying the final price of energy on the peninsular market.

#### 3.8.1 Presentation of sale and purchase schedules

The delivery of sale and purchase schedules by the agents has objective to the presentation of bids to the peninsular market and will be performed at least once a day (similar to the peninsular daily market) and will provide the starting point for the competition of the generation/consumption schedules in the corresponding territories.

#### 3.8.2 Access to the final price of electric power

The demand of each island and extrapeninsular system, i.e. demand by consumers, resellers, and distributors, has access to the final market price by participating in the dispatch process. Consumers may also establish bilateral contracts with resellers and producers.

#### 3.8.3 Settlements paid by buyers

The Market Operator will settle the final price paid by all buyers according to the peninsular final price, taking into account the deviations estimated by the system operator. Another settlement corresponding to distributors is carried out in the National Energy Commission by means of a system similar to that applicable to peninsular distributors. The applicable complementary regulation had not yet been published when this document was completed.

#### 3.8.4 Settlement to generators

The market operator must pay settle generators using the funds paid by buyers participating in the dispatch. Since the generation costs in the extrapeninsular and island systems do not normally coincide with the purchases of consumers valued at the peninsular final price, an imbalance exists between the price paid by buyers and the price collectable by generators based on their costs. In this way, the settlement performed by the market operator provides generators with funds that are normally insufficient.

In order to make up this difference, the National Energy Commission will pay generators the sum of the following items:

- The difference between the cost of energy purchased by distributors from generators valued at the final hourly generation price in each SEIE (island and extrapeninsular electricity system) and the cost of this energy valued at the average price on the peninsular system payable by all distributors.
- The difference between the cost of energy purchased by resellers and consumers from generators, valued at the final hourly generation price in each SEIE, and the cost of this energy valued...
In the intraday market all can be buyers and sellers
at the average price on the peninsular system payable by all resellers and consumers purchasing energy directly on the market.

3.9 Extension of deregulation to all consumers

On January 1st, 2003 full deregulation took place for the 21 million consumers who can operate directly in the electricity market or through any of the 67 resellers mentioned in section 4.3. This new option required the establishment of procedures in terms of access contracts and power purchases, changes in methods of contracting and the termination or cancellation of these contracts.

Moreover, in order for this strong contingent of mostly domestic consumers to operate in a market where prices are established on an hourly basis, measurement requirements had to be established that are compatible with the use of their right to choose a supplier and to apply hourly prices with the necessary speed, efficiency and economy of the chosen measuring system.

3.9.1 Basic conditions of energy purchase and low voltage network access contracts

Royal Decree 1435, of 27 December 2002, which sets out the basic contract terms for energy acquisition and low voltage network access, incorporates the following fundamental aspects:

- It establishes the specific terms and conditions governing the contracting of energy supplies between low voltage consumers and resellers.

- It offers consumers the option of either managing the contract governing access to the networks with the corresponding distributor or entrusting the reseller that supplies power on their behalf with this task.

- It establishes the creation of computer databases that the distributors must keep accessible for their clients at no cost, differentiating between supply point data accessible by all the players in the system and restricted data that can only be accessed by certain participants.

- It standardises the procedures to follow in the event of termination or cancellation of the contracts and determines the deadlines for the changeover from supply tariff to access tariff and the periods for changing reseller. These deadlines are differentiated depending on whether or not actions are requested on the installations and according to the meter reading cycle and invoicing of supply.

- It determines the conditions, means of communications, deadlines and procedures for dealing with requests for modification of contacting characteristics to the distributors.

- It enables low voltage consumers to contract through the organised market and by means of bilateral contracts with producers. This means that all the consumers have access to the same existing contracting possibilities for qualified high voltage consumers.

3.9.2 Low voltage measurement requirements of consumers

Royal Decree 1433, of 27 December 2002, which sets out measurement requirements for low voltage consumers and production plants under the Special Regime, completes the content of the aforementioned Decrees 2018/1997 and 385/2002, concerning measurement points, making full deregulation possible and facilitating market access to low voltage consumers that do not have hourly meters.

Consequently, from 1 January 2003, settlements can be made using the meter measurements, in the case of hourly meters, or by means of the application of consumption profiles published in the Resolutions of the Directorate General of Energy and Mining Policy of 30 December 2002 (Official State Gazette 1/1/03) for 2003, 26 December 2003 (Official State Gazette 30/12/03) for 2004 and 28 December 2004 (Official State Gazette 30/12/04) for 2005.

These resolutions approve the initial consumption profiles for the respective years, together with the method for calculating hourly
energy applicable to type 4 and type 5 consumers who do not have hourly consumption records. In turn, every month Red Eléctrica de España publishes the final profiles resulting from the application of the aforementioned method of calculation on its Internet web page.

Royal Decree 1433/2002 classifies low voltage consumers into two groups:

- Essentially domestic consumers contracting up to 15 kW of power (type 5 measurement points) who can maintain their current measuring equipment, or change to a period or even hourly measurement system, when their consumption habits make the investment in the required equipment worthwhile.

- For consumers of more than 15 kW (type 4 measurement points), generally small industry and retail; since these are larger consumptions, the options that they can choose are measurement in 6 periods or hourly measurement.

The most noteworthy aspects of the Royal Decree are as follows:

- The application of the same measuring equipment requirements to all consumers, regardless of how they contract their electricity supply, on the free market or at the integrated tariff, whereby the decision to purchase or sell power at unrestricted prices through a reseller would not have any impact on the measuring equipment required by the consumer.

- It offers consumers the possibility of installing measuring equipment that incorporates the recording of parameters relating to service quality, and which will help to improve supply quality.

- Full validity throughout Spain of model approvals, verification or any other control performed in accordance with Law 3/1985, in terms of metrology, and its implementing regulations, on the part of any administration or competent authority. This full validity will help to reduce equipment prices, avoid complications for manufacturers and installers, and lead to a better service to consumers.

- All electronic measuring equipment must include a tele-reading option, enabling the rationalisation of readings and the automatic treatment of information on power consumption, with the obvious benefits for consumers.

- The installation and verification of meters is organised in competition, which will probably be extremely positive for the prices of these services.

The extension of deregulation to all consumers following the implementation of the current legislation, and which is now a reality, represents a fundamental element for the short- and medium-term development of the market. Its full effectiveness will depend on factors linked to the possibility of choosing suppliers, price formation with growing importance in the market and stronger links between market wholesalers and retailers. The design characteristics of the market managed by OMELE contributes positively to this process and can be strengthened with the integration of long term supplies through bids to the market operator or by developing demand management programs in order to stimulate an efficient response to prices on the part of consumers.

3.9.3 Change of Supplier Management Office

Among the main aspects involved in the liberalisation of electrical markets, special mention should be made of the fact that consumers are able to change their contracting system and supplier easily, effectively and without additional costs.

Various countries have deemed it necessary to set up specific regulations on these matters and, in this respect, Directive 2003/54/EC imposes on member states the obligation to ensure that qualified customers can change suppliers if they so wish. Appendix A of the Directive includes a range of measures for this purpose applicable to domestic customers, which can be summarised as follows.

a) The contract with the electricity service supplier must specify:

- the identity and address of the supplier;
- the services provided, the level of quality proposed and the deadline for the initial connection;
- the type of maintenance service;
- how to obtain updated information on the tariffs applied and maintenance costs;
- contract duration and conditions for renewal and cancellation;
- agreements of compensation and repayment applicable if agreed quality levels are not complied with;
- the method for commencing a conflict resolution procedure.

b) Consumers will receive transparent information on prices, tariffs and general conditions applicable to the access and use of electricity services, they will be notified of any intention to modify the conditions or price of the supply, and they will be informed of their right to cancel the contract when they receive the notification.

c) Consumers will be free to choose means of payment.

d) Consumers should not incur any charges for changing provider.
e) Consumers will benefit from transparent and simple procedures, which are not overly burdensome, for processing any complaints.

To facilitate the change in supplier, different countries have designed, basically, two types of management procedures. In one of them, which is decentralised in nature, the consumer notifies the service provider of his intention to change, and all communication necessary to make the change is carried out between the agents.

In the other model, centralised in nature, all communications aimed at changing the terms and conditions of supplier or the supply are carried out by a neutral body.

In general terms, it can be stated that the centralised model is more common than the decentralised one. In certain countries, neutral bodies have been set up, in many cases the market operators has acquired this role which, with access to all information necessary, can efficiently and securely manage the supplier change process without detriment or unnecessary delays for the consumer.

This system avoids problems like preferential use of information and contracting irregularities, ensuring equitable and transparent use of the information, both in terms of consumers and other subjects in the electricity sector.

The draft law modifying Law 54/1997, to adapt it to Directive 2003/54/EC, on common standards for the internal electricity market, provides for the creation of the Change of Supplier Management Office, which would be responsible for the centralised management of communications and the formal recording of changes of electricity supplier. This body will be required to create and update a database of electricity consumers.
4.1 Requirements for participating as a system agent and being an agent in the daily market
4.2 The participation of agents in the daily market
4.3 Producers
4.4 Production aggregators
4.5 Retailers
4.6 Distributors
4.7 External agents
4.8 Representatives
4.9 Final consumers
4.10 Iberian market agents
The concept of the market agent, which previously referred to those authorised to act directly in any part of the electricity market is reserved, as of the publication of Royal Decree 1454/2005, of 2 December, exclusively, to those who participate in the daily or intraday production market. This change will take effect at the same time as the modifications introduced by said Royal Decree and the new market operating rules.

Said provision defines production system agents as those who carry out activities aimed at the supply of electricity when, pursuant to article 9 of Law 54/1997, of 27 November, on the electricity sector, they are considered to be producers, self producers, external agents, distributors, suppliers and, pursuant to additional provision eighteenth of Law 54/1997, of 27 November, representatives.

4.1 Requirements for participating as a system agent and being an agent in the daily market.

Article 4 of Royal Decree 2019/1997, of 26 December, organising and regulating the production of energy, the wording modified by Royal Decree 1454/2005, establishes that, to participate as a system agent in the production market, the following conditions must be complied with:

a) Ownership of facilities validly registered in the Administrative Register for Electrical Energy Production or the Administrative Register of Distributors, Suppliers and Consumers, as applicable, or certification of their capacity as representative of any of the above system agents through the corresponding notarial power of attorney. Both Registers will include a special section listing and classifying external agents.

b) Provision of sufficient guarantees to the system operator to cover the economic obligations which might derive from its activities and compliance with the requirements established in the operating procedures (P.O.) relating to the collection and payment process.

Article 7 of the aforementioned Royal Decree 2019/1997 adds that system agents of the production market participating in the daily market must also comply with the following conditions:

a) Expressly signing up to the operating Market Activity Rules and conditions of the daily production market in the corresponding agreement, which will be unique and must be approved by the Ministry of Industry, Tourism and Commerce, after a report from the National Energy Commission.

This is a contract that binds both the system agent who wishes to confirm adherence, and the Market Operating Company accepting such adherence.

The condition, applicable to all participants, of adhering to the Market Activity Rules constitutes a guarantee of security and objectivity for the whole body of participants operating in the market.

The main characteristics of the contract of adherence appear on the table under the box named “CONTRACT OF ADHERENCE”.

b) Provide the power exchange with sufficient guarantees to cover the economic obligations which might derive from its actions as an agent on the daily production market, under the terms established in the contract of adherence. The guarantees established must be differentiated both in terms of the markets, daily and intraday, in which agents participate, and the scope of their participation in same.

Failure to provide this guarantee will prevent the participant from participating in the electricity market.

The guarantees are issued in favour of OMEL, in accordance with Rule 23 of the Market Activity Rules, in one of the following ways:

- By means of a cash deposit in the bank designated by the market operator for this purpose.
- Through a bank guarantee issued in favour of OMEL by a bank, savings institution or credit co-operative.
- Through an irrevocable authorisation to use one or more credit facilities subscribed by the purchaser of the electricity up to the maximum amount of the payment obligations undertaken during the period to be settled.
- Through the assignment of production market collection rights, pending payment, to purchasers by the seller.

This requirement ensures the liquidity of the electricity power production market and provides financial guarantees for all participants.

Metering equipment

System agents must have adequate metering equipment in order to participate in the market, as stipulated in Royal Decree 2018/1997, of
26 December, which approves the Rules governing Electricity Consumption and Transit Metering Points; these are also stipulated in Royal Decree 385/2002, of 28 April, which modifies Royal Decree 2018/1997, of 26 December, and in Royal Decree 1433/2002, of 27 December, which establishes the low voltage metering requirements for consumers and power plants under special regime.

In accordance with the abovementioned regulation, metering points are classified according to five types. Their fundamental characteristics are summarised below:

**Type 1:** These metering points include:
- All power units with an annual interchange of electricity equivalent to 5 GWh or more.
- Border metering points with customers, with an annual interchange of electricity equivalent to 5 GWh or more or contracted electricity of 10 MW or higher.
- Border generation points, with annual interchange of electricity equivalent to 5 GWh or more or apparent nominal power of 12 MVA or higher.

Type 1 metering points must be hourly, equipped with communications and have direct connections with the main concentrator or through a secondary concentrator.

**Type 2:** These metering points include:
- Border points with customers with contracted electricity equivalent to 450 GWh or more.
- Generation border points with apparent nominal power equivalent to 1,800 GWh or more.
- Points in other borders with annual interchange of electricity equivalent to 750 MWh or more.

Like type 1 metering points, they must be hourly and must be equipped with communications and have direct connections with the main concentrator or through a secondary concentrator.

**Type 3:** These metering points include the remaining points provided that meters are installed at a voltage level equal to or greater than 1kV and that they are not type 1 or 2 points.

It is not mandatory for them to have communications but they must be directly connected to a secondary concentrator and an hourly meter readings.

**Type 4:** These metering points include:

Any border point belonging to consumers with more than 15 kW in contracted electricity and power stations under the special regime whose nominal installed capacity exceeds 15 kW and which are metered at low voltage, i.e. below 1 kW including high voltage supplies metered at low voltage (without voltage transformers).

This metering equipment will come with six active power recorders that correspond to periods of hourly discrimination. By adding the data from these registers, the data corresponding to the three periods of the access tariff are obtained. The hourly meter is optional for these points.

**Type 5:** These metering points include:

Any border metering point belonging to consumers with more than 15 kW in contracted electricity and power stations under the special regime whose nominal power is equal to or less than 15 kW and which are metered at low voltage, i.e. at less than 1 kW including high voltage supplies measured at low voltage (without voltage transformers).

The hourly meter for these points is optional.

### 4.2 The participation of agents in the daily market

The Spanish electricity market is designed to facilitate access by participants as much as possible. Accordingly, the technical resources necessary to access the market avoid, as far as possible, obliging
Ordinary Regime

- AES Energía Cartagena S.R.L.
- Baha de Bizkaia Electricidad S.L.
- Bizkaia Energía S.L.
- Castelan
- Elcopas
- Eléctrica de la Ribera del Ebro
- Endesa Generación S.A.
- Energía Eléctrica del Ebro
- EDP Mexico Cartagena S.L.
- Fuerzas Eléctricas de Navarra
- Gas Natural SDG S.A.
- Hidróelectrica del Cantábrico

Special Regime

- A T. J. Asesoría Técnica Jurídica S.L.
- Abanillo Energía S.L.
- Acaba Barberá
- Acciona Energía S.A.
- Acciona Eólica de Galicia S.A.
- Ailea S.A.
- Aerogeneradores del Sur S.A.
- Agrupación Energías Renovables S.A.
- Alba Cuadramos S.A.
- Alba Labradoro S.A.
- Alba-Leste S.A.
- Alba-Lombo S.A.
- Alba-Mareiro S.A.
- Alba-Monpilar A.I.E.
- Alba-Nordes S.A.
- Alba-Novas S.A.
- Alba-Pollensa S.A.
- Alba-Refocused S.A.
- Alba Soan S.A.
- Aluminios Cortizo
- Alyo Energía S.L.
- Ampliación de Alba Soan S.A.
- Apto Sociedad Cooperativa
- Arcillas Atomizadas S.A.
- Atomizaciones Minerías S.A.
- Avicu S.A.
- Aviápple Avicola y Ganadería S.C.L.
- Avicola de Energías S.A.
- Azulejera La Plana S.A.
- Azulejos Vives S.A.
- Becaso Élrica Aljaur S.A.U.
- BELÉN de Cogeneración S.A.
- Bélica de Cogeneración S.A.
- Bélica de Cogeneración S.A.
- Bélica de Cogeneración S.A.
- Blocúlulas de Novarro S.A.
- Bioenergética Erapenas S.A.
- Bioenergía Santasusana S.A.
- Biorural Galicia S.A.
- Biomuralla Energía S.A.
- Borosa Ética S.A.
- Boroxa Ética S.A.
- Borem S.A.
- Bovedillas Cerámicas Andaluzas S.A.
- Bunge Ibérica S.A.
- Calixi y Pareo S.A.
- Castellana de Energía Renovable S.L.
- Celulosa de Energía S.L.
- Celulosas de Asturias S.A.
- Cerámica del Villací S.L.
- Cerámica Tudielana S.A.
- Cerámica Vives S.A.
- Cerámicas Cuatro Palomas S.A.
- Cerámicas del Foix S.A.
- Cerámicas Sasa S.A.
- Ceranor S.A.
- CEP Environas
- CEP Organopas S.L.
- Cogeneneradora Burgalesa S.A.
- Cogeneneración de Astudillos S.A.
- Cogeneneración de Alcalá A.I.E.
- Cogeneneración de Navia
- Cogeneneración del Ebro S.A.
- Cogeneneración del Noroeste S.L.

Producers

- Endesa Generación S.A.
- Energía Eléctrica del Ebro
- EDP Mexico Cartagena S.L.
- Fuerzas Eléctricas de Navarra
- Gas Natural SDG S.A.
- Hidróelectrica del Cantábrico

- Eólica Basque Alto S.A.
- Eólica Caballeros S.L.
- Eólica Cabeza de San Roque
- Eólica Caparrosa S.L.
- Eólica de Rubiá
- Eólica de Sanabria S.A.
- Eólica de Villanueva S.L.
- Eólica del Moncayo S.A.
- Eólica La Bandera S.A.
- Eólica Montes del Cierzo S.L.
- Eólicas de Euskadi S.A.
- Eólicas de la Rioja S.A.
- Eólicas Páramo de Pezas S.A.
- Eos Pax IIA S.L.
- Erosa Industrial
- Eubrey S.L.
- Expolian Energéticas Arteaga S.L.
- Expolian Energéticas Aldeaizales S.L.
- Expolian Energéticas de Mue L.L.
- Expolian Energéticas del Puerto S.A.
- Explotaciones Eólicas Escucha
- Explotaciones Eólicas Los Labrados S.L.
- Expolian Energéticas Plana de la Beta S.L.
- Expolian Energéticas Plana de María S.L.
- Expolian Energéticas Plana de Zaragoza S.L.
- Expolian Energéticas Sierra de Utrera S.A.
- Eurotransmador S.A.
- Eurovento S.L.
- Ferrooheléctrica S.L.
- Fibrared A.I.E.
- Finallair Energía S.A.
- FORCE S.A.
- FORERENA S.L.
- FORZIO S.L.
- Forestal del Atlántico S.A.
- FORSEAN S.A.
- Galicia Viento S.L.
- Gamiña Plywood Balos de Rio Tobia S.A.
- Garone Verda S.C.P.A.
- Generación de Energía Renovable S.A.
- Generación Eléctrica Península S.A.
- Generación Península S.L.
- Genifibre
- Genosubión S.A.
- Grasobra Tintes y Acabados S.L.
- Granja La Luz S.A.
- Grecassia S.A.
- Grupo Empresarial Ence S.A.
- Guipuscoa Ética S.A.
- Hidróelectrica de Arzoco S.A.
- Horinas de Maderas S.L.
- Huncor S.A.
- Iberdrola A.I.E.
- Iberdrola Año S.A.
- Iberdrola Bauge S.A.
- Iberdrola Bauenza S.A.
- Iberdrola del Arroyo S.L.
- Iberdrola del Gasteiz S.A.
- Iberdrola del Trevejo S.A.
- Iberdrola Ibérica S.L.U.
- Iberenergetica Hidroeléctrica de Garrotxa S.A.
- Iberenergetica Hidroeléctrica de Bages S.A.
- Iberenergetica Hidroeléctrica de Sabadell S.A.
- Iberenergetica Hidroeléctrica de la Fontana S.A.
- Iberenergetica Hidroeléctrica de Catalunya S.A.
- Iberenergetica Hidroeléctrica de Madrid S.A.
- Iberenergetica Hidroeléctrica de Barcelona S.A.
- Iberenergetica Hidroeléctrica de Sevilla S.A.
- Iberenergetica Hidroeléctrica de Andalucía S.A.
- Iberenergetica Hidroeléctrica de Valencia S.A.

- Industrias del Acetato de Celulosa S.A.
- Industrias del Cuidrado S.A.
- Industrias del Tabaco S.A.
- Industrias Polteras S.A.
- Ineuropea de Cogeneración S.A.
- Invelum Mediterráneo S.L.
- IrisCrom Energía S.A.
- Jumex Alimentación S.A.
- K. & W. Tolara S.A.
- Kanul Energía S.L.
- Kao Corporation S.A.
- Kemetas del Cidacoc S.A.
- Molinos de La Rioja S.A.
- Molinos del Cidacoc S.A.
- Molinos del Ebro S.A.
- Molit Energía S.A.
- Mosaos Vinos y Alcoholes S.A.
- Naturener S.A.
- Northeolic Pico Gallo
- Norththic Sicilia de Badunova S.L.
- Norvento Montouto S.L.
- Nuovi Rischi del Progreso S.A.
- Oletara S.A.
- O. E. A. Ruiz
- P. E. Aradaño
- P. E. Ameixenda Algueira
- P. E. de Curros
- P. E. e. Tec.
- P. E. Doa
- P. E. La Bobia–San Isidro
- P. E. Silvero de Água S.L.
- P. E. Vicedo
- P. E. Virsen Do Monte
- Penedes Industrial de Curtidos S.A.
- Palau Cerámica de Chiloeches S.A.
- Papeleria del Oriente S.A.
- Papelería de Arques S.A.
- Papelería del Principado S.A.
- Parque Eólica Corral Nuevo S.A.
- Parque Eólica Conечepano S.A.
- Parque Eólica Molinos S.A.
- Parque Eólica La Carrasque S.A.
- Parque Eólica Los Pedreros S.A.
- Parque Eólica del Ebro S.A.
- Parque Eólica Mora S.A.
system agents to acquire specific products or special software. The only exception to this is the infrastructure associated with security procedures.

- All interested agents may access the market described about: producers, distributors, retailers, qualified consumers and external agents, as well representatives. All they need to have is simple, easy-to-use computer equipment comprising a personal computer and standard Internet access. Standardised and easy-to-use access methods are used. Agents may access the market through an Internet access, analogue modem (RTB), a digital telephone line (ISDN) or even through specifically dedicated lines, if they need to handle large volumes of transactions.

- It is an electronic market, which incorporates all the advantages and facilities offered by Internet technology.

- The information system facilitates participants’ transactions through real-time verification and validation processes, thereby practically eliminating the possibility of errors.

- All participants may make the verifications that they deem adequate.

- The system allows system agents to access market results and settlements that concern them.

4.3 Producers

Electricity production is an activity that is performed under free competition conditions. Legislation makes a distinction between two types of producers: producers under ordinary regime and producers under special regime.

Administrative authorisation of production installations

In order to engage in their activities, producers must obtain administrative authorisation for the production installations that they own. (Royal Decree 1955/2000, of 1 December, which governs transmission, distribution, retailing and supply activities and procedures for the authorisation of electrical power installations).

Producers under special regime are required to obtain the same licenses for their installations as any other producers and must also apply for inclusion in any of the specific special regime modes currently regulated by Royal Decree 436/2004, of 12 March, governing the production of electric power by installations fuelled by renewable energy sources, waste and cogeneration.

