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LEGISLATION DEVELOPMENT OF THE SPANISH ELECTRIC POWER ACT Vol. 3 1st Ed., 2000

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LEGISLATION DEVELOPMENT OF THE SPANISH ELECTRIC POWER ACT

(Unofficial English Translation)

Volumen 3

1st EDITION, 2000

National Energy Regulatory Commission
(Spain)

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Foreword

The editors would like to point out that, like the previous two volumes, this compilation is not intended to be a complete record of the "legislation development" of the Spanish Electric Power Act 54/1997 ("1997 Electricity Act") in its strictest technical-legal sense.

Indeed, certain legal provisions such as the section of the Decree-law on Urgent Measures for Liberalisation and Increased Competition have been included here even though they are not directly related to that Act. Electricity legislation issued by the Autonomous Regions in Spain, however, has not been included, even though it may develop and implement the 1997 Electricity Act, because there is no systematic body of this legislation at present.

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ORDER OF FEBRUARY 22ND, 1999

ORDER OF FEBRUARY 22ND, 1999, ESTABLISHING THE GUIDELINES ON THE QUARTERLY ACCOUNTING INFORMATION TO BE SUBMITTED BY COMPANIES INVOLVED IN THE ELECTRICITY INDUSTRY

(Published in the Official State Journal, B.O.E. no. 56, dated March 6th, 1999)

The basic purpose of the Spanish Electric Power Act 54/1997, dated November 27th, ("1997 Electricity Act") was to regulate the electricity sector with the threefold objective of guaranteeing the electricity supply, safeguarding its quality and keeping the costs of its provision as low as possible, whilst duly protecting the environment, without the need for the State to take upon itself any of its component activities.

The liberalising intention of the 1997 Electricity Act was not purely restricted to demarcating the State's involvement in the sector's activities; it also introduced major changes in the regulation of the sector itself. In electricity generation, for instance, it acknowledged the right to freely set up in business and that all operations connected with it be organised according to the principle of free competition. The remuneration of this activity is therefore based on the organisation of a wholesale market. Although both transmission and distribution were deregulated thereunder by making access to networks generally available to third parties, their remuneration will continue to be set by the Government in order to prevent the establishment of dominant positions based on the existence of a single network. In order to guarantee the transparency of this remuneration, a legal distinction has been made between regulated and non-regulated activities. Lastly, the legal text provided for trading to take place within a context of freedom to contract and to choose an electricity supplier.

With a view to facilitating the transition from a regulated remuneration system to one based on free competition, the sixth transitory provision of Act 54/1997 of November 27th recognised that companies owning electricity generating facilities included within the scope of Royal Decree 1538/1987 would incur costs in the process of this transition to a competitive market.

Article 20 of this Act set out the accounting and information obligations to be met by companies engaged in activities in the electricity industry and imposed an obligation on those whose corporate purpose involves regulated activities to keep separate accounts, differentiating between the revenues and costs strictly

attributed to transmission activity, to distribution activity and, where applicable, those corresponding to supply sales to tariff customers.

It also states that companies engaged in non-regulated electric activities shall keep separate accounts for generation activity, price activity and any other non-electricity related activities performed on national territory and all other activities performed abroad.

Self-producers and generators operating under the special system of arrangements shall keep separate accounts in their internal accounting procedures for electric activities and non-electric activities.

Under article 20 of the 1997 Electricity Act, the Government is authorised to establish any special accounting and accounts publication procedures it deems fit, as developed in Royal Decree 437/1998, dated March 29th, approving the adaptation regulations for the accounting system applicable to companies in the electricity industry.

Finally, the eleventh transitory provision of Act 54/1997 established special remunerative arrangements for distributors operating prior to January 1st, 1997 to whom Royal Decree 1538/1987, dated December 11th, on determining the service management companies, is not applicable.

Expanding on Act 54/1997, dated November 27th, Royal Decree 2017/1997, dated December 26th, governs the procedure for the settlement of transmission, distribution and tariff retailing (regulated price supplying) costs, the permanent costs of the system, and diversification and security of supply costs. Article 3 of said Royal Decree assigned the tasks involved in settling these amounts to the National Electric Regulatory Commission in Spain. Likewise, article 20.1 of the aforesaid Royal Decree set out accounting obligations for electric companies generating or distributing power in excess of 45,000,000 kWh annually in the 1998 business year and for "Red Eléctrica de España, Sociedad Anónima". Under the same provision, these same companies are under the obligation to submit their provisional financial statements, for the period running from January 1st each year to the last day of the quarter in question, to the Ministry of Industry and Energy on a quarterly basis.

The new regulatory framework, and consequently, the new relations that have come into being among agents of the electric power system and with the companies in which they have an interest, requires a new format to be devised for submission of accounting information which covers the accounting effects derived

from the liberalisation of the activities of generating and supply sales to qualified consumers, and those derived from the need to reflect in accounting terms the operations undertaken within regulated electric activities.

This Order fulfils the provisions set out in Royal Decree 2017/1997, dated December 26th.

By virtue whereof, I hereby order:

One. *Agents under obligation.*

Electricity companies whose power generation or distribution in the 1998 business year is in excess of 45 million kWh a year and "Red Eléctrica de España, Sociedad Anónima" must submit their provisional financial statements for the period running from January 1st each year to the last day of the quarter in question, to the Ministry of Industry and Energy on a quarterly basis. They must also submit those relating to their separate accounts for the different activities in which they are engaged, in line with the following classification:

a) Companies engaged in regulated electric activities must submit separate accounts differentiating between the revenues and costs strictly attributed to transmission activity, to distribution activity and, where applicable, those corresponding to supply sales to tariff customers, supply sales to qualified customers and other activities.

b) Companies engaged in non-regulated electric activities must submit separate accounts for generation activity, supply sales activity and any other non-electricity related activities performed on national territory and all other activities performed abroad.

c) Power generators which the Act considers to be included under the special system of arrangements, together with self-producers, must submit separate accounts for electric activities on the one hand and any other non-electricity related activities on the other.

Two. *Contents of the information.*

The financial statements must refer to each company individually. Companies that are part of a corporate group must also submit the consolidated accounts corresponding to the subgroup of electricity companies, expressly indicating which companies constitute the consolidation.

Three. *Accounting criteria applicable.*

The provisional financial statements must be drawn up in accordance with the provisions stipulated in the accounting rules and regulations in force, whereby the procedures followed shall be akin to those involved in the annual closing of accounts. This entails recording the entries required by the appropriate accounting provisions with a view to duly and faithfully observing the principles set out in the accounting system.

Four. *Presentation format.*

Accounts shall be presented in a way that conforms to the formats defined in Appendixes I, II, III, IV and V of this Order. The documentation must be accompanied by the corresponding magnetic storage device.

Five. *Supplementary information.*

For the purposes stipulated in article 17 of Royal Decree 2017/1997, dated December 26th, the information contained in the financial statements must be supplemented by details referring to the items and charts included as Appendixes as indicated below:

Composition of financial debt (Appendix VI).

Amounts corresponding to the fixed remuneration for the costs of transition to a competitive market (Appendix VII).

Breakdown of the transactions carried out in the generation market, together with the settlements made by the National Electric Regulatory Commission, indicating the adjustments that have been made to reflect these in the accounts.

A list of relevant or significant events that have occurred during the period in question must also be included. This list must necessarily cover all the headings listed in Appendix VIII.

Six. *Submission date.*

Submission must take place within the forty-five calendar days following the last day of the quarter to which the financial statements refer, with the exception of those which correspond to the annual closing of accounts, for which the submission deadline shall be March 31st each year.

Seven. *Transitional arrangements.*

Any distribution companies that were operating prior to January 1st, 1997, and to whom Royal Decree 1538/1987, dated December 11th, setting the tariff for service management companies, did not apply, shall not be under the obligation to submit separate accounts for distribution and regulated price supplying activities until the year 2007 or until they are no longer subject to settlements for their distribution and tariff retailing (regulated price supplying) costs.

Eight. *Entry into force.*

This Order shall come into force on the day after its publication in the Official State Journal, *"Boletín Oficial del Estado".*

Madrid, February 22nd, 1999.

PIQUÉ I CAMPS

The Secretary of State for Industry and Energy.

Company name

COMPANY TOTAL

ANNEXE I

Balance Sheet

(Pesetas in Millions)

Period: xx/xx/199x al xx/xx/199x

ASSETS	Current period	Period for previous year	Difference	% Variation Dif./previous
SHAREHOLDERS, AMOUNTS FOR UNCALLED CAPITAL				
FIXED ASSETS				
Start-up expenses				
Intangible fixed assets				
Research and development expenses				
Concessionary rights, patents and licences				
Computer applications				
Rights on goods under financial leasing				
Advance payments				
Provisions				
Amortisation				
Tangible fixed assets				
Land and structures				
Technical electrical power facilities				
Other facilities, machinery, equipment, furniture and fittings, and other fixed assets				
Technical electrical power facilities under construction				
Advance payments and other tangible fixed assets under construction				
Provisions				
Amortisation of technical electrical power facilities				
Other amortisation				
Investments				
Holdings in group companies				
Loans to group companies				
Holdings in associated companies				
Loans to associated companies				
Long-term securities portfolio				
Other loans				
Long-term guarantee deposits and deposits given				
Provisions				
Long-term public administration				
Own shares				

ASSETS	Current period	Period for previous year	Difference	% Variation Dif./previous
EXPENSES TO BE DISTRIBUTED OVER SEVERAL YEARS				
Deferred costs for transition to competition				
Negative exchange rate differences				
Other expenses				
CURRENT ASSETS				
Shareholders, amounts for called up capital				
Stocks				
Nuclear fuel				
Other energy materials				
Other supplies				
Debtors				
Customers for sales and service provision				
Group company debtors				
Associated company debtors				
Miscellaneous debtors				
Personnel				
Public administration				
Provisions				
Short-term investments				
Holdings in group companies				
Loans to group companies				
Holdings in associated companies				
Loans to associated companies				
Short-term securities portfolio				
Other loans				
Short-term guarantee deposits and deposits given				
Provisions				
Short-term own shares				
Cash and banks				
Accruals and prepayments				
TOTAL ASSETS				

Company name

COMPANY TOTAL

ANNEXE I

Balance Sheet (Continued)

(Pesetas in Millions)

Period: xx/xx/199x al xx/xx/199x

LIABILITIES	Current period	Period for previous year	Difference	% Variation Dif./previous
COMPANY'S OWN FUNDS				
Subscribed capital **Share premium** **Revaluation reserves** **Reserves** Legal reserve Reserves for own shares Other reserves **Results from previous years** Retained earnings Negative results from previous years Partner contributions to compensate losses **Profit or losses** **Interim dividend delivered during the year**				
MERGER DIFFERENCES				
INCOME TO BE DISTRIBUTED OVER SEVERAL YEARS				
Capital grants **Positive exchange rate differences** **Other income to be distributed over several years** **Tax income to be distributed over several years**				
PROVISIONS FOR RISKS AND EXPENSES				
Pensions provisions **Tax provisions** **Other provisions** **Reversion fund**				
LONG-TERM CREDITORS				
Issue of debentures and other marketable securities **Debentures and other convertible bonds** In domestic currency In foreign currency				

LIABILITIES	Current period	Period for previous year	Difference	% Variation Dif./previous
Convertible debentures				
Other debts represented in marketable securities				
Debts with credit institutions				
In domestic currency				
In foreign currency				
Debts with group and associated companies				
Debts with group companies				
Debts with associated companies				
Other creditors				
Debts represented for bills payable				
Other debts				
Guarantee deposits and deposits received				
Long-term public administration				
Payments pending on shares or called up capital				
SHORT-TERM CREDITORS				
Issue of debentures and other marketable securities				
Debentures and non-convertible bonds				
In domestic currency				
In foreign currency				
Convertible debentures				
Other debts represented in marketable securities				
Interest on debentures and other securities				
Debts with credit institutions				
Loans and other debts				
In domestic currency				
In foreign currency				
Debts for interest				
Short-term debts with group and associated companies				
Trade creditors				
Other non-trade debt				
Public administration				
Debts represented for bills payable				
Other debts				
Accrued wages and salaries				
Short-term guarantee deposits and deposits received				
Provisions for trade transactions				
Accruals				
TOTAL LIABILITIES				

Company name

COMPANY TOTAL

ANNEXE II

Profit and Loss Account

(Pesetas in Millions)

Period: xx/xx/199x al xx/xx/199x

DEBIT	Current period	Period for previous year	Difference	% Variation Dif./previous
EXPENSES				
Supplies				
Energy purchases				
a) Via generating market				
b) Via bilateral contracts				
— National				
— International				
c) To generators under the special system				
d) Tariff purchases (distributors)				
e) Other energy purchases				
Purchases of energy materials				
Purchases of other supplies				
Work undertaken by other companies				
Energy transmission undertaken by other companies				
Employee costs				
a) Expenses and wages				
b) Social security met by the company				
c) Contributions to additional pension schemes				
d) Other welfare costs				
Variation in traffic provisions				
Other running costs				
Fixed asset depreciation charges				
a) Tangible				
— Assigned to fixed remuneration				
— Remainder				
b) Intangible				
c) Deferred expenses				
— Deferred costs for transition to competition				
— Other expenses				
d) Start-up expenses				

DEBIT	Current period	Period for previous year	Difference	% Variation Dif./previous
OPERATING PROFIT				
Financial expenses				
For debts with group companies				
For debts with associated companies				
For debts with third parties				
Variation in investment provisions				
Financial contributions to pension funds				
Negative exchange rate differences				
TOTAL FINANCIAL EXPENSES				
POSITIVE FINANCIAL RESULTS				
PROFIT ON ORDINARY ACTIVITY				
Variation in fixed asset provisions and control portfolio				
Losses from fixed assets				
Extraordinary expenses				
Cost and losses from previous years				
TOTAL EXTRAORDINARY EXPENSES				
POSITIVE EXTRAORDINARY RESULTS				
PRE-TAX PROFITS				
Corporate income tax				
RESULT FROM THE YEAR (PROFIT)				

Company name

COMPANY TOTAL

ANNEXE II

Profit and Loss Account (Continued)

(Pesetas in Millions)

Period: xx/xx/199x al xx/xx/199x

CREDIT	Current period	Period for previous year	Difference	% Variation Dif./previous
INCOME				
Net turnover				
Sale of energy				
a) In generating market				
b) To tariff customers and regulated prices				
— End consumers				
— Distributors				
c) To qualified customers				
d) Via international contracts				
e) Fixed remuneration for transition to competition				
— General allowance				
— Specific allowance				
— Allowance for consumption of domestic coal				
Provision of services				
a) Contracting rights leasing and others				
b) Provision of energy transmission services				
c) Provision of energy distribution services				
d) Other services provision				
Inter-company compensation and settlements				
Work undertaken by the company for fixed assets				
Capitalised financial expenses				
Other expenses capitalisation				
Other operating income				
OPERATING LOSSES				
Income from equity interest				
a) From group companies				
b) From associated companies				
c) From companies outside the group				

CREDIT	Current period	Period for previous year	Difference	% Variation Dif./previous
Income from other marketable securities and fixed asset credit				
a) From group companies				
b) From associated companies				
c) From companies outside the group				
Other assimilated income and interest				
Positive exchange rate transfers				
TOTAL FINANCIAL INCOME				
NEGATIVE FINANCIAL RESULTS				
LOSSES ON ORDINARY ACTIVITIES				
Benefit on disposal of fixed assets				
Capital grants transferred to result				
Extraordinary income				
Income and profit from other years				
TOTAL EXTRAORDINARY INCOME				
NEGATIVE EXTRAORDINARY RESULTS				
YEAR RESULT (LOSSES)				

Company name

COMPANY TOTAL

ANNEXE III

Chart of Financial Charges

(Pesetas in Millions)

Period: xx/xx/199x al xx/xx/199x

APPLICATIONS	Current period	Period for previous year	Difference	% Variation Dif./previous
Funds applied in operations Start-up expenses and debt arrangements Fixed asset acquisition a) Intangible fixed assets b) Tangible fixed assets c) Investments c1) Group companies c2) Associated companies c3) Other investments Acquisition of own shares Capital reduction Dividends Cancellation for short-term transfer of long-term debts a) Debenture loans and other similar liabilities b) From group companies c) From associated companies d) From other debts e) From fixed asset suppliers and others Provisions for risks and expenses				
TOTAL APPLICATIONS				
SURPLUS OF SOURCES OVER APPLICATIONS (INCREASE IN WORKING CAPITAL)				

ANNEXE III (Continued)

Chart of Financial Charges

Pesetas in Millions

SOURCES	Period for previous year	Current period	Difference	% Variation Dif./previous
1. Funds from operations				
2. Shareholder contributions				
a) Capital increases				
b) For compensation of losses				
3. Capital grants				
4. Long-term debts				
a) Debenture loans and other similar liabilities				
b) Of group companies				
c) Of associated companies				
d) Of other debts				
e) Of fixed asset suppliers and others				
5. Disposal of fixed assets				
a) Intangible fixed assets				
b) Tangible fixed assets				
c) Investments				
c1) Group companies				
c2) Associated companies				
c3) Other investments				
6. Disposal of own shares				
7. Early cancellation or short-term transfer of investments				

Pesetas in Millions

SOURCES	Period for previous year	Current period	Difference	% Variation Dif./previous
a) Group companies b) Associated companies c) Other investments				
TOTAL SOURCES				
SURPLUS OF APPLICATIONS OVER SOURCES (DECREASE IN WORKING CAPITAL)				
VARIATIONS IN WORKING CAPITAL (Pesetas in Millions)	Period for previous year	Current period	Difference	% Variation Dif./previous
Shareholders, amounts for called up capital Stocks Debtors Creditors Short-term investments Own shares Cash & banks Accruals and prepayments				
TOTAL VARIATION IN WORKING CAPITAL				

Company name

COMPANY TOTAL

ANNEXE IV

Balance Sheet by Activity

Pesetas in Millions

ASSETS	CURRENT PERIOD								PREVIOUS PERIOD							
	Activity 1		Activity 2		Activity m		Total		Activity 1		Activity 2		Activity m		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1. Shareholders (partners), amounts for uncalled capital																
2. Fixed assets																
2.1. Intangible fixed assets																
2.2. Tangible fixed assets																
2.2.1. Technical electrical power facilities																
2.2.2. Technical electrical power facilities under construction																
2.2.3. Other tangible fixed assets																
2.2.4. Advance payments and other tangible fixed assets under construction																
2.2.5. Amortisation of technical electrical power facilities																
2.2.6. Other amortisation																
2.2.7. Provisions																
2.3. Investments																
2.4. Own shares																
3. Expenses to be distributed over several years																
4. Current assets																
4.1. Stocks																
4.2. Customers																
4.3. Other current assets																
TOTAL ASSETS																

Pesetas in Millions

LIABILITIES	CURRENT PERIOD								PREVIOUS PERIOD							
	Activity 1		Activity 2		Activity m		Total		Activity 1		Activity 2		Activity m		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1. Company's own funds																
2. Income to be distributed over several years																
2.1. Capital grants																
2.2. Other																
3. Provisions for risks and expenses																
4. Long-term creditors																
5. Short-term creditors																
TOTAL LIABILITIES																

Company name

COMPANY TOTAL

ANNEXE V

Profit and Loss Account Analysed by Activity

Pesetas in Millions

ITEMS	CURRENT PERIOD								PREVIOUS PERIOD							
	Activity 1		Activity 2		Activity m		Total		Activity 1		Activity 2		Activity m		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
+ Net sales and provision of services – Sales allocated between activities + Other income related to operations – Other income allocated between activities = Output value																
+ Consumption – Purchases allocated between activities + External and running costs – Other costs allocated between activities = Company added value – Other expenses + Other income																
– Employee costs = Gross operating profit																
– Fixed asset depreciation charges – Transfer to reversion fund – Bad debts from loans and variation in traffic provisions = Net operating result																
+ Financial income – Financial expenses – Depreciation and financial provision charges = Profit or loss from ordinary activity																
+ Profit from fixed assets and exceptional income – Losses from fixed assets and exceptional expenses – Variation in provision for intangible and tangible fixed assets and control portfolio = Pre-tax profit or loss																
+ Corporate income tax = Profit or loss after tax (profit or loss)																

Company name

COMPANY TOTAL

ANNEXE VI

Composition of Financial Debt

Pesetas in Millions

ITEM	FIXED RATE				VARIABLE RATE			
	Previous period	Current period	Variation	%	Previous period	Current period	Variation	%
Debentures and bonds Loans in domestic currency Loans in foreign currency Commercial papers								
Total								

ITEM	SHORT TERM				LONG TERM			
	Previous period	Current period	Variation	%	Previous period	Current period	Variation	%
Debentures and bonds Loans in domestic currency Loans in foreign currency Commercial papers								
Total								

Company name

COMPANY TOTAL

ANNEXE VII

Amounts corresponding to the company for fixed remuneration due to transition to competition

Pesetas in Millions

Year	Fixed remuneration				Coefficient of allocation to results
	Projected	% of total projected	Actual	% of total projected	
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007					
Total					

Company name

COMPANY TOTAL

ANNEXE VII (Continued)

Amounts corresponding to assets assigned to fixed remuneration for transition to competition whose recovery is associated with the aforesaid remuneration

Pesetas in Millions

Year	Technical electrical power facilities			Costs transition to competition			Other			Total		
	Opening balance	Attributed to results	Closing balance	Opening balance	Attributed to resultados	Closing balance	Opening balance	Attributed to resultados	Closing balance	Opening balance	Attributed to resultados	Closing balance
1988 1999 2000 2001 2002 2003 2004 2005 2006 2007												
Total												

ANNEXE VIII

1. Breakdown of investments made.
2. Capital increases.
3. Issue of debentures, bonds and other instruments.
4. Dividends approved.
5. Holdings in companies in the electricity sector.
6. Significant holdings in other sectors.
7. Other significant events.
8. Breakdown of the items that have been considered in the formation of accounts whose balances show substantial differences from those that appeared in the accounting records from the previous year.

ORDER OF APRIL 12TH, 1999

ORDER OF APRIL 12TH, 1999, ESTABLISHING TECHNICAL INSTRUCTIONS TO SUPPLEMENT ELECTRICITY CONSUMPTION AND TRANSIT METERING POINT REGULATIONS

(Published in the Official State Journal, B.O.E., no. 95, dated April 21st, 1999)

The first final provision of Royal Decree 2018/1997, dated December 26th, approving the Electricity Consumption and Transit Metering Point Regulations, empowered the Minister of Industry and Energy, following a report from the National Electric Regulatory Commission, to issue any supplementary technical instructions that may be necessary to develop and implement the Regulations.

The aforesaid Regulations laid down an electricity measuring system formed by certain measuring instruments, communications and computer systems for obtaining and processing the information about the power exchanged between the different electric activities. These supplementary technical instructions to the Regulations define the frontiers between the different activities and establish the accuracy required in the measuring instrument, and other characteristics of this instrument and of the communications and computer systems. They also specify the rules applicable to any existing instruments which have a level of accuracy lower than required under the new Regulations and to any errors caused by inaccuracies.

The supplementary technical instructions were proposed by the National Electric Regulatory Commission, following a report from the Commission's Consultative Council, when performing the functions assigned to the Commission under article 8.1 of Act 54/1997.

