COMMISSION
DE RÉGULATION
DE L'ÉNERGIE

2016

Activity Report

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

CRE Activity Report 2016

ENERGY TRANSITION: FOLLOW THE ROUTE

> « The integration of European energy markets needs to continue, without losing sight of our individual national characteristics. »
>
> **JEAN-FRANCOIS CARENCO**, Chairman of CRE

The ecological transition, which is an essential part of combating climate change, is leading to a major shakeup of our energy systems. It defines our course by setting us very long-term targets, 2040, 2050 and beyond. Our aim is to mobilise the whole of society, as we are all affected in our day-to-day lives: housing, transportation, energy consumption, etc.

But how can we achieve those distant goals? Which path should we take? How can we ensure, while heading in the right direction and gradually making the necessary changes, that the energy system remains efficient, and does not place an undue burden on consumers, businesses and the economy?

In this context of rapid change, the Minister of State for Energy has asked that CRE play a dual role:
• keeping the electricity and gas markets working at the best level of efficiency and fairness, while making sure that all actors, network operations in particular, have the incentives they need to innovate and act to make the necessary changes. Whatever changes are underway, consumers need to benefit from increasingly innovative offers and services. The integration of European energy markets also needs to continue, without losing sight of our individual national characteristics;
• keeping the public authorities, and more widely the whole country, updated about the challenges, risks and opportunities ahead of us. Decisions need to be taken on the basis of full knowledge of the short- and long-term costs involved. I am not forgetting that we are still paying today, and will be paying for a long time, more than 2 billion euros annually for the photovoltaic facilities installed before 2010.

The scale of the work to be done is immense, just like the possible changes are varied and complex. The course is set, but the future still needs to be written.

Technological innovation is advancing at a constantly accelerating rate: photovoltaic, offshore and onshore wind power are seeing dramatic falls in production costs. Tomorrow, electricity storage could also become competitive.

The digital revolution provides an amazing opportunity to assist with, and even to speed up the energy transition. Through smart meters for instance, it allows us to implement new policies to steer demand, and to effectively manage the general trend towards decentralising energy systems.

The social issues are manifold, going well beyond questions of the energy mix and the role of nuclear power in this: how to foster the development of self-supply without losing the values of solidarity that underpin our energy system? For electric mobility, how to reconcile the individual freedom our citizens cling to fiercely in their movements and the need to manage centrally the recharging of millions of electric vehicles? For heating, should we – as some argue – return to the all-electric option, when we have modern and high-performance gas infrastructures?

Given the complexity of the challenges that face us, CRE can and must help French society to make informed choices. This is why it is going to set up a foresight committee, which will provide a forum for debate and information on environmental, economic, industrial and social questions related to the energy sector.

I hope that this initiative will help us all to collectively choose the best way forward for the energy consumers of today and tomorrow.

> *« Given the complexity of the challenges that face us, CRE can and must help French society to make informed choices. »*

3 MINUTES TO UNDERSTAND CRE

Since its creation 17 years ago, on 24 March 2000, the French Energy Regulatory Commission (Commission de régulation de l'énergie – CRE) has ensured the proper functioning of the electricity and gas markets in France, for the benefit of end consumers and in accordance with the objectives of energy policy.

STATUS

Independent administrative authority

PRINCIPLES

Independence

vis-à-vis the energy sector and the government (shareholder of companies in the sector) for the implementation of certain responsibilities that are defined by law

Transparency

of work and procedures in preparing decisions and opinions

OBJECTIVES

Ensuring the independence

of the network operators

Establishing harmonised rules

for the operation of networks and markets so that energy can flow freely between the Member States of the European Union

Ensuring competition

between energy suppliers for the benefit of consumers

Ensuring that consumers

get the best service and pay a fair price

TASKS CARRIED OUT CONTINUOUSLY SINCE 2010

Participating

in the construction of the European internal energy market

Ensuring

the proper functioning of electricity and natural gas markets for the benefit of the end consumer

Regulating

the gas and electricity networks, which are monopolies: fixing their tariffs and ensuring that they do not favour any user

Ensuring

proper consumer information

Implementing certain support schemes

for renewable energy, by initiating calls for tenders

2 INDEPENDENT BODIES

The Board

6 commissioners, with parity between women and men, appointed based on their legal, economic and technical qualifications, define the broad guidelines and adopt decisions and opinions, while relying on the expertise of the management, under the authority of the Chairman and the Managing Director.

The Standing Committee for Dispute Settlement and Sanctions (CoRDiS)

4 members constitute the Dispute Settlement and Sanctions Committee: two state councillors and two councillors from the Court of Cassation. They are responsible for settling disputes between operators and users over the access to public electricity and gas networks and their use, and for punishing any infringements of the energy code.

267
deliberations

23
referrals to CoRDiS

16 public consultations

160 hearings

85 market players interviewed by the Board

53 consultative meetings of the CRE working groups (31 meetings of the electricity working group and 22 meetings of the gas working group)

9 hearings of the Chairman and CRE departments before parliament

102 commission sessions

12 decisions by the CoRDiS (board)

2 visits to the non-interconnected territories (French Guiana March 2016, Martinique October 2016)

WORKFORCE

130
officers,
comprising 57 women and 73 men as at 1 January 2017 (150 as at 1 July 2017)

AVERAGE AGE

37
years

BUDGET

18.5
million euros

The funding necessary for the functioning of the CRE is proposed by the commission to the Minister of Finance for inclusion in the Finance Act. Any allocations are entered in the general state budget. The CRE is subject to review by the Court of Auditors.

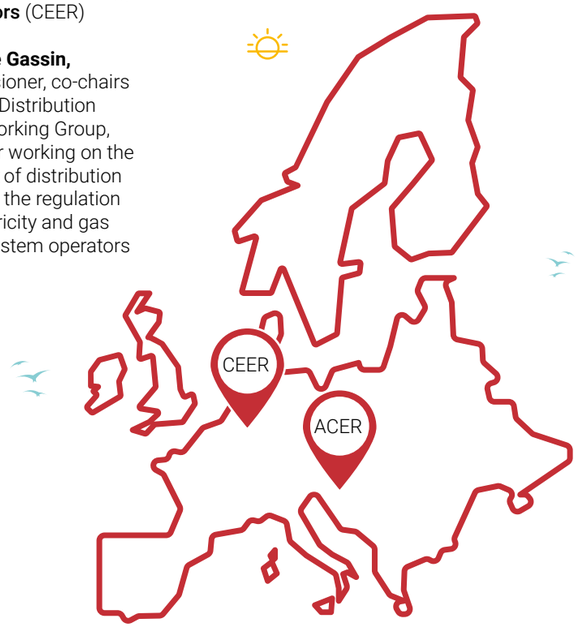
20
billion euros
Charges fixed by the CRE relating to the pricing of electricity and gas transmission and distribution systems

IN EUROPE

In order to create a genuine internal energy market in the European Union, CRE works closely with its European counterparts within two organisations:
– **Agency for the Cooperation of Energy Regulators** (ACER)
– **Council of European Energy Regulators** (CEER)

Hélène Gassin,
CRE commissioner, co-chairs the CEER Distribution Systems Working Group, responsible for working on the development of distribution systems and the regulation of the electricity and gas distribution system operators

Patricia de Suzzoni,
CRE director, chairs the CEER Customers and Retail Markets Working Group, which is working on consumer rights, the design and monitoring of the electricity and gas retail markets.



20
staff members
at CRE
are working
on European issues

9
meetings
of the ACER council
of regulators were attended
by CRE

CRE has performed
400
short-term missions
in order to participate
in the work of European
regulators in 2016

IN THE WORLD

The energy regulators from different continents meet to discuss common challenges and problems

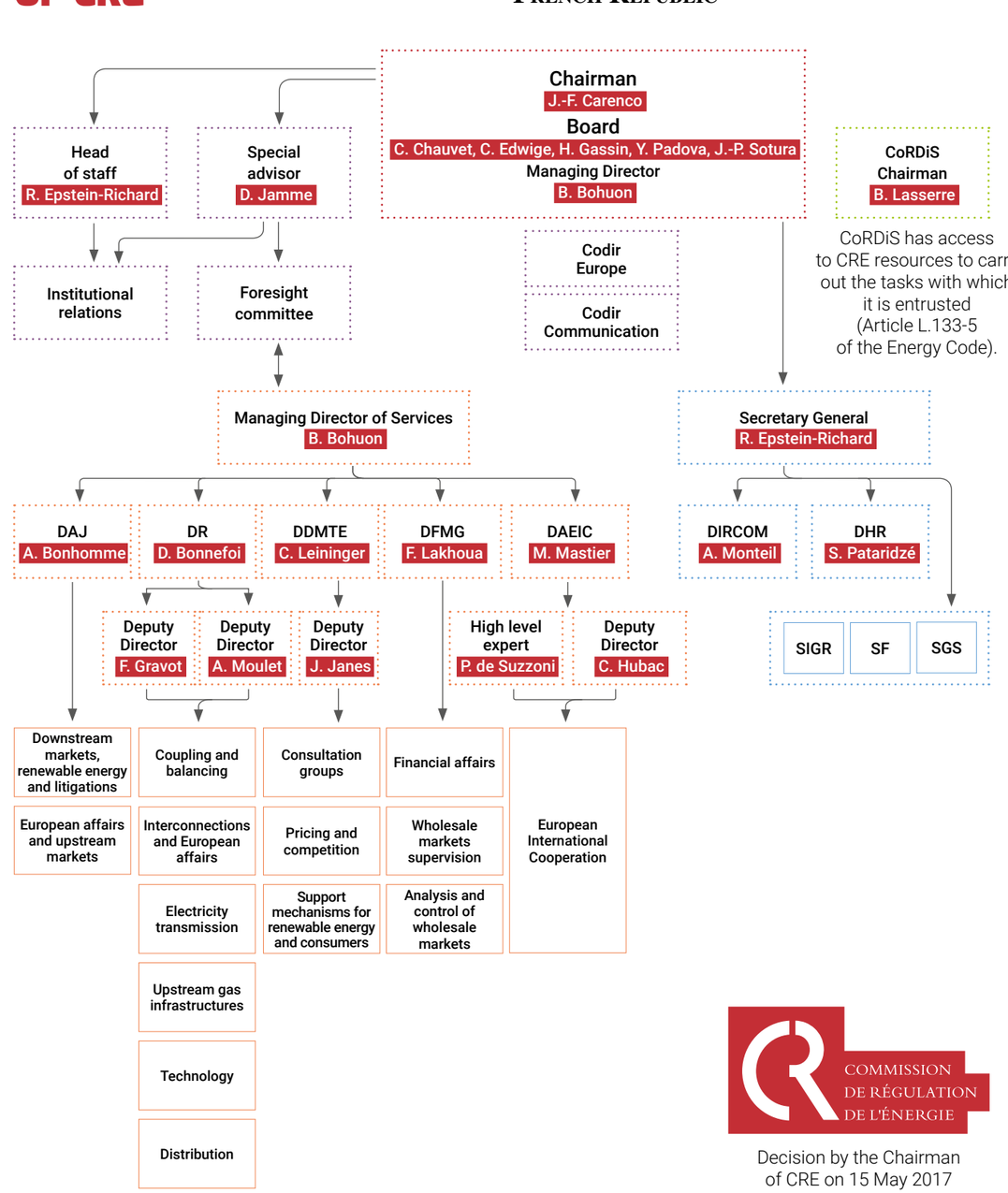
World Forum on Energy Regulation (WFER)

International Confederation of Energy Regulators (ICER)

The OECD Network of Economic Regulators (NER)

Florence School of Regulation

THE ORGANISATION OF CRE



CoRDiS has access to CRE resources to carry out the tasks with which it is entrusted (Article L.133-5 of the Energy Code).

COMMISSION DE RÉGULATION DE L'ÉNERGIE

Decision by the Chairman of CRE on 15 May 2017

CRE Activity Report 2016

KEY DATES FOR THE EUROPEAN ENERGY MARKET

COMMISSION DE RÉGULATION DE L'ÉNERGIE

March 2000
creation of CRE, with authority in the field of electricity
January 2003
CRE's authority expands to include natural gas
December 2006
a body with the power to sanction, CoRDiS is created for CRE

GROWING AND EXPANDING AUTHORITY AND RESPONSIBILITIES

2000
- proposing network usage tariffs
- advising on regulated electricity tariffs
- assessing public service charges, launching public calls for tender for renewable energy
- resolving disputes over access to networks

2006
- monitoring the wholesale electricity and gas markets

2010
- monitoring the wholesale CO_2 markets
- implementing the Regulated Access to Incumbent Nuclear Electricity (ARENH) and the capacity mechanism

2011
- fixing the network usage tariffs
- certifying the transmission system operators
- giving the go-ahead for the deployment of Linky and Gazpar

2015
- 13 new tasks arising from the energy transition law (regulation of gas storage, smart grid experiments...)
- the CRE can have the information collected as part of its tasks audited, at the expense of companies

2016
- proposing the values for the regulated electricity tariffs (blue tariffs)

GRADUAL OPENING UP TO COMPETITION

December 2008
- for electricity, 1 million residential customers have chosen an alternative supplier

December 2011
- for gas, 1.5 million residential customers have chosen an alternative supplier

1 January 2014
- 3 million residential customers for electricity and 3.5 million for gas can choose their supplier

1 January 2016
- disappearance of regulated tariffs for some businesses

31 January 2016:
- 4.5 million residential customers for electricity and 5 million for gas can choose their own supplier

THE MARKET BECOMES STRUCTURED

2005
- conversion of the transmission system operators into subsidiaries: birth of RTE, GRTgaz and TIGF

2007
- first coupling of electricity markets between France, Belgium and the Netherlands

2008
- conversion of the distribution system operators into subsidiaries: birth of ERDF and GRDF

2011
- massive increase in renewable energy calls for tenders

July 2011
- first coupling of the gas markets between the North and South zones of GRTgaz

2012
- implementation of REMIT, a European regulation on the integrity and transparency of wholesale energy markets

2013
- reform of regulated gas tariffs: monthly changes in supply costs, annual audits

2014
- reform of regulated electricity tariffs: pricing by stacking costs

2015
- GDF SUEZ becomes ENGIE
- reduction in the number of gas balancing zones, from 8 in 2003 to 2 in 2015

2016
- ERDF becomes Enedis

1ST ENERGY DIRECTIVES
- Free choice of supplier for consumers
- Freedom of establishment for producers
- Non-discriminatory, transparent and fairly priced rights of access for all network users

1996, 1998 ET 2003

ENERGY-CLIMATE PACKAGE "20-20-20" TARGETS
- Increase the share of renewable energy in the European energy mix to 20%
- Reduce CO_2 emissions in the countries of the European Union by 20%
- Increase energy efficiency by 20% by 2020

2008

3RD ENERGY PACKAGE
- Tariffs for transmission fixed by the regulators
- Creation of the Agency for the Cooperation of Energy Regulators (ACER)
- Development of European network codes

2009

NOME LAW
- Creation of access to and a tariff for regulated access to incumbent nuclear energy (ARENH) for electricity suppliers
- Removal of regulated tariffs for non-residential customers with contract power higher than 36 kVA by 31 December 2015
- Increasing CRE powers of surveillance

DECEMBER 2010

HAMON LAW
- Removal of regulated tariffs for natural gas for non-residential customers consuming more than 30 MWh per year by 31 December 2015

MARCH 2014

ENERGY TRANSITION ACT
- To reduce greenhouse gas emissions and final energy consumption
- To raise the share of renewable energy in the French energy mix to 32% by 2030
- To reduce the share of nuclear in the production of electricity to 50% by 2025

AUGUST 2015

EUROPEAN COMMISSION PROPOSAL PACKAGE FOR CLEAN ENERGY FOR ALL EUROPEANS
- Revision of European legislation in the field of electricity
- Maintaining the competitiveness of the European Union in the context of the changes to world energy markets resulting from the transition to clean energy
- Strengthening market integration, the role of consumers and the place of renewable energy

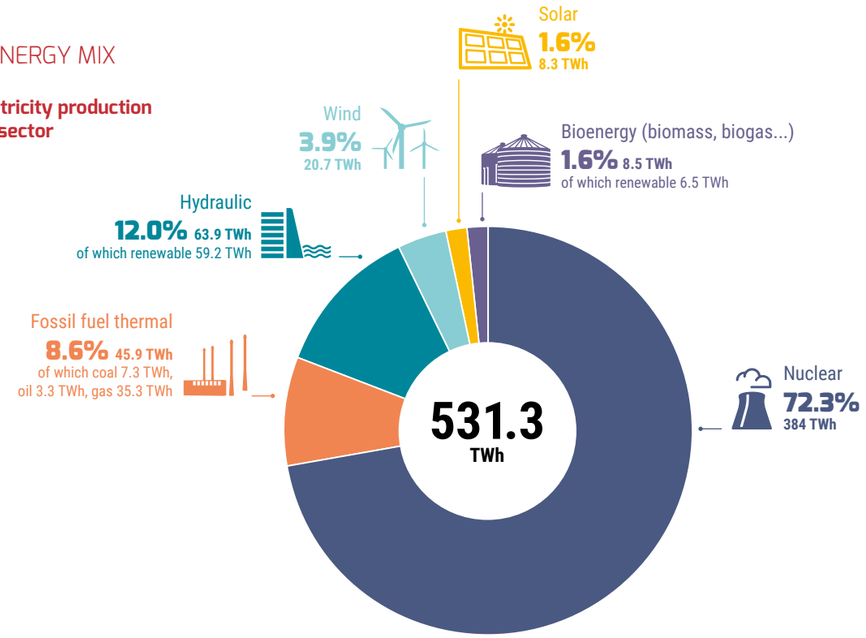
2016

KEY FIGURES 2016

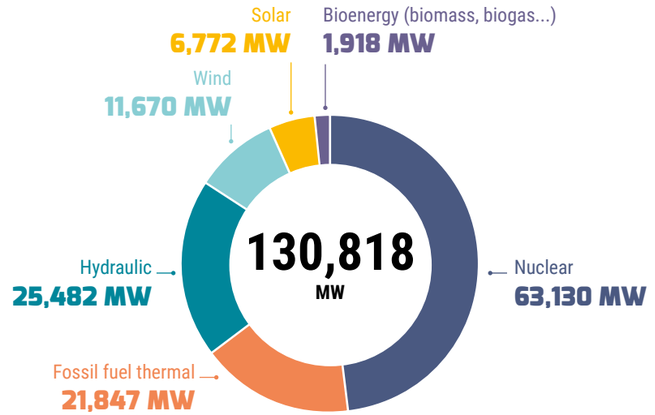
OVERVIEW OF ENERGY IN FRANCE AS OF 31/12/2016

ENERGY MIX

Electricity production per sector

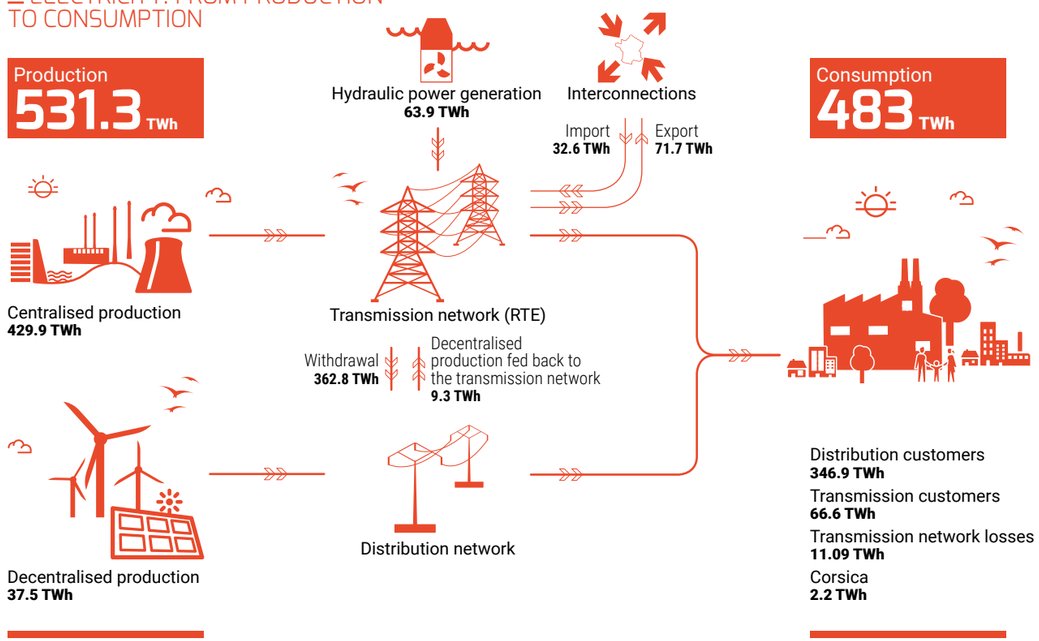


Electricity production facilities

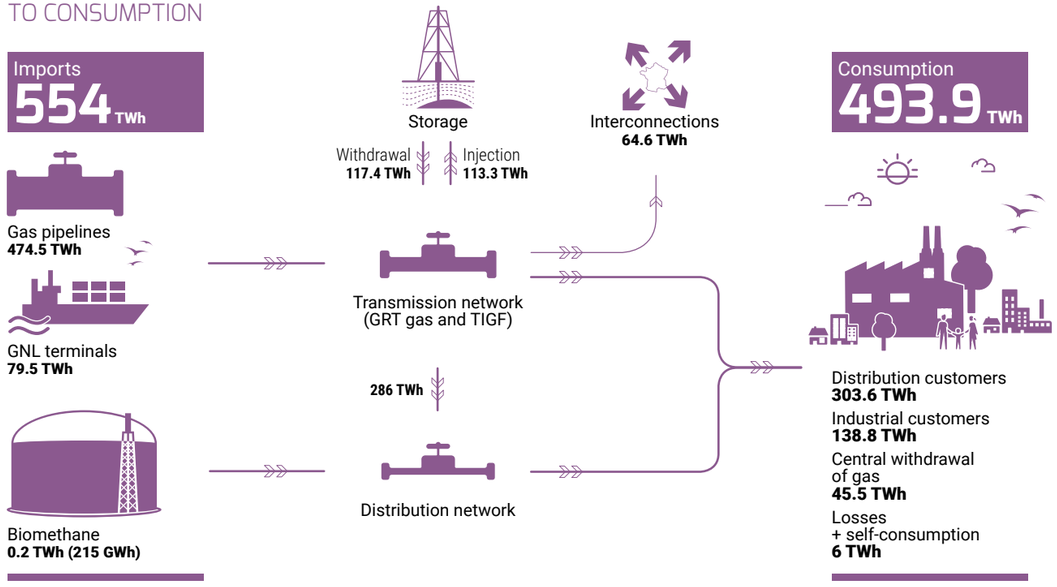


Source RTE Electricity review 2016

_ ELECTRICITY: FROM PRODUCTION TO CONSUMPTION



_ GAS: FROM IMPORT TO CONSUMPTION



RESIDENTIAL CONSUMERS

NUMBER OF RESIDENTIAL SITES + CONSUMPTION VOLUME

Electricity

32 million sites, 150.1 TWh (34 % of the total consumption in France)

Gas

10.6 million sites, 121.7 TWh (27% of the total consumption in France)

NUMBER OF RESIDENTIAL SITES UNDER MARKET OFFERS AND WITH AN ALTERNATIVE SUPPLIER

Electricity

4,560,000 sites, of which 4,550,000 sites are with an alternative supplier (17.9 TWh vs 0.05 TWh supplied under market offer by incumbent suppliers)

Gas

5,049,000 sites, of which 2,475,000 sites are with an alternative supplier (28.4 TWh vs 29.4 TWh supplied under market offer by incumbent suppliers)

MARKET OFFERS, FOR GAS AND ELECTRICITY, CHEAPEST MARKET PRICE COMPARED TO THE REGULATED TARIFF

Electricity

On the electricity market, the market offer price indexed to the least expensive regulated tariff offered in Paris is 5% lower than the regulated sales tariff (including taxes) for an average customer with a tariff base of 6 kVA consuming 2.4 MWh per year, and 7% lower for an average customer with peak/off-peak pricing for 9 kVA consuming 8.5 MWh per year.

Gas

On the natural gas market, the cheapest variable market price offered in Paris, on the one hand to a customer type consuming 750 kWh per year and using gas for cooking, and on the other hand, to a customer type with gas heating (tariff base B1) and consuming 17 MWh per year is 5% and 7% lower, respectively, than the regulated sales tariff (including taxes).