Administrative Registration of production installations

Legislation currently in force establishes the Administrative Register for Electrical Power Generating Units, which is located at the Ministry of Industry, Tourism and Commerce.

All authorised electrical power generating installations, the conditions of the aforementioned installation and in particular the installed capacity of the power unit, must be registered in this Register. Installations covered by the special regime and those of external agents selling electrical power must also be recorded in this Register.

For this purpose, this Register is structured into the following Sections:

a) Section One: Electrical Power Generating Units under ordinary regime.

b) Section Two: Electrical Power Generating Units under special regime.

c) Section Three: External Agents.

The registration of producers consists of an initial registration phase and a final registration phase, except in the case of installations with a capacity of less than 1 MW and which must only comply with the initial registration stage.

Participation and trading of producers in the market

Producers may participate in the market provided that their installed capacity is greater than 1 MW.

Producers whose installed capacity is greater than 50 MW will participate in the market, and must present bids to the market, provided that their production is not linked to a bilateral contract. In any case, producers will be able to participate in the intraday market even if all their production is committed in a bilateral contract.

Producers may also incorporate power from external sources under the same terms and conditions as external agents.
Production under the special regime is regulated by Royal Decree 436/2004, of 12 March, establishing the methodology for the updating and systematisation of the legal and economic regime covering the activity of production of electrical energy under the special regime. Installations included in this regime may only incorporate their excess electrical energy into the systems, except those for which use as primary energy any of the non-consumable renewable energies, biomass, or any type of biofuel, who will be able to incorporate the totality of energy produced into the network. Excess electrical energy is considered to be that resulting from instant electrical energy balances exchanged by the installation with the network through its border points.

Producers under the special regime, with power of less than 50 MW, may sell their excess or their production to distributors or participate in the production market by making bids to the power exchange as applicable.

- Installation owners who opt for selling their production or surplus electricity to the distributor shall receive remuneration in the form of a regulated price only for those programming periods, defined as a percentage of the average electricity price or the regulated reference price set out in Royal Decree 1432/2002, of 27 December.

- Installation owners who choose to sell their production or surplus freely on the market, through the system of bids managed by the power exchange, the system of bilateral or futures contracts, or a combination the above, shall receive remuneration for the energy sold at the organised market price or the freely negotiated price, supplemented by an incentive for market participation and a premium, if the installation in question is entitled for it. This incentive and supplementary premium is generically defined as a percentage of the average or reference price for electricity.

For facilities covered by the first temporary provision of Royal Decree 436/2004, of 12 March (formerly transitional Royal Decree 2366/1994), with power of less than 50 MW, the government shall establish the sales price to distributors, which will be updated along with royal decrees on the tariffs for each year.

For facilities covered by the second temporary provision of Royal Decree 436/2004, of 12 March (formerly transitional Royal Decree 2818/1998), which have a transitional period of up to 31 December, the sales price will be the average final hourly price of the production market complemented, as applicable, by a premium, also established by the government and updated annually. During the aforementioned transitional period, said installations will transfer their production or excess to the corresponding distributor company.

Royal Decree 1747 of 19 December 2003, establishes the participation of producing agents under both the ordinary and special regimes, in the extrapeninsular and island territories, through a variable cost optimisation model.

Producers participating in the Spanish market and new planned investment projects.

Following the creation of the electricity market, a favourable climate has been created for the installation of new generating units, particularly combined cycle gas and wind power plants.

The “Planning for Electricity and Gas sectors Gas 2002-2011. 2005-2011 review” approved by the Council of Ministers of 31 March 2006, envisages a generating pool of combined cycle plants of between 26,000 and 30,000 MW installed power.

The 2005-2010 renewable energies plan envisages that in 2010 installed wind power will be 20,155 MW. Other renewable sources (except for hydraulic installations of more than 50 MW), will be 8,818 MW.

The participating producers listed in the OMELE agents’ directory appear on the table under the box named “PRODUCERS”.

4.4 Production aggregator

In accordance with the aforementioned Royal Decree 436/2004, producers of electrical energy under the special regime with power of
over 1 MW and under 50 MW may voluntarily present bids to the power exchange for the surplus energy loaded into the system for each programming period, either directly or through a production aggregator.

The production aggregator can be an agent from the market on which it negotiates the energy of the body it represents, and must take into account the requirements and procedures established for it, but if the system agent it represents is an agent from the daily production market, the production aggregator does not have to be certified as such.

The production aggregator may present bids for the special regime facilities it represents as a whole, grouped into one or several bid units, without prejudice to the obligations to separate joint bids into production units.

The dominant operators in the electrical sector, determined by the National Energy Commission, may only act as production aggregator for special regime production installations in which they have a direct or indirect stake of more than 50 percent. This limitation should be applied, likewise, to contracts for acquisition of energy signed between suppliers for the dominant operator and its special regime facilities.

Non-dominant operators may act as production aggregator in representation of special regime production installations, with adequate separation of activities on their own behalf and that of others, and to a maximum limit of 5 percent of the joint share in the group of companies in the production market bid. These characteristics and limitation must be applied, likewise, to contracts for acquisition of energy signed between suppliers which do not belong to the dominant operators and special regime installations.

4.5 Retailers

The retailing of electricity is an activity that appeared with Law 54/1997 and, like electricity power production, is exercised in free competition.

**Administrative authorisation.**

In order to engage in this activity, retailing companies must obtain the corresponding administrative authorisation; the relevant procedure is explained in Heading 5 of Royal Decree 1955, of 1 December 2000, mentioned earlier.

Essential requirements are, registration with the Mercantile Register, as well as compliance with the legal, technical and economic terms and in the way stipulated in the above mentioned Royal Decree.

Suppliers who decide to extend their activity to SEIEs may operate in a similar way to their agents established via the application to their acquisitions of the final average hourly rate of suppliers in the peninsular production market.

**Administrative Register for Distributors, Retailers and Qualified Consumers.**

Electricity Sector Law 54/1997 establishes, in addition to the register described for production installations, the Administrative Register for Distributors, Retailers and Qualified Consumers, which is located at the Ministry of Industry, Tourism and Commerce.

This Register is structured in the following four sections:

a) Section One: Distributing companies.

b) Section Two: Retailing companies.

c) Section Three: Qualified consumers.

d) Section Four: External agents.

The registration procedure for retailers, just as for distributors, consists of an initial registration phase and a final registration phase.

**Participation and trading of retailers in the market.**

Previously, retailing companies could only obtain their electricity power sale needs by purchasing on the organised markets and they sold electricity exclusively to qualified consumers and foreign buyers. However, Royal Decree-Law 6/2000 now allows them to purchase electricity on the production market, directly from foreign agents or national producers.

This power may not only be sold to qualified consumers, but also to other retailers or bid into the existing daily and intraday markets.

As with producers and self producers, suppliers can act as production aggregator for the grouping of sales bids under the special regime.

**Retailers participating in the Spanish market.**

The participating retailers listed in the OMEL agents’ directory appear on the table under the box named “RETAILERS”.
4.6 Distributors

Distribution activities are performed by companies under a regulated regime; its aim is the transport of electrical power from the transmission grids to the points of consumption, as well as the tariff-based sale of electricity to consumers and to distributors that are supplied under the D tariff system, pursuant to transitory Provision 11 of Law 54/1997.

This electricity must be purchased in the production market and, in accordance with current regulations, from producers under special regime, except those under the D tariff system that purchase from other distributors.

**Authorisation of distribution installations.**

Distributors must obtain authorisation for their distribution installations in accordance with the same legislation applicable to producers (Royal Decree 1955/2000, of 1 December, which governs transmission, distribution, retailing and supply activities and procedures for the authorisation of electrical power installations).

For this purpose, applicants must accredit compliance with certain legal, technical and economic conditions.

**Registration in the Administrative Register.**

Distributors must register in Section One of the Administrative Register for Distributors, Retailers and Qualified Consumers.

The registration procedure is similar to the one described briefly for retailers and consists of an initial phase and a final phase.

**Participation and trading of distributors in the market.**

Distributors participate in the electricity market in order to purchase the electrical power that they require in order to sell it to consumers at the regulated tariff, as well as to the distributors availing themselves to transitory provision 11 of Law 54/1997, and who are connected to their distribution grid.

In the case of distributors from extrapeninsular and island territories, Royal Decree 1747/2003 establishes that such distributors must be treated in the same manner as distributors operating in the peninsular system; their purchases must be valued by the market operator at the final electricity production market price.

Distributors present specific energy sales bids for the amount of energy they are obliged to acquire under the special regime not covered by bilateral contract systems with physical delivery.

Likewise they will present energy acquisition bids for the energy necessary to supply their customers at a tariff not covered by bilateral contract systems with physical delivery.

Distributors, as well as producers, self producers, external agents, suppliers, qualified consumers or representatives of any of them, as system agents in the production market, may formalise bilateral contracts with physical delivery. Their participation in this type of contracts is regulated by the Ministry of Industry, Tourism and Commerce.
QUOTA BY AGENT AT THE END OF LAST INTRADAY MARKET

%  

PRODUCERS

RETAILERS, CONSUMERS AND EXTERNAL AGENTS

DISTRIBUTORS

IMPORTS

EXPORTS

21.71 Endesa Generación 10.07 Gas Natural SDG 10.01 Iberdrola Generación 0.66 Régimen Especial 5.56 Iberdrola Generación 5.25 Unión Fenosa Generación 4.87 Hidroelectrica del Cantabrico G. 2.22 Nucléor 1.68 Bizzia Energía 1.59 Nueva Generadora del Sur 1.21 Red Eléctrica de España 1.18 Viesgo Generación 1.02 Rede Eléctrica Nacional 1.01 Acciona Energía 1.00 Elcogas 0.86 Tarragona Power 0.80 Generación Eléctrica Peninsular 0.76 Hidrocanabfrico Energía 0.58 Gas Natural Corporación Eólica 0.58 Eufer Comercializadora 0.55 Rapsol Química 0.51 Industrias Celulosa Aragonesa 0.45 Electrica de la Ribera del Ebro 0.39 Sniace Cogeneración 0.32 Galicia Vento 0.29 Edifico de Euskadi 0.28 Celulosa Energía 0.26 Danta de Energías 0.26 Compañía Energética El Tablero 0.25 Edp–Energias de Portugal 0.25 Sogama 0.25 Energy Works Cartagen 0.22 Grupo Empresarial Ence 0.21 Molinos del Ebro 0.21 Centrica Energía Generación 0.21 Compañía Eléctrica Aragonesa 0.20 Édicas Paraíso de Pasa 0.20 Endesa Energía 0.18 Solal Cogeneración 0.16 Barcayl Bank Plc 0.16 Acciona Éolica de Galicia 0.16 Desarrolladoras Eólicas de Lugo 0.16 Zabalgarbi 0.15 Stora Enso Barcelona 0.14 Hidroeléctrica Iberica 0.13 Rapsol Petroleo 0.12 Cogeneración Motril 0.12 Unión Fenosa Generación 0.12 Parque Eléctico de Teo 0.12 Genlibre 0.12 Tortosa Energía 0.11 Boerm 0.11 Centrica Energía 0.11 S.A.T. 1.596 “Nufri” 0.10 Explotaciones Éolicas Aldehuelas 0.10 Parque Eléctico de la Bobia y San Isidro 0.10 Elecday Carcelen 0.09 Others (quotas < 0.1%)

0.76 Centrica Energía 0.72 Canal Energía Comercialización 0.72 Edp Comercial–Comercialización de Energía 0.34 Edp–Energias de Portugal 0.31 Hispaelec Energía 0.29 Elektrizitäts–Gesellschaft Laufenburg España 0.23 Delta 0.22 Accord Energy Limited 0.21 Unión Fenosa Generación 0.21 Viesgo Generación 0.19 Viesgo Energía 0.18 Eléctrica–Gesellschaft Laufenburg 0.18 Electricité de France 0.17 Endesa Generación 0.11 Hidroeléctrica del Cantabrico Generación 0.11 Others

42.91 Iberdrola Distribución 29.56 Endesa Distribución 14.04 Régimen Especial 6.79 Unión Fenosa Distribución 3.60 Hidrocanabfrico Distribución 1.30 Electra de Viesgo Distribución 0.18 Energías de Aragón I 0.02 Others

37.74 Red Eléctrica de España 31.79 Rede Eléctrica Nacional 7.87 Edp–Energias de Portugal 6.64 Centrica Energía Generación 5.06 Barclays Bank Plc 3.39 Centrica Energía 2.77 Elektrizitäts–Gesellschaft Laufenburg Ag 0.99 Hidrocanabfrico Energía 0.95 Hidroeléctrica del Cantabrico Generación 0.84 Viesgo Generación 0.67 Electral 0.46 Iberdrola Generación 0.27 Office National de L’electricité 0.23 Wind To Market 0.21 Puerto Real Cogeneración 0.11 Sempra Energy Europe España
**Distributors participating in the Spanish market.**

The participating distributors listed in the OMEL agents’ directory appear on the table under the box named “DISTRIBUTORS”.

### 4.7 External Agents

External agents were also established by Law 54/1997. Their specific regulations consist in the Order of 14 July 1998, which establishes the legal regime applicable to external agents for performing intra-EU and international exchanges of electric power (Official State Gazette 23/7/98), as well as by Order ITC/4112/2005 of 30 December, establishing the regime applicable to the realisation of intra-community and international electricity exchanges (BOE 31/12/05), which modifies the above in relation to bilateral contracts and the management of technical constraints in international interconnections.

There are two types of external agents, buyers and sellers; needless to say, the same entity may engage in both types of operations.

**Administrative authorisation of external agents.**

This activity is subject to prior administrative authorisation by the General Directorate of Energy Policy and Mines.

Applicants for authorisation must be authorised in their country of origin or residence to purchase or sell electricity. If the applicant is a resident of a community country, the application may only be rejected if in their country of origin or residence the equivalent entities, and qualified consumers in particular, do not enjoy the same trading capacity.

**Registration in the Administrative Registers.**

Only one type of registration is applicable to external agents.

The application is presented to the General Directorate of Energy Policy and Mines of the Ministry of Industry, Tourism and Commerce, accompanied by the initial administrative authorisation granted by the aforementioned General Directorate, as well as, if they wish to participate in the daily production market, the certification that they have signed up to the operating and settlement rules and conditions for the production market in the contract referred to in article 7 of Royal Decree 2019/1997.

Seller external agents shall register in the Third Section of the Administrative Register for Generating Units and purchaser external agents shall register in the Fourth Section of the Administrative Register for Distributors, Retailers and Qualified Consumers.

**Participation and trading of external agents in the market**

External agents may participate in the organised market, purchasing or selling electricity, depending on their nature.

They may also enter into bilateral contracts with national producers, retailers, national consumers, or other external agents.

---

**CONTRACT OF ADHERENCE**

- Unique standard format approved by State Secretariat Resolution, together with the rules.
- Signed by the market operator and the market agent.
- Express compromise of the market agents to fulfill:
  - Activity and settlement market rules.
  - Regulations applicable to the market.
  - Software and documentation associated to SIOM.
  - Adherence to future modifications of the above mentioned rules.
- Includes:
  - Annex I. List of affiliated and participated companies.
  - Annex II. List of owned production units or other represented units for presenting bids.
The integration of energy from these operations in the production market takes place, as established in Article 34 of Royal Decree 2019/1997, without any discrimination vis a vis system agents residing in Spain.

In turn, agents who reside in Spain may also perform electricity exchange operations with other countries, although they must obtain prior individual authorisation for such operations from the Ministry of Industry, Tourism and Commerce, in the same conditions as external agents.

Nevertheless, acquisition of energy in other community countries outside the scope of the Iberian Electricity market or third countries may not be carried out by dominant operators in the electricity sector.

**External agents that operate on the Spanish market**

The participating external agents listed in the OMEL agents’ directory appear on the table below the name “EXTERNAL AGENTS”.

### 4.8 Representatives

The 18th transitional provision of Law 54/1997, introduced by Royal Decree Law 5/2005, in its article 22.11 regulates in the context of MiBel, and once the International treaty signed 1 October 2004, the figure of the representative agent, incorporating it as one of the system agents which carries out electricity supply activities in the system covered by article 9 of Law 54/1997 on the electricity sector.

Representatives will be understood to refer to those who act on behalf of a system agent, whether in the name of said system agent (direct representative) or in their own name (indirect representative). In this second case, the effects of the legal negotiation carried out by the representative will be imputable directly to same, without prejudice to the internal relationship with the represented party. In the daily and intra-day energy production market there is, together with joint representation, a representative system agent specially qualified only for representation under the special regime. This qualified representative is called a production aggregator and adds to its ordinary representation functions the faculties recognised in article 28 of Royal Decree 436/2004 of 12 March.

They will accredit their status as representatives by presenting the corresponding notarial power of attorney. Agents acting as representatives may not simultaneously act on their account and for other entities.

A representative is understood to act on its own account when it has a direct or indirect holding of more than 50 per cent of the capital of the company that it represents.

### 4.9 Final consumers

Consumers can continue buying electricity at a regulated tariff, or can purchase freely electricity, either purchasing directly in the market, through a retailer, or signing a bilateral contract with any system agent, from January 1st of 2003.

In extrapeninsular territories consumers may purchase energy at tariff in the conditions established for the peninsular system for authorised resellers in each SEIE, or directly through dispatches. The power purchases will be settled by market operators at the final hourly average price of the qualified consumer in the electricity production peninsular market.

**Registration in the Administrative Register**

Consumers intending to purchase electric power on the organised production market or in extrapeninsular or island system dispatches for their own consumption must register in section three of the Administrative Register of Distributors, Resellers and Qualified Consumers. However, consumers wishing to purchase from resellers or through bilateral contracts are not required to complete this registration formality.

The registration procedure will consist of an initial registration phase and a final registration phase.

**Qualified consumer agents**

The participating qualified consumers listed in the OMEL agents’ directory appear on the table under the box named “QUALIFIED CONSUMERS”.

### 4.10 Iberian market agents

In accordance with Article 14 of the International agreement for establishing an Iberian electricity market, signed treaty the Kingdom of Spain and the Republic of Portugal on 1 October 2004, the recognition in either of the States shall automatically authorise an agent to operate in the other state. For this purpose, the aforementioned article contains provisions stipulating that the administrative procedures to be fulfilled with respect to the authorisation and registration of agents in order to engage in the different activities in Spain and Portugal must be harmonized on a reciprocity basis.
5.1 Trading in the electricity market
5.2 Daily market
5.3 Intraday market
5.4 Technical operating processes of the system
5.5 Final hourly price
5.6 Internacional electricity trading
During 2005, the eighth year of the electricity market’s operations, all the markets and processes continued to be fully operational, as shown by the volume of energy traded, the financial volume of transactions, the increasing development of the intraday market, the increase in transactions resulting from contracts entered at free prices, as well as the consolidation of the activity of the external agents and the power producers under the special regime in the market.

5.1 Trading in the electricity market

The energy produced for the overall electricity market in 2005 totalled 256,620 GWh, representing a total net trading value of 15,792 million euros, increase of 6.4% and 89.6% more, compared to the previous year, respectively.

The amount of energy traded in the year is influenced by both economic activity and a seasonal component, which prompts significant fluctuations in trading, with the consequent effect on the financial volume of trading.

Monthly averages of 21,385 GWh and around 1,316 million euros were traded in the production market.

Market trading is structured in hourly periods, which give rise to significant variations on prices and energy volume over the 24 hours of each day, producing peaks, valleys and flats, as well as different trading behaviour on holidays and weekends with respect to other days.

The number of transactions recorded for all processes in the production market in terms of settlements in the year 2005 amounted to a monthly average of 955,540 transactions and a daily average of 31,415 transactions, 96% more than the previous year.
Attending to the markets and technical operation processes, that integrate the power production market, the energy traded in each of them and its percentage respect to the total energy traded were as follows:
The economic traded volumes by markets and processes in the production market are as follows:

Net energy and economic figures are as follows:

In turn, and with reference to trading arising from production and net consumption, the energy and economic figures are as follows:
Noteworthy trading issues corresponding to production and purchasing units are as follows:

- With the exception of producers trading under the special regime and of a small amount of energy sold under bilateral contracts, the energy traded in the market was generated by the conventional production plants, amounting to approximately 87.4% of the total electricity production. We have added the energy traded in the international exchanges to total electricity production.

- From September 2002 until March 2006, special regime entered the market as market participants, presenting bids either directly or through a production aggregator with a capacity of more than 11,000 MW. Additionally, have been added to the market 762 MW that correspond to producers greater than 50 MW in the ordinary regime proceeding from the first transitory provision of the Royal Decree 436/2004 that because of its technology have premium.

- Electricity consumption corresponding to distributors, retailers and qualified consumers was supplied in the market, with the exception of the part of distributor demand covered by the surplus from producers operating under the special regime. In addition to this, selfproducers’ own consumption must also be taken into account.

- The analysis of energy traded either directly or indirectly through the market by retailers, qualified consumers and external buyer agents, and therefore excluding from total consumption the energy contracted by distributors for sale to customers at regulated tariffs and energy from pumping stations, is significant. Since the beginning of the market, the evolution of energy consumption at free prices is represented on the following page.

![Market Share of Special and Ordinary Regime Units with Premium](image-url)
5.2 Daily market

The daily market has functioned normally since January 1st, 1998. Market matching has been carried out every day after the corresponding daily market session in which marginal prices have been set for each hour, and energy has been matched every hour for each production and purchase unit.

Sales bids in the daily market that must be made by generators by production unit, as long as there are no commitments derived from bilateral contracts, may be set for an amount and a price independent for each hour, or may additionally include complex conditions (indivisibility, load gradients, minimum income, and scheduled stop). Most of the thermal power bids have included complex conditions, but, the number of bids from production units that include minimum income have been notably reduced. The bids from hydro units and some thermal units have not incorporated complex conditions.

Purchase bids in the daily market cannot include complex conditions. The main features during the year were as follows:

- Purchase bids made by distribution companies follow a rigid demand pattern i.e. in accordance with the established instrumental price, although ever since April 1998, the market rules permit all purchasing units to make price bids (distributors, resellers and consumers).

- The owners of pumping stations, retailers and consumers who are active in the market usually make bids at prices other than the instrumental price.

The weighted average monthly price in the daily market in the year 2004 ranged from a high of 7.018 c€/kWh in December to a low of 4.418 c€/kWh in April. For 3% of the market sessions, the difference between the maximum and minimum prices fluctuated between 1 and 2 c€/kWh. Nevertheless, during periods of low prices, the difference between maximum and minimum prices was considerably lower. The average price for the period was 5.368 c€/kWh and the weighted average price 5.573 c€/kWh, increases of 92.0% and 93.9%, respectively from the previous year.

The volume of trading in the daily market in 2005 increased to 12,445 M€, and 223,290 GWh, representing an increase of 114.6%
Daily market weighted average price: 3.55 €/kWh

Weighted Average Daily Market Price

Average Daily Market Price

Energy and Prices of the Daily Market

Years 98 to Mar 06

GWh

Years 01 to 05

Increase 05: 93.9%

Increase 05: 92.0%
and of 10.7%, respectively, with respect to the previous year. Maximum energy matched in the daily market reached highs in the year in July and the winter maximum in December evolving continuously in the intermediate months.

- The maximum power peak for 2005 was 43,378 MW and was reached at 8 p.m. on January 27th; in summer, the peak of 38,542 MW was reached at 2 p.m. on July 21st.
- The winter maximum for the volume of energy demanded in transmission was achieved in January with 22,886 GWh, while the key summer figure was the 21,758 GWh for July.

Purchases in the daily market by retailers and qualified consumers in the daily market in 2005 have been 80,889 GWh representing 36.2% in energy, with respect to the total energy acquired in the daily market.

Purchases by external agents in the daily market totalled 7.056 GWh in 2005, representing 3.2% in energy, with respect the total energy acquired in the daily market.

