



**Report sent to the DG TREN  
July 2007**

## CONTENTS

<b>I .</b>	<b>Presentation of the Commission de régulation de l'énergie .....</b>	<b>1</b>
1	Organisation of CRE and its departments .....	1
1.1	The Commission.....	1
1.2	CRE's departments .....	3
2	Main missions .....	5
3	Main powers .....	5
4	Guarantee of independence .....	6
5	Shared mission .....	6
5.1	with the Ministers for the Economy and Energy .....	7
5.2	with the Conseil de la concurrence .....	7
5.3	with the Financial Market Authorities .....	7
<b>II .</b>	<b>Regulation of the electricity market.....</b>	<b>8</b>
1	Cross-border energy exchanges.....	8
1.1	Development of the Electricity Regional Initiative .....	8
1.2	Development of electricity transmission grids and optimised use of interconnection capacities.....	10
2	Regulation of access to transmission and distribution grids .....	19
2.1	Grid access tariffs.....	19
2.2	The quality of service of electricity grids .....	21
2.3	Balancing .....	22
2.4	Principles of account unbundling .....	28
2.5	Independence of public network operators .....	30
<b>III .</b>	<b>Operation of the French electricity market.....</b>	<b>33</b>
1	The wholesale market.....	33
1.1	Generation - consumption.....	33
1.2	Organised markets .....	34
1.3	The OTC market.....	34
1.4	Integration of the French market within border markets .....	34
2	Retail market .....	36
2.1	Eligible customers .....	36
2.2	Market share.....	37
2.3	Incumbent suppliers .....	38
2.4	Switching supplier .....	39
2.5	Retail prices .....	41
3	Measures to avoid abuse of dominant positions .....	43
3.1	Wholesale market.....	43
3.2	Retail market .....	44
<b>IV .</b>	<b>Regulation of the natural gas market.....</b>	<b>46</b>

<b>1</b>	<b>Management and allocation of interconnection capacity</b> .....	<b>46</b>
1.1	Mechanisms aiming to resolve congestion .....	46
1.2	Releasable capacities .....	47
1.3	Short-term 'Use It Or Lose It' mechanism .....	47
1.4	Methods for reserving capacities .....	47
1.5	Obligation of transparency .....	48
1.6	Secondary capacity market and cross-border capacities .....	48
1.7	Swap as an instrument for managing congestion at interconnection points .....	49
1.8	Long-term transit contract .....	49
1.9	Calculation of technical capacity .....	49
<b>2</b>	<b>Regulation of transmission and distribution companies' activities</b> .....	<b>49</b>
2.1	Number of network operators .....	49
2.2	Network access tariffs.....	51
2.3	Balancing .....	54
2.4	Principles of account unbundling .....	56
2.5	Supply unbundling .....	56
2.6	Independence of public network operators .....	57
<b>V .</b>	<b>French gas market operations</b> .....	<b>61</b>
1	The wholesale market.....	61
1.1	State of play .....	61
1.2	Gas release programme .....	62
2	Retail market .....	64
2.1	Eligible customers .....	64
2.2	Market share .....	65
2.3	Suppliers.....	66
2.4	Switching supplier .....	66
2.5	Retail prices .....	68
<b>VI .</b>	<b>Security of supply</b> .....	<b>69</b>
1	Electricity .....	69
1.1	The current situation .....	69
1.2	Infrastructure projects .....	73
2	Gas .....	74
2.1	The current situation .....	74
2.2	Infrastructure projects .....	74
<b>VII .</b>	<b>Public service related issues</b> .....	<b>78</b>
1	Summary of provisions applicable .....	78
1.1	for implementation of a labelling system .....	78
1.2	for application of criteria stipulated in appendix A of the directive .....	78
1.3	for management of vulnerable customers .....	79
2	Regulation of prices applied to end users .....	79
2.1	Electricity .....	80
2.2	Gas .....	80

## List of tables

TABLE NO. 1: GRID ACCESS TARIFFS

TABLE NO. 2: IMBALANCE PRICES

TABLE NO. 3: STRUCTURE OF THE FRENCH MARKET

TABLE NO. 4: COEFFICIENTS OF CORRELATIONS BETWEEN BASE SPOT PRICES IN FRANCE AND IN BORDER COUNTRIES

TABLE NO. 5: COEFFICIENTS OF CORRELATIONS BETWEEN BASE SPOT PRICES IN FRANCE AND IN OTHER COUNTRIES

TABLE NO. 6: BREAKDOWN OF EXCHANGES PER BORDER

TABLE NO. 7: ALTERNATIVE SUPPLIERS' MARKET SHARE (IN NUMBER OF SITES)

TABLE NO. 8: BILL AT REGULATED RETAIL TARIFFS OF ELECTRICITY AS AT 1 JULY 2007

TABLE NO. 9: TRANSPORTATION COSTS AS AT 1 JULY 2006

TABLE NO. 10: SUMMARY TABLE OF INFORMATION REQUESTED BY THE DG TREN

TABLE NO. 11: GAS IMPORTS AND PRODUCTION PER ZONE

TABLE NO. 12: ALTERNATIVE SUPPLIERS' MARKET SHARE (IN NUMBER OF SITES AS AT 1 APRIL 2007)

TABLE NO. 13: BILL AT REGULATED RETAIL TARIFFS APPLIED BY GAZ DE FRANCE AS AT 1 JULY 2007 (€/MWH)

TABLE NO. 14: ENERGY MIX IN FRANCE

TABLE NO. 15: IMPORT CAPACITIES PER ENTRY POINT

## List of figures

FIGURE NO. 1: ANNUAL TRENDS IN COSTS RELATED TO SYSTEM BALANCING

FIGURE NO. 2: SHARE IN UPWARD BALANCING ACTIVATED ON THE FRENCH BALANCING MECHANISM BY ORIGIN

FIGURE NO. 3: TRENDS IN NEGATIVE IMBALANCE SETTLEMENT PRICES AND POWERNEXT PRICES SINCE START-UP OF THE BALANCING MECHANISM

FIGURE NO.2: PROCEDURE FOR SWITCHING SUPPLIERS

FIGURE NO. 5: NATURAL GAS TRANSMISSION NETWORKS, LNG TERMINALS, UNDERGROUND STORAGE FACILITIES AND LOCAL DISTRIBUTION COMPANIES

FIGURE NO. 6: NUMBER OF TRANSACTIONS AND QUANTITIES EXCHANGED AT GAS EXCHANGE POINTS

FIGURE NO. 7: PROCEDURE FOR SWITCHING SUPPLIER

FIGURE NO. 8: PROJECTS ANNOUNCED IN FRANCE FOR POWER PLANTS GENERATING OVER 100 MW

FIGURE NO. 9: EUSKADOUR PROJECT

FIGURE NO. 10: REGULATED RETAIL TARIFFS FOR NATURAL GAS

## List of insets

**INSET NO. 1: STATE OF WORK PROGRESS IN THE CENTRE-SOUTH REGION (FRANCE-ITALY-GERMANY-AUSTRIA- SLOVENIA-GREECE)**

**INSET NO.2: STATE OF WORK PROGRESS IN THE CENTRE-WEST REGION (FRANCE-BELGIUM-THE NETHERLANDS-GERMANY-LUXEMBOURG)**

**INSET NO. 3: STATE OF WORK PROGRESS IN THE GREAT BRITAIN-FRANCE-IRELAND REGION**

**INSET NO. 4: IMPACTS OF THE DECISION OF 1 DECEMBER 2005**

**INSET NO. 5: ORGANISED MARKET COUPLING**

**INSET NO. 6: UNDER-USE OF INTERCONNECTION CAPACITIES REMAINING AVAILABLE ON D-1 IN 2006**

**INSET NO. 7: STATUS OF ELECTRICITY INTERCONNECTIONS BETWEEN FRANCE AND OTHER MEMBER STATES VIS-À-VIS THE GUIDELINES FOR CONGESTION MANAGEMENT**

**INSET NO. 8: SEGMENTATION OF ELIGIBLE CUSTOMERS**

**INSET NO. 9: SEGMENTATION OF ELIGIBLE CUSTOMERS AS AT 1 APRIL 2007**

## Message from the Chairman



The final formal stage to opening of electricity and gas markets has just been completed. Since 1 July 2007, consumers from most European Union Member States have had the right to choose their electricity and gas supplier.

The European Union's objective, in introducing competition in the electricity and gas sectors, is to create an internal energy market that reconciles competitiveness, security of supply, and sustainable development.

France has completed legislative transposition of the directives providing for complete opening of the electricity and gas markets. The law of 7 December 2006 made all consumers eligible as from 1 July 2007, provided for requisite technical and organisational adaptation on the part of operators, and reinforced the role played by the Commission de Régulation de l'Energie (CRE) by extending its competence.

In its newly consolidated position, CRE is working to ensure the success of this move to open electricity and gas markets to household customers. Its priority is to see that market operations enable consumers to exercise their freedom of choice in full awareness of the situation and without let or hindrance. This condition is a prerequisite for progressive development of a range of innovative commercial offers better tailored to individual needs. In order to achieve this, CRE, in collaboration with the Energy Mediator and the public authorities, has set up a website ([www.energie-info.fr](http://www.energie-info.fr)) devoted to the opening of the markets and directed at household consumers as well as a telephone information service which can be reached at the price of a local call.

Full opening of the markets assumes operator compliance with a number of requirements. CRE focuses on the deployment of robust, automated information systems by distribution system operators (DSOs), which will facilitate supplier switching. It checks effective implementation of DSO affiliation, demanding the same requirements of them in terms of independence as those already tried and tested for transmission system operators (TSOs).

Working together with the interested parties, CRE is looking at ways to improve on existing low voltage electricity meters. In an open market, meters should process information in such a way as to satisfy consumer needs, thereby helping to achieve energy efficiency objectives.

Experience acquired since opening the markets to non-household consumers in 2000 suggests that no one should expect any instant massive changeover to the free market, but rather a gradual shifting of custom. The technical challenge of opening up the market to household customers is nevertheless considerable. On 1 July 2007, the number of consumers able to choose their supplier soared from 4.7 million to 33.5 million for electricity, and from 680,000 to 12 million for gas.

The high concentration of French markets, which are largely dominated by incumbent suppliers, remains a concern. The situation benefits neither operators nor consumers. Coexistence of regulated tariffs – applied to all consumers without distinction – and market prices does not enable identification of clear prospects for competitive development of the

markets, all the more so because regulated tariffs are subject to legal uncertainty with the European Commission having embarked on litigation proceedings against France.

By eliminating a significant part of existing liquidity, the transitional regulated tariff for market adjustment (TaRTAM) in the electricity sector adversely affects French wholesale market operations. Therefore, despite its high level of consumption, France is unable to set a reference electricity price in Europe, unlike its neighbours in Germany.

Electricity prices are subject to numerous economic and regulatory uncertainties. Volatility of prices along with the rises seen since 2003 have raised a number of legitimate doubts. No hasty conclusions should be drawn, however. It was not market opening that caused prices to rise, but rather the increasingly difficult quest for balance between a limited peak and semi-base supply, penalised by the cost of environmental requirements and of oil products, and by growing demand.

The situation in the French gas market is altogether different. Convergence of procurement costs and regulated tariffs opens up interesting prospects for alternative operators. On the non-household market, the number of gas customers to have abandoned their incumbent supplier is proportionately higher than the number of electricity customers.

The European Commission considers that more effective and more transparent price formation mechanisms are necessary if consumers are to enjoy all the benefits offered by an open market. These would also furnish price signals reflecting needs for medium- and long-term investments in generation/production and grid/network infrastructures. CRE is working to ensure rapid implementation of wholesale market monitoring, a remit entrusted to the Commission by the provisions of the Law of 7 December 2006.

Electricity and gas transmission and distribution systems form the backbone of energy markets, and their proper operation conditions security of supply and exercise of competition.

In guidelines published on 10 January 2007, the European Commission highlighted the necessity of making system operator independence more effective by insisting on asset unbundling. Based on French experience feedback, CRE reckons that strengthened regulator surveillance of system operators, whoever their shareholders might be, could fulfil European Commission objectives.

The European power cut on 4 November 2006 highlighted the importance of proper transmission grid and cross-border interconnection operations for security of supply. The extent of the cut resulted from poor application of security rules and insufficient cooperation between European grid operators. In order to resolve such issues, European regulators recommend the setting up of legally restrictive rules for transmission system operators (TSOs), compliance with which would be monitored by themselves.

CRE pays special attention to the levels of investment RTE devotes to electricity interconnections, essential to the setting up of a European internal electricity market. While taking into account the problems inherent in administrative restrictions and regional environmental requirements, CRE would like to emphasise how inadequate these investments are.

France imports 98% of its gas consumption. Development of interconnections and setting up of new gas entry points throughout the French territory are indispensable for facilitating the

arrival of newcomers on the French market. CRE seeks to ensure that national network dimensioning matches increased domestic consumption, and that this is taken into account in its tariff proposals.

CRE plans to propose changes in the structure of upcoming tariffs for systems use, with a view to ensuring that regulation guarantees system development sufficient to the needs of genuinely competitive electricity and gas market operations. With increasingly accurate knowledge of operator costs and the experience acquired from application of the various tariffs proposed since it came into being, CRE has been giving much thought to the setting up of more incentive-based regulation. With this in place, operators would naturally feel more motivated to achieving and exceeding predetermined performance objectives, and therefore to revealing their levels of cost-effectiveness.

The ways in which the French electricity and gas markets are developing are largely the result of European guidelines, directives and regulations, which is why CRE is actively involved in works carried out by the European Commission Transport and Energy Directorate General, as well as in those conducted by the European Regulators Association. The approach, via major European regional markets (electricity and gas regional initiatives), of opening up to competition and standardisation of electricity and gas markets are among CRE's most pressing priorities.



### **Warning**

In accordance with article 32 of Law 2000-108 of 10 February 2000, transposing articles 23.1 and 25.1 of Directives 2003/54 and 2003/55, the Commission de régulation de l'énergie has just published its annual report.

The European Commission's Directorate-General for Energy would nonetheless like to obtain further information from national regulatory authorities. This report has therefore been sent to the DG TREN.

The Commission de régulation de l'énergie draws the DG TREN's attention to the fact that some of the information provided does not come exclusively under its jurisdiction. Accordingly, with regard to public service (article 3.9 of Directive 2003/54 and 3.6 of Directive 2003/55) and to security of supply (article 4 of Directive 2003/54 and article 5 of Directive 2003/55), the Commission de régulation de l'énergie shares its remit with the Ministers for the Economy and Energy.

### **Foreword**

This report is intended to be an updated version of the DG TREN report published last year, and its structure has therefore been kept the same. For faster reading however, the updated paragraphs have been highlighted in yellow.

# I. Presentation of the Commission de régulation de l'énergie

## 1 Organisation of CRE<sup>1</sup> and its departments <sup>2</sup>

### 1.1 The Commission



Eric DYEVRE    Jacques-André TROESCH    Emmanuel RODRIGUEZ    Bruno LECHEVIN    Jean-Paul AGHETTI  
Michel LAPEYRE    **Philippe de LADOUCETTE**    Maurice MEDA    Pascal LOROT

CRE's composition was changed by the Law of 7 December 2006. It is now composed of a College of Commissioners with 9 members, a Dispute Settlement and Sanctions Committee (CoRDIS), and departments run by a Managing Director under the authority of the Chairman.

The members of the College and the Committee are appointed for 6 years on the basis of their qualifications in the legal, economic and technical fields. They cannot be dismissed and their mandate is not renewable.

---

<sup>1</sup> Article 28 of the Law of 10 February 2000.

<sup>2</sup> Article 30 of the Law of 10 February 2000.

## A. COMPOSITION OF THE COLLEGE OF COMMISSIONERS

The College consists of:

- the Chairman of the College, appointed by decree following an opinion given by Parliamentary Committees competent in energy matters;
- two Vice-Chairmen, appointed by the President of the French National Assembly and the President of the French Senate;
- two members appointed respectively by the President of the French National Assembly and the President of the French Senate;
- a member appointed by the Chairman of the Economic and Social Council;
- a member appointed by decree;
- two representatives of electricity and natural gas consumers, appointed by decree.

## B. THE DISPUTE SETTLEMENT AND SANCTIONS COMMITTEE (CoRDiS)

A Dispute Settlement and Sanctions Committee (CoRDiS) was created by the Law of 7 December 2006. It is distinct from the College of Commissioners and exercises CRE's competences in matters of dispute settlement and sanctions (articles 38 and 40 of the Law of 10 February 2000). It comprises two Councillors of State appointed by the Vice-President of the Conseil d'Etat) and two Councillors of the Supreme Court of Appeal, appointed by the First President of the Supreme Court of Appeal, all four appointed for 6 years. The Chairman of the Committee is appointed from among the members by decree.

The Chairman and Vice-Chairmen of the College play a full-time role whereas the other College and Committee members are paid per sitting under terms laid down by Decree of the Conseil d'Etat.

The office of Chairman and Vice-Chairman is incompatible with any other professional activity, elected term in office at *communal, départemental*, regional, national or European level, public employment, any direct or indirect holding of interests in a company within the energy sector, or sitting on the Economic and Social Council.

The role of other College and Committee members is incompatible with any other professional activity, or elected term in office at *communal, départemental*, regional, national or European level.

College members are barred from sitting on the Dispute Settlement and Sanctions Committee.

College and Committee members may not, on a personal level, take any public stance on subjects coming under CRE's jurisdiction.

Any Commission member exercising an activity or holding a mandate, position or interests that are incompatible with his remit shall automatically be declared resigned, after consultation with the Commission, by order of the Minister for Energy.

College members can have their role terminated in the case of serious neglect of duty by Cabinet Decree on proposal from the Chairman of a Parliamentary Committee competent in energy matters or on proposal from the College.

## 1.2 CRE's departments

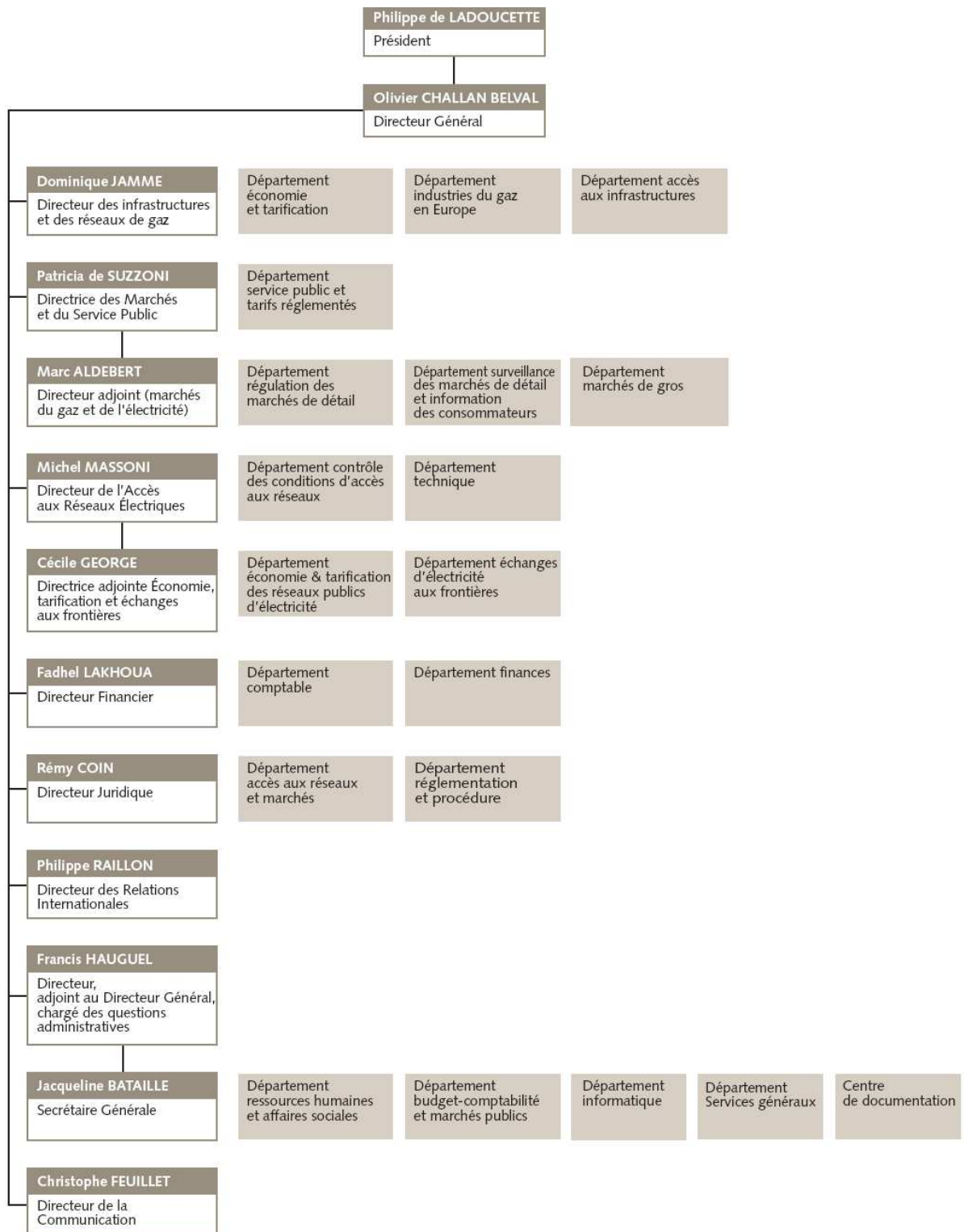
The Commission de régulation de l'énergie is composed of departments placed under the Chairman's authority. CRE fixes an internal regulation<sup>3</sup> which is published in the *Journal officiel* of the French Republic. CRE can employ civil servants in a post or on secondment under the same conditions as the Department of Energy or recruit staff under contract.

CRE's departments are organised in divisions, whose structure has been slightly modified since July 2005:

- operational (electricity public service and markets, access to electricity grids, and infrastructures and gas networks);
- functional (financial, legal and international);
- support services (secretariat general and communication).

---

<sup>3</sup> Article 30 of the Law of 10 February 2000.



## **2 Main missions**

Under various amended laws, mainly Law 2000-108 of 10 February 2000 and Law 2003-8 of 3 January 2003, CRE is entrusted with the following main missions:

- ensuring proper operation of the electricity and natural gas markets;
- guaranteeing access to public electricity grids, natural gas facilities, LNG facilities and natural gas storage facilities;
- ensuring the proper operation and development of public electricity grids, natural gas facilities and LNG facilities;
- guaranteeing the independence of electricity and natural gas transmission and distribution system operators;
- guaranteeing the financing of public electricity service charges;
- drafting and applying specifications for calls for tender of new generation capacities within the framework of pluri-annual electricity generation planning;
- monitoring transactions on wholesale markets whether they are organised or not and cross-border exchanges (article 5 of Law 2006-1537 of 7 December 2006).