_ BREAKDOWN OF THE BILL

Gas

1,085 EUR per year incl. taxes
for a customer with tariff base B1 (used for heating, customer consuming 17,000 kWh)

taxes
24%
VAT: €154, Domestic Tax on Natural Gas Consumption (TICGN): €74, Routing Tariff Contribution (CTA): €32

energy supply
37%
€405

transmission
39%
Distribution: €277, Transport: €92, Storage: €51

Electricity

1,330 EUR per year incl. taxes
for a 9 kVA customer (customer consuming 8,500 KWh, divided into 54% peak hours and 46% off-peak hours)

taxes
36%
VAT: €200, Contribution to the Public Electricity Service (CSPE): €173, Final Electricity Consumption Tax (TCFE): €80, Routing Tariff Contribution (CTA): €26

energy supply
36%
€479

transmission
28%
€372 (Tariffs for the use of public electricity systems (TURPE), transport and distribution)

Transmission: part of the regulated sales tariff covering costs for transport, storage and distribution. Transport and distribution costs are determined by applying the usage rates of the electricity network (TURPE) and gas network (ATRD for distribution and ATRT for transport) fixed by CRE. / **CSPE:** The Contribution to the Public Energy Service (CSPE) is transferred to a special dedicated account called "Energy Transition" which is used mainly to finance renewable energy support policies. Since 1 January 2016, the CSPE has been merged with the Domestic Tax on Final Electricity Consumption (TICFE), formerly part of the TCFE, and with the financing of a share of the costs allocated to the public gas and electricity services (formerly financed by the old CSPE tax). / **CTA:** the Routing Tariff Contribution provides funding for the specific rights related to pension plans for staff under the electricity and gas industries scheme. // **Supply:** part of the regulated sales tariff covering the supply and marketing costs./ **TCFE:** Final Electricity Consumption Taxes (TCFE) are defined by each municipality and each department. These taxes are paid by all electricity consumers whose maximum contracted power is 250 kVA or less. From 1 January 2016, the TCFE can be broken down into 1) Municipal Tax on Final Electricity Consumption (TCCFE); 2) Departmental Tax on Final Electricity Consumption (TDCFE). / **TICGN:** the Domestic Tax on Natural Gas Consumption is collected on behalf of customs. Since 1 April 2014, the TICGN applies to all natural gas consumers, in particular residential customers (certain industrial uses will however continue to benefit from the exemption). The Contribution to the Special Solidarity Tariff, which provides funding for the special solidarity tariff, and the biomethane contribution, which provides funding for the public service costs of purchasing the biomethane injected into the natural gas network, have both been included in the TICGN since 1 January 2016. / **VAT:** Value Added Tax applies at the rate of: 5.5% on the fixed part (including the CTA); 20.0% on the proportional part.

THE NETWORKS

TRANSMISSION SYSTEM OPERATORS (TSO)

Electricity transmission: 1 TSO, RTE
- 105,000 km of networks
- Energy routed: 508.4 TWh
- 258 industrial customers

Gas transmission: 2 TSO,

GRTgaz
- 32,000 km of networks
- Energy routed: 600 TWh
- 764 active industrial customers, including 13 gas-fired power plants

TIGF
- 5,000 km of networks
- Energy routed: 100 TWh
- 119 industrial customers (no gas-fired power plants)

DISTRIBUTION SYSTEM OPERATORS (DSO)

Distribution of electricity
- 196 DSO
  > with 1 principal DSO, ENEDIS, which covers 95% of France and supplies 35 million customers
- Total length of network: approx. 1.4 million km
- Total volume routed: 403.1 TWh
- Total number of customers in 2014: approx. 36.8 million

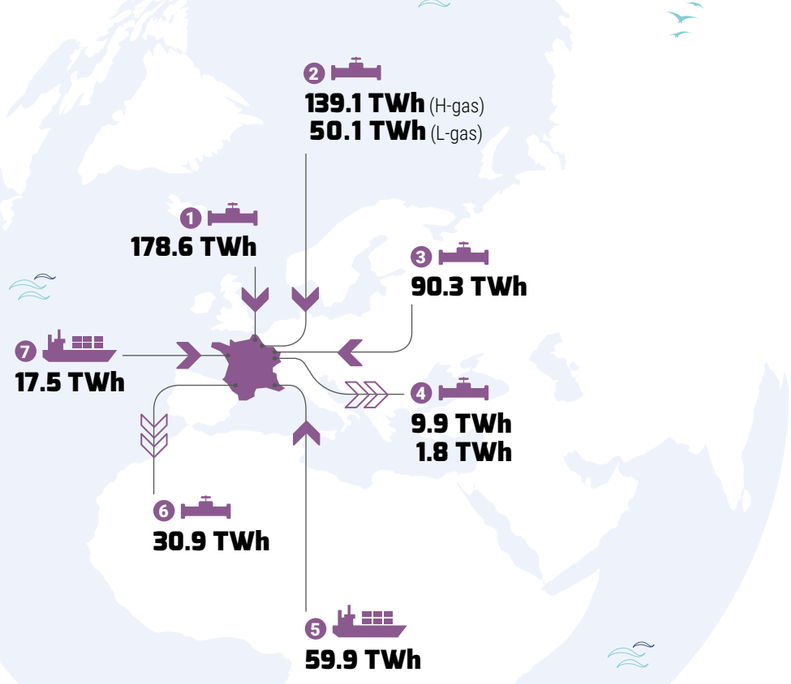
Distribution of gas
- 26 DSO
  > with 1 principal DSO, GRDF, which covers 95% of France and supplies 10.9 million customers
- Total length of network: approx. 205,000 km
- Total volume routed: 305 TWh
- Total number of customers: approx. 11.4 million

_ OVERVIEW OF GAS IMPORTS AND EXPORTS

Net balance of trade
489.4 TWh

Interconnector capacities
3,585 GWh/j in input
and 658 GWh/j in output

Imports 554 TWh
Exports 64,6 TWh



1. Dunkirk
2. Tasnières
3. Obergailbach
4. Oltingue & Jura
5. Fos-sur-Mer
6. PIR Pyrenees
7. Montoir-de-Bretagne

NUMBER OF LNG TERMINALS AND THEIR STORAGE CAPACITY

Montoir (Elengy): regasification capacity of 10 billion m³ per year and LNG storage capacity of 360,000 m³

Fos-Tonkin (Elengy): regasification capacity of 3 billion m³ per year and LNG storage capacity of 80,000 m³

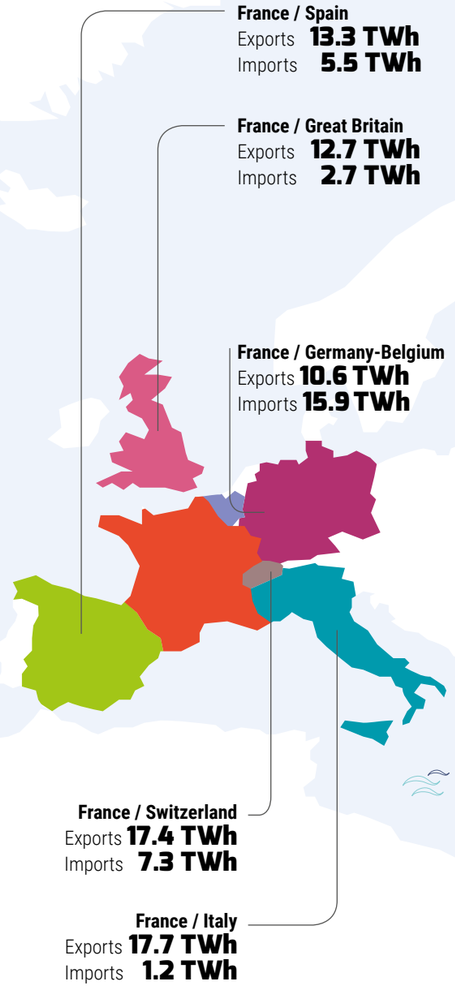
Fos Cavaou (Fosmax LNG): regasification capacity of 8.25 billion m³ per year and LNG storage capacity of 330,000 m³

Dunkirk (Dunkirk LNG): regasification capacity of 13 billion m³ per year and LNG storage capacity of 570,000 m³ (in use since January 2017)

_ BALANCE OF IMPORTS AND EXPORTS OF ELECTRICITY

Net balance of trade
39.1 TWh

Interconnector capacities
9.8 GW in input
and 13.8 GW in output



WHOLESALE MARKETS

_ VOLUMES EXCHANGES MONITORED BY CRE FOR ELECTRICITY AND GAS

Total electricity and gas
2,070 TWh traded
for 56.3 billion euros

Electricity
1,450 TWh traded
for 47 billion euros

Gaz
621 TWh traded
for 9.3 billion euros

_ AVERAGE ELECTRICITY AND GAS PRICES

Electricity
average spot price 2016
36.75 EUR/MWh

Gaz
average spot price 2016 at PEG Nord
14.2 EUR/MWh

KEY DATES

13/07/2016: INITIAL PROPOSALS FOR THE REGULATED ELECTRICITY SALES TARIFFS TO THE MINISTER FOR THE ECONOMY AND ENERGY.

28/11/2016: START OF REGULAE.FR.

KEY FIGURES

267 DELIBERATIONS.

102 COMMISSION MEETINGS.

31 CONSULTATIVE MEETINGS ON ELECTRICITY AND 22 ON GAS.

KEY WORDS

REGULATION
CONSULTATION
EUROPEAN COOPERATION

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CRE, committed and involved in Europe 37

THE ENERGY REGULATORY COMMISSION

With the adoption in 2016 of the Law on the general status of independent administrative authorities and independent public authorities, CRE's legislative framework changed. In addition, its budget was assigned to the Ministry of Energy. The scope of its powers in relation to collecting information, imposing sanctions and collaboration in the context of market supervision were also more closely defined. A major event during the year was that CRE, for the first time, set the regulated tariffs for sales of electricity to minor consumers. It also developed the new tariffs for the use of the natural gas and electricity networks, as well as those of the LNG terminals, paying special attention to handling the challenges of the energy transition.

CRE ORGANISATION AND RESPONSIBILITIES

1. THE ORGANISATION OF CRE: TWO INDEPENDENT BODIES

The CRE is an independent administrative authority, which was created when the energy markets were opened up to competition. The law of 10 February 2000 relating to the modernisation and development of the public electricity service, codified in the Energy Code, entrusted it with the task of regulating these markets. Its principal task is to support *"the proper functioning of the markets for electricity and natural gas for the benefit of end consumers, and in accordance with energy policy objectives"*(1). To achieve this task, the CRE is composed of two independent bodies: the Board of the Commission and CoRDiS, the Standing Committee for Dispute Settlement and Sanctions. In making its decisions, the Board relies on the management of CRE, who report to the Chairman and the Managing Director.

1.1. The Board of the Commission

The Energy Code created the Board of the Commission, which requires parity between men and women, and comprises six members. The members other than the Chairman include:

- one member appointed by decree, based on a proposal by the Minister of Overseas Territories, for his/her knowledge and experience of non-interconnected territories;
- two members appointed, one by the President of the National Assembly (lower house of the French Parliament) and the other by the President of the Senate (upper house of the French Parliament), based on their legal, economic and technical qualifications, respectively, in the domain of data protection and local public energy services;
- two members appointed by decree, due to their legal, economic and technical qualifications: one in the domain of the protection of energy consumers and combating fuel poverty, and the other in the fields of energy demand control and renewable energy.

Catherine Edwige was appointed on 1 April 2014 by decree, based on a proposal by the Minister of Overseas Territories, for a period of three years. Her mandate was renewed by decree on 3 February 2017. Jean-Laurent Lastelle was appointed by the President of the National Assembly on 15 June 2017, replacing Yann Padova. Christine Chauvet was appointed by the President of the Senate as of 7 February 2015. Hélène Gassin and Jean-Pierre Sotura were appointed by decree on 29 March 2013. The Chairman, Jean-François Carenco, was appointed by decree by the President of the Republic on 16 February 2017.

The commissioners are appointed for a six year term, which is non-renewable. One-third of the Board's members have been renewed every second year, which will change to the renewal of half of the members every three years under law 2017-55 dated 20 January 2017, on the general status of independent administrative authorities and independent public authorities.

(1) Article L. 131-1 of the Energy Code

The appointment of a member of an independent administrative authority or an independent public authority is irrevocable, subject to some exceptions. If unable to continue to exercise his/her tasks as a Board Member, the appointment can be suspended for a defined period, either at the request of the member in question, or by the Board by a three-quarters majority of the other members, voting on a proposal from one of them. A member of the Board may not be relieved of his/her duties other than in the manner provided for at the time of appointment, either by resignation, or on the proposal of the Chairman or one third of the members of the Board, after deliberations, approved by a three-quarters majority of the members of the board other than the person in question, noting a serious breach of his/her legal obligations, or a permanent disability making it impossible to fulfil his/her appointment.

The rules on incompatibility prohibit any combination of the position of member of the board with any elected municipal, departmental, regional or European position, and prohibit holding any direct or indirect interest in a company in the energy sector. This prohibition on holding an interest applies until the expiry of a period of three years following the end of the appointment.

1.2. The Standing Committee for Dispute Settlement and Sanctions (CoRDiS)

CoRDiS, which was created by law no. 2006-1537 of 7 December 2006, is made up of four members: two state councillors appointed by the Vice President of the Council of State (Conseil d'État), and two councillors of the Court of Cassation, appointed by the president of the Court of Cassation. The Committee also has four alternate members since 2013. As with the CRE Board, CoRDiS members and their alternates are appointed for a non-renewable six-year term.

CoRDiS settles disputes relating to technical and financial matters between operators and users of the public electricity and natural gas networks. Being independent from the board of commissioners, the Committee enables CRE to carry out one of its core responsibilities: to guarantee transparent and non-discriminatory access to electricity and natural gas networks, which is the key to open competition. CoRDiS also has the power to sanction certain failures cited in the Energy Code and, since the law of 15 April 2013, violations of the regulation of 25 October 2011 on Energy Market Integrity and Transparency (REMIT). This law has also clarified the procedures for separating the prosecution and sanctioning powers within the Committee.

Decree no. 2015-206 of 24 February 2015 relating to the Energy Regulatory Commission's Standing Committee for Dispute Settlement and Sanctions strengthened CoRDiS' power to apply sanctions. Under this decree, CoRDiS adopted a rules of procedure in a decision dated 11 March 2015, laying down the procedural rules for its hearings. While the procedure for dispute settlement underwent several improvements which combined to strengthen respect for the principle "hear the other side", the main changes affected the sanctions procedure.

Decree number 2016-461 dated 14 April 2016 defined certain competences for CoRDiS in relation to sanctions.

2. CRE RESPONSIBILITIES

CRE's responsibilities are divided into two components. On the one hand, the task of regulating the electricity and natural gas networks consists of ensuring users (businesses, local authorities, consumers, producers) have non-discriminatory access to the transmission and distribution infrastructure which are natural monopolies, while ensuring the security of supply. On the other hand, the task of regulating the markets to allow free and fair competition to develop, for the benefit of end consumers. CRE is required to consult the Higher Energy Council prior to its decisions on subjects that may *"have a significant impact on energy policy objectives"*, a list of which is defined in Article R. 134-1 of the Energy Code.

In order to accomplish its responsibilities, the CRE Board issued 267 deliberations and held 102 formal meetings (a meeting taking one day) in 2016. In addition, a further 160 hearings were held in front of the Board.

2.1. The regulation of gas and electricity networks

Since the law of 10 February 2000, the responsibilities assigned to CRE have continued to grow. Law no. 2010-1488 of 7 December 2010 on the organisation of the electricity market, known as the NOME law, and the implementation of directives 2009/72/EC and 2009/73/EC of 13 July 2009 concerning the common rules for the internal market for electricity and natural gas, and law no. 2015-992 of 17 August 2015 relating to the energy transition for green growth, (known as LTECV), are important steps in the reform of the energy sector.

Guaranteeing the right of access to public electricity and natural gas networks and facilities

Opening up to competition is only possible in the electricity and natural gas markets when operators and consumers have access to the networks, infrastructures and facilities under transparent and non-discriminatory conditions. CRE contributes to fulfilling this requirement, as well as to the safety, reliability and performance of the networks, infrastructures and installations, for the benefit of consumers. It promotes the adequacy of networks and energy efficiency, as well as the integration of energy produced from renewable sources. CRE's responsibilities for guaranteeing this right of access are essentially the same for the natural gas market and for the electricity market.

The principle of non-discrimination guarantees market access to new entrants and the promotion of fair competition for the benefit of consumers. CRE receives contracts concluded between the system operators and users, as well as protocols for accessing the electricity networks and natural gas transmission and distribution infrastructure, and liquefied natural gas installations. It receives notifications, with justifications, of refusals to enter into contracts or protocols for accessing such networks, structures and installations. For access to electricity networks, CRE issues a preliminary opinion on any decisions by a prefet (responsible administrative authority) refusing to authorise the construction of a direct line. For access to natural gas infrastructures, it issues an opinion on the exemptions from the tariffs for the use of the transmission and distribution networks of natural gas and liquefied natural gas installations that are imposed by decrees, as well as on any exemptions to the commercial conditions for using the networks or installations.

CRE has power to enforce decisions on operators in the event of a serious and immediate breach of the rules governing access to or use of networks, infrastructures and installations. It may order, as part of a dispute ruling, that precautionary measures be taken in order to ensure the continuity of network operation.

Ensuring the proper functioning and development of gas and electricity networks and the infrastructures for liquefied natural gas

The CRE monitors the proper functioning and development of electricity and liquefied natural gas networks and infrastructures. It also sets tariffs for the use of public electricity and natural gas networks, and the charges for related services provided under the monopoly of the operators of these networks. It approves the annual investment programmes of the natural gas TSOs (GRTgaz and TIGF) and of the public electricity transmission system operator (RTE), and ensures that the necessary investments are made for the proper development of the networks.

The implementation of the 3rd energy package in the Energy Code modified CRE's tasks regarding investment programmes of the transmission system operators. Each year, CRE examines the ten-year investment plan of the transmission system operators, to check that it covers all of the investment needs and is in line with the European plan prepared by the ENTSOs (European Network of Transmission System Operators), agencies for cooperation between European network operators. The CRE can, if necessary, consult with the Agency for the Cooperation of Energy Regulators (ACER) and require the transmission system operator to amend its ten-year investment plan. Should the TSO fail to carry out an investment that, under its ten-year investment plan, should have been realised within three years, CRE has powers of enforcement. If it deems that the investment is still relevant in the light of the current ten-year plan, it may either require the TSO to fulfil its obligation and implement the proposed investment, or it can organise a call for tenders open to third-party investors to carry out the investment.

In the event of a serious and immediate breach to the security and safety of public electricity transmission and distribution networks or to the quality of their operation, CRE may propose to the Energy minister precautionary measures necessary to ensure the continuity of their operation.

Ensuring the independence of network operators

As the guarantor of the independence of network operators, CRE approves the accounting rules for the separation of activities into electricity production, transmission and distribution, and any other activities of integrated electricity operators, and between transmission, distribution, storage of natural gas and the use of liquefied natural gas installations and other activities of integrated natural gas operators. It performs a monitoring and surveillance function which may lead to the potential exercise of its powers of investigation and sanction.

Management of the electricity and natural gas transmission networks is provided by legal entities separate from those operating electricity or gas production or supply [(2)]. Each year, CRE publishes a report on compliance with the codes of conduct established by transmission and distribution system operators, and an assessment of their independence. In February 2017, it published its tenth report on the independence of

(2) Article L. 111-7 of the Energy Code

the networks, in which it drew up an assessment of the measures taken by the electricity and gas network operators to ensure their independence from their parent companies, and highlighted the improvements needed in this area.

CRE can, either on its own initiative or following a justified request from the European Commission, carry out a new review when it considers that events affecting the organisation of the transmission system operator or that of its shareholders are likely to affect its independence obligations.

2.2. The regulation of the electricity and natural gas markets

Monitoring transactions on the wholesale electricity, natural gas and CO_2 markets

Since 2006, CRE has been monitoring transactions on the wholesale electricity and natural gas markets, in particular ensuring that the offers made by market players are consistent with their economic and technical constraints. This monitoring responsibility is executed on the basis of data that is collected regularly. Its aim is to ensure that prices are consistent with the physical and economic fundamentals which determine supply and demand, such as weather conditions, the level of consumption, the availability of production sites and interconnectors, fossil fuel and CO_2 prices, etc.

Law no. 2010-1249 on banking and financial regulation dated 22 October 2010 gave CRE the power to monitor the CO_2 market. In cooperation with the French Financial Markets Authority (AMF), CRE monitors transactions carried out by European electricity and natural gas suppliers, traders and producers in European CO_2 emission quotas or EUA (European Union Allowance), as well as in CER (Certified Emission Reduction) and ERU units (Emission Reduction Units) provided for under the Kyoto Protocol. It analyses these transactions for consistency with the economic, technical and regulatory constraints of the activities of these electricity and natural gas suppliers, traders and producers.

CRE's task of monitoring wholesale markets is also part of the framework of the Regulation on Energy Market Integrity and Transparency, known as REMIT, which prohibits market abuses on the wholesale electricity and gas markets. The market monitoring is carried out in cooperation with ACER. CRE's Standing Committee for Dispute Settlement and Sanctions (CoRDiS) has the power to sanction breaches or violations of REMIT. 7 January 2015 marked an operational turning point, with the entry into effect of the implementing regulation for the collection of transactional data on the gas and electricity wholesale markets. This set the key dates of 7 October 2015 and 7 April 2016 for the commencement of collection by ACER, depending on the type of contracts exchanged. ACER's data collection started in practice on 7 October for standard transactional data. As part of this task, CRE created an annual report on the functioning of the wholesale markets, the 9th edition of which was published in October 2016.

The national regulators must ensure in particular that articles 3 and 4 of REMIT, relating to the prohibition of insider trading and the publication of privileged information, have been respected. To do so, they have been given powers of inquiry and sanction.

Decree number 2016-461 dated 14 April 2016 defined certain competences for CRE in relation to collecting information, sanctions and cooperation. Article 1 of this decree modified article L. 131-2 of the Energy Code and provides that: *"The Energy Regulatory Commission shall guarantee compliance with articles 3, 4, 5, 8, 9 and 15 of the Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency"*.

Ensuring the proper functioning of retail markets

CRE assists with the proper functioning of the retail markets and monitors, on the one hand, transactions carried out between suppliers, traders and producers and those carried out on organised markets, and, on the other hand, the consistency of the offers made by the producers, traders and suppliers, in particular toward end consumers, with their economic and technical constraints.[3] CRE may also issue opinions and propose any measures to promote the proper functioning and transparency of the retail market. As part of this task, it prepares an annual report on its monitoring of the retail markets, the 4th edition of which was published in October 2016.

CRE's responsibility to ensure the proper functioning of the retails markets is also reflected in its role in setting regulated sales tariffs for electricity and natural gas. In 2016, CRE became responsible for the first time for proposing the regulated sales tariffs for electricity to the Minister of Economy and the Minister of Energy. During its deliberations on 13 July 2016, CRE set the public electricity tariffs for individual and professional customers who have contracted to a power equal to 36 kVA or less.

Contributing to the implementation of measures to support electricity generation and supply of electricity and gas

CRE contributes to the implementation of the measures to support electricity production through several channels.

On the one hand, it issues an opinion on the decrees that set the purchase tariffs for energy produced by small-scale installations, for example recycling household waste or using renewable energy.

On the other hand, if the production capacities do not meet, by simply relying on operator initiatives, the objectives of the multi-annual programming of electricity production, the Minister of Energy can resort to a call for tenders with CRE in charge of its implementation. The minister develops the specifications for the call for tenders, and submits them to CRE for review. The latter examines and appraises the tenders. The minister appoints the selected candidate(s) after obtaining CRE's opinion, if its choice differs from the ranking drawn up by CRE.

In addition, CRE assesses the amount of charges attributable to public service activities which are fully compensated under the conditions laid down in article L. 121-9 of the French Energy Code, and each year proposes the amount of the contribution applicable to each kilowatt hour to the Minister of Energy. It also proposes to the Minister for the Economy and the Minister of Energy the amount of the repayments to be made to operators incurring public service charges.

(3) Article L. 131-2 of the Energy Code, arising from the provisions of the NOME law

CRE also proposes to the Minister of Energy the terms which apply to the sales of the Regulated Access to Incumbent Nuclear Electricity (ARENH). In application of the NOME law, this sale is open to all operators supplying end consumers residing in metropolitan continental France or to system operators for their losses. CRE issues an opinion on the overall volume of maximum incumbent nuclear electricity that can be assigned (ceiling set by the Minister of Energy and the Minister of Economy after consultation with CRE, within the ceiling of 100 TWh set out by law), particularly with a view to the development of competition on the electricity production markets and its supply to end consumers. The methodology for calculating the ARENH price must be defined by a decree of the Council of State, under article L.336-10 of the Energy Code. The Government has not as yet published the decree defining the methodology for calculating the price for ARENH.