This Ministerial Order has been subject to the information procedure governing technical rules and regulations laid down in European Parliament Directive 98/34/EC, and the European Council Directive dated June 22nd, codifying notification procedure 83/189, and Royal Decree 1168/1995, dated July 7th.

In pursuance whereof, I hereby order:

One. *Supplementary technical instructions.*

This Order establishes the instructions supplementing the Electricity Consumption and Transit Metering Point Regulations, which are set out in the appendix hereto.

Two. *Free circulation of instruments.*

1. Any instrument legally manufactured and/or sold in other European Union member states, or which originates from one of the EFTA member states parties to the agreement on the European Economic area, which conforms to regulations, technical rules or manufacturing procedures which guarantee an equivalent level of accuracy and safe use to the standard specified by Spanish technical rules, may be considered equal to the instruments certified pursuant to Spanish technical rules for the purposes of the implementation of the technical instructions supplementing the Electricity Consumption and Transit Metering Point Regulations set out in the appendix to this Order, provided that such conformity is proven by the corresponding certificate, issued by a duly approved agency or laboratory in the State of origin of the instrument.

2. The system operator or the appropriate public authority may request the documentation necessary to test the equivalence mentioned in the previous point. Should no evidence be provided of such equivalence, the appropriate public authority may order the withdrawal of the instrument.

Three. *Coming into force.*

This Order shall come into force on the day after it is published in the Official State Journal, "*Boletín Oficial del Estado*"

Madrid, April 12th, 1999.

PIQUÉ I CAMPS
The Secretary of State for Industry and Energy.

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      - 13.2.5. Back-up measurement at the transmission-distribution frontier.
      - 13.2.6. Back-up measurement in dedicated facilities to connecting consumer installation.

1. *Definitions*

The definitions set out in this section shall be adopted for the purposes of interpreting this document.

The instrument transformer definitions are as described in UNE-EN 21.302-321 Standard regarding the International Electrotechnical Vocabulary. Reference numbers are given in brackets:

Accuracy class: The accuracy class of an instrument transformer or measuring instrument is designated by a number (class index) equal to the admissible upper error limit of the measured quantity, expressed as a percentage, for the assigned primary magnitude and the accuracy load. The accuracy class is defined in IEC 50 (UNE 21 302-32) 321/01/24 standards.

A class a is better than or equal to a class b when, in all the ranges of burdens defined in the standards, the class a error is less than or equal to the class b error.

Accuracy error: The error equivalent to the accuracy class which a measuring instrument is certified to have in a calibration or in a manufacturer's test.

Active power: The instant measurement of the electricity.

Apparent power: The voltage multiplied by the current.

Auxiliary bars: The bars to which the generator set auxiliary transformer output and back-up transformers are connected to supply the plant auxiliary consumption.

Auxiliary consumption: The power consumed by different generation plant or substation services which are not considered customers. It includes any power losses in any plant or substation elements which do not form part of the transmission or distribution networks.

Back-up instrument: One or a set of measuring instruments installed at the other end of a single element (line, transformer, etc.) to the main meter. Back-up instrument measurements may be compared to main meter measurements by a simple calculation which removes the effect of any network element which might exist between the two.

Balance of international exchanges: The difference between the electricity exchanged in either direction through the point of connection between the transmission grid and the grid of other countries, throughout one period.

Communications channel: The physical medium which allows two agents to send each other information.

Communications protocol: A convention for using a communications channel and for coding any information which is sent.

Control centre: A specialised facility designed to receive and send orders and signals for controlling the different components of the electricity system.

Current transformer: An instrument transformer, in which the secondary current, in normal conditions of use, is substantially proportional to the primary current and differs in phase from it by angle which is approximately zero for an appropriate direction of the connections (321-02-01).

Dedicated line: A communications channel used exclusively by two agents located at either end, where third parties are prevented from accessing the channel by some form of physical limitation.

Direct readout: The collection of meter measurement data by coupling a readout terminal to the meter, without involving any communications.

Existing element: An element of a measuring instrument which has been fully installed before the Metering Point Regulations came into force.

Faulty measuring instrument: A measuring instrument shall be deemed faulty as soon as it ceases to perform its functions or performs them with a lower degree of accuracy than it should.

Generating set: A facility used to obtain mechanical power for transformation into electricity by an alternator, including all the ancillary elements necessary to perform its functions.

Generation plant: A generator set or a group of generator sets which share common facilities. It must be possible to calculate the energy balance of a plant's facilities by fitting meters to all the bars. The closed zone shall exclude any transmission grid, distribution grid and customer element, as well as elements of other generation plants.

Gross generation power: The power produced by a generator set measured at alternator terminals.

When the alternator excitation is supplied externally, its consumption shall be deducted from the terminal measurement for the purposes of determining the gross generation power.

Group transformer or main transformer: Power transformer connected to the alternator terminals of a generator set which adapts the alternator output voltage to the grid voltage.

High-voltage side of the transformer: The highest rated voltage winding of a transformer. In transformers with several windings, the main transformer winding.

Information integrity: Measures taken to ensure that the information which is transmitted by a communications channel is not subject to any alterations between the issuing end and the receiving end.

Information security: Measures taken to prevent unauthorised people from accessing the information.

Information validation: One of the possible procedures for ensuring the integrity of the information, by using a cryptographic algorithm which must remain unchanged throughout the communications chain. If the lines are not dedicated or in network environments, the validation method is used to guarantee that the information in question was actually sent by the agent who claims to have sent it.

Instrument transformer: A transformer used to supply measuring instruments, meters, relays and similar instruments (321-01-01 amended). An instrument transformer may be a voltage or current transformer.

Integral static meter: An electronic measurement instrument without any moving parts, in which the meters, data storage instruments, display and data processing software all form part of the same instrument. Depending on the model, it may have an in-built communications instrument and other additional accessories.

Low-voltage side of the transformer: The lowest rated voltage winding of a transformer. In transformers with several windings, the main transformer winding.

Main hub: The information system which centralises measuring information for the whole National Electric System. These measurements may reach the main hub directly from the measuring instruments or from the secondary hubs.

Main instrument: A measuring instrument installed at a metering point which is used as the sole measurement for the purposes of the provisions of the Metering Point Regulations regarding electricity settlements, energy balances, etc.

Net power generated: The gross generation power minus the auxiliary consumption.

Plant bars: The bars to which the high-voltage side of a generator set transformer is connected.

Power delivered to the grid: The power delivered to the transmission or distribution networks by a generation plant, plus the consumption of customers supplied directly from plant bars and/or from auxiliary bars.

In the case of special system generation plants, this item is equivalent to the surplus power defined in Royal Decree 2366/1994.

Power received from the grid: The power absorbed from the transmission or distribution networks by a customer's facilities or a generation plant.

Reactive power: The part of the electricity which supplies the electromagnetic fields of the alternating current instrument.

Recorder: An instrument used to receive the information from the meters, record and store the data and support remote transmission.

Redundant instrument: A measuring instrument installed at the same point as a main instrument, the measurements of which must almost match the main instrument measurements.

Remote acquisition and control stations: Data hubs which control the flow of information and prioritise alarms between a control centre and a plant or substation.

Secondary hub: The data acquisition systems which collect the recorder measurements (by communications or human action) and then send them to the main hub.

Supplementary services: Any products and services necessary to allow electricity to be delivered in acceptable conditions of quality and security, other than power production and transmission.

Test strip: A set of terminals used to connect a testing instrument to a meter without having to manipulate the meter connections.

Voltage transformer: An instrument transformer, in which the secondary voltage, in normal conditions of use, is substantially proportional to the primary current and differs in phase from it by angle which is approximately zero for an appropriate direction of the connections (321-03-01).

2. *Frontiers between activities and determining metering points*

This Supplementary Technical Instruction establishes the frontiers between activities and the location of the metering points.

Frontiers shall always be established between no more than two measurement participants. When facilities which belong to three or more participants are connected to the same bar, the system shall establish as many frontiers with two participants as necessary.

The frontiers and metering points defined in this Instruction must allow the grid to be divided into zones and the calculation of the energy balance of each one. For these purposes, the following shall be considered grid zones:

Each generation plant and all its auxiliary consumption.

Each special system generator and its associated production processes, if any.

Each customer.
The transmission grid.
Each distribution area.

2.1. Generation frontiers.

Generation activity frontiers shall apply to each generation plant in the plant bars and in any other plant yard bar, belonging to the transmission grid or distribution network, from which the plant auxiliaries are supplied. For the purposes of determining the metering point, the plant bars are considered transmission or distribution network elements.

The metering point shall be established on the high-voltage side of the main transformer of each plant, on the high-voltage side of each auxiliary supply point in the plant and on the high-voltage side of each amount of power dispatched from the auxiliary bars.

Subject to agreement by the participants and provided that no other parties are affected, any supplies made from the switchgear yard of a generation plant at different consumption levels to the auxiliary consumption may be considered the same as an auxiliary consumption, provided that the rated apparent capacity is equal to or less than 250 kVA or the supplies are connected at low voltage. Consequently, these consumptions shall not be considered customers, for all purposes.

For the purposes of determining the frontiers and metering points, special system generators shall abide by the generation plant provisions, unless specified otherwise in specific legislation.

In the case of customers connected directly to plant bars, the generation-customer frontier metering point shall be determined in accordance with the criterion defined in the customer frontier section. In multi-unit plants, any auxiliary consumption drawn from transmission or distribution bars which cannot be assigned to a bidding unit, according to the Operating Regulations governing the bidding system, shall be considered customers.

The high-voltage side of the main transformer shall not be considered a frontier in any units which supply power to a grid which is considered a generation facility and which is only used to supply the auxiliaries of a set of plants which belong to the same owner.

2.2. Customer frontiers.

A customer frontier with the transmission or distribution activity shall be established at all the points of connection of the facil-

ities owned by the customer with the transmission or distribution networks.

The metering point shall be established at the edge of the customer facility side, as close as possible to the general facility protective device and at the same level of voltage.

2.3. Transmission facility frontiers.

For the purposes of the Metering Point Regulations, of Royal Decree 2018/1997, dated 26 December, approving the Electricity Consumption and Transit Metering Point Regulations, when transmission facilities which belong to different companies are connected it shall not be compulsory to install a metering point, unless specified otherwise in the section on frontiers with the grid of other countries.

The transmission substation consumption shall be measured to avoid confusion with the transmission or distribution grid losses. The instrument installed shall conform to the provisions of the Metering Point Regulations and these supplementary technical instructions regarding customer frontiers.

2.4. Transmission and distribution frontiers.

The frontier shall be established in the transformers having a high-voltage side rated voltage of 220 kV or higher, and a low-voltage side voltage of less than 220 kV.

The metering point shall be fitted on the high-voltage side of the transformers, if the 400/xx kV and 220/xx kV transformations are on the distribution network side; and on the low-voltage side of the transformers, if the 400/xx kV and 220/xx kV transformations are on the transmission grid side.

2.5. Distribution area frontier.

The frontier between distribution areas shall be established in all the points of connection of facilities which belong to two different areas.

Any distribution area frontiers with a rated apparent capacity equal to or less than 250 kVA or which is connected in low voltage conditions may be excluded from these Regulations, subject to agreement between the measurement participants and provided that said measurement does not affect other parties.

2.6. Frontier between the transmission grid and the grid of other countries.

The frontier between the transmission grid and the grid of other countries is on the national border. The metering point may be placed at the interconnection line end.

In the case of supplies to towns in neighbouring countries which are supplied by distribution voltages, the measuring instrument used to measure the power circulating at the frontier shall conform to the provisions regulating distribution area frontiers.

In both cases, the back-up meter shall be installed, preferably, at the other end of the line.

3. *Metering points*

As laid down in article 5 of the Metering Point Regulations, metering points shall be classified in two types: type 1 and type 2, for the purposes of determining the characteristics of the instrument.

3.1. Metering point classification.

The following shall be type 1 metering points:

Points located at any frontier whose annual exchanged power is equal to or higher than 5 GWh.

Points located at customer frontiers whose annual exchanged power is equal to or higher than 5 GWh, or whose contracted capacity is equal to or higher than 10 MW.

Points located at generation frontiers, whose annual exchanged power is equal to or higher than 5 GWh, or whose rated apparent capacity is equal to or higher than 12 MVA.

All the other metering points shall be type 2.

The following definitions shall be considered for the purposes of this classification:

The rated apparent capacity of a metering point shall be given by the element with the lowest rated apparent capacity of the circuit where the metering point is fitted. In any circuits where elements are connected in parallel, the elements shall be considered a single element whose rated apparent capacity is the sum of the rated apparent capacity of each one.

The annual exchanged power shall be deemed to mean the sum of the active power which flows through one frontier in both directions, in one calendar year.

Any gas turbines which are already in operation when the Metering Point Regulations come into force may be regulated by the power classification, without taking into account the general apparent capacity regulations established for such points. The System Operator must be informed accordingly before the end of the instrument adjustment time periods set out in the transitory provision of the Metering Point Regulations, and may not exercise this option after such date.

Point 4 of this document defines the specific characteristics of the instrument to be installed in each type of metering point.

When the location of the metering point at a frontier is changed pursuant to the provisions of article 4 of the Metering Point Regulations, the new point shall be subject to a classification of at least the same type as the original point.

3.2. Change of classification.

Should the annual exchanged power by a metering point subject to the power classification system exceed the corresponding upper limit by more than 10 per cent for more than two years running, the classification shall be changed automatically to the corresponding type.

Similarly, should any changes increase the apparent rated capacity of the circuit where a generation measurement is located, or when customers increase their contracted capacity, the classification of the corresponding measurement shall be revised.

The party responsible for the measurement shall proceed to replace any instrument which does not comply with the requirements derived from the new classification. The instrument replacement deadlines are set out in article 14 of the Metering Point Regulations and shall start to count on January 1st of the year following the first two in which the limit was exceeded.

3.3. Installation of instruments of a quality higher than the minimum requirement.

Instruments of a quality higher than the minimum requirement set out in the Metering Point Regulations and in these Supplementary Technical Instructions shall be installed at the request of any of the measurement participants, within the deadlines set in article 14 of the Metering Point Regulations.

Any expenses involved in replacing the instrument shall be paid by the party which makes the request. If the request is made before the instrument is first installed, these expenses shall be

calculated as the difference between the prices of the installed instrument and the minimum instrument required to meet the provisions of the Metering Point Regulations and these Supplementary Technical Instructions. If the request involves dismounting an existing instrument and installing a new one, the expenses shall include any costs actually incurred.

4. *Measuring instrument specifications*

All measuring instruments shall be subject to the State metrological regulations laid down in the Metrology Act (3/1985, dated March 18th), supplemented by the metrological controls set out in this Order.

Following a report from the National Electric Regulatory Commission and a proposal from the System Operator, the Directorate General for Energy of the Ministry of Industry and Energy shall establish the minimum general installation conditions which shall take account of the measuring instrument environmental conditions.

4.1. Instrument transformers specifications.

4.1.1. General considerations: Instrument transformers shall conform to the provisions of UNE 21.088 standard, grid component and security provisions, the Metering Point Regulations and these Supplementary Technical Instructions and any other applicable regulations.

Instrument transformers shall be of the inductive type and together with the accuracy test protocols, must pass the electrical and mechanical tests specified in the said regulations.

4.1.2. Transformer burden: The secondary winding of the instrument transformers to which the meters are connected shall be dedicated exclusively to the settlement measuring tasks set out in the provisions of article 25.1 of Royal Decree 2019/1997, dated December 26th, governing the organisation and regulation of the electric power generation market.

Should other secondary windings not used for settlement measuring tasks be permitted pursuant to point 4.2.2, tests shall be conducted to certify that the measurement transformation accuracy is suitable for a given range of burdens in the other secondary windings. The burden of secondary windings not used for measuring tasks shall be within the range specified in the tests. The System Operator shall be empowered to check that these secondary windings are within range.

The total simultaneous load on all the voltage transformer windings should be approximately the rated capacity. Under no circumstances shall this simultaneous load be lower than 50 per cent of said capacity nor shall the capacity factor (cos j) be lower than 0.8, even if this involves introducing artificial loads.

The main hub shall store an up-to-date inventory of all the instruments connected to the instrument transformer secondary windings. If the secondary winding is used for measurement purposes, each instrument shall specify at least its manufacturer, rated capacity and consumption. Any secondary windings which are not used for measurement purposes shall specify at least the rated load borne by each winding. The party responsible for a measuring instrument shall report any changes in the transformer load to the other measurement participant and to the System Operator, who shall update the main hub inventory.

4.2. Installation of instrument transformers.

4.2.1. General considerations: In general, instrument transformers must be installed pursuant to current electricity security and grid component provisions, the provisions of the Metering Point Regulations and these Supplementary Technical Instructions and any other applicable regulations.

The instrument installation process shall not affect the accuracy of the measurement.

Instrument transformer secondary windings shall be equipped with devices to permit the separation, for testing or replacement purposes, of any instrument which they supply or the insertion of others, without having to disconnect the facility and, in the event of current transformers, without interrupting the continuity of the secondary circuit.

The instrument transformers shall be installed in such a way as to make them easily accessible for testing or replacement purposes.

Special care shall be taken in dimensioning secondary circuit conductors to avoid measurement errors (see 4.2.2 and 4.2.3).

By way of example, Appendix C describes some of the meter configurations referred to in these Supplementary Technical Instructions.

4.2.2. Installation of voltage transformers: One set of three inductive voltage transformers shall be installed, with one exclusive secondary winding for measurement purposes and, as necessary, other secondary windings for other purposes.

The interconnection wiring between the transformers and the measuring instrument shall be thick enough to guarantee a voltage drop of less than 1 per 1,000 and in no case shall it be less than 6 square millimetres thick.

Should protective devices be installed in the secondary windings, the devices shall be fitted with suitable means for detecting, as soon as possible, a lack of voltage in any of the three phases.

The voltage may be measured on the bars or the line.

When redundant voltage measuring instruments are installed on the line, two sets of voltage transformers shall be used, pursuant to the provisions of point 4.6. One set shall be fitted on either side of the line output switch and the main measuring instrument shall be connected to the line side transformer.

When the set of voltage transformers is installed on bars, it may be shared by the measuring instruments of all the lines connected to the bar, provided that the accuracy of the measurement is not affected. In the event of redundant instruments, two sets of voltage transformers shall be installed pursuant to the provisions of point 4.6.

Bar measurements shall not be used in certain configurations in which, due to the existence of switches or other elements between the current transformer and the bar, power is allowed to flow between elements that operate at different voltages to the bar, nor shall they apply to the back-up configuration defined in point 4.7 for bars with more than one frontier.

Should the use of the set of transformers on bars involve making corrections to inaccurate measurements, as defined in point 9, the corrections shall apply to all the measuring instruments that are connected to the said transformer.

4.2.3. Installation of current transformers: One set of three current transformers shall be installed, with one exclusive secondary winding for measurement purposes and, as necessary, other secondary windings for other purposes.

The maximum load of the cable used to connect the current transformer and the measuring instrument shall be less than 4 VA and the cable shall never be less than 6 square millimetres thick.

When redundant instruments are installed, each set of current transformers shall be installed on either side of the switch and the main measuring instrument shall be connected to the line side transformer.

4.3. Meter-recorder specifications.

4.3.1. Active power meter: Depending on the class required and during a transitional phase, until the approval of the corre-

sponding specific metrological regulations, implementing the Metrology Act (3/1985, dated March 18th), active power meters shall have the corresponding certificate of conformity with UNE-EN 60.687 and UNE-EN 61.036 standards regulating their accuracy class.

Should the UNE not have enforced a corresponding standard for any instrument built with more recent technology, the corresponding IEC (International Electrotechnical Commission) standard may be applied.

The meter shall meet a series of minimum requirements:

A four-wire measurement system shall be used.

The active power shall be recorded in all the directions in which power is able to flow, and one or more sets of instruments may be used as appropriate.

4.3.2. Reactive power meter: Depending on the class required and during a transitional phase, until the approval of corresponding specific metrological regulations, implementing the Metrology Act (3/1985, dated March 18th), reactive power meters shall have the corresponding certificate of conformity with the UNE-EN 61.268 standard regulating their accuracy class.

Should the UNE not have enforced a corresponding standard for any instrument built with more recent technology, the corresponding IEC (International Electrotechnical Commission) standard may be applied

Should there not be any UNE or IEC standard for the accuracy class required, the System Operator shall propose the general requirements applicable to the type of instrument in question to the Directorate General for Energy of the Ministry of Industry and Energy, which shall authorise the use of the instrument, following a report from the National Electric Regulatory Commission and from the Spanish Metrology Institute of the Ministry of Development.

The meter shall meet a series of minimum requirements:

A four-wire measurement system shall be used.

The reactive power shall be recorded in any quadrants where power can flow, and may be recorded with one or more sets of instrument, as appropriate.

4.3.3. Recorders: This instrument shall be used to store the meter measurements and support the teletransmission, processing and preparation of the active and reactive power data. The measurements must not be obtained by notching.

This recorder may form part of a combined meter or be independent of the meter.

Each recorder may store information of one or more measuring instruments. Each substation or plant yard where a metering point is located must have at least one recorder. If there has to be one redundant or back-up instrument, a minimum of two recorders shall be installed, such that each redundant or back-up instrument and main instrument is connected to different recorders.

The recorders shall provide detailed information about each metering point.

The recorder shall meet the following requirements:

The recorder shall record no fewer than eight variables per metering point. The first two shall be associated to the active power records, the next four to the reactive power and the last two shall be available for future uses. These last two may be used for recording quality of service measurements, pursuant to quality regulations. By way of example, they may refer to a continuity of supply measurement and a slow voltage change measurement. The number of quantities recorded at metering points where active power can never flow in one of the two directions may be reduced to a maximum of at least five.

In general, the integration period shall last one hour, although it must be possible to parameterise lower values subsequently. Special system generators shall abide by the provisions of their specific legislation. Integration periods shall never last less than five minutes.

The recorder shall be capable of storing the results in periods, indicating the date, hour and minute, such that there are at least four thousand records per measurement.

In order to permit local readouts and the focal parameterisation of the instrument, the recorder shall have at least one suitable communications channel, either via an RS-232 serial port, an optocoupler which conforms to UNE-EN 61.107 standard or any other medium which, in the opinion of the System Operator, at least meets the same requirements as the latter two devices.

The recorder may only be parameterised by the System Operator or by whoever is appointed by the System Operator to perform this task, and who shall be the only party authorised to perform this action. The instrument shall record the exact time when it was reprogrammed. The recorder software shall be protected by an access password to ensure that the recorder parameterisation system cannot be accessed by unauthorised parties.

Where possible, the recorder shall be synchronised by GPS systems. Other procedures may be used provided that they comply with the parameterisation security criteria and permit a level

of synchronicity that does not distort the calculation of the energy balances.

4.4. Installation of meters and recorders.

The meters and the recorders shall be installed on a base formed by suitable, non-flammable materials. The base shall be protected by a sealed cover that permits the meter and recorder displays to be read while preventing any tampering with the instrument and meter-recorder leads, if there are any. The seals shall ensure that the set cannot be accessed by any System agents apart from the System Operator, who shall be responsible for fitting or removing the seals, as the case may be.

The party responsible for the measuring instrument shall also be responsible for any unauthorised breaking of the seals that the System Operator fits to the said instrument.

Should the System Operator, pursuant to the terms set out in the Metering Point Regulations and in these Technical Instructions, delegate responsibility for performing tasks which involve removing the seals, the seals may be removed and reattached by whoever performs this task.