## **3 Main powers**

Under the laws of 10 February 2000, 3 January 2003, 9 August 2004 and 7 December 2006, CRE is competent to:

- propose tariffs for access to public electricity and natural gas systems and to LNG facilities;
- approve the annual investment programme of the electricity transmission system operator and now also for gas (article 12-II of the Law of 7 December 2006)
- settle disputes between users and operators of public electricity transmission and distribution grids, between operators and users of natural gas transmission and distribution facilities and between operators and users of LNG facilities and natural gas storage systems: this procedure is limited to eligible customers;
- set the technical and financial terms for settling a dispute;
- order the protective measures necessary to ensure continuity of system operations in particular;
- take sanctions in the event of violation of legislative or regulatory rules or rules enacted by CRE, related in particular to access to or use of public electricity grids, natural gas transmission and distribution facilities or LNG facilities, to principles of account

---

<sup>4</sup> Article 38 of the law of 10 February 2000.

unbundling and to rules governing provision of accounts and in the event of non-compliance with dispute settlement decisions;

- conduct surveys and gather all the necessary information for fulfilling its remit;
- give an opinion on all draft regulations related to access to or use of public electricity grids, natural gas facilities and LNG facilities, on regulated tariffs proposed or on electricity purchase terms within the framework of purchase obligation;
- make regulatory decisions in the electricity and gas sector in various fields:
  - roles of public electricity and gas transmission and distribution system operators with regard to grid development and operation;
  - roles of operators of LNG facilities and of natural gas underground storage facilities;
  - terms for connection to public electricity and gas transmission and distribution systems;
  - terms for grid and network access and use;
  - implementation and adjustment of demand, supply and consumption programmes and financial compensation of imbalances;
  - conclusion of purchase contracts and protocols by public transmission and distribution system operators;
  - Scope of each unbundled accounting activity, accounting allocation rules applied to obtain unbundled accounts and principles determining the financial relations between these activities;
- assess the amount of charges assignable to public electricity service roles.

#### **4 Guarantee of independence**

The independence of CRE members is ensured by the statutes and method of appointing its members.

Its budget is fixed by the College upon proposal from the Managing Director. Its expenditure is not subject to control, with the exception of a posteriori checking carried out by the Cour des comptes. Whenever applicable, CRE is paid for services rendered.

The Chairman of the Commission de régulation de l'énergie reports on CRE's activities to the standing Parliamentary Committees, competent in the energy sector, at their request.

The Chairman of the Commission is authorised to take legal action to fulfil CRE's remit.

#### **5 Shared mission**

Directives 2003/54/EC and 2003/55/EC determine the minimum scope of mission of national regulatory authorities in the electricity and gas sectors, without dictating the administrative organisation of Member States. This remit may therefore be granted to one or more separate authorities. In France, CRE thus shares its role with three other authorities.

### 5.1 with the Ministers for the Economy and Energy

The Commission de régulation de l'énergie shares part of its remit with the Ministers for the Economy and Energy.

For example, for setting tariffs for use of public electricity and gas systems, article 4 of the amended Law of 10 February 2000 stipulates that "*the justified tariff proposals for use of transmission and distribution systems along with justified tariff proposals for related services provided under system operator monopoly should be sent by the Commission de régulation de l'énergie to the Ministers for the Economy and Energy. Ministerial approval is considered as granted, unless there is opposition from one of the Ministers within two months following receipt of the Commission's proposals. The tariffs are published in the Journal officiel by the Ministers for the Economy and Energy*".

### 5.2 with the Conseil de la concurrence

Article 39 of the law of 10 February 2000 provides for cooperative mechanisms between CRE and the Conseil de la concurrence: "The Chairman of the Commission de régulation de l'énergie refers to the Conseil de la concurrence any abuse of dominant positions and practices hindering the free exercise of competition of which he is aware in the electricity or natural gas sectors, particularly if he considers that these practices are banned by articles L. 420-1 and L.420-2 of the code of commerce". This referral may be made as part of an emergency procedure, in compliance with article L. 464-1 of the code of commerce. He may also refer any other issue coming under his remit for opinion from the Conseil de la concurrence.

The Conseil de la concurrence notifies CRE of any referral coming under CRE's remit and may submit any issue related to the electricity and natural gas sectors to CRE for opinion.

However, in exercising its remit to guarantee third-party access to networks, CRE may terminate any anti-competitive practices if they are based on refusal of network access.

### 5.3 with the Financial Market Authorities

CRE monitors transactions carried out on the wholesale markets, whether they are organised or not, as well as cross-border exchanges. Powernext, an organised market of electricity exchanges, is therefore monitored by both the Commission de régulation de l'énergie and the Financial Market Authorities.

\*  
\* \*



## II . Regulation of the electricity market

*in application of article 23 - § 1, points a) to g) of Directive 2003-54-EC*

In accordance with Directive 2003/54/EC, all non-household customers in France have been eligible since 1 July 2004, accounting for 68% of the electricity market, i.e. 295 TWh. The next step, which will see the electricity and gas markets opening up fully to all consumers, has been set by the Directive for 1 July 2007. In France, the open electricity market will then comprise 33.5 million consumers, making it the second largest market in Europe. Building on what was done for the opening of the markets to non-household customers on 1 July 2004, CRE has been preparing for this deadline and has been giving consideration to the procedures, information systems, methods for informing and protecting consumers and to any other measure to be taken, in consultation with all the parties concerned.

### 1 Cross-border energy exchanges

Facilitating development of cross-border exchanges is a requisite condition for the setting up of an integrated, competitive European electricity market likely to provide end consumers with tangible benefits. In order to achieve this, two types of complementary measures must be taken:

- development of electricity transmission grids contributing to increased interconnection capacities;
- optimisation of the use of existing interconnection capacities.

#### 1.1 Development of the Electricity Regional Initiative

The aim is to encourage grid operators to better coordinate their grid calculation procedures, through continuing information exchange and standardisation of security criteria, so that congestion management better reflects the reality of physical grid flows. Implementation of these three major projects requires close cooperation between regulatory authorities. The launch of Electricity Regional Initiative by ERGEG provides excellent opportunities for progress in resolving all these issues.

As shown in insets 1, 2 and 3, the Regional Energy Market Projects (REMs) in which CRE participates do not all progress at the same pace on all these issues, a fact often attributable to differences in market design, either between regions or within the same region. As emphasised by the European Commission in its Communication of 10 January 2007 on prospects for the internal electricity and gas market, such differences in market design may constitute significant obstacles to development of exchanges. CRE, which takes part in four of the seven REMs, ensures overall consistency between the regions concerned. Work carried out in the context of the ERGEG work programme by the Electricity Regional Initiative Working Group, co-directed by CRE, and the Electricity Market Design Working Group also aims to ensure overall consistency within the Regional Initiative and define a market design to which national markets should aspire.

**Inset no. 1: State of work progress in the Central-South region (France-Italy-Germany-Austria-Slovenia-Greece)**

Work carried out within the framework of this region has led to significant advances in coordination and standardisation of capacity allocation methods. Since 1 January 2007, congestion at the France-Italy, Austria-Italy and Greece-Italy interconnections has been managed by a coordinated explicit auction mechanism. The setting up of this coordinated allocation mechanism marks the first stage in a regional action plan focusing on:

- extension and harmonisation of mechanisms in place throughout the region;
- changeover to an implicit allocation method throughout the region
- setting up of intraday exchanges.

**Inset no.2: State of work progress in the Central-West region (France-Belgium-the Netherlands-Germany-Luxembourg)**

On 12 February 2007, in application of roadmaps and after consultation with market players and grid operators, regulators in the Central-West region published an ambitious action plan for integration of electricity markets in the region. The plan identifies priorities for the region, and proposes concrete action along with an implementation schedule for each priority.

As regards development of electricity transmission grids, priorities are:

- drafting of a regional incentive scheme by November 2007, seeking to increase volumes of interconnection capacities and their use;
- drafting of a regional investment plan for the electricity transmission grid by the end of 2007.

As regards optimisation of use of existing interconnection capacities, priorities are:

- publication of a summary document by the regulators, on 1 December 2007, for assessment of progress in transparency and standardisation and, on 1 January 2008, of explicit auction rules for periodic products throughout the region;
- extension of the solution of organised market coupling on D-1 to Germany and to other regions during 2008;
- setting up of a capacity hub for continuous intraday exchanges throughout the region in 2008;
- setting up of balancing exchanges throughout the region in 2009;
- publication by the region's grid operators of a detailed report on the state of compliance of capacity calculation methods with the Guidelines for Congestion Management.

### **Inset no. 3: State of work progress in the Great Britain-France-Ireland region**

Enforcement of the 'Guidelines for Congestion Management' in December 2006 resulted in a consensus on improvements to be made to allocation rules at the France-England interconnection. Two types of improvements have been identified:

- obligatory improvements resulting from alignment of the rules in force at the interconnection with the Guidelines:
  - setting up of a firm nomination deadline for periodic products and daily products, so as to enable grid operators to reallocate unused capacities (based on the so-called 'use-it-or-lose-it' (UIOLI) or 'use-it-or-sell-it' (UIOSI) rules and to carry out netting of nominated programmes,
  - setting up of an intraday allocation mechanism,
  - abolition of the reserve price,
  - optimisation of the degree of firmness of allocated capacities and nominated programmes;
- improvements resulting from the need to harmonise allocation rules at the France-England interconnection with rules in force at other interconnections in the Continental European plate:
  - introduction of hourly products at the France-England interconnection,
  - replacement of the current 'pay as bid' rule for invoicing capacity at the France-England interconnection with a rule of invoicing at the marginal price,
  - clarification and simplification of the rule for compensation in the event of reduction in capacities.

A schedule for implementation by grid operators has been agreed upon by all parties concerned, with priority given to alignment of allocation rules at the France-England interconnection with the Guidelines.

In addition, a taskforce has been set up to develop balancing exchanges within the region, based on a TSO-TSO model.

## **1.2 Development of electricity transmission grids and optimised use of interconnection capacities**

### **A. TOWARDS A JOINT REGULATORY FRAMEWORK**

Interconnection capacities of electricity transmission grids were originally developed to ensure mutual assistance for vertically integrated electricity undertakings, often monopolies, and enable long-term contracts to be drawn up. They are not always appropriate to the increased cross-border electricity exchanges required by the setting up of a single market and by freedom to choose a supplier based in any Member State. As concerns difficulties encountered by grid operators with regard to construction of new transmission lines, the lack of certain interconnection capacities is likely to be a long-lasting problem.

Both ERGEG, in its public consultation document published on 5 October 2006, and the European Commission, in its Communication of 10 January 2007 on prospects for the internal electricity and gas market insist on the need to set up a common, stable regulatory framework in Europe for cross-border grid infrastructures.

The framework presupposes streamlining and simplification of national administrative procedures authorising construction of new transmission lines, along with the setting up of a structure for assessing European cross-border investment projects. Without waiting for the setting up of such a regulatory framework, a significant coordination and transparency initiative must be undertaken to facilitate development of cross-border grid infrastructures.

Thus regulators in the Central-West Region of the Regional Initiative have asked grid operators to draw up and publish a regional investment plan to assess congestion zones and the investment initiatives required to ensure that the European transmission grid can meet current and future supply and demand needs. The regional plan will facilitate compliance of Member States concerned with obligations contained in article 7 of the European Directive of 18 January 2006 bearing on measures aimed at guaranteeing security of electricity supply and investments in infrastructures. The regulators are planning on defining and proposing a financing scheme and incentives appropriate to such investments.

#### **B. 2.2.2. INTERCONNECTION CONGESTION MANAGEMENT**

Alongside long-term action to be taken to foster development of interconnection capacities, CRE wanted the use of existing capacities to be optimised, by implementation of effective, transparent and standardised rules for allocating interconnection capacities. With this aim in mind, CRE's decision of 1 December 2005, announcing publication of roadmaps, constituted an important turning point in the management of French electricity interconnections: with, since 1 January 2006:

- extension of explicit auction mechanisms to all French interconnections with Member States of the European Union;
- abolition of the right of priority access for original contracts at interconnections with Member States, taking into account the decision of the Court of Justice of the European Communities, C-17/03 of 7 June 2005.

The annual report on cross-border exchanges in 2006, published by CRE on 22 May 2007, shows how much progress has been made as a result of this decision, both in terms of access to interconnections, now open to a greater number of parties, and of more efficient use of available interconnection capacities (see inset 4).

#### Inset no. 4: Impacts of the decision of 1 December 2005

- Opening up to competition: concentration indexes of capacity markets (table below) show a general increase in competition at the borders concerned by CRE's decision of 1 December 2005.

		2005		2006	
		<i>Number of players</i>	<i>Leading player's share</i>	<i>Number of players</i>	<i>Leading player's share</i>
<b>Germany</b>	Export	24	90 %	39	23 %
	Import	27	28 %	36	20 %
<b>Belgium</b>	Export	24	58 %	26	26 %
	Import	13	35 %	21	35 %
<b>Spain</b>	Export	27	55 %	22	33 %
	Import	26	20 %	23	30 %
<b>Italy</b>	Export	22	67 %	23	47 %

- Better use of interconnection capacities: in 2006, cross-border flows were more consistent with market price differentials than in 2005. The 2006 share, during a year in which net export flow at all borders was in the direction of the organised market price differential, rose compared to 2005 (table below).

	2005	2006
<b>Germany</b>	63%	69%
<b>Belgium</b> Belgium (since market coupling)	-	96%
<b>Spain</b>	77%	82%
<b>Italy</b>	77%	89%

In implementation of the roadmaps drawn up and published in collaboration with the Austrian, German, Belgian and Dutch regulators, CRE saw other significant improvements in mechanisms for interconnection congestion management, with:

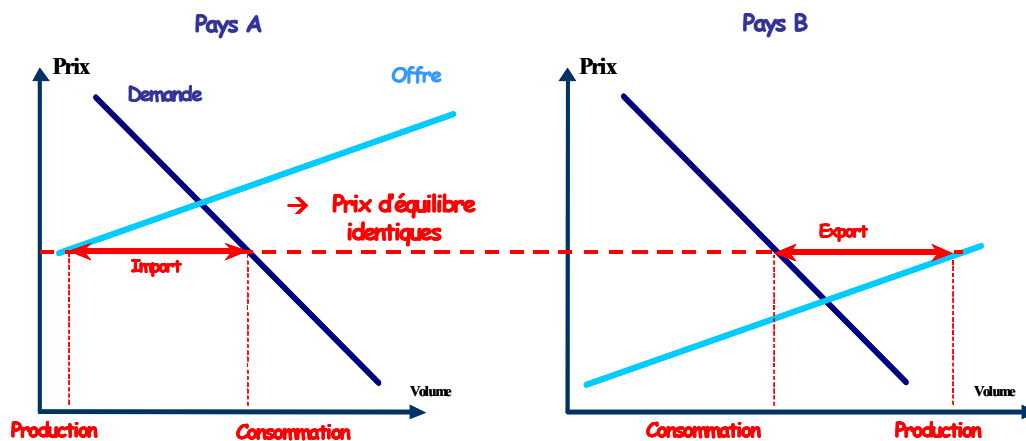
- setting up of a secondary capacity market at the France-Belgium, France-Germany and France-Italy interconnections as from 1 January 2007;
- coupling of the French, Belgian and Dutch organised markets (inset 5) since 21 November 2006;
- implementation of intraday exchanges with Belgium on 1 June 2007.

### Inset no. 5: Organised market coupling

Organised market coupling consists of using hourly price references on organised markets in order to optimise use of interconnection capacities still available the day ahead. This mechanism enables generation capacity for coupled markets and interconnection capacities to be more efficiently used, and guarantees that all opportunities of arbitrage between coupled markets are well exploited:

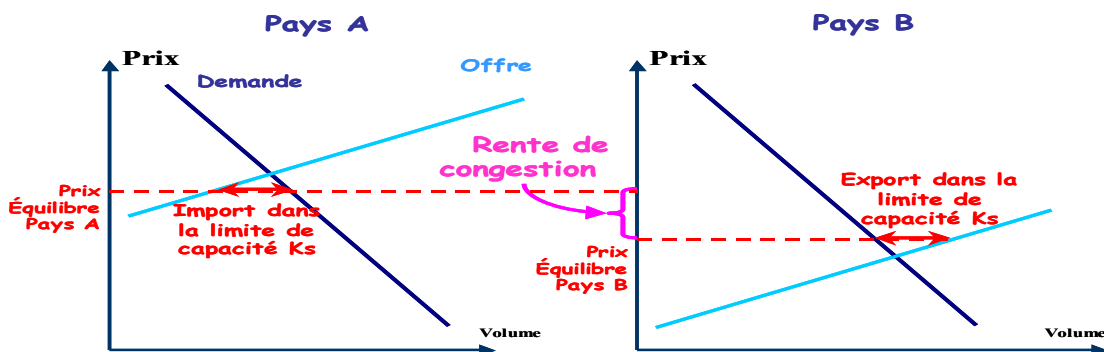
- either where interconnection capacities are sufficient up to market price convergence (case 1, below, with two coupled markets);

Cas 1 : Capacité d'interconnexion suffisante pour atteindre l'équilibre de prix entre les deux marchés (sans congestion) :



- or where interconnection capacities are limited up to interconnection capacity saturation (case 2, below, with two coupled markets).

Cas 2 : Capacité d'interconnexion limitée (congestion) :



Market coupling operations presuppose extensive coordination between:

- grid operators, so as to guarantee the level of capacities announced to organised markets for the day ahead;
- organised markets, so as to standardise market rules for good use of capacities available;
- grid operators and organised markets, so as to guarantee efficient management of the mechanism and encourage its extension to other countries.

It is still too early to fully assess the impact such progress is having on the development of border exchanges. However, the introduction of market coupling has already increased levels of capacity use at the France-Belgian interconnection and price convergence between the markets. On the other hand, under-use observed at other continental interconnections during 2006 shows that there is still progress to be made to ensure better use of existing interconnection capacities (inset 6).

**Inset no. 6: Under-use of interconnection capacities remaining available on D-1 in 2006**

The table below shows capacities underused at the Belgian, German, Italian and Spanish borders. These correspond to the difference between the capacity available in this direction and the net flow transiting on the interconnection. The mean calculated here corresponds to situations in which the organised market price differential is beneficial by at least 2 €/MWh for use of the interconnection in this direction. The corresponding company loss is the product of underused capacity and the price differential. The calculation therefore does not take the effect of market resilience into account.

	Average underused export capacity (MW)	Average underused import capacity (MW)	Estimate of company loss (M€)
Germany	925	2 125	113
Belgium (market coupling)	0	0	0
Spain	201	282	21
Italy	104	-	22

CRE together with regulators in neighbouring countries, has identified two projects:

**a. ENSURING COMPLIANCE OF MECHANISMS FOR CONGESTION MANAGEMENT AT INTERCONNECTIONS WITH REQUIREMENTS CONTAINED IN EUROPEAN REGULATORY TEXTS**

Work on congestion management embarked upon by European regulators comes within the framework of the European Regulation of 26 June 2003 governing conditions of grid access for cross-border electricity exchanges, and of the 'Guidelines on the Management and Allocation of Available Transfer Capacity of Interconnections between National Systems' adopted on 9 November 2006, and amending the appendix to this regulation.

The requirements resulting from these two documents must be fulfilled by transmission system operators. An assessment of how far rules governing French interconnections comply with European regulation requirements and Guidelines for Congestion Management (inset 7) highlights the points on which system operators will have to pay particular attention.

**b. CONTINUING HARMONISATION AND IMPROVEMENT OF METHODS FOR INTERCONNECTION CONGESTION MANAGEMENT**

In 2006, CRE took part in developing the following actions:

- the setting up of a single TSO-market player interface for allocation and nomination of periodic products, the main objective of this being to facilitate access of market players to interconnections;
- extension of the solution of organised market coupling on D-1, the main objective here being to optimise use of capacities available on D-1 and, in the medium term, to foster harmonisation of the role and status of organised markets in Europe;
- the setting up of a capacity hub on an intraday timescale, enabling market players to balance their portfolios continuously and reduce grid balancing needs;
- Development of balancing energy exchanges so as to reduce grid balancing costs, with introduction of greater competition close to real time, while guaranteeing grid security.



**Inset no. 7: Status of electricity interconnections between France and other Member States vis-à-vis the Guidelines for Congestion Management**

The table below presents the main points of non-conformance of interconnection management rules with the Guidelines for Congestion Management (appended to European Regulation 1228/2003 of 26 June 2003).

	<b>France – England</b>	<b>France - Belgium</b>	<b>France – Germany</b>	<b>France – Spain</b>	<b>France – Italy</b>
<b>Intraday allocation mechanism (article 1.9)</b>	<b>No</b> , intraday exchanges are carried out using daily nomination adjustments only	Yes, since June 2007		Yes	<b>No</b> , no intraday exchange possible between France and Italy
<b>Optimisation of the degree of (financial) firmness of capacities (article 2.4)</b>	<b>No</b> , reduction in capacity is not systematically compensated for	The rule for compensation in the event of reduction in capacities (excluding Acts of God) stipulates compensation of 110% of the price paid. The principle of compensation based on market price differential is currently under study.			
<b>Breakdown of capacities submitted to regulators (article 2.6)</b>	Structure of capacities according to timescales for 2006 was tacitly renewed in 2007	Yes, but submitted after initial auctions for 2007	Structure of capacities according to timescales for 2006 was tacitly renewed in 2007		
<b>Non-discrimination between OTC and organised markets (article 2.7)</b>		Yes		no	Yes
<b>Abolition of the reserve price, (article 2.9)</b>	In practice yes, since the reserve price is set at zero; but the rules are yet to be amended accordingly			Yes	
<b>Firm nomination of programmes and Use-It-or-Lose-It (articles 2.5 and 2.11)</b>	<b>No</b> , periodic capacities are definitively nominated at the same time as daily capacities			Yes	
<b>Netting of nominated programmes (article 4.2)</b>	<b>No</b> , for the same reason as above	<b>No</b> , netting is not carried out when periodic capacities are nominated before daily allocation		Yes	

<b>Existence of secondary markets (article 2.12)</b>	Yes	no	Yes
<b>TSO coordination at regional level (article 3.5):</b>			
<b>- joint transmission model</b>	<b>No</b> , TSOs use their own grid model		
<b>- Coordinated allocation</b>	<b>No</b> , allocation is only coordinated bilaterally	<b>No</b> , intraday allocation is not even coordinated bilaterally	<b>No</b> , allocation is only coordinated bilaterally
<b>No limitation of interconnection capacity to resolve internal congestion (article 1.7)</b>	Compliance under study		
<b>Transparency (article 5)</b>	<b>Partial</b>		
<b>Use of congestion revenue (art. 6.6 of the regulation)</b>	<ul style="list-style-type: none"> <li>On the French side, auction revenue is deducted from costs to be covered by the tariff for grid use</li> <li>On the English side, conformance of use of revenue is currently under study</li> </ul>	Yes on both sides of the interconnection, auction revenue is deducted from costs to be covered by the tariff for grid use.	