Informing all consumers

To deliver on its task of informing consumers, CRE has created, jointly with the French Energy Ombudsman (Médiateur national de l'énergie), Energie-Info, an information-sharing website which answers questions raised by consumers. It includes practical information sheets to help understand the opening up of the energy markets: How to change energy supplier? Who to contact when moving in or moving out? What is the procedure in the event of a complaint? Lastly, how to benefit from social tariffs?

This site also provides access to a tool that helps compare the offers of electricity and gas supplies. Educational and easy to use, it allows consumers to compare the offers of different suppliers with their current supply programmes, to look up, and to get an estimate of their annual expenditure, the price ex-tax and inc-tax of or a subscription and per kilowatt-hour, as well as a breakdown of the taxes, and to see who is offering green power if this is a selection criterion for them.

Since 2014, preparing for the gradual phasing out of regulated sales tariffs for professional consumers, CRE has set up an information mechanism (guides, practical information sheets, information meetings by the chambers of commerce and industry, etc.) to support consumers during this transition. In an initiative that was welcomed by energy suppliers and the different stakeholders, an educational video was also made. A preview of this was shown during a meeting of the working group devoted to communication and information on the end of the regulated tariffs set up by CRE. The website www.tarifsreglementes-cre.fr was also set up for this purpose.

3. CRE AND OTHER INSTITUTIONAL ACTORS

3.1. CRE and the Parliament

Independence from the Government is one of the core reasons for creating an independent administrative authority like the CRE. CRE is not subject to the hierarchical authority or supervision of the executive authority, and its independence is rooted in the European Directives. Law 2017-55 dated 20 January 2017 on the general status of independent administrative authorities (IAA) and independent public authorities (IPA), requires that the IAAs shall submit a report of their activities to the government and the Parliament each year by 1st June, detailing how they fulfilled their

responsibilities and accounting for their spending over the previous year.. It includes a multi-annual plan to improve expenditure, which evaluates the effect on the staffing levels and on each expense category of steps taken to share services with the services of the other independent administrative authorities or of independent public authorities or of a ministry. This activity report is made public.

The law of 20 January 2017 also provides that, at the request of the relevant standing committees of the National Assembly and the Senate, any IAA must present an account of its annual activities to them, and that the opinion of the IAA on any draft law shall be made public.

CRE attaches particular importance to the dialogue with the members of the Parliament. Each CRE publication is submitted to the Parliament and is also sometimes presented to the relevant committee. Consequently, after submitting to the Parliament its report on the tariffs for using the public electricity networks, CRE was invited to make a presentation on this during a hearing on 21 July 2016 in front of the Economic Affairs Committee. CRE officers are also available to provide information to the Parliamentary administrators on the functioning of the energy and natural gas markets whenever they request it. Regular exchanges of information occur, for example in 2016, during the ratification of Decree 2016-129 dated 10 February 2016 on a mechanism of continuity of supply following the end of the transitional market offers for gas and electricity, or during the review of the law ratifying decrees 2016-1019 dated 27 July 2016 on the self-supply of electricity and 2016-1059 dated 3 August 2016 on the production of electricity from renewable energy sources, seeking to amend certain provisions relating to the electricity and gas networks and to renewable energy.

Parallel to its involvement in the review of legal texts related to its responsibilities, CRE is also invited to become involved in other parliamentary work. In 2016, it participated in the round table on the introduction of a floor price level for coal in the power generation sector, which was organised by the National Assembly's Energy study group, in the round table on electricity markets organised by the National Assembly's Committee on European Affairs and the Committee on Sustainable Development, and also in the hearing organised by the Energy study group in the Senate on the tariffs for use of the public electricity networks.

The Chairman, the managing director and the departments of the CRE therefore appeared before the National Assembly and the Senate for nine hearings during 2016. These hearings are held to present the work of CRE, as well as to:

- communicate information to a committee of inquiry or an information assignment such as those carried out by the National Assembly into the risks and effects of electrical load shedding or on the situation of EDF;
- hear CRE's opinion during the process of drafting legislation. In 2016, CRE was asked to contribute during the drafting of law 2017-55 dated 20 January 2017 on the general status of independent administrative authorities and independent public authorities;
- collate its observations relating to the implementation of a text of the type used for the information campaign on the implementation of law no. 2015-992 dated 17 August 2015 relating to the energy transition for green growth;

- discuss the credits that it should be allocated and the subjects related to energy during the review of the French national budget. The CRE was heard, in the drafting of the 2017 finance law no. 2016-1917 of 29 December 2016, by the Economic Affairs Committee and the Finance Committee of the National Assembly.

3.2. CRE and local authorities

With regard to energy, local authorities are responsible for performing several major tasks. They own the distribution networks for electricity and gas. They promote production from renewable energy sources and consume it, they manage the planning of the towns and countryside and they raise awareness among local actors and the general population of energy management. With the transformation of the energy system, especially with the development of decentralised electricity production, their role has grown in terms of planning the means of production. Local authorities today are taking the initiative in many innovative projects to help manage energy more efficiently.

In March 2016, a commissioner and two officials from CRE visited French Guiana, then in October 2016 Martinique, to audit the production facilities of EDF SEI, and share with the local actors the energy issues for the territories. On 15 June 2016, CRE organised a discussion day on the subject of smart grids in the island zones.

CRE also invites local authorities to become involved in its work by offering them a platform at the events it organises (forums and symposia) or by inviting them to participate in an interview to be published in its newsletter Décryptages or to attend hearings.

3.3. CRE and the other independent administrative authorities

The CRE, as a regulatory authority, works with other administrative authorities, in particular with the Competition Authority and the Financial Markets Authority (AMF).

Article L. 134-16 of the Energy Code states that the CRE Chairman must notify the Competition Authority *"of any abuses of a dominant position and of any practices that may prevent free competition in the electricity or natural gas sectors, that it becomes aware of"*. It can also refer to the Authority for an opinion. For its part, the Competition Authority must inform CRE of any referral which falls within its field of competence, so that it can provide its comments within a period of two months.

The CRE and the Competition Authority are also frequently referred to for opinions on the same draft decrees. The two authorities have complementary and often interlinked responsibilities. As the preamble to the NOME law states, CRE is tasked with monitoring the consistency of the pricing proposed by electricity market players with their economic constraints, while the Competition Authority is responsible for checking anti-competitive practices under articles L.420-1 and pursuant to the Commercial Code.

"The functions of regulating the electricity market and of the authority in charge of competition are clearly separate. The first is intended to ensure that a market that was formerly subject to a public monopoly is opened up to competition under fair conditions, while respecting the objectives of public interest specific to that market and set out by law (national security, public service guarantees, strategic industrial objectives, for example). The second role is intended to guarantee that economic competition between market players is free and honest, namely that these players' practices do not lead to a distortion of the normal functioning of competition."(4)

CRE works regularly with the AMF in the context of its market supervision tasks. In fact, Article 1 of the REMIT regulation relating to the integrity and transparency of the wholesale energy market provides that the national regulatory authorities and the responsible financial authorities of the Member States *"shall cooperate to ensure a coordinated approach"*. The cooperation between CRE and AMF, and the principle of mutual referrals are also mentioned in article L.134-17 of the Energy Code, in article L.621-21 of the monetary and financial code, as well as in the law on banking and financial regulation, which proposes a consistent and complementary regulation of the CO market, based on cooperation between the two sector regulators. CRE and AMF meet regularly to pool information, and more generally, their respective expertise relating to the supervision of CO_2 emission quotas, electricity and natural gas. The principles and methods of this cooperation are defined more precisely in the memorandum of understanding signed by the two authorities on 10 December 2010.

In addition, the development of smart grids is, by definition, a subject which cuts across different areas that encourages CRE to step up its collaboration with the other regulators working in this area. Therefore, jointly with the National Data Protection Commission (CNIL) and the National Agency for Information System Security (ANSSI), CRE is considering the protection of the numerous personal data arising from deployment of information technologies and from communication on energy networks, as well as the cybersecurity of smart grids. It also meets regularly with the Electronic Communications and Postal Regulatory Authority (ARCEP) to discuss the topic of broadband, through the working group for the implementation of fibre optic cables using the pylons used for the electricity and phone networks. CRE was also heard by ARCEP as part of the work cycle it initiated on the subject the "Internet of Things".

In 2016, CRE and the Regulatory Authority for Railway and Road Activities (ARAFER) met to discuss on-train metering to ensure the system meets the needs that will arise from the opening up of the rail market and the creation of the new rail system operators.

(4) Report produced on behalf of the Production and Trade committee (1) on the draft law (no. 1253) relating to the modernisation and development of public electricity services, by Mr Christian Bataille, member of parliament, p. 273

4. CRE, CONSULTATION AND TRANSPARENCY

4.1. Public consultations to obtain the opinion of affected actors

Given their structural character, some of the CRE's deliberations automatically trigger one or more public consultations. In 2016, the actors were consulted on a wide variety of subjects, ranging from the tariffs for the use of regulated LNG terminals or the roadmap for balancing the French electricity system. CRE also consulted on several occasions with actors on setting up the TURPE and ATRT.

In certain cases, the French Energy Code defines the principle of consultation of stakeholders by CRE prior to some of the regulator's deliberations. CRE has also made the decision to regularly consult market participants, including for decisions where such a consultative approach is not required by statutory or regulatory texts. This market consultation takes the form of either an ad hoc public consultation or hearings before the CRE board.

In 2016, the CRE launched 16 public consultations. In all, 85 parties were heard by the board, some of them several times, on a variety of different topics. These consultations may also take the form of workshops or round tables, bringing together stakeholders from the sector.

In 2016, CRE organised 53 consultative meetings, 31 on electricity and 22 on natural gas.

4.2. A principle of transparency formalised in the rules of procedure

CRE's actions and procedures comply with the principle of transparency as formalised in its rules of procedure.

CRE is responsible for ensuring the transparency of the energy markets, in particular through its monitoring tasks, which give rise to the publication of annual reports. It also makes a contribution through the Energie-Info website.

In addition, it ensures the transparency of its own work in order to guarantee its quality and understanding by stakeholders. Its deliberations, the consultations which precede them, and its reports are available on the www.cre.fr website. This website is part of the educational approach used by CRE in all of its communication tools.

5. HUMAN AND BUDGETARY RESOURCES

5.1. Changes to the employment cap at CRE and change in the Ministry that manages the budget

Article 35 of Directive 2009/72 of 13 July 2009 and article 41 of Directive 2009/73 of the same date provide that *"the national regulatory authority shall have a separate budget and autonomy in the execution of the allocated budget, and shall have sufficient human and financial resources to fulfil its obligations"*.

The tasks and activities of CRE have increased substantially since 2010, with the implementation of the directives of the Third Energy Package (decision-making power for setting tariffs for the use of networks, certification, examination of transmission system managers' ten-year investment plans), the entry into force of the NOME law (ARENH, retail market monitoring), the frequent use of calls for tenders in the area of renewable energy, the entry into force of the REMIT regulation and the European work on drafting rules relating to market integration. The LTECV law has added a further twelve responsibilities.

In 2016, the Minister for Energy decided to give CRE the resources needed to allow it to fulfil all its responsibilities and, for the first time since 2008, CRE staffing levels increased by 20 FTEs (full-time equivalents). It was possible to implement this measure without waiting for the 2017 Finance Law, because a transfer decree was issued allowing CRE to benefit from operating and payroll resources from 1 September 2016. This significant increase in headcount was then confirmed in the finance law 2016-1917 for 2017, dated 29 December 2016, which set a cap on CRE staff levels at 149 FTEs for 1 January 2017.

Changes to the employment cap at CRE (in FTEs)

Full time equivalents	2009	2010	2011	2012	2013	2014	2015	2016	2017
Commissioners	3	3	5	5	5	6	6	6	6
Officers	128	128	126	126	125	124	121	126.4	143
Total	131	131	131	131	130	130	127	132.4	149

The 143 FTEs (full-time equivalents) of CRE are now entirely responsible for setting prices for the electricity (TURPE) and gas (ATRD, ATRT, ATTM) networks and infrastructures, which the CRE previously shared with the Ministry of Energy and the Ministry of Economy and Finance. CRE now decides alone on these tariffs, which constitute a cost of 21 billion euros annually for consumers.

As of 31 December 2016, the CRE had 130 staff members (excluding commissioners), including 57 women and 73 men.

Faced with changing responsibilities, the regulator is trying to acquire better technical and economic skills in the energy sector and better forecasting abilities. In 2016, CRE received over 1,700 applications for 32 open posts, mostly from candidates who matched the skills being sought, with a very high level of qualification.

CRE's employees, the majority of whom are contractual civil servants (89% of the workforce) are mainly recruited from companies. Their average age is 37. In 2016, 46% of the officers took at least one vocational training course with an allocated budget of EUR 115,429 (not including costs of language teachers).

Since 1 January 2017, CRE has been included in Programme No. 217 *"carrying out and managing policies for sustainable ecology, development and mobility"*, headed by the Ministry for the Environment, Energy and the Sea. The programme management takes into account the special role of CRE and the absolute need to retain its independence under European directives 2009/72 and 2009/73 dated 13 July 2009 and article L.133-5 of the Energy Code. Therefore, since 1 January 2017, the posts and budgets for CRE's activities, within Programme No. 217, belong to a specific measure, measure No. 27 *"regulation and control of energy markets"*, with a programme operating budget and an operating unit, thereby making clear the principle of the organisation's autonomy.

5.2. The multi-year plan to optimise expenses

Article 21 of law 2017-55 dated 20 January 2017 on the general status of independent administrative authorities (IAA) and independent public authorities (IPA), requires the IAAs to submit a report of their activities to the government and the Parliament each year by 1st June, detailing how they fulfilled their responsibilities and accounting for their spending over the previous year. This report shall include a multi-annual plan to improve expenditure, which evaluates the predicted effect on their staffing levels and on each expense category of steps taken to share services with the services of the other independent administrative authorities or of independent public authorities or of a ministry. CRE's multi-annual plan to optimise expenses constitutes a special review attached to the activity report.

THE CRE, COMMITTED AND INVOLVED IN EUROPE

1. CRE WITHIN ACER AND CEER

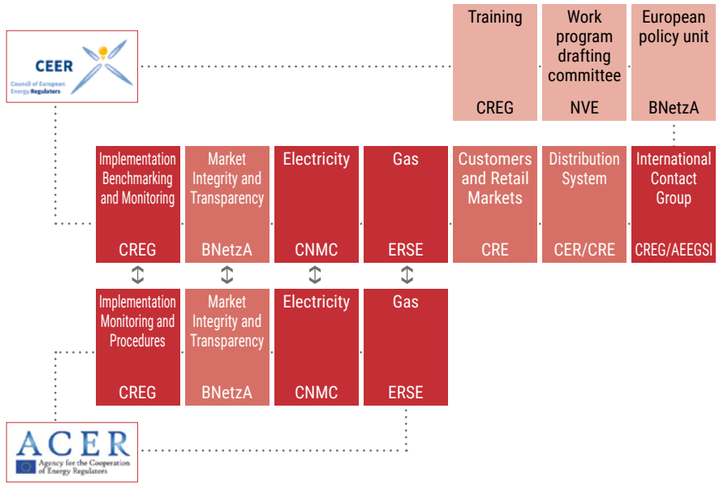
1.1. CRE and the bodies for cooperation between European regulators

CRE is playing an active part in the construction of a single energy market within European regulators, namely the Council of European Energy Regulators (CEER) and the Agency for the Cooperation of Energy Regulators (ACER). It estimates its contribution to the cooperative bodies of the European regulators to be over 20 FTEs. In 2016, it took part in nine CEER general assemblies and in nine meetings of the ACER Board of Regulators, which is responsible for informing the Agency's director on how its tasks are being implemented.

The CRE is represented in all the working groups of CEER and ACER, where it is working on the development of rules for the operation of the internal market. In 2016, it held the chairmanship or co-chairmanship of two CEER working groups:

- **Distribution Systems Working Group (DS WG),** which is working on the development of distribution systems and the regulation of electricity and gas distribution system operators. Hélène Gassin, commissioner of CRE, is the co-chairman;
- **Customers and Retail Markets Working Group (CRM WG),** which is working on consumer rights, smart metering, the design and monitoring of the retail markets. It promotes competition in the interests of consumers. Patricia de Suzzoni, CRE director, chairs the CEER Customers and Retail Markets Working Group, which is working on consumer rights, the design and monitoring of the electricity and gas retail markets.

CRE also holds the vice-chairmanship of one of the four joint working groups of CEER and ACER: **Market Integrity and Transparency Working Group (MIT WG),** which looks at questions of transparency and monitoring of the wholesale markets, as well as the links between sectoral legislation and applicable legislation on the financial markets. Fadhel Lakhoua, director at CRE, is the vice-chairman of this group.



UPDATE ON THE EUROPEAN REGULATORY BODIES

The Council of European Energy Regulators (CEER), a non-profit organisation under Belgian law, was set up in 2000 by ten national energy regulators in Europe. The CEER now includes among its members 27 energy regulators from the European Union, as well as the regulators from Norway and Iceland, and the regulators from Switzerland, Bosnia and Herzegovina, Kosovo, the former Yugoslav Republic of Macedonia, Montenegro and Moldavia as observers. The CEER promotes mutual assistance, the sharing of experience and good practices between its members and enables common positions to be developed. Working closely with ACER on Community matters, it also addresses many issues that are complementary to the latter's work, such as smart grids, sustainability and aspects relating to consumer protection. CEER promotes comparative analysis and issues non-binding recommendations in the areas of distribution, the functioning of retail markets, sources of sustainable energy, and the storage of gas and LNG. It also represents national regulators at Community and international level. CRE has been a member of CEER since it was founded in March 2000.

The Agency for the Cooperation of Energy Regulators (ACER) is a European agency with a legal personality based in Ljubljana. Created under the 3rd energy package, it has been operational since 3 March 2011. Its mission is to assist the national regulatory authorities to exercise and coordinate their regulatory tasks at community level and, if necessary, to take complementary actions. It ensures that the integration of markets and the harmonisation of regulatory frameworks are carried out in compliance with the objectives of the EU's energy policy. It is, among other things, responsible for monitoring adherence by the electricity and gas transmission system operators to the European network codes. It has powers to take individual decisions on cross-border subjects such as the conditions of access and security or exemptions, as well as a responsibility for monitoring the markets, in coordination with the national regulators. It also contributes to the coordinated development of the EU's energy infrastructures.

1.2. Participation by CRE in other European consultative groups

CRE participates in the forums organised by the European Commission to promote collaboration at community level between market players on the regulation of the internal energy market. These four forums bring together the European Commission, the national regulatory authorities, the Member States and other interested parties, to discuss both general and technical issues.

- The Florence forum: created in 1998, it is devoted to the regulatory aspects of the electricity market. It meets twice a year.
- The Madrid forum: created in 1999, it is devoted to questions concerning the functioning of the natural gas market. It meets twice a year.
- The London forum: created in 2008, it deals with regulatory aspects that affect the retail markets and the protection of European consumers of electricity and natural gas. It meets once a year.
- The Copenhagen forum: created in 2015, it deals with regulatory and financial aspects related to the expansion and strengthening of energy infrastructures. It meets once a year.

In addition, CRE is actively involved in the regional initiatives of four of the seven electricity regions and two of the three gas regions, in close collaboration with its counterparts and ACER. This form of voluntary cooperation helps to achieve real progress towards further integration of regional markets in electricity and gas.

CRE also attends conferences, workshops and training sessions organised by various European bodies, especially the *Florence School of Regulation*.

During 2016, CRE officers have undertaken short-term trips on over 400 occasions to contribute to work at European level.

1.3. CRE's contribution to the European debate

On 30 November 2016, the European Commission published a package called *"clean energy for all Europeans"*. Within the context of the Energy Union launched in February 2015, this package of proposals pushes forward with the aims of prioritising energy efficiency, taking world leadership in the area of renewable energy and providing fair conditions to consumers. This leads – among other things – to the revision of European legislative provisions on the organisation of the electricity market, on the responsibilities and the governance of ACER, the Agency for the Cooperation of Energy Regulators, on the promotion of renewable energy and on the security of electricity supplies. This legislative package is the result of preparatory work carried out in consultation with the parties affected, with CRE contributing both as an active member of CEER and ACER, and in its own right.

The regulators, following the same principles as during the preparatory work, reacted as a group when they presented their initial responses to the Commission's proposals. While supporting the general aims being pursued and welcoming certain positive points in these proposals, CEER and ACER feel that the principles of proportionality and subsidiarity should take precedence, and that some of the Commission's proposals need more detailed analysis to determine their real added value and how they can

be made to fit well with the integration work already underway. The European regulators and ACER also shared their concerns on various proposals relating to the regulatory framework and the balance of power within ACER and between the agency and the regulators.

CRE fully supported this response, and added to it by sharing its own experience, for example in developing ways of managing consumption or the gradual elimination of regulated tariffs. It also wanted to reiterate specific messages concerning the overall effectiveness of this institutional and regulatory framework.

2. COOPERATION WITH OTHER REGULATORS

2.1. Bilateral meetings with other regulators

CRE departments maintain daily relationships with their counterparts in neighbouring countries to enable progress on common issues, such as the approval of rules for access to interconnectors, decisions to grant exemptions or decisions on allocation of the costs of cross-border infrastructures. High-level meetings are also organised to strengthen some bilateral links, improve mutual understanding between CRE and its main partners, and to better understand the changes to the regulatory framework for European energy and their impact. In 2016, CRE stepped up its contacts with the regulators in Germany, the BNetzA *(Bundesnetzagentur)* and in Italy, the AEEGSI *(Autorità per l'energia elettrica il gas e il sistema idrico)*. It also continued the existing dialogue with the regulators in Belgium, the CREG *(Commission de régulation de l'électricité et du gaz)*, and Ireland CER *(Commission for energy regulation)*, and started similar meetings with Ofgem, the regulator in the UK.

Beyond the European Union, CRE also responds to ad hoc requests for information or involvement from its international counterparts on specific technical matters. Its departments received visits from fifteen different foreign delegations during 2016, from Brazil, Canada, China, the Ivory Coast, the United States, Hungary, Japan, Malaysia, Mauritius etc. This way, CRE is involved in promoting French and European principles of regulation on the international scene.

2.2. Involvement in other multilateral cooperation frameworks for regulators

CRE is also a member of the Association of Mediterranean Energy Regulators (MEDREG), which brings together the members of almost all the countries bordering the Mediterranean, in order to share experiences and good practices in energy regulation. CRE chairs MEDREG's working group addressing issues related to electricity. It participated in the meetings of the Energy Community Regulatory Board, or ECRB.

The ECRB was created by the 2005 treaty that established the Energy Community, and extended the internal energy market to the Balkan peninsula. It does preparatory work for the Energy Community in relation to the regulation of the electricity and natural gas markets.

2.3. Involvement in the work of the OECD Network of Economic Regulators

The CRE has, since its creation, taken part in the work of the Network of Economic Regulators (NER) of the Organisation for Economic Cooperation and Development (OECD). The Managing Director of CRE, Jean-Yves Ollier, was elected vice-president of the NER office for 2016 and president for 2017.

This forum, which held its first formal meeting in November 2013, brings together 70 regulators from OECD countries and partner countries who operate principally in the sectors of energy, telecoms, transport and water. It provides a framework for discussion of questions related to governance and their regulatory practices. In 2016, the NER's work on the comparative analysis of the conditions of the independence of economic regulators and their practical implications led to the publication of a report called Being an independent regulator. CRE was a member of the peer evaluation committee, alongside the German regulator, BNetzA (Bundesnetzagentur) and the International Confederation of Energy Regulators (ICER), for the performance review of the Latvian multisectoral regulator (PUC), the conclusions of which were published in 2016. The NER was closely associated with the OECD's work on governance in infrastructure policies and enabled members to pool their experiences.

2.4. RegulaE.Fr the French-speaking network of energy regulators

In November 2016, CRE hosted the first meeting of RegulaE.Fr, the French-speaking network of energy regulators. The initial meeting, which brought together members of 17 African, European and Canadian regulatory authorities, officially created the Network, by adopting a Charter which describes its objectives and organisation. A concluding statement was also approved at the end of this meeting. A website is being created.

The network was created at CRE's initiative, working closely with the regulators in the Ivory Coast (ANARE), Belgium (CREG) and Quebec (Régie de l'énergie) in order to bring together regulators in French-speaking countries. It aims to establish and enhance collaboration and discussions between members, and promotes the exchange of information, the facilitation of training exercises, coordination and technical cooperation. The common use of the French language seems to make it easier to hold discussions and understand each other.