During the year 2005, contracting of international exchanges not managed by REE in the daily market totalled 13,183 GWh, to which must be added a total of 1,035 GWh from bilateral contracts.

Bids and matching results were sensitive not only to the evolution of electricity demand, but also to conditions of hydraulicity and producible hydraulic in 2005.

In the last eight years, production by technologies derived from trading by production unit owners in the daily market is represented on the following graph:
The number of hours that each technology has established as “marginal price”, grouping data on a weekly basis since the beginning of the production market, is shown in the chart named “prices setting technology”.

The influence of technical constraints on the market since January 1st 1998, has passed through different levels, as shown in the chart on the following chart named “technical constraints daily energy”.

During the summer, there is a significant increase in the amount of energy used for solving technical constraints; 3.87% in August 2001, 2.41% in August 2002, 2.84% in June 2003, 5.52% in July 2004 and 1.67% in July 2005, of the corresponding to the daily market. In the winter months it also increased, but to a lesser extent. In December 2005, it accounted for just 1.4% of energy traded on the daily market, the same that for the whole year 2005.
Analysis of the electricity production reserve margin in the daily market

The electricity production reserve margin can be evaluated on the daily market by determining all sale bids presented by producers that have not been matched, since it constitutes surplus energy available over demand that settles price in the daily market. The consideration of the reserve margin is an essential factor for correct price formation. The consideration of unmatched energy offered in bids as the reserve margin depends on the type of technology used and on the possibility of using the aforementioned energy on a permanent basis.

The following analyses consider three hypotheses relating to the evaluation of the electricity production reserve or residual offer considering non matched bids, simultaneously indicating available production and aggregate demand. Aggregate demand is deemed to refer to total that settles price in the daily market, and residual offer are deemed to refer to the difference between available production bids and production that settles price in the daily market. bids in each hourly slot.

Hypothesis 1: bids relating to total residual power except imports, in which available electricity production is considered to be total power offered except the imports in each hourly slot in the period September 1998 to March 2006.

Hypothesis 2: bids relating to total residual power except imports, in which available electricity production is considered to be total power offered except the imports in each hourly slot in the period September 1998 to March 2006.

Hypothesis 3: bids relating to total residual power except imports, in which available electricity production is considered to be total power offered except the imports in each hourly slot in the period September 1998 to March 2006.
**Hypothesis 2**: bids relating to thermal residual energy except the imports, in which total bids relating to energy produced from hydraulic plants is deducted from the available electricity power production considered in hypothesis 1, for each hour in the period September 1998 to March 2006, without treating surplus hydraulic hourly energy as a permanent reserve. Consequently, this is a conservative hypothesis, particularly in cases in which hydroelectric producible is high or medium.

**Hypothesis 3**: thermal residual bid limit, except the imports in which energy offered over 9.015 c€/kWh, conventional figure that corresponds to half of the instrumental price, considered in hypothesis 2 is rejected except the energy that has been assigned in the daily market, for each hour in the period September 1998 to March 2006.

The analysis of the evolution of the reserve margin jointly with the analysis of price evolution is a relevant factor indicative of price sensitivity in situations of either abundant or scarce production when there is excess of energy production. In the daily market there is a high inverse correlation between the electricity power production reserve margin and the price of the afore mentioned energy, as shown below with respect to the above mentioned hypothesis and the coinciding periods.
5.3 Intraday market

The intraday market started operations on 1 April 1998. During the first three months, trading was performed in two sessions. Between July 1998 and 15 September 1998, the market held four sessions, and five from the latter date until 8 March 1999, when a sixth session was added. The market has operated every day in all sessions.

The characteristics of bids can be described as follows:

- Trading by production units in this market has been substantially greater than trading by purchasing units.
- The market has adequately resolved failures prompted by the unavailability of production units and infeasibilities arising from energy assignment processes prior to the intraday market.
- The number of bids is very high; however, there are fewer matched bids. In this market, however, more than one bid may be made per production or purchasing unit.

The average monthly price in the intraday market in 2005 was of 5.501 €/kWh and the weighted average price 5.327 €/kWh, an increase of 91.8% and 77.4% respectively, considering previous year. In December there was an increase in the weighted average price compared to the previous month, rising to 6.805 €/kWh. The spread between maximum and minimum prices was generally higher than that observed in the daily market, and certain periods of considerable volatility arose.

The energy settled in the intraday market includes the desegregation of the power units in the special regime.

On the basis of a study of daily spreads between the maximum and minimum, at 3.6% of the days of the difference it was between 2 and 3 €/kWh and on 96.4% of the days the spread exceeded 3 €/kWh.

Purchase units are still scarce, particularly in the case of distributors, whose weight is preponderant in the overall number of purchase units. This may be because they are unable to obtain the cost of the deviations in a useful amount of time, and also because it is hard to forecast demand.

AVERAGE INTRADAY MARKET PRICE

<table>
<thead>
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<th>Year</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Avg</th>
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</table>

WEIGHT AVERAGE INTRADAY MARKET PRICE

<table>
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<tr>
<th>Year</th>
<th>Jan</th>
<th>Feb</th>
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<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Avg</th>
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</table>
electricity trading in 2005

**ENERGY TRADED IN THE INTRADAY MARKET**

<table>
<thead>
<tr>
<th>Years 01 to 05</th>
<th>Increase 05: -17.8%</th>
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<tbody>
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<td>GWh</td>
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**ECONOMIC VOLUME OF TRADING IN THE INTRADAY MARKET**

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<thead>
<tr>
<th>Years 01 to 05</th>
<th>Increase 05: 45.8%</th>
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<tr>
<td>96.62</td>
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<td>87.92</td>
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<td>1,984</td>
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<td>49.11</td>
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<tr>
<td>05</td>
<td>113.33</td>
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</tbody>
</table>
The daily trading and energy volume in the intraday market have followed a gradual upward trend, with an average trading volume in 2005 of 1,090 M€ and 20,488 GWh, an increase of 45.7% and a decrease of 17.8% respectively, than in the previous year.

The energy traded on the intraday market in 2005 was around 9.2% of the energy and 45.8% of the economic volume negotiated on the daily market.

The energy traded by retailers and qualified consumers accounted for 10.1% of electricity traded during the year in this market and 31.9% of the energy traded by purchasing units, increasing continually since the creation of the intraday market.

5.4 Technical operating processes of the system

During 2005, the technical operating processes managed by the system operator, deviation management and ancillary services required the trading of an average monthly regulating band of 1,217 MW, and average monthly energy of 700 GWh. The economic value of these services was 327 M€ for the band and 494 M€ in order to cover energy required to control deviations and ancillary services. The cost of these services for the consumer additional to the price of the daily market have been 519 M€. However, as shown in the figures, the deviations of the different processes and in each month were significant.

The volume of energy required for the technical operation of the system stands at 3.3% of all contracted energy on the production market.

This volume of energy corresponds to the difference between the hourly programmes resulting from the trading on different market sessions and the real-time supply and demand of energy, i.e. are the necessary energies to guarantee balanced supply and demand flows in each programming period.

The volume of deviated energy is significant although this involves quantities that are within the margins of error in the demand forecasts.

The energy required in the technical operating processes for the year 2005 was 8,402 GWh and 494 M€, and a decrease of 1.3% and increment of 80.2% in economic volume than in the previous year.

The average price of the energy sold for the year 2005 in all the technical operating processes was 7.830 c€/kWh, lower than 4.791 c€/kWh for the previous year. This average price for the energies bought again to the system was 3.305 c€/kWh in the year 2005, higher than 1.634 c€/kWh in the year 2004.

The share of these processes on the weighted average final hourly price, including regulation cost and technical constrains cost is 0.270 c€/kWh for the year 2005, a 24.4% increase over 2004.
5.5 Final hourly price

The value of energy traded on the electricity market depends on the transactions carried out by each participant in the different markets and processes, the costs incurred in solving deviations, and on the application of collections and payments derived from the capacity payment. This value constitutes a basic reference in the electricity market and is known as the final price. It is calculated on an hourly basis for each participant as a result of settlement.
5.5.1 Capacity payment

The capacity payment is calculated since 1999 in accordance with the Order of 17 December 1998, which modified previous Order of December 29th, 1997.

The above-mentioned Order establishes that:

- Qualified consumers, retailers and external agents are now provided with prior information on the capacity payment applicable to each hour.

- Distributors pay a single hourly price for each month.

Article 1 of Royal Decree 2066/1999, which established the tariff for 2000, stipulates that the value of 0.7813 €/kWh that was applied in the calculation of the monthly amount collectible for capacity payments would be reduced to 0.6912 €/kWh as from 1 January 2000. Royal Decree-Law 6/2000 of 23 June, reduced this value to 0.4808 €/kWh as from 1 July 2000, and also modified the collection and payment criteria with respect to the capacity payment.

The capacity payment is calculated since 1999 in accordance with the Article 1 of Royal Decree 2066/1999, which established the tariff for 2000, stipulates that the value of 0.7813 €/kWh that was applied in the calculation of the monthly amount collectible for capacity payments would be reduced to 0.6912 €/kWh as from 1 January 2000. Royal Decree-Law 6/2000 of 23 June, reduced this value to 0.4808 €/kWh as from 1 July 2000, and also modified the collection and payment criteria with respect to the capacity payment.

The consumers, retailers and external agents have a capacity payment lower than the distributors. The average capacity payment variation cost in 2005 for retailers, qualified consumers and external agents was as follows: it reached a maximum of 0.323 €/kWh in January 2005, and a value of 0 €/kWh in August. Distributors have an average price between a minimum of 0.556 €/kWh in January 2005 and a maximum reached in August of 0.810 €/kWh.

Capacity payment for production units depends on the availability of generating plant. Also, the allocation of amounts differs for thermal and hydroelectric power stations. Special regime production units that participate in the organised market received a capacity payment the same to the ordinary production regime since March 27th 2004.

5.5.2 Deviations from the final schedule

The deviation from the final schedule in each programming period is the difference between final schedule and meter measure in power production unit bus bars.

In 2005, new complete final measurements have been received for the period March 2004 to January 2005, which have allowed practically all agents to have final settlements. It has not been possible to sign off earlier measures because a small group of agents is involved in a legal-administrative dispute regarding settlements dating from April 2002.
Along with the problem referred to in the previous paragraph, it is important to explain a further reason why it is not possible to make definitive settlements incorporating firm measurements for the period from January, 2003, to February, 2004, the market operator either does not have measurements or the measurements sent by the system operator do not comply with legal regulations, with the result that it is not possible to estimate deviations or to calculate corresponding individual additional cost.

Likewise, the market operator does not have full measurements for the period starting on May, 2005, as a consequence of applying Operation Procedure 10.5, which sets out a deadline of ten months for closing measurements, a deadline which is too long and probably not justifiable.

Measurement data also provides information to each market participant on deviations and its own unit costs:

- Based on an analysis of deviations in actual consumption and production values as compared to the contracted schedule, the weighted average value of deviations expressed as a percentage of traded power was 2.9% in 1998, while in 1999 it was 3.6% and in 2000 6.1%. For the period 2001 to 2005, it was 6.4% in 2001 and from 2002, based on provisional data available, the values were as follows: 5.7% in 2002, there was no data for 2003, 4.7% for the period March to December, 2004 and 6.3% for the period going from January to April, 2005.

- The average value on deviations of generators compared to traded energy fell from 1.7% in 1998 to 1.0% in 2000. In the period from 2001 to 2005, the values were as follows – based on available data: In 2001, 0.8%, in 2002, 0.9%, 1.4% in 2003 – a provisional rate for the last months of the year, 1.0% in 2004 and 3.3% in 2005.

It is important to note that deviations for ordinary regime power producer remained at low percentage rates, at around 1.0% compared to the contracted level. The increase which took place at the end of 2004 and in 2005 was due to the greater participation of special regime producers in the market, with important repercussions from wind power, which has a significant influence on the whole figure. The special regime average deviations stood at 8.0% in 2004 and at 23.2% in 2005, both of them provisional figures.

- The deviation percentage for distributors has been maintained at a stable level since the market started out. In 1998, it was 4.1%, in 1999, 5.2%, and in 2000, 5.6%. In the period from 2001 to 2005, it was very similar in 2001 and 2002, at 6.3% and 6.2% respectively, there is no data for 2003, from March to December, 2004, it was 5.8%, while it was 4.9% in the first four months of 2005.

### ADDITIONAL COST PER DEVIATION

<table>
<thead>
<tr>
<th></th>
<th>01</th>
<th>02</th>
<th>03</th>
<th>04</th>
<th>05</th>
</tr>
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<tr>
<td></td>
<td>&gt; 90%</td>
<td>&gt; 50%</td>
<td>&gt; 10%</td>
<td>&gt; 90%</td>
<td>&gt; 50%</td>
</tr>
<tr>
<td>Jan</td>
<td>0.097</td>
<td>0.572</td>
<td>1.652</td>
<td>0.032</td>
<td>1.092</td>
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<tr>
<td>Feb</td>
<td>0.046</td>
<td>0.416</td>
<td>1.383</td>
<td>0.001</td>
<td>0.264</td>
</tr>
<tr>
<td>Mar</td>
<td>0.049</td>
<td>0.384</td>
<td>1.196</td>
<td>0.029</td>
<td>0.329</td>
</tr>
<tr>
<td>Apr</td>
<td>0.004</td>
<td>0.179</td>
<td>0.685</td>
<td>0.005</td>
<td>0.282</td>
</tr>
<tr>
<td>May</td>
<td>0.008</td>
<td>0.262</td>
<td>1.005</td>
<td>0.012</td>
<td>0.438</td>
</tr>
<tr>
<td>Jun</td>
<td>0.003</td>
<td>0.246</td>
<td>1.047</td>
<td>0.121</td>
<td>0.800</td>
</tr>
<tr>
<td>Jul</td>
<td>-0.013</td>
<td>0.226</td>
<td>1.081</td>
<td>0.010</td>
<td>0.707</td>
</tr>
<tr>
<td>Aug</td>
<td>0.009</td>
<td>0.395</td>
<td>1.321</td>
<td>0.095</td>
<td>1.118</td>
</tr>
<tr>
<td>Sep</td>
<td>0.018</td>
<td>0.446</td>
<td>1.560</td>
<td>0.042</td>
<td>0.903</td>
</tr>
<tr>
<td>Oct</td>
<td>0.013</td>
<td>0.465</td>
<td>1.581</td>
<td>0.016</td>
<td>0.604</td>
</tr>
<tr>
<td>Nov</td>
<td>0.013</td>
<td>0.460</td>
<td>2.375</td>
<td>0.063</td>
<td>0.541</td>
</tr>
<tr>
<td>Dec</td>
<td>0.127</td>
<td>1.835</td>
<td>11.306</td>
<td>0.036</td>
<td>0.399</td>
</tr>
<tr>
<td>Total</td>
<td>0.018</td>
<td>0.389</td>
<td>1.667</td>
<td>0.027</td>
<td>0.540</td>
</tr>
</tbody>
</table>
The deviations of retailers, qualified consumers and external agents were higher in the first few years, reaching an average percentage rate, compared to the level contracted on the market, of 9.5% in 1998, 11.7% in 1999 and 6.4% in 2000. In the period 2001 to 2005, percentages fell, as a result of higher market concentration and improved knowledge of customer demand profiles. Although there was 6.1% deviation in 2001, in 2002 it fell to 4.2%, there is no data for 2003, the provisional figure for 2004 is 2.2% and in the first third of 2005 it was 3.6%.

The charts on the previous page show the total absolute value and percentage deviation compared to the contracted schedule for each kind of activity.

The monthly weighted average of the additional cost of measured deviations up to 2001 was lower than 0.6 c€/kWh. Certain significant exceptions did occur, especially in December, 1998, January, 1999, March, September and October, 2000, and November, and December, 2001. However, the figures started to climb from 2002. With the actual measurements information available, average values were 1.19 c€/kWh in 2002, 0.71 c€/kWh in 2004 and 1.01 c€/kWh in the first four months of 2005.

For the months for which final measurements are not yet available, since April 2002, total overcosts payable for measured deviations varied from 146.6 million euros in 2002, to 95.2 million in 2004, to 155.9 million in 2005.

The high cost of deviations from January and June, 2002, and March, 2005 stands out, and in general, it can be said that the monthly rate for the past year are between 30% and 40% higher than equivalent monthly rates in previous years.
The statistical distribution of the additional unit cost payable in terms of deviations is shown in the following graph in percentage terms for the total cases arising from January 1998 to March 2002 –when measurements are available–, in which the additional cost has taken place in a given interval. The graph also shows cases of negative additional costs, albeit on limited occasions, as well as values exceeding 3 c€/kWh. The most likely value is around 0.4 c€/kWh. The table two pages back shows the distribution of additional unit costs for each month. The first column shows the value exceeded in 90% of the cases, the second the average value and the third the value exceeded in only 10% of the cases.

### 5.5.3 Measures of power production units

In 2005, complete measures for the period March, 2004, to January 2005, were received - although those for a number of agents are related to the administrative-legal dispute referred to above – as well as generation values up to December, 2005.

The shipment of measures from April, 2004, onwards has been regulated by Royal Decree 385/2002, which stipulates that the distributor is responsible for taking measures. Implementing the required computer systems for the reception, process and shipment of the measures supposed an interruption in the shipment of the measurements that it had the consequence that the measures from April to December 2002 were received after March 2004, with receipt of those from the period January, 2003, to February, 2004, still pending.

Publication on February 26th, 2003 of Rule 23 of the Spanish Market Activity Rules, on granting of guarantees to the market operator, improved the method of valuation of the guarantees that the agents must render to the market operator, giving a more stable and safe estimation and with a smaller cost for the agents.

A number of modifications had an important effect on the reception of measures. The following are especially important:

- The cession of the collection rights can only be considered a valid instrument if the corresponding measures have been sent.
- The generator that does not have the measurement that justifies its sale, to be able to receive the day of collections and payments, it will have to present extraordinary guarantees for the energy sold and not endorsed with the measurement.

These changes allowed that it was not long before when generation measures began to be received the following day, with a significant improvement in the second half of the year. Actually, measures are received on the following day, almost in its totality.
5.5.4 Settlement of the special regime that participates in the market

The publication of Royal Decree 436/2004, that stimulated the participation in the market of the special regime, directly or through a selling agent, forced the modification of the application settlement.

The selling agent presents before the market operator the supplies of the holders of the facilities to which he is representing.

With object to facilitate this participation it made possible the outside associate one or two forms of settlement to the election of the holders of the facilities:

- Directly, to the holder of the installation.
- To the selling agent who participated in the market.

In 2005 74% of the energy of the special regime with possibility of acceding to the market has done it.

5.5.5 Final hourly price, energy and pertinent trading

The value of energy traded in the electricity market depends, for each buyer or seller, on the transactions carried out and the application of the capacity payment and the additional cost of deviations. On this basis, the average final hourly price of energy in the electricity production market can be calculated.

Significant matters regarding the functioning of the production market, in addition to those referred to above, are as follows:

- The total volume of energy traded in the different sessions of the production market reached 256,620 GWh. The maximum has been reached in July, followed by the months of January and December 2005, in that order.

- The economic volume of trading reached 15,792 M€. The high value was reached in December 2005, followed by the months of July and June.

- Settlement processes have been carried out in accordance with the terms established in the Market Rules, with the co-operation of the system operator.

- The existing delays in the reception of measurements to the market operator, should be significantly reduced.

- There has been a significant development of the retailing activity and of free price contracting by qualified consumers. Accordingly, the market participation of both retailers and qualified consumers in the market is growing at a fast pace rising to 2,563,734 supplies at the end of 2005, a 90% more than the previous year.

Final monthly traded price totals fell from December 2005 (7.988 c€/kWh), to January (5.250 c€/kWh). Monthly total energy amounts goes from maximum in July with 23,230 GWh to a minimum in April with 18,928 GWh.

### COMPONENTS OF THE FINAL HOURLY PRICE

<table>
<thead>
<tr>
<th>DATE</th>
<th>DAILY MARKET</th>
<th>TECHNICAL CONSTRAINTS</th>
<th>SPINNING RESERVE</th>
<th>INTRADAY MARKET</th>
<th>TECHNICAL OPERATION</th>
<th>CAPACITY PAYMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>c€/kWh</td>
<td>c€/kWh</td>
<td>c€/kWh</td>
<td>c€/kWh</td>
<td>c€/kWh</td>
<td>c€/kWh</td>
</tr>
<tr>
<td>Jan</td>
<td>2.184</td>
<td>2.160</td>
<td>2.402</td>
<td>4.418</td>
<td>0.107</td>
<td>0.113</td>
</tr>
<tr>
<td>Feb</td>
<td>2.045</td>
<td>2.032</td>
<td>2.471</td>
<td>4.028</td>
<td>0.152</td>
<td>0.148</td>
</tr>
<tr>
<td>Mar</td>
<td>1.825</td>
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<td>3.032</td>
<td>5.718</td>
<td>0.122</td>
<td>0.040</td>
</tr>
<tr>
<td>Apr</td>
<td>2.064</td>
<td>2.201</td>
<td>2.352</td>
<td>4.503</td>
<td>0.067</td>
<td>0.037</td>
</tr>
<tr>
<td>May</td>
<td>2.731</td>
<td>2.547</td>
<td>2.441</td>
<td>4.616</td>
<td>0.073</td>
<td>0.081</td>
</tr>
<tr>
<td>Jun</td>
<td>3.685</td>
<td>3.805</td>
<td>3.213</td>
<td>6.340</td>
<td>0.141</td>
<td>0.099</td>
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<tr>
<td>Jul</td>
<td>3.603</td>
<td>3.079</td>
<td>2.019</td>
<td>6.691</td>
<td>0.159</td>
<td>0.095</td>
</tr>
<tr>
<td>Aug</td>
<td>2.991</td>
<td>3.164</td>
<td>2.696</td>
<td>2.290</td>
<td>0.207</td>
<td>0.110</td>
</tr>
<tr>
<td>Sep</td>
<td>3.791</td>
<td>3.914</td>
<td>3.509</td>
<td>5.073</td>
<td>0.097</td>
<td>0.119</td>
</tr>
<tr>
<td>Oct</td>
<td>4.047</td>
<td>3.518</td>
<td>3.331</td>
<td>3.076</td>
<td>0.296</td>
<td>0.064</td>
</tr>
<tr>
<td>Nov</td>
<td>3.646</td>
<td>2.912</td>
<td>2.659</td>
<td>3.226</td>
<td>0.087</td>
<td>0.075</td>
</tr>
<tr>
<td>Dec</td>
<td>4.982</td>
<td>2.230</td>
<td>2.256</td>
<td>3.356</td>
<td>0.013</td>
<td>0.061</td>
</tr>
<tr>
<td>Total</td>
<td>3.150</td>
<td>3.089</td>
<td>2.874</td>
<td>5.573</td>
<td>0.113</td>
<td>0.057</td>
</tr>
</tbody>
</table>
The final average price for 2005 differs for each participant. It has therefore been calculated on the basis of the following assumptions:

- It has been calculated as the purchase price of electricity in the production market, taking into consideration all payments and collections made by purchasers, including capacity payments at the rates established by prevailing regulations in each period.

- Additional costs of energy for secondary and tertiary regulation have been taken into consideration in this price. Once the final measurements are determined, these additional costs are charged to participants incurring deviations on a proportional basis.

- In accordance with the final measurement data for the period April 2001 to March 2002, the additional cost in connection with deviations for the last 12 months settled has varied a few cents to over 32 c€/kWh. The average value is 1.227 c€/kWh.

**5.5.6 Components of the final hourly price**

The analysis of the components of the final hourly price showed above have been determined for the year 2005 with the best available measures, incorporating the difference to what correspond to distributors and the one referred to resellers, consumers and external agents.
The components of the average final hourly price for the production market as a whole are shown in the following graph.