## C. OPERATION OF THE EUROPEAN INTERCONNECTED ELECTRICITY GRID AND SECURITY OF SUPPLY

On 4 November 2006, a major incident on the very high voltage interconnected European grid deprived fifteen million inhabitants in Western Europe – including five million in France – of electricity for almost two hours. The following day, given the consequences observed in France, CRE decided to carry out its own enquiry to inform French consumers of the event timeline and the exact causes of the power cut. The report on the CRE enquiry was published on 8 February 2007.

At the same time, given the European scale of the incident, ERGEG conducted an enquiry at CRE's initiative, the final report on which was published on 6 February 2007.

### a. REMINDER OF THE FACTS

The power cut was caused by an incident on the very high voltage line in Northern Germany. Due to inappropriate corrective action taken by the German transmission system operator E.ON Netz, overload protections on the line were disconnected from the grid. A knock-on effect caused disconnection of fifteen very high voltage lines across Europe, due to successive load slow downs and resulting in three zones being separated from the continental European interconnected electricity grid.

Separation from the grid caused instantaneous imbalance between electricity generation and consumption in each zone. In France and the entire West region, the imbalance lowered the frequency from 50 to 49 Hz. In compliance with the defence plan for such situations, automatic selective load shedding of part of the consumption was necessary to prevent blackout. In France, triggering of this defence plan resulted in load shedding of almost 6300 MW of consumption at 10.10 pm, unevenly spread throughout continental metropolitan *départements*. Interruptions in electricity supply lasted as long as it took European transmission system operators to obtain start-up of new means of generation and reinstate acceptable conditions for electricity system operation, supply to French consumers affected by the cut being resumed between 10.30 and 11.10 pm. Just before 11.00 pm, the transmission system operators concerned were able to reenergise disconnected lines and restore the European interconnected grid.

### b. CAUSES OF THE POWER CUT

The major causes of the power cut identified in the enquiry reports are:

- operations inappropriate to the actual electricity transmission grid situation, carried out by the German TSO, E.ON Netz;
- existence of disparities between European transmission system operators in the monitoring of grid operation safety levels (especially as regards application of the 'N-1' security rule);
- lack of coordination between the same system operators for real-time management of trends in flows.

This situation resulted from the existence of technical security rules drawn up and applied, on a purely voluntary basis, by TSOs in Europe, belonging to the Union for the Coordination of Transmission of Electricity (UCTE) – rules that were not legally binding, imprecise, and subject to interpretation (the 'N-1' security rule for example), as well as being incomplete, in particular as regards coordination between TSOs for real-time management of trends in flows.

Furthermore, the consequences of the 2006 power cut were aggravated by the behaviour of all decentralised means of generation, marked in most European countries by the random nature of disconnections and reconnections of facilities, unforeseeably contributing to increasing imbalance between generation and consumption.

At national level, CRE observed in its report published on 8 February 2007 that the French electricity system did much to help limit the consequences of the European electricity system power cut. Some of the rules applied by the French transmission system operator RTE could be usefully extended to Europe as a whole. A number of inadequacies were observed in the implementation of palliative emergency measures, resulting in CRE recommending that grid operators:

- should learn all they can from feedback on load shedding system operations, so as to limit malfunctions in the future;
- contribute equally to maintaining the balance between generation and consumption when load shedding is carried out.

## 2 Regulation of access to transmission and distribution grids

In France, there is one transmission system operator, RTE, a major distribution system operator (EDF Réseau Distribution), accounting for 95% of electricity distribution and around 160 local distribution companies (LDCs).

### 2.1 Grid access tariffs

CRE proposes grid access tariffs to the government, which may only accept or refuse them, without being able to modify them. Under the Law of 13 July 2005, amending article 4 of the Law of 10 February 2000 governing CRE's remit as regards pricing, CRE's proposal is applied two months after being transmitted to the Ministers for the Economy and for Energy, unless one of the Ministers voices their opposition within this period of time.

#### A. CURRENT GRID ACCESS TARIFF

The current grid access tariff came into force on 1 January 2006 and resulted from the decision of 23 September 2005 (cf. see table No 1 below). Its planned period of application is around two years. Average fees for grid access are expressed exclusive of tax and applicable deductions.

Tariffs for the use of public electricity grids currently in force are presented in the following table:

**TABLE NO. 1: GRID ACCESS TARIFFS**

Average fees for grid access	
Dc*	41.9 €/MWh
Ib*	40.2 €/MWh
Ig*	12.6 €/MWh

(\*) Eurostat classification:

Dc: Households: consumers with an annual consumption of 3500 kWh.

Ib: Commercial concern with an annual consumption of 50 MWh and maximum rated power of 50 kW.

Ig: industrial company with an annual consumption of 24 GWh and maximum rated power of 4000 kW.

<sup>5</sup> Excluding tariff contribution to electricity transmission and distribution services set by [decree 2005-123](#) of 14 February 2005 and Ministerial Order of 29 December 2005.

CRE sets the tariff structure as well as their level. Experience feedback on application of the initial pricing rules highlighted the need to improve transparency of the tariff for users. In this regard, the tariff, applicable since 1 January 2006, clearly distinguishes the components of contract management, metering and those related to the use of grid infrastructures, each one corresponding to one of the grid operator's specialised activities. With the same aim of improving information provided to grid users, CRE has deemed it necessary to facilitate simulation of the calculation of fresh tariffs and the choice of those most suited to their situation. For this purpose, CRE has put a grid tariff calculator on its website ([http://www.cre.fr/fr/acces\\_aux\\_reseaux/reseaux\\_publics\\_d\\_electricite/calculatrice\\_des\\_tarifs](http://www.cre.fr/fr/acces_aux_reseaux/reseaux_publics_d_electricite/calculatrice_des_tarifs)).

## B. LEVEL OF GRID OPERATOR COSTS

In order to draw up its latest pricing proposal, CRE based itself on the findings of audits conducted on EDF's unbundled accounts for the financial years 2000 and 2002, and on the accounts for 2003. Moreover, the tariff proposal takes into account changes in sector organisation when the non-household segment was opened up to competition on 1 July 2004:

- 20% of customer relation management costs borne by grid operators, with the remainder paid for by suppliers who have signed a "single contract";
- Possibility offered to users of requesting installation of metering systems better suited to their needs and owning their metering device;
- Cover of costs related to the setting up of balancing responsible entity and profiling mechanisms for users with a connection point;
- Billing by public grid operators, in keeping with a public price band, which is transparent and applicable without discrimination, of additional services, whose costs were previously partially included in costs covered by regulated tariffs, without the legal status of these services being clearly defined.

The tariffs also take into account changes made by the European Parliament and Council Regulation of 26 June 2003 and the Law of 9 August 2004. These involve assets included in the transmission and distribution scopes, the amount of pension costs borne by grid operators and revenue from the congestion management mechanisms at international interconnections. Revenue from grid capacity auctions at international interconnections lowers the level of transmission tariffs to the benefit of all users.

## C. BALANCE OF REVENUES AND EXPENSES

Setting the tariff level takes into account operating and capital costs as well as revenue forecast for each regulated activity of grid operators. For this purpose, CRE assessed the forecast revenues and expenses of the public transmission grid for the period 2006 to 2007. However, only the year 2006 was the subject of forecasts for the public distribution grids. This method was adopted due to modifications to organisation and to operating modes in 2007 when the supply of household customers is open to competition.

Capital costs comprise depreciations of and return on the regulated asset base.

## D. RETURN ON ASSETS

For transmission, the value of RTE's regulated asset base corresponds to the net book value of its assets as at 1 January of the year reduced by investment grants for the financial year. **Its average amount for 2006-2007 is 10,937 M€.** For distribution, the regulated asset base reflects the book value of franchised assets and takes into account particularities related to

the existence of public distribution franchise schemes. Its amount as at 1 January 2006 was 26 324 M€. It is used as the basis for return on assets for the duration of the tariff currently in force.

The method of calculating the rate of return on the asset base is based on weighted average cost of capital (WACC). For the duration of tariff validity it was set at a nominal pre-tax rate of 7.25% for RTE and ERD, against 6.5% for the previous period.

#### **E. REQUESTED PRODUCTIVITY GAINS**

In compliance with article 4 of the regulation of 26 June 2003, CRE wishes to incorporate costs *"corresponding to those of an efficient grid operator"*. CRE therefore asked grid operators to make productivity gains during the period of application of the proposed pricing rules. These productivity gains take the form of a general reduction of 3% in total forecast costs proposed by grid operators. The cost assessment basis used to calculate this general reduction is defined as the sum of personnel costs and external consumption. Capital costs resulting from investments are therefore not concerned.

#### **F. A NEW EXPENSES AND REVENUES CLAWBACK ACCOUNT (CRCP)**

Another innovation of the last tariff proposal is the application of a non-accounted fiduciary account, called the Expenses and Revenues Clawback Account (CRCP). Its objective is to incorporate uncertainty surrounding certain categories of revenues and expenses that are out of public grid operators' control. CRE considered that costs related to compensation for losses on public electricity grids, income related to congestion management mechanisms at interconnections of the transmission grid with neighbouring countries and revenues from additional services are difficult for the system operators to control and forecast, thus justifying their incorporation in the expenses and revenues clawback account. Furthermore, capital costs taken into account in the tariff reflect investments made in application of investment procedures and regulations applicable to public transmission and distribution grids. These capital costs are therefore eligible for inclusion in the expenses and revenues clawback account for the part not forecast by CRE under depreciations of and return on the regulated asset base.

### **2.2 The quality of service of electricity grids**

#### **A. QUALITY OF DISTRIBUTION GRIDS**

Since December 2003, CRE has drawn up an activity report containing a set of indicators to be periodically filled in by grid operators. Given the specific problems related to the bulk of information to be processed, the priority was given to work carried out with EDF Réseau Distribution, the main French DSO. The content of the activity report was defined in October 2005 and the monitoring indicators were broken down into five topics:

- Knowledge of distribution assets including description of grid and customer status and physical development of grid infrastructures;
- Supply continuity and quality of voltage wave;
- Quality of distributor service, including connection conditions, routine management of contracts and commitments related to the quality approach and monitoring of metering activities;
- Losses incurred at lines;
- Trends in revenues and expenses, including distributor revenues and expenses, fixed assets and investments in the grid.

These indicators are not significant at the national level and are therefore mostly filled in at the appropriate level (region or franchised area). This facilitates detection of zones where quality of service needs improving and this observation is used to encourage investment in these areas. The activity report has been exhaustively transmitted to CRE on an annual basis, mid-year, since financial year 2004.

This report has also provided CRE with data on the main non-nationalised distributors since financial year 2006.

## B. QUALITY OF THE TRANSMISSION GRID

Since 2001, CRE has been collecting data describing the performance of the public electricity transmission grid. RTE's activity report was improved in 2005, with the monitoring of indicators related to its seven regions of territorial organisation. It now includes monitoring of significant system events (ESS) classified by gravity. In 2006, at its request, CRE also received additional information on load shedding.

## C. IMPROVED ANALYSIS OF QUALITY OF SERVICE

Activity reports provide practical, reliable tools for CRE to be able to improve its knowledge of overall performance of public grids concerning quality and its trend over time. These results will be incorporated in international benchmarking carried out for quality of service of European grids.

In addition, they provide CRE with the possibility of determining relevant objectives for levels of quality of service and parameters of economic mechanisms for incentive-based regulation of grid operators. This development is provided for in the appendix to the pricing decision of 23 September 2005<sup>6</sup> which states that "[...] CRE will apply incentive-based regulation to the financial benefit of [public electricity grid operators] for the improvement of their levels of quality of supply and of service". This system will be "included in the proposal it will make [and] applied at the beginning of 2008".

In order to do so, CRE will base itself on the experience of systems already in place in other European countries. These reports will also provide CRE with useful components for drafting opinions and proposals to be issued concerning the regulation of levels of quality to be complied with by public grid operators.

## 2.3 Balancing

### A. BALANCING MECHANISM RULES APPROVED BY CRE

Under the Law of 10 February 2000 relative to modernisation and development of the public electricity service, "the Commission de régulation de l'énergie shall approve, prior to implementation, the rules for presenting balancing programmes and proposals as well as the criteria for choosing from the balancing proposals submitted to the public transmission system operator."

In accordance with CRE's deliberations of 23 January 2003, on 1 April 2003, RTE implemented a market mechanism for managing grid balance in real time and removal of technical operation constraints in real time of its grid not covered by ancillary services.

---

6 Appendix, section III-B-2-c

The balancing mechanism rules are revised annually, after discussion with the parties concerned and approval from CRE. The modifications made aim to improve mechanism operations by increasing its effectiveness and robustness and to act on certain parameters with a view to ensuring balance of financial flows related to settlement of balancing supply and of balancing responsible entities' imbalances.

## B. BALANCING MECHANISM OPERATIONS

The balancing mechanism is a market mechanism, open to French generators, major interruptible load consumers and foreign operators. RTE is the only counterparty on this market for balancing bidders. France has just one balancing zone, corresponding to the RTE grid.

Through an upward and downward offer system, market players send the technical and financial conditions under which RTE may modify their generation or consumption programmes. RTE makes up for imbalances by selecting offers after collating them on the basis of a criterion of economic precedence and by incorporating the technical constraints expressed by operators. By law, all unused power technically available from each generation facility connected to the public transmission grid is made available to the operator of this grid by generators in their offers to the adjustment mechanism. When they send their day-ahead generation programmes to the French TSO, the generators therefore implicitly submit balancing offers at the same time, equal to the difference between maximum power available and the generation programme.

In parallel, major consumers and foreign players may also participate in the balancing mechanism by presenting RTE with explicit balancing offers.

Maintenance of generation-consumption balance at a frequency of 50 Hz is based on three categories of resources, which come into play successively:

- Automatic primary reserve, spread out over the entire UCTE grid, and whose purpose is to prevent deviation from frequency due to a generation problem or unexpected change in consumption;
- Automatic secondary reserve, specific to each TSO control area, the purpose of which is to restore frequency to 50 Hz and interconnection exchange programmes to their scheduled level;
- Manual tertiary reserve, or balancing mechanism, whose purpose is to absorb persistent generation-consumption imbalance as cost-effectively as possible in order to restore activatable primary and secondary reserves, which are grouped together under the term 'frequency control system services' and are subject to contract with generators giving rise to payment of a fixed premium and, in the case of the secondary reserve, of a variable part in proportion to net energy injected. Such costs are recovered by RTE in the tariff for the use of public electricity grids.

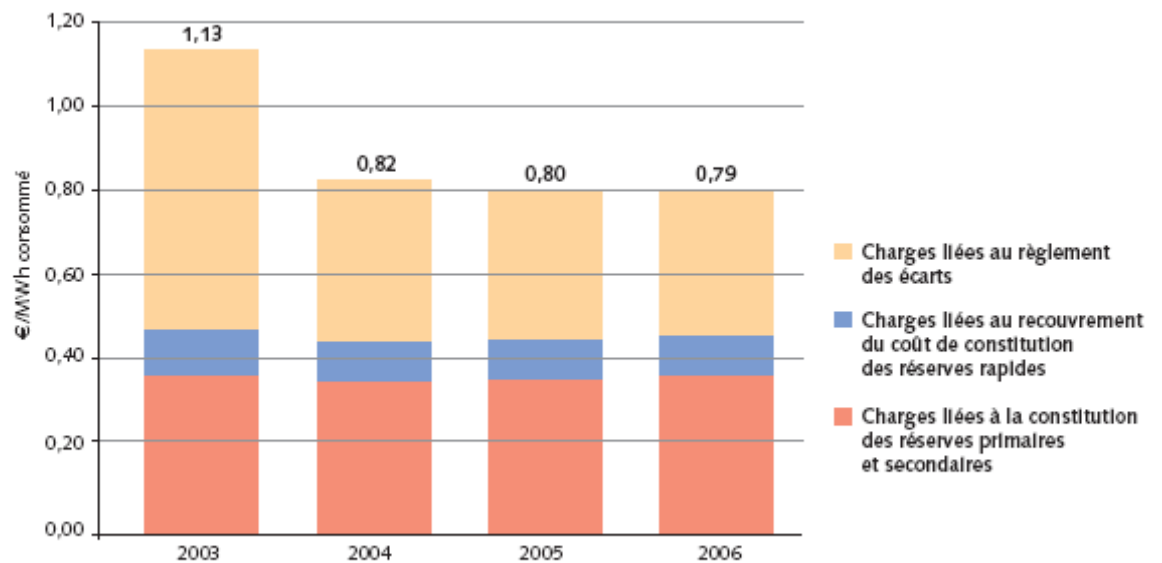
As regards the tertiary reserve, 1500 MW of power (1000 MW of fast reserve deployable in less than 13 minutes and 500 MW of additional reserve deployable in less than 30 minutes) is covered by contract, the costs of which are recovered by a payment from balancing responsible entities proportional to their physical withdrawal.



The rest of the capacity offered on the balancing mechanism does not receive any payment related only to its provision. Suppliers of this part of balancing energy are paid according to power actually provided. Balancing costs are recovered through invoicing of imbalances.

Since start-up of the balancing mechanism, there has been a sharp drop in balancing costs due to physical withdrawal: they represent the balancing cost in the electricity bill (see figure 1).

**FIGURE NO. 1: ANNUAL TRENDS IN COSTS RELATED TO SYSTEM BALANCING**

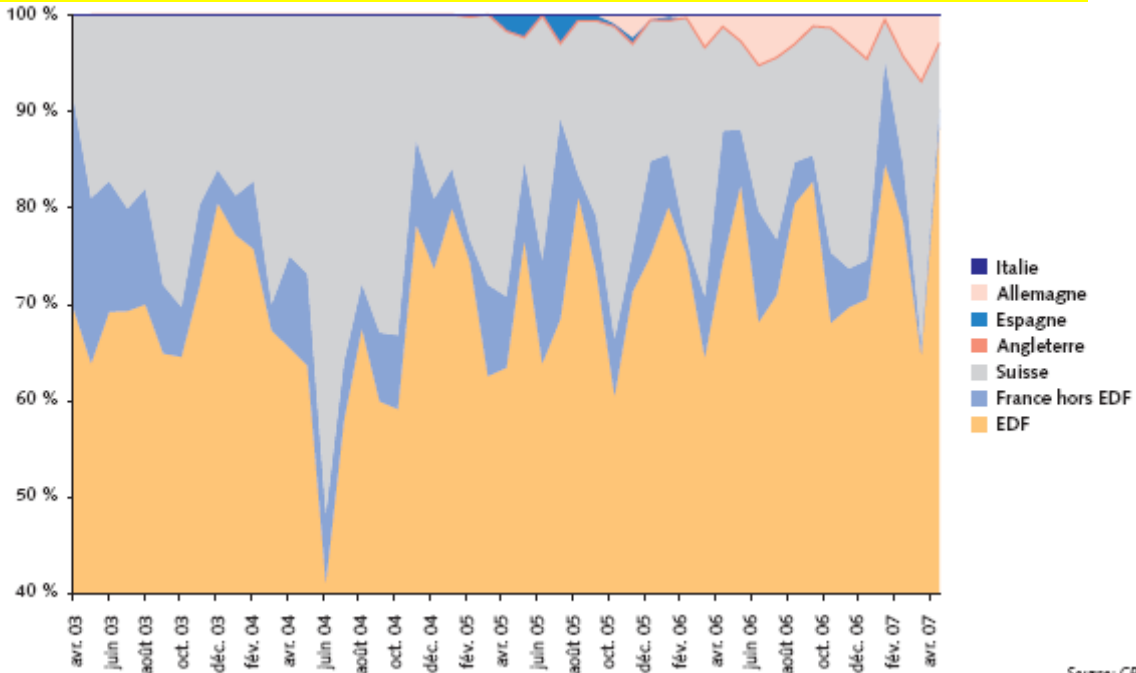


Source: CRE

### C. ACTIVATION OF BALANCING OFFERS FROM MEMBER STATES OR FROM BORDER CONTROL AREAS

Right from start-up of this mechanism, CRE ensured that market players set up in border areas and countries could participate in the balancing market, competing against French operators. Swiss players have been participating in the French balancing mechanism since April 2003. Foreign participation was extended to England and Spain in November 2004, to Germany in September 2005, and to Italy in April 2006. Swiss and German operators regularly participate in the mechanism for significant volumes (their market share for upward offers is around 25 %), whereas Spanish, English and Italian operators participate on a more occasional basis due to incompatibility between interconnection access processes or national generation planning rules and RTE's needs for flexible offers to balance its system as close as possible to real time (see the following figure).

**FIGURE NO. 2: SHARE IN UPWARD BALANCING ACTIVATED ON THE FRENCH BALANCING MECHANISM BY ORIGIN**



However, it should be pointed out that at present French operators may not participate in any foreign balancing market. Within the framework of the France-UK-Ireland Region of the Regional Initiative, TSOs have nevertheless submitted proposals aimed at developing exchanges based on a 'TSO-TSO' model which should be implemented in 2008.

#### **D. RELATIONS BETWEEN GENERATION PLANNING, INTRADAY MARKET AND BALANCING MECHANISM**

The balancing market is considered as a last resort enabling RTE to balance flows in real time and is not intended as a substitute for the intraday market or for generators' self-balancing actions. CRE therefore ensures that balancing responsible entities are encouraged to balance their zone and have flexible solutions to achieve this balance. Services available to the parties to balance their zone are: gate closures for rescheduling generation, gate closures for OTC block exchanges, organised intraday markets and gate closures for interconnection exchanges.