In 2016-2017, the coordinating committee organised meetings of the Network and coordinated discussions. It is chaired by Philippe de Ladoucette from the French regulator, CRE, until the 4th quarter of 2017, with vice-chairmen Hippolyte Ebagnitchie from ANARE in the Ivory Coast, and Marie-Pierre Fauconnier from CREG in Belgium. During 2017, CRE acts as secretariat to RegulaE.Fr. As part of this, it is helping the network to carry out its work and, more generally, is working to encourage and facilitate discussions between members.

KEY DATE

2016: FIRST DRAFTOF REGULATED TARIFFS FOR THE SALE OF ELECTRICITY (BLUE TARIFFS).

KEY FIGURES

86% OF SITES USING ELECTRICITY AND 47% USING GAS ARE UNDER THE REGULATED TARIFFS ON THE RESIDENTIAL MARKET.

1,100 MARKET PARTICIPANTS REGISTEREED WITH CRE.

KEY WORDS

WHOLESALE MARKETS

RETAIL MARKETS

REMIT (REGULATION ON ENERGY MARKETS INTEGRITY AND TRANSPARENCY)

GROWTH OF COMPETITION

Wholesale markets supervision 44

Retail markets supervision 61

CRE AND THE MARKETS

Since 2006, the CRE has been supervising the French wholesale electricity, gas and CO_2 markets, in collaboration with the responsible authorities. In 2016, the operational roll-out of REMIT was speeded up. For the first time, CRE also set the regulated electricity sales tariffs for residential and business consumers.

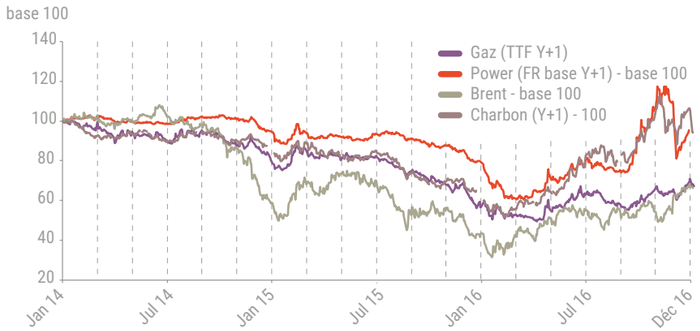
WHOLESALE MARKETS SUPERVISION

Since 2006, the CRE has been supervising the French wholesale electricity and natural gas market and since 2010, the CO_2 market, in collaboration with the responsible authorities, especially the Financial Markets Authority. In October 2016, it published its annual report on the operation of the French electricity, CO_2 and natural gas wholesale markets, which covers their activities and describes the development of these markets in 2015 and the 1st half of 2016. It also publishes each quarter the publication Observatoire des marchés de l'électricité et du gaz (Market Observer for Electricity and Gas). This monitoring task falls under the European regulation known as REMIT, in force since 2011, on the transparency and integrity of the energy markets, the operational implementation of which sped up in 2016. Where necessary, this monitoring task can invoke investigative and sanctioning powers when market abuses are discovered.

1. ENERGY AND RAW MATERIAL PRICES RECOVERED SHARPLY IN 2016

In a turnaround of the downward trend of 2015, during 2016, there was a sizeable pickup in energy prices (Illustration 1). This price increase is against a background of China reducing its coal production, because of the low profitability of its mines combined with health and environmental issues. In addition, strong demand from developing countries such as India, also contributed to the to creation of tension between supply and demand on the world coal market. The price of coal was €47.3 per tonne at the start of 2016, and reached €67 per tonne by the end of the year, an increase of approximately 76% over the year.

Illustration 1: Energy price trends



Sources: EEX; ICIS Heren; Reuters; ICE

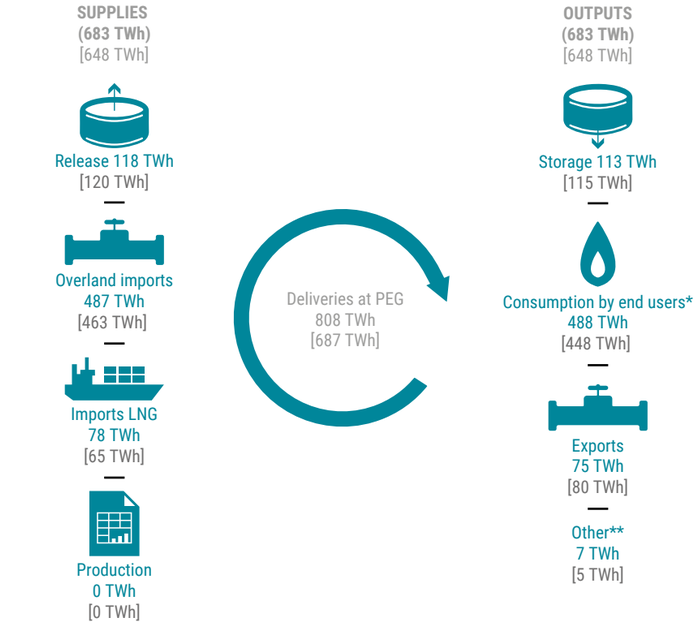
The price of oil rose by 50% over the year, but average prices were lower than in 2015 (€39.5 per barrel in 2016 and €47.6 per barrel in 2015). The market was overshadowed by discussions between OPEC and other producer countries who reached an agreement on 30 November 2016 to reduce their production in the face of sluggish demand(1).

1.1. Overview of the gas system

In France, the wholesale gas markets were characterised by an increase in consumption by end users in 2016, with revenues at levels similar to 2013, thanks to the rise in consumption by gas-powered electric power stations (sites with widely varying consumption). In fact, nuclear power stations being frequently offline from the second half of 2016 (see Overview of the electricity system) and the rise in coal prices from the start of 2016 led to an increase in electricity production from gas over the year (Illustration 3: Consumption by gas-powered electricity power stations – sites with widely varying consumption).

This increase in consumption was partly offset by an increase in imports and a fall in exports.

Illustration 2: Overview of gas injections and withdrawals during 2016 [2015]



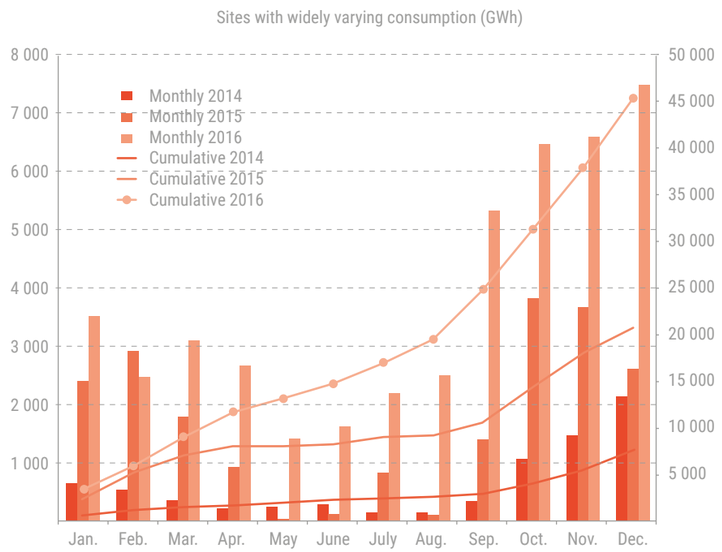
* Including both customers under regulated tariffs and market offers
** The item Other covers the volume consumed by the GRTs and DSOs for the running of the network itself (self-consumption, metering errors, losses...)

Sources: GRTgaz, TIGF – Analysis CRE

(1) Agreement of 30 November 2016 between OPEC and other petroleum exporting countries to reduce production, given low and volatile prices for the last two and a half years.

Consumption by gas-powered electricity power stations – sites with widely varying consumption), which had already tripled in 2015, more than doubled again on average in 2016. At the end of the year, the increase in electricity prices, linked to the low availability of the nuclear power stations, increased substantially the profitable periods of fossil-powered thermal plants.

Illustration 3: Consumption by gas-powered electricity power stations (sites with widely varying consumption).



Sources: GRTgaz, TIGF – Analysis: CRE

On average in 2016, the day-ahead gas prices ended up well below the levels of the previous years, following the same trend as commodity prices, and tracking international gas prices. In fact, after the general fall seen since 2014, prices reached a low point in the first quarter of 2016, before starting to climb again steadily throughout the rest of the year.

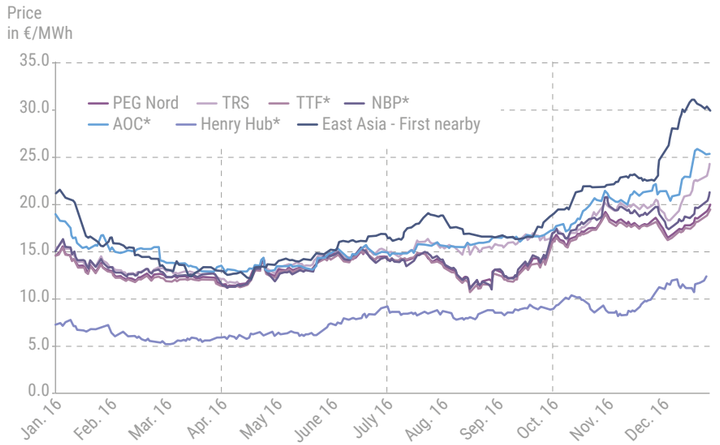
Table 1: Average spot day-ahead prices PEG Nord and TRS

Year	Average day-ahead price PEG Nord (€/MWh)	Average day-ahead price TRS (€/MWh)
2014	21.3	24.8
2015	20.0	20.5
2016	14.2	15.5

Source: Powernext

In addition, the convergence of world spot prices, seen from the second half of 2015 onwards, faded out in the second half of 2016. The price in the southern zone, (TRS) and in the Spanish market (AOC), for instance, followed the level of prices on the South American and Asian markets, reflecting their dependence on supplies of LNG (Illustration 4).

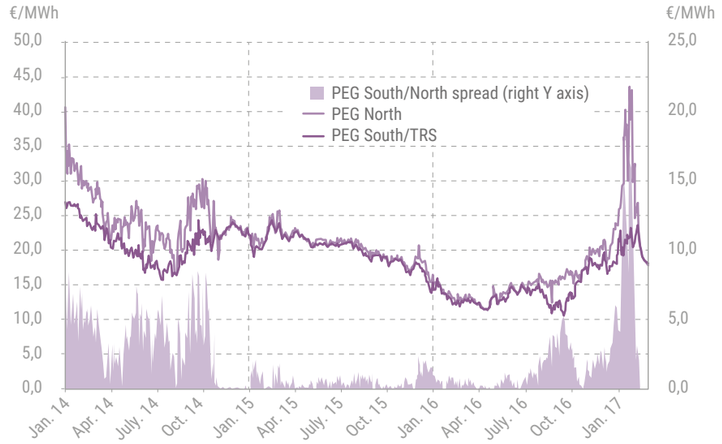
Illustration 4: International gas prices month-ahead



*TTF = Dutch index; NBP = UK index; AOC = Spanish index;
Henry Hub = North American index

In this case, the price spread between the southern (TRS) and northern (PEG North) zones in France grew from the second half of 2016 onwards, especially between July and October, and again at the end of the year (Illustration 5). The increase in prices in the south is linked to the almost 100% congestion at the link between the two zones, as well as to low levels of imports of LNG at the Fos terminal and in Spain. At the beginning of 2017, gas consumption increased strongly because of lower temperatures, bringing another price increase to the south which went beyond the Asian and South American price levels. The result of this was international arbitrage in favour of deliveries of LNG to the south of France, which led to prices reaching similar levels to those in the North in February.

Illustration 5: Trend in the spread TRS PEG North

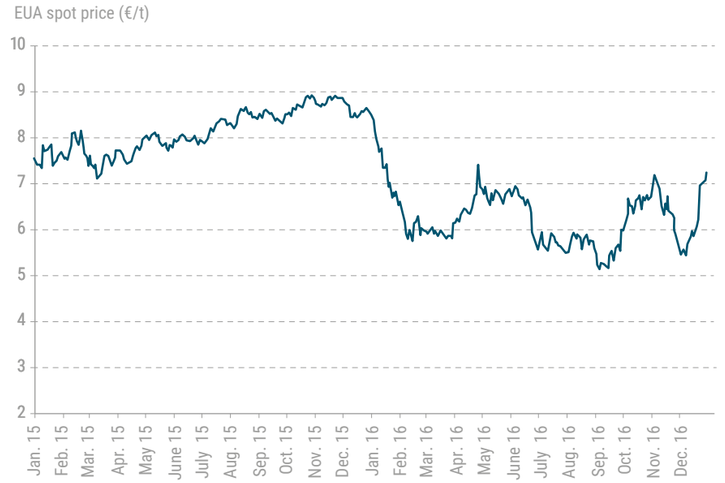


In 2016, 643 TWh were delivered to the North, which is an increase of 20% compared to 2015, and 154 TWh to the South, an increase of 12% over 2015.

1.2. The signal price of CO_2 remains low in an environment affected by government announcements and European events

In 2016, the average spot price of the product of CO_2 emission quotas, (EUA), under the European trading system, fell by 30% compared to 2015 and settled at €5.35 per tCO_2 (Illustration 6). This fall was mainly linked to very mild temperatures in January, an increase in the volumes sold at auction (+100 MT) and a fall in demand at these auctions. After a noticeable recovery in April 2016, following the announcements by the French government that it would create a floor price for CO_2, which idea has since been suspended, the price for a quota fell again during the second half of June 2016, following the results of the Brexit referendum in the UK. The price then fluctuated between €4 and €6.5 per tCO_2, stabilising by 31 December 2016 at €6.54 per tCO_2.

Illustration 6: Trends in CO_2 prices Spot price EUA (€/t)



Source: EEX

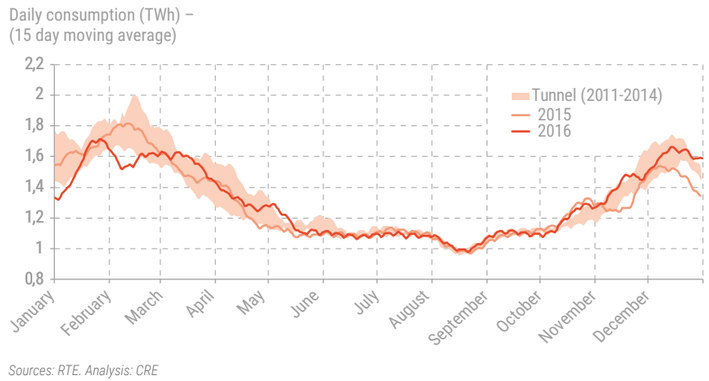
1.3. Trends in the electricity markets

Demand strongly affected by climatic conditions

Climate variations during 2016 and into January 2017 had an impact on electricity demand in France and across Europe, with a noticeable effect on the wholesale markets. In 2016, average consumption of electricity in France settled at 483 TWh (gross consumption, source RTE), an increase of +1.5% compared to 2015. The distribution throughout the year reflects the differences in observed temperatures. During the first quarter of 2016, the temperature ranged from 5°C to 10°C and consumption fell by almost 4 TWh compared to 2015. On the other hand, with the first wave of winter cold during the 4th quarter, it rose by 8 TWh (Illustration 7). This increase of 7% in consumption placed the electricity system under stress, given the low level of availability of nuclear power stations.

> *Climate variations during 2016 and into January 2017 had an impact on electricity demand in France and across Europe, with a noticeable effect on the wholesale markets.*

Illustration 7: Consumption patterns in France



Sources: RTE. Analysis: CRE

In the second half of the year, the electrical system was placed under stress by the low level of availability of nuclear power

On the supply side, the availability of nuclear plants, from mid-July 2016 until the end of the year (Illustration 8), was at a historic low due to the reactors being stopped at the demand of the Nuclear Safety Authority (ASN), in order to carry out analysis of the levels of concentration of carbon in the heart of steam generators. This period had a significant impact on the physical tension of the system, and led to an increase in wholesale electricity prices.

“On the supply side, the availability of nuclear plants, from mid-July 2016 until the end of the year, was at a historic low due to the reactors being stopped at the demand of the Nuclear Safety Authority (ASN), in order to carry out analysis of the levels of concentration of carbon in the heart of steam generators.

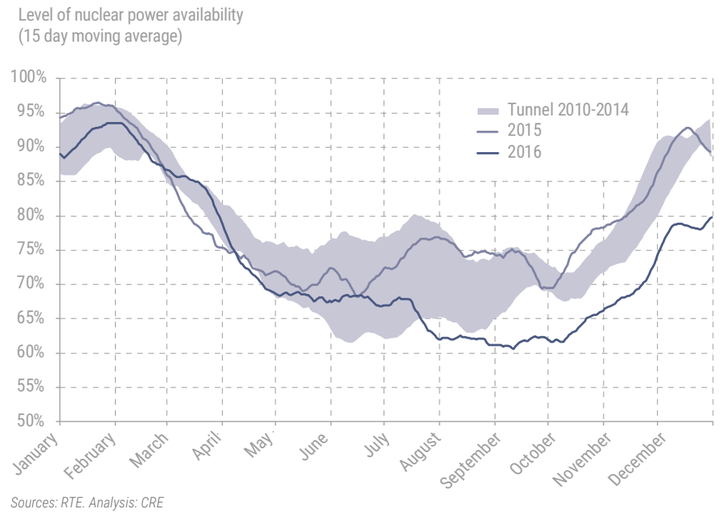
Hydraulic power generation, which remained at the same low level as in 2015, fell even further in the last quarter of 2016.

Given this background, the utilisation rates of gas-powered electric power stations remained high, especially in the third and fourth quarters, when the availability from nuclear sources was low. Production in gas-fired power stations reached 35 TWh, an increase of 60% compared to 2015, with an installed capacity of 11.7 GW.

Utilisation rates in coal-fired power stations showed a similar trend in 2016, totalling a production of 7 TWh (+15.4% compared to 2015) with an installed capacity of 3 GW.

The strong reliance on fossil-powered thermal plants, combined with a sharp drop in exports and an increase in imports during the last two quarters helped to bridge the gap caused by the low level of availability from nuclear plants and to cope with the increase in demand. The level of net exports was 39 TWh, (32.6 TWh of imports and 71.7 TWh of exports), a reduction of 37% compared to 2015.

Illustration 8: Trend of nuclear power availability



Sources: RTE. Analysis: CRE

Spot prices falling over the year, with a pick-up in the last quarter

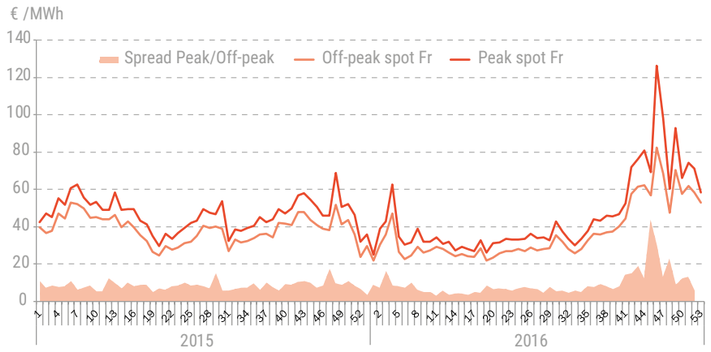
In France, the spot prices came out at an average of €34.6/MWh in 2016, which is a drop of 4.9% compared to 2015 (Table 2 and Illustration 9). This drop can be explained by lower consumption due to a mild winter in 2015-2016 against the background of low commodity prices. However, during the last quarter, tensions between supply and demand led automatically to an increase in spot prices, which rose to an average of €60/MWh, an increase of about +47% compared to the last quarter of 2015. This rise in spot prices partly reflects the heavy demand on thermal generation facilities, which have higher marginal costs than nuclear production does.

Table 2: Day-ahead price France on the EPEX SPOT exchange (annual averages)

€/MWh	2014	2015	2016
Day-ahead price	34.6	38.5	36.6

Source: EPEX SPOT analysis: CRE

Illustration 9: Development of day-ahead prices France on the EPEX SPOT exchange (weekly averages)



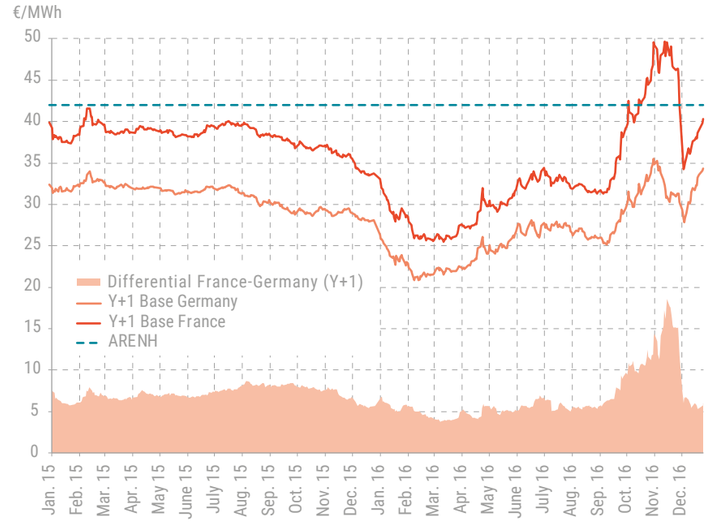
Source: EPEX SPOT analysis: CRE

A year-end marked by uncertainty about the availability of nuclear production

On the futures markets, the price of calendar-dated contracts for delivery in the following year (Y+1) settled at an average of €33.4/MWh, falling by -12.5% compared to 2015 (Illustration 10). This fall can be explained in part by the low prices seen in the first half of the year, given the favourable background of low commodity prices, especially gas and coal. However, the rise in coal prices from the second quarter onwards pulled French futures prices upwards, from historically low levels in the first quarter.

After falling for several months, prices rose in the last quarter of 2016. Therefore, forecasts by Météo France (the French weather service) of a potentially cold January, and the additional inspections required by ASN on some nuclear reactors together pulled prices of electricity for delivery in 2017 upwards. The prospect of prices remaining above the ARENH level (€42/MWh) led some alternative suppliers to ask CRE for allocations of electricity volumes under this arrangement.

Illustration 10: Energy price trends Y+1 on EEX



Source: EEX Power Derivatives – Analysis: CRE

The development of the ARENH scheme against the background of rising wholesale market prices

The ARENH scheme allows electricity suppliers to buy nuclear electricity from EDF at a regulated price set at €42/MWh. The volume available in this way is capped at 100 TWh.

In 2015, CRE noted a drop in ARENH requests, which stopped altogether in 2016, due to the falling prices on the wholesale electricity market. In the autumn of 2016, the wholesale prices came back up, meaning that subscriptions restarted at the submission date of 16 November 2016[(2)].

In this context, and thanks to the experience acquired over the first five years during which the scheme was in force, CRE sought to improve the standard ARENH purchase contract between EDF and suppliers. All the proposed changes were listed in its deliberation on 7 November 2016.

In line with the principle of annuality, which requires that ARENH requests cover a full year, CRE defined three conditions under which purchasers may invoke the "early termination clause", allowing them to terminate deliveries:

- a change in the ARENH price of more than 2%,
- a significant modification of the framework agreement,
- a change in the regulations relating to ARENH which runs counter to the purchasers' interests.

(2) Deliberation by the Energy Regulatory Commission on 7 November 2016 on a proposed decree in application of article L. 336-2 of the Energy Code, and amending the decree dated 28 April 2011, issued in application of Title II, article 4-1 of law no. 2000-108 on the modernisation and development of the public electricity service.

With the same end in mind, the Minister for the Environment, Energy and the Sea, who is responsible for international relations relating to climate change, informed CRE in a message dated 2 November 2016 of her intention *"to initiate a revision of the regulatory part of the Energy Code, in order to clarify the application of the so-called monotony clause*[3]*"*. This clause prevents suppliers from making changes that go against their six-month ARENH demand. In order to bring the modification of the termination clause in line with this measure, CRE stated in its deliberation on 7 November 2016 that the intended regulatory amendment would not constitute grounds for termination, provided it came into effect before the 1st April 2017.

The minister asked CRE on 15 November 2016 to review a draft decree amending the regulatory part of the Energy Code on these new arrangements. CRE gave a favourable opinion on 26 January 2017. The decree was issued on 21 March 2017.

The publication of the ruling on 14 November 2016, defining the framework ARENH agreement, supplemented by the publication of the decree referred to above, addresses the main concerns caused by the sudden surge in prices on the wholesale electricity markets in 2016.