On average, the final price includes the following:

- The daily market price, which represents approximately 89.3% of the final price.
- The cost incurred in solving technical constraints and technical operating processes, which represent around 3.8% of the final price.
- The price of the intraday market, which represents -0.3% of the final price.
- The capacity payment, which on average represented 7.2% of the final price.
The breakdown of the final price shown in the table on the previous page represents the final price for retailers, consumers and external agents and is based on the basis of the assumptions referred to above, except that payments, collections and power acquired by these agents have been taken into consideration.

On average, the final price for retailers and qualified consumers comprises the following:

- The daily market price, which represents around 93.4% of the final price.
- The costs incurred in resolving technical constraints and technical operating processes, which account for approximately 4.4% of the final price.
- The price of the intraday market, which represents 0.2% of the final price.
- The capacity payment, which, on average, accounts for 2.4% of the final price.

### Components of the Final Hourly Price for Distributors

<table>
<thead>
<tr>
<th>COMPONENTS OF THE FINAL HOURLY PRICE FOR DISTRIBUTORS</th>
<th>Year 05</th>
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<tr>
<td><strong>ce/kWh</strong></td>
<td><strong>TOTAL</strong></td>
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<tr>
<td><strong>January</strong></td>
<td><strong>January</strong></td>
</tr>
<tr>
<td>Daily market</td>
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</tr>
<tr>
<td>Technical constraints</td>
<td>0.091</td>
</tr>
<tr>
<td>Spinning reserve</td>
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</tr>
<tr>
<td>Intraday market</td>
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</tr>
<tr>
<td>Technical operation</td>
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<tr>
<td>Capacity payment</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
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<tr>
<td><strong>February</strong></td>
<td><strong>February</strong></td>
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<tr>
<td>Daily market</td>
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<tr>
<td>Technical constraints</td>
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<td>Spinning reserve</td>
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<tr>
<td>Intraday market</td>
<td>0.011</td>
</tr>
<tr>
<td>Technical operation</td>
<td>0.035</td>
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<tr>
<td>Capacity payment</td>
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<tr>
<td><strong>Total</strong></td>
<td>5.680</td>
</tr>
<tr>
<td><strong>March</strong></td>
<td><strong>March</strong></td>
</tr>
<tr>
<td>Daily market</td>
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<td>Spinning reserve</td>
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<tr>
<td>Intraday market</td>
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<td>Technical operation</td>
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<td>Capacity payment</td>
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</tr>
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<td><strong>Total</strong></td>
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<tr>
<td><strong>April</strong></td>
<td><strong>April</strong></td>
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<td>Intraday market</td>
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</tr>
<tr>
<td>Technical operation</td>
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</tr>
<tr>
<td>Capacity payment</td>
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<tr>
<td><strong>Total</strong></td>
<td>5.500</td>
</tr>
<tr>
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<td><strong>May</strong></td>
</tr>
<tr>
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</tr>
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</tr>
<tr>
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<tr>
<td><strong>June</strong></td>
<td><strong>June</strong></td>
</tr>
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<td><strong>Total</strong></td>
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<tr>
<td><strong>Total</strong></td>
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</tr>
<tr>
<td><strong>November</strong></td>
<td><strong>November</strong></td>
</tr>
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<td>Technical operation</td>
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<td>Capacity payment</td>
<td>0.560</td>
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<td><strong>Total</strong></td>
<td>6.774</td>
</tr>
<tr>
<td><strong>December</strong></td>
<td><strong>December</strong></td>
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<td>Daily market</td>
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<td>Capacity payment</td>
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<tr>
<td><strong>Total</strong></td>
<td>7.988</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5.647</strong></td>
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<tr>
<td>Daily market</td>
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<tr>
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<td><strong>0.684</strong></td>
</tr>
<tr>
<td>Capacity payment</td>
<td><strong>6.589</strong></td>
</tr>
</tbody>
</table>
The final price for distributors and REE export as an average price defers from the one that correspond to each agent and has been obtained on the basis of the assumptions described above, except that payments, collections and energy for distributors have been taken into consideration. The components of the final hourly price for distributors and REE export contracts are as follows:

- The average daily market price, which accounts for around 85.7% of the final price.
- The costs incurred in solving technical constraints and technical operating processes, including surplus/deficit of the contacts referred in transitory provision 9th of Law 54/1997, which account for approximately 3.8% of the final price.
- The average intraday market price, which accounts for 0.1% of the final price.
- The capacity payment, which on average accounts for 10.4% of the final price.

### 5.6 International electricity trading

International electricity exchanges previously regulated by the Order of 14 of July 1998, which establishes the legal regime applicable to external agents for the purposes of intra-EU and international exchanges of electric energy, now is regulated by Order ITC/4112/2005 of December 30th, that establishes the regime applicable to the electric energy intra-EU and international exchanges.

Prior to the publication of this Order, the only exchanges were the result of the contracts entered into by Red Eléctrica de España, S.A., referred to in the ninth transitory provision of Law 54/1997 and the sixth transitory provision of Royal Decree 2019/1997, of 26 December, which organises and regulates the electricity market.

Accordingly, this information has been made available to the market participants since 18 May 1999, thereby making it possible to attach a value to each of the tielines and commence commercial exchanges in the electricity production market.
electricity trading in 2005

Imports

Economic volume of imports

<table>
<thead>
<tr>
<th>Year</th>
<th>M€</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>11.18</td>
</tr>
<tr>
<td>02</td>
<td>43.09</td>
</tr>
<tr>
<td>03</td>
<td>12.26</td>
</tr>
<tr>
<td>04</td>
<td>15.63</td>
</tr>
<tr>
<td>05</td>
<td>41.80</td>
</tr>
<tr>
<td>06</td>
<td>44.18</td>
</tr>
</tbody>
</table>

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Avrg

Increase 05: 67.4%

Exports

Economic volume of exports

<table>
<thead>
<tr>
<th>Year</th>
<th>M€</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>8.56</td>
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<tr>
<td>02</td>
<td>6.72</td>
</tr>
<tr>
<td>03</td>
<td>13.51</td>
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<tr>
<td>04</td>
<td>21.85</td>
</tr>
<tr>
<td>05</td>
<td>24.33</td>
</tr>
<tr>
<td>06</td>
<td>70.07</td>
</tr>
</tbody>
</table>

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Avrg

Increase 05: 57.4%

Imports

<table>
<thead>
<tr>
<th>Year</th>
<th>GWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>450</td>
</tr>
<tr>
<td>02</td>
<td>655</td>
</tr>
<tr>
<td>03</td>
<td>574</td>
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<tr>
<td>04</td>
<td>577</td>
</tr>
<tr>
<td>05</td>
<td>1,055</td>
</tr>
<tr>
<td>06</td>
<td>628</td>
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</table>

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Avrg

Increase 05: 0.3%

Exports

<table>
<thead>
<tr>
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</thead>
<tbody>
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</tr>
<tr>
<td>02</td>
<td>130</td>
</tr>
<tr>
<td>03</td>
<td>1554</td>
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<tr>
<td>04</td>
<td>916</td>
</tr>
<tr>
<td>05</td>
<td>768</td>
</tr>
<tr>
<td>06</td>
<td>1,007</td>
</tr>
</tbody>
</table>

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Avrg

Increase 05: -15.5%
5.6.1 Volume of international exchanges

The previous graph shows the energy traded on the different markets in terms of imports and exports since the beginning of the production market.

The previous charts show monthly figures for imports and exports of energy traded in the daily and intraday markets, including the contracts signed by REE, energy traded under bilateral contracts and power withdrawn from the system in order to resolve technical constraints and in real-time technical operating processes.

Imports, as a percentage of the volume of energy production in the market as a whole, vary between 1.75% and 6.68%. The averages were 4.06% for 2001, 4.62% for 2002, 3.73% for 2003, 3.34% for 2004 and 3.15% for the year 2005.

In the month of November 2005 57.4% of imports under the aforementioned contracts entered into by Red Eléctrica de España (REE).

Exports represent between 0.09% and 7.6% of total monthly demand for energy in the market. The averages were, 2.26% for 2001, 2.10% for 2002, 3.26% for 2003, 4.69% for 2004 and 3.73% for the year 2005.

The financial volume of imports and exports traded in the electricity production market is shown in the following graph.

The financial volumes shown above do not include energy exchanges under bilateral contracts. Energy imports and exports carried out under the contracts made by REE referred in the Transitory Disposition 9 of the Law 54/1987 have been valued at the corresponding market or associated process price.

The financial volume of imports accounts for between 1.83% and 6.24% of total market turnover. On average, the percentage were 3.37% in 2001, 3.64% in 2002, 3.10% in 2003 and 2.99% in 2004 and 2.64% for the year 2005.

The financial volume of exports has accounted between 0.10% and 7.3% of total market monthly turnover. The average annual percentages were 1.83% for 2001, 1.57% for 2002, 2.84% for 2003, 3.74% for 2004 and 3.10% for the year 2005.
5.6.2 Balance of international exchanges

International exchanges have produced a net exporting balance. Exchanges have been carried out in 2005 with Portugal, France, Andorra and Morocco, as follows:

- Imports from Portugal totalled 718 GWh and exports 7,659 GWh.
- Imports over the border with France totalled 7,319 GWh and exports to France reached 776 GWh.
- Imports from Morocco totalled 51 GWh and exports amounted to 848 GWh.
- Exports to Andorra were 279 GWh. No imports were made.

In 2005, imports decreased from Portugal and increased from France and Morocco and the exports grew to Portugal.

### CAPACITIES AND ENERGY INTERCHANGE 18 May 99 to Mar 06

<table>
<thead>
<tr>
<th>MW</th>
<th>Portugal</th>
<th>France</th>
<th>Morocco</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Export Capacity</td>
<td>887.4</td>
<td>531.8</td>
<td>361.1</td>
</tr>
<tr>
<td>Free Export Capacity</td>
<td>404.3</td>
<td>437.3</td>
<td>178.5</td>
</tr>
<tr>
<td>Export</td>
<td>453.1</td>
<td>94.5</td>
<td>182.6</td>
</tr>
<tr>
<td>Import</td>
<td>113.9</td>
<td>840.1</td>
<td>2.4</td>
</tr>
<tr>
<td>Free import Capacity</td>
<td>621</td>
<td>188</td>
<td>388.8</td>
</tr>
<tr>
<td>Comercial Import Capacity</td>
<td>734.9</td>
<td>1,028.1</td>
<td>391.2</td>
</tr>
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</table>

### ECONOMIC VOLUME OF THE BALANCE OF INTERNATIONAL EXCHANGES

<table>
<thead>
<tr>
<th>M€</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Avrg</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
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<td>2.6</td>
<td>0.5</td>
<td>8.1</td>
<td>12.2</td>
<td>16.2</td>
<td>18.3</td>
<td>9.2</td>
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<td>4.4</td>
<td>14.5</td>
<td>23.8</td>
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<td>22.6</td>
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<td>8.4</td>
<td>28.0</td>
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<td>11.4</td>
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<td>17.0</td>
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<tr>
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<td>-0.3</td>
<td>3.3</td>
<td>-3.0</td>
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<td>6.1</td>
<td>4.0</td>
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<td>0.8</td>
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<tr>
<td>04</td>
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<td></td>
</tr>
</tbody>
</table>

Increase 05: 15.1%
Financial flows resulting from these operations are not comparable as information on the prices at which energy is exchanged under bilateral contracts is not known. Nevertheless, taking into account that bilateral contracts do not represent a significant volume, the total economic value of energy exchanges is shown below, excluding such contracts and the contracts subscribed by REE, referred in Ninth Transitory Provision of Law 54/1997, have been valued at marked price or corresponding process.

5.6.3 Level of occupation of commercial exchange capacity

Since 18 May 1999, the system operator has published the commercial capacity in each hourly slot available for each of the international tie lines of the Spanish electricity system. This commercial capacity is used both by market participants carrying out trades through bids sent to the market operator and by participants executing physical bilateral contracts. The capacity value is used both in the matching process and in the solution of technical constraints, in order to obtain a result for the markets that respects the maximum capacity with each of the neighbouring electricity systems.

The previous table shows the level of occupation of capacity up to 31 March 2006. The free capacity has been calculated taking into consideration the final value of commercial exchange capacity before the daily and intraday markets.
6.1 Analysis made by the Association of Power Exchanges APEx

6.2 Evolution of the internal electricity market

6.3 The Florence Forum

6.4 Intra-community exchanges, EuroPEX contributions to the solution of congestions within the European context

6.5 Development of prices in the main organised spot markets in 2005

6.6 Importance of the Spanish market in the European context

6.7 The Iberian electricity market
liberalisation of electricity in an international context
The liberalisation of electricity systems is being carried out, not without difficulties, on the basis of boosting competition in production and retail activities, providing free system access to producers, retailers, distributors and customers, and the progressive advance towards freedom of trade.

Most of these experiences are characterised by the establishment of entities that act as market operators on day-ahead markets and intraday markets that later on incorporate forward contracts and, in more advanced cases, the implementation of financial futures markets.

These types of markets exist not only in the European Union, but also in the more advanced Eastern European countries, America, Eastern Asia, Australia and New Zealand, as well as projects in the southern Mediterranean (Maghreb). Other Asian countries are also in the process of preparing deregulation projects along the same lines.

The creation of electricity markets managed by independent power exchanges, a common denominator of almost all electric system deregulation experiences, responds to the need to guarantee free trade and correct price formation. The objective is to guarantee access to energy trade under equal conditions to the largest possible number of participants.

Year 2005 and first months of 2006 were characterised by continuity in the expansion of organised markets, where trading in the main markets continues to grow both in Europe and America.

Progress has also been made in terms of the number of market participants, with small and medium-sized producers and resellers starting up in several markets.

This progressive path towards the expansion of organised markets is taking place in an environment where consumers have an increased capacity to choose supplier. On this point, the second European Union directive for the internal market in electricity deserves a special mention, as it establishes a timetable with a deadline of July 1st 2007, when all European consumers will be considered as qualified consumers.

In this sense, while there are still large differences in regulations and liberalization models, significant reference is made to procedures that guarantee consumers freedom of choice and, closely related to this, to the importance given by experts and regulators to the information and resources that should be made available to consumers so that they can contract and have access to the public prices of organised markets; advanced communications and electronic meters.

The programs for demand response to prices are considered essential by these institutions and experts, for promoting rational energy consumption which, in addition, contributes to the security of electricity supply, and constitutes a significant factor for increasing price elasticity in the demand for electricity, with a possible contribution to resolving problems that could arise from market power on the side of the supplier.

This development is at the base of the requirements for liquidity requested by many companies from spot electricity markets, both to facilitate the trading for a larger number of agents at correctly formed prices, and to develop spot trading operations and risk coverage in organised electricity markets based on this liquidity and prices.

The inter-relationship that exists between interconnected electric systems was a fundamental question also in 2005.

This inter-relationship among electric systems, in security of supply scenarios, has served as a basis for emphasising in experts and regulators’ analysis the benefits derived from expanding international interconnections, the formation of regional markets, and boosting cooperation between neighbouring power exchanges, especially in resolving structural congestion in networks, or the need for enabling flexible and free-flowing transactions in the field of supranational integration of markets, which is the case of the European internal market.

Finally, electricity and the environment has also become a significant concern. In this sense, a noteworthy initiative is the adoption of EU Directive 2004/101/EC, which amends Directive 2003/87/EC, establishing a scheme for greenhouse gas emission allowance trading within the EU to contribute to comply the agreements commitments of the Kyoto Protocol (DO. 13/11/04), which entered into effect on February 16th 2005.

The publication on August 28th 2004 of Royal Decree Law 5/2004, which regulates the greenhouse gas emission allowance trading scheme and Regulation 2216/2004 of the European Commission laying the basis for a standardised and secured system of registries in keeping with the said Directive, as well as individual allotment of emission rights to individual facilities, which is currently underway in all the EU Member states, has opened the door for the organised markets to effectively incorporate this product into their business.
6.1 Analysis made by the Association of Power Exchanges APEx.

Since 1998, OMEL has been participating in successive international conferences that take place on the occasion of the Association general assemblies. From the beginning of OMEL’s involvement in the association, conferences have been held in Pasadena (California) 1998, Madrid October 1999, Kananaskis (Alberta-Canada) 2000, Noordwijk (Holland) 2001, Singapore 2002, Cartagena (Colombia) 2003, Leipzig (Germany) 2004 and Orlando (United States) 2005.

All the conferences addressed relevant and current topics, highlighting in particular the following:

- Experiences in the development of the different markets managed by members of the Association.
- Evolution of transactions and different types of contracts in the electricity markets: adjustment markets, spot transactions, long-term supply, swaps, futures and options and settlement of OTC contracts.
- Price volatilities in organised markets.
- Aspects concerning metering and settlements in organised markets.
- Relationships between market and system operators.
- Relationships with market supervisory entities, with special reference to American markets.
- Forums on markets in different continents.
- Developments in Central and Eastern Europe.
- Government bodies and the neutrality and independence of organised markets.
- Communication by market operators of information to market participants and the public in general.
- Cooperation between power exchanges.
- Key trends that shape the future of the markets.
- The effects of problems arising from the exercise of market power in organised markets and analysis by surveillance committees established for this purpose, with special reference to American markets.
- European Union experience in the treatment of congestion management and access tariffs and the possible application of this experience to other interconnected areas such as the South American markets.
- The emissions markets.
- Investment in new generation and capacity payments.

The last conference in Orlando was attended by 56 representatives from the most important European (NordPool, OMEL, APX, ELEXON, BORZEN; OPCOM, ESB, OMIP), American (PJM, New England ISO, Midwest ISO, XM S.A., New York ISO, Wholesale Market Administrator, Cammesa) and Asian (EMC and KPX) market operators, as well as representatives of European Commission institutions and US state regulators.

OMEL, which currently acts as President of APEx, chaired the Conference, the meetings of the Board of Directors and the Association’s General Assembly, all of which took place during the Conference.

The main topics discussed at the Association’s 10th Annual Conference held in Orlando on October 31st and November 1st were the following:

- Market evolution in the different continents represented.
- Investment in new generation and payments for power guarantee.
In a regulated pricing environment, consumers take on the risk, whereas in a market in which prices are determined competitively company shareholders bear the risk.

Availability of information in a transparent manner is crucial if agents are to trust the markets. Information must be freely available to all agents.

Restructuring does not entail deregulation, but rather a different mode of regulation.

In the United States, electricity transportation is regulated by the FERC (federal regulator), while distribution is regulated by the relevant State Regulator.

Market benefits can be summarised in three words: Efficiency, innovation and reliability.

PJM estimates that 500 million dollars have been saved due to the introduction of markets in its system.

In an efficient market, there should not be significant differences between futures market and spot market prices.

Over the last few years, PJM has evolved from the concept of “Economic cost dispatch, taking into account security conditions”, used for the previous, regulated environment, to “Economic bid dispatch, taking into account security conditions” – the current situation.

In August, 2005, PJM applied to the FERC for the RTO (Regional Transmission Operator) licence.

During the following session, dedicated to the presentation of new markets, the MISO Operator (Midwest - ISO) then described the main characteristics of its market and its main organisational ideas:

- It has been operating since December 15th, 2001.
- Its main aggregated figures are:
  - 23 transport network owners
  - 36 control areas
  - 119,207 MW Peak demand
  - Over 137,000 MW installed power capacity
  - Over 9,000 miles of transport lines
- 947,000 miles² of territory
- 15.1 million clients
- 1,504 Generation units

■ It is crucial that information in a market like MISO is decentralized and not centralized.

■ At the start, MISO only offered transportation services to agents, thereby facilitating bilateral contracting. Today, it has added the operation of a dispatch system based on bids (LMP “Locational Marginal Pricing”) every 5 minutes, operation of a daily market - also resolved via an LMP algorithm and a real-time market, and it has already provided agents with a market for Financial Transmission Rights for electricity (FTR). It functions in a similar way to the PJM market.

■ The electricity system operated by MISO is connected to several others ISOs/RTOs (PJM, SPP, IMO), security coordinators (TVA) and control areas (MAPP) and has reached agreements with them to improve both the quality of information supplied to market agents and their coordination.

■ Its main future challenges are the ancillary service markets, the capacity market and improving the joint treatment of the different control areas.

The next session was on investment in generation and capacity markets and featured presentations on systems with energy and capacity markets, in which this solution has been put into practice, as well as on others in which markets were solely energy.

The system operator for the New York area (NYISO) spoke of its capacity market, commenting that, in their opinion, it was an optimum solution for ensuring new investment in generation.

Formed in December, 2001, the NYISO controls an area with peak demand of 32,000 MW and organizes next-day and real-time energy markets (spot), ancillary service markets and capacity markets. The proportion of energy traded on the spot market is 40-50%, with 5% being traded on the real-time market and around 50% by means of bilateral contracting.

It organizes the capacity market (ICAP/UCAP) in 1 month and 6 month auction sessions, respectively. The state regulator (NYSRC) (“New York State Reliability Council”) sets an annual power margin for each of the aggregate supply entities. This requirement may be fulfilled in four different ways:

■ Bilaterally with producers.
■ On the six-month capacity market.
■ On the spot capacity market (monthly)
■ Paying for balance capacity, bought in its name at the monthly auction, if they have not acquired the relevant capacity rights, given that the NYISO itself participates in the monthly auction in order to acquire the balance between the joint requirement and that acquired by power suppliers.

According to NYISO, energy payments are to cover marginal costs, those for ancillary services cover opportunity costs, and capacity payments cover the fixed cost of power stations. Also, in the opinion of NYISO, revenues from capacity and energy mutually substitute each other, in such a way that when capacity payments are high, energy payments are low, and vice versa.

In NYISO’s opinion, when capacity costs are high there are less energy price peaks and prices are more stable. Markets are more volatile when there is no mechanism of capacity payments. In the electricity business, spike price periods are generally a political problem and payments for having capacity available are therefore considered essential.

In short, NYISO, defended the existence of three products, organized in three markets: Energy, ancillary services and capacity.
Next, the Argentinean system, CAMMESA, representative gave its opinion on capacity payments as they are working in the Argentinean system.

To illustrate the situation, it was pointed out that in Argentina 80% of energy corresponds to the marginal price, with around 20% corresponding to free contracts outside the market.

Payment for capacity is fixed and is received by suppliers who are available the 90 hours each week when there is bigger demand and it acts as a signal, so that power plants are available when they are most needed.

With respects to energy payments, distributors acquire energy for residential consumers at a lower price than the market price (they only pay for variable generation costs), with the difference being used to set up a so-called “financing fund” with which the state builds new power plants to be owned by suppliers who did not receive the full price for the energy.

The Colombian delegate gave the ISA opinion (today known as XM Compañía de Expertos en Mercados). Firstly, he outlined the advantages of capacity payments for the different agents. In his opinion, these are normally justified by a lack of demand elasticity with respect to prices, a situation which causes periods of high energy prices:

- For power producers: Reduces investment risk, assuring revenue stability and providing an incentive for maintaining reserves.
- For consumers: Improves system reliability, ensures more competitive energy prices, reduces price volatility and diminishes market power.

Capacity payments range from a strongly administered regulation scheme, the current situation in Colombia, to a scheme of free markets and capacity contracting, with the halfway-situation of mixed schemes combining both forms of regulation.

The current scheme in Colombia includes capacity payments which are not made directly by the energy buyer, but which are rather held to be part of the generation bids (their minimum price), which the Market Operator redistributes amongst power suppliers in terms of previously established capacity rights pertaining to each of them. The regulator is presently reviewing the current mechanism of capacity payments, which has been in operation on the Colombian system for the last 10 years, in view of the fact that the following problems have been identified:

- Failure to provide an incentive for the maintenance of minimum reserves.
- It is not useful for controlling the market power of the biggest power producers.
- Failure to offer an incentive for demand flexibility to prices.

During the closing discussion on payments and capacity markets, the representative from Alberta (Canada) highlighted the fact that in the Alberta system there are no capacity payments but that despite the new investment has been sufficient, with a 33% increase in new capacity being recorded. The NordPool (Scandinavian countries) also pointed out that in their system there are no capacity payments and that it is only necessary to pay for energy, with the power producers themselves taking on board all necessary factors in their pricing policies.