At CRE's initiative, new measures applicable as from 29 March 2007 to facilitate the balancing of balancing responsible entity positions (measures which are of particular benefit to small-sized suppliers who only partly gain from the portfolio effect of their sites). The number of intraday gate closures for scheduling and block exchanges between balancing responsible entities has increased from 12 to 24. In addition, the delay imposed before effective implementation of modifications to generation programmes, known as the neutralisation period, is 2 hours, reduced to 1 hour in the event of generation problems (as from September 2007).

Moreover, the neutralisation period of 1 hour applied to block exchanges was abolished as from September 2006. Henceforth, energy block exchanges between balancing responsible entities take effect right from the end of the gate closure for exchange notification. Lastly,

measures were taken to roll out the neutralisation period of one hour for re-declarations of generation programmes and balancing offers in the future, providing such a change can effectively reduce overall balancing costs without adversely affecting security of supply in the short term.

On 11 July 2007, Powernext launched a continuing negotiation service on an intraday basis.

The characteristics of the intraday market set-up can be summarised as follows:

- Re-declaration of generation planning:
  - with the following timescales: D-1 gate closure at 4 pm and 24 intraday gate closures: every hour from 10 pm on D-1 to 9 pm on the day.
  - neutralisation period of 2 hours, reduced to 1 hour in the event of generation problems,
  - programme defined in 5- minute intervals;
- OTC transactions:
  - timescales of gate closures for block exchange notification are the following: D-1 gate closure: 4 pm and 24 intraday gate closures: every hour from 10 pm on D-1 to 9 pm on the day.
  - neutralisation period,
  - The block exchange programme is defined in 30-minute intervals;
- Market transactions:
  - As from 11 July 2007, continuing block negotiation on the Powernext exchange up to one hour before delivery (RTE are notified of on-the-day transactions at 11 pm on the same day by Powernext).

## E. MECHANISM FOR CALCULATING IMBALANCES AND RELATED PRICES

Any party wishing to carry out energy transactions using the RTE grid must sign an agreement of affiliation with a balancing responsible entity who is in charge of paying the imbalances observed within its scope.

Balancing responsible entities' imbalances are calculated for every half-hour of the day, and defined as the difference between total physical injections and total physical withdrawals measured within their scope, consisting of the difference between physical injection and physical withdrawal measured and the difference between national purchase/sales transactions and declared import/export transactions at interconnections.

Imbalance prices are calculated as follows:

**TABLE NO. 2: IMBALANCE PRICES**

	Case where the overall system imbalance is positive	Case where the overall system imbalance is negative
Positive imbalance prices	$\text{Min}(\text{Ppowernext}, \text{PMP Downturn} / (1+K))$	$\text{Ppowernext}$
Negative imbalance prices	$\text{Ppowernext}$	$\text{Max}(\text{Ppowernext}, \text{PMP Upturn}^* / (1+K))$

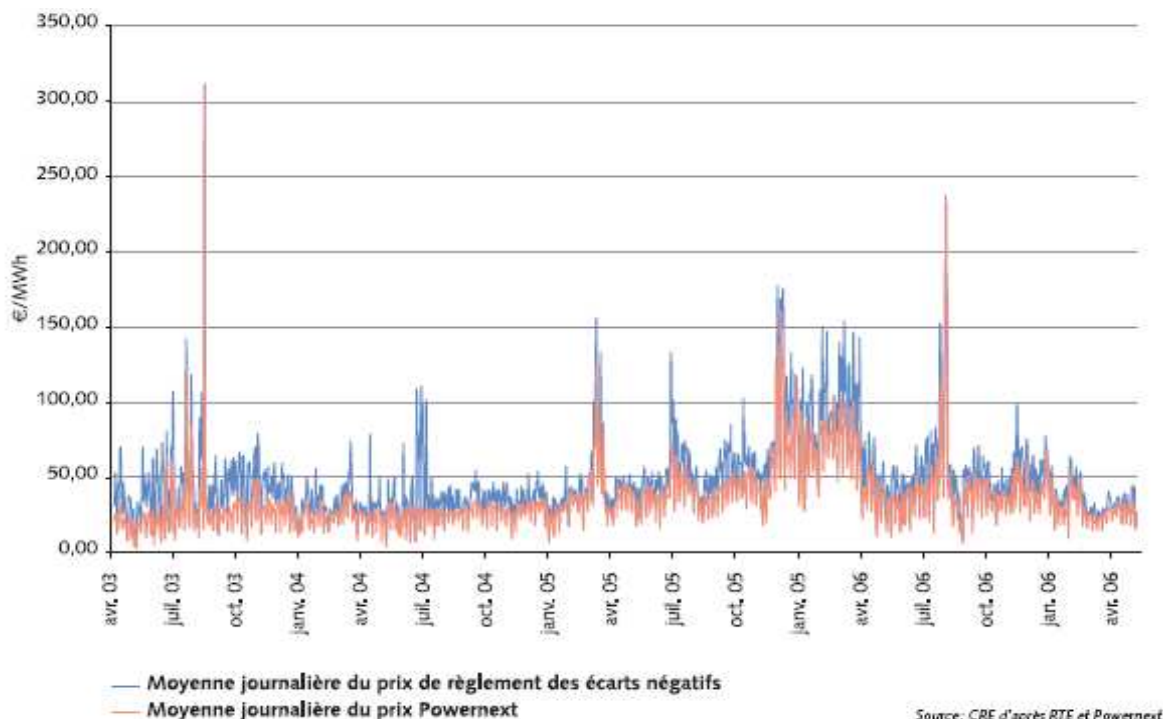
Where:

- Powernext represents the exchange price (or spot price) for the half-hour concerned;
- PMP Upturn represents the average price of upward adjustments that RTE had to activate during the half-hour concerned;
- PMP Downturn represents the average price of downward adjustments that RTE had to activate during the half-hour concerned;
- K is a balancing variable aiming to balance out the financial flows relating to settlement of balancing and imbalances over one year. The value of K was reduced from 0.15 to 0.05 on 1 July 2006 at CRE's request.

By the nature of the structure, the negative imbalance price always exceeds the Powernext price, while the positive imbalance price is always less.

For the period from 1 January 2006 to 1 June 2007, negative imbalance settlement prices averaged out at 55€/MWh with, however, extremely high volatility (see the following figure).

**FIGURE NO. 3: TRENDS IN NEGATIVE IMBALANCE SETTLEMENT PRICES AND POWERNEXT PRICES SINCE START-UP OF THE BALANCING MECHANISM**



## F. OBLIGATIONS OF TRANSPARENCY

The degree of transparency in the adjustment mechanism has significantly increased since its establishment with a view to improving small-sized operators' understanding of operations so as to facilitate their access to it.

RTE publishes the following information on its website:

- Balancing volumes activated upwards and downwards for various reasons (overall balancing, congestion settlement, reconstitution of ancillary services and operating margins) per half-hour;
- Upward and downward adjustments in average and marginal prices per half-hour;
- Positive and negative imbalance prices per half-hour;
- Level of operating margins at peak consumption times, published on D-1 for the day;
- Aggregate curve of upward balancing offers available at peak consumption times;
- Monthly report on adjustment, containing statistics on the following aspects:
  - characteristics of frequently accepted offers;
  - balancing share per technology;
  - quality of published indicators;
  - statement of balancing/imbalance account;
  - reliability rate of programme notification systems, adjustment offers and blocks exchanges (published since 1 July 2006);
  - report per border and per day of energy volumes activated for reserve exchange contracts between RTE and other TSOs (published since 1 July 2006).
- Message dispatch notice of warning and changeover to 'degraded mode' for offer inadequacy (since 1 July 2006).
- Additional balancing costs related to resolving grid congestion broken down by geographical zone.

### 2.4 Principles of account unbundling

In application of the provisions of article 25 of the amended Law of 10 February 2000, the rules for allocating headings in balance sheets and profit and loss accounts, accounting scopes of activities and principles defining their financial relations must be submitted to CRE for approval after opinion from the Conseil de la concurrence. CRE stated in its deliberations of 11 January 2001 that the principles proposed by operators did not enable it to make a valid decision. As a result, in application of the provisions of article 37 § 6 of the aforementioned law, on 15 February 2001, CRE stipulated the principles of account unbundling applicable as from the accounts of the year 2000.

## A. GENERAL PRINCIPLES OF ACCOUNT UNBUNDLING

The general principles of account unbundling are as follows:

The scope of transmission activity corresponds to that of the public electricity transmission system operator (RTE) which has been affiliated since 1 January 2005. This scope covers all the lines of the continental mainland grid and of its interconnections where voltage is equal to or higher than 63 kV. The scope of distribution activity **being affiliated** covers activities related to management of the continental mainland distribution grid and of grids in non-interconnected territories. The scope of '*other generation*' activity includes all activities related to electricity power generation, interconnections and exchanges with foreign operators. The scopes of supply to eligible and ineligible customers consist of all activities related to commercialisation and commercial management of eligible and ineligible clientele respectively. The scope of '*other activities*' covers all activities performed outside the electricity sector.

The policy implemented for allocation of headings in balance sheets and revenue and expense accounts is the direct allocation principle. If an asset component is useful for several activities, it is allocated to the activity which is its main user. For expenses and revenues accounts, income and costs must be directly allocated, or otherwise they must be broken down according to applied costs.

Since 2005, electricity operators are no longer obliged to publish their unbundled accounts. These accounts are submitted to the Commission de régulation de l'énergie on an annual basis.

Moreover, the Commission de régulation de l'énergie may, in application of the provisions of article 27 of the Law of 10 February 2000, carry out audits. These are carried out either by CRE employees accredited for this purpose, or by external audit firms selected after calls for tender.

Financial relations between unbundled activities are covered by protocols, the establishment of some of which is provided for by law (for example, access to infrastructures). The protocol terms applicable to unbundled entities must be the same as those applicable to third parties, in compliance with the rules governing non-discrimination and prohibition of cross-subsidies between unbundled activities. Therefore, if terms applicable to third parties result from a public tariff (access to regulated infrastructures) or regulations, these public rules constitute the reference standard for rules applicable across unbundled activities.

In the event of violation of these rules, the Commission de régulation de l'énergie may institute the default notice procedure stipulated in 3° of article 40 of the law of 10 February 2000 and apply the resulting financial sanctions stipulated in 1° of article 40. The financial sanction may not exceed 3% of the previous financial year's turnover exclusive of taxes and may be increased to 5% if the same obligation is violated again. There are no sanctions other than those stipulated in article 40 mentioned above.

## B. SUPPLY UNBUNDLING

**The unbundling rules for supply activities were modified by the Law of 7 December 2006. Before promulgation of this law, companies operating in the electricity and natural gas sectors had to keep unbundled accounts of their supply activity between eligible and**

ineligible customers. However, this scope was heterogeneous since it did not distinguish eligible customers according to whether they had exercised their eligibility or not.

The Law of 7 December 2006 now imposes the obligation of account unbundling for supply between customers having exercised their eligibility and customers who have not, to take effect as from 1 July 2007.

CRE will review operator proposals on account unbundling of their supply activity in keeping with the new scopes, in the light of observations made in the context of unbundling of eligible and ineligible customers.

## 2.5 Independence of public network operators

In application of the Law of 9 August 2004, the public transmission system operator has been a separate legal subsidiary of the integrated electricity undertaking since 1 September 2005.

Legal unbundling of distribution system operators servicing more than 100,000 connected customers is underway. CRE has conducted hearings with all DSOs concerned, to check that their legal unbundling projects are in full compliance with the requirements of directives governing independence. It makes detailed examination of the draft statutes of new companies and checks that grid operators are provided with appropriate physical, financial and human resources to enable them to act in total independence.

The Law of 9 August 2004, transposing the European directives of 26 June 2003, provided for the publication by CRE of an annual report on compliance with codes of good conduct and grid operator independence. CRE published two reports in November 2005 and November 2006.

The public transmission system operator, RTE, as well as all distribution grid operators who supply over 100,000 connected customers, drew up a code of good conduct in 2005 and submitted it to CRE. The codes have been sent to all grid operator staff and published on the grid operators' websites.

These codes deal with non-discrimination, transparency and protection of commercially sensitive information.

CRE analysed the grid operators' codes and annual reports. It conducted hearings with the grid operators in October 2006 and also audited their practices.

---

<sup>7</sup> A summary table (no.10) of data on the unbundling of electricity and gas system operators is provided on page 61.

During audits conducted in EDF Gaz de France Distribution centres, CRE observed the following:

- Management is highly involved in the proper application of the codes of good conduct in all the phases – deployment, monitoring and checking;
- Staff have been properly informed of principles of the codes and the resulting consequences;
- Physical separation of EGD premises from those of the supplier, if this exists, fosters staff assimilation of their respective roles and duties.

In its second report, published in November 2006, CRE pointed out that grid operators had to be organised and managed independently as from 1 July 2004, whether they are affiliated (transmission systems) or not (distribution systems). This independence should result in an organisation comparable with that of an autonomous undertaking and free to take any decisions in accordance with its interests, subject to the "*economic supervision and management rights*" acknowledged as belonging to the parent company by the directives of 26 June 2003.

The grids must be managed independently from the other activities of the integrated groups. Progress has been observed regarding transmission. However, supply and distribution grid management activities have still not been unbundled, although this is essential to ensure independence of the grid management activity as from 1 July 2007.

CRE also provided a reminder of the recommendations made in 2005 and the following proposals:

- Grid operators must be free to choose their subcontractors and no service must be imposed by the parent company;
- In compliance with provisions in the Directives of 26 June 2003, grid operators must have full responsibility for deciding on their investments, to satisfy all grid user needs in a non-discriminatory manner, within the framework of the total budget allocated to them.

CRE is currently conducting audits in order to check these points. , CRE checks the implementation of commitments undertaken by electricity grid operators in these codes of good practice.

The preservation of the independence of electricity transmission grid operators is not absolutely guaranteed by the contents of the statutes adopted alone, due to the very nature of the link which unites a parent company to its subsidiary within an integrated group. The proper behaviour of parties concerned in their implementation will now be essential for achieving the result prescribed by the Directives of 26 June 2003.

Transmission system operator independence is restricted by the right, resulting from laws applicable to limited companies, for any shareholder or director to access exhaustive information, at any time, to carry out their role or mandate. This right cannot be limited in the current state of national law. The protection of CSI is incompatible with the fact that directors who are appointed by a shareholder can have permanent access to certain information and then report back.

The brand image confusion between regulated and competitive activities is harmful. EDF Réseau Distribution has opted for a similar visual identity for its competitive supply activities and regulated distribution grid operator activities.



This confusion clouds customer understanding of how the market is organised and operated.

The institutional communication of these groups, which ignores the unbundling of activities, heightens this effect.

Confusion may lead customers to believe that they run risks in terms of quality and continuity of supply if they switch supplier.

\*  
\* \*

### III . Operation of the French electricity market

in application with article 23, § 8 and 1, point h of Directive 200354-EC

CRE has set up a quarterly market survey report comprising quantitative indicators to make reference data on the opening of the electricity and gas markets available to the public. Available on CRE's website ([www.cre.fr](http://www.cre.fr)) in French and English, this contains a description of the wholesale and retail markets in mainland France.

#### 1 The wholesale market

##### 1.1 Generation - consumption

According to RTE, domestic consumption, including losses on the distribution and transmission grids, amounted to 478.4 TWh in 2006, lower than consumption in 2005 by 1%. Maximum consumption hit a record high of 86,280 MW on 27 January 2006 so far unbeaten.

Again according to RTE, installed capacity in France amounted to 115,500 MW in 2006, compared with 116,000 in 2005.

With 86 % of installed capacity, EDF was the only generator to reach the 5% threshold of installed generation capacity available. The other two major generators are:

- Electrabel-Suez which, through CNR, SHEM and its holdings in the nuclear power plants, operates 4% of installed capacity;
- SNET (ENDESA group), which holds 2% of installed capacity.

These three generators hold a total of 92 % of installed capacity.

The table below shows the structure of the French market with different components ranked in order of importance:

**TABLE NO. 3: STRUCTURE OF THE FRENCH MARKET**

Order of importance	Number of generators	List of generators
Base	2	EDF, Total
Semi-base	3	EDF, SNET, Gaz De France
Peak	2	EDF, SNET
Hydropower	3	EDF, CNR, SHEM
Small-sized decentralised generation	Several thousand	Small-sized independent generators, local distribution companies, industrial companies (self-generation)

In 2006, EDF finished its closure programme for coal-, oil- and gas-fired units considered obsolete. A total capacity of 1700 MW has been put 'under wraps' since 2003. In return, EDF has decided to invest in more competitive plants and is planning to renovate or extend several already existing power plants by the year 2009.

## 1.2 Organised markets

Volumes of electricity commercialised in 2006 on Powernext include:

- Day-ahead traded volumes (hourly products or blocks quoted a day ahead) have increased by 49 % in one year, rising from 19.7 TWh in 2005 to 29.4 TWh in 2006;
- Forward volumes traded since the opening of Powernext Futures on 18 June 2004, rose until May 2006, and then slumped. Nevertheless, for 2006 taken as a whole, the overall results were better than the previous year: 83 TWh was traded on Powernext Futures in 2006 against 62.4 TWh in 2005.

In August 2005, the German exchange EEX launched an organised market for the exchange of forward products for delivery in France. After an initial phase of growth in volumes, EEX France activity has been zero since August 2006. For 2006 as a whole, 2.2 TWh was traded on EEX France, against 1.6 TWh from 29 August to 31 December 2005.

## 1.3 The OTC market

The bulk of transactions on the French market are still carried out on a bilateral basis (OTC).

CRE does not have access to bilateral transactions; it is only aware of the volumes of net physical deliveries between operators. In 2006, OTC transactions recorded a total volume of 259 TWh, a rise of 29% compared with 2005 (200 TWh).

## 1.4 Integration of the French market within border markets

The French wholesale market remains national. There are no regional markets within the French market.

However, French market prices are fairly closely linked with German and British market prices and are less so with market prices in other border countries. For most of the countries interconnected with France, correlation with French prices seems to have decreased since 2005.

- In 2006, French prices were quite well correlated to German and British prices.

**TABLE NO. 4: COEFFICIENTS OF CORRELATIONS BETWEEN BASE SPOT PRICES IN FRANCE AND IN BORDER COUNTRIES**

	France/Germany	France/Spain	France/UK	France/Italy
2005	89 %	67 %	84 %	53 %
2006	80%	53%	72%	64%

Sources: 2005 and 2006 data, Powernext, EEX, OMEL, Platts UK and IPEX (CRE does not have price data concerning the Belgian and Swiss markets)

**TABLE NO. 5: COEFFICIENTS OF CORRELATIONS BETWEEN BASE SPOT PRICES IN FRANCE AND IN OTHER COUNTRIES**

	2006 Correlation									
	DNK	ES	FIN	FRA	GE	NOR	POL	ROM	SWE	
DNK	1.00	0.29	0.71	0.37	0.44	0.64	0.45	0.14	0.73	
ES	0.29	1.00	0.12	0.53	0.42	-0.07	0.16	-0.18	0.01	
FIN	0.71	0.12	1.00	0.08	0.17	0.89	0.30	0.09	0.95	
FRA	0.37	0.53	0.08	1.00	0.80	-0.09	0.25	0.15	0.00	
GE	0.44	0.42	0.17	0.80	1.00	0.06	0.30	0.19	0.13	
NOR	0.64	-0.07	0.89	-0.09	0.06	1.00	0.27	0.12	0.97	
POL	0.45	0.16	0.30	0.25	0.30	0.27	1.00	0.14	0.30	
ROM	0.14	-0.18	0.09	0.15	0.19	0.12	0.14	1.00	0.12	
SWE	0.73	0.01	0.95	0.00	0.13	0.97	0.30	0.12	1.00	

## Remarks

- Denmark: Average over east and west region
- Norway: Average over three regions
- Netherlands: Not used, since the time series is incomplete

Source: E-Control

- In 2006, exchanges with Germany represented the bulk of imports/exports, and a significant volume with regard to the size of the French market.

Last year, France imported 27.9 TWh including 15 TWh from Germany (compared with 32.1 TWh in 2005, including 21.2 TWh from Germany) and exported 90 TWh (compared with 90.9 TWh in 2005). The following table shows the breakdown per border of these exchanges, which changed very slightly between 2005 and 2006:

**TABLE NO. 6: BREAKDOWN OF EXCHANGES PER BORDER**

		Switzerland	Germany	Belgium	Spain	United Kingdom	Italy
2005	Imports	19 %	66 %	4 %	2 %	4 %	3 %
	Exports	29 %	12 %	14 %	8 %	13 %	22 %
2006	Imports	21%	54%	6%	8%	6%	5%
	Exports	29%	11%	19%	7%	13%	21%

Source: RTE public data

## **2 Retail market**

### **2.1 Eligible customers**

As of 1 July 2007, all French customers can exercise their eligibility. As we do not currently have statistics on this deadline, the following section only deals with the eligible market before 1 July 2007 (non-household market).

Opening of the French electricity market took place in several stages:

- As from June 2000, eligibility of all sites with annual consumption higher than 16 GWh;
- As from February 2003, eligibility of all sites with annual consumption higher than 7 GWh;
- As from July 2004, eligibility of all companies and public authorities.

Since 1 July 2004, all companies and public authorities have been free to choose their electricity supplier. Around 4.7 million sites are currently eligible, accounting for around 310 TWh of annual electricity consumption.

Eligible customers have the choice of two types of contract:

- regulated tariff contracts (only offered by incumbent suppliers)
- Market price contracts (offered by both incumbent suppliers and alternative suppliers). Access to this type of contract is obtained by exercising eligibility.

The Law of 7 December 2006 introduced a new choice for customers. Customers who have subscribed to a market contract can ask their supplier for the transitional regulated tariff for market adjustment (TaRTAM), applicable for a maximum duration of two years. This request could be made between 3 January 2007 and 1 July 2007. The TaRTAM is equal to the regulated retail tariff excluding taxes applicable to a consumption site with the same characteristics, increased by 23% for large sites, 20% for medium-sized sites and 10% for small sites <sup>8</sup>.

---

<sup>8</sup> The segments to which these coefficients of increase are applied are indicative only.

### **Inset no. 8: Segmentation of eligible customers**

To ensure monitoring of the retail market, CRE has defined a segmentation of eligible clientele:

**Large-sized:** sites connected to high voltage supply with rated power of higher than or equal to 250 kW. These sites are large-scale industrial sites, hospitals, hypermarkets, and large office blocks. This segment accounts for about 1% of sites in number but 63% of electricity consumption of eligible sites.

**Medium-sized:** sites connected to high voltage supply with subscribed power lower than 250 kW and low voltage sites with rated power higher than or equal to 36 kVA. These sites correspond, for example, to premises of SMEs. This segment accounts for 8% of sites and 22% of consumption of eligible sites.