Any combination of active power meters, reactive power meters and recorders may be used for the installation, both in individual apparatus and as part of a combined instruments, optimising the number of combined instruments, provided that they meet the requirements listed in points 4.3.1, 4.3.2 and 4.3.3, respectively, for each one instrument.

In any event, the instrument display shall indicate the cumulative value of the variables measured or recorded until the time of the readout, to make them easier to read. Furthermore, the instrument shall be fitted to make the display easy to read, every effort being made to avoid visual readout errors. All the elements of communication between the user and the instrument necessary for local data capture shall be freely accessible and shall not be affected by the cover or the security seals.

The testing devices and recording meters or instruments shall be of the front access type to facilitate testing and checking. Whenever possible, the instrument shall be installed at a height of between 0.250 and 1.80 metres.

4.5. Measurement accuracy.

Pursuant to the metering point classification set out in the Regulations supplemented by these Technical Instructions, each

type of measuring instrument listed in point 3 shall have a given level of accuracy.

4.5.1. Type 1 instrument: The voltage transformers shall have a measurement accuracy class of 0.22.

Current transformers shall have an accuracy class equal to or better than 0.2S.

The accuracy class of active power meters shall be equal to or better than 0.2S. The accuracy class of reactive power meters shall be equal to or better than 0.5.

4.5.2. Type 2 instrument: The voltage transformers shall have a measurement accuracy class of 0.5.

The current transformers shall have an accuracy class equal to or better than 0.5S.

The accuracy class of active power meters shall be equal to or better than 0.5S. . The accuracy class of reactive power meters shall be equal to or better than 1.

This classification is summarised in the following table:

Point type	Measurement system — Wires	Accuracy class			
		Transformers		Meters	
		Voltage	Current	Active	Reactive
1	4	0.2	0.2S	≤ 0.2S	≤ 0.5
2	4	≤ 0.5	≤ 0.5S	≤ 0.5S	≤ 1

4.6. Measurement redundancy.

4.6.1. Definition: A redundant measurement is the measurement obtained with a measuring instrument installed at the same point as the main instrument, and whose measurements must almost match the main instrument measurements.

A back-up measurement is the measurement obtained with an instrument or set of instruments installed at the other end of a single element (line, transformer, etc.) to the main measuring instrument. The back-up instrument measurements may be compared to the main instrument measurements by means of a simple calculation which removes the effect of any grid element which might exist between the two.

Point 4.7 describes the back-up instrument configurations admissible for the purposes of implementing the Metering

Point Regulations and these Supplementary Technical Instructions.

4.6.2. Redundant or back-up measurements: Except as specified in the next paragraph, redundant or back-up measurements shall be provided for all type 1 measurements. Back-up instrument must be installed at the distribution area frontiers.

It is also recommended, but not compulsory, that back-up or redundant instruments be installed both at distribution area frontiers and customer frontiers with a voltage, in either case, of less than 36 kV. In the event of an anomaly in the main measuring instrument and the lack of a back-up or redundant measurement, the estimate mechanism described in point 9.2 of these Supplementary Technical Instructions shall apply.

A redundant or back-measurement up shall not be affected by the failure of any main measuring instrument components, except as specified in the next paragraph, which shall not apply to shared instrument transformers.

If a redundant instrument is installed at frontier points with a rated apparent capacity equal to or less than 80 MVA, the redundant instrument may share the secondary winding of any of the main instrument transformers, provided that it conforms to the provisions of point 4.1.2, regarding the instrument transformer burden. The Directorate General for Energy may, on justified grounds, amend or remove this exception at any points which meet certain characteristics.

Except with regard to distribution area frontiers, the redundant or back-up instrument must be installed by the party responsible for the main measuring instrument, who shall also be responsible for the redundant or back-up instrument; if the instrument has to be located in facilities owned by another participant, it shall be installed subject to agreement with the other participant. In distribution area frontiers, the other measurement participant shall be responsible for installing the back-up instrument.

4.6.3. Comparison of measurements: If back-up instruments are used, any losses in the grid elements located between the metering point and the back-up instrument shall be compensated and the loss compensation models shall be tested at regular intervals in order to guarantee the comparability of the two measurements.

The main hub shall compare the measurements of the main meters and the redundant or back-up measurements, pursuant to the specified procedure. The System Operator shall request the

testing of the instruments whenever made advisable by the measurement checking procedures, unless one of the measurement participants has already requested the test.

The interested parties shall be informed of the results of these comparisons by the main hub user services.

4.6.4. Accuracy requirements: The accuracy required for redundant or back-up instruments shall be the same as required for the main instrument.

4.7. Back-up configurations.

This section includes the back-up configurations admissible for the purposes of the implementation of the Metering Point Regulations and these Supplementary Technical Instructions.

By way of example, Appendix C lists some of the meter configurations referred to in these Supplementary Technical Instructions.

4.7.1. Use of back-up measurements at distribution area frontiers: Back-up instruments used at distribution area frontiers shall be fitted at the other end of the connection element (line, transformer, etc.).

4.7.2. Bars with more than one frontier: This situation occurs when facilities belonging to more than two participants are connected to the same bar.

When each participant has all the measuring instruments, with independent voltage and current measurements to those used by the other participants, the configuration shall be deemed a back-up or redundant configuration.

All the metering points at this type of frontier shall have the same instrument accuracy classification, which shall be of the strictest type applicable to the separate metering points.

4.7.3. Back-up measurements of generation output lines: Subject to agreement by the measurement participants, at generation frontiers the back-up instrument may be fitted on each transmission, distribution or customer line that is connected to the plant bars. These measurements shall be made as close as possible to the plant bars.

In multi-unit plants that form a single bidding unit, pursuant to the Operating Regulations governing the said system, this back-up instrument may be used as main measuring instrument. Type

1 instruments must have the corresponding redundant or back-up measurement configurations.

4.7.4. Back-up measurement in alternator terminals: The back-up measurement may be obtained at generation frontiers from the difference between the alternator terminal measurements minus the consumption of auxiliaries supplied by alternator terminals, which may be measured on the low-voltage side of the auxiliary consumption transformer.

The back-up measurement defined in this section must be taken as the main measurement for measuring the active power absorbed from the grid through the main unit transformer when, due to the range of performance, the accuracy of the metering main instrument falls below the class of the back-up instrument. In this particular case, the lack of accuracy correction shall not be applied.

4.7.5. Back-up measurement in dedicated facilities to connecting transmission network: When a plant or group of plants deliver their power to the grid over a single line, which is not connected to any other customer nor another owner's plants and is not meshed with other grid lines, the back-up measuring instrument may be placed at the end of the line.

4.7.6. Back-up measurement at the transmission-distribution frontier: In general, the transmission-distribution frontier shall be on the low-voltage side of the transformer connecting the two facilities. The metering back-up instrument may be fitted on the high-voltage side.

4.7.7. Back-up measurement in dedicated facilities to connecting consumer installation: When a customer receives power from the grid over a single line, which is not connected to any other customer nor another owner's plants and is not meshed with other grid lines, the back-up measuring instrument may be placed at the end of the line.

4.8. Data transmission, communications and readout.

4.8.1. General considerations. Definite and provisional measurements: In general, data recorded by instruments equipped with a communications device may be sent to the main hub directly or through secondary hubs. The local readout method shall be used for any that are not equipped with a communications device.

Measurements received at the main hub shall be classified in line with their degree of certainty as definite or provisional. All the recorders must send one definite measurement, either by communications or local readout. When the main hub receives a definite measurement for the same point and period as a provisional measurement, the provisional measurement shall be replaced by the definite measurement.

Any measurements which are obtained by local readout, sent directly to the main hub or captured by secondary hubs which meet the integrity requirements set out in point 7.1, shall be deemed definite measurements. Any measurements that are not definite shall be classified as provisional measurements.

Local readouts shall be required for any measuring instrument which is not fitted with a communications device or which is interrogated by secondary hubs that do not meet the integrity requirements set out in point 7.1., to permit the recording of definite measurements in the main hub.

Local readouts shall not be required for any measuring instrument that is equipped with a communications device for sending definite measurements. Such instruments shall be subject to the checking procedure.

4.8.2. Instruments fitted with communications devices: Type 1 and international interconnection measurements must be fitted with compulsory communications devices and transmit the recorder data to the main hub every day, such that they are available before eight o'clock the next day. This information may be definite or provisional.

Any other measurements read by instruments fitted with communications devices shall be sent to the main hub at intervals that are regular enough to guarantee that all the measurements taken by the meter are captured. The measurements shall be sent at least once a month.

The obligation to transmit readouts by communications devices for measuring instruments located in off-peninsula systems shall be established in the specific applicable regulations.

4.8.3. Local readout: Local recorder readouts shall be performed at intervals that are regular enough to guarantee that all the measurements taken by the meter are captured, and at least once a month.

Local recorder readouts shall be performed by the System Operator personnel or by the company appointed by the System Operator to perform this task, which must not be the company re-

sponsible for the measuring instrument in question. This limitation shall not apply if the user cannot tamper with the portable instrument used for the local readout.

Local readouts shall be performed using portable instruments that can be connected to the recorder, as specified in point 4.3.3.

4.8.4. Checking of measurements: The checking procedure shall apply to any measuring instrument that is not subject to the local readout procedure and also to any instrument that is read locally by one of the measurement participants.

Instruments that supply definite measurements shall be checked at least once every two years. All other instruments shall be checked at least once a year. Additionally, instruments may be checked whenever the System Operator deems it necessary.

Measurements shall be checked to ensure that the readings captured by the main hub match the information stored in the local recorder.

Should any differences arise between the information stored in the main hub and the information stored in the local recorder and without prejudice to any applicable fines, the instrument shall be read locally until the information captured by the communications procedure is seen to match the true information, according to the procedures defined by the System Operator.

5. *Regulations applicable to existing instruments*

In order to reduce the amount which would have to be invested in replacing many of the instrument transformers which were installed before the Metering Point Regulations came into force, as well as a large number of meters which do not meet the accuracy requirements, this existing apparatus may be used in the conditions set out in this section until it is replaced by new instrument.

Any manufacturer's tests and calibrations carried out on existing instruments to ensure that they meet the accuracy requirements must be approved by the appropriate public authority.

5.1. Instrument transformers.

5.1.1. Installation and accuracy requirements: Any transformers whose accuracy class is equal to or better than as indicated in the table in point 5.3 may be used until it is replaced by a new instrument.

Similarly, any transformers which supply three-wire measurement systems may be used until they are replaced by a new in-

strument, provided that the accuracy class is equal to or better than as indicated in the table in point 5.3.

Additionally, the level of accuracy and secondary winding voltage and current of all instrument transformers shall be adapted to their burden and shall conform to the Regulations and provisions in force on the commissioning date.

Any transformers which fail to conform to all of these minimum requirements shall be replaced in the time periods set out in the transitory provisions of the Metering Point Regulations.

5.1.2. Capacitor voltage transformers: Any capacitor voltage transformers already installed when the Metering Point Regulations come into force may be used to connect redundant or back-up instruments, provided that they meet the applicable accuracy requirements.

When the results of the last calibration of transformers give an intrinsic error value equal to or higher than 75 per cent of the error limit guaranteed by the manufacturer, the next calibration must be carried out within twenty-four months.

If the value of the intrinsic error is lower than 75 per cent of the error limit guaranteed by the manufacturer, the next calibration must be carried out within thirty-six months.

Should manufacturers recommend specific calibration periods, the recommended periods shall apply provided that they are shorter than the aforementioned periods.

Whatever the case, any calibrations and manufacturer's tests carried out on existing capacitor transformers must be approved by the appropriate public authority.

5.2. Meters and recorders

Any existing meters which meet the other requirements applied to newly-installed meters and have an accuracy class equal to or better than as indicated in the table in point 5.3., may be used until they are replaced by a new instrument.

Any such existing meters that are equipped for recorder notching measurements may be used until they are replaced by new instruments, and shall meet the following conditions:

Both the pulse integration recorder and the meters whose pulses it integrates shall be installed in the same box, which shall be sealed as indicated in point 4.4.

All the connection wiring between the recorder and the meters shall be housed in the sealed box.

These meters shall be of the required class and the final notching measurement shall meet the corresponding accuracy requirements. Should this not be the case, the instrument in question shall be replaced by a new instrument.

Any meters which do not meet all of these minimum requirements shall be replaced within the time periods set out in the transitory provisions of the Metering Point Regulations.

5.3. Measurement accuracy.

All existing components of the measuring instruments described in this section 5, shall have an accuracy better than or equal to the one listed in the following table (6):

Point type	Measurement system — Wires	Accuracy class			
		Transformers		Meters	
		Voltage	Current	Active	Reactive
1	3 or 4	0.5	0.5	0.5	1
2	3 or 4	1	1	1	2

(6) Classes of accuracy ANSI 0.6, ANSI 0.3 and IEC 0.2 equal to or better than class IEC 0.5 shall be accepted for both types of metering point and measuring instrument.

6. *Main hub specifications*

6.1. Information contained in the main hub.

The main hub shall store the electricity measurement information with the same degree of detail and at the same intervals as required of measuring instrument recorders.

Similarly, the hub shall store any measurements necessary for the settlement of the supplementary services, even if they are not provided by the measuring instrument defined in the Metering Point Regulations and in these Supplementary Technical Instructions. The procedures for acquiring such information shall be defined in the operating regulations governing the operation of each supplementary service.

Additionally, the hub shall store information about:

Measuring instrument testing and tests.

Fault-related corrections made to the measurements.

Apparatus specifications.

The instrument transformer burden.

Any other information which the System Operator deems appropriate, pursuant to the application separation and security regulations and set out below.

The main hub shall not store information about any type of settlement or economic flow, pursuant to the application separation regulations set out in point 6.3.3.

The electricity measurement information shall be available in the hub for a minimum of six calendar years from the year following the date of each measurement.

In order to reduce hub costs, a special procedure may be required to access information which is more than two years old.

6.2. Main hub functions.

The functions performed by the main hub are classified in three groups: User functions, administration functions and data acquisition and testing functions.

6.2.1. User functions.

The user functions shall allow authorised users to consult the information in question, with the limitations required to guarantee the confidentiality and integrity of the information.

The main hub user services shall make known to users any information which, pursuant to the Metering Point Regulations and these Supplementary Technical Instructions, must be made public, either generally or only to agents who hold an economic interest in a measurement.

The System Operator may introduce other services in addition to those described above.

6.2.2. Main hub administration functions: The main hub administration functions include the maintenance of the databases and communication systems, storage and safekeeping of the information, management of the system security, control of the main hub and backbone network communications usage costs, and any other tasks necessary for the operations of the machines and the normal provision of the service.

6.2.3. Data acquisition and testing functions: The data acquisition and testing functions include the capture of readouts, the detection of discrepancies in the redundant and back-up instruments defined in the supplementary technical instructions, the preparation of energy balances, local readout meters, checking

and testing instruments and, in general, any functions required to permit data to be captured on time and tested.

6.3. Security.

6.3.1. Database queries: Users shall only consult databases with their queries in "read only" mode, and access shall be limited by passwords.

6.3.2. Measurement data acquisition: The communication method shall be agreed by the System Operator and the parties responsible for the measuring instrument or the owners of the secondary hubs used to perform the connection, and shall be technically feasible for the main hub.

The System Operator and the party responsible for each measuring instrument shall implement information validation procedures for any data received from public communication networks.

The parties responsible for the measuring instrument shall implement additional security measures for encrypting the information and limiting access through passwords. In these cases, the necessary programmes and passwords must be supplied to the System Operator by the party responsible for the measuring instrument.

Should the main hub detect security breaches when it receives data from an instrument, the main hub shall store as much information as possible about the incident and the problem shall be reviewed with the measurement participants in question.

6.3.3. Separation of applications: The data processing applications (for settlements, etc.) shall be located in computers that are independent from the main hub and the hub information shall only be accessed in "read only" mode.

The hub shall only store applications for auditing the internal coherence of the measurement data and the system administration utilities.

6.3.4. Redundancy: The main hub data storage instruments shall be redundant. The System Operator may implement more restrictive measures if it deems it necessary, in order to guarantee that the information is not lost in the event of an instrument failure.

6.4. Users communications protocol.

The protocol used for communicating with the main hub queries server shall be unique and standard, such that users can

acquire it at a minimum cost. The protocol shall be implemented by the System Operator as part of the main hub technical specifications.

6.5. Software development.

The System Operator will develop the software necessary to implement the main hub. The data acquisition communications protocol and other specific measuring instrument software shall be supplied by the parties responsible for the instrument in question to facilitate its implementation in the hub.

7. *Characteristics of the secondary metering hubs*

7.1. Integrity of information.

A secondary hub shall be deemed to guarantee the integrity of the information sent by communications when each byte of information obtained by the local recorder readout matches each byte of information received by the main hub, with the exception of any changes made by the specific communications channel protocols.

Secondary hubs do not have to guarantee the integrity of information, which shall be optional, although different measuring instrument readout and checking systems shall apply in either case.

Hardware or software procedures shall be used to guarantee the integrity and authentication of measurement record data, between the source end at the point where the record is generated and the destination end in the main hub, in order to prevent the data from being changed by any party other than the System Operator.

If a software procedure is chosen, the so-called “electronic signature” method shall be used wherever possible. This method establishes a correspondence between a data file and an electronic signature, generated at source by an algorithm, which is attached to the file, thus forming the message file. Any modification to the data file or electronic signature made at some point along the communication chain, is detected at the destination when both parts of the message file are seen not to match.

Exceptionally, and after the party responsible for the secondary hub has justified that the general methods proposed cannot be used, the integrity of any metering point data sent by a secondary hub may be guaranteed by establishing a direct con-

nection to the secondary hub and by the performance of a remote reading by the System Operator of the records stored by any of the metering points considered, at any time and more than once every three months. Therefore the metering point shall be equipped with a sealed communications device.

The confidentiality of the measurement recorder data shall be guaranteed by a set of passwords assigned to each agent, in accordance with their information access rights, to prevent such data from being read by other unauthorised subjects. The System Operator shall be responsible for awarding the rights to access the information and for creating and allocating the passwords.

7.2. Communication channels and protocols.

The secondary hub may use any type of communication channels and protocols to communicate with the measuring instrument.

The channels and protocols used by a secondary hub to communicate with the main hub shall be agreed with the System Operator, pursuant to the procedures defined by the latter and the provisions of the Metering Point Regulations and the Supplementary Technical Instructions.

7.3. Use of information.

Secondary hub owners shall only use the measurement information in accordance with the terms agreed freely with the party responsible for the measuring instrument.

8. *Testing*

The different measuring instrument components shall be tested to guarantee correct operation, pursuant to the provisions of this section.

Should a measuring instrument be found not to meet one of the applicable requirements, the System Operator shall propose the general repair or replacement procedure to be implemented to the Ministry of Industry and Energy, which shall establish the procedure following a report from the National Electric Regulatory Commission.

8.1. General considerations.

All measuring instruments shall be subject to the State metrological regulations laid down in the Metrology Act (3/1985, dated

March 18th), supplemented by the metrological controls or tests set out in this Ministerial Order.

Any calibrations and manufacturer trials conducted during a test must have been approved by the appropriate public authority.

8.1.1. Types of tests: The following types of tests shall be considered:

Tests at origin: These tests shall be carried out before the instrument is first installed and before it is reinstalled after a repair.

Routine tests: The instrument shall be tested at the regular intervals indicated in point 8.2 and 8.3, for each type of measuring instrument.

Tests on request: To be conducted whenever requested by a measurement participant or the System Operator.

8.1.2. Protocols:

8.1.2.1. Tests at origin: The manufacturer's trial protocol shall be implemented in tests at origin provided that it includes at least the trials and conditions defined in the routine tests protocol.

Tests at origin shall be conducted in an authorised official laboratory.

8.1.2.2. Routine tests: The System Operator shall make a proposal to the Ministry of Industry and Energy regarding the minimum ambient test conditions, standards and instruments to be used, procedure, test protocol and maximum permissible errors. The Ministry of Industry and Energy shall establish these requirements following a report from the National Electric Regulatory Commission. The system shall conform to the Industrial Calibration System processes of the appropriate authority, in force when the tests are conducted. This definition shall take into account the resolutions of the Metering Point Regulations Monitoring Group, defined in section 10 of these Supplementary Technical Instructions.

The test protocol shall consist of a form to fill in the tests conducted and shall contain at least the following information:

Identification and characteristics of the element to be tested.

Identification and characteristics of the standards used, indicating the laboratory where the standard was last calibrated, the date and period of validity.

List of errors obtained.

Readings and corrections.

Ambient conditions and other instruments used.

Comments and remarks about the test.

The protocol shall be signed by the representatives of any measurement participants who have been involved in the test and by the System Operator's representative. The signed protocols shall be recorded in the main electricity measurement hub and shall be made public to the interested parties by the main hub user services.

8.1.2.3. Tests on request: The same protocol shall be used for tests on request as for the routine tests.

8.1.3. Test site: The tests shall only be conducted in the switchgear yard if all the minimum requirements defined for the routine tests are met.

Whenever possible, the routine tests shall be conducted in the switchgear yard. Otherwise, they must be conducted in a laboratory which meets the minimum requirements.

The testing on request shall be conducted in the switchgear yard, if possible, or in the laboratory, at the requesting party's decision.

All meters, without exception, must be tested with the test instrument described in the regulations of Royal Decree 3275/1982, dated November 12th, governing Technical Conditions and Safety Guarantees in Electric Power Plants, Substations and Transformer Stations in instruction MIE-RAT 08, set out in the Order issued on July 6th 1984 by the Ministry of Industry and Energy, without prejudice to the provisions of any other applicable regulations.

8.2. Meter testing periods.

8.2.1. Main meters: The main meters shall be tested in the following ways to ensure that they work correctly, pursuant to the provisions of the previous section:

Test at origin: The meter must be tested before it is first installed and before it is reinstalled after a repair.

Routine tests: The meters shall be revised at the following intervals, according to the type of classification:

Apparatus located at international interconnections, every year.

All other type 1 instruments, every two years.

All other type 2 instruments, every three years.

The first routine test shall be conducted within three months of the meter commissioning date, and shall be conducted with a real load.

The measurement participants may agree to shorten the aforementioned periods.

Testing on request: Whenever requested by one of the measurement participants or the System Operator.

8.2.2. Redundant or back-up meters: All types of redundant and back-up meters shall be subject to the same types of revisions as the main meter, with the exception of the routine tests, which shall be conducted every three years unless the measurement participants agree on a shorter period.

8.3. Instrument transformer revision periods.

The instrument transformer revision periods shall apply both to instrument transformers which supply main instruments and back-up or redundant instruments:

Tests at origin: These tests shall be carried out before the transformer is first installed and before it is reinstalled after a repair.

Routine tests: The capacitor transformer testing periods are specified in point 5.1.2 of these supplementary technical instructions. In all other cases, transformers shall be revised at regular intervals which vary according to the main type of insulation:

Paper-oil, every fifteen years.

All others, every five years.

Should instrument manufacturer's recommendations, applicable regulations or UNE standards specify shorter periods for the testing of certain instruments, the periods laid down in the said specifications shall be met.

The measurement participants may agree to shorten the aforementioned periods.