The next item on the agenda was zonal price models versus nodal pricing.

Firstly, the PJM representative provided an explanation of the nodal model based on a sharing out of supply responsibilities, optimized by taking into account security conditions and executed every 5 minutes, with the setting of nodal prices (LMP “Locational Marginal Prices”). The system used by PJM optimizes together both, energy prices, and those of necessary reserves.

The way of ensuring that power producers follow instructions given by the PJM office is to allow, for those producers who follow the signals produced by the security constrained load flow every 5 minutes, to set marginal prices, whereas those who do not follow the signals are converted to price takers. Consequently, those power producers who follow instructions receive their bid price, at least, while those who do not heed instructions do not benefit from this guarantee. They have therefore managed to avoid the necessity of applying a penalty scheme for those power generators who fail to comply with instructions.

The NordPool representative spoke of the situation in the Scandinavian countries, where a zonal pricing model has been operating for years now, although he emphasised that 50% of the time the resulting price is the same in all zones. Firstly, in order to give an idea of its dimensions, he explained that the Nordic system has annual consumption of 380 TWh, he also pointed out that 40% of the energy is directly acquired on the spot market, with other forms of contracting being employed to supply remaining consumers.
The area covered by the NordPool market includes electricity systems administered by 5 different system operators.

In NordPool, losses are also included in price formation, given that network owners have to purchase them on the market.

The resulting price on the spot market every hour is unique, the market is split, and there are therefore different prices for different zones, in the case of congestion in the exchange of energy between the different zones.

The Nordic model is a system in which spot market transactions are all firm, with later solution on the part of system operators of the problems resulting from the need to balance production and consumption, based on other real-time markets in which demand bids are also accepted. At present, the size of real-time markets is equal to 3-5% of demand.

The NordPool representative’s way of explaining the differences between zonal and nodal models was to present the latter as a single market in which all system requirements are jointly solved on the market, at the same time as energy prices are formed. On the other hand, the zonal model was presented as a dual market model, in which the basic energy price is set the previous day on the spot market, leaving other real-time mechanisms to set the price for more technical energy needs.

The advantages of the dual market model pointed out by the NordPool representative are as follows:

- Possibility of centralizing spot market price-setting, and therefore of increasing the size of the relevant market. Since the spot market price is set in a transparent manner, it constitutes a reasonable base for a derivatives market.
- Maintaining decentralized, technical management in real-time markets.
- Since they are separate, the basic energy price is transparent and easily understood in both types of market.
- Separation of pricing concepts allows for efficient participation of demand on all the markets and effective bidding on each of them.

According to NordPool, the single pricing model has the following problems:

- Complex price-setting due to mixing different concepts in a single price (Basic energy price and other features such as location, speed of response etc.).
- Trading is very close to real-time, thereby making it impossible the demand participation.

In the closing debate, OMEL presented the differences between the two models, stating that a possible justification for them may be found in the level of network development, which allows for zonal prices to be meaningful, when the network is reasonably developed, while in those cases in which the network establish an important restriction on free trade in energy, it may be acceptable to apply a greater diversity of prices. As ways of increasing the relevant market in setting energy prices, solutions involving joining markets together, or splitting them, were also presented. Electricity and gas price convergence and correlation also featured in the OMEL presentation.

EuroPEX, the association of European markets presented the situation of the different market coupling projects taking place as part of the construction of the single European electricity market.

Next, the session on emissions markets took place and the PJM delegate was the first to describe the emission rights situation in his area.

For now, they are trying to undertake monitoring of emissions from power stations using the GATS (“Generation Attribute Tracking System”) project and they have formed a company for issuing certificates and maintaining control of their customers at all times, something which is similar to the central register of emission rights certificates in Europe.

The NordPool representative explained the state of the art of the Kyoto Protocol and their emission rights market, presently with a price...
of around 20-25 euros/tonne. He stated that, at present, market agents are largely financial entities and that there are not many final users of certificates participating on the market. He also pointed out that energy prices are increasing due to the need to put a price on emissions.

The APX representative spoke of his emissions rights market, one in which different countries are involved as bid-receiving offices, given that emission certificates is a product without transport restrictions.

Professor William W. Hogan's lecture on restructuring of the electricity sector and market design largely focussed on wholesale electricity markets.

He expressed his support for the bid based security constrained economic dispatch, as the best mechanism for setting nodal prices on electricity markets, as well as his clear opposition to capacity markets.

Summarizing, he argued that physical markets must be close to real-time, taking into account the technical characteristics of electricity as a product when setting prices, and avoiding the ancillary service markets in which it is inevitably more complicated to establish minimum competition conditions. The price-setting mechanism is largely the same as that which was used before the deregulation processes began, although incremental cost functions used then are substituted by bids from owners of power plants.

During the closing session the European and US market regulators gave their points of view on market design.

The US federal regulator explained that FERC is trying to ensure that network operators (ISO) operate in accordance with standards which allow for development of power reselling, insisting that, for the wholesale electricity market to function well, it was essential for the retail market to run satisfactorily. He also pointed out that the capacity markets and payments for capacity are being reviewed in order to find a way of adapting them to market mechanisms.

In conclusion, he said he supported the implementation of ex-ante measures to restrict market power, with the aim of avoiding that measures such as artificial price limits reduce the validity of price signals and thereby demand management measures based on market prices. He emphasised the influence of demand participation, even at minimum levels, on reduction of market power exercised by power producers.

The European Commission representative in the United Status explained how EU standards are developed and how the Commission is the executive body which formulates proposals before these are passed on to the Council of Ministers for approval.

He then described the development of directives, stating that publication of a European Commission report on the implementation of directives in member states was expected. He specified that, in terms of content, directives are mandatory, but that the way of enacting them was the prerogative of the different member states (the subsidiarity principle).

He summarized the current status of the electricity directive as follows:

- 2004 was the date for total deregulation of all consumers, except domestic consumers. 2007 is the date for deregulation applicable to domestic consumers.
- Legal and functional separation, but not client separation, of network operators from other electricity supply activities.
- Access to regulated and non-traded networks.
- Increased importance of the role of national regulators.
He also summarized the functions of the European Commission, which are essentially the following:

- Capacity to propose pan-European legislation.
- To oversee and oblige compliance with regulations in force.
- Ensure that regulators have sufficient power and budget to carry out their duties.
- Create a coordinated network of European regulators in order to achieve the greatest possible consistency in national regulation.

In his opinion these are the issues pending:

- Delays in including directives within the regulatory systems of the different countries.
- Lack of integration between the different national markets.
- Dominant position of incumbent operators in many countries.
- Deficient separation of the network business.
- Development of demand participation on the markets is pending.

Measures to improve the situation may be summarized as follows:

- Providing consumers with indications of real-time pricing, something which includes the importance of hourly electronic metering devices and remote reading.
- Development of consumer protection measures which do not distort the validity of pricing indicators, perhaps varying final protected tariffs more often.

During the general assembly it was decided that the 2006 APEX conference would be held from October 29th to November 1st in Seoul (Korea), and organized by the market operator Korea Power Exchange (KPX).

6.2 Evolution of the internal electricity market

In the EU, 2005 was a period of reflection on the difficulties to be overcome, if the internal electricity and gas markets are to advance. Price increases on the main international power markets, the difficulty of removing exchange barriers, and the full incorporation within member states’ regulatory systems of the European internal market directives, led the European Commission to publish the following relevant documents:
6.2.1. Survey on power markets.

The European Commission believed that certain dysfunctions on the power markets might exist, meaning that it would be necessary to defend the interests of affected European industry and consumers.

With the aim of analyzing the state of effective market competition, the Commission sponsored a survey in June, 2005. The corresponding final report will be published at the end of 2006. However, in November, 2005, it published a provisional version, which included the following preliminary conclusions:

- In general, the wholesale markets maintain the high levels of concentration which were registered during the pre-deregulation period, and provide historic operators with the possibility of raising their prices.
- Consumers are denied the possibility of choice due to the difficulties experienced by new suppliers in attempting to enter the market.
- There is no meaningful cross-border concurrence, since new operators cannot obtain commercial capacity, and market integration is being blocked by a lack of interconnections.
- New entrants are unable to obtain the information they require, with the lack of transparency benefiting historic operators and having a negative impact on new operators.
- Prices are not set under free competition conditions. Many consumers do not trust the way in which prices are set.

Before drawing up further conclusions, the European Commission has not ruled out developing a proposal for measures on agreements and abuse of dominant positions in the following areas:

- Price setting for wholesale markets, including organized power markets.
- Assessment of price indexing on gas and oil prices estimated in many contracts.
- Different practices preventing consumers from a real change of supplier.
- Strengthening of historic operators’ transparency obligations.
- Acquired rights of historic operators require the application of competition-defence measures.
- The responsibilities of national regulatory bodies should be increased, in particular those relating to conditions and prices for network access.
- If no progress is made regarding application of directives on the internal market, it may be necessary to apply other measures, such as the total break-up of monopolistic structures.

6.2.2 Fifth progress report on creation of the internal market

This annual report was published on November 15th, 2005, in accordance with article 28 of Directive 2003/54/CE.

The report examines the situation between two relevant dates. The report’s main conclusion is that although it is necessary to recognize the initial period of opening of markets has generally been successful with a proof of this being the fact that electricity prices in real terms are lower than they were in 1997, despite recent price increases affecting oil, gas and coal, it is also necessary to ensure that industrial customers and domestic consumers are able to access the full benefits of the opening-up of markets.

The report notes that lack of integration of national markets is the most important factor.

According to the report the following are the existing gaps and the most important issues:

Application of new directives

The majority of member states did not meet the July 1st deadline for the incorporation of new directives, meaning that these have been in force for less than a year, and also that certain member states have still not begun to apply them.

This delay means that certain structural measures are being introduced later than planned.

At the time of drawing up this report, the European Commission had formalized the procedure, with as many as 43 infringement proceedings related to energy being adopted on April 4th, 2006, of which 28 are to do with the failure of 17 member states to introduce electricity (2003/54/CE) and natural gas (2003/55/CE) Directives into national law. In accordance with the table they have been sent the corresponding letter of formal notice.
At least three member states have been analyzed by the Commission within these terms. The most commonplace infringements identified by the Commission are as follows:

- A total of 13 member states are affected by a situation in which there is not enough functional separation of system operators to guarantee independence or discriminatory procedures for access to their networks in electricity, gas, or both.
- Preferential access for historic contracts affecting 8 member states.
- Existence of regulated prices blocking the access of new suppliers, affecting 6 member states.

Market integration

The aim of opening-up the market is to create a single market for electricity and gas and not a juxtaposition of 25 national markets. This task is a challenge, given that the integration of national markets will not be achieved overnight. The level of market integration is still insufficient, as shown by two essential indicators:

- Significant differences in end consumer prices which exist on the internal market,
- Lack of cross-border trade.

The intra-community market has experience modest growth since 1995, as shown in the adjoining table.

Where trade in an integrated market is easy, competition produced on a community level leads to similar EU-wide pricing levels, or at the very least, similar prices in neighbouring member states. In certain cases, price differences of 100% exist for industrial consumers in the EU. Although it is true that prices have started to converge in certain neighbouring countries.

The development of regional markets, as an interim step before definitive integration on a community level is only just getting off the ground, with the exception of the wholesale electricity market in Scandinavia, which is relatively well developed.

Cross-border trade increases competitive pressure on prices. At present, trade on the internal power market is not presently well enough developed.

<table>
<thead>
<tr>
<th>Member state</th>
<th>ELECTRICITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>X</td>
</tr>
<tr>
<td>Germany</td>
<td>X</td>
</tr>
<tr>
<td>Belgium</td>
<td>X</td>
</tr>
<tr>
<td>Slovakia</td>
<td>X</td>
</tr>
<tr>
<td>Spain</td>
<td>X</td>
</tr>
<tr>
<td>Estonia</td>
<td>X</td>
</tr>
<tr>
<td>Finland</td>
<td>X</td>
</tr>
<tr>
<td>France</td>
<td>X</td>
</tr>
<tr>
<td>Greece</td>
<td>X</td>
</tr>
<tr>
<td>Ireland</td>
<td>X</td>
</tr>
<tr>
<td>Italy</td>
<td>X</td>
</tr>
<tr>
<td>Latvia</td>
<td>X</td>
</tr>
<tr>
<td>Lithuania</td>
<td>X</td>
</tr>
<tr>
<td>Poland</td>
<td>X</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>X</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>X</td>
</tr>
<tr>
<td>Sweden</td>
<td>X</td>
</tr>
</tbody>
</table>

Source: Self elaboration

<table>
<thead>
<tr>
<th>Extent of cross border electricity flows</th>
<th>cross border flows - actual as % of consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>7%</td>
</tr>
<tr>
<td>2000</td>
<td>8%</td>
</tr>
<tr>
<td>2005</td>
<td>10.7%</td>
</tr>
</tbody>
</table>

Source: European Union

Lack of market integration is largely because interconnection capacity available for the market between many member states has been clearly insufficient for allowing an adequate level of integration between national markets. It is necessary to eliminate permanent congestions in the electricity interconnection infrastructures.

It is also important to verify whether network access can be achieved by all operators under equal conditions or whether discrimination exists. This is still not happening, and improvements are required.

A further example of this discrimination are the excess of charges for deviation which can be seen on the balance markets, as shown by the table:

The Commission has noted that member states have a low level of interconnection as opposed to installed capacity, as shown by the corresponding table.
An important issue is the reservation of cross-border capacity in favour of long-term historic contracts. In a recent verdict (matter C-17/03) on reserving capacity in the electricity sector, the Court of Justice, without questioning long-term contracts, declared that giving priority to existing contracts is incompatible with the principle of non-discrimination.

As we have seen above, on this issue of giving priority to historical contracts the Commission has commenced infringement procedures against 8 member states.

### Industry concentration and consolidation

In many states there was a monopoly – or at best an oligopoly, when opening-up commenced. The aim was to bring this situation to an end. In most markets, this has still not been achieved.

### BALANCING MARKETS

<table>
<thead>
<tr>
<th>Country</th>
<th>Market or fixed prices</th>
<th>Gate closure</th>
<th>Average TSO sell price</th>
<th>Average TSO buy price</th>
<th>Spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>market</td>
<td>day ahead</td>
<td>51</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>Belgium</td>
<td>hybrid</td>
<td>‘ex - post’</td>
<td>56</td>
<td>12</td>
<td>44</td>
</tr>
<tr>
<td>Denmark</td>
<td>market</td>
<td>fl hour</td>
<td>36</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>Finland</td>
<td>market</td>
<td>fl hour</td>
<td>32</td>
<td>27</td>
<td>5</td>
</tr>
<tr>
<td>France</td>
<td>market</td>
<td>6 during day</td>
<td>50</td>
<td>45</td>
<td>5</td>
</tr>
<tr>
<td>Germany</td>
<td>market</td>
<td>3 during day</td>
<td>70</td>
<td>2</td>
<td>68</td>
</tr>
<tr>
<td>Greece</td>
<td>fixed</td>
<td>day ahead</td>
<td>44</td>
<td>44</td>
<td>0</td>
</tr>
<tr>
<td>Ireland</td>
<td>hybrid</td>
<td>day ahead</td>
<td>69</td>
<td>60</td>
<td>9</td>
</tr>
<tr>
<td>Italy</td>
<td>market</td>
<td>day ahead</td>
<td>102</td>
<td>23</td>
<td>79</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>fixed</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Netherlands</td>
<td>market</td>
<td>1 hour</td>
<td>69</td>
<td>28</td>
<td>41</td>
</tr>
<tr>
<td>Portugal</td>
<td>fixed</td>
<td>2 during day</td>
<td>58</td>
<td>23</td>
<td>35</td>
</tr>
<tr>
<td>Spain</td>
<td>market</td>
<td>2/- 3/horas</td>
<td>–</td>
<td>–</td>
<td>0</td>
</tr>
<tr>
<td>Sweden</td>
<td>market</td>
<td>1 hour</td>
<td>32</td>
<td>28</td>
<td>4</td>
</tr>
<tr>
<td>UK</td>
<td>market</td>
<td>fl hour</td>
<td>55</td>
<td>39</td>
<td>16</td>
</tr>
<tr>
<td>Norway</td>
<td>market</td>
<td>1 hour</td>
<td>29</td>
<td>29</td>
<td>0</td>
</tr>
<tr>
<td>Estonia</td>
<td>n.k.</td>
<td>day ahead</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Latvia</td>
<td>n.k.</td>
<td>2 hours</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Lithuania</td>
<td>n.k.</td>
<td>2 hours</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Poland</td>
<td>market</td>
<td>day ahead</td>
<td>37</td>
<td>24</td>
<td>13</td>
</tr>
<tr>
<td>Czech Rep.</td>
<td>market</td>
<td>1fl hour</td>
<td>51</td>
<td>0</td>
<td>51</td>
</tr>
<tr>
<td>Slovakia</td>
<td>n.k.</td>
<td>day ahead</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Hungary</td>
<td>market</td>
<td>day ahead</td>
<td>40</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>Slovenia</td>
<td>market</td>
<td>day ahead</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Source: European Union

One indicator which reflects the level of competition on the national markets is the total share of the three main producers (electricity) and wholesale suppliers (gas).

In certain markets, there also seems to be a trend towards growing vertical integration between production and supply activities, which may lead to a reduction in liquidity in affected markets – something which would increase the risk of concentration.
MEMBER STATES WITH LOW LEVELS OF INTERCONNECTION

<table>
<thead>
<tr>
<th></th>
<th>Installed generation capacity (GW)</th>
<th>Import capacity NTC (GW)</th>
<th>Import capacity as % installed capacity</th>
<th>Projects to improve interconnection</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>80</td>
<td>6.0</td>
<td>8%</td>
<td>San Fierano - Robbia</td>
<td>complete</td>
</tr>
<tr>
<td>Portugal</td>
<td>12</td>
<td>0.8</td>
<td>8%</td>
<td>Balboa - Sines</td>
<td>complete</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Duroro internacional</td>
<td>in progress</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Minho</td>
<td>proposed</td>
</tr>
<tr>
<td>Spain</td>
<td>56</td>
<td>2.2</td>
<td>4%</td>
<td>Balboa - Sines</td>
<td>complete</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Baixas - Bescano</td>
<td>delayed</td>
</tr>
<tr>
<td>UK</td>
<td>80</td>
<td>2.3</td>
<td>3%</td>
<td>UK-NL DC Link</td>
<td>proposed</td>
</tr>
<tr>
<td>Ireland</td>
<td>5</td>
<td>0.3</td>
<td>6%</td>
<td>Second ROI - NI</td>
<td>agreed</td>
</tr>
<tr>
<td>Poland</td>
<td>34</td>
<td>3.4</td>
<td>10%</td>
<td>Poland - Lithuania</td>
<td>no progress</td>
</tr>
<tr>
<td>Baltic States</td>
<td>0.0</td>
<td>0.0</td>
<td>0%</td>
<td>EstLink</td>
<td>in progress</td>
</tr>
<tr>
<td>(collectively)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>no progress</td>
</tr>
</tbody>
</table>

Source: European Union

As part of the present sector investigation, which began in June 2005, the Commission has begun an in depth investigation of concentration and consolidation of the sector.

Another relevant indicator is the volume of business of the main energy sector companies, as shown in the upper graph.

Customer response

Although the figures for large-scale electricity consumers changing supplier are continuing to increase, gas consumers and small-company and private consumers are still reluctant to exercise this right. The dominant positions and an insufficient separation, in particular in
distribution terms, appear to be dissuasive factors, with changing supplier often being seen as a risky business.

The following graph shows the divergent results from member states for this indicator.

But differences do not just exist between member states because it can also be seen that, in effect, there is a significant difference between different types of consumer – i.e. between big and very big consumers, between average-sized industrial consumers and small-scale domestic consumers, as shown by the table featuring data collected since opening-up of markets commenced.

In order to generate the necessary consumer confidence, member states and national regulatory bodies have to guarantee regulations which are adequate in terms of information and transparency, as well as the existence of simple procedures for effecting the change.

**Pricing trend**

Analysis of pricing trends needs to be carried out in terms of its effects from different points of view. Thus, the existence of price control (either because they are administratively set or controlled ex-ante or ex-post) exacerbates difficulties faced by consumers in entering the market and benefits certain consumer groups over and above others.

This disparity can be noted in the table on the next page.

Since 2000, prices for big consumers have risen more than those for small consumers, as the table shows.

Industries which use a lot of power have lately expressed their concern regarding price increases, which have been particularly steep in certain member states. This was one of the reasons why, in June, 2005, the Commission decided to undertake general research on the electricity and gas sector in order to analyze whether competition in the common market was limited or falsified.

Since 1997, prices for large-scale consumers have evolved in the following manner:
In the case of small consumers, evolution since 2000 is depicted in the adjoining graph, in which it can be seen that there has been a certain reduction between 2000 and 2004, and have continued to fall since then.

Electricity prices have fallen in real terms over the last 10 years. In addition, the price of other fuels such as gas and oil, which are equally important in some industries, have risen considerably more than electricity prices over the last three years.

**Independence of network operators**

Effective separation between network management and competitive participants is essential to guarantee independent network management and non-discriminatory network access to for all market operators.

In practice, the tighter regulations on splitting included in the new directives are still not operative. The splitting process has not been finalized by the network managers.

Moreover, it must be kept in mind that the situation for transport is different to that for distribution, where it is the case that the majority of member states either apply all the exceptions allowed to small distributious or delay the legal and functional separation of the biggest distributors as long as possible. This can be seen in the information on the situation provided in the tables above.

In addition, as far as transmission system operators are concerned, more and more member states have gone further than the Directives, as far as dividing ownership almost in half. Nevertheless, the Commission feels that it is necessary to open infringement procedures against 13 member states for lack of functional separation or for discriminatory procedures with regards to network access.

### Customer Switching by Group

<table>
<thead>
<tr>
<th></th>
<th>Large and very large industrial</th>
<th>Small-medium industrial and business</th>
<th>Very small business and household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>29%</td>
<td>29%</td>
<td>4%</td>
</tr>
<tr>
<td>Belgium</td>
<td>≤ 20%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>&gt;50%</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>&gt;50%</td>
<td>82%</td>
<td>30%</td>
</tr>
<tr>
<td>France</td>
<td>15%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>41%</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>Greece</td>
<td>2%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Ireland</td>
<td>56%</td>
<td>15%</td>
<td>9%</td>
</tr>
<tr>
<td>Italy</td>
<td>60%</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Luxembourg</td>
<td>25%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>–</td>
<td>–</td>
<td>11%</td>
</tr>
<tr>
<td>Portugal</td>
<td>16%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>25%</td>
<td>22%</td>
<td>19%</td>
</tr>
<tr>
<td>Sweden</td>
<td>&gt;50%</td>
<td>–</td>
<td>29%</td>
</tr>
<tr>
<td>UK</td>
<td>&gt;50%</td>
<td>&gt;50%</td>
<td>48%</td>
</tr>
<tr>
<td>Norway</td>
<td>&gt;50%</td>
<td>&gt;50%</td>
<td>44%</td>
</tr>
<tr>
<td>Estonia</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Latvia</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Lithuania</td>
<td>15%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Poland</td>
<td>19%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Czech Rep.</td>
<td>5%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Slovakia</td>
<td>–</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Hungary</td>
<td>32%</td>
<td></td>
<td>0%</td>
</tr>
<tr>
<td>Slovenia</td>
<td>8%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Cyprus</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Malta</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: European Union
Effective regulation on the part of regulatory bodies

Certain member states have set up different regulatory bodies on a national and regional level, and in some cases responsibilities are divided between the sector regulatory body, the relevant public authorities and the ministry. Regulatory bodies need to adopt a European mindset.

European electricity and gas regulators’ forums have been engaged in excellent work, developing innovative solutions in key areas.

In accordance with the Commission policy of developing joint regulations and an improved regulatory system, the Madrid and Florence forums have made an important contribution to the development of the internal market.