**Small-sized:** sites connected to low voltage supply with rated power lower than 36 kVA. These sites correspond to the professional mass market (freelancers, craftsmen, etc.). This segment accounts for 91% of sites in number and only 15% of consumption of eligible sites.

## **2.2 Market share**

As at 1 April 2007, alternative suppliers' market share, compared to the number of eligible sites was 6.4 % (or around 12.4 % of eligible consumption volume). This figure hides a disparate reality in the various segments. Penetration of alternative suppliers is thus limited to the segment of medium-sized sites:

**TABLE NO. 7: ALTERNATIVE SUPPLIERS' MARKET SHARE (IN NUMBER OF SITES)**

All sites	Large-sized	Medium-sized	Small-sized
6.4%	3.7%	0.6%	6.9%

### C. ANALYSIS IN TERMS OF NUMBER OF SITES

One supplier (EDF) holds a market share greater than 5% of the eligible market. This comment is also valid for the 3 sub-segments of the eligible market described above.

The market share of the 3 most significant suppliers in each segment is:

- 95% (all segments);
- 93% (segment of LARGE-SIZED sites);
- 98% (segment of MEDIUM-SIZED sites);
- 96% (segment of SMALL-SIZED sites).

Foreign suppliers in France include all suppliers governed by foreign law who operate on the French market as well as suppliers governed by French law whose main shareholder is a supplier governed by foreign law. The foreign suppliers' market share in France is:

- 0.01% (all segments);
- 2% (segment of LARGE-SIZED sites);
- 0% (segment of MEDIUM-SIZED sites);
- 0% (segment of SMALL-SIZED sites).

### D. ANALYSIS IN TERMS OF CONSUMPTION VOLUME

One supplier (EDF) holds a market share greater than 5% of the eligible market. The market share of the 3 most significant suppliers is around 86%. The foreign suppliers' market share is 6%.

## 2.3 Incumbent suppliers

### A. INCUMBENT SUPPLIERS ALSO INVOLVED IN GENERATION

In France, there are over 160 incumbent suppliers who originally ensured supply and distribution in geographical areas:

- EDF, who is also involved in generation, supplied 95% of French consumption sites;
- around 160 Local Distribution Companies (LDCs) supplied the remaining 5%, with 56 of them also being involved in generation (2002 figure).

### B. ALTERNATIVE SUPPLIERS ALSO INVOLVED IN GENERATION

As at 1 April 2007, 4 alternative suppliers operating since the opening of the markets have generation capacities: Endesa Group, Suez Group, Gaz de France and Total.

In total, there are therefore around 61 suppliers in France with generation capacities.

### C. SUPPLIERS ALSO WORKING AS GRID OPERATORS

In France, one sole supplier (EDF) is also a transmission system operator (TSO).

Along with 160 LDCs, EDF is also a distribution system operator (DSO).

At the same time, suppliers with no transmission or distribution capacities have entered the market since the opening of the markets. As at 1 July 2007, there were around twenty operating in France.

## 2.4 Switching supplier

Standard procedures were drawn up to organise the methods for switching suppliers but are not defined by law. They have resulted from discussion between various players in the electricity sector (end consumers, suppliers, distributors, TSOs and administrative authorities). CRE's objective was for the process of switching supplier to be easy, quick and free of charge.

### A. THE VARIOUS STAGES IN THE PROCEDURE

Within the framework of a single contract covering both the conditions for electricity supply and for its transportation by the public distribution system operator<sup>9</sup>, suppliers can be switched in the following way:

- Customers conclude a contract with their future supplier and sign a 'certificate for switching supplier';
- The future supplier informs the distribution system operator of the customer's desire to switch supplier. For household customers, the consumer code provides for a retraction period of 7 days in the case of canvassing or distance selling. Information on switching supplier is only given to the grid operator once this period has elapsed;
- Distribution system operators acknowledge receipt of the application:
  - they check admissibility of the application (consistency of technical information);
  - they inform the customer's current supplier;
- Distribution system operators estimate the customer's index for switching:
  - they send the indexes to the current supplier on the date suppliers are switched along with the invoice for the corresponding amount;
  - they send the same indexes and the initial invoice corresponding to the fixed part of the grid tariff to the future supplier.

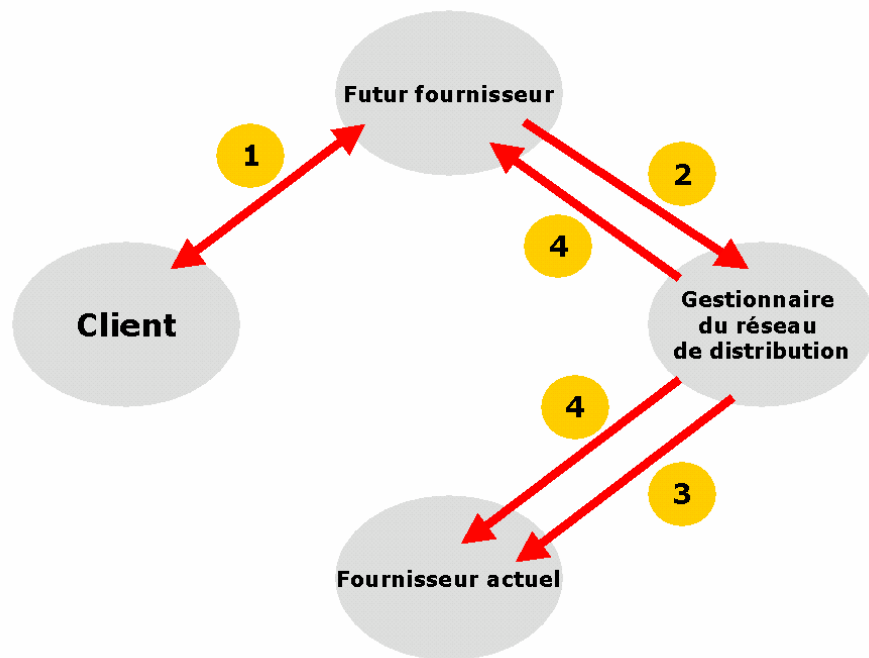
Some DSOs impose additional obligations on their customers: some systematically demand the "*certificate for switching supplier*", signed by the customer, from the future supplier, others carry out a special meter reading, invoiced to the future supplier.

---

<sup>9</sup> This type of contract accounts for the vast majority of contracts signed (around 762,700 as at 1 April 2007).



FIGURE NO.4: PROCEDURE FOR SWITCHING SUPPLIERS



## B. REASONS FOR REFUSAL

The distribution system operator may object to an application to switch supplier (application admissibility verification) if:

- a previous application to switch supplier is already underway;
- fraud has been observed on the metering equipment.

## C. METHODS FOR TERMINATION AND TIMEFRAMES

The Law of 7 December 2006 inserting article L.121-89 in the consumer code indicates for household customers that *"in the case of switching suppliers, the contract is legally terminated on the date that the new energy supply contract takes effect"*.

The process of switching supplier, without modification of the rated power or the metering structure, must take place within the following timeframes:

- the 1<sup>st</sup> of the month following the application if it was made before the 10<sup>th</sup> of the month;
- the 1<sup>st</sup> of the second month following the application if it was made after the 10<sup>th</sup> of the month.

## D. COSTS RELATED TO SWITCHING SUPPLIER

Article 83 of Law 2005-781 of 13 July 2005 of the programme setting out the energy policy guidelines amends the rules governing payment of services provided for switching supplier.

Article 83 stipulates that, when eligible customers take up their eligibility for a site and switching supplier, *"their current contracts at the regulated tariff regarding electricity supply from this site are legally terminated. This termination may not give rise to any compensation whatsoever"*.

However, *"when this termination occurs within one year following a modification, made at the customer's initiative, to the subscribed power in the contract, Electricité de France or the non-nationalised distributor concerned shall be entitled to compensation corresponding to the sum of fixed premiums due for the electricity actually consumed"*.

Finally, *"when customers who have already exercised their eligibility switch supplier for a second time, they alone are liable for the costs incurred by this change, particularly to the operator of the grid to which they are connected"*.

However in the case of household customers, the law of 7 December 2006 inserting article L.121-89 in the consumer code stipulates that *"the supplier may only bill the customer for the costs effectively borne for termination, either directly or by intermediary of the grid operator, providing that these expenses were explicitly stated in the contract and are duly justified. No other costs may be claimed from the customer for the sole reason of switching supplier."*

## 2.5 Retail prices

The taxes included in grid costs correspond mainly to taxes on pylons and are not identified in the bills for use of public grids.

Since 1 January 2006, costs relating to pension schemes for electricity and gas industry employees are funded by a tariff contribution separate from the tariff for use of public electricity grids. *This contribution is nevertheless always integrated in the regulated retail price of electricity and does not feature on bills.*

The following table presents the breakdown of customer billing at regulated retail tariffs of electricity as at 1 July 2007:

**TABLE NO. 8: BILL AT REGULATED RETAIL TARIFFS OF ELECTRICITY AS AT 1 JULY 2007**

	Dc <sup>10</sup>	Ib <sup>7</sup>	Ig <sup>7</sup>
Grid part of the bill (€/MWh)	41.9	40.2	12.6
supply part of the bill (€/MWh)	47.5	41.5	33.0
tariff contribution (€/MWh)	2.6	3.8	0.7
public electricity service contribution (CSPE) (€/MWh) (*)	4.5	4.5	4.5
local taxes (**) (€/MWh)	9.7	3.4	0.0
VAT (***) (€/MWh)	17.3	18.3	10.0
bill including taxes (€/MWh)	123.6	111.7	60.8

(\*) CSPE (public electricity service contribution) funds the support systems for cogeneration and renewable energies, national tariff equalisation and social systems, along with a part of the costs related to the transitional regulated tariff for market adjustment.

(\*\*) Local taxes corresponding to a percentage of 13.2% for Paris (and 11% on the national scale) are applied to 80% of the bill excluding taxes for rated power lower than 36 kVA and to 30% of the bill excluding taxes for rated power between 36 kVA and 250 kVA. No local taxes are paid on power exceeding 250 kVA.

(\*\*\*) For power lower or equal to 36 kVA, VAT corresponds to 5.5% of the invoice subscription excluding CSPE and 19.6% of the rest of the invoice excluding CSPE. For power exceeding 36 kVA, VAT corresponds to 19.6% applied to the bill excluding VAT and other taxes.

Comments on the calculation hypotheses:

- the grid part of the bill is calculated on the basis of Eurostat customer characteristics (annual consumption  $c$ , consumption during off-peak hours for households, rated power  $ps$  and duration of use  $c/(ps*8760)$ );
- the supply part of the bill is obtained from the difference between the total bill excluding taxes, as published by Eurostat in July 2006, increased by 1.7% as from 15 August 2006 and the grid part of the bill + CTA (transportation tariff contribution)

<sup>10</sup> Eurostat Classification, cf. definitions p.16.

### **3 Measures to avoid abuse of dominant positions**

#### **3.1 Wholesale market**

No specific rule has been applied on the French wholesale market to avoid abuse of dominant positions on the part of the dominant generator.

For example, French generators are not subject to any obligation to publish ex ante or ex post information on the structure, generation capacity or operation of power plants. In November 2006, generators belonging to the French Electricity Industry Association nevertheless set up a transparency initiative: in partnership with the transmission system operator, they publish accumulated generation data per sector (ex ante: generation capacity data and ex post: power generated).

Likewise, in terms of price strategy on the wholesale market, no specific rule applies to generators. Only the national rules governing competition apply.

Since 2001, EDF has been obliged to sell VPPs (*Virtual Power Plants*) which constitute an essential component of the French wholesale market. These are virtual generation capacities periodically put up for auction by EDF following the European Commission ruling allowing it to acquire a 34.5% stake in the German electricity company EnBW.

In 2006, VPPs accounted for 58% of procurement necessary for alternative operators to cover their eligible customers' consumption and their commitments concerning supply of losses to RTE and EDF distribution system operator.

---

<sup>11</sup> Decision of 7 February 2001

### 3.2 Retail market

Electricity suppliers are, in their relations with eligible customers to date, subject to the common law of the *Civil Code* and *Code of Commerce*.

Suppliers are subject to an obligation of transparency as regards eligible consumers. They must clearly explain their obligations and any obscure or ambiguous contractual provision will be interpreted to their detriment.

The structure and contents of contracts concluded with eligible consumers are free, providing that they do not go against applicable regulations. Grid access contracts are sent to CRE and their provisions must be transparent and non-discriminatory. If it is necessary for settlement of a dispute submitted to CRE, the regulator may set the methods of access to grids, structures and facilities or the terms of their use in an objective, transparent, non-discriminatory and proportionate manner.

The duration of the contract is also free and may be of long duration if the customer so wishes and if the supplier makes the customer an attractive offer. CRE has declared itself in favour of establishing long-term contracts, in which suppliers commit to prices whose trends over the contract duration would be linked to transparent indexes. These contracts must nevertheless comply with the competition law, particularly regarding operators in a dominant position. The conclusion of long-term electricity supply contracts must not aim at or result in the eviction of competitors. Furthermore, customers must be able to terminate their contract in advance with related fines being of a reasonable amount.

In application of article L.441-6 of the code of commerce which applies to all suppliers as regards their contractual relations with non-household customers, they are obliged to send their general terms of sale to any non-household customer upon request. These form the basis for commercial negotiation and contain the sales terms, unit price scale, price reductions and payment terms.

Article 22-VI of the Law of 10 February 2000 also stipulates that suppliers are obliged to send their price scales and a precise description of the commercial offers to which these prices apply to customers subscribing to demand of  $\leq 36$  kVA upon request. These price scales must be identical for all eligible customers in this category, connected to the continental electricity grid.

As is the case for the contract, the format of the invoice is free but any bill issued by an electricity supplier must contain a minimum of the following information:

- Line concerning consumed energy billed. The Law of 10 February 2000 (article 22-VII), stipulates, firstly, that the energy invoiced for contracts of a rated power  $\leq 36$  kVA must be invoiced "*on the basis of energy consumed*" and, secondly, that each kWh consumed must be invoiced "*at the minimum [...] of the amount specified by the tariff for grid use*" if the supplier invoices the consumer for both the energy supply and use of public transmission and distribution grids;
- If the supplier has concluded a "*single*" contract with a customer, covering the supply and transportation of electricity, customer is billed for both the energy supply and use of public grids. The bill identifies the amount corresponding to the use of public grids by the customer (article 5-I of Decree 2001-365 of 26 April 2001 governing tariffs for use of public electricity transmission and distribution grids);
- The supplier applies the retail tariff to ineligible customers and eligible customers who have not exercised their eligibility. For the tariff category concerned, the bills indicate the proportion corresponding to the costs for use of public grids. The supplier pays the grid operator the sums received for use of this grid (article 5-I of the Decree of 26 April 2001);
- Line for the public electricity service contribution (CSPE) in accordance with CRE's Communication of 12 February 2002;
- Line concerning valued added tax (VAT) in accordance with Decree 2003-632 of 7 July 2003;
- Line for local taxes (of *départements* and *communes*) in accordance with Decree 2004-1210 of 15 November 2004;
- Information on the origin of the electricity supplied in accordance with Decree 2004-388 of 30 April 2004 (article 5).

Other lines may be added freely by suppliers (for example to detail other services provided by the supplier).

## **IV . Regulation of the natural gas market**

In application of article 25 § 1, of Directive 2003/55/EC

Since 1 July 2004, all non-household customers have been eligible, i.e. 675,000 sites, accounting for an annual consumption of 380 TWh of natural gas and an opening of 73% of the total market. The next step, which will see the electricity and gas markets opening up fully to all consumers, is set by the Directive for 1 July 2007. The open gas market will then comprise 11 million consumers, becoming the fourth largest market in Europe. Building on what was done for the opening of the markets to non-household customers on 1 July 2004, CRE has been preparing for this deadline and has been giving consideration to the procedures, information systems, methods for informing and protecting consumers and to any other measure to be taken, in consultation with all the parties concerned.

### **1 Management and allocation of interconnection capacity**

#### **1.1 Mechanisms aiming to resolve congestion**

The activity of shippers on the French network is developing. As at 1 May 2007, 30 shippers were operating on the GRTgaz network and 10 on the TIGF network. As at 1 May 2006, there were respectively 21 and 8 shippers and as at 1 January 2005, a total of 10 shippers operating on the French transmission network.

There is physical congestion on the GRTgaz transmission network, which is more extensive than that of TIGF. This physical congestion results from the new operating scheme for the bulk transmission network with numerous shippers. In order to resolve this congestion, the GRTgaz network was split into four balancing zones with 'entry-exit' pricing per balancing zone.

On 1 January 2009, three balancing zones (East, West and North) will merge, leaving only two zones (North and South) remaining on the network.

For all the onshore entry and exit points on the French transmission network, except for the entry point of H Taisnières, virtually all the annual firm capacities have been subscribed for the next 6 months.

Different mechanisms for managing this congestion are currently in place.

## 1.2 Releasable capacities

At all the points of entry, exit (except for Oltingue) and GRTgaz network interface, a releasable capacity system is in place and is used by new shippers.

Shippers holding a capacity greater than 20% of the marketable capacity at these points must release a fraction of these capacities if they are required by another shipper, for the maximum values indicated below:

Point concerned	Dunkirk	Obergailbach	H Taisnières	L Taisnières	Hérault	Dordogne	Links
R	20%	20%	0%	15%	20%	20%	20%

## 1.3 Short-term 'Use It Or Lose It' mechanism

This mechanism exists on the network of the two French TSOs. Between April 2006 and May 2007, this mechanism was used 14 times on the GRTgaz network, for a total volume of 50.42 GWh. The mechanism is detailed in the section on the secondary capacity market.

## 1.4 Methods for reserving capacities

The range of durations for subscribing to transmission is a tool for additional flexibility to facilitate access to capacities. It is therefore possible to make:

- multi-year and annual subscriptions with long notice (more than six months),
- annual subscriptions with short notice (between one and six months),
- monthly and daily subscriptions,

These capacities may be firm and, where applicable, interruptible.

Moreover, 20% of firm marketable capacities is planned to be reserved for short-notice subscriptions.

The last rule is intended to help newcomers who are less able than incumbent operators to make long-notice subscriptions. Its effectiveness could be strengthened if it were valid for all Member States, which is currently not the case.

Rules for allocating transmission capacities are posted by every TSO on their website.

Lastly, the tariff currently in force stipulates that transmission capacities on the GRTgaz network should be automatically allocated at the interface points with LNG terminals, depending on regasification capacities subscribed and at interface points with storage facilities, for the storage capacities subscribed.

It should also be pointed out that, in the event of congestion on the TIGF network, this tariff stipulates that applications for entry capacity allocation on the main network in order to supply end customers in the TIGF zone should be processed within the framework of a capacity reallocation procedure set up by TIGF.

Moreover, a large-scale investment programme is underway in order to resolve congestion (see below 'infrastructure projects').



## **1.5 Obligation of transparency**

The development of a competitive gas market requires access for all market players to detailed information on capacities, flows, prices and main contractual terms under transparent and non-discriminatory conditions. This information must be published by transmission system operators (TSOs).

In its deliberations published in 2003, CRE asked transmission system operators to publish, as from 1 September 2003, firm, marketable capacities, which are subscribed and available, along with daily flows for the past month for entry and exit points and for connection points between the balancing zones. In June 2006, fresh deliberations strengthened these measures.

As at 1 July 2007, GRTgaz and TIGF were in compliance with virtually all the points listed in the deliberations of 2003 and 2006. Thus, both of these transmission system operators publish all the information requested for capacities at entry and exit points, at connections between balancing zones and at interfaces with LNG terminals. They also publish the following operational data:

- daily consumption and daily consumption forecasts (for D-1, D and D+1) per balancing zone;
- exchanges at gas exchange points per balancing zone;
- flows at interconnections of the GRTgaz network.

By the end of 2007, TIGF will publish information on flows at the France-Spain interconnection points Larrau and Biriattou.

TSOs also publish the programme forecast for the coming six months of capacity reductions caused by maintenance and repair work, with at least an update every month.

It is worth mentioning that on the whole the two French TSOs comply with the provisions in Regulation 1775/2005<sup>12</sup> governing transparency. Both TSOs sometimes go further than these legal provisions, especially concerning flows and capacities.

## **1.6 Secondary capacity market and cross-border capacities**

The secondary capacity market is underdeveloped in France. Tariffs for use of transmission networks establish the setting up of secondary capacity markets for each TSO. There is thus a capacity exchange hub on GRTgaz Extranet, reserved for active shippers on this network and these transactions are carried out on an OTC basis.

In addition, GRTgaz has set up a capacity exchange service in order to revive the secondary market. Thus, before notifying the shipper of refusal of access due to capacity shortage, GRTgaz searches for the corresponding capacity from the shippers holding these capacities.

A short-term interruptible Use-It-Or-Lose-It mechanism has been set up by the two French TSOs. This enables subscribed capacities that are unused by primary subscribers to be put back on the market, a day ahead, when all firm daily capacities from an entry or exit point have been sold. Shippers have been making regular use of this mechanism on the GRTgaz

---

<sup>12</sup> Regulation 1775/2005 of 28 September 2005 governing conditions of access to natural gas transmission networks.

network since 12 December 2005. TIGF launched this service during the final quarter of 2006.

### **1.7 Swap as an instrument for managing congestion at interconnection points**

Not applicable

### **1.8 Long-term transit contract**

In France, the tariff scheme applicable to gas transit is the same as that defined for national transmission.

### **1.9 Calculation of technical capacity**

TSOs determine the levels of marketable, firm and interruptible capacities at different points of their network. Their methodology is based on hypotheses of network flows depending on procurement sources and consumption forecasts.