Should the switchgear yard configuration allow measurements which depend on certain transformers to be checked with measurements obtained from other transformers, without introducing any errors that exceed the required accuracy of the instrument, the System Operator and the measurement participants may agree to postpone the routine tests for periods of one year at a time, provided that the check does not result in differences that exceed the permissible measurement errors.

Tests on request: Whenever requested by one of the measurement participants or the System Operator.

8.4. Repairs.

Any repairs required to correct faults detected during a test shall always be made in a laboratory. The repaired instrument must be must tested at origin before it is reinstalled.

These instruments shall only be repaired by authorised persons or entities registered for such purpose in the Metrological Control Register established by Royal Decree 1618/1985, dated September 11th.

If the faulty component is equipped with data storage memory, the information contained in the memory shall be retrieved before the instrument is disconnected.

Should a fault occur in any instrument component which does not conform to the provisions of the Metering Point Regulations and the Supplementary Technical Instructions, it must not be repaired and must be replaced. If a fault occurs in an instrument component for a second time before the scheduled regular revision date, any of the measurement participants or the System Operator may order the party responsible for the instrument not to repair the instrument and to replace it. The replaced elements may not be reused in any other facility regulated by the Metering Point Regulations.

The replacement instrument must conform to the provisions of the Metering Point Regulations and the Supplementary Technical Instructions.

8.5. Meter testing instruments.

In the event of on-site tests, the testing instrument shall be provided by the company responsible for the tested measuring instrument, except in the case of customers, when the testing instrument shall be provided by the other measurement participant. Should the company responsible for providing the test instrument not have such instrument, it shall rent it.

8.5.1. Standard specifications: The standards used for testing meters of class 0.2 or better shall be of class 0.05 or better. Meters of class worse than 0.2 shall be tested with standards of class equal to or better than 0.1.

8.5.2. Comparison of the standards: All the standards used for the meter tests shall be calibrated to guarantee traceability to national standards. Pursuant to applicable provisions, the System Operator shall make a proposal to the Directorate General for Energy of the Ministry of Industry and Energy regarding the procedure, instrument and minimum conditions required for the calibration of standards, as well as the regularity and permissible maximum error limits. The Directorate General for Energy, following a report from the National Electric Regulatory Commission,

shall pass the proposal onto the Spanish Metrology Institute, which shall resolve on the matter. Each standard shall have the corresponding record, comprising the calibration certificates issued by the authorised official laboratory where it was calibrated and any information considered necessary for the metrological monitoring of its performance.

9. *Correction due to lack of accuracy and estimating measurements*

9.1. Correction due to inaccuracy.

Any measurement obtained using instruments formed by components with a lower level of accuracy than required for the newly-installed instrument, shall be corrected to consider the highest possible error. Similarly, a correction factor shall be applied to any measurement obtained with instruments which supply a three-wire system to bring it into line with the four-wire system.

The correction applicable to active and reactive power measurements, shall be given by the following formula:

$$E_c = E_m \cdot [F_{cl} \cdot (\Delta\varepsilon_V + \Delta\varepsilon_I + \Delta\varepsilon_C) + F_{3h}]$$

where:

$\Delta\varepsilon_V = ERR_V - C_{NV}$
$\Delta\varepsilon_I = ERR_I - C_{NI}$
$\Delta\varepsilon_C = ERR_C - C_{NC}$

where:

E_c: Power correction, to be added to or deducted from the measurement E_m to obtain the corrected measurement.
E_m: Net amount of power passing through the meter.
F_{cl}: Factor between 0.5 and 1, to be defined by the Directorate General for Energy.
F_{3h}: Factor between 0 and 0.002, to be defined by the Directorate General for Energy, for each facility.
C_{NV}: Numerical value of the minimum accuracy class required for newly-installed metering voltage transformers, expressed in unit terms.
C_{NI}: Numerical value of the minimum accuracy class required for newly-installed metering current transformers, expressed in unit terms.

C_{NC}: Numerical value of the minimum accuracy class required for newly-installed electricity meters, expressed in unit terms.

ERR_V: Numerical value of the accuracy error for metering voltage transformers, expressed in unit terms.

ERR_I: Numerical value of the accuracy error for metering current transformers, expressed in unit terms.

ERR_C: Numerical value of the accuracy error for electricity meters, expressed in unit terms.

$\Delta\varepsilon_V$: Value of the difference $ERR_V - C_{VN}$.

$\Delta\varepsilon_I$: Value of the difference $ERR_I - C_{IN}$.

$\Delta\varepsilon_C$: Value of the difference $ERR_C - C_{CN}$.

The accuracy error ERR_V and/or ERR_I and/or ERR_C detected on the date of the last calibration, or the last manufacturer's test shall be deemed in force since then and for the next five years. For these purposes, provided that the error detected validity period is complied with, any calibrations and manufacturer's tests which have been carried out before the Metering Point Regulations come into force may be considered valid. Nonetheless, the calibrations and the manufacturer's tests must have been approved by the appropriate public authority.

If the accuracy error (ERR) is less than or equal to corresponding minimum requirement (C_N), the De shall be assigned a null value;

If the accuracy error ERR detected in the last calibration or in the last manufacturer's test is not within the accuracy class of the calibrated measuring instrument (transformer or meter), the instrument shall be replaced by a new one which meets the requirements.

Should the required accuracy error (ERR) value not be available, the value of the accuracy class of the used measuring instrument (transformer or meter) shall be used instead.

The correction shall always apply in favour of the measurement participant who is not responsible for the measuring instrument whose readout is being corrected.

When the main measurement is of the required accuracy and the redundant or back-up measurement is not, this correction shall only be applied to any measurements which have had to be taken from the redundant or back-up instrument if the main instrument definite measurement is not available, as indicated in the Metering Point Regulations.

The inaccuracy correction shall apply to type 1 instruments thirty months after the date upon which the Metering Point Regu-

lations come into force, and to type 2 instrument forty months after the date upon which the Metering Point Regulations come into force.

9.2. Measurement estimation.

The measurement estimation service shall be provided by the System Operator to complete power balances in the different areas of the grid when definite measurements are not available at certain points, pursuant to the provisions of article 28 of the Metering Point Regulations.

The estimates shall be made known to any agents who have an economic interest in the measurement by publication by the main hub user service, to permit claims pursuant to article 29 of the Metering Point Regulations.

9.2.1. Service costs: Any costs borne by the System Operator when estimating measurements shall be paid by the parties responsible for the instrument whose measurement is estimated, in the terms set out in article 26 of the Metering Point Regulations.

The tariff for each estimate shall depend on the type of estimate made, the classification of the metering point and the power circulated during the period for which there is no definite readout. The tariff shall be calculated by applying the factor indicated in each section to a base tariff. This base tariff shall be established by applying the power price specified in the current Tariff Order to the estimated power for the period running from one week before the loss is detected to the time when the measurement is re-established.

9.2.2. Basic estimate data: There shall be two methods for estimating measurements for a given point and period which shall depend on whether or not there is a definite measurement of the total power circulated during the estimated period.

The time distribution of the circulated power during the estimated period may be calculated on the basis of the provisional measurement, telemeasurement integration or be estimated from historic records.

Telemeasurement integration shall only be valid for the estimate when so agreed by the measurement participants and the System Operator.

9.2.3. Estimating measurements when the total circulated power is known: When a definite measurement of the total circu-

lated power is known, the estimates shall be corrected proportionally so that the estimated total matches the definite readout total.

If the provisional measurement or integrated telemeasurements are available and the resulting total does not differ from the definite readout total by more than 2 per cent, after being corrected the better of the two approximations shall be used as the definite measurement. In this case, nothing shall be charged for the estimate.

Should there be no provisional measurement or telemeasurements, or should the resulting total differ from the definite readout total by more than 2 per cent, the System Operator shall estimate how the power that has passed through the metering point is distributed during the estimated period, using the provisional measurement, the telemeasurements or the historic information, charging a tariff equal to 5 per cent of the service base tariff.

9.2.4. Estimating measurements when the total circulated power is not known: If the provisional measurement or integrated telemeasurements are available and the two differ by less than 2 per cent, the provisional measurement shall be taken as the definite measurement and no amount shall be charged for the estimate. If the two measurements differ by more than one 2 per cent the telemeasurement shall be discarded and the provisions of the next paragraph shall apply.

If there are only provisional measurements or only integrated telemeasurements, the provisional measurement shall be accepted. The tariff for this estimate shall be 5 per cent of the service base tariff.

If there are no provisional measurements nor integrated telemeasurements, the measurement shall be estimated on the basis of historic records. The tariff for this estimate shall be 10 per cent of the service base tariff.

10. *Monitoring Group*

A Monitoring Group formed by representatives of the parties involved in any metering points that fall within the scope of the Regulations supplemented by these Technical Instructions, and appropriate electrical metrology experts, shall be created to monitor the implementation of the Metering Point Regulations. The Spanish Metrology Institute of the Ministry of Development and the Directorate General for Energy of the Ministry of Industry and

Energy shall be represented as well. The Group shall be chaired by a representative of the System Operator.

The aim of this Monitoring Group shall be to facilitate the implementation of the principles laid down in the Metering Point Regulations and facilitate the tasks of installing the necessary instruments.

11. *Appendix A: Regulations applicable to measuring instruments* (Standards appendix)

List of UNE standards that are binding for the purposes of this Order:

UNE 21088 Instrument transformers.

Voltage transformers:

Primary and secondary winding industrial frequency dielectric test.

Short-circuiting capacity test.

Heating test.

Shock voltage test.

Induced voltage test.

Partial discharges.

Current Transformers:

Primary and secondary winding industrial frequency dielectric test.

Turn overvoltage test.

Short-circuit test.

Heating test.

Shock voltage test.

Partial discharges.

Rated safety current test.

UNE-EN 60687 Class 0.2S and 0.5S AC static active power meters.

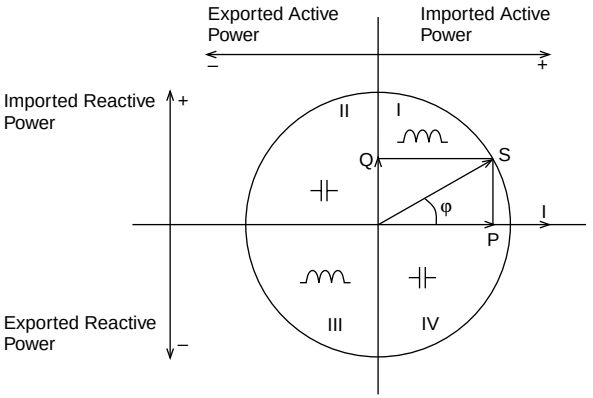
UNE-EN 61036 Class 1 and 2 AC static active power meters.

UNE-EN 61268 Class 2 and 3 AC static reactive power meters.

UNE-EN 61107 Local data exchange.

12. *Appendix B: Definition of electrical quantities and sign conventions* (Information appendix)

The following is a geometric diagram of the active and reactive powers, pursuant to chapters 12 and 14 of IEC standard 375 (UNE 21 336):



Notes:

The current vector is the vector taken as the reference in the diagram (on the right)

The voltage vector changes direction in line with the phase angle φ.

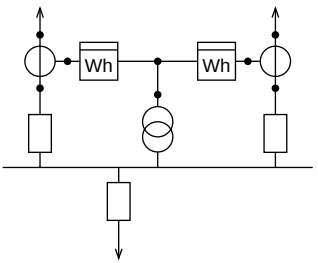
The phase angle φ between voltage V and current I is considered positive in the trigonometric direction (anti-clockwise).

13. *Appendix C: Examples of meter installations* (Information appendix)

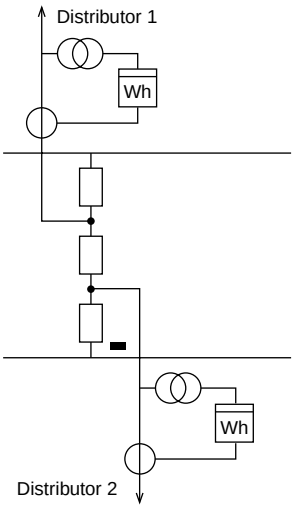
The following is only an example of some of the meter configurations referred to in the supplementary technical instructions.

13.1. Bar voltage measurements.

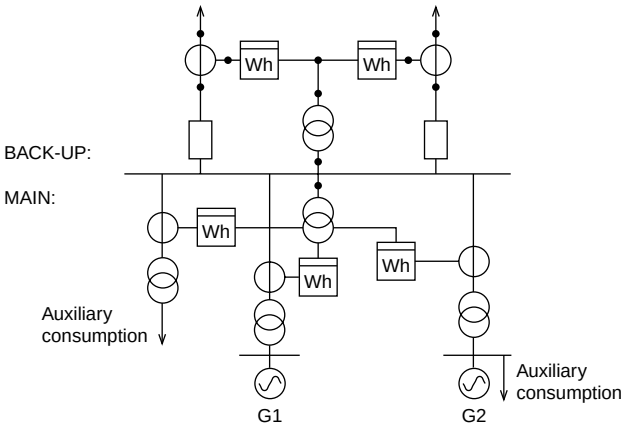
The following configuration conforms to the specifications laid down in these instructions for the use of bar voltage measurements.



Bar voltage measurements may not be used in switch configurations. The example shows one of the methods allowed for this configuration (with line voltage measurements).

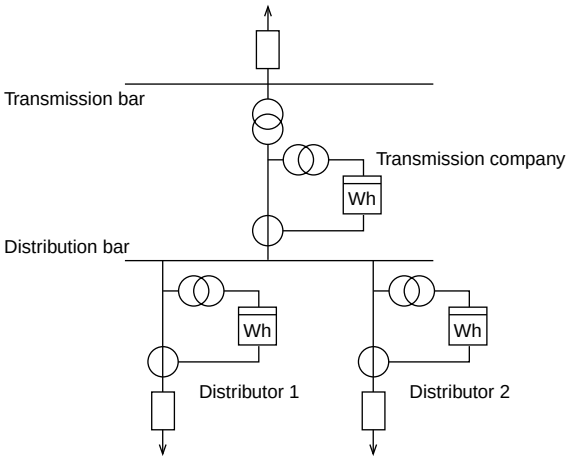


When the configuration is redundant, two bar voltage measurements shall be required, one for the main instrument and another for the redundant instrument.

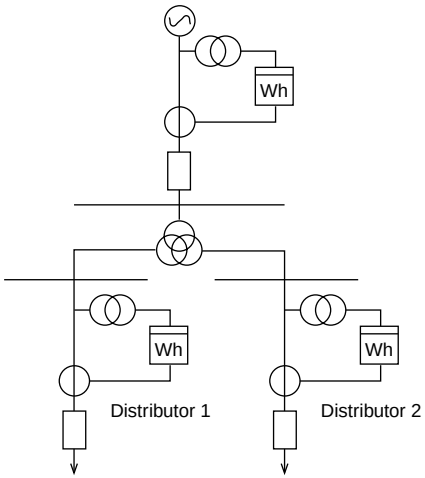


13.2. Back-up configurations.

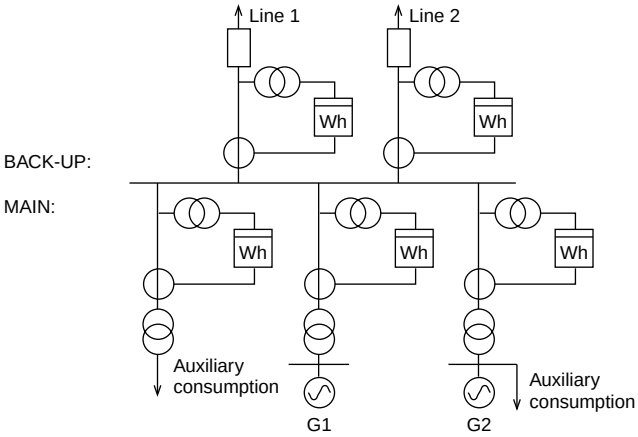
13.2.1. Bars with more than one frontier: The following configuration conforms to the specifications laid down in these instructions for bars with more than one frontier. The example shows the frontier between a transmission company and two distribution companies.



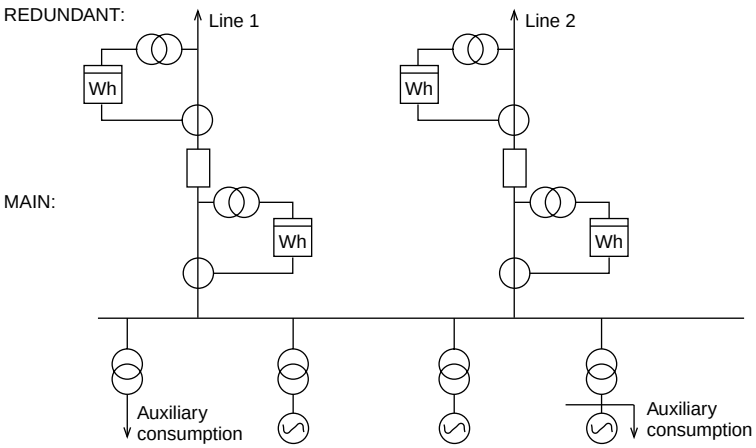
In the following example the “bar” with more than one frontier is a three-winding transformer. The back-up configuration shown conforms to the specifications laid down in these instructions:



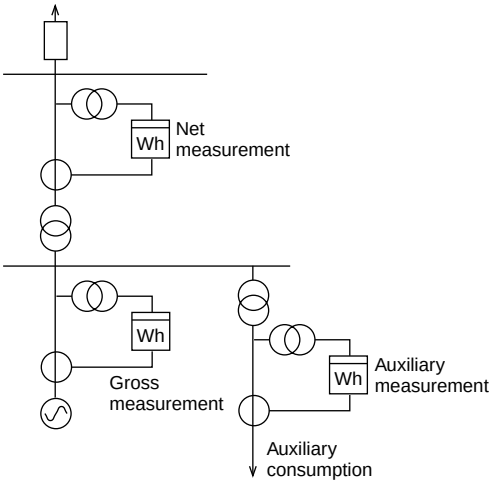
13.2.2. Back-up measurement in generation output lines: The following configuration conforms to the specifications laid down in these instructions for generation frontiers when back-up meters are installed on the lines. The figure shows the line voltage meter, although it could be in bars.



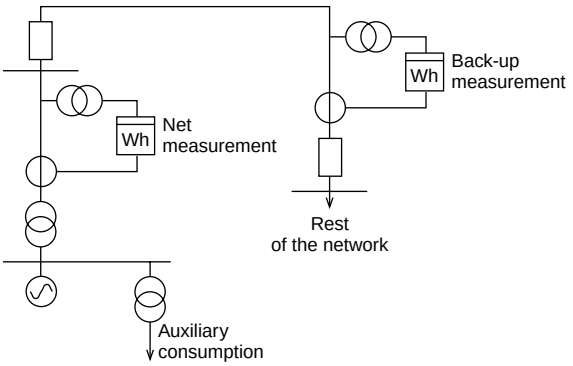
In the conditions described in the text, a main measurement could exist on the output lines of a multi-unit plant which constitutes a generation bidding unit.



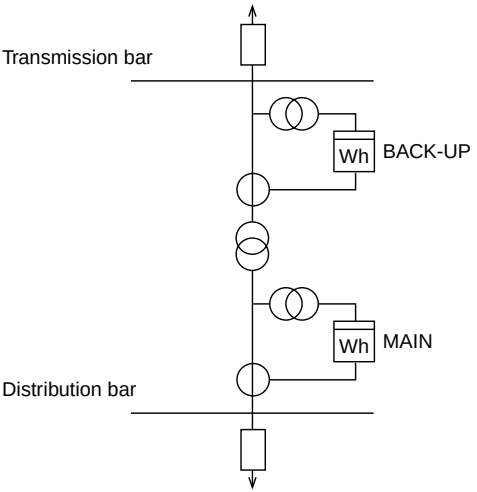
13.2.3. Back-up measurement in alternator terminals: The following configuration conforms to the specifications laid down in these instructions for the cases in which alternator terminals measurement can be used as a back-up for the net power measurement, to replace the redundancy requirement.



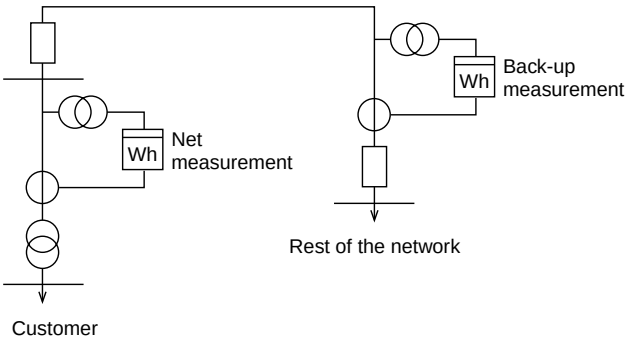
13.2.4. Back-up measurement in dedicated facilities to connecting transmission network: The following configuration conforms to the specifications laid down in these instructions for cases in which the back-up measurement can be used at the other end of the line (dedicated facilities to connecting transmission network plants), to replace the redundancy requirement:



13.2.5. Back-up measurement at the transmission-distribution frontier: The following configuration conforms to the specifications laid down in these instructions for cases in which the high-voltage measurement can be used as a back-up at the transmission-distribution frontier.



13.2.6. Back-up measurement in dedicated facilities to connecting consumer installation: The following configuration conforms to the specifications laid down in these instructions for the cases in which the back-up measurement can be used at the other end of the line (dedicated facilities to connecting consumer installation), to replace the redundancy requirement:



ROYAL DECREE-LAW 6/1999

(Chapter IV and chapter VIII, Article 10.1)

ROYAL DECREE-LAW 6/1999, DATED APRIL 16TH, ON URGENT MEASURES FOR LIBERALISATION AND INCREASED COMPETITION

(Published in the Official State Journal, B.O.E. no. 92, dated April 17th, 1999)

CHAPTER IV

Electricity Sector

Article 5. *Reduction of electricity tariffs charged to domestic consumers and of production prices under the special system.*

One. As an exceptional measure, from the date that this Royal Decree-Law comes into force, the low voltage tariffs 1.0, 2.0, and 2.0.N (nocturnal) applied by electricity power distribution companies shall be reduced by an average, global amount of 1.5 per cent in respect of the tariffs which came into force on January 1st 1999.

Two. The power and electricity charges of the tariffs affected are as follows:

Low voltage	Power charge Tp: Ptas./kW & month	Electricity charge Te: Ptas./kWh
1.0 Power up to 770 W.....	44	9.89
2.0 General, power not higher than 15 kW.....	247	14.03
2.0 N (nocturnal)	247	(1)

(1) Day-time energy usage (peak and intermediate): 14.41 pesetas/kWh energy charge
Night-time energy usage (off-peak): 6.54 pesetas/kWh energy charge.

Three: The prices of the power and electricity charges for those installations coming within the scope of the system established in Royal Decree 2366/1994, dated December 9th, on the production of electric power by hydro-power, cogeneration and other installations fuelled by renewable energy sources or resources, shall be reduced by an additional 0.74 per cent in addition to the 3.22 per cent reduction provided for in article 2.2 of Royal Decree 2821/1998, dated December 23rd, setting the electricity tariff for 1999.