### EXISTENCE OF PRICE CONTROLS

<table>
<thead>
<tr>
<th></th>
<th>Regulated tariffs industrial users</th>
<th>Regulated tariffs - small commercial users</th>
<th>Regulated tariffs - households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Belgium</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Denmark</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Finland</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>France</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Germany</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Greece</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Ireland</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Italy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Netherlands</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Portugal</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Spain</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sweden</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>UK</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Norway</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Estonia</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Latvia</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Lithuania</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Poland</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Czech Rep.</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Slovakia</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Hungary</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Slovenia</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Cyprus</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Malta</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: European Union

### ELECTRICITY PRICE SUMMARY

<table>
<thead>
<tr>
<th></th>
<th>July 1997</th>
<th>July 2000</th>
<th>July 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average (all consumers)</td>
<td>100</td>
<td>86</td>
<td>90</td>
</tr>
<tr>
<td>Very large</td>
<td>100</td>
<td>83</td>
<td>96</td>
</tr>
<tr>
<td>Medium industrial</td>
<td>100</td>
<td>82</td>
<td>95</td>
</tr>
<tr>
<td>Small commercial and household</td>
<td>100</td>
<td>88</td>
<td>88</td>
</tr>
</tbody>
</table>

Source: European Union
The service offered to users/consumers and public service considerations

Consumer opinion polls reveal that, in general, there is satisfaction with respect to the quality of electricity and gas services. Fears that the introduction of competition would lead to a lowering of quality have not come true.

The Commission will also broach the subject of vulnerable clients.

The Commission will remain vigilant as far as the repercussions of energy competition on employment in industries with great power consumption goes, as well as in relation to protecting consumers against disloyal sales practices.

Conclusions

In the coming months, apart from commencing the aforementioned infringement proceedings in any non-compliance cases, the Commission

- Will adopt new Directives on congestion management in electricity which will facilitate cross-border trade by introducing more efficient methods of managing said congestion.
- It will also continue to apply pressure on member states so that they increase investment in transport infrastructure, with the aim of relieving cross-border congestion in electricity networks.

6.2.3 Green paper. European strategy for a “Sustainable, Secure and Competitive Energy Supply”.

Community institutions have begun debating the green paper approved by the Commission on March 8th, 2006. The council of energy ministers on March 14th, 2006, which assessed the Commission’s green paper, agreed conclusions under the umbrella title “A New Energy Policy for Europe”.

The green paper identifies six priority sectors for intervention.

**Full implementation of internal electricity and gas markets.**

Secure energy supply will not be achieved without open and competitive power markets, based on competition between companies competing on the European stage instead of limiting their focus to occupying the dominant position in national terms.

By the end of 2006, all member states will have applied the directives and the Commission will have completed its study on how competition is working on the European gas and electricity markets.

A final decision will then be taken on legislative measures required to guarantee:

- Non-discriminatory network access.
- Network capacity and adequate availability of interconnections.
- Liquidity on the gas and electricity markets.

There are specific areas requiring special attention as far as the internal market is concerned:

- A European network, with a single network code, a European energy regulatory body to deal with cross-border questions and a European Energy Networks Centre to contribute to the development of the European network code.
- Priority plan for interconnections, vital in the cases of Ireland, Malta and the Baltic states. Additional capacity is required in many zones, especially between France and Spain, with the aim of developing real competition between the two countries.
- Investment in generation capacity, so that sufficient reserves become available.
- Equality of conditions: it is important to separate activities.
- Increasing the competitiveness of European industry, something which will entail a study of the best way of attending to the legitimate needs of the power intensive industry – needs.

An internal market which guarantees security of supply: Solidarity between member states.

Deregulated, competitive markets contribute to the security of supply by providing adequate investment signals to companies. In order for this competition to function correctly, the market has to be transparent and predictable.
Security and competition in power supply: In search of a more sustainable, efficient and diversified energy supply.

A strategic energy review should be carried out, in order to analyze the advantages of different energy sources from coal to nuclear power, including native renewable energy sources such as wind power, biomass, bio-fuels, mini hydraulic stations and energy efficiency.

Integrated focus to combat climate change:

The EU's emissions trading regime provides a flexible, profitable framework for fomenting energy production which is more respectful with the environment.

The EU should be a leader for energy efficiency and use of renewable energy sources.

European strategic plan for energy technology:

A strategic plan for energy technology will be necessary in order to develop markets which are leaders in innovation.

A coherent energy foreign policy, with the following aims and instruments:

■ A clear policy for guaranteeing and diversifying energy sources.
■ Energy partnerships with producers, transit countries and other international players such as Russia, Norway, Caspian Basin countries, Mediterranean countries, the OPEP and the Gulf Cooperation Council.
■ Dialogue with big producers.
■ Development of a pan-European energy community, based on the Community Energy Treaty with south-west European members, the EU-Maghreb electricity market, the EU-Mashrek gas market, and on paying special attention to strategic partners such as Turkey, the Ukraine, Algeria etc.

It will be necessary to reflect on the best way to respond to external energy crises, integrating energy in other foreign policy areas and effectively use energy to support development.

The conclusions of the European Council meeting in Brussels on March 23rd and 24th specifically refer to the European energy policy.

It identifies a number of strategic challenges, including these:

■ Difficulty on the oil and gas markets.
■ Increase in volatility of power prices.
■ Increase in world demand.

■ Need for greater market transparency.
■ Need for greater integration and interconnection of national power markets.

Growth strategy should be developed in a context of open and competitive markets, identifying these three targets for them:

■ Increasing security of supply.
■ Safeguarding competitiveness.
■ Fomenting environmental sustainability,

an aim which requires measures including the following: guaranteeing transparency and non-discrimination on markets, and compatibility with competition regulations.

6.3 The Florence Forum

The European Electricity Regulation Forum, which took place in Florence on September 1st and 2nd, 2005, was attended by European Commission representatives, different market regulators, national ministers (including from candidate countries such as Switzerland) and various interested associations.

On the second day Energy Commissioner Piebalgs spoke, and also heard, brief presentations from the bodies represented at the forum.

During his introduction to the forum, Mr Harrison emphasised the importance of deregulation and especially the need to do things well from the outset, seeking growth in competition, given the scepticism regarding deregulation which exists in certain sectors.

Mr Vasconcelos stressed that it was important that all regulators were represented, given that the German regulator was attending for the first time. He also stressed the importance of the new guidelines on congestion and tariff-setting, adding that they were an example of good regulation. Lastly, he expressed the opinion that regional markets should be strengthened, citing MIBEL as a good example – the subject of analysis since 2001, and on which discussion had continued in the mini-forum, although he also emphasised that it is only consultative and that its conclusions are not legally binding. The final objective is to make the European market more competitive.

6.3.1 Assessment of the European Electricity Market

In his speech, the European Commissioner pointed out the importance of the Florence Forum as a meeting place at which to engage in an open discussion on the internal power market. Although not yet complete, he highlighted the Commission's work and benefits...
obtained to date, such as an improvement in efficiency in the industry and the decrease in price in real terms for many consumer groups. Lastly, he informed that at year-end the Commission would be publishing the results of a study launched in June on the effects of the regulatory environment on the internal power market.

The Commission (DG Competition) informed of the state of research on the energy sector which DG Competition is carrying out. The study is being completed in parallel with the preparation of a report to evaluate the progress of the creation of the internal market in accordance with the second electricity directive. The aim is to detect possible failings and to identify aspects of the system – as indicated in earlier forums, which are not functioning well. The Commission will present a preliminary report with the early result of research in December 2005.

Participants presented their proposals for the two Commission reports which are going to be published on the workings of the electricity market.

### 6.3.2 Development of Regional Markets

The Commission presented a summary of the results of the Mini-Forums which had taken place from the end of 2004 to mid-2005, created by the last Forum in Florence in September, 2004. It emphasised that, generally speaking, the Mini-Forums had obtained good results, and that, despite not having reached an agreement on capacity allocation on the daily market, the agreements reached at said mini-forums were being followed.

The first agreement refers to plans to apply methods based on market mechanisms in allocating capacity from the start of 2006 in all interconnections. The second point was to improve coordination in congestion management from the start of 2006, above all in central-eastern Europe (they have decided to continue the mini-forums), southern Europe and western Europe. Lastly, implicit auctions between France, Belgium and Holland are planned. An implicit auction pilot project will be launched between Germany and the Scandinavian countries.

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**EUROPEAN COMMISSION DRAFT DECISION MODIFYING GUIDELINES FOR CONGESTION MANAGEMENT IN THE ANNEX OF REGULATION 1228/2003**

- **General dispositions**
  - Transmission system operators (TSO) shall aim to accept all commercial transactions. Where there is no congestion, there shall be no access restrictions to the interconnection.
  - Methods of congestion management employed must encourage competition.

- **Congestion management methods**
  - Congestion management methods shall be in accordance with market regulations. Capacity shall only be allocated by means of explicit (capacity) auctions or implicit (capacity and power) auctions. Both methods may coexist at the same interconnection.
  - Access rights shall be subject to the principles of “use-it-or-lose-it” or “use-it-or-sell-it” at the moment of nomination.
  - Capacity allocation shall not discriminate between physical bilateral contracts and bids on the power markets.
  - In countries in which financial futures markets for electricity are well-developed and have demonstrated their efficiency, regulatory bodies may decide to allocate total interconnection capacity via implicit auctions.

- **Coordination**
  - Capacity allocation at an interconnection shall be coordinated and applied by the relevant TSOs, using common allocation procedures.
  - By January 1st, 2007 at the latest, a common coordinated management method shall be applied for countries in different regions of Europe, including South-western Europe.
    1. Regions with efficient financial futures markets will be able to allocate total day-ahead capacity.
    2. Coordination must be compatible with electricity market functioning.

- **Timetable for market operations**
  - Allocation of available transport capacity and nomination of rights must take place sufficiently in advance to allow for correct functioning of the markets.

- **Transparency**
  - TSOs shall publish all relevant data on availability, access and use, including where and why congestion exists and what methods are applied for its management.

- **Use of congestion income**
  - TSOs shall clearly establish how they are going to use congestion revenues, which shall be devoted to one or more of the objectives described in article 6.6 of the Regulation.
It proposed a second round of mini-forums next spring, in order to advance with the work, and to investigate other relevant topics, particularly the issue of intra-daily balance markets.

ERGEG presented the questionnaire it is administering on the development of regional markets in the EU, although results were not yet available given that the deadline for responses was the previous day. This consultation document analyzes the subjects which need to be taken into account to achieve functioning of the regional markets, identifies areas and proposes mechanisms for achieving Commission targets. It emphasises that, more than harmonization, market coordination is necessary, and that in any event support from governments and deregulation in real terms are essential. Lastly, it stresses that it will not be necessary to establish an ideal market in all regions, but rather that the mini-forum initiatives are in a common direction (it comments that although the focus of min-forums is well-defined new initiatives may appear and these will need to be included).

Participants contributed the following comments on the document:

- **EURELECTRIC** explained the steps to be followed in order to achieve market integration on a European level. It proposed achieving sufficient harmonization so as to be able to create regional markets as a first step to creating a single market. Such markets must be along the same lines and create liquidity. The existence of daily, intra-daily and balance markets would be a requirement, and these should be liquid with credible prices and transparency. There should be enough market agents on the daily market and the futures market, and there should also be coordination between the markets. With regards to markets, it stressed that there would be a meeting the following week and that issues pending were the establishment of basic regulations, the timetable for negotiations and product harmonization.

- **ETSO** expressed its support for the creation of regional markets and underlined the need to increase the harmonization of national legislation, an obligation of the legislators given that neither TSOs nor regulators can achieve said harmonization. It emphasised that there has to be a balance between rights and obligations and that TSO responsibilities resulting from the participation of agents on the markets should not increase. Lastly, it stressed the serious difficulties involved in obtaining licences for the construction of lines and asked for greater government support.

- **IFIEC** stated that in its opinion there is not competition in production and that in many countries 80% of production is dominated by historic producers. The only way to increase competition is stimulating competitiveness in interconnections on regional markets. It proposed solving the question of international interconnections as soon as possible by treating them as if they were internal lines. In other words, markets would be consolidated without taking bottlenecks into account, with these being solved by means of redispatching paid for by network access tariffs. As a temporary solution, it proposed limiting recirculations (using national limitations), mandatory use of annual and monthly allocation etc.

- **GEODE** supported the creation of a single System Operator as the last step for the internal market.

- **CEDEC** highlighted the importance of a reliable regulatory framework which guarantees investment for independent distributors.

- **EFET** spoke of the need to remove unnecessary red tape, emphasising the importance of carrying out explicit auctions in the long-term and implicit auctions in order to take full advantage of capacity in the short term.

- **UCTE** explained that to achieve the target of competition in generation in all areas it would be necessary to develop lines but also to consider generation itself. It criticized the contribution of the Commission representative, saying that the presentation had been largely limited to explicit auctions, whereas legislation in force was based on both explicit and implicit auctions, adding that, in particular, both the DMC and the OMC gave the value of the capacity price.

- **EUROPEX** stressed the importance of an effective wholesale market for the integration of the regional markets. It was not essential for an ideal market to exist, but rather that each region should develop its market with its own regulations and the important thing was market coordination. EUROPEX has attended all the mini-forums and is a key player in ensuring that they develop in the direction identified by the Commission. Implicit and explicit auctions should be effected simultaneously without phased implementation. The DMC method has been sufficiently analyzed for it to be applied straight away on various borders.

- **EPSU** spoke in favour of prudent approximation, expressing its scepticism about the benefits of the single market.

- **UNICE** suggested a structured monitoring process for all interconnection projects via the Forum. UNICE, CEFIC and IFIEC were concerned about the impact of the emissions market on electricity prices and suggested discussing this at future forums.
The Swiss representative gave an overview of the development of the legislative process in Switzerland in relation to opening-up of the market. By the end of 2007, Switzerland will have organized a market similar to the EU market. They presently have a balance system and auctions will begin on the Swiss-German border in January, 2006.

For developing the regional market, the Forum stressed the need to accelerate harmonization of regulations and national legal systems, as well as the need to facilitate making harmonization agreements between governments and regulators.

Participants also highlighted the need for greater transparency with the aim of creating a market which functions fairly.

As stipulated by the regulators (Mr Vasconcelos), ETSO committed to delivering a list of data which system operators consider necessary on November 1st, not presently available, that would guarantee optimum use of interconnection capacity (not in order to increase capacity but rather to use current capacity more efficiently). Likewise, EUROELECTRIC was requested to coordinate collection of this information from the agents’ perspective, via traders, market operators and consumers, by November 1st.

With this information and other comments forthcoming, ERGEG will develop a document on regional markets.

6.3.3 Guidelines to be implemented for Electricity Regulation

The Commission explained that guidelines on congestion and tariff-setting had been sent to the Commission by ERGEG at the end of July, and commented that it is preparing the final draft on bottlenecks with the idea of it receiving approval at year-end via the comitology procedures.

Of the comments which followed, ETSO’s contribution was noteworthy. It stated that penalties for non-compliance are not positive and that it would be better to give enough incentives to the TSOs for capacity to be firm.

There were comments on the process followed by the Court of Justice on priority in the allocation of international interconnections for contracts prior to market deregulation, which concluded with sentence C-17/03. The Commission commented that it had always sought the opinion of the CEER on this matter and that in any event the guidelines will take on board the results of the judicial process.

The Regulation requires that compensation mechanisms between TSOs (ITC) and tariff harmonization are introduced simultaneously. A report on ITC will be delivered by ETSO to the Commission and will be taken into account by ERGEG, although it will not be ready until the end of September, 2005. Once it has been received by ERGEG, the Commission will be able to carry out the process at the end of the year, adopting it for 2006 – although not for January 1st. For this reason, TSOs are asked to maintain the present compensation method until it becomes law. The president of ETSO responded that this will be the case as long as regulators are in agreement.

EUROELECTRIC stated that it was not in agreement with the level of harmonisation proposed by ERGEG in the guidelines. It requested a rapid general harmonization process.

6.3.4 Standard for supply security and electricity networks

The Commission presented the directive on Security of the Electricity Supply, on which there is an agreement between the Council and the Parliament. The Commission commented on interactions between this directive and current legislation, as well as on new requirements for member states which be applicable once it becomes law. It is going to issue an informative note on the subject.

UCTE presented information on progress made on the “Operational Handbook”. A multilateral agreement was signed by UCTE members on July 1st (sections 1 to 3). The remaining parts of this agreement will be signed by the end of 2005.

One part of the multilateral agreement is the “Programme for Supervising the Application of Conformity”, a formal procedure which will be carried out at the end of 2005.

ERGEG referred to the UCTE document “Operational Handbook”, with recommendations on implementation and complete development of operational rules, in order to ensure compatibility between rules and the regulatory framework.

6.4 Intra-community exchanges, EuroPEX

6.4.1 EuroPEX Activities.

The European market operators’ association, EuroPEX, was founded in 2002 and continued with an important level of activity during 2005.

The basic goals of EuroPEX are the promotion of intra-community exchanges and free trading in the scope of the internal market, which have been recognised by the Florence Forum. The Forum requested the presentation of specific proposals in the area of cross-border...
trading and particularly for the solution of congestions at international interconnections based on market methods.

In 2005, EuroPEX’s work continued on three different levels:

■ Active presence at all the meetings of European bodies to which it was invited, regional Mini-Forums which were proposed in the conclusions of the Florence Forum in 2004, the Florence Forum itself and the forums of south-eastern European countries, as well as discussion forums called by ERGEG (European Regulators).

■ Meetings with the main international associations, such as Eurelectric, ETSO, EFET, etc..

■ Contributions to the different draft of the Regulation Guidelines reviews (EC) Nº 1228/2003.

With respect to the different national initiatives under development in Europe aimed at finding a solution to cross-border bottlenecks with the intervention of electricity markets, EuroPEX has noted that they are all based on the idea of linking markets and, although there are differences on an organizational level, they are technically very similar, and therefore in line with the creation of an internal electricity market.

At present, the most developed market-coupling processes are those of the daily horizon type, based on linking the day ahead spot markets already operating in most member states. In 2006, it is hoped that work will commence on proposing solutions for linking markets with horizons which are lower than that of the day ahead market.

As far as timescales which are longer than the daily market are concerned, explicit auctions on options for capacity use are the most extended initiatives in Europe at present, whose competition problems are partially solved by the complement with the coupling procedures of the markets with a daily horizon, given the nature of the product sold at these auctions.

The organizational and regulatory aspects of the procedures to solve cross-border congestion were also analyzed by EuroPEX, given their variety, something brought about by the variety of electrical sector organizations and by the structure of sector companies in each country.

Main questions pending in relation to the use of market coupling/splitting as a way of solving cross-border congestion are:

■ Application of the market coupling method is relatively simple in the case of two or more systems connected electrically in a row, given that there are no physical electrical recirculations. In meshed systems, as is the case in Central Europe, the part of the “Flow based market coupling” (FMC) mechanism that ensures that flows in the different borders, as a result of the market transactions and options on cross-border capacities exercised, is compatible with the physical reality of the networks, is pending development.

■ In the cases where there are congestions, the so-called “congestion revenues”, defined as the product of the net energy that crosses each border multiplied by the price difference between the adjacent markets, will appear. The determination of the distribution of such revenues and their final destination is left by EuroPEX and ETSO to the criteria of the regulators, although Regulation (EC) 1228/2003 clearly defines the three options for the use of such funds.

■ Whether market coupling is achievable in the near term, or should be seen as an eventual goal.

It should be recognised that practical and efficient multi-national day-ahead implicit auctions have existed for several years (for

<table>
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<tr>
<th>THE MINI FORA</th>
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<tbody>
<tr>
<td><strong>Benelux</strong></td>
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<tr>
<td><strong>Nordic countries</strong></td>
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<tr>
<td><strong>Iberian Peninsula</strong></td>
</tr>
<tr>
<td><strong>Italy</strong></td>
</tr>
<tr>
<td><strong>Central &amp; Eastern Europe</strong></td>
</tr>
<tr>
<td><strong>Baltic countries</strong></td>
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<tr>
<td><strong>UK &amp; Ireland</strong></td>
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</table>
example, in the Nordic region via market splitting). Furthermore, some local projects are well advanced building the systems and commercial/regulatory structures to enable market coupling, and these could be ready for operation in the very short term.

- How the various initiatives being launched can all be achieved, given that some countries are potentially being impacted simultaneously by more than one coordination mechanism project (the various projects are listed in a table at the end of this point).

The problems associated to the practical implementation of overlapping initiatives need to be addressed through a viable approach; in the meantime interim solutions could be explored that move in the direction of the final goal. Therefore, it is important to ensure the compatibility of the interim solutions.

- How these various initiatives can eventually converge to provide a Europe-wide solution.

- How to solve cross border congestions after the day-ahead markets - i.e., intraday.

If the TSOs have unsold capacity after the day-ahead market, or new capacity becomes available, it is necessary to have solutions for intraday congestion management. The PXs stand ready, as for the day ahead, to provide solutions that are highly compatible with the local energy markets.

6.4.2 Regulators’ conclusions on Mini-Forums, as published by the European Commission

In accordance with the conclusions of the Florence Forum of September, 2004, during the first few months of 2005 seven Mini-Forums took place, with the aim of discussing solutions applicable to the different aspects of the problem of congestions in cross-border interconnections. The Mini-Forum conclusions included a plan providing, at least the estimated, dates for introduction of market mechanisms to solve congestions on the following-day horizon.

The seven Mini-Fora, countries involved in each, and meeting dates were in the table before.

At each of the Mini-Forums participants were as follows: Regulators of participating countries, system operators, market operators and the European Commission.

Subjects related to congestion-solving, as discussed at the Mini-Forums, can be grouped as follows:

Final Solution method for congestions

The general aim was to find a solution to congestions at different borders which would be compatible with the existence of explicit auctions of options to use the capacity and implicit auctions for simultaneous power and capacity use. The overall conclusion of the different mini-Forums is that a combined solution of both ways of solving congestions is what is being put into practice at most borders and that the use of zonal prices is the most common choice on European markets, the single-pricing zones corresponding to the member states themselves.

Explicit auctions

This method is being applied, or it is planned that it will be applied, at the following interconnections:

- France-Germany (future) (due to recent appearance of bottlenecks)
- France-Belgium (future)
- France-Spain (future) (as the first phase of a global three-phase agreement culminating in the joint application of explicit and implicit auctions.
- Czech Republic with Germany and Poland (auction coordinated between both borders)
<table>
<thead>
<tr>
<th>Region</th>
<th>Parties</th>
<th>Network model</th>
<th>Congestion Management mechanism</th>
<th>Actual/Foreseen launch date</th>
<th>Status</th>
<th>Iberian Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>BELPEX</td>
<td>France, Belgium, The Netherlands</td>
<td>TSOs, PXs</td>
<td>Not flow-based (radial region)</td>
<td>S3: 2006</td>
<td>Ongoing project</td>
<td>Spain, Portugal</td>
</tr>
<tr>
<td>France-Spain</td>
<td>France, Spain</td>
<td>TSOs, PXs</td>
<td>Not flow-based (radial region)</td>
<td>S1: mid-2006 S1: 2007</td>
<td>Officially approved and published by Spain, and pending in France</td>
<td></td>
</tr>
<tr>
<td>NorNed cable</td>
<td>Norway, The Netherlands</td>
<td>PXs, TSOs</td>
<td>Not flow-based (HVDC)</td>
<td>Q1 2008</td>
<td>Cable project approved and underway Commitments made to regulators re: coupling</td>
<td></td>
</tr>
<tr>
<td>Central Eastern Europe</td>
<td>Austria, Germany, Poland, Czech Republic, Hungary, Slovakia, Slovenia.</td>
<td>TSOs (not PXs)</td>
<td>100% day-ahead market coupling (no forward physical rights)</td>
<td>TBD</td>
<td>Project between TSOs</td>
<td></td>
</tr>
<tr>
<td>Germany-Austria</td>
<td>Austria-Germany</td>
<td>TSOs</td>
<td>None</td>
<td>April 1st of 2005</td>
<td>Operating</td>
<td></td>
</tr>
<tr>
<td>Kontek cable</td>
<td>Germany, Denmark</td>
<td>PXs, TSOs</td>
<td>Not flow-based (HVDC)</td>
<td>In service</td>
<td>Working Group established between PXs (NPS &amp; EEX) and TSOs (EKS &amp; VET) since a year. In the mini-fora Northern Europe it was agreed that the Danish regulator will help initiate further discussion on MC</td>
<td></td>
</tr>
<tr>
<td>Iberian Market</td>
<td>Spain, Portugal</td>
<td>OMEL (SPOT market), Capacity provided by TSOs</td>
<td>Day-ahead market coupling including Germany as a NordPool zone</td>
<td>June 30, 2006</td>
<td>Market Splitting (under final discussion)</td>
<td></td>
</tr>
</tbody>
</table>
The main problem is coordination in the case of countries with multiple borders.