## **2 Regulation of transmission and distribution companies' activities**

### **2.1 Number of network operators**

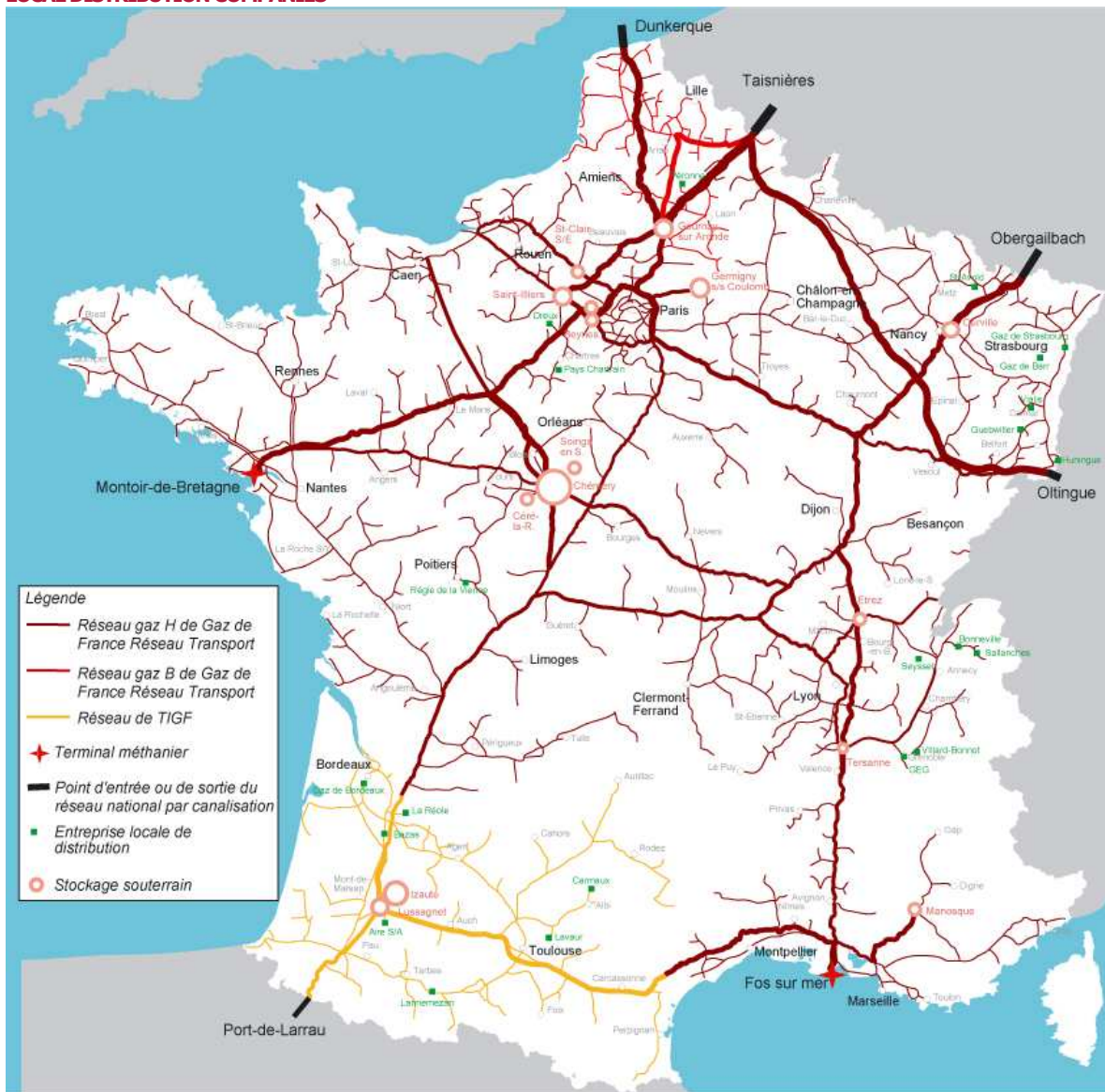
Since 1 January 2005, there have been 2 transmission system operators in France:

- GRTgaz, a subsidiary of Gaz de France, which operates a network of 31,000 km of pipelines divided into four balancing zones;
- TIGF, a subsidiary of Total, which operates a network of 6,000 km of pipelines in a single balancing zone.

There are 23 distribution system operators (DSOs):

- Gaz de France Réseau Distribution, a Division which holds 96% of the market share in terms of quantity of gas distributed (i.e. around 340 TWh per year). Gaz de France Réseau Distribution will be legally unbundled from Gaz de France as from 1 January 2008;
- 22 local distribution companies (LDCs) which distribute 14 TWh per year, i.e. 4% of the total quantity of gas distributed in France
  - The most significant companies are Gaz de Bordeaux, Gaz de Strasbourg and Gaz de Grenoble, in which the local council is the main shareholder.

**FIGURE NO. 5: NATURAL GAS TRANSMISSION NETWORKS, LNG TERMINALS, UNDERGROUND STORAGE FACILITIES AND LOCAL DISTRIBUTION COMPANIES**



## **2.2 Network access tariffs**

### **A. METHODOLOGY**

Under Article 7 of the Law of 3 January 2003, decisions concerning tariffs for the use of transmission networks, distribution networks and LNG terminals must be jointly made by the Minister for the Economy, and the Minister for Energy, upon CRE proposal.

The national legal and regulatory framework defines the main categories of costs to be taken into account by CRE. Such costs include operating costs and capital costs, which are themselves made up of depreciation of equipment and return on fixed capital.

Lastly, in order to draw up its tariff proposals, CRE systematically consults market players concerning the main changes envisaged. Hearings are also held with the parties contributing to CRE's consultations.

#### **a. TRANSMISSION**

New tariffs for the use of natural gas transmission networks came into force on 1 January 2007.

These tariffs keep the overall structure of 5 balancing zones, along with the 'entry-exit' pricing principle on the main network.

In order to draw up its tariff proposal, CRE adopted a real rate of return of 7.25% before tax. In addition, gas transmission networks benefit from a bonus system for the rate of return to encourage operators to invest. Any new investment commissioned since 2004 benefits from an increase of 125 base points.

An additional increase of 300 base points for a period of 5 or 10 years could be allocated by CRE to the share of investments in transmission infrastructures likely to make significant contributions to improving gas market operation.

#### **b. DISTRIBUTION**

On 26 October 2005, CRE proposed fresh tariffs for the use of natural gas distribution networks for the 23 distribution system operators (DSOs).

These tariffs have a simple single structure with four basic pricing options. In order to draw up its tariff proposal, CRE adopted a real rate of return of a 7.25% before tax.

### **B. QUALITY OF SERVICE**

The development of relations between distribution system operators and their shipping customers and end consumers requires closer definition of certain aspects of the monitoring of their activity.

CRE worked in partnership with DSOs to set up indicators measuring processing timeframes and quality of service as regards suppliers and end customers.

For example, CRE monitors the following indicators as regards quality of service:

- For transmission system operators:
  - delivery incidents occurring on the networks by indicating the date of the event, the type of incident, delivery station concerned and the duration and cause of the incident;
  - access refusal, by indicating the points on the network and the shippers concerned.
- For distribution system operators:
  - repairs (number and time taken);
  - interruptions to transportation;
  - applications for switching supplier (number and time taken);
  - applications for cut off of supply due to unpaid bills;
  - connection requests (number and time taken);
  - end consumer complaints/claims;

### C. TARIFF FOR USE OF LNG TERMINALS

In 2006, the LNG terminal in Fos-sur-Mer received 173 ships and released 62 TWh of gas on the transmission network. The Montoir-de-Bretagne terminal received 117 ships and released 98 TWh of gas on the transmission network.

In 2006, in addition to Gaz de France Négoce, three shippers unloaded LNG at the Fos Tonkin and Montoir terminals. Six shippers have so far subscribed to regasification capacities at the two French terminals in operation.

In October 2005, CRE proposed a new tariff to the government for use of the LNG terminals in Montoir and Fos Tonkin for application as of 1 January 2006. This tariff was adopted by ministerial decision on 27 December 2005 and is due to be applied at least until the commercial start-up of the Fos-Cavaou terminal currently under construction.

This new tariff creates more favourable conditions for the arrival of new shippers at French LNG terminals. It contains special clauses on the operation of terminals when several shippers are operating at the same time. It provides for a reduction of around 20% for spot cargoes.

In order to draw up its tariff proposal, CRE adopted a real rate of return of 9.25% before tax for assets commissioned before 31 December 2003 and 10.5 % for other assets.

Three distinct regasification services have been introduced in CRE's new tariff proposal. This distinction is required to define the terminal operating mode with several users at the same time.

**a. 'CONTINUOUS'SERVICE**

This service is for shippers unloading an average of at least one cargo a month at a terminal. The operator provides continuous output over a contractual period and as regular as possible for the user, depending on the overall unloading programme of the terminal.

**b. 'BAND'SERVICE**

This service is for shippers unloading an average of a maximum of one cargo a month at a terminal. Each cargo is released in the form of a constant band, for a 30-day period as from the end date of unloading.

**c. 'SPOT'SERVICE**

This service is for the unloading of cargoes over a given month *m*, subscribed to after the 20<sup>th</sup> day of month *m*-1. The subscription is made on the basis of vacant slots in the monthly programme on the booking date. Each cargo is released in the form of a constant band, for a 30-day period as from the end date of unloading.

The fresh tariff introduces the principle of a secondary regasification capacity market for the first time and also improves transparency.

**D. LEVEL OF TARIFFS**

Average transportation costs on the national network for Eurostat type consumers are as follows:

**TABLE NO. 9: TRANSPORTATION COSTS AS AT 1 JULY 2006**

Profile		Transportation costs in €/MWh
I4-1	Transportation transmission	1
	Transportation distribution	1.3
I1	Transportation transmission	2
	Transportation distribution	7.2
D3	Transportation transmission	2.4
	Transportation distribution	10.9

## 2.3 Balancing

The detailed methods of how balancing operates are defined by each transporter, sent to CRE and published on the TSOs' websites.

Each shipper is subject to a balancing obligation on a daily and monthly basis, for each of the balancing zones in which capacities have been reserved.

### A. DAILY IMBALANCE

Gas transmission system operations require rigorous management of network balancing, i.e. compliance with equality, at any time, between gas injections and withdrawals. These imbalances are operationally managed by network operators, using gas stocks in pipelines and storage facilities provided as a service by storage system operators.

For each shipper, on a daily basis, for each balancing zone and, in the North zone of Gaz de France, for each type of gas, daily imbalance is calculated.

For each balancing zone and, in the North zone of Gaz de France, for each type of gas, each shipper has a daily tolerance range defined according to the following methods:

- $\pm 20\%$  of total daily delivery capacities subscribed by the shipper at delivery points attached to the balancing zone in question, in a bracket ranging from 0 to 1000 MWh per day;
- $\pm 5\%$  for the share of this total exceeding 1000 MWh per day.

If the daily balance is positive and exceeds the maximum authorised, the excess quantity is sold by the shipper to the transporter at a price equal to the daily reference price decreased by 50%.

If the daily balance is negative and exceeds the maximum authorised in absolute terms, the deficit quantity is bought by the shipper from the transporter at a price equal to the daily reference price increased by 50%.

The daily reference price for a balancing zone and, in the North zone of Gaz de France, for each type of gas, for a given day, is equal to the market price (based on day ahead quotations) at the Zeebrugge hub in €/MWh, increased by 50%.

### B. CUMULATIVE IMBALANCE

For each balancing zone and, in the North zone of Gaz de France, for each type of gas, each shipper's residual imbalances, after incorporation of purchases and sales described above, are reported on a daily basis in order to calculate cumulative imbalance.

If, on a given day, cumulative imbalance is positive and exceeds the maximum authorised, the excess quantity is sold by the shipper to the transporter at the daily reference price as defined in § C, reduced by 50%.

If, on a given day, cumulative imbalance is negative and exceeds the maximum authorised in absolute terms, the deficit quantity is bought by the shipper from the transporter at the daily reference price as defined above, increased by 50%.

At the end of each month, the excess or deficit quantity is, depending on the case, bought from or sold to the transporter concerned at the reference price for the month in question. This monthly reference price is calculated based on the market price at the Zeebrugge hub.

### C. IMPROVING THE BALANCING REGIME

Although the current balancing mechanism enables transmission system operators to fulfil their obligations, it has two drawbacks:

- since the prices invoiced for shipper imbalances have no correlation with the cost of balancing, they do not reflect the real situation of French networks and do not send shippers the right economic signals;
- balancing does not help to improve the liquidity of the French wholesale market.

In the first half of 2006, CRE carried out a public consultation on the development of the balancing mechanism. In its deliberations of 21 June 2006, CRE asked GRTgaz and TIGF to enter into consultations with all market players, in order to examine whether balancing rules should be progressively changed over to a system based on market transactions.

On 28 November 2006, GRTgaz sent CRE a proposal for changes in the balancing rules on its network, basing itself on consultations with market players carried out from July to November 2006. GRTgaz proposed the following changes:

- as from 1 April 2007, part of GRTgaz's daily balancing needs to be covered by purchases/sales on the market, allowing a daily balancing price to be set;
- as from 1 July 2007, 'daily balancing services' (SEJ) to be replaced by a new optional tolerance offer, sponsored by GRTgaz, and implementation of measures to help shippers improve balancing management;
- as from 1 September 2007, invoicing of a part of shippers' daily imbalance at the daily balancing price.

In its deliberations of 7 December 2006, after holding hearings with shippers, CRE approved the new balancing rules proposed by GRTgaz.

In order to ensure that balancing is financially neutral, GRTgaz has introduced an income statement for balancing, including the costs and revenues related to this mechanism.

At the beginning of 2007, TIGF also launched consultation with its network users.



## 2.4 Principles of account unbundling

In application of article 8 of the amended Law of 3 January 2003, the rules for allocating headings in profit and loss accounts and balance sheets, accounting scopes of activities and principles determining their financial relations must be approved by CRE after opinion from the Conseil de la concurrence. The principles proposed by operators were approved by CRE in its deliberations of 23 October 2003. The first unbundled accounts were drawn up as from 2002.

Since enforcement of the Law of 10 February 2000, CRE has had additional regulatory powers in the electricity sector, enabling it to stipulate allocation rules used, scope of each unbundled account activity, and principles determining financial relationships between such activities and these additional powers were extended to the natural gas sector by the Law of 7 December 2006.

All companies carrying out one or several of the activities concerned in the natural gas sector, must keep unbundled accounts within their internal accounting system respectively for natural gas transmission, distribution, storage facilities, and operation of LNG facilities and for other activities outside the natural gas sector.

The policy implemented for allocation of headings in balance sheets and revenue and expense accounts is the direct allocation principle. If an asset component is useful for several activities, it is allocated to the activity which is its main user. Expenses and revenues are directly allocated to the expenses and revenues account. If direct allocation is not possible, expenses and revenues must be broken down according to applied costs.

Financial relations between unbundled activities are covered by protocols, the establishment of some of which is provided for by law (for example, access to infrastructures). The protocol terms applicable to unbundled entities must be the same as those applicable to third parties, in compliance with the rules governing non-discrimination and prohibition of cross-subsidies between unbundled activities. Therefore, if terms applicable to third parties result from a public tariff (access to regulated infrastructures) or regulations, these public rules constitute the reference standard for rules applicable across unbundled activities.

In the event of violation of these rules, the Commission de régulation de l'énergie may institute the default notice procedure stipulated in 3° of article 40 of the amended Law of 10 February 2000, and apply the ensuing financial sanctions stipulated in 1° of article 40. The financial sanction may not exceed 3% of the previous financial year's turnover exclusive of taxes and may be increased to 5% if the same obligation is violated again. There are no sanctions other than those stipulated in article 40 mentioned above.

Gas operators are not obliged to publish their unbundled accounts. These accounts are sent to CRE each year. Moreover, the Commission de régulation de l'énergie may carry out audits, in application of the provisions of article 27 of the law mentioned above. These are carried out either by CRE employees accredited for this purpose, or by external audit firms selected after call for tender.

## 2.5 Supply unbundling

In the gas sector, in the same way as in the electricity sector (cf. above electricity market regulation), the Law of 7 December 2006 now imposes the obligation of supply unbundling

between customers having exercised their eligibility and customers who have not, to take effect as from 1 July 2007.

Before promulgation of this law, companies operating in the electricity and natural gas sectors had to keep unbundled accounts of their supply activity between eligible and ineligible customers. This scope was, however, heterogeneous as it did not distinguish eligible customers according to whether they had exercised their eligibility or not.

CRE will review operator proposals on account unbundling of their supply activity in keeping with the new scopes, in the light of observations made in the context of unbundling of eligible and ineligible customers.

## **2.6 Independence of public network operators**

In application of the law of 9 August 2004, transmission system operators have been separate legal subsidiaries of vertically integrated undertakings since 1 September 2005.

Legal unbundling of distribution system operators servicing more than 100,000 connected customers is underway. CRE has conducted hearings with all DSOs concerned, to check that their legal unbundling projects are in full compliance with the requirements of directives governing independence. It makes detailed examination of the draft statutes of new companies and checks that network operators are provided with appropriate physical and human resources to enable them to act in total independence.

The law of 9 August 2004, transposing the European Directives of 26 June 2003, provided for the publication by CRE of an annual report on compliance with codes of good conduct and network operator independence. CRE published two reports in November 2005 and November 2006.

The transmission system operators, GRTgaz and TIGF, as well as all distribution grid operators who supply over 100,000 connected customers, have drawn up a code of good conduct and submitted it to CRE. The codes have been sent to all network operator staff and published on the network operators' websites.

These codes deal with non-discrimination and transparency, as well as the protection of commercially sensitive information.

CRE analysed the network operators' codes and annual reports. It held hearings with the network operators in October 2006 and also audited operators' practices.

During audits conducted in EDF Gaz de France Distribution centres, CRE observed the following:

- Management is highly involved in the proper application of the codes of good conduct in all the phases – deployment, monitoring and checking;
- Staff have been properly informed of principles of the codes and the resulting consequences;
- Physical separation of EGD premises from those of the supplier, if this exists, fosters staff assimilation of their respective roles and duties.

In its second report published in November 2006, CRE pointed out that network operators had to be organised and managed independently as from 1 July 2004, whether they are affiliated (transmission networks) or not (distribution networks). This independence should result in an organisation comparable with that of an autonomous undertaking and free to take any decisions in accordance with its interests, subject to the "*economic supervision and management rights*" acknowledged as belonging to the parent company by the Directives of 26 June 2003.

The networks must be managed independently from the other activities of the integrated groups. Progress has been observed regarding transmission. However, supply and distribution network management activities have still not been unbundled, although this is essential to ensure independence of the network management activity as from 1 July 2007.

CRE also provided a reminder of the recommendations made in 2005 and the following proposals:

- Network operators must be free to choose their subcontractors and no service must be imposed by the parent company;
- In compliance with provisions in the Directives of 26 June 2003, network operators must have full responsibility for deciding on their investments, to satisfy all network user needs in a non-discriminatory manner, within the framework of the total budget allocated to them.

CRE is currently conducting audits in order to check these points. In general terms, CRE checks the implementation of commitments undertaken by gas network operators in these codes of good practice.

The preservation of the independence of network operators is not absolutely guaranteed by the contents of the statutes adopted alone, due to the very nature of the link which unites a parent company to its subsidiary within an integrated group. The proper behaviour of parties concerned in their implementation will now be essential for achieving the result prescribed by the Directives of 26 June 2003.

Network operator independence is restricted by the right, resulting from laws applicable to limited companies, for any shareholder or director to access exhaustive information, at any time, to carry out their role or mandate. This right cannot be limited in the current state of national law. The protection of CSI is incompatible with the fact that directors who are appointed by a shareholder can have permanent access to certain information and then report back.

The brand image confusion between regulated and competitive activities is harmful. Gaz de France has opted for a similar visual identity for its competitive supply activities and regulated distribution system operator activities.

This confusion clouds customer understanding of how the market is organised and operated.

The institutional communication of these groups, which ignores the unbundling of activities, heightens this effect.

Confusion may lead customers to believe that they run risks in terms of quality and continuity of supply if they switch supplier.

**TABLE NO. 10: SUMMARY TABLE OF INFORMATION REQUESTED BY THE DG TREN**

	Electricity	Gas
Number of TSOs	1	2
DSOs	169	23
Application of the 100,000 customer rule	yes	yes
Unbundling of TSO/DSO ownership	none	none
Number of DSOs with fewer than 100,000 customers	164	20
Legal unbundling of TSOs	none	none
Number of system operator employees		
TSOs	RTE: 8 300	GRTgaz: 2 650 TIGF: 150
DSOs	EDF: 48 000	<b>Gaz de France: 6 000</b> 22 other DSOs: fewer than 800 in total
% of shared services		
TSOs	< 10%	GRTgaz: 25% TIGF: < 10%
% of shared employees	0%	0%
Application of legal unbundling		
TSOs	yes	yes
DSOs	no	no
Ownership of:		
TSOs	100% EDF	100% Gaz de France 100% Total
DSOs	not relevant	not relevant
Unbundling as regards generation/production and supply entities of the group		
TSOs	complete	complete
DSOs	complete or underway	<b>complete</b>
Presentation as a separate entity		
TSOs	yes	<b>GRTgaz and TIGF: yes</b>
DSOs	no	no
Publication of unbundled accounts		
TSOs	yes	yes
DSOs	no	<b>yes</b>
Detailed rules adopted by the regulator concerning account unbundling	yes	yes
Consequences of rule violation	Possibility of fines	Possibility of fines
Specific audit of unbundled accounts	no	no
Role of compliance officer	none	none
Possible sanctions on the regulator's part	yes	yes

\*

\* \*

## V. French gas market operations

### 1 The wholesale market

#### 1.1 State of play

For the bulk of its supplies, the French gas market relies on long-term contracts signed between incumbent suppliers and national companies from the producing countries. The share of alternative suppliers in imports is nonetheless on the rise.

The table below shows the imports and generation per transmission system operator zone measured over 12 months from 1 June 2006 to 31 May 2007.

**TABLE NO. 11: GAS IMPORTS AND PRODUCTION PER ZONE**

(Quantities in bcm)	All suppliers	Alternative suppliers <sup>(1)</sup>	
<b>Gas flow, per TSO zone (including transits and exports)</b>			
<u>Gaz de France réseau Transport zone</u>			
Imports	51.15	3.50	6.84%
Production	0.03	-	-
<u>TIGF Zone</u>			
Supplies from Gaz de France réseau Transport zones	1.44		
Production	1.01	-	-

*Source: CRE, based on data provided by Gaz de France Réseau Transport - Total Infrastructures Gaz France*

Import capacities are presented in table no. 15.