The aforesaid prices are established in the following amounts:

Type of installation	Installed capacity	Ptas./kW & month	Ptas./kWh
Group A	P < ó = 10	315	10.45
Group B	P < ó = 100	625	9.21
Group C, D y E...	P < ó = 15 15 < P < ó = 30 30 < P < ó = 100	1,604 1,553 1,508	7.27 7.00 6.78
Group F	P < ó = 100	315	10.45

Four. Annually, or whenever special circumstances so advise, and subsequent to the appropriate procedures and reports, the Government shall modify by Royal Decree the tariffs and prices referred to in the previous sections of this article.

Article 6. *Qualified consumers of electric power.*

One. Without prejudice to the provisions of article 1.3 of Royal Decree 2820/1998, dated December 23rd, setting the network access tariffs, and in accordance with the provisions of article 9.2 of the Spanish Electric Power Act 54/1997, dated November 27th ("1997 Electricity Act"), as from July 1st 2000, all those consumers who are supplied at nominal voltages higher than 1,000 volts, shall be deemed to be qualified consumers of electric power.

Two. The Government may, by Royal Decree, modify the limits laid down in this provision and set the liberalisation timetable for the supply of electric power at voltages below 1,000 volts, should market conditions so require, and taking into particular account the annual consumption rate and/or supply voltage.

CHAPTER VIII

Defence of Competition ("Restrictive Practices")

Article 10. *Amendment of the Defence of Competition ("Restrictive Practices") Act 16/1989, dated July 17th.*

One. Chapter II of Title I is reworded in the following way:

"CHAPTER II

On economic concentrations

Article 14. *Scope.*

1. Any project or operation for the concentration of enterprises must be notified to the Department for the Defence of Competition ("Restrictive Practices"), by one or more of the participant enterprises, in the event that:

a) As a result of the operation, a share is acquired or increased which is equivalent to or greater than 25 per cent of the national market or of a defined geographical market within that market, or of a specific product or service.

b) The global volume of sales in Spain of the combined enterprises in the previous financial year is in excess of Ptas.40,000 million, and provided that at least two of the participants individually effect sales in Spain in excess of Ptas.10,000 million.

This obligation to notify the aforesaid Department does not affect those operations for the concentration of enterprises coming within the scope of (EEC) Council Regulation 4064/89, modified by (EEC) Regulation 1310/97.

2. For the purposes of the provisions of the previous point, economic concentrations shall be held to be those operations implying a stable modification of the control structure of the participant enterprises by means of:

The merger of two or more previously independent enterprises.

b) The takeover of control of an enterprise or enterprises, in whole or in part, by any legal means or transaction.

c) The creation of a joint enterprise and, in general, the acquisition of the overall control of an enterprise, when the said enterprise permanently performs the functions of an independent economic entity, whose fundamental object or purpose is not to coordinate the competitive behaviour of enterprises which continue to be independent.

Article 15. *Notification of concentration operations.*

1. The notification of concentration operations which come within the scope of article 14 of this Act must be submitted to the Department for the Defence of Competition prior to the operation being undertaken or within one month after the date of the conclusion of the concentration agreement.

Prior notification shall not imply the suspension of the execution of the operation before express or tacit authorisation is granted, although in any event, the said operation shall remain subject to the provisions of article 17.

2. The notification shall be public.

3. The form and content of the notification shall be determined by regulations and shall in any event contain the information necessary to appraise the nature and effects of the operation.

4. Prior to the submission of the notification, the Department may be consulted as to whether a particular operation fulfils the minimum requirements for compulsory notification provided for in point 1 of article 14 hereof. The period of one month established in point 1 of this article shall be suspended until the parties receive a reply to their consultation.

5. The notification of operations to acquire shares accepted for trading on a securities market when, in pursuance of the provisions of article 60 of the Securities Market Act 24/1998, a public offering for the acquisition of shares is compulsory, shall be the object of a specific procedure as determined by the regulations.

Article 15 bis. *Referral of cases to the Tribunal and tacit authorisation.*

1. At the request of the Department for the Defence of Competition, the Ministry of Economy and Finance shall refer to the Tribunal for the Defence of Competition the cases of those projects or operations for the concentration of enterprises which have been notified by the parties concerned and which it considers may obstruct the course of continued effective competition in the market, in order that the said Tribunal may issue a ruling in this respect within a period of three months, and subsequent to a hearing of the interested parties, if appropriate.

2. It shall be understood that the Administration does not oppose the operation in the event that, one month following the presentation of notification to the Department, the said operation has not been referred to the Tribunal.

3. The Department shall notify the interested parties of the date on which an operation was referred to the Tribunal for the Defence of Competition.

4. In the event that a project or operation for the concentration of enterprises that fulfils the minimum limits set out in article 14 of this Act should not have been notified to the Department, the said Department shall have the authority to automatically request

the companies concerned make the corresponding notification within a period of not more than twenty days from the date of the receipt of the said request. Thereafter, in the absence of due notification, and having heard the parties concerned, the Director of the Department may impose the sanction provided for in point 2 of article 18 of this Act.

Operations notified at the request of the Department shall not be entitled to benefit from tacit authorisation.

5. Where appropriate, certain accessory restrictions on competition, directly linked to the operation or necessary for its accomplishment, may be considered to form part of the operation.

6. In the event that, following analysis, an operation does not meet the conditions established in article 14 of this Act, the Director of the Department shall resolve upon whether the operation should be treated as an enterprise agreement in accordance with the provisions of article 3 of this Act and subject, therefore, to the procedures laid down in article 38 hereof, in which case the operation shall not benefit from tacit authorisation.

Article 15. ter. *Termination by agreement in cases of concentration.*

1. In the event that a concentration operation which, while not entailing the creation or reinforcement of a position of dominance which may obstruct the development of competition in a market, is, nevertheless, an operation which may create obstacles to competition which can easily be rectified, the Ministry of Economy and Treasury may, following a report from the Department for the Defence of Competition, require the parties to present commitments or modifications of the operation, which shall not benefit from tacit authorisation. The parties are obliged to respond within a period of one month from the date of the request for commitments or modifications of the operation.

2. On the basis of the commitments presented and subject to the report by the Department for the Defence of Competition, the Ministry of Economy and Treasury may resolve:

a) To authorise the operation in the event that the commitments are considered sufficient.

b) Otherwise, to refer the case to the Tribunal.

Article 16. *Report by the Tribunal for the Defence of Competition*

1. Once the case has been referred to the Tribunal for the Defence of Competition, the said Tribunal shall issue its ruling in re-

spect of the operation within a period of three months. The assessment of whether or not a project or operation for the concentration of enterprises may obstruct the course of effective competition in the market shall be based on an analysis of its predicted or confirmed restrictive effects, and shall take into account, in particular, the following circumstances:

a) Defined scope of the appropriate market.

b) Its structure.

c) The opportunities for choice by suppliers, distributors and consumers or users.

d) The economic or financial strength of the enterprises.

e) The evolution of supply and demand.

f) Foreign competition.

Similarly, the Tribunal may take into account the contribution that the concentration may make to the improvement of the systems of production or marketing, to the promotion of technical or economic development, to the international competitiveness of Spanish industry or to the interests of consumers or users, and whether the said contribution is sufficient to compensate for the restrictive effects on competition.

2. In the case of companies in which a stake is held, the possible restrictive effects on competition deriving from the presence of the company in which a stake is held and of the parent companies in the same market or in rising, falling or future markets, shall be particularly closely examined.

3. The Tribunal report shall be made public once the Council of Ministers has reached its decision in respect of the operation.

Article 17. *Scope of Governmental powers and responsibilities.*

1. The Tribunal for the Defence of Competition shall refer its ruling to the Ministry of Economy and Treasury for subsequent presentation to the Government, which, within a period of three months shall resolve:

a) Not to oppose the concentration operation.

b) To make its approval subject to the fulfilment of conditions implying a contribution to economic and social development of sufficient importance to compensate for the restrictive effects on competition.

c) To declare the merger inadmissible, and with authority to:

1. Order it not to go ahead, in the event that it has not been initiated.

2. Order the appropriate steps be taken to establish effective competition, including the authority to order a de-concentration.

In the event that three months from the date of the receipt of the ruling by the Tribunal or from the date set for the issuing of the ruling by the said Tribunal, the Council of Ministers should not have reached its decision, the operation shall be considered to have tacit authorisation.

Article 18. *Fines for non-compliance.*

1. Non-compliance with the obligation to notify shall be sanctioned by the Director of the Department for the Defence of Competition with a fine of up to Ptas.5,000,000.

2. Notwithstanding the provisions of the previous point, the Director of the Department may impose a fine of up to Ptas.2,000,000 per day in respect of delay in notification, when the said notification has been requested by the Department in accordance with point 4 of article 15. bis.

3. The Department for the Defence of Competition shall monitor the execution of and compliance with the resolutions of the Council of Ministers. In the event of non-compliance with the orders issued in pursuance of article 17, the Government shall, without prejudice to the provisions of the procedures for execution provided for in current legislation, impose on each of the enterprises affected a fine of up to 10 per cent of their respective sales volume in Spain in the financial year in which the concentration took place.

Madrid, April 16th, 1999

JUAN CARLOS R.

The Prime Minister,
JOSÉ MARÍA AZNAR LÓPEZ

ORDER OF JUNE 14TH, 1999

ORDER OF JUNE 14TH, 1999, SETTING THE REMUNERATION OF ELECTRIC POWER DISTRIBUTION ACTIVITIES.

(Published in the Official State Journal, B.O.E., no. 144, dated June 17th, 1999)

Royal Decree 2819/1998, dated December 23rd, governing the regulation of electric power transmission and distribution activities, establishes in chapter III, section 2 thereof, the economic arrangements for distribution activities and distinguishes between three types of distributor:

1. Those undertaking this activity in accordance with the provisions of Royal Decree 1538/1987, dated December 11th, determining the electricity tariff of the service management companies, whose remuneration is settled by the National Electric Regulatory Commission pursuant to Royal Decree 2017/1997, dated December 26th, governing the organisation and regulation of the procedure for the settlement of transmission, distribution and tariff retailing (regulated price supplying) costs, the permanent costs of the system and diversification and security of supply costs, as detailed in Appendix I thereof.
2. Those undertaking distribution activities within the scope of the eleventh transitory provision of the Spanish Electric Power Act 54/1997, dated November 27th ("1997 Electricity Act").
3. Those new distributors set up since the said Act came into force.

Consequently, the remuneration must be established for each of the agents referred to in article 14, paragraph a) of Royal Decree 2819/1998, dated December 23rd. Likewise, the basis on which to determine the remuneration of the distribution agents referred to in paragraphs b) and c) of the aforesaid article 14 of Royal Decree 2819/1998, dated December 23rd, must also be laid down.

By virtue whereof, I hereby order:

One. *Remuneration of the distribution agents or groups of agents included within the scope of article 14, paragraph a) of Royal Decree 2819/1998, dated December 23rd.*

The overall remuneration of the distribution activities carried out by the aforesaid distribution agents shall be assigned to them on an individual basis, taking into account each distributor's cer-

tified costs for 1997, and with an annual deduction of 6.22 per cent to be made from the overall amount to offset the depreciation in distribution assets. The said remuneration shall be deemed to cover the investment, operating and maintenance costs of the distribution facilities, costs relating to the energy circulated and other costs entailed in the development of the activity of distribution, with the exception of sales management costs.

The difference with regard to the overall remuneration of distribution activities established by Royal Decrees 2016/1997, dated December 26th, and 2821/1998, dated December 23rd, setting the electricity tariffs for 1998 and 1999 respectively, shall be allocated to each distribution agent or group of agents by applying the percentages deriving from the network reference model which characterises the distribution areas of each agent aforesaid.

In the Appendix to this Order, the percentages deriving from this methodology are listed up to the 1999 financial year.

Two. *Remuneration of sales management costs of distribution agents or groups of agents included within the scope of article 14, paragraph a) of Royal Decree 2819/1998.*

1. The remuneration of sales management costs, the object of which is to compensate the distribution companies for expenses incurred in providing service electricity to tariff consumers and qualified consumers or customers who claim this status either wholly or in part, is established by drawing a distinction between tariff consumers and qualified consumers or clients who claim this status either wholly or in part, in accordance with the following formulae:

a) Sales management costs for providing service to tariff consumers is defined by the following formula:

$$C_{gct} = CC_s \times C_s + CC_{pt} \times P + CR_{ct} \times R_t$$

Where:

C_{gct} = Sales management costs for supplying tariff consumers.
CC_s = Annual unit cost per supply contract or customer policy.
C_s = Supply contracts or customer policies.
CC_{pt} = Annual unit cost per kW contracted for a tariff.
P = Voltage greater than 1 kV contracted for a tariff.
CR_{ct} = Annual unit cost for billing of supply to tariff consumers.
R_t = Number of supply contracts or customer policies.

b) Sales management costs for supplying electric power to qualified consumers through a contract are defined in accordance with the following formula:

$$C_{gcp} = CC_p \times C_p + CR_{cp} \times R_p$$

Where:

C_{gcp} = Sales management costs for supplying qualified consumers/customers.
CC_p = Annual unit cost per access charge or access tariff contract.
C_p = Number of access charge or access tariff contracts.
CR_{cp} = Annual unit cost for billing for access charges or tariffs.
R_p = Number of access charge or tariff contracts.

2. In 1998 and 1999, respectively, the unit amount of the said costs is as follows:

	1998	1999
CC_s =	Ptas. 1,600 per annum	Ptas. 1,632 per annum
CC_{pt} =	Ptas. 309 per annum	Ptas. 315 per annum
CR_{ct} =	Ptas. 118 per annum	Ptas. 120 per annum
CC_p =	Ptas. 800 per annum	Ptas. 816 per annum
CR_{cp} =	Ptas. 118 per annum	Ptas. 120 per annum

3. These unit costs shall be updated annually, in pursuance of the provisions of article 20 of Royal Decree 2819/1998, dated December 23rd. The overall amount deriving from the remuneration of sales management costs in any financial year may not exceed the total amount established in each year's tariff.

Consequently, when the overall remuneration of sales management costs exceeds the amount established for that year, the appropriate corrective coefficient shall be applied to the participation corresponding to each distribution agent.

Three. *Remuneration of agents covered by the terms of provision eleven of Act 54/1997 who adopt the system of remuneration of distribution activities established in Royal Decree 2819/1998 either as a whole or in respect of that part acquired by them as qualified agents.*

Those distribution agents who wish to adopt the system of remuneration of distribution activities established in the second

additional provision of Royal Decree 2819/1998, dated December 23rd, shall make an application to the Directorate General for Energy which, following a report from the National Electric Regulatory Commission, will make a proposal in respect of remuneration for subsequent approval by the Ministry of Industry and Energy.

To this end, along with their application, the distribution agents must declare the net amount of their tariff sales of electricity and the amount representing the electricity they have purchased.

The difference between the aforesaid amount for electricity purchased and the amount corresponding to electricity sold constitutes the basis of the certified distribution and sales management costs. The certified cost of initial distribution is obtained by deducting from this basis the certified costs of sales management as determined by point two of this Order.

For the purposes of calculating the remuneration of distribution activities, taking into account the model which characterises the reference network, the distributor must provide the Directorate General for Energy with details of transformer facilities, levels of voltage contracted, particular population entities and such other information as may be required to determine the cost corresponding to the reference network within which the agent is operating.

The initial base remuneration shall take into account both systems of determining distribution costs, the certified cost of initial distribution and the cost corresponding to the network in question.

Once the initial amount of remuneration has been set, it shall be reviewed on an annual basis in pursuance of the provisions of article 20 of Royal Decree 2819/1998, dated December 23rd.

The established costs of sales management shall be calculated in accordance with the formulae and parameters contained in point two of this Order.

In the event that a distribution agent should only apply to be considered under the second additional provision of Royal Decree 2819/1998 for part of its distribution in respect of the setting of the remuneration of distribution activities, the calculation of the initial established cost shall take into account the purchases and sales of electric power necessary to the corresponding section of the market and the sales management costs associated thereto.

Distributors who are included within the scope of the eleventh transitory provision of the 1997 Electricity Act may, on submission of the aforementioned information to the Directorate General for

Energy, apply for compensation in the amount of the difference between the revenue earned by them from network access tariffs and the revenue margin which they would have earned had they continued to supply electricity to tariff consumers.

Four. *Remuneration of distribution and sales management costs for new distributors set up since Act 54/1997 came into force.*

1. The initial remuneration for new distributors set up since Act 54/1997 came into force shall be established by Ministerial Order.

2. For the purposes of the calculation and settlement of distribution and sales management costs, and prior to undertaking any distribution activities, new distributors shall apply to the Directorate General for Energy for the assessment of their initial remuneration. They shall accompany their application with details of investments made in the distribution area and information on the characteristics of the reference network in the said distribution area, in accordance with the provisions of the preceding paragraph.

Subsequent to a report from the CNSE, the Directorate General for Energy shall propose the approval of the initial remuneration of each of the new distributing companies to the Ministry of Industry and Energy.

The established costs of sales management shall be calculated in accordance with the formulae and parameters contained in point two of this Order.

The remuneration of distribution activities shall be reviewed on an annual basis, in pursuance of the provisions of article 20 of Royal Decree 2819/1998, dated December 23rd.

Five. *Overall remuneration of distribution activities.*

The established costs for the remuneration of distribution and sales management activities of all the distribution agents covered by settlement shall not exceed the costs of the said activities, established on a yearly basis in the legislation approving the tariffs each year.

In the event that, during the course of 1999, new distribution agents should apply for remuneration in their first year in pursuance of the provisions of this Order, the amount of the established costs for the remuneration of their distribution and sales management activities shall charged to the specific cost payable

as compensation for interruptibility, for the purchase of electricity from facilities operating under the special regime and other compensations provided for in article 3 of Royal Decree 2821/1998, aforesaid.

Six. *Reallocation of distribution costs.*

1. The composition of the established costs of agents operating in 1998 within the scope of Royal Decree 2017/1997, dated December 26th, remains unchanged in order to allow for the modifications made in the remuneration of transmission and distribution activities resulting from Royal Decree 2821/1998, dated December 23rd, setting the electricity tariff for 1998. The composition of the established costs of agents operating in 1998 within the scope of Royal Decree 2017/1997, dated December 26th, is set out in the following terms:

Overall remuneration for distribution costs for 1998: Ptas. 409,970 million.

Overall remuneration for sales management costs for 1998: Ptas. 38,846 million.

Overall remuneration for transmission costs for 1998 to distribution companies requiring settlement, with the exception of the transmission costs of "Red Eléctrica de España, Sociedad Anónima": Ptas. 33,276 million pesetas, pursuant to the provisions of Royal Decree 2819/1998, dated December 23rd.

Total established costs in 1998 for transmission, distribution and sales management activities by agents operating under the terms of Royal Decree 1538/1987, dated December 11th: Ptas.482,092 million.

2. For 1999, the composition of the established costs of agents operating within the scope of Royal Decree 2017/1997, dated December 26th, is established in the following terms:

Overall remuneration of distribution costs for 1999: Ptas. 418,275 million.

Overall remuneration of sales management costs for 1999: Ptas. 39,627 million.

Overall remuneration of transmission costs for 1999 to companies requiring settlement, with the exception of the transmission costs of "Red Eléctrica de España, Sociedad Anónima": Ptas. 34,208 million.

Total established costs in 1999 for transmission, distribution and sales management activities by agents operating under the terms of Royal Decree 1538/1987, dated December 11th: Ptas. 492,110 million.

Seven. *Information.*

With a view to assisting in the evaluation of subsequent modifications to the remuneration of the said activity in future financial years, distribution companies shall provide the Directorate General for Energy, in such terms as it may indicate, with duly audited details in respect of the annual investment in facilities, together with any other information which may be deemed appropriate for this purpose.

Eight. *Validity term of the Order.*

This Order shall come into force on the date of its publication in the Official State Journal, *Boletín Oficial del Estado*, and shall cover the final settlement to be made for the years 1998 and 1999.

Madrid, June 14th, 1999.

PIQUÉ I CAMPS
Secretary of State for Industry and Energy

APPENDIX

Allocation of established costs at December 31st 1997 of distribution agents operating under the scope of Royal Decree 1538/1987

Distribution costs at December 31st 1997, taking into account real investments valued in line with objective criteria, operating and maintenance costs and other costs necessarily entailed in the activity of distribution, and with the exception of sales management and transmission costs, amount to Ptas.354,409 million on that date, following deduction of the revenue derived from testing, mains connection charges, customer connection charges, meter rentals and other items.

The allocation to each distribution agent or group of agents is established in the following terms:

	Percentage
Iberdrola, S.A.	36.56
Unión Eléctrica Fenosa, S.A.	15.40
Compañía Sevilla de Electricidad, S.A.	14.89
Fuerzas Eléctricas de Cataluña, S.A.	11.56
Empresa Hidroeléctrica del Ribagorzana, S.A. (including the merger with Hidroeléctrica de Cataluña, S.A.)	11.66
Hidroeléctrica del Cantábrico, S.A.	2.46
Electra de Viesgo, S.A.	2.81
Eléctricas Reunidas de Zaragoza, S.A.	4.08
Endesa, S.A.	0.58
Total	100.00

For the 1998 financial year, the aforementioned overall remuneration shall be reduced by 6.22 per cent. Consequently, the overall remuneration for the years 1998 and 1999 is as follows:

1998: Ptas. 332,351 million.
1999: Ptas. 310,293 million.

The difference between the overall amount established for distribution activities by the said distribution agent or group of agents, in accordance with the Royal Decrees approving the tariffs for 1998 and 1999 and the amounts above indicated,

shall be allocated to each distribution agent or group of agents by applying the cost allocation percentages of the said distribution agents in accordance with the reference network model which characterises the distribution areas in which each of them operates and in accordance with the annual percentages determined as follows:

Allocation percentages in accordance with the network reference model

Compnay	1998 Percentage	1999 Percentage
Iberdrola, S.A.	39.14	39.05
Unión Eléctrica Fenosa, S.A.	18.47	18.16
Compañía Sevilla de Electricidad, S.A.	16.53	16.79
Fuerzas Eléctricas de Cataluña, S.A.	7.61	7.73
Empresa Hidroeléctrica del Ribagorzana, S.A.	7.09	7.21
Hidroeléctrica del Cantábrico, S.A.	4.13	3.92
Electra de Viesgo, S.A.	2.94	2.98
Eléctricas Reunidas de Zaragoza, S.A.	4.09	4.16
Endesa, S.A.	0.00	0.00
Total	100.00	100.00

The Directorate General for Energy having authorised the transfer of transmission and distribution assets from "Endesa, Sociedad Anónima" to "Termoeléctrica del Ebro, Sociedad Anónima", by means of the Resolution dated March 8th 1999, the remuneration in respect of distribution shall be allocated to "Endesa, Sociedad Anónima" up to 15th March 1999 and thereafter to "Termoeléctrica del Ebro, Sociedad Anónima".

ORDER OF OCTOBER 29TH, 1999

ORDER OF OCTOBER 29TH, 1999, SETTING THE PREMIUM FOR THE CONSUMPTION OF DOMESTICALLY PRODUCED COAL FOR 1999

(Published in the Official State Journal, B.O.E. no. 276, dated November 18th, 1999)

The provisions developed by Royal Decree 2017/1997, dated December 26th, governing the organisation and regulation of the settlement procedure for transmission, distribution and tariff retailing (regulated price supplying), permanent costs of the system and supply diversification and security costs, included the provisions to make the incentive or premium for the consumption of domestically produced coal effective as set out in the fourth transitory provision of the Spanish Electric Power Act 54/1997 ("1997 Electricity Act").