Implicit auctions

The main targets set out by the Mini-Forums for this solution are the daily and intra-daily horizons and borders in which price differences are not permanent (sometimes price difference between neighbouring markets is the sign that power should flow in one direction, and in other moments that it should flow in the opposite direction.) The potential of implicit auctions to increase liquidity of electricity markets, in countries where they are implemented, was underlined. The Mini-Forums also reached the conclusion that it is hoped that implicit auctions increase competition on the internal electricity market by means of maximizing the use of available commercial capacities an mitigating the market power of the bigger participants.

The potential of the ETSO-EuroPEX decentralized market-coupling (DMC) solution (presented in 2004) was also emphasised, keeping in mind the physical nature of electricity flows in the network.

This method is being applied, or it is planned that it will be applied, at the following interconnections:

- France-Belgium-Holland (future) (coupling project for different markets)
- Nordic countries (market splitting in the case of congestion)
- Iberian peninsula (future) (market splitting in case of congestion)
- France-Spain (future) (part of the three-phase agreement between the two countries)
- Germany-Denmark (Integration in the NordPool market of a zone in Germany to admit energy supplies into the Nordic market from the German side of the Kontek cable)
- Netherlands-Nordic countries (future) (use of the Norned cable in 2008)
- Application of the concept of market coupling in Germany (future) (based on a combination of explicit and implicit auctions).

In addition, in several Mini-Forums solutions were presented which are now being applied on different borders. These involved implicit auctions, although not agreed between the two border countries:

- The Dutch market admits power supplies from Germany.
- The Spanish market admits power supplies from France and Portugal.
- The Italian market admits power supplies offered from the markets of neighbouring countries.

All of these unilateral solutions have the potential to become market-coupling solutions.

During the mini-Forums it was pointed out that implicit auctions require the existence of day ahead (spot) markets which are reasonably liquid on both sides of the congestion.

**Coordination of the cross-border congestion solution**

The areas in which appropriate coordination should exist are these:

- Coordination between countries
- Coordination inside the country
- Coordination between the different market operators

It was concluded that the differences between countries should not prevent the future development of alternative solutions and the development of a harmonized method which could be applied throughout Europe. France and Germany are countries particularly sensitive to the coordination problem, since they are involved in several different borders with the potential for congestion.

**Allocation of responsibilities to different operators for the solution of congestions**

At the Mini-Forums it was recognized that, although the system security is the responsibility of system operators, the use of implicit auction procedures calls for the participation of market operators whose status is different in the different countries.

**Legal questions related to solving congestion**

In addition to the legal situation of market operators in the different countries, it was judged that harmonized regulatory control would be required for the following areas:

- Calculating maximum commercial capacities.
- Ways of presenting bids to explicit and implicit auctions
- Capacity allocation
- Obligations for power producers to provide information
- Transparency
Transparency

Transparency is a necessary pre-condition for correct functioning of the internal electricity market. In particular, it is needed for:

- Establishing a balanced playing field for participation, especially for newcomers.
- Facilitating planning decisions to different participants.
- Allowing control by regulators
- Developing the internal European market.

Future action

Future actions identified by the organizers of the Mini-Forums were as follows:

- ERGEG proposed a review of the 1228/2003 Regulation guidelines as soon as possible, with a joint agreement on the solution of congestions
- The Florence Forum will be informed
- A decision will be taken on the second round of Mini-Forum meetings.

6.5 Development of prices in the main organised spot markets in 2005

The following presents the evolution of prices in a collection of organised markets from 2001 until December 31st 2005, where the main relevance is the relative evolution of the prices in question. There may be discrepancies in price level comparisons due to the different treatment of some final price components such as losses, deviations and the existence or inexistence of the explicit concept of capacity payments.

To analyse the evolution in other non-European electricity markets, we have chosen the markets of Alberta in Canada, PJM in the United States, and NEMMCO in Australia.

The PJM market in the United States, with one of the highest trading volumes, 344.679 GWh in 2005, produced a 49% higher average price over the previous year. Prices fluctuated in the range of 34 - 76 €/MWh, with a minimum in May and a maximum in December, and peak demand being registered in August, followed by July and January.

Prices in the Australian market decreased 13% to 14 €/MWh, with a maximum in the month of April of 18 €/MWh and a minimum of 11 €/MWh in December. The months of maximum demand are July and August, which coincide with winter in the southern hemisphere.

Prices in the market of Alberta increased by 29% compared to the previous year, up to 48 €/MWh, with a maximum of 90 €/MWh in November and a minimum of 26 €/MWh in July. Peak demand was reached in the month of December.

As appeared would be the case at the end of 2004, prices on the electricity markets have been much higher and have started to reflect the higher prices of primary energy sources such as oil, gas and coal, and they have also been affected by the price increase of CO2 emission rights. In 2005, as far as monthly behaviour of European markets was concerned, the first thing to point out is that there was an increase in market prices. Taking the average monthly price on the daily market, it can be seen that there was an increase in the range of 29 - 59 €/MWh. The Netherlands, Spain and Italy were at the upper end, at over 52 €/MWh, while the NordPool countries marked the lower end. France and Germany were at 47 and 46 €/MWh, respectively.

The markets of Spain, the Nordic countries, the Netherlands, Germany, France and Italy have been chosen with the aim of illustrating price evolution in recent years.

Analysis of quarterly pricing in the period 2001-2005 reflects periods of very low capacity generation reserve on several European markets at times of the year which were not always uniform. Secondly, it reveals development of greater stability due to year-end European prices in 2003 and 2004, and thirdly the upward trend maintained by European prices in 2005 - a year in which saw record prices no doubt related to the price of primary energy sources such as oil, gas and coal on the main international markets.
6.6 Importance of the Spanish market in the European context

The Spanish market’s international exchanges, although high, are still very limited due to the low interconnection capacity, especially with the north of Europe.

The development of the Spanish market, which is an interesting market for the main electricity companies in the European Union, will not be able to realize its full potential if this situation, practically of isolation, is not modified in the short to medium-term.

The integration of international exchanges in the market occurs in an efficient manner and is a consequence of market participants making transactions that originate in the organised market or from bilateral contracts or electricity transits.

Bearing in mind the size of the Spanish and Iberian market, commercial capacity with the north of Europe should be near 20% of the peak demand, which positions us at the European Union average.

2005-2011 Review of Planning

For the 2005-2011 horizon, the document “2005-2011 Review of Planning for the Electricity and Gas Sectors 2002-2011”, from March, 2006 confirms the advantages of a technical, economic, environmental and strategic nature that justify the necessary interconnection of the Spanish electricity system with external systems. The following are the forecasts for the four interconnections:

- Interconnection with Portugal: In addition to the two lines put into operation in 2004, both in southern Extremadura 400 kV interconnection line between the Alqueva (Portugal) and Balboa (Spain) sub-stations and in the Miño region: Reinforcement of the 400 kV line via the installation of a second circuit between Cartelle and Lindoso; joint analyses by Spanish and Portuguese system operators established the need for the following interconnection network reinforcements, which must be complemented by the relevant internal reinforcements within each system:

  - Tajo region: All parts of the 400 kV interconnection line need to be strengthened, given that the exchange capacity will be increased starting from the 2005/06 horizon.

  - Duero region: It can be seen from the studies that there is a need to reinforce the 220 kV interconnection lines, in particular on the Portuguese side, starting from the 2007 horizon, and linked to the new ‘Douro Internacional’ 220 kV substation. In addition, the Duero interconnection network will be strengthened, via a 400 kV link which, on the Spanish side, will connect with the existing Aldeadávila 400 kV substation, initially functioning at 220 kV.
Interconnection with Andorra: Presently via a 110 kV double circuit – it is planned that it will be developed via transformation to 220 kV. This operation, at the same time as allowing for strengthening of support for the electricity system in Andorra, will also establish a new 220 kV Spain-Andorra-France line which, although only to a small degree, will play a part in increasing interconnection capacity.

Interconnection with Morocco: It is planned to strengthen the interconnection by laying a 2nd Estrecho – Fardoua circuit (a new triad of underground, under-sea cables, linked to the installation of the 2nd Pinar-Estrecho circuit). This is an operation which will create greater reliability than that provided by the current link, as well as allowing for greater commercial capacity, to be the subject of appropriate operation conditions in accordance with the development of the mesh of the north African system.

International trade in the Spanish market at present.

An examination of the Spanish Peninsular electric system indicates the following in relation to electricity exchanges:

- With Portugal, import and export operations are common. The relative size of the Portuguese electricity system in relation to the entire Spanish system makes the commercial capacity for exchange relative to Portugal’s peak demand is very significant, close to 16% in commercial terms, which exceeds the 10% established at the Barcelona summit. The level of commercial capacity for exchanges in the organised market derived from bilateral contracts is shown in the graph on the following page.

- In the case of the Spanish - French border, the available commercial capacity with the rest of Europe is currently between 1,000 ÷ 1,400 MW on the importer direction and 250 ÷ 700 MW on the exporter direction. If this is compared to the maximum demand peak of the Spanish system, 43,378 MW on January 27 2005, this capacity of around 3% is very scarce. This leads to a situation close to trading isolation with central Europe. However, trade has evolved without incident, based on the evolution of prices on the Spanish market. The level of commercial capacity for exchanges in the organised market derived from bilateral contracts is shown on the corresponding graph.

- Concerning trade through the interconnection with Morocco, attention must focus on the existence of a predominant exporter flow, together with the appearance of electricity imports to Spain.

International exchanges, which in the last two years have featured net exporting, are becoming more and more sensitive to relative prices. During the first part of 2005, our price was above that of the main organized European markets, meaning that there was the corresponding importing flow from central Europe via the French border. In the second half of the year, and until now, our price has been more in the medium-low range with the consequent flow of exports to central Europe, except with reference to the EDF-REE contract.

6.7 The Iberian electricity market

The Iberian Electricity Market is a regional market integrated within the concept of a single European market. Conceptually it responds to the efficiency that could be derived for the Portuguese electricity system from the integration of the large companies on its market into a substantially larger one, with proven operational experience. At the same time, the Iberian Market offers the Spanish electricity market a potential enlargement by 20%.

Background

The creation of Mibel culminated the cooperation process commenced in the Memorandum of Understanding signed on July 29th 1998 by the Portuguese Minister of the Economy and the Spanish Minister of Industry and Energy, for cooperation in the area of electrical energy, which enabled the commencement of exchanges with Portugal through the participation of Portuguese agents on the Spanish market.

This process continued with the cooperation Protocol between the Spanish and Portuguese Governments for the creation of the Iberian Electricity Market, signed in Madrid on November 14th 2001, as well as the Memorandum of Understanding signed in Figueria da Foz on November 8th 2003, within the framework of the 19th Portuguese-Spanish Summit, in which the Parties, represented by the corresponding Ministers, fixed certain bases and the calendar for the creation of the Iberian Electricity Market.

Growth in exchanges between the two countries

Subsequent to the 1998 Memorandum, a process of proximity commenced, comprised of the elimination of obstacles to increase the exchanges between Spain and Portugal, the registration of REN in the Administrative registry as an external agent in Spain, the opening up of the Portuguese market to Spanish electricity companies and the establishment of coordination between the network managers in both countries. The 2001 Protocol envisaged the extension of the interconnections through the Alqueba-Lisbon line (2004), the
Cartelle-Lindoso line (2006), the reinforcement of the Duero interconnection and an increase in transmission capacity in the Cedillo-Oriol line in the Tajo area.

The following graphs show the growing volume of energy exchanges between Portugal and Spain, particularly significant in exporter direction to Portugal, which led to 14.1% of the energy consumed in Portugal in 2005 originating in Spain.

Integration of the market operators in Spain and Portugal

On 20th January 2004 the Agreement creating the Iberian Electricity Market - Mibel - was signed in Lisbon, commencing the creation of a single market for both countries. This Agreement established the beginning of operations in 2004, and allocated the daily and intraday market management to OMEL and the management of the futures market to OMIP. In addition, it stipulated a 10% shareholding exchange between OMEL and OMIP, which was accomplished in 2004.

Furthermore, it established the creation of an Iberian Market Operator - OMI - which would be the result of the merger of the management companies of each national Operator, the Operador del Mercado Ibérico Portugués (OMIP) and the Operador del Mercado Español de Electricidad (OMEL) no later than April 20th 2006.

International Agreement establishing the creation of an Iberian Electrical Energy Market, between the Kingdom of Spain and the Republic of Portugal.

However, eight months after the provisional application of the Agreement signed on January 20th 2004, the Governments of both countries realised that the necessary reforms could not be implemented within the scheduled period, stressing the need for the Iberian Electricity Market to be compatible with the provisions set out in Directive 2003/54/EC, of the European Parliament and Council, of June 26th 2003, concerning common rules for the internal market in electricity. As a consequence, Spain and Portugal decided to sign a new Agreement regulating the aforementioned aspects. The new Agreement was signed on October 1st 2004 in Santiago de Compostela.

The Agreement follows the same lines as those adopted to date between the two countries and takes into account both Community regulations and the need to set a new date (June 30th 2005) for the Iberian Electricity Market to begin operations, once the necessary legislative issues have been dealt with in both countries.

The Agreement sets out several specific provisions that may be summarised as follows:

■ Participants: To the effects of the activities of the Mibel, this term encompasses all participants in the electricity markets in both countries. In addition to producers, external agents, distributors, resellers and consumers, regulated resellers or last resort suppliers will also be participants in the Iberian Electricity Market, in the terms set out in Directive 2003/54/EC of the European Parliament and Council, concerning common rules for the internal market in electricity, in addition to the agents acting on behalf of the Mibel participants, agents negotiating financial instruments on the Mibel markets and all others so defined by the Parties.

■ Creation of an Iberian Market Operator: The Iberian Market Operator (OMI) will undertake the functions of the Operador del Mercado Ibérico Polo Portugués (OMIP) and the Operador del Mercado Ibérico Polo Español (OMEL).
liberalisation of electricity in an international context

PRICES AND DEMAND - NORDPOOL/ELSPOT

Years 01 to 05
Increase 05: 1.3%

PRICES AND DEMAND - POWERNEXT IN FRANCE

Years 01 to 05
Increase 05: 65.9%

PRICES AND DEMAND - EEX IN GERMANY

Years 01 to 05
Increase 05: 61.4%

PRICES AND DEMAND - APX IN THE NETHERLANDS

Years 01 to 05
Increase 05: 32%
**PRICES AND DEMAND - GME ITALY**

€/MWh

- **Years 04 to 05**
  - Increase 05: 13.1%

**PRICES AND DEMAND - NEMMCO IN VICTORIA (AUSTRALIA)**

$USA/MWh

- **Years 01 to 05**
  - Increase 05: -12.6%

**PRICES AND DEMAND - PJM IN THE UNITED STATES**

$USA/MWh

- **Years 01 to 05**
  - Increase 05: 48.8%

**PRICES AND DEMAND - ALBERTA IN CANADA**

$CAN/MWh

- **Years 01 to 05**
  - Increase 05: 28.6%
During the initial phase, OMIP will act as the governing body for the futures market, and OMEL will take the same role in the daily market. Before two years from the Mibel’s entrance into operation have elapsed, OMIP and OMEL must merge to constitute a single operator, the Iberian Market Operator (OMI).

- System Operation: The System Operators of both Parties are responsible for the system technical management in order to guarantee the continuity and security of the electrical supply, through the management of the system adjustment services.

- Electrical energy trading markets in the Mibel:

  The organised Mibel markets and its settlement system shall be as follows:

  a) Futures markets, including transactions for blocks of energy to be delivered after the next day from the date of trading, settled both by physical delivery and by differentials.

  b) Daily markets, to encompass transactions for blocks of energy and delivery the day after trading, settled necessarily by physical delivery.

  c) Intraday market: with settlement necessarily by physical delivery.

  The non-organised markets are comprised of bilateral contracts amongst the market participants that may be settled either through physical delivery or price differences.

- Economic management of the interconnection between Spain and Portugal: The Parties will agree upon mechanisms to allocate the interconnection capacity between the Spanish and Portuguese systems.

- Tariffs: Their price structure will tend toward harmonisation, based on the principles of additivity, transparency, uniformity and must reflect the real costs incurred in the supply of electrical energy, as well as taking as references the Mibel market prices.

- Supervision: The Mibel supervisory bodies will be the National Energy Commission (CNE) and the National Securities Market Commission (CNMV) in Spain and the Energy Services Regulatory Body (ERSE) and the Securities Market Commission (CMVM) in Portugal.

- Regulatory Council: Regulatory Council is composed of representatives from the National Energy Commission (CNE), the Energy Services Regulatory Body (ERSE), the National Securities Market Commission (CNMV) and the Securities Market Commission (CMVM).

- Market Agents’ Committee: The governing companies may create Market Agents’ Committees for their respective markets, as consultative bodies.

- Technical and Economic Management Committee: A Mibel Technical and Economic Management Committee will be created, comprised of the systems and market operators, to suitably manage communication and the flow of information necessary between the various operators, as well as to facilitate issues relating to the daily performance of their duties.

- Administrative procedures for the authorisation and registry of agents: The administrative procedures for the authorisation and registration of agents for the exercise of the various activities in Spain and Portugal must be harmonised on the basis of reciprocity. Recognition by one of the Parties will automatically accredit the agent to act in the other.

- Guarantee of supply: When the guarantee of electricity supply is in question within the Mibel territory, each Party will adopt those measures necessary to guarantee the energy supply, without affecting its commitment to act in line with the principle of solidarity.
EUROPEX QUARTER AVERAGE PRICES

€/MWh

Years 01 to Mar 06

EUROPEX AVERAGE PRICES

€/MWh

Jan 05 to Mar 06
The Agreement, now pending ratification, will enter into effect on the date of reception of the last notification in which Spain and Portugal communicate their compliance with the domestic legal requirements to this effect. Until the date of entrance into effect of the present Agreement, the previous Agreement will continue to be applied provisionally.

The Agreement was concluded for an initial period of two years, automatically renewable for equal periods of time except where one of the two parties gives a minimum of six months notice of their intention to terminate it.

At the Spanish-Portuguese summit, which took place in Evora on November 18th and 19th, 2005, both national ministers agreed to July 1st, 2006, as the new date for Mibel start-up. Likewise, it was also agreed that both countries would publish legal Regulations establishing the obligation of Spanish and Portuguese regulated distributors or resellers to acquire 5% of power sold to tariff clients from OMIP-OMIClear.

As far as the regulatory price is concerned, a regulatory convergence programme was agreed, establishing a timetable for harmonization of regulations in each country, in accordance with European law and with the symmetry principle of opening up both national markets. It is planned that this timetable will be presented at the forthcoming Spanish-Portuguese summit in Badajoz.

In January, 2006, the inaugural meeting of the Regulators’ Council was held in Lisbon. This is a body consisting of the electrical sector Regulators (ERSE and CNE) and stock exchange Regulators (CMVM and CNMV) from Spain and Portugal, the presidency of which will rotate.

Part of the role of this council is to study the regulations for functioning of the futures market, overseeing MIBEL infringement procedures, and ruling on conflicts on economic and/or technical management of the system.

Positive effects of the Mibel

The starting of the Iberian Market offers a number of potential advantages, some of which are indicated below:

- Greater market efficiency due to its increased size and the liquidity it can reach.
- Participation of all the actors under non-discriminatory conditions.
- Contribution to generation investment processes.
- Easing the deregulatory process on the demand side.
- Incentives for coordination between network managers.
- Progress in the harmonisation of charges for network use.

In this respect, Decree Law 192/2004, of August 17th, issued by the Portuguese Ministry of the Economy, is worth mentioning. Article 2 of the Decree Law establishes the total eligibility of low-voltage consumers, and Communication 1/2005, issued by the ERSE, contains all the regulatory changes needed to allow the opening up of the electricity market to low-voltage consumers.
INTERCHANGE CAPACITY AND ENERGY MATCHED IN THE MARKETS AND EXECUTED IN BILATERAL CONTRACTS

FRANCE

PORTUGAL

MOROCCO

Import capacity not used  Import  Export capacity not used  Export

Years oct 01 to Mar 06
liberalisation of electricity in an international context

**Imports from France**

Years 98 to Mar 06

- GWh
- REE-EDF Contract
- Organised market
- Bilaterals

**Exports to France**

Years 98 to Mar 06

- GWh
- Organised market
- Bilaterals
However, certain issues still remain that could, at least partially, obstruct the attainment of the expected advantages. Differing tax systems, independent technical management on both sides of the border, the existence of “stranded” or Competition Transition Charges (CTC) in Spain and contractual equilibrium maintenance cost in Portugal (CMEC) and the manner in which interconnection management is handled, are only some of the matters which, regardless of the market mechanisms, may give rise to conditions that impair the Mibel’s operation as a single market.

Price formation and solution of border congestions

It is clear that for the correct functioning of MIBEL, as a single electricity market, it is essential that the interconnection capacity between Spain and Portugal reaches a sufficient level. In April, 2006, commercial capacity published by the Spanish system operator is between 1,200 and 1,500 MW in direction Spain-Portugal, and between 900 and 1,300 MW in the opposite direction. These figures are higher than last year but still not high enough to prevent border congestion and choice of the means of solving the problem is of the utmost importance.

Amongst the methods studied by the operators is the so-called “Market Splitting”, which, according to the studies carried out, allows the resolution of congestions in a non-discriminatory manner for the agents involved, and furthermore mitigates the problems associated to a possible dominant position. Moreover, it implies no extra cost, take into account in a fair manner bilateral contracts and determines the area costs on both sides of the congestion in accordance with the situation. This method is similar to the one used by NordPool for the management of congestions in the interconnections among Norway, Sweden, Finland and Denmark, but allowing cross-border bilateral contract.

The design of a system to resolve congestions that combines the Market Splitting procedure at the Portuguese border with the Market Coupling method at the French border something which it is planned to partially introduce once the second phase of Order ITC/4112/2005 becomes effective, could offer a solution that is compatible with the criteria of the European Union pursuing an internal energy market, of which the Iberian Electricity Market will be a part.
liberalisation of electricity in an international context

- **Imports from Portugal**
  - Years 98 to Mar 06 GWh
  - GWh: 0, 50, 100, 150, 200, 250, 300, 350
  - Years: 98, 99, 00, 01, 02, 03, 04, 05, 06
  - Organized market
  - Bilaterals

- **Exports to Portugal**
  - Years 98 to Mar 06 GWh
  - GWh: 0, 100, 200, 300, 400, 500, 600, 700, 800, 900
  - Years: 98, 99, 00, 01, 02, 03, 04, 05, 06
  - Organized market
  - Bilaterals
COMMERICAL CAPACITY

MW

Winter 05 to 06

Source: ETSO
7.1 OMEL's human resources
7.2 OMEL's information system
7.3 Main modifications in 2005
7.4 OMEL's advanced technology and cooperation with other entities
The implementation and operation of the electricity market by OMEL, which has now been in full operation in all processes and functions for seven years, is based on the organisation of human and technological resources, which have been combined with a high degree of effectiveness.