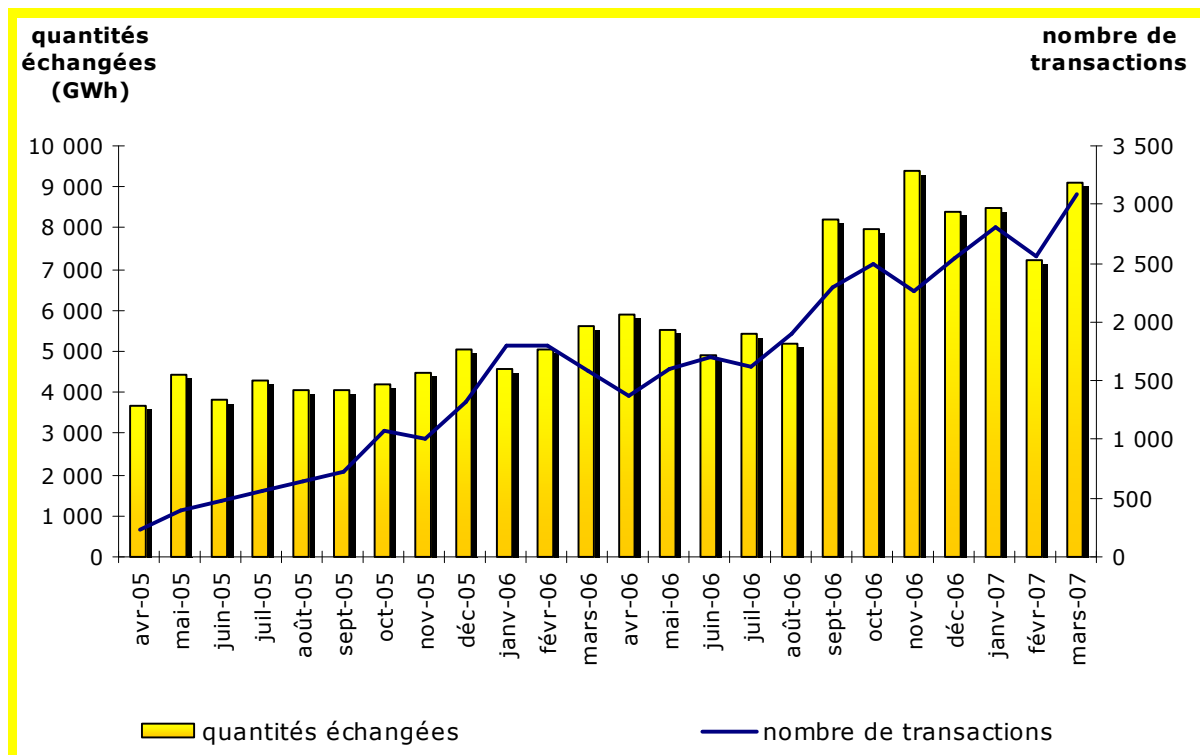
The 2 incumbent suppliers, Gaz de France and Total, manage around 92.2% of imports alone. The three largest market suppliers account for around 95.0% of imports. Twelve foreign companies operate on the wholesale market.

The gas exchange points were set up at the beginning of 2004 by Gaz de France and TIGF. These are virtual points, connected to a balancing zone, where a shipper can deliver gas to another shipper. Transactions are carried out at gas exchange points on a day-to-day basis and may result from longer-term commitments.

The gas sold under the temporary gas release programme is delivered to the south gas exchange point by Gaz de France and to the southwest gas exchange point by Total.

<sup>13</sup> Alternative suppliers are suppliers other than incumbent suppliers (Gaz de France, Tegaz and LDCs).

**FIGURE NO. 6: NUMBER OF TRANSACTIONS AND QUANTITIES EXCHANGED AT GAS EXCHANGE POINTS**



Sources: CRE based on data provided by TSOs

Volumes exchanged in the first quarter of 2007 rose by 69% compared to the same period in 2006.

### 1.2 Gas release programme

There is a geographical disparity on the French gas market related to the source of supplies and network constraints. Competition developed initially in the north and east of France. This is because the gas available for creating competition with the long-term supplies of incumbent operators currently comes mainly from gas deposits in the north of Europe. To get round this problem, and in response to CRE's request, at the end of 2004, Gaz de France and TOTAL set up gas release programmes in the south of France to foster the development of competition.

CRE's deliberations of 15 April 2004 concerned the conditions for release:

- Gaz de France will make 15 TWh (1.4 bcm) available at the south gas exchange point each year for three years (i.e. 45 TWh, 4 bcm), including at least 6 TWh per year by auction, accounting for around 15% of the gas quantities sold to eligible customers in this zone;
- Total will make 1.1 TWh (0.1 bcm) available at the southwest gas exchange point by auction each year for three years (i.e. 3.3 TWh, 0.3 bcm).

All the quantities available were sold. Sixteen companies took part in the auction organised by Gaz de France on 22 October 2004. The 12 lots sold were assigned to Distrigaz, Gas Natural and Total. In addition, Gaz de France sold 9 TWh (0.8 bcm) over the counter to BP, Distrigaz, Gas Natural and EDF.

Eight companies took part in the auction organised by Total on 27 October 2004. Only 5 of the 10 lots sold were acquired, by EDF and Iberdrola, at the reserve price set by Total. Total sold the remaining quantities over the counter to Distrigaz at the beginning of 2005.

The lot purchasers are able to adapt the increased load of their gas purchases to their needs.

Gas deliveries began on 1 January 2005. Due to the possibility offered to purchasers to choose the start date of the contracts, deliveries will progressively end in 2008.



## **2 Retail market**

### **2.1 Eligible customers**

As of 1 July 2007, all French customers can exercise their eligibility. As we do not currently have statistics on this deadline, the following section only deals with the eligible market before 1 July 2007 (non-household market).

Opening of the French gas market underwent several stages:

- as from August 2000, eligibility of all sites with annual gas consumption greater than 237 GWh, and all electricity generators or simultaneous generators of electricity and heat whatever their level of annual consumption;
- as from August 2003, eligibility of all sites with annual consumption higher than 83 GWh;
- since July 2004, all non-household customers have been able to choose their gas supplier. As at 1 April 2007, this represents 688,000 sites and annual gas consumption of 382 TWh.

Eligible customers have the choice between two types of contract:

- contracts at regulated retail tariffs (only proposed by incumbent suppliers);
- contracts at market prices (proposed by incumbent suppliers and alternative suppliers). Access to this type of contract means that eligibility has been exercised.

### **Inset no. 9: Segmentation of eligible customers as at 1 April 2007**

To ensure monitoring of the retail market, CRE has defined a segmentation of eligible clientele:

**Transmission:** sites connected to the transmission network. These sites are large-sized industrial sites (around 1,000). This segment accounts for about 1% of sites in number but 45% of natural gas consumption of eligible sites.

**Distribution:** sites connected to the distribution network. This segment accounts for 99% of sites and 55% of consumption of eligible sites.

**Reminder:** Household customers were not part of the eligible market as at 1 April 2007. As electricity generators account for insignificant volumes (35.6 TWh in 2006<sup>14</sup>), they are not distinguished from other customers.

## **2.2 Market share**

As at 1 April 2007, alternative suppliers' market share, compared to the number of sites having taken up their eligibility, was 7.4% (or around 15.4% of eligible consumption volume). This figure hides a disparate reality in the various segments. Penetration of alternative suppliers is thus limited to the segment of medium-sized sites:

**TABLE NO. 12: ALTERNATIVE SUPPLIERS' MARKET SHARE (IN NUMBER OF SITES AS AT 1 APRIL 2007)**

All sites	Transmission	Distribution
7.4%	17%	7.4%

### **A. ANALYSIS IN TERMS OF NUMBER OF SITES**

The market share of the 3 most significant suppliers in each segment is:

- 95% (all segments);
- 89% (segment of sites connected to the transmission network);
- 95% (segment of sites connected to the distribution network).

Foreign suppliers in France include all suppliers governed by foreign law who operate on the French market as well as suppliers governed by French law whose main shareholder is a supplier governed by foreign law.

As at 1 April 2007, eight foreign operators supplied 4.9% of sites connected to the transmission network against less than 0.01% of non-household customers connected to the distribution network.

### **B. ANALYSIS IN TERMS OF CONSUMPTION VOLUME**

The market share in volume of the 3 most significant suppliers for each segment is:

- 88% (all segments);
- 84% (segment of sites connected to the transmission network);
- 92% (segment of sites connected to the distribution network).

<sup>14</sup> Source DGEMP.

Foreign operators supply 10% of consumption of sites connected to the transmission network and less than 1% of consumption of sites connected to the distribution network.

## 2.3 Suppliers

### C. INCUMBENT SUPPLIERS

In France, there are 24 incumbent suppliers, which originally ensured supply and distribution:

- Total for gas transmission (great southwest);
- 22 local distribution companies (ELD) (in their own distribution zone);
- Gaz De France (in the rest of the territory).

### D. SUPPLIERS ALSO WORKING AS NETWORK OPERATORS

In France, two suppliers (Gaz De France and Total) work as transmission system operators (TSOs).

Along with the twenty-three LDCs, Gaz de France is also a distribution system operator (DSO).

### E. SUPPLIERS WORKING IN THE FIELD OF EXPLORATION AND PRODUCTION

As at 1 April 2007, five active alternative suppliers in addition to Gaz de France and Total were working in the exploration-production field. These activities are mostly located abroad (except for Total).

## 2.4 Switching supplier

Standard procedures have been drawn up to organise the methods for switching suppliers, but not defined by the law. They have resulted from discussion between various players in the sector (end customers, suppliers, distributors, TSOs and administrative authorities). CRE's objective was for the process of switching supplier to be easy, quick and free of charge.

### A. THE VARIOUS STAGES IN THE PROCEDURE

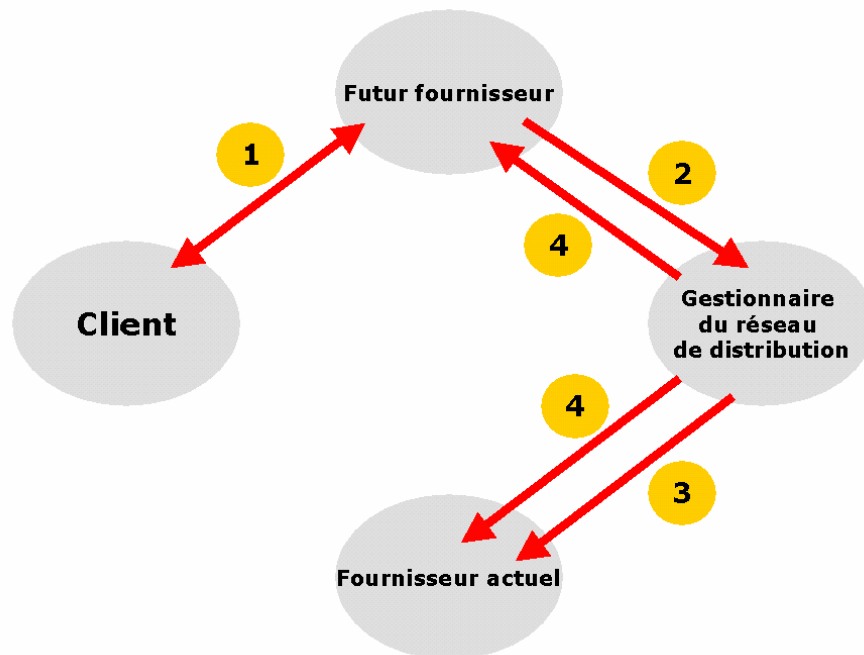
Within the framework of a single contract covering both the conditions for natural gas supply and for its transportation by the public distribution system operator, suppliers can be switched in the following way:

- Customers conclude a contract with their future supplier and sign a 'certificate for switching supplier';
- The future supplier informs the distribution system operator of the customer's desire to switch supplier. For household customers, the consumer code provides for a retraction period of 7 days in the case of canvassing or distance selling. Information on switching supplier is only given to the network operator once this period has lapsed;
- Distribution system operators acknowledge receipt of the application:
  - they check admissibility of the application (consistency of technical information);
  - they inform the customer's current supplier;

- Distribution system operators estimate the customer's index for switching:
  - they send the indexes to the current supplier on the date suppliers are switched along with the invoice for the corresponding amount;
  - they send the same indexes and the initial invoice corresponding to the fixed part of the network tariff to the future supplier.

In the case of customers with monthly or daily readings, distribution system operators (DSOs) impose a special meter reading invoiced to the future supplier.

**FIGURE NO. 7: PROCEDURE FOR SWITCHING SUPPLIER**



## B. REASONS FOR REFUSAL

The distribution system operator may object to an application to switch supplier (application admissibility verification) if:

- a previous application to switch supplier is already underway;
- fraud has been observed on the metering equipment.

## C. METHODS FOR TERMINATION AND TIMEFRAMES

The Law of 7 December 2006 inserting article L.121-89 in the consumer code indicates for household customers that *"in the case of switching suppliers, the contract is legally terminated on the date that the new energy supply contract takes effect"*.

The supplier must be switched within 21 days providing that this does not entail any change to meter reading frequency or metering equipment.

## D. COSTS RELATED TO SWITCHING SUPPLIER

Article 3 of Law 2003-8 of 3 January 2003 governing electricity and gas markets and public energy service, transposing Directive 98/30/EC of the European Parliament and Council of 22 June 1998, and defining joint rules for the internal natural gas market stipulates that *"if an*

eligible customer exercises eligibility for a site the supply contract [...] for this site, concluded at regulated prices is legally terminated without giving rise to any compensation whatsoever”.

However in the case of household customers, the law of 7 December 2006 inserting article L.121-89 in the consumer code stipulates that "the supplier may only bill the customer for the costs effectively borne for termination, either directly or by intermediary of the network operator, providing that these expenses were explicitly stated in the contract and are duly justified. No other costs may be claimed from the customer for the sole reason of switching supplier."

## 2.5 Retail prices

The following table presents the breakdown of billing for standard Eurostat customers Eurostat<sup>15</sup> at regulated gas retail tariffs applied by Gaz de France as at 1 July 2007.

The bill does not show this breakdown, as regulated tariffs are integrated tariffs composed of a subscription and a variable part.

Since 1 January 2006, costs related to pension schemes for electricity and gas industry employees are funded by a tariff contribution separate from the transportation tariff. This contribution is nevertheless always integrated in the regulated gas retail price and does not feature on bills.

**TABLE NO. 13: BILL AT REGULATED RETAIL TARIFFS APPLIED BY GAZ DE FRANCE AS AT 1 JULY 2007 (€/MWh)**

	D3 customer	I1 customer	I4 customer
Supply part (average supply cost between July 2006 and June 2007)	20.9	20.9	20.1
Transmission part	2.4	2.0	1.0
Distribution part	10.9	7.2	1.3
Storage part	2.8	2.0	0.04
Regulatory contributions to network costs (CTA) <sup>(1)</sup>	0.9	0.2	0.02
Commercial costs <sup>(2)</sup>	5.43	5.32	0.12
Bill excluding VAT at regulated tariffs as at 1 July 2007	43.33	37.62	22.58
VAT	7.74	7.16	4.40
Bill including VAT at regulated tariffs as at 1 July 2007	51.07 (B1 tariff)	44.78 (B2I tariff)	26.98 <sup>(1)</sup> (STS tariff)

(1) STS tariff for a consumer connected to the bulk transmission network

\*  
\* \*

<sup>15</sup>D3 customer: Household with consumption of 23.26 MWh per year (hot water, cooking and heating)  
I1 customer: Industrial company with consumption of 116.3 MWh per year  
I4 customer: Industrial company with consumption of 116.3 GWh per year.

## **VI . Security of supply**

CRE draws attention to the fact that the bulk of information given in this chapter comes under the jurisdiction of the Minister for Energy.

Security of electricity supply is mainly ensured by the scheduling of means of generation. This scheduling takes place every two years when the pluri-annual generation investment programme is adopted. Article 6 of the law of 10 February 2000 stipulates that the "*Minister for Energy shall fix and make public the pluri-annual generation investment programme which sets the objectives for the distribution of electricity generation capacities by primary energy source and, if need be, by generation technique and geographical area*". In order to achieve these objectives, support measures, for example benefiting certain primary energies, may be adopted and possibly accompanied by calls for tender.

Moreover, the current context of market integration which is not yet effective and development of cross-border exchanges requires, in addition to the existence of sufficient installed capacity, generation capability to meet the demand.

For gas, CRE has no responsibility in terms of security of supply, which comes under the government's jurisdiction.

### **1 Electricity**

In accordance with article 4 of the Directive 2003/54/EC

#### **1.1 The current situation**

##### **A. PEAKS IN ELECTRICITY DEMAND**

According to RTE, maximum consumption in 2006 reached 86,280 MW at 6.58 pm on 27 January 2006, which is also the record high for instantaneous consumption.

## B. ENERGY MIX

According to RTE, maximum installed capacity in France amounts to 108.5 GW. This figure does not include the generation capacities definitively shutdown or connected to distribution grids (7.5 GW). The energy mix is as follows:

**TABLE NO. 14: ENERGY MIX IN FRANCE**

Sector	Energy generated in 2006	Variation 2006/2005	Share in energy mix
Nuclear power	428.7 TWh	- 0.3 %	78.1 %
Conventional thermal power	54 TWh	- 9.6 %	9.8 %
Hydropower	60.9 TWh	+ 8.4 %	11.1 %
Other renewable energy sources	5.5 TWh	+ 27.7 %	1 %

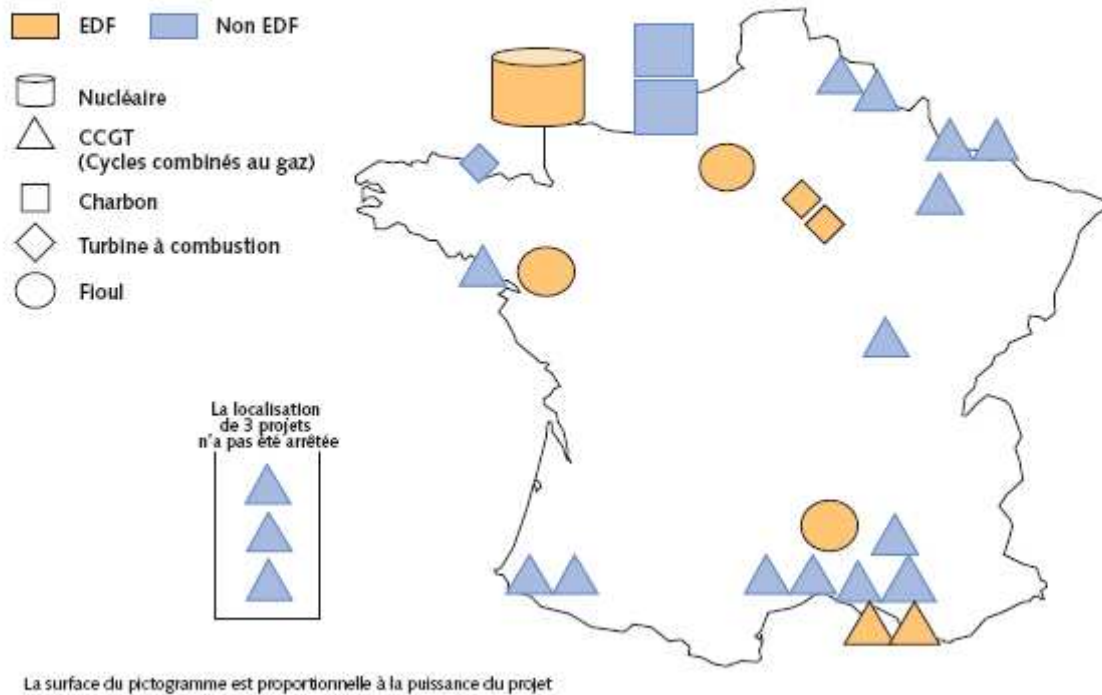
*Source: RTE published data*

According to RTE, 1000 MW of generation capacities (mainly thermal power) was withdrawn from operation in 2006 and mainly concerned EDF's conventional power plants. This drop was mainly compensated for by connection of 1220 MW of new means of generation (including 610 MW of wind power generation capacities and 355 MW of cogeneration capacities).

## C. INVESTMENTS IN THE GENERATION SECTOR

The law of 10 February 2000 on the public electricity service stipulates that new electricity generation facilities and modified facilities must obtain an operating permit or a declaration from the Minister for Energy.

**FIGURE NO. 8: PROJECTS ANNOUNCED IN FRANCE FOR POWER PLANTS GENERATING OVER 100 MW**



Source: CRE

The figure above shows the main projects announced in France for new means of generation, to become operational in 2012 at the latest, and representing a total capacity of over 14 GW. For the most part, projects concern combined cycle gas turbines (CCGT), but projects for oil- and coal-fired plants are also planned. Although it is uncertain whether some of them will be completed, others are already at the construction stage. Over 9 GW are in the hands of alternative operators, all active on the retail market – Endesa, Poweo, Gaz de France and Electrabel. In addition, alternative operators' projects are for so-called 'semi-base' facilities.

Previously mainly managed by EDF, under the State's control, the electricity generation investment programme (pluri-annual investment programme) has become a State prerogative, which is carried out under the terms defined by article 6 of the Law of 10 February 2000:

"The Minister for Energy shall fix and make public the pluri-annual generation investment programme which sets the objectives for the distribution of electricity generation capacities by primary energy source and, if need be, by generation technique and geographical area. *This programme is drawn up so as to accommodate decentralised generation, cogeneration and new technologies and is the subject of a report submitted to Parliament by the Minister for Energy in the year following any re-election of the Assemblée nationale. [...]*

*In order to define this programme, the Minister for Energy uses the energy collective services scheme in particular along with a pluri-annual forecast report drawn up at least*



*every two years, under the State's control, by the public transmission system operator. This statement incorporates trends in consumption, transmission and distribution capacities and exchanges with foreign grids".*

The Government may launch a call for tender, implemented by CRE, if it considers that existing and planned means of generation do not fulfil the objectives set by the Minister for Energy within the framework of the pluri-annual generation investment programme.

Since the beginning of 2004, several calls for tender have been launched:

- A call for tender for a 40 MW combustion turbine in Martinique has led to an operating permit being issued for a power plant in Bois-Rouge;
- A call for tender for electricity generation facilities using biomass and biogas energy has led to an operating permit for 232 MW of capacity;
- A call for tender for offshore wind power plants has led to an operating permit for 100 MW of capacity (500 MW was requested);
- A call for tender for onshore wind power plants has led to an operating permit for 278 MW of capacity (500 MW was requested);
- A call for tender for electricity generation facilities using biomass energy was launched in 2006, targeting a capacity of 300 MW.

Furthermore, purchase obligations are intended to foster development of certain sectors and, as a result, EDF and LDCs must, under certain conditions and at tariffs fixed by the State, purchase energy generated by:

- Facilities using renewable energy sources (small-sized hydropower facilities, wind power, photovoltaic, recycling of household waste, biomass/biogas and geothermal power);
- Cogeneration facilities.