Article 15 of the aforesaid Royal Decree established the criteria for sharing out the allocation for consumption of domestic coal and specified the incentives for 1998 in its Appendix II.

The same Royal Decree stated that the Ministry of Industry and Energy would set the corresponding amounts for the premiums for consumption of domestic coal for subsequent years.

However, the first additional provision of Royal Decree 2820/1998, dated December 23rd, setting network access tariffs, modified the domestic coal consumption premium for 1998 and replaced the previous Appendix II.

For 1999, in pursuance of the aforementioned Royal Decrees, the amount of incentives or premiums for the consumption of domestic coal in the different generating plants must be determined, together with the maximum limit of actual output stemming from the consumption of that coal for which the said incentives must be acknowledged.

Moreover, the lesser hydro conditions in 1999, the contracting of supplies between electric utilities and mining companies and, above all, the drop in the price of international coal compared to the situation at the start of 1998 make it advisable to limit the maximum outputs that are entitled to the incentive given that outputs with domestic coal are likely to exceed forecasts this year.

For all of the reasons stated above, it is necessary to limit the entitlement to collect these incentives to the forecast output of the plants achieved with domestic coal under the Mining Plan. Otherwise, it might affect the maximum amount forecast throughout the transitional period.

In witness whereof, I hereby order:

One.—For 1999, the premium or incentive to consume domestic coal shall be the amounts in the table below, stated in pesetas/kWh, for the different generating plants listed:

Plant	Main fuel type	Specific premium Ptas/kWh	Permanent premium Ptas/kWh	Integrated gasification in combined cycle (GICC) technology incentive Ptas/kWh
Teruel	Sub-bituminous coal	0.4323	0.4240	
Escucha	Sub-bituminous coal	1.2858	0.4240	
Escatrón.....	Sub-bituminous coal	0.4346	0.4240	
Cerchs.....	Sub-bituminous coal	0.9634	0.4240	
Compostilla ...	Domestic coal	0.6560	0.4240	
Anllares.....	Domestic coal	0.4533	0.4240	
Narcea	Domestic coal	0.2836	0.4240	
La Robla.....	Domestic coal	0.4347	0.4240	
Guardo	Domestic coal	0.5952	0.4240	
Soto.....	Domestic coal	0.1687	0.4240	
Lada	Domestic coal	0.1651	0.4240	
Aboño.....	Domestic coal	0.0340	0.4240	
Puente Nuevo	Domestic coal	0.4429	0.4240	
Puertollano....	Domestic coal	1.1597	0.4240	
Elcogás	Integrated gasification in combined cycle	0.3763	0.4240	14.3338
Puentes.....	Brown coal	0.9012	0.4240	
Meirama.....	Brown coal	1.7381	0.4240	

Two.—The maximum production, equivalent to their domestic coal consumption shall be limited to the following outputs stated in GWh for 1999.

Plant	Main fuel type	Production GWh
Teruel	Sub-bituminous coal	3,879
Escucha	Sub-bituminous coal	449
Escatrón	Sub-bituminous coal	303
Cerchs	Sub-bituminous coal	275
Compostilla	Domestic coal	7,459
Anllares	Domestic coal	2,150
Narcea	Domestic coal	2,021
La Robla	Domestic coal	2,463
Guardo	Domestic coal	1,691
Soto	Domestic coal	2,292
Lada	Domestic coal	1,759
Aboño	Domestic coal	2,812
Puente Nuevo	Domestic coal	1,688
Puertollano	Domestic coal	1,008
Elcogás	Integrated gasification in combined cycle	598
Puentes	Brown coal	4,372
Meirama	Brown coal	1,947
Total		**37,166**

Three.—This Order shall come into force on the day following its publication in the Official State Journal, "*Boletín Oficial del Estado*".

Madrid, October 29th, 1999.

PIQUÉ I CAMPS

Secretary of State for Industry and Energy.

ORDER OF DECEMBER 27TH, 1999

ORDER OF DECEMBER 27TH, 1999, ESTABLISHING MEASURES FOR THE TRANSITION TO THE YEAR 2000 IN THE ELECTRICITY SECTOR

(Published in the Official State Journal, B.O.E., no. 310, dated December 28th, 1999)

The failure of some IT equipment to identify the year with four digits may cause problems at the beginning of the year 2000, a phenomenon commonly known as "Y2K" or the "Y2K bug".

To minimise the possible damage that might be caused, particularly that affecting the rendering of services or essential supplies to the general public, the "Office for Transition to the Year 2000" was set up by Royal Decree 1377/1999, dated August 27th, with a view to coordinating the actions of the General State Administration in the transition to the year 2000.

Section 2 of article 10 of the Spanish Electric Power Act 54/1997, dated November 27th ("1997 Electricity Act") empowers the Government, in certain circumstances and for a specific period of time, to adopt the measures necessary to guarantee the supply of electric power. The transition to the year 2000 is considered to come within the scope of the circumstances provided for in the Act.

The Ministry of Industry and Energy has set up the Y2K Electricity Committee, composed of representatives of the electricity companies, the System Operator, the Market Operator, the Nuclear Safety Council, and the National Electric Regulatory Commission. This body has approved Contingency Plans relating to the Spanish Peninsular Electricity System and to the Off-Peninsular Systems. These Plans make provision for special measures, both with respect to installations regarded as critical and with respect to the deployment of the personnel required to apply the said measures.

As the supply of electrical power is considered to be an essential service, the Ministry of Industry and Energy has felt it necessary to adopt the measures required to deal with the contingencies which might arise out of the Y2K problem. The following contingencies are included:

A significant loss in generating capacity due to the untimely disconnection of generator sets which must be covered by a suitable, pre-planned electric power generation schedule which makes available the necessary reserves and facilitates the use of auxiliary services.

A sudden disconnection of large sectors of demand which must be covered by the pre-determination of sufficient reserve bands of secondary and tertiary power regulation.

Separation of the Spanish and European systems by opening the interconnection lines with France, which will bring into operation the secondary regulation in frequency mode.

Article 31 of Royal Decree 2019/1987, dated December 26th, governing the organisation and regulation of the electric power generation market, requires the System Operator to submit for the approval of the Ministry of Industry and Energy the required technical and instrumental operating procedures necessary for adequate technical management of the system.

Consequently, in compliance with its functions as listed in article 34 of the 1997 Electricity Act, and in accordance with the provisions of article 37 of the aforementioned Royal Decree 2019/1997, relating to the capacity for network interconnectivity, the System Operator has submitted a proposal to the Ministry of Industry and Energy, detailing the measures which it deems necessary to adopt to ensure continuity in the supply of electric power and to maintain the interconnections with the rest of the European transmission network during the days spanning the transition to the year 2000.

Following consultation with the Electricity Consultative Council, composed of all the interested parties, the National Electric Regulatory Commission has issued the mandatory report, thus completing the consultation process.

In addition, in order to ensure the smooth running of the electric power generation market and to have more time to guarantee the proper functioning of the System, it is considered necessary to bring forward the matching process in the day-ahead market throughout the transition period.

Moreover, in accordance with the provisions of articles 21 and 22 of Royal Decree 2818/1998, dated December 23rd, on the assignment to distribution companies of the power produced by installations supplied by renewable energy resources or sources, waste and cogeneration, and due to the fact that the generation of electric power under the special system is frequently, and by nature, more erratic, it may be necessary to limit its contribution to the System, if circumstances so advise.

On the other hand, in the event of a separation of the Spanish Peninsular and European Systems, frequency variations in the system should not be allowed to permit an untimely loss of the large generating capacity currently produced under the special system. As a result, and for the duration of the transition, the frequency relay settings laid down in the Ministerial Order dated September 5th 1985 shall be modified to avoid generator set disconnection due to minimum frequency before this drops to 48Hz,

thus bringing the operation of these generators into line with the other generator sets in the System.

By virtue whereof, I hereby order:

One. *Estimated demand.*

On December 29th 1999, the System Operator shall communicate to the Market Operator and to the Market Agents its best demand estimate for the seven days to follow and the most appropriate guideline load for the means of generation, in accordance with the criteria set out in Appendix I to this Ministerial Order.

Two. *Special measures.*

1. The System Operator is authorised to adopt the preventive and, if appropriate, corrective measures required in the preparation of the power generation schedules corresponding to the days of transition to the year 2000 and in respect of operation in real time during the said days. These measures shall be established in pursuance of the provisions of Appendix I.

2. With regard to the off-peninsular electricity systems, the special measures shall be adopted in accordance with the provisions of the respective Contingency Plans drawn up by the power supply companies.

Three. *Market operation.*

1. The day-ahead market sessions planned for the transition period shall be brought forward with respect to their normal opening times, and shall take place in accordance with the provisions for market sequencing set out in Appendix II.

2. The Market Operator shall effect the electric power generation market settlements corresponding to December 31st 1999, and January 1st and 2nd 2000, in accordance with the provisions of the market regulations currently in force.

Four. *Power generation under the special system.*

1. Should the System Operator deem it necessary for the smooth running of the electricity system, it may determine a reduced load operating regime for those generator sets covered by the special system for December 31st 1999 and January 1st and 2nd, 2000. For this purpose, the System Operator shall order the

electric power distribution companies to make the corresponding reduction in power, for transmission to the generators affected, and shall notify the Directorate General for Energy at the Ministry of Industry and Energy and the National Electric Regulatory Commission of the said reduction.

2. Unjustified non-compliance with the provisions of section 1 of this article by generators of electric power under the special system may give rise to the non-acknowledgement of the surplus power transferred to the electricity transmission grid.

Five. *Frequency relay adjustment.*

The generating sets covered by this operating regime must, on December 31st and January 1st and 2nd 2000, adjust their frequency relay rating to avoid lowest frequency disconnection of the sets until the said frequency rating reaches 48 Hz and has remained below this frequency value for at least 3 seconds, with the exception of those installations currently in existence in which this is not technically feasible.

Six. *Validity term of the Order.*

This Order shall come into force on December 29th, 30th, 31st, 1999 and January 1st and 2nd, 2000.

Madrid, December 27th, 1999.

PIQUÉ I CAMPS
Secretary of State for Industry and Energy.

APPENDIX I

Criteria for the operation of the System

1. Outages of installations: Installation outages are not permitted on the aforementioned dates, except when strictly necessary for the repair of faults.

2. Interconnection arrangements: In the period between 21.00 hours on December 31st 1999 and 03.00 hours on January 1st 2000, all international interconnection capacity shall be reserved for possible security exchanges, cancelling any commercial exchanges in the interconnections with France, Portugal and Morocco.

In the hour prior to and the hour following the period aforesaid, the capacity available for commercial exchanges in the interconnections with France, Portugal and Morocco shall be equal to 50 per cent of the capacity corresponding to the interval between 19.00 and 20.00 hours on December 31st and between 04.00 and 05.00 hours on January 1st, respectively.

The System Operator shall, together with the System Operators of neighbouring countries, determine the distribution of power generation on both sides of the borders in order to minimise the load on interconnection lines.

During operations in real time, and depending on how the transition has progressed, the System Operator may extend the application of these criteria to restrict commercial exchanges beyond 03.00 hours on January 1st.

3. Transmission network arrangements: The load on transmission network lines must be kept as light as possible, particularly on interconnection lines between areas.

4. Generating reserves: The primary power regulation reserve shall be at least 640 MW. The power generation companies must guarantee an adequate response to these primary regulation requirements and must ensure the smooth running and the static state of their own generators.

To guarantee the existence of an adequate margin of regulation reserve in the period from 21.00 hours on December 31st 1999, to 03.00 hours on January 1st 2000, the secondary power reserve requirements for the regulation of frequency shall be 2,500 MW capacity band to boost power in the case of a drop in frequency and 2,000 MW band to reduce power in the event of a rise in frequency.

This secondary power regulation reserve shall be provided preferably by hydro-electric power generating sets, with a view to ensuring a rapid and homogenous response.

The aim will be to distribute this reserve geographically to reduce the repercussions of a possible failure in the regulation reserve and sudden interruptions in demand and/or disconnections in the generation of power within the system. In order to facilitate the allocation of the secondary power regulation reserve in accordance with the criteria expressed above, the maximum capacity of the indivisible block of offers will be reduced to 300 MW.

Throughout the said period, the reserves of tertiary regulation shall be maintained at values equal to those of the corresponding secondary power regulation reserve bands, aforementioned.

During operations in real time, and depending on how the transition has progressed, the System Operator may extend the application of these margins of power regulation reserve, or else introduce new, modified margins to apply beyond 03.00 hours on January 1st.

In addition to the measures listed above, the power generation companies must guarantee the availability of all the quick start generator sets, in particular those described in the Plans for the Restoration of the Service.

5. Power generation operations:

Hydro-electric power generator sets. Given that secondary regulation shall be undertaken preferably by hydro-electric power generator sets and be distributed geographically, the operations of power stations composed of certain Hydro-power Management Units (UGH) shall be subject to the aforementioned regulation requirements, and the scheduling of these sets will be modified, as required, during the process to resolve the constraints in the day-ahead market.

Nuclear power generating sets. In the period from 21.00 hours on December 31st 1999 to 03.00 hours on January 1st 2000, nuclear power sets shall be limited to a load not greater than 60 per cent of their nominal capacity. This requirement is subject to the possible restrictions and conditions laid down in the operating licences currently in force in each power station. This will allow scope to deal with contingencies such as the failure of several sets and also the need to leave a margin of capacity for the operation of a sufficient number of thermal sets. For this purpose, during the process to resolve the constraints in the day-ahead market, the System Operator may, if required, schedule the appropriate reduction in load of the power generation matched in the said market.

In the hours before 21.00 hours, nuclear sets must have a load schedule which guarantees a stable operating regime at the start of the critical period. For this purpose, during the process to resolve

the constraints in the day-ahead market, the System Operator may, if necessary, modify the matched scheduling in the said market.

Any possible modifications to the day-ahead market matched schedules which may be required in earlier intervals and which relate to the maximum feasible ramps in each set shall be administered by the Agents in the intra-day spot market.

During operations in real time, and depending on the behaviour of demand and generation and on hydrological conditions, the interests of system reliability may dictate an extension of the period requiring a reduced load in the nuclear sets beyond 03.00 hours on January 1st 2000 in order to prevent the shutdown of thermal sets, or else to allow the aforementioned nuclear sets to increase load.

Conventional thermal sets: In the period from 21.00 hours on December 31st 1999 to 03.00 hours on January 1st 2000, the load variation of these sets shall be kept to the minimum so as to adapt to the development of demand during the said period.

The criteria for thermal set connection will be the minimisation of risk of common failure, avoiding the connection of identical sets in one power station or twin sets which may have a common failure mode. In addition, a balanced geographical distribution of thermal sets shall be sought and attempts shall be made to include the greatest possible number of thermal sets compatible with the demand forecast during the off-peak period on January 1st. By doing so, the reserve of additional, connected tertiary regulation will be maximised, avoiding the concentration of risks.

To ensure compliance with the aforesaid criteria, during the process to resolve the constraints in the day-ahead market, the System Operator may schedule the connection of those sets which are deemed necessary and have not been matched in the day-ahead market session. The connection time of these sets shall be established in such a way as to guarantee their full availability and stable operation at the load levels laid down at the start of the critical period.

In the hours prior to 21.00 hours, the conventional thermal sets must have a load schedule that guarantees a stable operating regime at the beginning of the critical period. For this purpose, during the process to resolve the constraints in the day-ahead market, the System Operator may, if required, modify the matched schedule in the market.

Any possible modifications in the day-ahead market matched schedules which may be required earlier and which relate to the maximum feasible ramps in each set shall be administered by the agents in the intra-day market.

During operations in real time, the behaviour of demand and generation and hydrological conditions may advise the continued connection of some of these thermal sets, whilst maintaining the larger nuclear sets on a reduced load, since the Y2K problem in some equipment may not manifest itself until the set has been started up, thus incurring a greater risk of failure should this set be required for coverage in hours following peak demand.

During operations in real time on January 1st and 2nd, if faults in thermal sets have been detected during the transition to the year 2000, the System Operator may decide to start up new thermal sets, not connected during the transition, with a view to verifying the correct operation of as many units as possible before reaching the high levels of demand which may be produced on Monday, January 3rd.

Pumping sets. During the transition, non-seasonal pump-generating stations shall constitute an instant action reserve, for power generation and pumping, in this case to increase system demand, if necessary. Those companies owning pumping power stations must ensure the full availability of these installations.

In the process to resolve the constraints in the day-ahead market, the System Operator may establish the operational limitations of these sets which are necessary to guarantee the availability of these resources during the operation in real time.

If necessary, during the process to resolve the constraints in the day-ahead market and, as the case may be, during operations in real time, the System Operator may modify the schedules of the pure pump-generating stations, both in the hours before and during the days after the transition, with a view to maintaining sufficient reserves in the upper basins of these generating stations in order to guarantee the security of the system.

APPENDIX II

Sequence of the markets in the transition to the year 2000

Scheduling for December 31st, 1999.

This scheduling will take place on December 30th.

Before 10.00 hours: closure of the period for receipt of day-ahead market bids and offers and of the period for notification of international physical bilateral contracts shall take place.

Before 11.00 hours: the Market Operator will inform the System Operator and the Market Agents of the base matching schedule (*programa base de casación,* PBC) corresponding to December 31st. At the same time, closure of the period for receipt of information relating to the surplus produced by self-producers and to national physical bilateral contracts sent by the Agents to the Market Operator will take place.

Before 12.00 hours: the Market Operator will inform the System Operator and the Market Agents of the base operating schedule (*programa base de funcionamiento,* PBF) corresponding to December 31st. Also before 12.00 hours, the electric power generation agents will submit the breakdown of the hydraulic management units which have been matched in the day-ahead market to the Market Operator, who will in turn submit this breakdown to the System Operator.

Immediately thereafter, the System Operator will proceed to resolve the constraints in the base operating schedule, taking into account the criteria contained in Appendix I, and will make the appropriate modifications to the electric power schedules by drawing up the corresponding Provisional Viable Schedule (*programa viable provisional,* PVP). The System Operator will communicate the aforesaid to the Market Operator and to the Agents before 14.00 hours. Also before 14.00 hours, and taking into account the criteria indicated in Appendix I, the System Operator will publish the reserve requirements for secondary and tertiary power regulation necessary for each hour of December 31st 1999, thus opening the process for the submission of offers for secondary regulation corresponding to December 31st. This process will be terminated at 15.30 hours.

The System Operator will then assign the auxiliary service of secondary regulation in accordance with the criteria contained in Appendix I, and, before 16.00 hours, will publish the Final Viable Schedule (*programa viable definitivo,* PVD) corresponding to December 31st 1999.

Following publication of the PVD, the System Operator will publish the reserve requirements for secondary and tertiary regulation for January 1st 2000.

Schedule for January 1st, 2000.

This schedule will also be put into effect on December 30th.

Before 16.30 hours: closure of the period for the receipt of day-ahead market bids and offers and of the period for notification of international physical bilateral contracts will take place.

Before 17.30 hours: the Market Operator will inform the System Operator and the Market Agents of the base matching schedule (*programa base de casación,* PBC) corresponding to January 1st. At the same time, closure of the period for receipt of information relating to the surplus produced by self-producers and to national physical bilateral contracts sent by the Agents to the Market Operator will take place.

Before 18.30 hours: the Market Operator will inform the System Operator and the Market Agents the base operating schedule (*programa base de funcionamiento,* PBF) corresponding to January 1st. Also before 18.30 hours, the electric power generation agents will submit the breakdown of the hydro-power management units which have been matched in the day-ahead market, to the Market Operator, who will in turn submit this breakdown to the System Operator.

Immediately thereafter, the System Operator will proceed to resolve the constraints in the base operating schedule, taking into account the criteria contained in Appendix I, and will make the appropriate modifications to the electric power schedules, by drawing up the Provisional Viable Schedule (*programa viable provisional,* PVP) corresponding to January 1st 2000. The System Operator will communicate the aforesaid to the Market Operator and to the Agents before 20.30 hours.

At the same time, the System Operator will open the period for the receipt of offers for the reserve of secondary power regulation corresponding to January 1st. This period will end at 22.00 hours.

The System Operator will then allocate the auxiliary service of secondary regulation in accordance with the criteria contained in Appendix I, and, before 22.30 hours, will publish the Final Viable Schedule (*programa viable definitivo,* PVD) corresponding to January 1st 2000.

Following publication of the PVD, the System Operator will communicate the reserve requirements for secondary and tertiary regulation for January 2nd 2000.

Scheduling for January 2nd, 2000.

The scheduling for January 2nd will take place on December 31st 1999.

Before 10.00 hours: closure of the period for receipt of day-ahead market bids and offers and of the period for notification of international physical bilateral contracts will take place.

Before 11.00 hours: the Market Operator will inform the System Operator and the Market Agents of the base matching scheduling (*programa base de casación*, PBC) corresponding to January 2nd. At the same time, closure of the period for receipt of information relating to the surplus produced by self-producers and to national physical bilateral contracts, sent by the Agents to the Market Operator will take place.

Before 12.00 hours: the Market Operator will inform the System Operator and the Market Agents of the base operating schedule (*programa base de funcionamiento*, PBF) corresponding to January 2nd. Also before 12.00 hours, the electric power generation agents will submit the breakdown of the hydro-power management units which have been matched in the daily market to the Market Operator, who will in turn submit this breakdown to the System Operator.

Immediately thereafter, the System Operator will proceed to resolve the constraints in the base operating schedule, taking into account the criteria contained in Appendix I, and will make the appropriate modifications to the PBF, drawing up the Provisional Viable Schedule (*programa viable provisional,* PVP) corresponding to January 2nd 2000. The System Operator will communicate the aforesaid to the Market Operator and to the Agents before 14.00 hours.

At the same time, the System Operator will open the period for the receipt of offers for the reserve of secondary power regulation corresponding to January 2nd. This period will end at 15.30 hours.

The System Operator will then allocate the auxiliary service of secondary regulation in accordance with the criteria contained in Appendix I, and, before 16.00 hours, will publish the Final Viable Schedule (*programa viable definitivo*, PVD) corresponding to January 2nd 2000.

The above times may be altered during the course of the generation scheduling process itself, if necessary. In that event, adequate communication of the new times to the Market Agents and between both Operators must be guaranteed.

RESOLUTION OF DECEMBER 29TH, 1999

RESOLUTION OF DECEMBER 29TH, 1999, ISSUED BY THE DIRECTORATE GENERAL FOR ENERGY, SETTING THE CALENDAR FOR THE YEAR 2000 APPLYING TO THE TIME-BASED DISCRIMINATION TYPE 5 SEASONAL SYSTEM IN THE PENINSULAR INTEGRATED SYSTEM AND IN THE OFF-PENINSULAR SYSTEMS OF CEUTA, MELILLA, BALEARIC ISLES AND CANARY ISLES FOR THE ELECTIRCITY TARIFF.

(Published in the Official State Journal, B.O.E., no. 313, dated December 31st, 1999)

The first transitory provision of the Spanish Electric Power Act 54/1997 dated November 27th, ("1997 Electricity Act") states that: "Until the issuing of the regulations developing this Act which are necessary to put into practice some of its precepts, the corresponding provisions in force with regard to electricity shall continue to apply".