2. THE 5 YEARS OF REMIT MARK A PERIOD OF FULL OPERATION

2.1. European activities around REMIT gathered speed

Cooperation and coordination, the drivers of REMIT's successful implementation

Shared responsibilities, far-reaching coordination

Regulation (EU) 1227/2011 of 25 October 2011 on wholesale energy market integrity and transparency, known as REMIT, forbids insider trading and market manipulation, both of which constitute market abuse. It requires all parties to publish any insider information they possess. The concept of insider information in the context of REMIT includes any information related to the means of production or the use of the infrastructure.

REMIT gives national regulatory authorities and ACER joint competence, and also separate responsibilities, in order to ensure the integrity and transparency of the wholesale energy markets. ACER has the task of monitoring all European markets, in cooperation with national regulators. Where there are suspicions of abuse, the inquiries shall be carried out by the national regulators, who have the power to apply sanctions.

(3) Article R. 336-16 of the Energy Code contains this clause.

REMIT gives ACER a major role in organising cooperation both at European Union level and with national regulatory authorities. In article 16, it therefore states that ACER shall issue non-binding guidelines to assist national regulatory authorities in taking consistent and harmonised decisions with regard to their monitoring activities. The national regulatory authorities participate in the drafting of these guidelines, which therefore reflect a common understanding of REMIT. ACER shall also be informed of any reasonable suspicions of infringements, and may approach one or more national regulatory authorities to ask them to make inquiries about the facts involved and to take any appropriate measures that may be necessary. Any cross-border inquiries that are needed shall be co-ordinated by ACER, which may also require that it be provided with the relevant information and may create an investigation group made up of representatives of the national regulatory authorities. In the same way, REMIT lays down the bases for coordination with the competent financial authorities.

> *REMIT gives national regulatory authorities and ACER joint competence, and also separate responsibilities, in order to ensure the integrity and transparency of the wholesale energy markets.*

Regular communication between the regulatory parties, necessary for the coordination and implementation of REMIT

In operational terms, the coordination of REMIT's implementation in the Member States is provided by ongoing communication between the national regulatory authorities and with ACER, through a number of working groups and task forces dedicated to subjects relevant to REMIT.

CRE plays an active part in the European working groups on market integrity and transparency, in the context of both the work carried out in the Council of European Energy Regulators (CEER) and that done within ACER. It also provides its expertise to the Coordination Group (CG) set up by ACER in 2015, and contributes to the pooling of methodologies and good practices in monitoring the energy markets. Bilateral meetings between regulators are also organised on a regular basis. These different activities address:

- the operational implementation of REMIT, in particular, the information technology and security aspects of the systems for transmitting and exchanging data;
- the issues relating to the tools, methods and means of monitoring;
- the harmonisation of the responses given to questions from actors on the European markets;
- the coordination of inquiries if cross-border market abuse is detected.

Several common tools have been set up by ACER to enhance coordination with national regulators, for example in the secure sharing of data.

Projects underway in 2016

Pursuant to the implementing acts of REMIT, ACER starts to collect data

REMIT entered an operational deployment phase at both European and national levels, following adoption of the implementing regulation 1348/2014 of 17 December 2014 on the collection of transaction data on the wholesale electricity and gas markets. This regulation organised the start of data collection by ACER from October 2015 of data relating to standard contracts, that is, those registered for trading on an organised market[4], and from April 2016 on data relating to so-called non-standard contracts. In addition to the data that is collected on an ongoing basis, ACER can collect data on an ad hoc basis or on reasoned request on:

- contracts and intra-group transactions;
- delivery contracts for electricity generated by an electrical production unit with a capacity of 10 MW or less, or by several electrical production units with a combined capacity of 10 MW or less;
- delivery contracts for gas produced by a gas production unit with a capacity of 20 MW or less;
- balancing or adjusting contracts for the electricity or gas markets.

The REMIT regulation authorises the national regulatory authorities to collect additional data at national level, as required to carry out their monitoring duties[5] on the markets.

All the information on this subject is available on ACER's REMIT portal. In particular, the implementation regulation, the Transaction Reporting User Manual (TRUM) and the Manual of Procedures on transaction and fundamental data reporting (MoP) provide additional explanations.

Registration of actors in the European register, a prerequisite for the declaration of their data

The REMIT regulation provides that, before declaring their data, all market players must be registered with the national regulatory authority of the Member State in which they are registered for business, or if they are not registered in any country of the European Union, then with the Member State in which they carry out their activities[6].

In France, CRE opted to use the "CEREMP" registration system *(Centralised European Register for Market Participants)* developed by ACER, which has been available since 7 October 2014 for collecting data, which began 7 October 2015. As market players are responsible for the information kept in the national register, they are required to inform immediately the national regulatory authorities of any changes to the information about themselves[7].

(4) The list of standard contracts is available on the ACER website: https://www.acer-remit.eu/portal/standardised-contract
(5) See recital (17) of REMIT
(6) See the 4th edition of ACER guidelines on the subject
(7) See article 9(5) of REMIT

Based on the information provided, ACER consolidates the national registers to create a European register which is made public in part[8], particularly the name of each market player, their ACER code and the website on which they intend to publish insider information relating to themselves.

By the end of 2016, slightly over 1,100 market participants were registered with the CRE[9].

Data registered by ACER and shared with certified national regulators

For all the European markets, data is collected by means of the data-reporting entities: the market players themselves once accredited using a Registered Reporting Mechanism *(RRM)*, or by intermediaries using third-party RRMs. If possible, data is collected centrally from these entities. The exchanges, including EPEX, EEX and Powernext, and certain intermediation (broker) platforms form a part of these entities that collect data. ACER has defined the criteria for registration of these entities in the RRM requirements document, together with some videos detailing the steps to be completed.

The data is then shared with the relevant national regulators, provided that their information security systems meet the criteria required for the complex certification procedure set up by ACER. CRE was one of the first regulators to have their information security systems certified by ACER. The data collected by ACER may be transferred to other competent authorities (financial authorities, competition authorities, etc.), provided that they respect the strict confidentiality and protection requirements pursuant to articles 10 to 12 of the REMIT Regulation.

Financial legislation relating to market abuse: an overlap with REMIT, necessary for energy regulators to take into account

Articles 3 and 5 of REMIT on the prohibition of insider trading and the prohibition of market manipulation do not apply to wholesale energy products, which are also classified as financial instruments under the terms of financial regulations[10]. In particular, the provisions relating to market abuse under the MAR Regulation *(Market Abuse Regulation[11])* and the CSMAD Directive *(Criminal Sanction on Market Abuse[12])* are intended to apply to the majority of these products. These legislations, which have been in force since 3 July 2016, extend the scope of the pre-existing provisions relating to market abuse:

- to contracts negotiated on regulated markets (RMs) and multilateral trading facilities (MTFs);
- to financial instruments traded on an organised trading facility (OTF), and derivative OTC products and commodity spots, not including wholesale energy products, which may influence the price of contracts traded on regulated markets and multilateral trading facilities and OTFs;

(8) See the European register of market players
(9) Where to register: https://www.acer-remit.eu/ceremp/home?nraShortName=9&lang=fr_FR
(10) See article 1(2) of REMIT (EU regulation no. 1227/2011)
(11) See EU regulation no. 596/2014 of 16 April 2014 on market abuse
(12) See also EU Directive 2014/57/EU of 16 April 2014 on criminal sanctions for market abuse

These legislations also ban manipulation of benchmarks and create a specific system for whistleblowers; they require persons professionally arranging or executing transactions (PPAET) to set up monitoring tools and to report any suspicious transactions and orders. They strengthen the powers of financial regulators in relation to inquiries and sanctions, and allow Member States to introduce criminal penalties.

On 10 February 2016, the European Commission delayed the implementation of the MiFID II Directive until 3 January 2018[13] to give those affected and the relevant authorities time to put appropriate systems in place. This Directive extends, among others, the list of financial instruments to include CO emission quotas and derivative products relating to an underlying electricity or gas asset, traded on an OTF. Futures wholesale energy products which require a physical delivery (an exception known as a *REMIT carve-out*) are one of the exceptions[14]. The delegated regulation from the European Commission dated 25 April 2016[15] defines these products in more detail and therefore removes the uncertainty about the applicable legal framework.

In relation to the prohibition of market abuse, a wholesale energy product is therefore likely to fall within the scope of application of either REMIT or the financial regulation, depending on its maturity, the trading venue and the application or non-application of this exception.

In each case, regardless of the classification of financial instruments, REMIT continues to apply regarding the obligations to publish insider information (Article 4), to send data to ACER (Article 8) and to register (Article 9).

2.2. At national level, the mechanism became fully operational during 2016

A suitable national monitoring mechanism, forming part of a European approach

An amended Energy Code to allow CRE to fulfil its monitoring responsibilities in line with the provisions of REMIT

Since 28 December 2011, CRE's task of monitoring the wholesale markets in enshrined in the REMIT regulation. Law no. 2013-312 of 15 April 2013[16] amended the Energy Code to entrust to CRE the task of enforcing compliance with the requirements and prohibitions defined in Articles 3, 4 and 5 of the REMIT regulation. This law empowers CRE to conduct inquiries if it discovers, or is informed of, potential infringements of the provisions of the REMIT regulation. It also added provisions to the Energy Code relating to CRE's power to apply sanctions. The Standing Committee for Dispute Settlement and Sanctions (CoRDiS) can sanction any proven infringement of the provisions of the REMIT regulation.

(13) See EU Directive 2014/65/EU of 15 May 2014 on markets in financial instruments
(14) See Annex I, section C of Directive 2014/65/EU
(15) See the delegated regulation of the European Commission dated 25 April 2016, supplementing Directive 2014/65/EU, especially Articles 5 and 8
(16) See law no. 2013-312 dated 15 April 2013

The work needed to integrate the provisions relating to REMIT has been completed with decree 2016-461 dated 14 April 2016[17]. The provisions of the decree define CRE's competences in the fields of the collection of information, registration and the obligations of the persons professionally arranging transactions. Article L.131-2 states that CRE *"shall enforce compliance with articles 3,4,5,8,9 and 15"* of REMIT. These articles refer to:

- relating to transparency requirements and the publication of insider information (Article 4);
- relating to the prohibition of market abuse in the form of insider trading (Article 3) and market manipulation (Article 5);
- relating to the requirement on market players to submit data (Article 8);
- relating to the registration obligation of market players (Article 9);
- relating to the obligations on the persons professionally arranging transactions, in the event of suspected market abuse (Article 15).

The legal provision based on REMIT is now in place and fully operational, which allows CRE to:

- supervise the wholesale markets;
- conduct investigations in cases of suspected market manipulation;
- refer matters to CoRDiS, which has the power to sanction infringements.

Data collected at European level, the basis for supervising the wholesale markets

2016 appears to be a transition year, as CRE started to receive transactional data passed on to ACER on a daily basis. In order to become actively involved in the quality control of the data held by ACER, CRE temporarily extended the national mechanism for collecting data directly from operators and the persons professionally arranging transactions. In the long run, CRE's analyses will mainly be based on the data collected by ACER, with the addition, where necessary, of data collection at national level deemed necessary by CRE.

CRE organised a number of information meetings to present the REMIT regulation and its operational implementation[18] to market players. In 2016, it also assisted market players to understand the regulation, and responded to their practical questions about the registration and data submission obligations.

The link between REMIT and the financial regulation is the subject of regular discussions between the departments of CRE and those of the Autorité des marchés financiers (French Financial Markets Authority, AMF), under the cooperation agreement that exists between these two independent administrative authorities.

(17) See the original text of decree no. 2016-461 dated 14 April 2016
(18) All the documents are available on the CRE website, see the page devoted to REMIT

Analysis and inquiry processes

In-depth analysis of unusual events

As part of its mission of monitoring wholesale markets, CRE has to carry out analyses whenever an unusual or suspicious market event is detected. It may be detected by:

- the Wholesale Markets Supervision Department at CRE;
- ACER, as part of its market monitoring activities;
- persons professionally arranging transactions, who are required to alert the national regulatory authority without delay, if they suspect an infringement of REMIT articles 3 and 5. To do this, ACER has created a notification platform to receive reports of any suspicions about infringements of the REMIT regulation[19];
- any other market participant who may suspect an infringement to REMIT.

As soon as CRE has detected or has been informed of an unusual event, it carries out an in-depth analysis attempting to establish if there is an infringement under REMIT, or any other failure that is likely to severely impair the good functioning of the energy markets. In 2016, CRE sent out thirteen requests for information to operators as part of its in-depth analyses.

From an in-depth analysis to setting up an inquiry

If the suspicions of a failure to comply with the REMIT provisions are confirmed during the analysis, then the president of CRE may decide to open an inquiry and appoint an officer to conduct it. This inquiry may, where applicable, lead to a referral to CoRDiS. So far, six formal inquiries have been initiated by CRE, three for electricity and three for gas.

"If CRE detects or is informed of an unusual event, it carries out an in-depth analysis attempting to establish if there is an infringement under REMIT, or any other failure that is likely to severely impair the good functioning of the energy markets.

One of the inquiries concerning the electricity market was related to suspicions of market abuse related to information about a power plan. It did not lead to a referral to CoRDiS because it related to transactions that occurred prior to the adoption of the law of 2013, giving CoRDiS the power to sanction possible offences against the REMIT regulation.

In relation to the information from this inquiry, CRE, in its monitoring report on 18 October 2016[20], reminded all market players of their obligations relating to the publication of insider information.

(19) See the platform for reporting any suspicions
(20) http://www.cre.fr/documents/publications/rapports-thematiques/rapport-marches-de-gros-2015-2016

RETAIL MARKETS SUPERVISION

Tasked with the proper functioning of the retail markets, CRE was the first to propose regulated electricity sales tariffs for residential and business consumers. Each year, it also draws up a status report for the electricity and natural gas retail markets, with data and indicators showing recent developments. 2016 was marked by the growth of competition linked to the ending of regulated sales tariffs for businesses, and by a rapid increase in the number of attractive and innovative offers.

1. CRE DEVELOPS REGULATED TARIFFS FOR SALES TO END USERS

1.1. In 2016 for the first time, CRE proposed the regulated sales tariffs for electricity to the Minister of Economy and the Minister of Energy.

Pricing by stacking costs

Pursuant to the provisions of articles L.337-4 and L.337-7 of the Energy Code, from 8 December 2015 onwards, the CRE has been tasked with proposing the regulated electricity sales tariffs to the Minister of Energy and the Minister of Economy. In metropolitan continental France, these regulated tariffs are retained only for residential and business consumers who have a contract for power of 36 kVA or less. In the territories not interconnected to the grid of metropolitan continental France, these tariffs will continue to apply for all consumers.

"In 2016 for the first time, CRE proposed the regulated sales tariffs for electricity to the Minister of Economy and the Minister of Energy.

Under article L. 337-6 of the Energy Code, *"the regulated electricity sales tariffs are defined by taking the sum of the regulated price of access to the incumbent nuclear electricity, the cost of additional provision at market prices, the capacity guarantee, the transmission costs of electricity and the marketing costs, plus a normal return for the supply activity"*.

Articles R. 337-16 ff. of the Energy Code implement pricing by stacking by level and structure.

Stacking by level ensures structurally that alternative suppliers can enter the market with the regulated tariffs on average, in other words a supplier is able to put forward an offer which is at least as competitive as the tariffs.

The construction of the structure of the tariffs by stacking (each tariff option and each time-of-use item of the tariff rates is representative of the stacking of the components mentioned above) makes it possible to compete with all the tariffs, while avoiding any cross-subsidies between consumers on one tariff option or from one tariff period to another. For example, even within those customers who subscribe to the peak/off-peak hours option, a consumer who uses a lot of peak hours and a consumer using just a few peak hours will not create the same costs for the electricity system. As the stacking is performed based on each time-of-use item, each of these two consumers will see on their bill the real cost that they create for the electricity system.

In its deliberation on 13 July 2016, CRE proposed for the first time the regulated sales tariffs for both the metropolitan continental grid and the non-interconnected territories. These were applied as of 1 August 2016, following a decision by the Ministers for the Economy and for Energy who can request CRE, within a maximum of three months, to prepare a new proposal for the tariffs (Article L. 337-4 of the Energy Code).

When preparing its proposal, CRE consulted with all the market players: a public consultation was started on 18 February 2016 and numerous hearings were organised by the Board. The deliberation leading to the tariff proposal was presented to the Higher Energy Council, which gave a favourable opinion on it.

The contestability of all regulated tariffs

CRE developed some specific tools for setting tariffs, in order to evaluate in detail those components of the stack which best reflect the practices of all those involved in the market.

The supply of energy is normally carried out progressively by suppliers, to reduce their exposure to market price volatility and to take into account the liquidity of markets. Based on the responses to the public consultation started on 18 February 2016, CRE opted for smoothed supply over the period of two years, which represents it supply strategies.

During 2016, when the ARENH price was higher than the market price, suppliers did not subscribe for ARENH supplies. They purchased what they needed on the wholesale electricity market. The structure of their pricing to end users is therefore solely based on the relativity of the market prices from one hour to the next during the year, for example, between the peak hours and the off-peak hours. Thus, CRE reflected in its tariffs the structure of this supply 100% from the market, while realigning the level of the tariffs to the level defined by the Energy Code, which includes the ARENH price.

The electricity transmission costs are measured by using the tariffs for using the public electricity networks (TURPE) decided on by CRE.

The costs of sales by suppliers (staff costs, managing energy savings certificates, cost of information systems, etc.) should, under the Energy Code, reflect the *"cost of sales of an electricity supplier who is at least as efficient as Électricité de France when acting as a supplier to customers who have contracts at the regulated sales tariffs for electricity"*. To define the commercial costs, CRE carried out an analysis of the information provided to it during the public consultation on 19 June 2015. Taking into account the conclusions of this study, when preparing a sales proposal, it estimated that the sales costs defined by the incumbent supplier allowed it to guarantee the contestability of the regulated sales tariffs.

The normal remuneration for performing the activity of supply is included in the regulated sales tariffs. The stacked elements that match the TURPE, the ARENH and the wholesale market include a remuneration for the network manager and for the producer. This aims to cover the following risks in the tariffs proposed in 2016:

- risks related to consumption (impact of the temperature, economic climate, etc.);
- portfolio risks (loss of customers, etc.);
- regulatory risks.

The commercial margins for energy suppliers were assessed by CRE following analysis of those of comparable European suppliers. This analysis showed that a commercial margin equal to 3% of the pre-tax regulated sales tariffs (not including any catch-up) is appropriate for this type of business.

As CRE indicated in its Report on regulated electricity sale tariffs in July 2015, *"the differences in costs noted between the level of regulated sales tariffs and the level of costs in EDF's accounts for the years 2012, 2013 and 2014 lead to catch-ups, which will need to be applied to the upcoming tariff movements"*.

The decisions of the Council of State on 15 June 2016 (no. 383722 and no. 386078) instructed the Minister for Energy and the Minister for the Economy to apply two retroactive decrees, for the period between 1 August 2014 and 31 October 2014, and for the period between 1 November 2014 and 31 July 2015, in order to recover the deficit in cost coverage during the previous tariff period.

However, no catch-up was planned by the competent ministers for the costs not covered during the tariff period from 23 July 2012 to 1 August 2013. These costs amounted to €422 million for the residential customer sector (see CRE report on regulated sales tariffs, 2015). For the markets to work correctly, CRE included an amount for catch-up in the regulated sales tariffs it proposed in July 2016. This amount corresponds to one half of the discrepancy between costs and tariffs for financial year 2012. So CRE increased the variable elements for all the "blue" regulated sales tariffs for residential customers by €1.7/MWh.

The regulated sales tariffs put forward by CRE are defined excluding taxes. The various taxes and levies that apply need to be added to these prices (CTA, CSPE, TLCFE and VAT).

Smoothing some regulated sales tariffs over three years to retain customers

Pursuant to Article R. 337-20-1 of the Energy Code, *"the Energy Regulatory Commission seeks to shield the tariff structure, in relation especially to the breakdown of costs between the fixed part and the part proportional to electricity consumption, and in relation to tariff differentiation between tariff periods, from sharp movements or instability that are likely to make it difficult for consumers to understand price signals, or likely to lead to excessive fluctuations in invoice amounts over a number of consecutive periods"*.

Therefore CRE evened out the changes in tariff structures across three years (Tempo and EJP options) to avoid major variations in invoices for some customers.

Contracts signed for low power consumption and the level of certain tariffs that are restricted by the government

Pursuant to article R. 337-20-1 of the Energy Code, *"in order to encourage consumption management, in particular during peak periods, the ministers responsible for energy and the economy may issue decrees annually, after consulting with the Energy Regulatory Commission to set:*

- *the maximum percentage that the fixed part of the probable bill may constitute, before taxes, assuming average usage at normal temperatures, for each of the different power levels for each tariff option under the "blue (residential) tariff";*
- *the minimum ratio between the highest price during the tariff period and the lowest price during the tariff period, that must respect at least one"blue tariff" available to residential customers."*

The decree dated 26 July 2016, on which CRE was consulted on 31 May 2016, and on which it submitted its opinion on 21 June 2016, sets a ceiling of 25% for the fixed element and a minimum level of 7% for the ratio between the highest and the lowest price within the tariff period for the blue residential tariffs.

The 25% ceiling on the fixed part only concerns small consumers with blue residential tariffs in the basic option, who have a contract for 3 kVA.

The ratio restriction only applies to the Tempo blue residential option, between the peak red hours and the off-peak blue hours.

UPDATE ON THE CAPACITY MECHANISM TO BE USED IN FUTURE REGULATED ELECTRICITY SALES TARIFFS

The provisions of Articles L. 335-1 ff. of the Energy Code define a mechanism for capacity obligation. This provides that *"based on the consumption patterns of their customers, each electricity supplier shall contribute with power and energy to ensuring the continuity of supply within the metropolitan continental area"*.

To achieve this, each supplier (or those consumers who are required to do so) is obligated to purchase capacity guarantees to cover the consumption of his portfolio of customers during peak periods of national consumption. These guarantees can be obtained by investing in new production facilities or demand reduction, or from operators of capacity (for production or reduction). They will be assigned guarantees by RTE in return for the effective availability of their capacity during periods when the electricity system is under stress.

The capacity mechanism shifts the burden of default risk to the actors that create such risks for the system. In the medium-term, it encourages the development of production capacities or load shedding to ensure continuity of supply. Among others, this allows facilities with extreme peaks to enjoy more stable revenues during their running time, and encourages the development of load shedding through giving them economic space by means of their capacity value.

On 1 December 2016, a review of the rules of the capacity mechanism improved the mechanism by restricting the options for manipulating the market and increasing the transparency and liquidity of the collateral market. In this respect, the European Commission noted on 8 November 2016, in the conclusions to its inquiry into this area, that the French capacity mechanism was compatible with the rules of the European Union regarding state aid. It also noted that it improved the security of supply while maintaining competition.

The first year of application of the mechanism started on 1 January 2017. The actors, suppliers and capacity operators carried out an organised auction on 15 December 2016, during which 22.6 GW of capacity were traded on the exchange platform. The result of this auction was also to fix the reference price for the market at €10,000/MW.

CRE, having worked on the preparation of the regulatory texts for the implementation of the mechanism (opinion on the Rules for the capacity mechanism, approvals, proposals and decisions concerning various complementary mechanisms), is now supervising the market for capacity guarantees. As part of its monitoring responsibilities on the retail market, it also ensures that capacity costs have good impacts on supplier offers.

Pursuant to Article L.337-6 of the Energy Code, the cost of additional capacity procurement will be built into the pricing of the regulated tariffs by stacking costs in the next round of tariffs.

1.2. CRE took into account the developments in the gas market in 2016

Revision of the principles used to allocate Engie's commercial costs between its regulated activities and its market activities

Since 2006, CRE has regularly audited Engie's supply contracts and checked that its supply costs and other costs correspond to the costs included in the regulated sales tariffs for natural gas. Pursuant to article R. 445-3 of the Energy Code states that CRE shall carry out a detailed analysis each year of all of Engie's costs of supplying natural gas and its other costs. It submits the results of this analysis to the government and publishes them by 15 May at the latest. In 2016, CRE published its 3rd audit report on Engie's regulated sales tariffs for natural gas.

Based on an in-depth review of Engie's accounts, its supply costs and other costs, CRE concluded that in 2015, these costs were covered by revenues from sales to customers under regulated sales tariffs. Unlike previous years, CRE did not identify the factors likely to change the level of indexation on the gas market prices within the tariff formula. Instead, it recommended increasing the indexed share linked to the French PEG North index and reducing the number of oil indices as of 1 July 2016. Its recommendations were included in Engie's new tariff formula, laid down in the decree dated 29 June 2016, decided on after consultation with CRE.