#### **D. SYSTEMS DESIGNED TO ENSURE CAPACITY AVAILABLE TO SATISFY DEMAND**

Firstly, the balancing responsible system was set up and is financially responsible for imbalance later observed within its balancing zone. Imbalance is settled based on the price of balancing carried out in order to maintain generation/consumption balance and cannot be less than the latest reference market price, which is available and credible, i.e. the hourly price defined the day ahead on the Powernext exchange. The purpose of this system is to encourage market players never to willingly place themselves in a position of negative imbalance – with a deficit of injection compared to planned withdrawal.

In order to complete this system, RTE publishes not only consumption forecasts and generation data but also the following information:

- Forecast analysis of supply-demand balance for summer and winter periods, published at the beginning of the period studied. Conclusions of these analyses are presented in the form of authorised level of export related to the security criterion adopted,<sup>16</sup> for every weekly consumption peak;
- The margin available for the following day's consumption peak is compared to the margin required for the security criterion adopted;
- Alert indicators are sent out if the risk of load shedding is significant. If the risk of load shedding is greater than 50%, an alert message is sent to the public authorities

---

<sup>16</sup> 1% of possibility of having to call on exceptional means, i.e. outside the normal field of balancing mechanism operations

and generators. If the risk of load shedding is close to 100%, an alert message is sent to the general public.

Residual imbalance of the system, the sum of balancing responsible entity imbalance, is cleared off by the balancing mechanism. French generators connected to the transmission grid must provide RTE with the total unused power technically available when submitting their offers for the balancing mechanism. French consumers as well as foreign operators<sup>17</sup> can also submit offers to the balancing mechanism if they so wish.

In addition, RTE has signed assistance contracts with neighbouring TSOs<sup>18</sup> which may be used by RTE in the event of insufficient offers on the balancing mechanism in order to restore system balance.

## 1.2 Infrastructure projects

### Strengthening of France-Spain exchange capacities

Commercial capacity of transits between France and Spain is currently around 1600 MW. The Iberian Peninsula interconnection rate is one of the lowest in Europe. It is far from being in line with recommendations made by the European Summit held in Barcelona in 2002 (10% of domestic consumption i.e. 4000 MW).

The objective currently targeted by TSOs is to raise the capacity to 2,800 MW, and then to 4,000 MW at a later date.

Interconnection reinforcement initially consisted of two headings: strengthening of the existing electrical line of Baixas/La Gaudière, and construction of a cross-border structure between Baixas and Bescanos. Even if the Baixas/La Gaudière reinforcement successfully passed through the stage of local consultation in 2003, the same cannot be said for the second heading.

New in-depth studies were therefore conducted by RTE in order to determine options complementary to the initial project. RTE transmitted possible solutions to the Department for Industry with a view to drafting the new project to be submitted for local consultation.

The start-up date for the project has already been postponed several times and has now been set for 2012 with an estimated budget of 162 M€.

---

<sup>17</sup> This possibility exists for operators at the borders with Germany, Spain, Great Britain, Italy and Switzerland.

<sup>18</sup> Elia, EnBW, National Grid, Swissgrid and Terna

## 2 Gas

In application of article 5 of Directive 2003/55/EC and article 5 of Directive 2004/67/EC

### 2.1 The current situation

Current levels of gas consumption and forecasts of future consumption constitute data coming under the jurisdiction of the Department for Industry, the Economy and Finance.

Firm import capacities per entry point are provided in the table below:

**TABLE NO. 15: IMPORT CAPACITIES PER ENTRY POINT**

Entry point (total firm capacities)	MWh/d	bcm/year
H TAISNIÈRES	590 000	17.4
DUNKIRK	555 000	16.4
OBERGAILBACH	430 000	12.7
FOS / MER	220 000	6.4
MONTOIR	370 000	10.9
L TAISNIÈRES (L gas, GCV of 9.8 kWh/m <sup>3</sup> )	230 000	8

Source: GDF RT in MWh per day and in bcm per year (with 340 days of use and a GCV of 11.5 kWh/m<sup>3</sup>)

Total import capacity in France is around 70 bcm/year.

Storage capacity in France is 11.7 bcm, i.e. 132 TWh (useful volume), accounting for 26% of annual consumption.

### 2.2 Infrastructure projects

In France, gas flows are currently mainly in the north south direction. Given the high number of entry points, the north benefits from sufficient supply to enable different sources of gas to compete against each other. On the other hand, the south has few gas entry points which adversely affects competition between suppliers. The construction of an interconnection with Spain and the commissioning of the Fos Cavaou (Fos 2) LNG terminal will improve this situation and allow the regional gas markets to develop. In addition, GRTgaz has developed an investment programme to resolve congestion and merge the west, north and east zones of its network as from 1 January 2009. GRTgaz has published its ten-year investment plan.

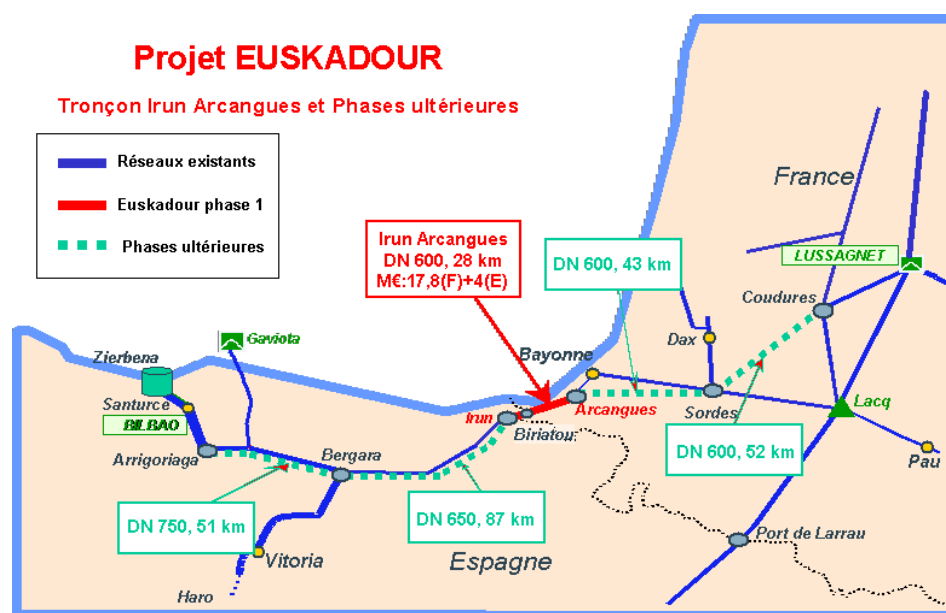
#### A. RESOLVING CONGESTION IN THE NORTH ZONE

GRTgaz has launched an investment programme amounting to 310 M€ designed to resolve congestion in the north of France and merge the west, north and south zones as from 1 January 2009.

## B. THE EUSKADOUR PROJECT

The Euskadour project is a pipe connecting the Bilbao LNG terminal to the Lussagnet and Izaute storage facilities. Phase 1 of the project consists of a 28-km pipe connecting Irun (Spain) to Arcangues (Pyrénées Atlantiques). This new interconnection with Spain was commissioned in June 2006.

FIGURE NO. 9: EUSKADOUR PROJECT



Source: TIGF

## C. FOS CAVAOU LNG TERMINAL

With the construction of a new LNG terminal at Fos Cavaou (Fos 2), France is helping to increase LNG (liquefied natural gas) import capacities in Europe. This terminal will be operated by Société du Terminal Méthanier de Fos Cavaou whose shareholders are Gaz de France (70%) and Total (30%). With capacity of 8.25 bcm per year – almost 20% of French natural gas consumption – this new terminal will be commissioned in the first half of 2008.

10% of capacities has been reserved by third parties for a period of 3 years, with four companies subscribing to these capacities: Essent, Distrigaz, Eni and EDF. EDF has been appointed as the contract holder for the terminal operator.

The commissioning of the new LNG terminal in Fos Cavaou requires transmission pipelines to be fitted between the terminal and the interconnection and compression station of Saint-Martin-de-Crau (Bouches du Rhône) as well as reinforcement of the station to ensure connection of this terminal to the GRTgaz transmission network for a total cost of 78 M€.

## D. EXTENSION PROJECT FOR THE MONTOIR TERMINAL

In December 2006, Gaz de France also announced a project for extension of the Montoir LNG terminal, in accordance with commitments made by Suez and Gaz de France to the European Commission, under the merger project. Two scenarios are being examined:

- commissioning of a regasifier which would increase terminal capacity from 10 Bcm per year to 12.5 Bcm per year, in 2011;
- construction of a fourth tank which would increase terminal capacity to 16.5 Bcm per year, in 2014.

The choice of scenario will depend on market response at the end of the open season procedure, for which Gaz de France closed subscriptions in April 2007.

#### **E. REINFORCEMENT PROJECT FOR THE GUYENNE TRUNK MAIN (GIRONDE – LANDES)**

The commissioning of the LNG terminal in Fos Cavaou and development of interconnections with Spain and storage capacities in the southwest of France will change the flow system of dominant gas in France.

To deal with these new gas flows, it is necessary to develop gas transmission capacities in the "south to north" direction and to reinforce certain structures as a result.

The technical solution adopted for overall optimisation of investments is to reinforce the Guyenne trunk main, partly integrated in both the GRTgaz and TIGF networks. The project, amounting to a total of between 320 and 360 M€ (65 M€ for GRTgaz and between 255 and 295 M€ for TIGF), is composed of three phases and will enable the capacity of the Guyenne trunk main to reach 380 GWh per day in the south-north direction.

The 1<sup>st</sup> phase has been decided and will be commissioned in October 2008. It corresponds to commissioning of the Fos Cavaou terminal and will increase the capacity of the Guyenne trunk main by 200 GWh per day in the north-south direction (TIGF entry from GTRgaz).

#### **F. EXTENSION OF IMPORT CAPACITIES AT OBERGAILBACH**

The Obergailbach entry point, linked to Germany through the Megal gas pipeline, mainly serves to transport gas from the Russian production fields.

The need for an eventual increase in transportation capacities at the Obergailbach entry point arose from different non-binding requests from shippers or transmission system operators upstream, and from GRTgaz's own analysis of trends in gas flows in Europe.

At present, the firm entry capacity sold amounts to 430 GWh per day. At the end of 2004, Megal shareholders decided to develop exit capacity on the German side. Consequently, in May 2005, GRTgaz organised a market consultation to determine the need for additional entry capacity on the French side.

As a result of this, GRTgaz decided to reinforce the Obergailbach entry point to offer firm entry capacity of 550 GWh per day at the end of 2008 and 620 GWh per day at the end of 2009.

## G. THE FLUXYS/GRTGAZ OPEN SEASON

The Taisnières entry point is connected to two gas pipelines located in Belgium and is used to import gas from Norway and the Netherlands. Analysis of subscriptions and flows at this point highlights the access difficulties experienced by newcomers, even though the full capacity of the infrastructure is not reserved on the French side.

Consequently, the shippers Fluxys and GRTgaz undertook to find solutions to the difficulties identified. Some initial measures were presented at a gas interconnection workshop, held at CRE on 11 May 2007 as part of the ERGEG Regional Initiative.

In addition, for the longer term, on 26 April 2007, GRTgaz and Fluxys made a coordinated announcement of the start of a consultation on additional capacity needs for gas transit from Belgium to France. Interested shippers have until 31 July 2007 to notify their non-binding requests and until 30 November 2007 to put in their binding requests. Based on the results of this consultation, GRTgaz and Fluxys could, if necessary, decide to increase interconnection capacity, to be made available on the market on 1 November 2011. The GRTgaz and Fluxys consultations will take place under the respective supervision of the French and Belgian regulators.

## H. FRANCE-SPAIN INTERCONNECTIONS

On 6 February 2007, as part of the ERGEG South Regional Energy Market Project, Enagas, GRTgaz and TIGF presented a forecast investment plan for development of interconnections between France and Spain by 2010-2011.

The plan, of an indicative nature, assumes prior completion of phases 2 and 3 of the Guyenne trunk main and reinforcement of the Larrau interconnection point, and provides for physical imports of gas from Spain to France of around 3 Bcm per year in 2010 and 5 Bcm per year in 2011.

In parallel, TSOs will work with the relevant regulators to design transparent, non-discriminatory allocation methods for the capacity thus created.

\*  
\* \*

## VII . Public service related issues

in application of article 3, paragraph 9 of the electricity directive  
in application of article 3, paragraph 6 of the gas directive

### 1 Summary of provisions applicable

#### 1.1 for implementation of a labelling system

Under article 5 of decree 2004-388 of 30 April 2004, suppliers are obliged to inform end consumers of the origin of the electricity supplied. This information is provided in bills and documents enclosed as well as in promotional material distributed.

#### 1.2 for application of criteria stipulated in appendix A of the directive

The provisions of appendix A of the directive were, for the most part, already transposed by existing texts, and primarily in the consumer code.

Nevertheless, in order to finish off this transposition, the Law of 7 December 2006 completed the consumer code by creating a section assigned to electricity and natural gas.

Article 42 thus defines the information that electricity and natural gas suppliers are obliged to provide to their customers at the pre-contractual and contractual stages.

Article 43 extends the application of certain articles in the consumer code to small non-household customers defined in the following way: "*non-household consumers subscribing to electrical power equal to or less than 36 kilovolt-amperes*" or "*consuming less than 30,000 kilowatt-hours per year*"; for natural gas.

In addition, article 7 appointed an Energy Mediator, responsible for recommending solutions to disputes between consumers and suppliers of electricity and natural gas, and to help in drafting information on electricity and natural gas consumer rights.

Concerning the fact that the procedure for switching supplier is free of charge, article 83 of Law 2005-781 of 13 July 2005 of the programme fixing the energy policy guidelines states that if, customers who have already exercised their eligibility, switch supplier for a second time, they are solely liable for the costs incurred by this change.

However in the case of household customers, the law of 7 December 2006 inserting article L.121-89 in the consumer code stipulates that "*the supplier may only bill the customer for the costs effectively borne for termination, either directly or by intermediary of the grid operator, providing that these expenses were explicitly stated in the contract and are duly justified. No other costs may be claimed from the customer for the sole reason of switching supplier.*"

### 1.3 for management of vulnerable customers

Social provisions regarding the protection of vulnerable consumers (exclusively household customers, and not companies) came into force under article 37 of the Law of 3 January 2003.

Decree 2001-531 of 20 June 2001 sets up a system "to preserve or guarantee access to electricity" for people in precarious situations. This decree was completed by Decree 2005-971 of the 10 August 2005 governing the procedure applicable in the case of unpaid bills: consumers in financial difficulty may benefit from an energy maintenance service (minimum rated power of 3 kVA) and assistance with paying invoices together with social services, from the housing solidarity fund supplied by EDF and the LDCs. Furthermore the Law of 5 March 2007 stipulates that between 1 November of each year and 15 March of the following year, electricity and gas suppliers cannot cut off supply in the case of unpaid bills by persons benefiting or having benefited from a decision to grant aid from the housing solidarity fund within the last twelve months.

Decree 2004-325 of 8 April 2004, governing the special pricing of electricity as a staple, refers to the "special pricing of electricity as a social product". Within the framework of the public electricity service, consumers with low incomes (lower than the a certain cap depending on household composition) may qualify for a discount on the regulated retail tariff for electricity.

Part of the cost borne by suppliers for this duty of public service is compensated by the public electricity service contribution (CSPE).

## 2 Regulation of prices applied to end users

All customers have been eligible since 1 July 2007.

Any customer holding a market contract for a site may no longer hold a regulated contract for that site (non-reversibility principle).

- Any customer holding a regulated contract for a site may maintain it for that site.
- Any customer moving into a previously occupied site may hold a regulated contract if the previous occupant held a regulated contract.
- Any customer moving into a newly created site (new building) may request a regulated electricity contract before 1 July 2010.

Regulated retail tariffs (regulated contract prices) are set jointly by the Minister for the Economy and the Minister for Energy following CRE's opinion. In application of the Law of 10 February 2000 governing electricity and the Law of 3 January 2003 governing gas, tariffs must cover suppliers' costs – transportation and supply costs (procurement and marketing/customer management).

The Law of 7 December 2006<sup>19</sup> provided for a new option for customers. Customers holding an electricity market contract can request the transitional regulated tariff for market adjustment (TaRTAM) from their supplier between 5 January 2007 and 1 July 2007 for a maximum duration of 2 years.

---

<sup>19</sup> Law 2006-1537 of 7 December 2006 governing the energy sector



The tariff is legally applicable for a maximum period of 2 years as from the date of the request. It is equal to the regulated sales tariff exclusive of tax, increased by 23% for green tariffs, 20% for yellow tariffs, and 10% for blue tariffs.<sup>20</sup>.

Like the regulated retail tariff, the TaRTAM covers supply and grid access.

Suppliers do not receive any compensation in return for the obligation of providing energy at regulated retail prices for gas and electricity. On the other hand, suppliers using the TaRTAM are compensated for the difference between their supply costs and the supply part of the TaRTAM (equal to the TaRTAM decreased by the tariff for grid use). CRE is in charge of assessing this compensation, based on suppliers' declarations. It is funded by generators using nuclear and hydroelectric plants with a power rating greater than 2000 MW – EDF and Compagnie Nationale du Rhône (CNR).

As at 1 July 2007, around 2,500 sites had requested the TaRTAM.

## 2.1 Electricity

There are around twenty regulated tariffs, depending on the rated power, applied by EDF and the local distribution companies.

After an average drop of around 24% over 10 years in constant Euro value, regulated electricity retail tariffs:

- increased by 3% on average on 1 July 2003;
- fell by 1.2 €/MWh on 1 January 2004, an amount equivalent to the rise in the public electricity service contribution for 2004.
- increased by 1.7% on 15 August 2006.

They comprise:

- A grid part, equal to the total tariff for grid use set by the decision of 25 September 2005 (TURP2) and the transportation tariff contribution (CTA);
- A supply part, which must remunerate electricity generation and commercialisation activities.

CRE considered, as imposed by the law, that the supply part of current blue tariffs applicable to household and small non-household customers covered the supplier EDF's costs and also allowed investments necessary to the activity to be financed, especially given the 2006 drop in the tariff for the use of public grids. Green and yellow tariffs applicable to medium-and large-sized sites do not enable such objectives to be achieved.

The public service contract between EDF and the State, signed in October 2005, stipulates that the rise in tariffs for household customers shall not exceed inflation for the first five years. No periodicity of tariff changes has been decided upon.

## 2.2 Gas

Regulated retail tariffs for natural gas are applied by Gaz de France, Tegaz and the local distribution companies and are specific to each supplier.

---

<sup>20</sup> Blue tariffs: rated power  $P \leq 36$  kVA – yellow tariffs:  $36 \text{ kVA} < P \leq 250$  kVA – green tariffs:  $P > 250$  kVA

Without identifying them these tariffs include:

- the cost of gas supply;
- the cost of use of the transmission and distribution networks (where applicable);
- the cost of load-balancing (use of storage facilities to meet seasonal consumption demand);
- marketing costs.

Since June 2006, CRE's opinions on the trends in regulated retail tariffs have been adopted by the Government with the exception of 2 unfavourable opinions on 28 March 2007.

Two types of regulated tariff exist.

#### A. SUBSCRIPTION TARIFFS

Subscription tariffs apply to gas consumers connected directly to the gas transmission network and customers connected to a distribution network who consume more than 4 GWh a year.

Subscription tariffs are revised four times a year (1 January, 1 April, 1 July and 1 October).

Subscription tariff movements are proposed by suppliers and are applicable directly, provided that the Government, having considered CRE's opinion, does not oppose them.

#### B. PUBLIC DISTRIBUTION TARIFFS

Public distribution tariffs concern all customers connected to a distribution network consuming less than 4 GWh a year. Gaz de France accounts for around 96% of sales for these tariffs and local distribution companies of natural gas, around 4%.

Methods for changing public distribution tariffs are defined by the Ministerial Order of 16 June 2005 which provides for quarterly increases for LDCs. The quarterly updating of Gaz de France tariffs was abolished by the Ministerial Order of 28 April 2006, which amended the Ministerial Order of 16 June 2005. No frequency for updating tariffs has been set for this supplier.

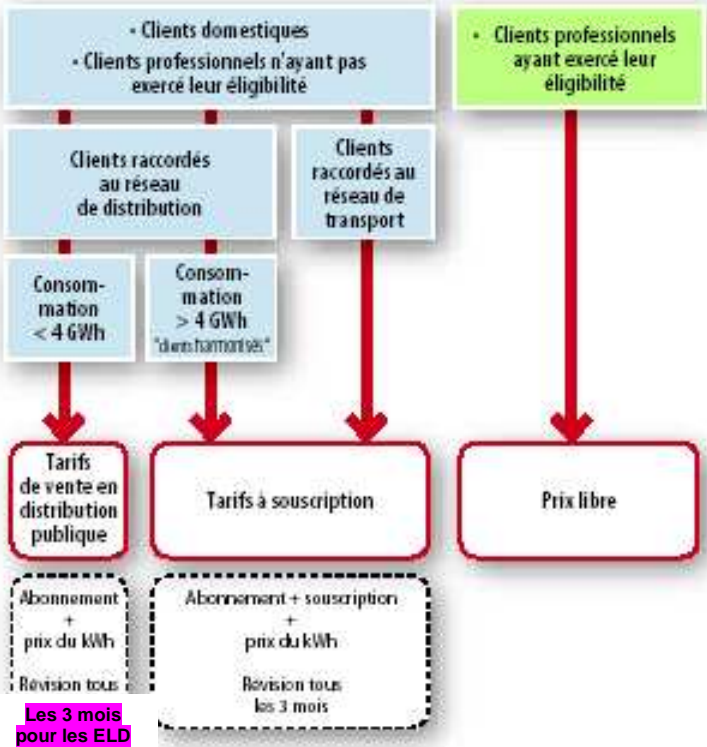
Suppliers submit their proposed price scale to the Ministers for the Economy and Energy with a copy to CRE, 21 days before the date that the change is due to come into effect.

After opinion from CRE on the Ministers' referral, the Ministers may ask the suppliers concerned to amend their proposed price scale.

The tariff changes incorporate trends in supply costs, on the basis of a formula unique to each operator, and trends in other types of costs.

The calculation of supply costs for a given month M is equal to the average of the formula applied over the 6 months preceding the month in question with a months' difference (month M-7 to M-2).

FIGURE NO. 10: REGULATED RETAIL TARIFFS FOR NATURAL GAS



\*  
\* \*