### 7.1 OMEL's human resources

OMEL’s organic and functional structure is designed to foster teamwork, which is the Company’s key working approach. In this way, despite the fact that each person and unit in the Company has specific responsibilities, functions and objectives, all collaborate in the achievement of the company's overall objectives, ensuring a broader field of vision and greater efficiency in the performance of their tasks.

OMEL’s team has demonstrated a high degree of professional skills, both with regard to the innovative information technology applicable to electronic markets in general and in the operation of electricity markets.

This professionalism has been revealed in the design and management of the electricity markets, the relationships with market participants and entities interested in participating in it, as well as its market regulation proposals, internal and external training and during its collaboration in the development of electricity markets in other countries.

OMEL’s strategic policy is based on continuous training, at the same time fostering innovative attitudes, based on cooperation and the integration of efforts and the development of personal skills, aimed at incorporating state-of-the-art technologies into the Company's assets.

At the end of 2005 the Company’s workforce numbered 53 persons. The Company is structured as a simple organisation geared towards the achievement of its objectives with the overall participation of all the employees.

The large number of qualified personnel with university degrees, especially senior staff (64%), and junior college degrees (17%) is typical of organised markets based on advanced information systems. Administrative personnel account for 19% of the total workforce.

In the field of occupational safety and health, the outstanding feature of the year 2005 was the continuation of the safety and occupational risk prevention measures with the corresponding training plans implemented in the previous year.

### 7.2 OMEL's information system

The operation of the markets and the performance of settlements are basic functions of OMEL. They are supported on the market operator's information system (SIOM), which constitutes an electronic trading market on which all transactions are carried out.

The main functions performed by SIOM are as follows:

- Receiving sale and purchase bids. This function includes a series of verification procedures aimed at helping participants to make error-free bids.
- Matching bids and obtaining marginal prices for each hour in the daily and intraday markets.
- Receiving information relating to the execution of bilateral contracts.
- Performing technical constraint solution processes in cooperation with the system operator, until June 2005.
- Performing energy market settlements and invoicing to participants.
Providing market participants with the necessary information on market results and settlements.

Managing information exchanges between OMEL and market participants, including the electronic treatment of eventual market claims.

Maintenance of information related to participants required by the market and the electronic management of the changes associated to it.

Exchanging with the system operator information required to run the production market and settlements processes.

Analysis of existing information and generation of reports.

Automatic generation and distribution of public reports, mainly through the market public web site.

**Design principles.**

The SIOM system design enables market participants with a wide range of different needs and requirements to participate on the market. It facilitates access to a large number of small participants who basically require straightforward access and may not have highly developed computing skills at the same time. The system is also suitable for satisfying the needs of participants who carry out a significant volume of transactions and therefore have other concerns and requirements.

The adopted solution, based on the use of Internet technology, enables a large number of participants to enter and operate in the market in a short time span. The design of the participant’s equipment is simple, robust and reliable, using only standard PC software. It is also practically maintenance free.

SIOM has a star configuration, redundant in all its equipment in order to cover single equipment faults. All market transactions are recorded in a central database.

The following table summarises the SIOM system design requirements and the solutions adopted in each case.

In order to ensure that communications between participants and SIOM do not hinder access to market participants, the SIOM system has been designed to be accessible through four types of alternative communications channels:

- Basic analog telephone line (PTN).
- Integrated services digital network (ISDN).
- Internet network.
- Dedicated lines.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>SOLUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlimited number of participants</td>
<td>Internet technology</td>
</tr>
<tr>
<td>Minimum requirements for participants</td>
<td>A desktop PC with an Internet browser</td>
</tr>
<tr>
<td>Universal access</td>
<td>Use of available technologies</td>
</tr>
<tr>
<td>Controlled security</td>
<td>PTN</td>
</tr>
<tr>
<td>Expandable</td>
<td>ISDN</td>
</tr>
<tr>
<td>Single-fault tolerance</td>
<td>Internet</td>
</tr>
<tr>
<td>Automatic access from applications</td>
<td>Dedicated line</td>
</tr>
<tr>
<td>Interchange format standardization</td>
<td>SSL, personal certificates, digital signature</td>
</tr>
<tr>
<td>Scalable architecture</td>
<td>Equipment and applications redundancy</td>
</tr>
<tr>
<td>Access allowed through Web Services</td>
<td>Gradual implantation of XML</td>
</tr>
</tbody>
</table>
Participants may use any of the above communication channels or a combination of them, according to their specific needs.

Access via the Internet enables market participants to access the SIOM system through the usual standard connections: ADSL, UMTS, Wi-Fi, etc.

All the elements that configure communications infrastructure sustain a single fault in any of its components, since they are all duplicated for automatic switchover in case of breakdown.

In order to comply with the stringent security requirements of an electronic market, electronic signature techniques, which are now common in Internet e-commerce applications, are used. These are based on:

- Personalised smart cards for each participant containing the certificates.
- Control of different access levels through the certificates issued by OMEL.
- The use of the https secure communications protocol, in accordance with the standard Secure Sockets Layer (SSL).

In order to make the system more secure, OMEL has assumed the function of market certification authority. Consequently, the Company manages participants’ electronic identification certificates used both for accessing the market and for system operating processes.

The before figure describes the modular architecture of the SIOM system.

The names and functions of the modules are as follows:

- **Data base**: Main kernel of the system, the whole information associated to the daily operation in the electricity market is stored on it, including the actions carried out by the agents, received information, prices, market results and, in summary, the information generated, received and exchanged with the rest of the entities (agents and system operator, mainly).

- **SIOM-Web**: Main module for the services of external access provided by the market. Endowed with special mechanisms of redundancy, it processes all the requests of information and uploads of external information and, communicating with the database, it provides the associated information to the presentation layer.

- **SIOM-Agents**: This module handles participant-OMEL communications. It enables bid sending and validation and downloading of session matching and settlements results by the participants. Several operating screens from this system are shown below.

- **Matching**: This module matches participants’ bids in the daily and intraday markets and generates the marginal prices for each hour, the matched power, and the economic precedence order of the bids.

- **Settlements**: This module generates the account annotations for all transactions in the production market, including processes managed by OMEL and those managed by the System Operator. The module also sets the power traded in each process by each participant and the final hourly price. Finally, as a function of the overall transactions produced by all agents, acquisition and selling final prices for the different categories of participants are obtained.
**Invoicing**: In charge of managing the processes of invoicing, collections and payments carried out between the company and the market participants. Generation of an unique bill for each participant incorporating all its transactions in the market, including the overcosts associated to ancillary services. Equally, it takes charge of the execution of the management of the several kinds of guarantees provided by each agent in the market and of their daily control. The IT System continuously publishes the guarantees state for each participant, allowing them to maintain a complete control over them.

**External interfaces**: This module handles communications with external entities, particularly the system operator. Exchanged information includes data required for management processes shared by OMEL and the System Operator, market results that are required for the technical operation of the system, and the results of processes managed by the System Operator that are required for financial settlement.

**Reports**: Generation and publication of the information associated to the market including the tools used for editing reports, distributing and automatic publication of them.

**Management**: This module enables OMEL personnel to perform the tasks involved in the operation maintenance and continuous monitoring of the different equipments of the system and of their basic software and applications. Additionally, this module includes also all the management tools existing in the application, including facilities of performance analysis and predictive maintenance of the system.

### 7.3 Main modifications in 2005

Within the scope of the technological development in the system structures of the market operator, 2005 was a year marked by, on one hand, the continued consolidation of the systems and communications infrastructure and, on the other hand, the implementation of new functions and services for the market trading system.

During this year 2005, both the main system and the emergency system remained operative at all times. There was no need to use the emergency system except in the regular operativity tests that were performed with market agents.

Significant improvements have also been made in the company’s computing infrastructure, both in the main system and the emergency system (SIOME).

These improvements has produced a system with the necessary processing functions and capacities required for the new needs arising from the continuous growth in the number of active participants in the market and the new challenges associated to the widening of the markets, like the Iberian Market, the extension of the buyers choices an the market prices to the extrapeninsular system, or potential collaborations with other European market operators.
As a result of the various regulatory changes affecting the market (Royal Decree 5/2005, Royal Decree 1454/2005 and Order ITC/4112/2005, primarily), during the last months of 2005 and first months of 2006, significant changes were made in the trading and settlement system to adapt it to the new operational conditions in the electricity market. These changes have been and are currently being implemented as the various articles of these regulations enter into effect.

**Modifications arisen as a result of the Resolution of 24th June 2005, which altered certain Market Activity Rules.**

The aforesaid Resolution brought about significant changes in market operation, particularly with respect to the process for managing technical constraints. As a consequence of its publication, throughout 2005 system operation was modified to adapt it to the new regulations.

**The SIOM2 System**

From the viewpoint of SIOM2 trading, which was implemented in 2004, 2005 was a year of consolidation and expansion in the use of the access facilities that this system affords. SIOM2, which fully maintains the functionality provided by the previous SIOM system, includes a series of new functionalities that have enabled participants to develop computer applications that connect directly to the market application. Thus, all the processes related to active participation in the electricity market (issue of bids, queries, downloads, etc.) have been automated and integrated with the participants’ own applications, reducing the margin for errors and upgrading the management of market-related data.

SIOM 2 was developed using Web Services technology, after having defined and implemented the main services of dispatch and access to the information furnished to market participants. Following the industries process of standardization, XML has been chosen as the interchange information format. XML is currently used in the Internet world as the base of most B2B applications.

In order to facilitate the market participants the use of these new technologies, a series of software modules developed and proven by OMEL are provided to the agents that can serve as the base of their applications (client module). The provision of these modules includes the delivery of the associated source code, the documentation and the support for its use in the fastest and most efficient way.

In order to facilitate the introduction of these new technologies in the facilities of the participants, OMEL provides a series of developments and interfaces for programming (APIs) that can be used in the participant’s applications accessing the market. The agents have seen thus simplified, in case of wanting to use these new functionalities, their utilization and subsequent automatization of their processes.
Other significant modifications in the SIOM system

In addition to the developments related to new market rules and the continual process of improvement in the functionalities provided by the SIOM2 system, in 2005 significant changes were also made in the company’s information systems. Highlights of such changes include:

- Improvements in operational and communications infrastructures in the main SIOM market operation system and the SIOME emergency system, upgrading performance and data processing capacities to handle the increasingly higher market demands in this area.

- The introduction of key changes in the storage equipment used for company and market data (NAS equipment), increasing its performance and capacity to adapt to current growing needs.

- Continuation of the upgrading process undertaken in the security systems, equipping the SIOM and SIOME systems with more sophisticated security mechanisms in keeping with the continual progress made in this field. In this respect, it is important to note the implementation of a new system for managing market access certificates and the internal security audits carried out by OMEL this year, which confirmed the high level of security within the company.

- The implementation of a new e-signature system for documents and e-billing that enables the electronic generation, signature and publication of documents related to settlements and, in particular, e-bills, which eliminate market participants’ need to continue working with documents and bills on paper.

- Continual improvements made in market, settlement and billing processes, maintaining the operability and performance of the application despite the significant increase in the number of participants and transactions undertaken during the period, particularly the very high number of special regime producers without sales representatives.

- Improvement in the system for monitoring and supervision of internal infrastructure, providing new capacities that afford the company’s operational staff an efficient tool to verify and manage the performance of the information system and communications with market participants at any time.

- The development of a new application for maintenance and updating of the data available at all times in the system and the execution of the various market processes.

- The on-going improvement of the public information server of the company (public web site), which during the year incorporated new functions and presented new information and new access facilities to market results.
Other new developments

In addition to all these important improvements to the daily operation of the market, in 2005 progress was made in the development of new integrated solutions, that expected to be put in operation in 2006, will respond to the new needs of the market and agents in the near future.

As the first of these solutions, it is worth mentioning the analysis, design and implementation of a series of modifications necessary to the beginning of the Iberian Market operation, anticipated initially to April of 2004, although later delayed. Since the end of 2003 and throughout 2004 and 2005, significant changes have been made in the information system to enable its adaptation to the new market needs, particularly as regards the necessary communications with the Portuguese operators, the OMIP market and the REN system, as well as modifications in market processes and matching that must be taken into account in transactions with Portuguese participants. Within this last points it is specially important the development of a new matching and formation of the price process for the Mibel considering the bids made in both countries and the limitation of the capacity of the interconnection. In order to obtain adequate price, this system uses the mechanism of market splitting recommended by the European Union, allowing bilateral contracts the presentation of prices to compete with the market bids in the use the limited interconnection capacity.

Likewise, in 2005 the adaptations and new functionalities required to facilitate the settlement processes in extra-peninsular systems were also updated. The system is kept prepared at all times to carry out these functions whenever theoperation of the aforesaid extra-peninsular systems undergoes regulatory changes.

Moreover, in line with the company’s strategy of collaboration and active participation in forums promoted by the European Union, and due to the commission entrusted to the Europex organisation by the Florence Forum, work has continued on providing market solutions for congestion at international tie-lines, particularly at the Spain-France interconnector. In this respect, theoretical and practical studies are underway for the development of models that allow implementation at the borders of the “market coupling” mechanism proposed by Europex organisation of European operators, and the proposals from ETSO operators for the implementation of market mechanisms for tie-line management. There is currently a fully operational application available that enables the implementation of this mechanism in two countries with a common border, as well as a theoretical study that includes the practical implementation of a model which enables its generalised use throughout the European network.

7.4 OMEL’s advanced technology and cooperation with other entities

At the same time, the continual drive to maintain and acquire know-how and technologies applied to the dynamic adaptation of our information system continues to make the SIOM technology, which is also being used in other organised power markets, the ideal instrument for the development of our market.

OMEL’s technology, which had already been exported to the Dutch market APX-Netherlands and to Portugal’s trading system, was successfully implemented at the end of 2001 in the electricity market of the Czech Republic. During 2005, the company continued collaborating with the Czech electricity market operator, carrying out the necessary improvements and modifications to the system in order to improve its performance and adapt it to the needs of the electricity market in that country.
Apart from this action, in 2005 OMEL continued to develop its cooperation activities with other markets and institutions in countries in the process of deregulating their markets. Between these actions, it is worth highlighting the continuation of the consultancy projects to support the operation of the electricity market in Georgia; the companies Iberinco and IPA have collaborated in this project.

This year, the political situation in the aforementioned country, although still complex, showed distinct improvements over the previous year. Pre-established objectives for this project continue to be met, providing vital assistance to the market operator in Georgia. The project is expected to continue throughout 2006.

Additionally, during 2005 it has continued the OMEL’s interest in the development of applications and models to facilitate introduction of demand side management processes at the consumers facilities. Within these efforts, it is specially important the joint project of demand management that is being made with Telvent, which, hopefully will already have its results available throughout 2006, shortly.

OMEL technological assets include numerous price forming developments based on implicit auctions corresponding to the one currently applicable in the market, as well as market splitting and market coupling mechanisms. Both procedures may be potentially used to deal with congestion on the Spanish-Portuguese and Spanish-French interconnection lines.

Finally, it is also important to highlight the continual development of information system technology that allows the management of continuous trading markets applicable to forward trading and other potential markets other than the daily and intraday markets, as well as the related settlement, billing and guarantee processes. This technology has been exhaustive proven for the operation of a forwards market, but it is also prepared for its use when it is considered opportune. The developments obtained and tests made as well as the results demonstrated the capacity of Internet as a support of this kind of markets, being able to serve as a base of future new functionalities to incorporate in the electricity market or on other energy markets related.
8.1 Information on the electricity market and its results
8.2 OMEL's training activity
information on the electricity market
The Electricity Sector Law and its implementing regulations entrust the market operator with the task of providing information on the results and operations of the sector that is relevant to both agents participating in the market and third parties interested on its evolution.

This function, which is characteristic of institutions managing organised trading or financial markets, becomes particularly relevant in the processes of creating and consolidating these markets.

OMEL, aware of the importance of these activities for the development of the electricity market, has introduced a specific strategy that integrates this as a basic and intrinsic function of the Company.

In conformity with the latest recommendations for the promotion of corporate security and transparency, OMEL publishes information about the Company and its management bodies on its Web page. The most noteworthy information is as follows:

1. Functions of the Company
2. Corporate Statutes.
3. Company Code of Conduct, which must be adhered to by all the members of the Board of Administration, as well as the Company’s directors and employees.
4. Organic structure of the Company, including the composition and identity of the members of its Board of Directors.
5. Regulations applicable to the Company and to the electricity sector.
6. Information on functions, structure, composition, system of rotating appointments to the posts of Chairman, Deputy Chairman and Secretary and the International Operating Regulations of the Market Agents Committee.
9. The Company’s Annual Reports since 1998, together with independent auditors’ reports and details of the Company’s shareholder structure.

8.1 Information on the electricity market and its results

Since the market started operations, OMEL has provided information on a regular basis in connection with the characteristics and functioning of the electricity market and its results through press releases, diffusion through conferences organised by institutions interested in the electricity sector, the publication of articles in specialist Spanish and foreign magazines and journals and several training courses about the electricity market.
OMEL considers that Internet is currently the most efficient media for broadcasting both real-time and historical information in a quick and accessible manner. Accordingly, key information on the Company and the organised electricity market has been published on Internet.

The information provided by OMEL is updated on an ongoing basis and is published in English as well as in Spanish.

OMEL publishes the results of the daily and intraday markets, including the volume of energy and prices resulting from the transactions in those markets, immediately after the corresponding market sessions. It also publishes information about the other market processes, such as the results of settlements, information on the resolution of technical constraints and the results of the technical operating processes managed by the system operator, an integral part of the final electricity price for whose calculation is OMEL’s responsibility and that others components are also published together with a list of all its components, including deviations over the meter readings, when they are incorporated in the settlements.

Additionally to the publication of the hourly final prices for each kind of agent, the average market final prices for purposes of what is laid down in the Royal Decree 436/2004 Second Temporary Disposition calculated in accordance with the calculation method of the temporary economic regime stemmed from the Royal Decree 2818/1998, applicable to power production units in the special regime are also published.

Royal Decree-Law 6/2000 established the basic principles governing confidential information and information that must be made available to the general public in the electric power production market, in connection with both the market operator and the system operator.

Pursuant to the provisions established in the abovementioned Royal Decree-Law, the following information is also made available to the general public:

- Publication of the aggregate supply and demand curves for the daily and intraday markets, as well as the resulting matching programme not including the bids related to bilateral contracts between companies belonging to the same group, in accordance with the provisions of Royal Decree-Law 3/2006, with an explicit breakdown of each of the points comprising such curves.

- The market operator must publish the interconnections commercial capacities as well as the international exchanges on each border.

- The market operator must publish on a monthly basis the results of the energy schedules aggregated by participant and month in the electric power production market, one month after the last day of the month to which they refer. These results are published for all the markets by type of participant, producer, retailer and distributor, as well as for imports and exports through the interconnections.

- The market operator must publish, on a monthly basis, the bids submitted by the participants in each of the daily and intraday markets three months after the end of the month to which they refer.

The majority of the indicated data, depending on their nature, are published in four different scopes: daily, monthly, annual and interannual, what results very helpful to establish comparisons.

OMEL also uses Internet to publish, and update on a regular basis, basic legislation governing the electricity market and information on training courses offered by the Company, and which include most notably an interactive Internet based course.

It is also worth mentioning that the Company also publishes monthly and yearly reports on the situation of the organised electricity market.

In a scope of international cooperation, OMEL collaborates with the European Association of Power Exchanges, Europex. This Association publishes on a daily base and automatically in its web page: http://www.europex.org, the average daily prices updated, in rolling monthly and rolling year by periods of the associated power
8.2 OMEL’s training activity

In 2005 OMEL continued to develop its training activity, as it considers to be crucial for the proper development of the electricity market, it complementing the more extensive work of providing adequate information and support to market agents and entities interested on it.

Thirteen courses were imparted in 2005, and collaborated in 10 Masters programmes, encompassed the company’s own courses as well as those organised in collaboration with other entities and institutions, including the University Carlos III, the Pontifical University of Comillas, the Spanish Energy Club, the Industrial Organisation School, the Institute of Higher Energy Studies (Repsol YPF) and the Lawyer’s Office Cremades & Calvo Sotelo. These courses were attended by 525 students. The May course was given in English.

Amongst the courses offered, two were related to the use of market access facilities through computer applications, and four others were on e-billing. The programmes and contents were adapted to the new regulations, primarily in reference to Royal Decree-Law 5/2005, on reforms to promote productivity and Royal Decree 436/2005 on the special regime and subsequent provisions.

The entities attending the courses may be classified as follows:

<table>
<thead>
<tr>
<th>ENTITIES</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity companies</td>
<td>17%</td>
</tr>
<tr>
<td>Retailers and consumers</td>
<td>14%</td>
</tr>
<tr>
<td>External agents</td>
<td>3%</td>
</tr>
<tr>
<td>Small distributors</td>
<td>2%</td>
</tr>
<tr>
<td>Self-producers</td>
<td>55%</td>
</tr>
<tr>
<td>Public Administration</td>
<td>1%</td>
</tr>
<tr>
<td>Consultants and other companies</td>
<td>8%</td>
</tr>
</tbody>
</table>

Mention must also be made of OMEL’s interactive Internet course; in 2005, this course was visited by 320 users.

OMEL management staff have continued the dissemination of information know of the electricity market, participating in seminars, conferences and international congresses, where they have given 38 conferences on different aspects of the markets and their operation.

OMEL has continued to promote the quality and objectivity of its teaching activities and the different published documents. These publications have been prepared by the Company’s employees, or by electricity company experts, specialised institutions or consumer representatives.

Many of the courses contain practical operation on the market. For that OMEL has developed a training system that works identically to the main SIOM system, where market operations can be simulated so that the students can pretend they are buyers or sellers and obtain results in the different markets, present queries and present claims as if they were market agents.

OMEL continually adapts its training system to the new requirements of parties interested in participating in the market, with special focus on the market deregulation aspects mentioned previously.

TRAINING COURSES

- Market operations.
- Introduction to the market.
- Course for using the access facilities to the electricity market through computer applications.
- Basic Market Concepts.
- Training for Specific Interested.
- Interactive Course on Internet.
- Master level degree courses on the Electricity Sector in collaboration with several Universities, institutions, consultancy and business schools.
Regarding this, during 2005 the company continues to offer training services that may be requested by interested parties, programming and adapting the courses contents to the needs that the company observes and/or is asked to provide, including the following:

■ Practical course on the Spanish Electricity Market, aimed at professionals and companies interested in receiving practical training on the functioning of the market. Duration: 8 hours.

■ Course on the Spanish Electricity Market, aimed at company professionals, Entities and Associations interested in receiving a broad insight into the functioning of the Spanish electricity market. Duration: 25 hours. The course is distributed in three days with morning and afternoon sessions. This course has been adapted to the producers of special regime (cogenerators and wind producers), that are accessing to the market.

■ Course on the Spanish Electricity Market, given in English and identical to the course described above. Scheduled to be imparted once a year, according to demand.

■ Interactive Internet course (new design).

■ A new course has been designed named “Course for using the access facilities to the electricity market through computer applications”, directed to market participants interested in knowing in detail the new provided facilities for accessing the electricity market through automatic computer applications. The course is useful not only for entities interested in developing specific applications that use them, but also for entities interested in acquiring the information for its potential future use, the course includes practical sessions with examples related to all topics, communication exercises with the market and practical execution of concrete operations for presenting bids, obtaining matching results and settlements through SIOM (Market Operator Information System) in an automatic way.

■ The four courses on e-billing proved particularly popular, with a total enrolment of 74 participants.

■ Courses on the electricity market are also offered upon request in both Spain and abroad, either in Spanish or in English. These courses can be designed for external agents, corporate employees or entities interested in the functioning of the Spanish market or because they see this market as a potential model for their own countries. In these courses imparted on request, OMEL adapts to the specific needs of applicants in terms of both the duration and content of the courses.
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