In parallel to this work, in its deliberation on 17 May 2016, CRE approved new principles for allocating ENGIE commercial costs between its sales activities to regulated sales tariff customers and those under market offers. This change was necessary because of the significant change in Engie's customer base, which is devoting significant efforts to developing its market offers. Indeed, these increased by 55% over two years.

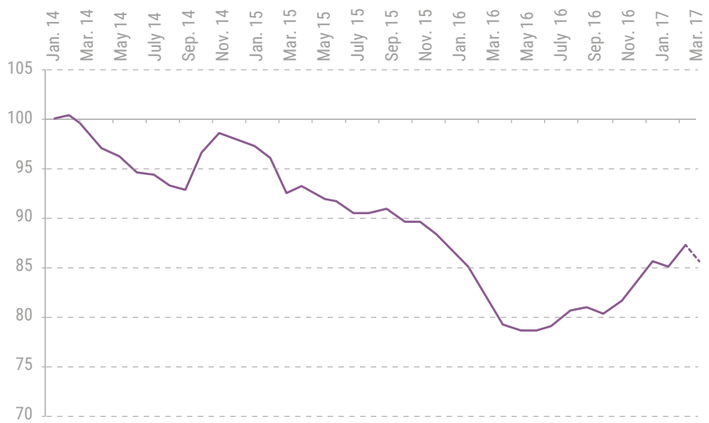
These new principles are based on allocation rules for the costs related to customer relationship management (incoming calls and back office activities). Thus, all promotional and sales costs are allocated for market offers, provided that these marketing actions no longer concern the regulated sales tariffs. This has led to a drop of around 70 million euros in the commercial costs allocated to regulated sales tariffs. Therefore, compared to the present regulated sales tariffs in force, CRE predicted in its audit report in May 2016 that *"a downward correction of around -3% seems necessary in the regulated tariffs for 1 July 2016, of which -2.2% comes from the revision of the methods of allocating commercial costs between customers under regulated sales tariffs and those under market offers, as part of separate accounting, in order to reflect the expected trends in Engie's commercial costs"*.

A drop of 3.4% of the regulated ENGIE tariffs for 2016

Engie regulated sales tariffs vary each month, in order to reflect the changes in Engie's supply costs estimated for the tariff formula included in the current decree. Each year at the end of June, after consulting with CRE and based on the audit report it submits in May, the government publishes a new decree.

The changes in Engie's rates of regulated sales tariffs for natural gas, before tax and CTA, represent an overall decrease of -3.4% in the average tariff for 2016. The increase in the regulated sales tariffs in the 4th quarter of 2016, a result of an increase in gas prices on the Netherlands wholesale market and on the north of France (PEG North) market, essentially offset the decrease seen in the first four months of the year. The part of the formula for the calculation of Engie's supply cost indexed to the wholesale gas market has been dominant in the last few years (it amounts to 77.6% since 1 July 2016). The regulated gas sales tariffs, excluding tax, nevertheless have fallen an average of 16.4% since 1 January 2014.

Trends in the average regulated gas sales tariffs from Engie, excl. taxes and CTA, from 1 January 2014 (in €/MWh, base 100 in January 2014)



The annual bill, including taxes, for a residential customer under regulated sales tariffs, using gas for heating and consuming 17 MWh per year, fell by -2.4% between December 2015 and December 2016. The taxes increased on 1 January 2016, especially the Domestic Tax on Natural Gas Consumption (TICGN), which rose from €2.64/MWh in 2015 to €4.34/MWh in 2016. On 1 January 2016, the biomethane contribution and the contribution to the special gas solidarity tariff (CTSSG), which amounted to €0.2/MWh and €0.0153/MWh respectively in 2015, were merged into the TICGN.

Dispute relating to the existence of regulated sales tariffs for natural gas

The Association nationale des opérateurs détaillants en énergie (National Association of Retail Energy Operators, ANODE) made a submission to the Council of State on 17 July 2013, requesting the annulment of decree no. 2013-400 dated 16 May 2013, amending decree no. 2009-1603 of 18 December 2009 on regulated natural gas sales tariffs, as being ultra vires. ANODE maintains that Articles L.445-1 to L.445-4 of the Energy Code, under which the disputed decree was issued, misreads, among others, the objectives of Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas.

In its decision no. 370321 of 15 December 2014, the Council of State stayed proceedings on ANODE's request and referred to the Court of Justice of the European Union (CJEU) for a preliminary ruling on the compatibility of the regulated sales tariffs with the laws of the European Union. Does the French system of regulated sales tariffs, which is applied only to incumbent suppliers and which guarantees that the alternative suppliers can compete with these tariffs, constitute an obstacle to the achievement of a competitive natural gas market? What criteria would justify this kind of state intervention?

Following on from its previous decision on 20 April 2010, Federutility, the CJEU notes in its ruling on 7 September 2016 (C-121/15, ANODE), that the regulated sales tariffs constitute an obstacle to the achievement of a competitive gas market. As justification for such an intervention, the CJEU recalls that it must pursue a general interest, respect the principle of proportionality and lay down clearly defined public service obligations that are transparent, non-discriminatory and verifiable, while guaranteeing equal access of EU gas undertakings to consumers. Among others, it noted that security of supply and equal treatment across the entire territory, the objectives referred to by France, assuming that regulated sales tariffs help to achieve this, are objectives of general interest which could justify state intervention in the setting of gas prices. It did, however, express some doubts about the proportionality and the non-discriminatory nature of the French regulations.

The principle of proportionality implies that the content and the form of the action (in this case the existence of the regulated tariffs) do not go beyond what is necessary to achieve the objectives pursued by the French regulations (objectives of general interest).

In its decision, the CJEU recalls that the criterion of proportionality implies that: the measure is likely to guarantee achieving the objective of general interest, its duration must be limited to what is strictly necessary, and the implementation method must not go beyond what is necessary to achieve this objective.

In the next few months, it will be for the Council of State to settle the dispute on the basis of the framework created by the CJEU.

2. 2016: STRONG SIGNALS TO INDICATE THAT COMPETITION IS GROWING IN THE MARKETS

2.1. CRE analysed the market for residential customers

The majority of residential customers remained with their incumbent supplier, but other offers might stimulate competition

Although consumers still prefer the incumbent suppliers, their competitors are gradually gaining new customers. According to the results in the 2016 publication of the Baromètre Énergie-Info of the French Energy Ombudsman, awareness of the opening up of competition is growing but strong inertia still persists among the public. Even if French people feel better informed about the opening up of energy markets to competition (62% in 2016 over 57% in 2015) and are in favour of this (68%), 76% still have no intention of changing their energy supplier.

Therefore, for electricity, the regulated tariffs clearly dominate the residential market, representing 86% of sites as of 31 December 2016. Engie and Direct Énergie share the free market, in terms of numbers of sites and consumption, with about a 2/3 share for Engie and 1/3 share for Direct Énergie. Other active suppliers work with market offers, with 5% for Lampiris (up by 2 points during the last quarter of 2016, mainly due to its winning offer in the joint purchasing campaign organised by UFC Que Choisir (federal union of consumers), see page 71).

> *Market offers for gas represented 47% of sites as of 31 December 2016 and they distributed almost evenly between incumbent suppliers and alternative suppliers.*

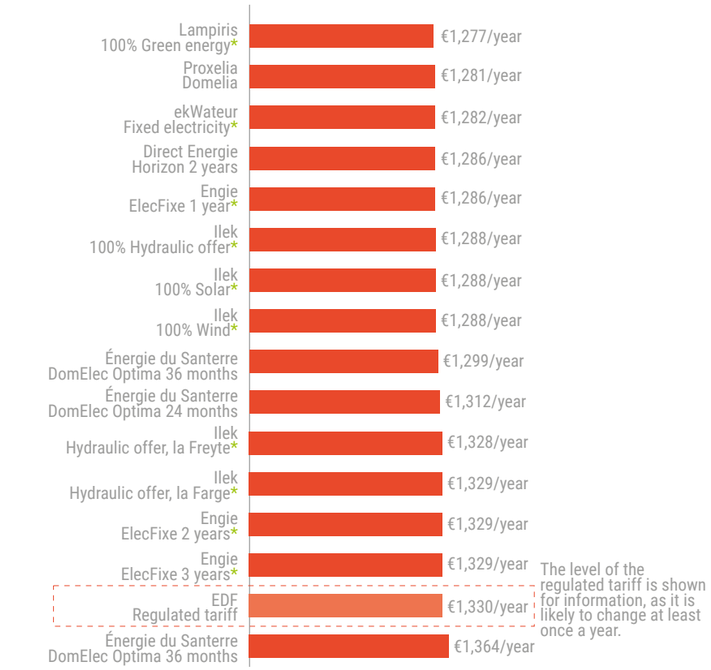
Gas market offers are more widespread than those for electricity. They represented 47% of sites as of 31 December 2016 and they distributed almost evenly between incumbent suppliers and alternative suppliers. Engie is the primary supplier of market offers for residential customers, both for electricity and natural gas.

Alternative suppliers can make consumers offers well below the regulated tariffs, especially given the relatively low market prices in 2016. Consumers can subscribe to market offers with an indexed price 7% lower than the regulated sales tariffs, incl. tax, both for electricity and natural gas (for a customer type with peak rate/off-peak rate 9 kVA, consuming 8.5 MWh of electricity per year, and a customer type with heating using 17 Mwh of natural gas per year, both situated in Paris). Suppliers are also making offers with fixed prices that are below the regulated tariffs (-4% for electricity and -13% for gas as at 31 December 2016).

At present, suppliers are offering residential customers more fixed price offers than offers with variable prices. Until mid-2012, only Engie made offers with fixed prices for electricity. In 2013, they became more common for a larger number of suppliers. These fixed price offers are very successful among consumers because they ensure price stability, as well as a predictable invoice amount, both highly important factors in their eyes. They also cover ever-growing time periods, up to four years for natural gas since 2015.

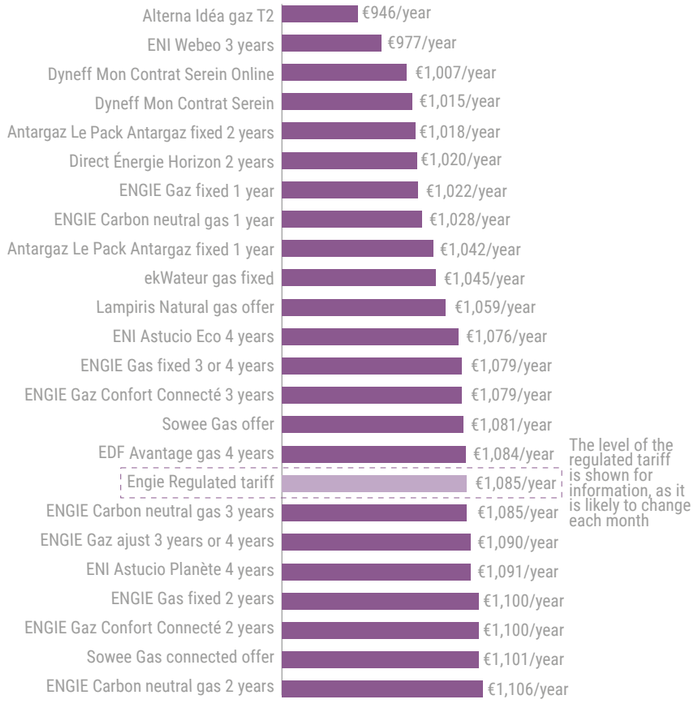
However, the financial interest in subscribing to such an offer depends on price movements in the wholesale markets and on the regulated tariffs over the period in question.

Comparison of fixed price electricity offers for a peak/off-peak customer type as of 31 December 2016



Source: Énergie-info offer comparisons
Green offers are indicated by a green asterisk

Comparison of fixed price natural gas offers for a customer type with heating, as of 31 December 2016



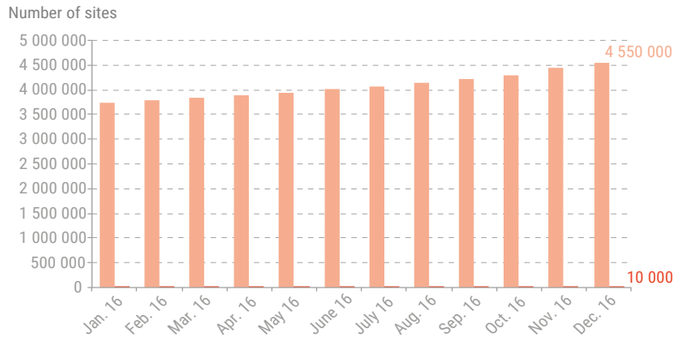
Source: Énergie-info offer comparisons

Taking part in joint purchases, like those organised by UFC-Que Choisir, or through the Selectra site for comparison of offers, gives access to even larger discounts. The significant increase in the number of sites under market offer at the end of 2016, on both the electricity and natural gas markets, is explained primarily by the new campaign *"Combine for cheaper energy"* run by UFC-Que Choisir. The winning offers made by the supplier Lampiris give -23% (before tax) and -17% (before tax) savings on the price per kWh of the regulated tariffs for electricity and gas (as of September 2016). According to the association, 270,000 people subscribed before the auction and more than 100,000 stated that they wanted to subscribe to the Lampiris offer that won the auction (figures provided by UFC Que Choisir). Those customers who accepted the commercial proposal of Lampiris, sent out in October 2016, were transferred to Lampiris during November and December.

For electricity, the number of sites under market offers grew substantially with an additional 336,000 customers (+7.9%) by the end of the 4th quarter of 2016 (instead of 4.5% on average per quarter over the first three quarters). A total of 871,000 customers subscribed to a market offer in 2016.

For natural gas, the residential market is growing steadily, particularly in the 4th quarter with an additional 241,000 customers under market offers (+5.0% instead of +3% on average per quarter over the first three quarters). A total of 688,000 customers subscribed to a market offer in 2016.

Development of the number of residential sites under market offers until 31 December 2016



Sources: GRT, GRD – Analysis: CRE

These joint purchase initiatives, combined with the publicity campaigns about the end of the regulated tariffs for business customers, helped to raise awareness among residential customers about the opening up of the market and the possibility to change suppliers. The recent arrival of new suppliers, such as Énergie d'ici, Ilek and Plum Énergie for electricity, Dyneff and SoWee for natural gas and EkWateur for both energy sources, also helps to stimulate the retail market.

In electricity, the new providers offer energy from innovative renewable sources, which also encourages a reduction in consumption (Plum Énergie) or offer local green electricity (Énergie d'ici and Ilek).

In natural gas, Sowee, which markets itself as an energy supplier committed to smart homes, is introducing innovations into the residential market with services for controlling heating remotely and tracking consumption.

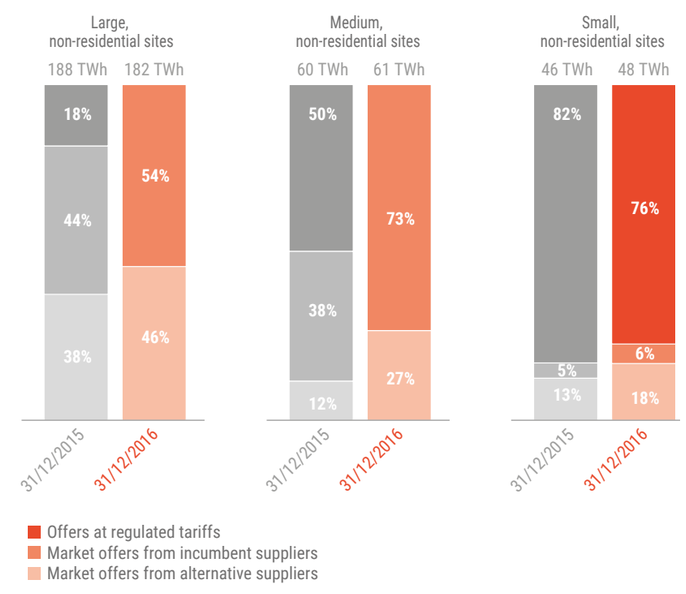
2.2. CRE analysed the market for business customers

The end of regulated sales tariffs and the growth of competition

31 December 2015 marked the end of regulated sales tariffs for electricity and natural gas for businesses and local authorities: an opportunity for alternative suppliers to acquire new customers. In the sectors affected by the end of regulated sales tariffs, after a strong development in market offers and in competition in the 1st quarter of 2016, especially for electricity, the pace slowed down in the 2nd quarter and then stabilised in the 3rd and 4th quarters of 2016.

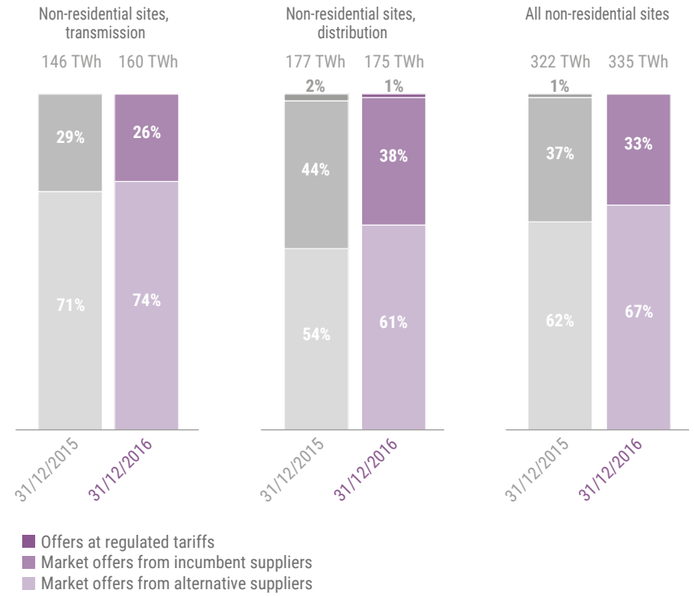
In electricity, the growth in the number of competitors to the incumbent suppliers started in the medium-sized non-residential sites (SMEs). Their market share increased by 11.2 points in a year, reaching 12.5% by volume until 31 December 2015, before doubling to reach 25% by volume until 30 June 2016, then 27% by volume until 31 December 2016. In the sector of major non-residential sites (large industrial sites and buildings, hospitals, hypermarkets, etc.), there was stronger growth: alternative suppliers held 30.6% by volume in December 2014, and 46% in December 2016.

Breakdown of electricity offers by customer segment and annual consumption



Sources: GRT, GRD – Analysis: CRE

Breakdown of gas offers by customer segment and annual consumption



Sources: GRT, GRD – Analysis: CRE

On the natural gas market, competition is already well underway. The growth in the market shares of alternative suppliers is impressive. In the segment of non-residential sites connected to the distribution network (condominiums and large industrial sites), market share by volume rose from 46% in December 2014 to 54% in December 2015, then 61% until 31 December 2016. In the segment of non-residential sites connected to the transmission network, 74% of gas was supplied by alternative suppliers until 31 December 2016.

The impact of the end of the regulated sales tariffs on competition is relative, however, as non-residential consumers mainly opted for a market offer contract from their incumbent supplier. This was true for 79% of gas sites in 2015 (including 61% with Engie) and 70% of electricity sites, which went to EDF between 1 January 2014 and 1 January 2016. In electricity, until 31 December 2016, of the 491,000 non-residential sites which were no longer had a right to regulated sales tariffs, 75.5% have market offer contracts with an incumbent supplier. This phenomenon is even more significant in areas with local distribution companies (LDCs). A fact that clearly demonstrates the strong position held by incumbent suppliers for retaining their existing customers and acquiring new ones. Rather less for natural gas, given that until 31 December 2016, 67% (compared to 60% at 31 December 2014) of volumes were supplied under market offers by alternative suppliers.

CRE issues calls for tenders as part of ending the regulated tariffs

As part of the end of the regulated tariffs, article 25 of law no. 2014-344 of 17 March 2014 on consumption provided that consumers who had not subscribed to a market offer contract by the final date would automatically be accepting a default offer, a so-called "transitional offer" from their supplier. This offer, set up in order to avoid cutting off electricity and gas, was valid for a maximum of six months. After the end of that period, and if the consumer had still not subscribed to a market offer contract, the supply of gas and electricity would no longer be guaranteed.

> *"This mechanism involves designating a supplier for each site that does not have a contract at the end of the interim offer period, following a call for tenders organised by CRE. The selection of a supplier is made on the basis of a proposal, for each of the affected sites, of a unit amount in euros per MWh, which will be refunded to the State.*

In order to take into account the feedback and lessons learned from the first deadline of removing regulated tariffs for natural gas in 2015, a mechanism for the continuity of supply following the end of the interim market offers for gas and electricity was created by decree, to avoid having to cut off supplies to sites that had not yet signed a contract by 1 July 2016. This mechanism involves designating a supplier for each site that does not have a contract at the end of the interim offer period, following a call for tenders organised by CRE. The selection of a supplier is made on the basis of a proposal, for each of the affected sites, of a unit amount in euros per MWh, which will be refunded to the State.

To be able to appoint suppliers within the timeframes that match the obligation to provide information to customers by 30 June 2016 at the latest, CRE issued specifications on 17 March 2016. The principles applied in the specifications were presented to suppliers and consultations were held to hear their opinions.

To promote the opening up of the market, CRE carried out allocations according to geographical areas and types of consumption site. It capped the number of batches that one supplier could take.

CRE published the assignment of the batches on 10 May 2016.

APPOINTMENT OF SUPPLIERS: FIGURES FOR THE CRE CALL FOR TENDERS

20 suppliers submitted applications before the closing date for tenders. Among those, 9 suppliers from LDCs submitted bids for LDC batches, 6 suppliers, including 2 LDCs, submitted bids for GRDF network batches and 8 suppliers submitted bids for batches on the Enedis network.

For electricity
- 8 suppliers submitted bids for batches in the area covered by Enedis, but no-one bid for all the batches;
- 4 batches on the area supplied by Enedis did not receive any bids, and were declared void
- Average unit value applied: €19.50/MWh
- 6 suppliers submitted bids which covered 11 LDCs
- Average unit value applied: €10.60/MWh

For natural gas
- 6 suppliers submitted bids for batches in the area covered by GRDF: 5 for all the batches and 1 for the PEG North batches
- Average unit value applied is €8.06/MWh

In relation to LCDs
- 6 suppliers responded
- Average unit value applied: €8.10/MWh

7,535 electricity sites and 3,935 natural gas sites were transferred on 1 July 2016 to a supplier appointed by CRE

6,288 electricity sites and 3,247 natural gas sites were transferred on 31 December 2016 to a supplier appointed by CRE

Pursuant to part III of article 1 of the above decree, CRE issued a second call for tenders to appoint suppliers to ensure continuity of supply for the remaining sites to whom the transitional offers still applied.

CRE announced the allocation of batches on 14 December 2016: only one supplier had submitted a bid for a natural gas batch with a local distribution company.

Monitoring of commercial practices

The competition authority and CRE are working together to ensure that incumbent suppliers do not make market offers which are anti-competitive. The price of market offers is required to reflect the costs involved, in order to avoid alternative suppliers being squeezed out.

> *The competition authority and CRE are working together to ensure that incumbent suppliers do not make market offers which are anti- competitive.*

In a decision dated 2 May 2016, the competition authority, in response to a referral from Direct Énergie, judged that Engie had fixed the prices of individual market offers for business customers *"without taking account of the actual costs, running the risk of setting up predatory or squeeze-out prices"*. The competition authority therefore instructed Engie to set the prices of its individual market offers at a level that allows the avoidable costs to be covered. The competition authority and CRE are responsible for checking that Engie correctly applies the protective measures to which it is subject.

KEY DATES

1.6.2016: ERDF BECOMES ENEDIS.

17.11.2016: DELIBERATIONS CONCERNING THE TARIFFS FOR ACCESS TO THE ELECTRICITY TRANSMISSION AND DISTRIBUTION NETWORK.

KEY FIGURES

72 TWH/YR OF ELECTRICITY EXPORTED AND 537 TWH/YR OF GAS IMPORTED.

5 NEW NETWORK CODES ADOPTED FOR GAS AND ELECTRICITY.

17 NEW RECOMMENDATIONS FOR PROMOTING SMART GRIDS.

KEY WORDS

INTERCONNECTIONS
NETWORK CODES
BALANCING MODEL

CRE AND THE NETWORKS

CRE defined the tariffs for gas and electricity delivery and gave the system operators the resources to support their work on the energy transition. To build up the European energy market, CRE is encouraging the development of effective mechanisms, such as market balancing for the electrical system. With nuclear production of electricity in France decreasing at the end of the year, the interconnections between energy networks have demonstrated their proper functioning.

DEVELOPING TARIFFS FOR ACCESS TO NETWORKS

In 2015 and 2016, CRE developed a new series of tariffs for access to networks which will apply from 2017 to 2021. These tariffs represent a turnover of around €20 billion in 2017.