The Ministerial Order of January 12th 1995, setting the electricity tariffs for 1995, stated in point 7.1.4 , title I of its Appendix I, on regulating the supplement for type 5 time-based discrimination, that the Directorate General for Energy shall set each year the specific days allocated to each category, both for the integrated peninsular system and for each one of the isolated systems outside the peninsular.

In pursuance of the above, using the powers and authority invested by the aforesaid Order developing Royal Decree 2550/1994 dated December 29th,

This Directorate General has resolved to:

One.—Approve the specific days allocated to each category applicable during the year 2000 for the type 5 time-based discrimination system in the integrated peninsular system and in the off-peninsular systems of Ceuta, Melilla, Balearic Isles and Canary Isles, for the electricity tariff, which appear in the Appendix to this Resolution.

I hereby notify your honourable self of the above for your information and any purposes that may ensue.

Madrid, December 29th, 1999.—The Director General,

ANTONIO GOMIS SÁEZ
Deputy Director General for Electric Energy.

APPENDIX

Integrated peninsular system

a) Peak days.

January	February	March	November	December
3	1	1	15	1
4	2	2	16	4
5	3	3	20	5
10	4		21	11
11	7		22	12
12	8		23	13
13	9		24	14
14	10		27	15
17	11		28	18
18	14		29	19
19	15		30	20
20	16			21
21	17			22
24	18			27
25	21			28
26	22			29
27	23			
28	24			
31	25			
	28			
	29			
19	**21**	**3**	**11**	**16**
Total days: 70				

b) High days.

March	June	July	September	October	November	December
6	13	3	5	10	7	7
7	14	4	6	11	8	26
8	15	5	7	18	9	
9	16	6	8	19	10	
10	19	7	12	20	13	
13	20	10	13	24	14	
14	21	11	14	25	17	
15	22	12	15	26		
16	23	13	19	27		
21	26	14	20	31		
22	27	17	21			
23	28	18	22			
28	29	19				
29	30	20				
30		21				
		24				
		25				
		26				
		27				
		28				
15	**14**	**20**	**12**	**10**	**7**	**2**
Total days: 80						

c) Medium days.

Jan.	Feb.	Mar.	April	May	June	Aug.	Sept.	Oct.	Nov.	Dec.
7 15 22 29	5 26	17 20 24 27 31	4 5 6 7 11 12 13 14 17 18 19 26 27 28	2 3 4 5 9 10 11 12 16 17 18 23 24 25 26 30 31	1 2 6 7 8 9 12	1 2 3 28 29 30 31	1 4 11 18 25 26 27 28 29	2 3 4 5 6 9 16 17 23 30	2 3 6	16 23
4	**2**	**5**	**14**	**17**	**7**	**7**	**9**	**10**	**3**	**2**
Total days: 80										

d) Low days.

Jan.	Feb.	Mar.	April	May	June	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1 2 6 8 9 16 23 30	6 12 13 19 20 27	4 5 11 12 18 19 25 26	1 2 3 8 9 10 15 16 20 21 22 23 24 25 29 30	1 6 7 8 13 14 15 19 20 21 22 27 28 29	3 4 5 10 11 17 18 24 25	1 2 8 9 15 16 22 23 29 30 31	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	2 3 9 10 16 17 23 24 30	1 7 8 12 13 14 15 21 22 28 29	1 4 5 11 12 18 19 25 26	2 3 6 8 9 10 17 24 25 30 31
8	**6**	**8**	**16**	**14**	**9**	**11**	**24**	**9**	**11**	**9**	**11**
Total days: 136											

Ceuta off-peninsular system

a) Peak days.

January	February	July	August	December
3	1	25	1	1
4	2	26	2	2
5	3	27	3	12
7	4	28	4	13
10	7	29	8	14
11	8		9	15
12	9		10	16
13	10		11	19
14	11		12	20
17	14			21
18	15			22
19	16			23
20	17			27
21	18			28
24	21			29
25	22			30
26	23			
27	24			
28	25			
	28			
	29			
19	**21**	**5**	**9**	**16**
Total days: 70.				

b) High days.

July	August	September	October	November	December
1	15	1	3	2	5
4	16	5	4	3	7
5	17	6	5	4	9
6	18	7	6	7	
7	19	8	7	8	
8	22	9	10	9	
11	23	12		10	
12	24	13		11	
13	25	14		14	
14	26	15		15	
15	29	16		16	
18	30	19		17	
19	31	20		18	
20		21		21	
21		22		22	
22		23		23	
		26		24	
		27		25	
		28		28	
		29		29	
		30		30	
16	**13**	**21**	**6**	**21**	**3**
Total days: 80					

c) Medium days.

January	February	July	August	September	October	November	December
1 2 6 8 9 15 16 22 23 29 30 31	5 6 12 13 19 20 26 27	2 9 16 23 30	5 6 7 13 14 20 21 27 28	2 3 10 17 24	1 8 11 12 13 14 15 17 18 19 20 21 22 24 25 26 27 28 29 31	1 5 6 12 13 19 20 26 27	3 4 6 8 10 11 17 18 24 25 26 31
12	**8**	**5**	**9**	**5**	**20**	**9**	**12**
Total days: 80							

d) Low days.

March	April	May	June	July	September	October
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	3 10 17 24 31	4 11 18 25	2 9 16 23 30
31	**30**	**31**	**30**	**5**	**4**	**5**
Total days: 136						

Melilla off-peninsular system

a) Peak days.

February	June	July	August	September	November	December
9	22 27 28	4 8 11 12 13 14 15 18 19 20 21 22 25 26 27 28 29	1 2 3 4 5 8 9 10 11 12 15 16 17 18 19 22 23 24 25 26 29 30 31	1 2 3 5 6 8 9 12 13 14 15 19	30	6 8 10 13 14 15 16 17 20 28 29 30 31
1	**3**	**17**	**23**	**12**	**1**	**13**
Total days: 70						

b) High days.

January	Feb.	May	June	July	August	Sept.	October	Nov.	Dec.
4 5 7 8 12 13 18 22 25 26 27 28	1 5 8 10 11 15 17	17 18 20	2 8 9 10 13 14 15 16 20 21 23 24 29 30	1 5 6 7	6 20	4 7 10 11 17 20 21 22 27 28	12 17 18 24 25 26 27	1 4 7 9 10 14 16 17 21 22 23 24 29	2 9 11 18 21 22 23 27
12	**7**	**3**	**14**	**4**	**2**	**10**	**7**	**13**	**8**
Total days: 80									

c) Medium days.

Jan.	Feb.	Mar.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1 2 11 14 15 19 20 21 29	2 3 4 12 16 18 19 22 23 24 25 26	10 11 21	4 5 6 9 10 11 12 13 16 19 23 24 25 26 27 31	1 3 6 7 17	2 9 16 23 30	13 21 27	16 23 26 29 30	3 6 13 14 19 20 21 28	2 3 5 8 11 15 18 25	3 5 7 12 19 25
9	**12**	**3**	**16**	**5**	**5**	**3**	**5**	**8**	**8**	**6**
Total days: 80										

d) Low days.

Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
3 6 9 10 16 17 23 24 30 31	6 7 13 14 20 21 27 28 29	1 2 3 4 5 6 7 8 9 12 13 14 15 16 17 18 19 20 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 7 8 14 15 21 22 28 29 30	4 5 11 12 18 19 25 26	3 10 17 24 31	7 14 28	18 24 25	1 2 4 5 7 8 9 10 11 15 16 22 23 29 30 31	6 12 13 19 20 26 27 28	1 4 24 26
10	**9**	**28**	**30**	**12**	**8**	**5**	**3**	**3**	**16**	**8**	**4**
Total days: 136											

Balearic Isles off-peninsular system (Majorca-Minorca)

a) Peak days.

June	July	August	September
23	1	1	1
26	3	2	2
27	4	3	4
28	5	4	5
29	6	5	6
30	7	7	7
	8	8	8
	10	9	11
	11	10	12
	12	11	13
	13	12	19
	14	14	20
	15	15	
	17	16	
	18	17	
	19	18	
	20	19	
	21	21	
	22	22	
	24	23	
	25	24	
	26	25	
	27	28	
	28	29	
	29	30	
	31	31	
6	**26**	**26**	**12**
Total days: 70			

b) High days.

January	February	June	July	August	Sep.	October	Nov.	Dec.
25	8	1	2	6	9	2	20	1
26	15	2	9	13	14	3	23	4
27	22	4	16	20	15	4	24	11
28		6	23	26	16	5	27	12
		7	30	27	18	6	28	13
		8			21	9	29	18
		9			22	10	30	19
		12			23	11		20
		13			25	16		21
		14			26	17		22
		15			27	18		27
		16			28			28
		17			29			29
		19			30			30
		20						31
		22						
4	**3**	**16**	**5**	**5**	**14**	**11**	**7**	**15**
Total days: 80								

c) Medium days.

January	February	March	April	May	June	Sept.	October	Dec.
3	2	13	10	2	3	3	7	5
4	3	17	11	3	5	10	13	14
5	4	22	12	4	10	17	14	15
10	7	23	14	5	21	24	19	
11	9	24	17	8	24		20	
12	11			9	25		21	
13	14			10			23	
14	16			11			24	
17	17			15			25	
18	18			16			26	
19	19			17			27	
21	21			18				
24	23			19				
	25			22				
	26			25				
				26				
				29				
				30				
13	**15**	**5**	**5**	**18**	**6**	**4**	**11**	**3**
Total days: 80								

d) Low days.

January	February	March	April	May	June	October	Nov.	Dec.
1	1	1	1	1	11	1	1	2
2	5	2	2	6	18	8	2	3
6	6	3	3	7		12	3	6
7	10	4	4	12		15	4	7
8	12	5	5	13		22	5	8
9	13	6	6	14		28	6	9
15	20	7	7	20		29	7	10
16	24	8	8	21		30	8	16
20	27	9	9	23		31	9	17
22	28	10	13	24			10	23
23	29	11	15	27			11	24
29		12	16	28			12	25
30		14	18	31			13	26
31		15	19				14	
		16	20				15	
		18	21				16	
		19	22				17	
		20	23				18	
		21	24				19	
		25	25				21	
		26	26				22	
		27	27				25	
		28	28				26	
		29	29					
		30	30					
		31						
14	**11**	**26**	**25**	**13**	**2**	**9**	**23**	**13**
Total days: 136								

Balearic Isles off-peninsular system (Ibiza-Formentera)

a) Peak days.

July	August	September
1	1	1
2	2	2
3	3	4
4	4	5
5	5	7
6	6	8
7	7	9
8	8	11
9	9	
10	10	
11	11	
12	12	
13	13	
14	14	
15	15	
16	16	
17	17	
18	18	
19	19	
20	20	
21	21	
22	22	
23	23	
24	24	
25	25	
26	26	
27	27	
28	28	
29	29	
30	30	
31	31	
31	**31**	**8**
Total days: 70		

b) High days.

May	June	September	October
8	1	3	1
15	2	6	2
16	3	10	3
17	4	12	4
18	5	13	5
19	6	14	6
22	7	15	9
23	8	16	10
24	9	17	11
25	10	18	13
26	11	19	16
29	12	20	17
30	13	21	18
31	14	22	19
	15	23	
	16	24	
	17	25	
	18	26	
	19	27	
	20	28	
	21	29	
	22	30	
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
14	**30**	**22**	**14**
Total days: 80			

c) Medium days.

January	April	May	October	December
3	3	1	7	1
4	4	2	8	2
10	5	3	12	3
11	6	4	14	4
12	7	5	15	5
13	10	6	20	11
14	11	7	21	14
17	12	9	22	15
18	13	10	23	16
19	14	11	24	17
24	15	12	25	18
25	19	13	26	19
26	28	14	27	21
	29	20	28	22
		21	29	27
		27	30	28
		28	31	29
				30
				31
13	**14**	**17**	**17**	**19**
Total days: 80				

d) Low days.

January	February	March	April	November	December
1	1	1	1	1	6
2	2	2	2	2	7
5	3	3	8	3	8
6	4	4	9	4	9
7	5	5	16	5	10
8	6	6	17	6	12
9	7	7	18	7	13
15	8	8	20	8	20
16	9	9	21	9	23
20	10	10	22	10	24
21	11	11	23	11	25
22	12	12	24	12	26
23	13	13	25	13	
27	14	14	26	14	
28	15	15	27	15	
29	16	16	30	16	
30	17	17		17	
31	18	18		18	
	19	19		19	
	20	20		20	
	21	21		21	
	22	22		22	
	23	23		23	
	24	24		24	
	25	25		25	
	26	26		26	
	27	27		27	
	28	28		28	
	29	29		29	
		30		30	
		31			
18	**29**	**31**	**16**	**30**	**12**
Total days: 136					

Canary Isle off-peninsular system

a) Peak days.

August	September	October	November	December
3	5	2	2	1
4	12	3	3	4
29	13	4	6	5
	14	9	7	11
	15	10	8	12
	19	11	9	13
	20	13	10	14
	21	16	13	15
	22	17	14	18
	25	18	15	19
	27	19	16	20
	28	20	17	22
	29	24	20	26
		25	21	27
		26	22	29
		27	23	
		30	24	
		31	27	
			28	
			29	
			30	
3	**13**	**18**	**21**	**15**
Total days: 70				

b) High days.

Jan.	Feb.	Mar.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
5	4	1	31	1	11	1	1	5	4	16
7	11	2		2	12	2	4	6	11	21
11	14	3		7	14	7	6	23	18	28
21	15	6		20	18	8	7	28		
	16	8			19	9	11			
	17	14			20	10	18			
	24	16			21	11	26			
	25	17			24	14				
	28	20			25	16				
	29	21			26	17				
		22			27	18				
		23			28	21				
		24				22				
						23				
						24				
						25				
						28				
						30				
						31				
4	**10**	**13**	**1**	**4**	**12**	**19**	**7**	**4**	**3**	**3**
Total days: 80										

c) Medium days.

Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
3	1	9	4	5	5	4	5	8	7	25	2
4	2	10	5	26	6	5		16	14		9
10	3	13	7	29	8	6		23	21		23
12	7	15	12		9	7		30			30
13	8	27	18		12	10					
14	9	28			13	13					
17	10	29			14	17					
18	18	31			15	31					
19	22				16						
20	23				19						
24					21						
26					22						
27					23						
28					26						
31					27						
					28						
					29						
					30						
15	**10**	**8**	**5**	**3**	**18**	**8**	**1**	**4**	**3**	**1**	**4**
Total days: 80											

d) Low days.

Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5	4	1	1	3	1	6	2	1	1	3
2	6	5	2	2	4	2	12	3	8	5	6
6	12	7	3	3	10	3	13	9	12	12	7
8	13	11	6	4	11	8	15	10	15	19	8
9	19	12	8	6	17	9	19	17	22	26	10
15	20	18	9	7	18	15	20	24	29		17
16	21	19	10	8	24	16	26				24
22	26	25	11	9	25	22	27				25
23	27	26	13	10		23					31
25		30	14	11		29					
29			15	12		30					
30			16	13							
			17	14							
			19	15							
			20	16							
			21	17							
			22	18							
			23	19							
			24	20							
			25	21							
			26	22							
			27	23							
			28	24							
			29	25							
			30	27							
				28							
				30							
12	**9**	**10**	**25**	**27**	**8**	**11**	**8**	**6**	**6**	**5**	**9**
Total days: 136											

ROYAL DECREE 2066/1999

ROYAL DECREE 2066/1999, DATED DECEMBER 30TH, SETTING THE ELECTRICITY TARIFF FOR 2000.

(Published in the Official State Journal, B.O.E., no. 313, dated December 31st, 1999)

Paragraph 2 in article 17 of the Electric Power Act 54/1997, dated November 27th ("1997 Electricity Act") states that "annually, or when special circumstances make it expedient, and following the appropriate procedures and reports, the Government shall approve or modify the average benchmark or reference tariff through a Royal Decree".

Royal Decree 2019/1997, dated December 26th, governing the organisation and regulation of the electric power generation market, has brought competitive mechanisms into play in the electricity industry since January 1st 1998 by creating a competitive electric power generation market in pursuance of the provisions of articles 23 and 24 of the 1997 Electricity Act.

Royal Decree 2017/1997, dated December 26th, governing the organisation and regulation of the procedure for the settlement of transmission, distribution and tariff retailing (regulated price supplying) costs, the permanent costs of the system, and diversification and security of supply costs, laid down the way in which the revenue received by distributors and retailers is to be shared out amongst the agents who perform the system's activities. This shall be in accordance with the remuneration that these agents are entitled to receive under the legal provision approving the tariffs for the year in question, together with the portion of the fees assigned to the permanent costs of the system and diversification and security of supply costs.

Royal Decree 2017/1997 also established that the legal provision approving the tariffs for the year in question shall lay down fee exemptions for any distributors that are not covered by Royal Decree 1538/1987, dated December 11th, determining the electricity tariff of the service management companies.

Moreover, the 1997 Electricity Act permits the supply tariff structure already in force prior to the date of the said Act to be maintained, in accordance with the first transitory provision thereof, which states that "Until the issuing of the regulations developing this Act which are necessary to put into practice some of its precepts, the corresponding provisions in force with regard to electricity shall continue to apply."

Royal Decree 2820/1998, dated December 23rd, setting network access tariffs, established the structure and price of these

tariffs from January 1st 1999. Royal Decree 2818/1998, dated December 23rd, on the production of electricity by facilities supplied by renewable energy resources or sources, waste and cogeneration, created the regulatory framework for this type of facility, laying down a system of incentives for these companies which allows them to compete in a free market and establishing a sufficiently long transition period during which those facilities operating within the scope of the previous regulations may continue to apply the system introduced by Royal Decree 2366/1994, with the price modifications set out in Royal Decree-law 6/1999, of April 16th.

Royal Decree 2819/1998, dated December 23rd, regulating the activities of transmission and distribution of electric power, determined which elements make up the electric power transmission and distribution network, and laid down the economic framework for the said activities, guaranteeing a sufficient level of supply and the quality thereof.

Act 50/1998, dated December 30th, relating to fiscal, administrative and corporate measures, modified the sixth transitory provision of the 1997 Electricity Act with regard to the costs of the transition to a competitive market of those companies operating electricity generation facilities which, on December 31st 1997, were operating within the scope of Royal Decree 1538/1987, dated December 11th, determining the electricity tariff of the service management companies.

As a result, this Royal Decree lays down the average decrease in tariffs for the sale of electricity, together with its application to the structure of current tariffs, the amount assigned for regulated activities in the year 2000 and the fees used to cover the permanent costs of the system, diversification and security of supply costs, exemptions from the said fees for certain distributors, and the application of the tariffs to such distributors.

Although the average decrease in tariffs was approved by Royal Decree 2821/1998, dated December 23rd, setting the electricity tariff for 1999, with the amendments approved by Royal Decree-law 6/1999, dated April 16th, in respect of urgent measures for liberalisation and increased competition, this decrease is distributed between a 2.11 per cent reduction in the tariff 2.0 and a 2 per cent increase in high voltage tariffs, with the exception of the G.4 tariff and those tariffs of distributors covered by the eleventh transitory provision of the 1997 Electricity Act.

The prices for the sale of electricity by facilities operating under the special system are likewise updated, both with respect to the transitory system of Royal Decree 2366/1994, bringing the para-

meters into line with the evolution of tariffs, and those premiums established by Royal Decree 2818/1998, taking the inter-annual variation in the rate of interest to be the 3 month MIBOR variation at November 1998 with respect to November 1999, giving a variation of –9.46 per cent. The inter-annual variation in the price of gas is taken to be the annual variation in average monthly prices for a pipeline-supplied consumer on an uninterruptible contract of 40 million therms/year, producing a value of –0.27 per cent. The calculated variation in the average sale price of electricity gives a figure of –5.48 percent, including both the variation applied since April 1999, approved by Royal Decree-law 6/1999, dated April 16th, in respect of urgent measures for liberalisation and increased competition, and the variation forecast for the year 2000.

Consequently, in order to bring into line the premiums and prices established in Royal Decree 2818/1998, the additional reduction applied in April 1999 and approved by the aforementioned Royal Decree has been taken into account.

In pursuance of the above, on the proposal of the Ministry of Industry and Energy, following a report by the National Electric Regulatory Commission and by the Government Commission for Economic Affairs, and following careful consideration by the Council of Ministers at its meeting of December 30th 1999,

I HEREBY ORDER:

Artícle 1.

1. In the year 2000, the tariffs for the sale of electric power to be applied by the electricity distribution companies shall be reduced by an overall average of 1 per cent when taken together with respect to the tariffs which came into force on January 1st 1999 in pursuance of the provisions of Royal Decree 2821/1998, dated December 23rd, setting the electricity tariff for 1999, and on April 18th 1999, in pursuance of the provisions of Royal Decree-law 6/1999, dated April 16th, in respect of urgent measures for liberalisation and increased competition.

2. The price of 1.3 pesetas/KWh stated in point three of the Ministerial Order dated December 17th 1998, modifying the Ministerial Order of December 29th 1997, which developed some aspects of Royal Decree 2019/1997, dated December 26th, governing the regulation and organisation of the electric power generation market, used to set the amount to be paid to generators as a capacity payment, will be reduced to 1.15 pesetas/KWh as from January 1st, 2000.

3. The acknowledged costs for the year 2000 assigned to the remuneration of transmission activities shall amount to Ptas. 91,536 million, of which Ptas.54,434 million correspond to the remuneration of the transmission activity of "Red Eléctrica de España, Sociedad Anónima", and Ptas.37,102 million to the transmission activity of the other companies subject to the settlement process, in pursuance of Royal Decree 2017/1997, dated December 26th.

4. The acknowledged costs for the year 2000 assigned to the remuneration of distribution activities shall amount to Ptas.429,175 million, following the deduction of the other revenue derived from mains connection charges, customer connection charges, testing, rental of metering equipment and others, in pursuance of Royal Decree 2017/1997, dated December 26th, and without including the costs assigned to supply quality improvement plans.

5. The acknowledged costs for the year 2000 assigned to the remuneration of the retailing activities undertaken by the electricity distribution companies shall amount to Ptas.40,660 million, in pursuance of Royal Decree 2017/1997, dated December 26th.

6. The fixed remuneration to be paid to companies operating electricity generation facilities which, as of December 31st 1997, were included within the scope of Royal Decree 1538/1987, dated December 11th, determining the tariff of the electricity service management companies, in pursuance of the provisions of article 10 of Royal Decree 2017/1997, dated December 26th, shall amount to an estimated maximum figure of Ptas.139,214 million in the year 2000. Said amount shall include the specific cost, established as a permanent cost in article 3 of this Royal Decree, to cover the costs of transition to competition, all in accordance with article 107 of Act 50/1998, dated December 30th, relating to fiscal, administrative and corporate measures.

Article 2.

1. The decrease referred to in article 1.1 of this Royal Decree shall be distributed among the different tariffs as set out in Appendix I, which lists the basic tariffs to be applied with the power and electricity charges. Appendix I also lists the conditions for the application of sale tariffs to the distributors who were not covered by the scope of Royal Decree 1538/1987, dated December 11th, determining the tariff of the electricity service management companies.

The prices for the rental of metering equipment are listed in Appendix II of this Royal Decree and the prices corresponding to

mains connection charges, customer connection charges and testing, as defined by Royal Decree 2949/1982, dated October 15th, regulating electricity mains connections and approving the corresponding Regulations in respect of new facilities, are hereby fixed at the amounts listed in Appendix III of this Royal Decree.