Historically centralised, over the last few years the French energy model has gone through changes in the forms of production and consumption. The combined effects of the energy transition and the digital transformation (provision of data, development of smart grids or the adjustment of networks to the increase in decentralised production) have led to substantial changes in the role of system operators.

The key issue for CRE when developing network tariffs is the preparation and support of the energy transition, in particular enabling system operators to adapt to changes in their roles and controlling the changes in these tariffs while covering the costs of efficient system operators.

1. FOR THE VARIOUS NETWORK TARIFFS, CRE IS IMPLEMENTING A REGULATORY FRAMEWORK BASED ON COMMON PRINCIPLES

1.1. The same general principles have been applied to the preparation of tariffs during 2016

In accordance with the provisions of the Energy Code (articles L 341-3 and L 452-3), new tariffs for the use of transmission and distribution systems for natural gas (ATRT6 and ATRD5) and electricity (TURPE 5), and LNG terminals (ATTM5) define a regulatory framework that encourages infrastructure operators to improve their efficiency, cost management, and the quality of service provided to users of their structures.

“This regulatory framework is in line with the one implemented for previous tariffs. It is based on principles common to all network tariffs.

This regulatory framework is in line with the one implemented for previous tariffs. It is based on principles common to all network tariffs:

- a multi-year tariff for a period of approximately four years, with changes each year(1) in the table of tariffs, based on predefined rules;
- an incentive for operators to control costs: they will retain all productivity profits and losses which can be achieved on a trajectory predefined by CRE;
- incentives to maintain or improve the quality of service or the quality of supply: bonuses or penalties are disbursed to operators based on the achievement of predefined objectives.

(1) Mid-tariff change only for the ATTM5

These elements provide all parties with a clear view of tariff developments over the next four years. They encourage operators to improve their efficiency, while protecting them from risks linked to, among others, inflation and climate conditions which influence tariff profits.

In addition, for network usage tariffs for the transmission and distribution of electricity and natural gas, as well as the tariff for using LNG terminals, CRE has applied the general principle of a review clause on the point of net operating costs. This provision aims to allow taking into account, midway, any changes in legislation, regulations or court rulings or quasi-legal rulings that might have a significant impact on operators’ costs during the last two years of tariffs. This clause allows changes to be made, if necessary, to the tariffs two years after they take effect, so in 2018 for the ATRD5 tariff and in 2019 for the TURPE 5, ATRT6 and ATTM5 tariffs. CRE will ensure, if this review clause is invoked, to maintain the continuity and predictability of the tariffs necessary for the proper functioning of electricity and gas markets.

“CRE attaches special importance to the deployment of smart electric grids and to the growth in research and development activities (R&D) by system operators.

CRE attaches special importance to the deployment of smart electric grids and to the growth in research and development activities (R&D) by system operators. To prepare for the future of networks, the regulatory framework described below provides for a number of measures.

A framework to promote the deployment of smart grids

In order to define a framework that promotes the deployment of smart grids, CRE held initial deliberations on 12 June 2014, covering recommendations on the changes needed in the legal, technical and economic framework and their development.

During a second deliberation, on 8 December 2016, it reviewed the level of progress on the system operators’ roadmap in this area, and proposed new recommendations on the promotion of smart grids for electricity and natural gas, in order to:

- support and encourage the development of new technologies and new services;
- improve the use of public electricity and natural gas networks;
- increase the overall performance of the electricity system.

“The goal is to shift smart grids from the experimental phase to industrial deployment, both in mainland France and in non-interconnected zones to the continental metropolitan grid.

The goal is to shift smart grids from the experimental phase to industrial deployment, both in mainland France and in non-interconnected zones to the continental metropolitan grid.

The deployment of smart electricity grids is also promoted by a measure under TURPE 5 which allows RTE and Enedis to ask, once each year, for the integration of cost overruns linked to a project, or a group of projects, related to the deployment of smart electricity grids, subject to a positive analysis of the costs and benefits.

The projects approved by CRE need to allow for a reduction of investment in the grid, for example through projects relying on the flexibility provided for under Article 199 of the LTEVC, which authorises geographical collectives that bring together parties within the same area to provide services which give flexibility to the distribution system operators.

In gas, spending related to smart grid projects are primarily R&D expenditures. Therefore, they are included in the measure to provide incentives for R&D expenditure described below.

Allowing for R&D activities of system operators in network tariffs

CRE takes into account, in tariffs, the need for system operators in both electricity and gas to expand their R&D activities linked to the construction of tomorrow's networks, and has set up a mechanism that gives them the resources to carry out these R&D and innovation projects, while encouraging the effective realisation of these expenditures. Therefore, R&D operating costs for a system operator which were included under the tariff but have not yet been committed at the end of the tariff period, will be refunded to users. CRE has included in the new tariffs all costs related to R&D projects put forward by the operators.

In addition, the R&D activities of system operators are monitored. Each year, RTE, Enedis, GRTgaz, TIGF and GRDF send a status report of their R&D activities to CRE. CRE ensures the effective commitment of R&D expenses by system operators, by analysing the difference between forecast trajectories and actual totals provided in the status report.

In addition to this annual review, every two years CRE publishes a report on the R&D and innovation activities carried out by network operators. This report complements the communication tools set up by CRE, especially in the area of smart electric grids. It aims to give actors a clear view of the R&D and innovation policy implemented by system operators and financed by tariffs.

1.2. System operators are given an incentive to improve their performance

Controlling energy procurement costs

The costs of energy procurement can vary significantly depending on factors that are external to the system operators, notable climatic conditions, growth in consumption or prices on the wholesale markets. As a result, the tariff protects the system operators from risks associated with their energy costs. System operators do, however, have some leverage to limit the total cost of losses and compression needs, primarily by managing the volume of losses and optimising the cost of energy procurement.

Given the importance of this cost item, CRE considers it necessary to ensure that system operators apply their best efforts to keep it to a minimum. That is why it has set up a mechanism to encourage electricity and gas system operators to manage loads and volumes linked to the procurement of energy needed to compensate for losses on electricity and gas networks and continue the proper functioning of compressors on the gas networks.

Managing energy investment costs

The regulatory frameworks that applied to previous electricity and natural gas infrastructure tariffs displayed a significant lack of symmetry between mechanisms related on the one hand to operating costs, and on the other hand to investment expenses.

The additional productivity gains achieved by system managers, above and beyond the projections for net operating costs defined in the various tariffs, were retained in full by the system operators. In a symmetrical approach, any additional costs in terms of net operating costs were also borne in full by the operators. The net operating costs therefore were always subject to a strong incentive.

Conversely, the discrepancies between actual and forecast investment expenses were simply covered in full by the tariffs. The incentive to improve the efficiency of investment expenses was therefore minimal.

This asymmetry in the regulatory framework was enough to introduce distortion in the choices made by system operators, between solutions that involved investments and those that involved operating expenses when these are interchangeable.

To alleviate this imbalance, CRE introduced a regulation in the new network tariffs to provide an incentive to spend on investments. The new usage tariffs for transmission and distribution networks for natural gas (ATRT6 and ATRD5 tariffs), and transmission and distribution networks for electricity (TURPE 5), therefore define new mechanisms that address network[2] and non-network investment.

For investments in transmission networks for TURPE 5 HVB electricity, and for all investments under ATRT6 for gas, the new tariffs introduce an incentive regulation covering the costs of major investment projects, for example those with a budget over €30 million for electricity and €20 million for gas. In addition, in the current context of a fall in demand and overcapacity on the European natural gas market, the ATRT6 tariff provides a new regulatory incentive mechanism, the allocation and amount of which will depend on compliance with a target budget defined by CRE. This new mechanism replaces the flat-rate bonus of 3% over ten years assigned to projects that increased interconnection capacity or reduced the number of balancing zones during the period of the preceding tariff (ATRT5). With regard to interconnection projects, a bonus or a penalty is determined ex post, according to the actual utilisation rate of the interconnection, compared to the theoretical rate of utilisation applied in the cost/benefit study.

The mechanism related to investments in distribution networks is based on the definition of the unit investment costs. The TURPE 5 HVA-LV tariff for electricity and the ATRD5 tariff for gas have thus introduced a mechanism based on a model of reference costs for the installations brought into service by the distribution system operators, which involves their technical features and the general trend of costs over time.

(2) Network investments carried out under the control of the system operator

For investments outside the network, the mechanisms for transmission and distribution are similar. The TURPE 5, ATRT6 and ATRD5 tariffs introduce a mechanism to encourage system operators to manage their capital costs in the same way as their operating costs, for a range of non-network investments including assets such as real estate, vehicles and information systems. As these expense items are likely to lead to trade-offs beween investment and operating costs, the mechanism selected encourages operators to optimize their overall costs in the interests of network users.

Supply quality

Monitoring supply quality does not only apply to the area of electricity, although the challenges related to monitoring cuts is far lower in gas.

“CRE wanted to update the regulatory framework provided under TURPE to improve the quality delivered to users.

CRE wanted to update the regulatory framework provided under TURPE to improve the quality delivered to users. In 2016, it commissioned an external study to compare the regulatory framework incentives in the area of continuity of supply for European electricity system operators, and to evaluate the margin for improvement of the applicable incentives.

Some of the recommendations that came out of this study, published on the CRE website, were implemented in TURPE 5. The main changes relate to the increase in incentives and the creation of new indicators:

- for RTE, TURPE 5 refocuses the incentive rules by increasing the cut-off time target, and decreasing the cut-off frequency target, strengthening the incentive by raising the incentive ceiling and an obligation to compensate distribution system operators for cuts longer than five hours affecting users;
- for Enedis, CRE introduced financial incentives over the average duration of cuts in HVA voltage, in addition to the existing one for LV voltage, as well as to the average cut-off frequency of HVA and LV[3]. In addition, in order to limit the financial risk to Enedis linked to the introduction of the four incentives mentioned above, a ceiling/floor to the financial incentives (bonus/penalty) applied to the operator was defined to neutralise the impact of extreme performances which account for only 1% of cases. Finally, for lengthy cuts, Enedis now needs to pay a penalty to users for cuts longer than 5 hours, instead of the previous 6 hours.

CRE also provides incentives to local distribution companies (LDCs) serving more than 100,000 users and EDF SEI to set up the same indicators as monitored by Enedis.

Quality of service

For quality of service, changes agreed on to the ATRD5, ATRT6 and TURPE 5 tariffs attempt to clarify, through simplification, the mechanism for assigning financial incentives. These changes also help to ensure the stability of the incentive system by offering a clearer view to operators and other parties involved.

(3) HVA: High voltage – low voltage: Low voltage

CRE has developed a list of service quality indicators that align to both the operational practices of system operators and to CRE recommendations issued in its reports for 2014 and 2015 related to the encouragement of electrical and gas system operators’ quality of service. For example, the developments included in TURPE 5 HVA-LV aim to improve relations between Enedis and the suppliers who control the quality of service to the end consumers.

CRE also notes that suppliers anticipate having modern digital services that are reactive, available 24/7 and with more functionality. To this end, it invited all suppliers to communicate to them during 2017, their precise expectations for improvements in quality of service, in particular concerning the Enedis supplier portal (SGE), information flow, and web services.

In relation to RTE, CRE has not yet identified any areas in which financial incentives may be required for this operator. It wants to ask the market actors about their expectations in terms of quality of service from RTE. If the market actors’ expectations reveal some areas in which RTE’s performance could be improved, then CRE may decide to set up some financial indicators. To improve RTE’s transparency in relation to market actors, CRE asked it to publish at least once per year the results for quality of service indicators and satisfaction surveys.

2. THROUGH NETWORK TARIFFS, CRE CAN HELP MANAGE THE ENERGY TRANSITION

2.1. The TURPE 5 HVB for use of public electricity networks in the area of HVB voltage

The TURPE HVB tariff for the use of public electricity networks applies to users connected to high voltage and very high voltage networks. The new TURPE 5 HVB[4] will apply from 1 August 2017, synchronously with TURPE 5 HVA-LV (which will apply to users connected at medium and low voltage), for a period of about four years. It was adopted after wide consultations with the relevant parties involved, and following studies that were published on the CRE website.

TURPE 5 HVB is preparing for the networks of the future by giving the public transmission system operator all the necessary resources to handle the challenges of the energy transition.

The level of expenses covered by TURPE 5 HVB

TURPE 5 HVB includes all of the investment and research and development programmes put forward by RTE. It provides RTE with the option of obtaining, subject to certain conditions, supplementary budgets during the tariff period, to finance projects related to the deployment of *smart grids*.

(4) Deliberation by the Energy Regulatory Commission on 17 November 2016, leading to a decision on tariffs for the use of HVB public electricity networks

TURPE 5 HVB provides for a significant increase in the net operating costs and capital costs compared to level achieved in 2015, and is therefore providing RTE with the necessary resources to respond to the challenges of the energy transition and digital transformation (provision of data, development of smart grids or the adjustment of networks to the growth of decentralised production).

The net operating costs covered by TURPE 5 HVB for RTE amount to €2.8 billion/yr on average during the tariff period (excluding receipts from interconnections and the costs of contracting for rapid and supplementary reserves), an increase of +5.7% between 2015 and 2017. This increase is the result of several factors, some exogenous to RTE, such as the significant increase in costs associated to the implementation of the interruptibility mechanism.

The capital costs for RTE covered by TURPE 5 HVB total €1.8 billion/yr on average during the tariff period. In this context, investments funded by RTE are remunerated at a rate of 6.125%. In the current financial environment, marked by low interest rates and weak inflation, this remuneration encourages the financing of investments necessary for the management and development of the transmission network.

“TURPE 5 HVB will increase on average by +6.76% on 1 August 2017, and will then change in accordance with inflation on 1 August of each year.

TURPE 5 HVB will increase on average by +6.76% on 1 August 2017, and will then change in accordance with inflation on 1 August of each year (excluding corrective effects of the clearing account for costs and profits). This change is primarily due to factors exogenous to the coverage of RTE costs: the end of compensation for overpayments during the TURPE 2 and 3 periods, coverage of invoice rebates for electro-intensive industries, transfer of balancing loads (+1.2%) which were previously not covered by TURPE.

Changes to the tariff structure

For the structure [5] of the tariff and the tariff signals sent to network users, CRE looked at the forecast trends in electricity volumes on RTE transmission networks during the period between 2017 and 2020. Thus, it took into account the expectations of system operators concerning the level of network usage and development linked to energy transition (such as growth in decentralised production from renewable sources).

In addition, time-seasonality signals which correspond to the difference in tariff between peak loads and base loads on the network are increased for voltage domains HTV 1 and HTV 2. This increase will help encourage activities to manage peak consumption and to increase decentralised production from renewable sources. These changes will lead to significant invoice reductions for users connected to the HVB 1 and HVB 2 networks who consume very little during the top 300 peak hours of the year.

(5) For RTE and Enedis, the authorised forecast revenue is broken down across network users based on their connection voltage level, contracted power, consumption and their choice of tariff options, in the form of tariff elements which constitute the “tariff structure”.

The changes in network usage envisaged by system operators could lead to a higher concentration of consumption by users concerned during the busiest hours of peak load. In this case, use of the structure development method selected for TURPE 5, applied to load curves reflecting this phenomenon, would lead to a much greater power share than is the case today for the time range concerned.

However, CRE opted not to artificially inflate the share of tariff revenues, which represents an output of the tariff model. An artificial increase in this element would in fact lead to significantly higher invoices for some users, and would reduce the incentive to manage consumption. CRE believes that a significant change in the share of power should be based on observation and anticipation of major changes in usage models for networks, which is apparently not the case today looking at data provided by RTE for the period from 2017 to 2020.

In the context of changes in the energy landscape, CRE has introduced a review clause that allows, if necessary, a change to the tariff structure after two years of implementation of TURPE 5 HVB, the summer of 2019.

Key figures for TURPE 5 HVB (for RTE)

- **8,500** employees
- More than **100,000 km** of power lines
- Approximately **500** producer users, consumers, traders and distributors who are directly linked
- **€4.3 billion/year** of authorised revenue (average 2017 to 2020)
- **€1.5 billion/year** of investments (average 2017 to 2020)
- **+6.76%** average increase on 1 August 2017, then inflation indexing.

2.2. The TURPE 5 HVA-LV tariff for use of public electricity networks in the HVA and LV domains

The TURPE HVA-LV tariff for the use of public electricity networks applies to users connected to medium (HVA) and low voltage (LV) networks. The new TURPE 5 HVA-LV[6] will apply from 1 August 2017, synchronous with TURPE 5 HVB (which will apply to users connected at high and very high voltage), for a period of about four years. It was adopted after wide consultation with the relevant parties involved, and following studies that were made public.

TURPE 5 HVA and LV is preparing for the future by giving distribution system operators all the necessary resources to handle the challenges of the energy transition.

(6) Deliberation by the Energy Regulatory Commission on 17 November 2016, leading to a decision on tariffs for the use of the HVA and LV public electricity networks

The level of charges covered by TURPE 5 HVA-LV

TURPE 5 HVA-LV includes the whole of the investment and research and development programmes put forward by Enedis. It takes into consideration the impact of the deployment of Linky smart meters, especially the reduction in losses on networks and offers Enedis the option to propose smart grid projects during this tariff period.

TURPE 5 HVA-LV presents a significant increase in operating expenses and capital costs compared to the level realised in 2015, and is enabling Enedis to manage the changes in its activities in the context of the energy transition and digital transformation and the architecture of the electricity markets (provision of data, development of smart grids or the adjustment of networks to the development of decentralised production).

The operating costs covered by TURPE 5 HVA-LV for Enedis amount to €4.5 billion/yr on average over the tariff period (excluding coverage for electricity losses and costs of access to the transmission network), an increase of +5.6% between 2015 and 2017.

The capital costs for Enedis covered by TURPE 5 HVA-LV total €4.4 billion/yr on average over the tariff period. In this context, investments financed by Enedis from its own funds attract payments at a level of 6.7%, both for investments carried out during the TURPE 5 tariff period, and for those carried out during past tariff periods, provided that they were financed using Enedis' own capital. Given the current financial environment, with low interest rates and weak inflation, this level of payment is an incentive to financing the necessary investment in management and the further development of distribution networks.

> *TURPE 5 HVA-LV will increase on average by +2.71% on 1 August 2017, and will then change in accordance with inflation on the 1 August of each year.*

TURPE 5 HVA-LV will increase on average by +2.71% on 1 August 2017, and will then change in accordance with inflation on the 1 August of each year (excluding corrective effects through the clearing account for costs and profits).

Changes to the tariff structure

The deployment of Linky meters represents an opportunity to change the structure of TURPE in order to better reflect the network costs linked to peak periods. Increasing the difference in the tariff between peak hours and hours with a lower load on networks will promote actions to manage peak consumption as well as increasing decentralised production from renewable sources and consumption associated with the storage of electricity. This is why CRE included in TURPE 5 a tariff option with a movable peak time in the HVA voltage domain, and a tariff option with four different time periods for users of LV who have a Linky meter installed.

With the gradual deployment of Linky meters during the TURPE 5 tariff period, users will be able to choose the tariff option which best suits their needs as well as the volume they subscribe to, in 1 kVA steps.

Key figures for TURPE HVA-LV (for RTE)

- **39,033** employees
- **1.3 million km** of managed electricity network
- Around **35 million** connected users
- **€13.5 billion/year** of authorised revenue (average from 2017 to 2020)
- **€ 4.2 billion/year** of investments (average from 2017 to 2020)
- **+2.71%** average increase on 1 August 2017, then inflation indexing.

2.3. The ATRT6 tariff for use of natural gas transmission networks owned by GRTgaz and TIGF.

The ATRT6 tariff[7] for use of natural gas transmission networks owned by GRTgaz and TIGF will apply from 1 April 2017 for approximately four years. It was adopted after wide consultation with the interested parties, and following studies that were made public.

The level of charges covered by the ATRT6 tariff

The ATRT6 tariff provides GRTgaz and TIGF with all the necessary resources to meet the challenges of the energy transition, and to deal with changes in the gas market over the next few years. Its level is set in such a way as to integrate specifically the projects "GRTgaz 2020" and TIGF's "Research and innovation", through which the GRTs participate in the energy transition.

The developments linked to the ATRT6 tariff form a part of the overall management of the tariff levels for gas transmission, linked to the gradual reduction of demand. Thus, the ATRT6 tariff for GRTgaz and TIGF will be reduced on 1 April 2017, principally because of the reduction in the cost of capital from 6.5% to 5.25% due to the current financial environment of low interest rates and weak inflation, before increasing gradually over the following year, primarily due to the cost of investments related to the creation of the single market in November 2018.

Changes to the tariff structure

> *The ATRT6 tariff will reflect some important changes to the tariff structure, mainly to pave the way for the creation of the single market in France in 2018.*

The ATRT6 tariff will reflect some important changes to the tariff structure, mainly to pave the way for the creation of the single market in France in 2018. These developments include a reduction on 1 April 2017 of the tariffs for the main network of around 10% for access points in France (pipelines and LNG terminals) and for exit points from the main network to the regional network.

The method for deciding the Regional Tariff Level (NTR) that applies under ATRT5 will lead to differences in the tariff for very large transmissions between delivery points in France compared to other European countries. In the context of dropping the regulated sales tariffs, which historically applied an equalisation to mitigate the consequences of NTR

(7) Deliberation by the Energy Regulatory Commission on 15 December 2016 to reach a decision on the tariff for use of natural gas transmission networks owned by GRTgaz and TIGF.

discrepancies, disruptions detrimental to network users could occur. The ATRT6 tariff therefore provides a cap on the NTR at 10, starting 1 April 2017.

Key figures for the ATRT6 tariff

GRTgaz

- **2,916** employees
- **32,456 km** of managed pipelines
- **764** active industrial users
- Approximately **600 TWh** of gas transported each year
- **€1.8 billion/year** of authorised revenue (average for 2017 to 2020)
- **€544 million/year** of investments (average for 2017 to 2020)
- **-3.1% r**eduction on 1 April 2017, and a reduction equivalent to –0.4% per year for the period of 2017 to 2020

TIGF

- **582** employees
- **5,136 km** of managed pipelines
- **119** active industrial users
- Approximately **100 TWh** of gas transported each year
- **€257 million/year** of authorised revenue (average for 2017 to 2020)
- **€104 million/year** of investments (average for 2017 to 2020)
- **-2.2%** reduction on 1 April 2017, and an increase equivalent to +0.8% per year for the period 2017 to 2020

2.4. The ATTM5 tariffs for connection to LNG terminals

The new ATTM5 tariffs for use of regulated LNG terminals at Montoir-de-Bretagne (Montoir) and Fos Tonkin, managed by Elengy, as well as Fos Cavaou, managed by Fosmax LNG, known as ATTM5[8], will apply from 1 April 2017 for a period of about four years. They were adopted after wide consultation with interested parties, and following studies that were made public.

The level of charges covered by the ATTM5 tariff

The ATTM5 tariffs show a significant reduction compared to the ATTM4 tariffs: the drop in the average unit rate for the ATTM5 period is -6.5% for Montoir, -18.2% for Fos Tonkin and -18.6% for Fos Cavaou.

These reductions are caused primarily by the reduction in the rate of returns on assets. To a lesser extent, the fall in operating costs (linked to the reduction in activity and the productivity gains achieved by Elengy and Fosmax LNG during the ATTM4 period) help to push the tariffs downwards.

(8) Deliberation by the Energy Regulatory Commission on 18 January 2017 on a decision of tariffs for the use of regulated LNG terminals

Changes to the tariff structure

Following the work carried out jointly by operators, the ATTM5 tariffs introduce several changes to the tariff structure: creating a basic service which can be supplemented by subscribing to a range of bands, allowing a customer of the terminals to see their emissions eased (i.e. a standard quantity of gas issued each day from the terminal into the transmission network). In addition, the ATTM5 tariffs will continue several experimental services started during the previous tariff period (ATTM4): *the pooling*[9] service, dedicated stock service and transhipment service at the Fos Cavaou terminal. A subscription account has also been set up to increase flexibility to terminal customers on their subscriptions.

Key figures for the ATTM5 tariffs

Elengy

- **376** employees
- **2** LNG terminals with a total regasification capacity of 13 billion m3
- **141.4 TWh** of subscriptions for unloading per year (average for 2017 to 2020)
- **€136 million/year** of authorised revenue (average for 2017 to 2020)
- **€11.1 million/year** of investments (average for 2017 to 2020)
- **-6.5%** reduction in the average unit tariff on 1 April 2017 compared to the ATTM4 period for the Montoir terminal
- **-18.2%** reduction in the average unit tariff on 1 April 2017 compared to the ATTM4 period for Fos Tonkin

Fosmax LNG

- **1** LNG terminal with a total regasification capacity of 8.25 billion m3
- **87.2 TWh** of subscriptions for unloading per year (average for 2017 to 2020)
- **€128 million/year** of authorised revenue (average for 2017 to 2020)
- **€5.2 million/year** of investments (average for 2017 to 2020)
- **-18.6%** reduction in the average unit tariff on 1 April 2017 compared to the ATTM4 period

(9) The pooling service allows any shipper with subscriptions at a regulated terminal, who does not intend to make use of all their subscriptions, to access these subscriptions at another regulated terminal, at a preferential tariff.