2. The premiums stipulated in Royal Decree 2818/1998, dated December 23rd, governing the production of electricity by facilities supplied by renewable energy resources or sources, waste and cogeneration, are brought into line by applying the inter-annual variation in the rate of interest of –9.46 per cent, the inter-annual variation in the price of gas of –0.27 per cent, the variation in the electricity tariff charged to customers with no freedom of choice of supplier of –1.23 per cent and the variation in the average sale price of electricity of –5.48 per cent. The values relating to these percentages are listed in paragraph 1 of Appendix IV of this Royal Decree.

The power and electricity charges for those facilities operating within the scope of the system established in Royal Decree 2366/1994, dated December 9th, governing the production of electricity by hydro power generating facilities cogeneration plants and others supplied by renewable energy resources or sources, are set out in paragraph 2 of Appendix IV of this Royal Decree. The said charges are the consequence of restructuring the parameters to take into account the new conditions of the electricity system. The initial values of each group are modified in line with the corresponding tariff charges approved in this Royal Decree and in accordance with the correlation indicated in article 14 of Royal Decree 2366/1994.

3. This Royal Decree quantifies the homogenous transmission and distribution losses for each supply tariff and/or access tariff, in order to transfer the electricity supplied to tariff and qualified consumers, at their meters, to electricity supplied at plant bars (gross electricity production), for the purposes of the settlements provided for in Royal Decree 2017/1997, dated December 26th and in Royal Decree 2019/1997, dated December 26th. The coefficients for the calculation of the said losses are given in Appendix V of this Royal Decree.

Article 3.

1. For the year 2000, the costs assigned to specific items, in accordance with chapter II of Royal Decree 2017/1997, dated December 26th, that electricity consumers must pay for tariff supplies are as follows, expressed in percentages:

Percentages for the year 2000

	Percentage of tariff
Permanent costs:	
Off-peninsular compensation	0.904
System Operator	0.053
Market Operator	0.056
National Electric Regulatory Commission	0.061
Costs for the transition to competition	4.500
Costs for diversification and security of supply:	
Nuclear moratorium	3.540
Uranium base stock	0.020
Nuclear fuel second cycle	0.800
Cost of the compensation for interruptibility, purchase of electricity from generating facilities operating under the special system and other compensations	0.059

2. For the year 2000, the costs assigned to specific items, in accordance with chapter II of Royal Decree 2017/1997, dated December 26th, that qualified consumers and retailers must pay for access tariff contracts, are as follows, expressed in percentages:

Percentages for the year 2000.

	Percentage of tariff
Permanent costs:	
Off-peninsular compensation	2.465
System Operator	0.145
Market Operator	0.153
National Electric Regulatory Commission	0.166
Costs for the transition to competition	12.274
Costs for diversification and security of supply:	
Nuclear moratorium	3.540
Uranium base stock	0.055
Nuclear fuel second cycle	2.182
Cost of the compensation for interruptibility, purchase of electricity from generating facilities operating under the special system and other compensations	0.161

A total of 3.54 per cent of the nuclear moratorium fee shall also be applied to the amounts resulting from the allocation of the electricity purchased by retailers or qualified consumers in the electricity market, or to the amounts of electricity supplied by means of physical bilateral contracts, in pursuance of the provisions of article 6 of Royal Decree 2017/1997, dated December 26th, governing the organisation and regulation of the procedure for the settlement of transmission, distribution and tariff retailing (regulated price supplying) costs, the permanent costs of the system, and diversification and security of supply costs.

3. Exemptions from the fees to be applied to the electricity distribution companies that purchase tariff electricity and to the companies GESA, UNELCO and ENDESA, for their tariff supplies in the Balearic Islands, Canary Islands, Ceuta and Melilla:

a) As a general rule, any electricity distribution companies that purchase tariff electricity shall be exempt from paying the fees expressed as a percentage of the bill for the nuclear moratorium and competition transition costs, as set out in the point above.

b) Companies classified within group 1, in pursuance of the additional provision of Royal Decree 2017/1997, dated December 26th, shall be exempt from paying the fees provided for in the said Royal Decree, as set out in the point above.

c) With regard to the companies classified within group 2, in pursuance of the additional provision of Royal Decree 2017/1997, dated December 26th, following a report by the National Electric Regulatory Commission, the Directorate General for Energy may authorise a reduction coefficient which will be applied to the amounts to be paid to the National Electric Regulatory System, as referred to in point 1 of this article.

d) The other electricity distribution companies that purchase tariff electricity shall pay all the fees, with the exception of the general provision set out in 3.a) of this article

e) In respect of their tariff supplies in the Balearic Islands, Canary Islands, Ceuta and Melilla, the companies GESA, UNELCO and ENDESA shall be exempt from paying the fee corresponding to their own off-peninsula compensation, as well as the Market Operator and System Operator fees and those fees corresponding to competition transition costs.

Article 4.

1. For the purposes of complying with the information required by Directive 90/377/EEC regarding the transparency of

prices applicable to industrial consumers of gas and electricity, all electricity distribution companies, together with retailers or generators shall send the Directorate General for Energy the information stipulated in the Ministerial Order of May 19th 1995, regarding information on the prices applicable to industrial end-consumers of electricity, and any other information about prices, conditions of sale applicable to the end-consumers, distribution of the consumers and of the corresponding volumes per category of consumption, as may be determined by the Ministry of Industry and Energy.

2. The Directorate General for Energy may request companies operating in the electricity sector to furnish information for the monitoring of the market and the facilities operating under the special system, for the drafting of the tariff proposal, and for the approval of off-peninsula compensations to electricity distribution companies that purchase tariff electricity for the amount of electricity purchased from facilities operating under the special system and the electricity supplied to interruptible tariff consumers.

3. Electricity distribution companies shall send each Town or City Council a list classified by electricity tariffs every month. For each tariff, the list shall show the amounts billed for the electricity supplied in their municipal district and the amounts billed for the network access charges for the electricity supplied in their municipal district.

Article 5.

1. Annually, the National Electric Regulatory Commission shall undertake to:

a) Check the income declarations of those electricity distribution companies that are obliged to pay the fees expressed as a percentage of their billing as provided for in article 3 of this Royal Decree, in order to confirm collection thereof. A report shall be submitted annually on the declarations of the checks carried out in each company to the Directorate General for Energy

b) Check the invoices corresponding to each of the purchases of electricity made from facilities operating under the special system by electricity distribution companies which, prior to the entry into force of the 1997 Electricity Act, were not covered by Royal Decree 1538/1987, dated December 11th, for the purposes of presenting a proposal to the Directorate General for Energy in respect of the compensations established in paragraph 4 of article 20 of Royal Decree 2017/1997, dated December 26th.

c) Check each of the invoices for the supplies of interruptible electric power effected by the electricity distribution companies referred to in paragraph b) above, in order to present a proposal to the Directorate General of Energy for the approval of the compensations payable to the said electricity distribution companies for this service, in accordance with the procedure established in the Ministerial Order of July 7th 1992, governing the regulation of the compensations to be made by OFICO for the supply of interruptible electric power provided by certain companies, and Royal Decree 2017/1997, aforesaid.

d) Check the invoices issued by the electricity distribution companies in respect of interruptible supplies and time-based electricity tariffs, sending the annual report on the inspections carried out to the Directorate General for Energy, for the purposes of confirming the application of the current tariff regulations.

e) Carry out the checks on the financing of uranium base stock, with a view to verifying its cost.

2. The Ministry of Industry and Energy may, through the National Electric Regulatory Commission, inspect the invoices corresponding to tariff supply contracts and tariff access contracts, and may investigate the purchases of electricity from facilities operating under the special system in order to ensure that current tariff regulations are being applied in transactions and the assignment of surpluses.

Consequently, the Directorate General for Energy shall approve a bi-annual (six-monthly) inspection programme to be carried out on a specific sample of clients of electricity distribution companies and on facilities operating under the special system. Over the course of the first fifteen days of each six month period, the National Electric Regulatory Commission must present a proposal to the Directorate General for Energy.

3. The Directorate General for Energy may request the National Electric Regulatory Commission to verify the income of other distributors not included in paragraph 1.a) of this article, with a view to allowing their subsequent classification by the Directorate General for Energy.

Sole additional provision.

On a date no later than April 1st 2000, the Ministry of Industry and Energy shall present to the Government a proposal to bring into line the price of access tariffs established in Royal Decree 2820/1998, dated December 23rd, in preparation for the new

framework of liberalisation of supply commencing on July 1st 2000. The said proposal shall take account of the production costs of the special system.

Sole transitory provision.

1. From November 1st 2000, the time-based electricity tariff shall be incompatible with contracts for additional power supply.

2. The time-based electricity tariff shall be applied only to those consumers who contracted this tariff on or before December 31st 1999, and until such a time when consumption and the number of clients affected by this tariff are reduced by 50%. For these purposes, base consumption will be taken to mean the consumption of the said tariff in 1999 and the number of consumers will be taken to mean the number of consumers affected by this tariff on December 31st 1999. The conditions and prices to be applied to these contracts will be those listed in Title II of Appendix I to the Ministerial Order of January 12th 1995, with the modifications stipulated in paragraph 2 of Appendix I to this Royal Decree.

3. The supplement for interruptibility corresponding to general high voltage tariffs shall be applied only to those consumers affected by the said supplement on December 31st 1999 and until such a time when consumption and the number of clients affected by this supplement are reduced by 50%. To this end, base consumption will be deemed to be the consumption of customers affected by the said supplement in respect of general high voltage tariffs in 1999 and the number of consumers will be held to be the number of consumers affected by the said supplement on December 31st 1999. The conditions and prices to be applied to these contracts will be those listed in paragraphs 7.4 and 8.4.4 of Title I of Appendix I to the Ministerial Order of January 12th 1995, with the modifications stipulated in paragraph 2 of Appendix I to this Royal Decree.

Sole repeal provision.

The discount for interruptibility is hereby revoked, together with the time-based electricity tariff regulated by the Ministerial Order of January 12th 1995, with the express provisions of paragraphs 7.4 and 8.4.4 of Title I of Appendix I and Title II of Appendix I to the said Ministerial Order, but with the exception of the provisions of paragraphs 2 and 3 of the sole transitory provision contained in this Royal Decree; Royal Decree 2821/1998, dated

December 23rd, setting the electricity tariff for 1999, and any other provision of equal or lesser import which is at variance with the provisions of this Royal Decree.

First final provision.

The Ministry of Industry and Energy shall dictate the provisions necessary for the execution of this Royal Decree.

Second final provision.

This Royal Decree will come into force on January 1st, 2000.
Conferred in Arrecife on the thirtieth day of December 1999.

JUAN CARLOS R.

The Minister of Industry and Energy,
JOSEP PIQUÉ I CAMPS

APPENDIX I

1. *List of base tariffs with the prices for their power and electricity charges*

Tariffs and voltage levels	Power charge Tp: Pta/kW and month	Electricity charge Te: Pta/kWh
Low Voltage:		
1.0 Power up to 770 W	44	9.89
2.0 General, power not higher than 15 kW (1)	242	13.73
3.0 General	224	13.10
4.0 General, long-term use	357	11.97
B.0 Street lighting	0	11.47
R.0 Agricultural irrigation	52	12.18
High Voltage:		
General tariffs:		
Short-term use:		
1.1 General, not higher than 36 kV ...	305	10.23
1.2 General, over 36 kV but not higher than 72.5 kV.....	289	9.60
1.3. General, over 72.5 kV but not higher than 145 kV.....	279	9.32
1.4 Over 145 kV	271	9.00
Medium-term use:		
2.1 Not higher than 36 kV	629	9.33
2.2 Over 36 kV but not higher than 72.5 kV.....	594	8.73
2.3 Over 72.5 kV but not higher than 145 kV.....	574	8.47
2.4 Over 145 kV	560	8.21
Long-term use:		
3.1 Not higher than 36 kV	1,668	7.51
3.2 Over 36 kV but not higher than 72.5 kV.....	1,560	7.07
3.3 Over 72.5 kV but not higher than 145 kV.....	1,512	6.80
3.4 Over 145 kV	1,466	6.61

Tariffs and voltage levels	Power charge Tp: Pta/kW and month	Electricity charge Te: Pta/kWh
T Tariffs (Traction):		
T.1 Not higher than 36 kV.....	96	10.69
T.2 Over 36 kV but not higher than 72.5 kV.....	88	10.06
T.3 Over 72.5 kV.....	86	9.74
R Tariffs (Agricultural irrigation):		
R.1 Not higher than 36 kV.....	78	10.70
R.2 Over 36 kV but not higher than 72.5 kV.....	74	10.08
R.3 Higher than 72.5 kV.....	70	9.73
G.4 Tariff (Major consumers).....	1,573	1.73
Tariff D (Sale to distributors):		
D.1 Not higher than 36 kV.....	334	7.06
D.2 Over 36 kV but not higher than 72.5 kV.....	315	6.74
D.3 Over 72.5 kV but not higher than 145 kV.....	307	6.50
D.4 Over 145 kV.....	298	6.33

(1) The surcharges or discounts set out in point 7.4.1 (Type 0) of Title I of Appendix I to the Ministerial Order of January 12th 1995, shall not apply to this tariff when the night-time discrimination supplement (Type 0) is applied. Instead, the following prices shall be applied for the electricity used in each of the time intervals:

— Daytime electricity usage (peak and off-peak 1): Ptas.14.10/kWh electricity charge.

— Night-time electricity usage (off-peak 2): Ptas.6.40/kWh electricity charge.

2. *Prices for power and electricity charges for time-based tariffs*

The prices for the power charge (t_{pi}) in each time interval for subscribers covered by this tariff shall be as follows, with the effect of the surcharges or discounts listed below:

Prices.

Intervals	1	2	3	4	5	6	7
Power charge in Ptas./kW year.....	4,888	3,258	2,793	1,955	1,955	1,955	1,503
Electricity charge in Ptas./kWh.....	27.36	10.17	9.50	8.49	5.58	3.63	2.86

The surcharges or discounts applicable to the prices shown above, in terms of the supply voltage, shall be as follows:

Voltage in kV	Surcharge	Discount
T ≤ 36.....	3.09	
36 < T ≤ 72.5	1.00	
72.5 < T ≤ 145	0.00	0.00
T > 145		12.00

These prices will be rounded off to zero decimal points for power charges and to two decimal points for electricity charges.

For the purposes of the application of this tariff, the twenty-three type A days of interval 1 to be set by "Red Eléctrica de España, Sociedad Anónima", must be allocated in each electrical year, with no one month containing more than twelve of the days aforesaid.

3. *Conditions of application of the supplement for interruptibility regulated by point 7.4 of Title I of Appendix I to the Ministerial Order of January 12th 1995 in respect of general high voltage tariffs.*

The variable charge of discount DI, figuring in the second addend of the formula set out in paragraph a) of point 7.4 of Title I of Appendix I to the Ministerial Order of January 12th 1995 shall be zero, that is to say ($\sum$Pj/Pf) shall always be 0 independently of the interruptions requested and effected by the consumer in each electricity period.

4. *Conditions of application of the tariffs of sale to distributors that were not covered by Royal Decree 1538/1987, dated December 11th.*

1. Any electricity distribution companies that were operating prior to January 1st, 1997, and that were not covered by the provisions of Royal Decree 1538/1987, dated December 11th, except for GESA and UNELCO, shall be entitled to purchase electricity:

a) At tariff D, in pursuance of the contents of the eleventh transitory provision of the 1997 Electricity Act. This tariff shall apply to the part of their electricity consumption that does not exceed the consumption recorded in the previous financial year, deducting those increases of the previous year which may have

exceeded the fixed consumption limits and adding the natural increase percentage, which for these purposes shall be as follows:

1.° For companies classified in Group 1: 10%. However, following a report from the body with relevant jurisdiction in the respective Autonomous Region and from the National Electric Regulatory Commission, the Directorate General for Energy shall be empowered to authorise a larger increase, depending on the specific circumstances of each case.

2.° For companies classified in Group 2: 10%.

3.° For companies classified in Group 3: 7%.

These limits will be calculated annually in arrears and consequently, as qualified agents they should purchase that amount of power which exceeded the fixed consumption increase limits in the previous financial year either directly, as market agents operating in the organised generation market ("Pool"), or through a trading company.

However, given the existence of one single supply company in the off-peninsular and island systems, as an exception, these natural growth limits shall not apply to the electricity distribution companies of Ceuta, Melilla, Balearic Islands and Canary Islands until a benchmark or reference price is established for qualified agents in those systems.

b) At the organised generation market ("Pool") price as qualified agents.

2. All other electricity distribution companies shall purchase electricity in the organised generation market ("Pool") as qualified agents.

APPENDIX II

Metering equipment rental rates

	Ptas./month
a) Single tariff meters:	
Active power:	
Single-phase:	
Tariff 1.0	89
Others	102
Three-phase or double single-phase	288
Reactive power:	
Single-phase	136
Three-phase or double single-phase	322
b) Time discrimination meters:	
Single-phase (double tariff)	210
Three-phase or double single-phase (double tariff)	420
Three-phase or double single-phase (triple tariff)	527
Contactor	29
Timer switch service	173
c) Power control switch (per pole)	6

The rental rate for all other ancillary metering and control equipment and apparatus shall be calculated by applying a rate of 1.25% per month to the average price of such equipment and apparatus.

APPENDIX III

Amounts payable for mains connection charges, customer connection charges and testing charges

The amounts shall be as follows :

a) Mains connection charges, for low voltage supplies (articles 8 and 9 of Royal Decree 2949/1982, dated October 15th, laying down electricity mains connections standards and approving the corresponding Regulations):

	Ptas/kW
Full rate	5,336
Rate for the sole installation of an extension	2,500
Subscriber or end-user rate, where applicable, equal to the difference between the full rate and the extension rate	2,836

b) Mean value of low voltage responsibility investments (article 10 of Royal Decree 2949/1982, dated October 15th, laying down electricity mains connections standards and approving the corresponding Regulations):

	Ptas/kW
From thermal power station output or low voltage network.....	11,470
From high-voltage or medium voltage substation bars ...	8,850
Desde barras de subestación A.T. o M.T.	6,010
From high-voltage network.....	4,495

c) Mains connection charges for high voltage supply (article 13 of Royal Decree 2949/1982, dated October 15th, laying down electricity mains connections standards and approving the corresponding Regulations):

Rates.

Voltage	Responsability	Extension	Full
≤ 36 kV	2,455	2,262	4,717
> 36 kV y ≤ 72.5 kV	2,119	2,208	4,327
> 72.5 kV	1,540	2,351	3,891

d) Customer connection charges (article 20):
   1. Low voltage.
      1) Up to 10 kW: 1,302 pesetas in total.
      2) For each additional kW: 30 pesetas.
   2. High voltage.
      1) Up to 36 kV inclusive:
         1.° Customer connection charges, 11,440 + (P-50) x 18 pesetas/subscriber.
         2.° With a minimum of 11,440 pesetas.
         3.° With a maximum of 37,135 pesetas.
      2) More than 36 kV to 72.5 kV: 38,417 ptas./subscriber.
      3) More than 72.5 kV: 53,900 ptas./subscriber.

e) Testing charges (article 21 of Royal Decree 2949/1982, dated October 15th, laying down electricity mains connections standards and approving the corresponding Regulations):
   1. Low voltage supply: 1,153 Ptas./subscriber.
   2. High voltage supply:
      1.° Up to 36 kV, inclusive: 7,896 ptas./subscriber.
      2.° More than 36 kV to 72.5 kV, inclusive: 12,256 ptas./subscriber.
      3.° More than 72.5 kV: 18,132 ptas./subscriber.

APPENDIX IV

1. The premiums and prices established by Royal Decree 2818/1998, dated December 23rd, relating to the generation of electricity by facilities supplied by renewable energy resources or sources, waste or cogeneration, are as follows:

Premiums.

Group	Type of facility	Capacity MW	Premium ptas./kWh
a	a.1 y a.2	P ≤ 10	3.08
b	b.2 b.3 b.4 b.6 b.7		4.79 4.97 4.97 4.61 4.26
c		P ≤ 10	3.50
article 31			0.95
d	d.1 d.2 d.3	P ≤ 15 P ≤ 10 P ≤ 10	3.76 3.76 2.41

Prices regulated by article 28.3

Group	Type of facility	Price ptas./kWh
b	b.2 b.3 b.4 b.6 b.7	10.42 10.59 10.59 10.24 9.89

2. Charges for power and electricity delivered by power generation facilities operating under the special system covered by Royal Decree 2366/1994.

Type of facility	Installed capacity MWA	T_p Ptas./kW and month	T_e Ptas./kWh
Group a	P ≤ 100	289	9.60
Group b	P ≤ 100	594	8.73
Groups c, d and e	P ≤ 15 15 < P ≤ 30 30 < P ≤ 100	1,560 1,512 1,466	7.07 6.80 6.61
Group f	P ≤ 10	289	9.60

APPENDIX V

Percentage of losses incurred in the transfer of electricity supplied to tariff and qualified consumers, at their meters, to electricity supplied at plant bars (gross electricity production).

Supply and/or access tariff	Losses per tariff
Tariff 1.0	13.88
Tariff 2.0	13.84
Tariff B.0	13.21
Tariff 3.0	13.85
Tariff 4.0	13.73
Tariff R.0	13.45
Tariff 1.1	5.97
Tariff 2.1	5.94
Tariff 3.1	5.85
Tariff R.1	5.75
Tariff T.1	5.93
Tariff D.1	6.02
Tariff 1.2	4.19
Tariff 2.2	4.18
Tariff 3.2	4.06
Tariff R.2	4.10
Tariff T.2	4.19
Tariff D.2	4.23
Tariff 1.3	2.91
Tariff 2.3	2.88
Tariff 3.3	2.82
Tariff R.3	2.80
Tariff T.3	2.94
Tariff D.3	2.98
Tariff 1.4	1.52
Tariff 2.4	1.51
Tariff 3.4	1.50
Tariff D.4	1.61
Tariff G.4. Voltage level > than 36 kV and ≤ 72.5 kV	4.15
Tariff G.4. Voltage level > than 72.5 kV and ≤ 145 kV	2.90
Tariff G.4. Voltage level > than 145 kV	1.55

Loss percentages for time-based power supply contracts and general high voltage access tariff contracts.

Supply voltage	Attributed electricity losses (in % of the electricity used in each interval)					
	Interval 1	Interval 2	Interval 3	Interval 4	Interval 5	Interval 6
Over 1 kV but not higher than 36 kV	6.8	6.6	6.5	6.3	6.3	5.4
Over 36 kV but not higher than 72.5 kV.....	4.9	4.7	4.6	4.4	4.4	3.8
Over 72.5 kV but not higher than 145 kV.....	3.4	3.3	3.2	3.1	3.1	2.7
Over 145 kV	1.8	1.7	1.7	1.7	1.7	1.4

The time intervals that are referred to in this Appendix are those regulated for the general high voltage access tariffs. To apply them to time-based power tariff contracts, intervals 1 and 2 of the said tariff correspond to 1 in this table, interval 3 to 2 and so on, correlatively.

Loss percentages for other supply or access contracts.

Level of voltage	Percentage
Low.....	13.81
Medium (1 > kV ≥ 36)	5.93
High (36 > kV ≥ 72.5)	4.14
High (72.5 > kV ≥ 145)	2.87
Medium-high (145 > kV)	1.52