2.5. The ATRD5 tariff for use of GRDF distribution networks for natural gas

The ATRD5 [10] tariff for use of GRDF distribution networks for natural gas has been in effect since 1 July 2016, for a period of about four years. It was adopted after wide consultation with the interested parties, and following studies that were made public.

The level of charges covered by the ATRD5 tariff

The ATRD5 tariff for GRDF represents an increase of +2.76% compared to the ATRD4 tariff. This change takes into account in particular the fall in the cost of capital from 6.0% to 5.0%. Over the period from 2017 to 2019, the tariff will change by application of the formula "inflation – 0.8%". It gives GRDF the necessary resources to carry out its activity and development. Therefore, the costs identified by GRDF in connection with the changes to its role as a GRD under the energy transition have been taken into account, such as those related to supplying data, developing smart grids and the sharp rise in biomethane injections into the natural gas networks.

"Looking ahead to the ATRD6 tariffs, CRE will start work at the end of 2017 on the tariff structures, in collaboration with the GRDs and market actors.

Changes to the tariff structure

For the structure of the ATRD5 tariff, the principles in force in the previous tariff are renewed. Looking ahead to the ATRD6 tariffs, CRE will start work at the end of 2017 on the tariff structures, in collaboration with the GRDs and market actors. This work will allow, for example, a better taking into account in the tariff structure changes in consumer behaviour, to help encourage them to control their energy demand, or better to encourage them to limit their consumption during peak periods.

Key figures for the ATRD5 tariff (for GRDF)

- **11,431** employees
- Approximately **200,000 km** of managed pipelines
- About **11 million** of connected users
- **€3.2 billion/year** of authorised revenue (average for 2016 to 2019)
- **€912 million/year** of investments (average for 2016 to 2019)
- **+2.76%** average increase on 1 July 2016, then indexing at "inflation -0.8%".

(10) Deliberations by the Energy Regulatory Commission on 10 March 2016 leading to a decision on the equalised rates for use of GRDF's public distribution systems for natural gas

3. CRE TAKES INTO ACCOUNT THE FUNCTIONALITY PROVIDED BY SMART METERS

In addition to their missions linked to supply and financed by tariffs, GRDs provide additional services. These are provided primarily at the request of suppliers and consumers, and are packaged, by each GRD, into a catalogue of services published on its website, or if they do not have a site, by other appropriate means. In application of articles L.341-3, L.452-2 and L.452-3 of the Energy Code, CRE defines the methods used to establish tariffs for additional services carried out exclusively by the GRDS, and takes a decision on the changes to these tariffs.

In 2016, CRE approved several deliberations to introduce new services or amend the tariffs for services supplied by the GRDs for gas and electricity. The main purpose of these deliberations was to launch new data transmission services, so that consumers can benefit from the new functions available using smart meters for both gas and electricity, and required by law on the energy transition for green growth (LTECV).

In December 2015, Enedis started the deployment of Linky smart meters, with the aim of installing 35 million meters. Since January 2016, GRDF has launched a pilot phase of its project with Gazpar smart meters, for about 11 million of its residential and small business customers. Industrial deployment will begin in May 2017. With these smart meters, consumers who currently have semi-annual readings, will be able to have monthly readings, and therefore have more precise and detailed consumption data.

"CRE has introduced, during its deliberations dated 3 March (for electricity) and 16 June 2016 (for gas) new data transmission services which smart meters support.

The collection, supply and transmission of these data to consumers, to suppliers, or to a third party designated by the consumer, are essential to obtain invoices based on a real index, and to better control one's consumption.

After consultation with the market actors in November 2015 and March 2016, CRE has introduced, during its deliberations on 3 March (for electricity) and 16 June 2016 (for gas), new data transmission services which smart meters support. In addition, for gas it adapted the descriptions of certain existing services of the core curriculum, to allow for the deployment of smart meters. For electricity, it lowered the tariff for some services to include the reduction in costs arising from the remote operation of certain activities.

CRE also approved, on 16 November 2016, after consulting with market actors, its deliberations to amend the tariffs for additional electricity services for LV connections of > 36 kVA, and HVA. In fact, 90% of these users have a smart meter, and all will be equipped by the end of 2018, with a few exceptions (zones with no reception, or a metering point not accessible to the GRD). Therefore, CRE revised certain services and their tariffs, to take into account the remote operation options provided by smart meters. Its deliberation also changed the billing service in order to make it easier to set up the infrastructure for recharging electric vehicles. It also withdrew the services "Provision of a Mechanism for transferring operating information (DEIE) and "Condenser battery rentals" from the list of services provided exclusively by the electricity GRDs, as these two services are not part of the GRD's monopoly.

Applying the provisions of Article 28 of the TECV law, CRE introduced a new service provided by the GRDs for gas and electricity related to transmitting consumption data to the owners and managers of buildings. Henceforth, the owners and managers of buildings who can provide proof of consumption management activities undertaken on behalf of consumers in their building, may ask the GRD to send them, free of charge, the consumption or meter data in anonymised and aggregated form, at the scale of the building or group of buildings.

In 2017, CRE will continue its work on providing data to infrastructure managers.

CRE Activity Report 2016
CRE AND NETWORKS

CONTRIBUTING TO GOOD NETWORK OPERATIONS

Responsible for the efficient operation of networks, CRE actively contributes to the development of a European regulatory framework of which the cornerstone is the geographical network of interconnections between the national energy networks. The challenge is to make the circulation of electricity and gas across Europe more fluid. Through trade between Member States, supply sources are becoming more diversified, leading to a reduction in energy costs. With other regulatory authorities, CRE takes part in the development of rules derived from European regulations, network codes, to ensure consistency while still allowing for various energy issues in each country.

1. CRE PROMOTES INTERCONNECTIONS WITH NEIGHBOURING NETWORKS AND MONITORS THEIR EFFICIENT USAGE

The report published by CRE in June 2016 on the interconnections in France provides a full status report of development and use of electricity and gas connections with neighbouring countries. It provides proof of their good operation and recalls the role played by CRE, which has always promoted their effective use.

In electricity, for example, France is a pioneer within central and western Europe in coupling markets, in other words common processing of their supply and demand curves in accordance with their economic relevance. This mechanism, via electricity exchanges, allows buying and selling for the next day in the countries concerned, while respecting the physical dimensions of networks. It is a decisive asset in optimising production resources and electricity needs at a supra-national level. More recently, CRE has implemented a method of calculating capacity, called *Flow Based*, to allocate capacity to the most economically beneficial flows.

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In the gas sector, all the interconnections are used under procedures that comply with the European network codes that CRE applies in full and which it has often implemented ahead of deadline.

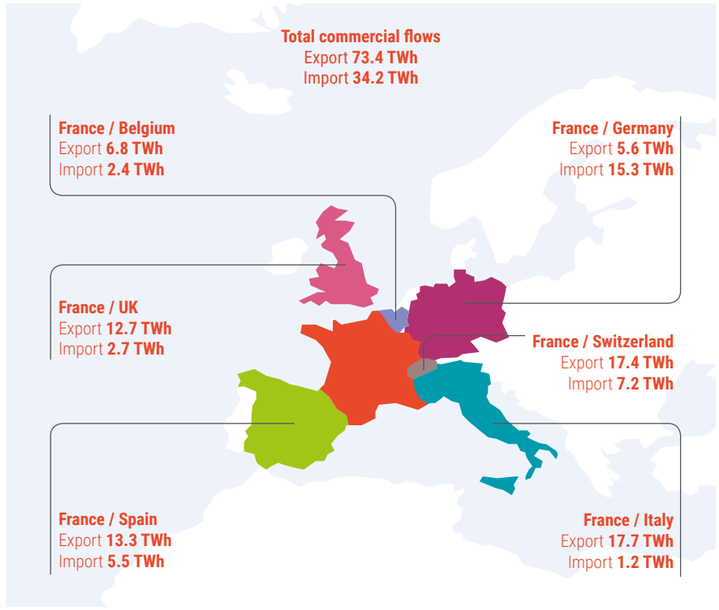
The CRE report makes it clear that for both electricity and gas the new interconnections are costly and complex projects. If we include the costs of necessary reinforcement of infrastructures to support a new interconnection, the amount of investment involved can easily exceed EUR 1 billion. Against a background of major and rapid changes in the sector due to the development of renewable energy, managing consumption, the emergence of new forms of use and the development of smart grids, it is essential that investment decisions are made based on a solid cost-benefit analysis. As required by law, CRE always acts for the benefit of end users in all its activities. Thus, it tries to prevent consumers of gas and electricity from being exposed to significant costs for the construction of infrastructure unless its contribution to creating a European market and securing supply can be demonstrated.

1.1. Available capacity at the borders and status report of trading in 2016

A report of the rapidly changing electricity trade

In 2016, the net level of electricity traded was very different to that of 2015. Exports fell by nearly 20 TWh, from 91 TWh to 72 TWh and imports rose by 3 TWh. The total level of exports from France was 39.1 TWh, a fall of 36.6% compared to 2015.

This situation was the result of a strong increase in imports in the last quarter of 2016, linked to the unavailability of some nuclear reactors and the increase in consumption due to a period of cold weather. For the year 2016, France was a net importer for 46 days.



Source: RTE, Analysis CRE

Increased interconnection capacity, plans agreed for the development of new border capacities

The capacity for cross-border trading is greater for exports than for imports, especially with Switzerland and Italy. Since the interconnection at Baixas-Santa Llogia between France and Spain was brought into service in October 2015, the capacity for trading at this border has now reached 2,400 MW for exports and 1,900 MW for imports.

At the borders with Germany and Belgium, since flow-based market coupling in May 2015 in the Central and Western European region (CWE – which includes Germany, Belgium, France, the Netherlands and Luxembourg), the trade capacity is calculated and allocated dynamically with lower costs.

Introduction of the flow-based system allowed the maximum level of cross-border trading to be increased with Belgium and Germany: it reached 7.7 GW for exports (July 2015) and 8.2 GW for imports (December 2016) compared to 4.1 GW and 4 GW before this mechanism was introduced. However, since the second half of 2016, the capacity for imports from Germany has reduced considerably. This situation, given the unavailability of some nuclear reactors in France, contributed to the creation of significant price differences between France and Belgium on the one hand, and France and Germany on the other hand during the winter of 2016 to 2017. CRE is working in close collaboration with other regulators involved to create the necessary improvements in the mechanism before the winter of 2017 to 2018.

After the approval in 2015 of the Savoy-Piedmont project, the interconnection with Italy which is due to be commissioned in 2019, CRE approved two projects in 2016 for interconnection with the UK:

- **ElecLink,** the first French interconnection to be provided by a private company, under an exemption granted under Article 17 of the European regulation (EC) 714/2009. (All other interconnections are operated by RTE within a regulated framework). It will use the Channel Tunnel and should enter into service before the beginning of 2020. The foundation stone was laid on 23 February 2017;
- **IFA 2,** a project for an undersea interconnection being carried out by RTE and the UK National Grid system operator. This line is expected to be commissioned at the end of 2020 and will link the Caen area to the Southampton area. CRE approved this project during its deliberations on 2 February 2017 and set up an incentive regulatory framework linking the level of remuneration of the system operator to that of the use of the new line. This decision also takes into account the potential consequences of the UK's decision to leave the European Union. CRE carried out public consultations to obtain the views of market actors on this subject.

Other interconnection projects with the UK are also being studied. CRE will ensure that the consequences of Brexit are covered, and will make sure that growth in capacity is in the public interest.

“CRE will ensure that the consequences of Brexit are covered, and will make sure that growth in capacity is in the public interest.

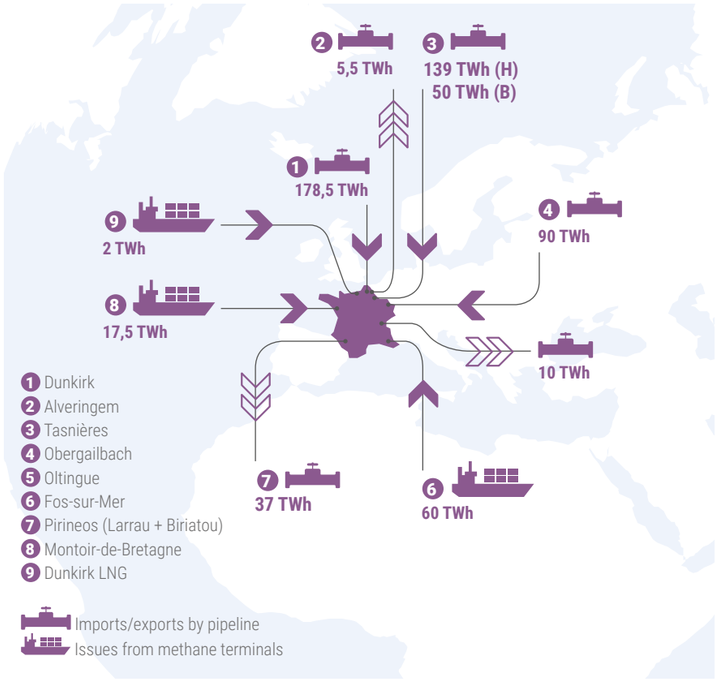
Several projects to increase interconnections with Spain are being discussed within the framework of the high-level Group for Interconnections in Southwest Europe which involves Spain, France and Portugal, under the chairmanship of the European Commission.

The Bay of Biscay project, which consists of the construction of two offshore lines with continuous 1,000 MW power each (raising the total interconnection capacity to 5,000 MW) is the furthest advanced. Its very high cost, estimated at around €1.75 billion, is due to the high technical quality of construction of this line, which will need to cross the Gulf of Capbreton. Funding for this project must be based on cost sharing between the French and Spanish system operators, and is expected to benefit from a European subsidy so that the financing arrangements guarantee that these costs will not exceed the expected benefits of the project, and so do not weigh excessively on consumers' costs.

Increases in gas imports

In 2016, gas imports reached 537 TWh, an increase of 30 TWh over 2015. At the entry point of Obergailbach on the border with Germany, inflows of imports increased by 36% compared to 2015, while a slight drop was seen at the border with Belgium at Taisnières H (-5%) and at Dunkirk (-6%). Imports of liquefied natural gas (LNG) rose by 27%, reaching 14% of total French gas imports. The terminals at Fos-Tonkin and Fos-Cavaou handled 75% of the volume of LNG injected into the networks.

Gas exports were 40.8 TWh in 2016, a fall of 20 TWh compared to 2015. This fall was especially marked at Oltingue, with a reduction of two-thirds in the flows to Italy, which increased its imports of gas from Algeria. Exports to Spain also fell overall, with a clear upturn at the end of the year 2016. This situation resulted from better availability of LNG in Spain during the first three quarters of 2016, and an increase in imports from Algeria. For the first time, a net physical flow from Spain to France occurred (2.7 GWh on 2 June 2016).



Source: GRTgaz and TIGF, analysis CRE

The capacity available for trade at each interconnection remained stable compared to 2015. The main changes related to the interconnections with Belgium: the commissioning of the methane terminal at Dunkirk on 1 December 2016 was the final stage of the planned infrastructure at Alveringem, a new interconnection point for flows from France to Belgium.

From a commercial point of view, there is only one remaining commercial interconnection between the two countries, the physical points at Alveringem and Taisnières having been combined "virtually" into a single interconnection point (CRE deliberations dated 2 February 2017).

The Midcat project for a third link between France and Spain to the east of the Pyrenees is the main gas interconnection project currently being studied. It includes a pipeline linking the Barcelona region to the Perpignan region, and also includes new infrastructures on the French network to strengthen the Rhone artery and the Lyon bypass. As a result, it will cost more than €3 billion, of which over €2 billion for the French side. Given this amount, CRE is questioning its advisability and necessity for consumption in France and Spain. It believes that there are some preconditions to be met before such a high-cost project can be started, without creating too much of a risk for consumers in Spain and in France, especially given stable demand and overcapacity at methane terminals in Europe. It believes that, at a minimum, the market actors need to confirm whether further demand for gas is expected that could justify this scale of investment. In the event of a supply crisis that requires reliance on additional imports of LNG, the current European capacity levels of regasification, and the interconnections between France and Spain appear to be adequately sufficient, given the expected availability of LNG on the world market.

THE STEP PROJECT

Given the very high cost of the Midcat project, the system operators considered only building the pipeline between Barbaira and Perthus, on the TIGF network (STEP project). The technical study carried out by the GRTs concluded that the capacities thus created might be difficult to use because of technical constraints, mainly due to the capacity of the rest of the infrastructure on the Spanish and French networks.

1.2. CRE is actively contributing to network codes

The third energy package from the European Commission requires the development, within a fixed deadline, of European network codes. These common rules on how the market should work, intended to make energy trading run more smoothly, define the conditions for access to and management of the European energy transmission networks, with the aim of creating a single market for gas and for electricity.

"In 2016, the preparatory work advanced well, five new network codes for gas and electricity were approved.

Their development is a major challenge, as it involves the establishment of common operational rules that integrate the technical specificities of the energy systems of each country. This process requires the involvement of a large variety of stakeholders, such as market participants, system operators, energy exchanges and the European Commission. At the end of this process, the Member States will be consulted for the formal adoption of the texts that will become directly applicable in their countries.

In 2016, the preparatory work advanced well, five new network codes for gas and electricity were approved.

In the gas sector

Very much involved in the work of European regulators, CRE helps to chair workgroups on various topics dedicated to capacity allocation, interconnections and the harmonisation of gas tariff structures. It is also co-chairing the working group on gas infrastructure, which is handling the European investment plan ENTSOG[11] and the implementation of the package on energy infrastructure.

Approved by the Member states on 12 October 2016, the European network code on the harmonisation of tariff structures for gas transmission networks aims to remove the tariff barriers for cross-border transmission of gas, to avoid discrimination between providers. It will be published in the Official Journal of the European Union in the first half of 2017, and it will be implemented gradually. Some provisions, like the transparency and consultation requirements will apply from 31 May 2019. Its preparation required years of work, and the strong involvement of CRE in its drafting to improve readability.

The network code on allocation of gas capacity (CAM) was amended in October 2016. CRE has co-directed the work carried out under ACER framework. The network code aims to facilitate gas trade by creating common rules for allocation between market areas. Approved on 13 October 2016, the changes will take into account the new code on the harmonisation of tariff structures, and especially the changes to the timetable for the capacity auctions. CRE is also introducing new provisions to harmonise the methods for creating and allocating additional capacity. A status report should be prepared every two years. This amendment will be published in the Official Journal of the European Union.

In the electricity sector

Two network codes related to the organisation of the wholesale electricity market, and three "technical" network codes have been approved. Intensive work was also done on the draft regulation on balancing, before it was approved by the Member States in a "comitology" in March 2017.

Two network codes related, on the one hand, to capacity allocation and congestion management (CACM), and on the other to forward capacity allocation (FCA).

The CACM network code approved in July 2015 is meanwhile being implemented. As part of this, transmission system operators and market operators (NEMOs) are working on methods to calculate and allocate capacity for transmission at interconnections that can be used by suppliers for cross-border trade. These methods may apply at national, regional or pan-European levels. The CACM code places the market operators, who receive purchase and sales orders from market actors, firmly at the heart of the process of integrating the European markets. Two NEMOs have been appointed in France: EPEX SPOT and NordPool.

(11) European Network of Transmission System Operators for Gas

The harmonisation process also covers the methodologies for supplying production and consumption data, and for sharing the congestion profits from interconnections. These rules have been submitted for approval to the regulatory authorities, who must unanimously approve pan-European decisions. If the regulators cannot reach agreement, the decision is handed off to ACER. This was the case for the definition of regions for calculating capacity. ACER therefore decided that France would be involved in four regions for calculating capacity: on its border with the United Kingdom, on its borders with Germany and Belgium, on its border with Italy and on its border with Spain.

The FCA *(Forward Capacity Allocation)* network code covering long-term capacity allocations approved in September 2016, came into effect on 17 October 2016. It aims to promote the integration of the European energy market by offering actors the opportunity to cover themselves against the risk of energy price fluctuations for cross-border transactions by subscribing to interconnection capacities for periods ranging from one month to one year. In preparation for its implementation, changes have been made to the existing rules to improve the terms for the financial compensation paid to market actors in the event of an unexpected reduction in the trading capacity to which they had subscribed.

Three "technical" network codes aimed at establishing common requirements for connecting any installations to the transmission and distribution networks for electricity.

These were published in the form of regulations in the Official Journal of the European Union during 2016. The implementation phase, over three years, will be used to define the necessary provisions for their application at a national level and to amend the French regulations. In addition, a system of exemptions to the terms imposed for the connection to the network of installations that produce electricity has been defined to simplify the deployment of new technologies.

2. CRE APPROVES THE RULES FOR BALANCING TRANSMISSION NETWORKS FOR NATURAL GAS AND ELECTRICITY

The system aims to match supply and consumption, and is based on the requirement that each distributor must balance supply based on demand. Any actor whose report shows an imbalance will have a penalty applied which is equivalent to 2.5% of the average price of gas on the wholesale market. In return, the GRTs will provide suppliers with detailed information on the level of load on the network.

2.1. Balancing rules for natural gas transmission networks improving

The system in force in France, compulsory since 1 August 2016 and compliant with the network balancing code, is based on the requirement for each supplier to balance daily gas inputs and outputs on the grid. In 2016, developments proposed by the GRTs and implemented by deliberation on 15 September by CRE were improved:

- timetables for intervention by GRTgaz and TIGF were made less restrictive;
- requirements for financial guarantees were tightened to protect the system operators from all fraud.

2.2. CRE lays the groundwork for necessary developments in the model for balancing the electricity system in France

In application of Articles L.321-10, L. 321-11 and L.321-14 of the Energy Code, CRE approved the rules for access to the balancing mechanisms, namely, related to balancing reserves (system services and adjustment mechanism), based on RTE's proposals. RTE is responsible for maintaining the balance between supply and demand in the electricity system, and also guarantees the safety of the network. With quickly mobilised reserves, RTE can modulate the levels of production and consumption which it does by selecting the best bids available. To ensure that it has sufficient power to balance the system, RTE defines contracts for a part of these reserves, based on forecast demand. For the last ten years, CRE has been making an active contribution to opening up the balancing market to withdrawal sites (reducing consumption) and involving them in the creation of reserves. The public authorities, who have also supported the growth of this approach, are organising detailed calls for tenders for demand reduction, using methods that CRE has approved.

"For the last ten years, CRE has been making an active contribution to opening up the balancing market to withdrawal sites (reducing consumption) and involving them in the creation of reserves.

CRE and RTE note that the French balancing system is working well and is efficient in terms of costs. However, this model needs to be fundamentally changed over the next few years, for two main reasons. The first results from the need to promote the energy transition, which leads to increased needs for flexibility in the French and European electrical system to be able to integrate intermittent energy sources. The second is the growth in integration of the European markets required by the draft European regulation *(Guideline on Electricity Balancing)* agreed in March 2017. CRE fully supports the steps defined in this draft regulation, based on the common approach of using standard balancing products traded on European market platforms. These exchanges will in practice allow the bulk of the benefits related to integration of the balancing markets to be harnessed, without having to impose complete uniformity between the different balancing models which exist in various Member States.

Informing and involving actors well in advance is vital to the success of these developments. To define the framework for their introduction and prioritise the steps needed to implement them, CRE asked RTE to set up a working program to improve balancing over several years. This was published in July 2016 in the form of a Roadmap for balancing the French electricity system. CRE and RTE note the overall consistency of the French balancing model, and its main benefits in relation to controlling the costs and development of competition in various market segments. The RTE proposals aim to develop the French balancing mechanism by applying the principles defined in the draft European regulation related to balancing, without upsetting the existing French model:

- retaining a lead time of one hour before real time during which RTE is the only actor able to intervene to balance the system,
- giving RTE the option, in certain situations, to continue to use so-called "specific products" supply, the only ones currently used in the French model, in addition to so-called "standard products", as required by the draft European regulation on balancing to enable cross-border trade,
- creating an adjustment mechanism for independent aggregators to attach financial value to reductions in consumption.

HOW DOES THE FRENCH BALANCING MODEL WORK?

In advance of real time, RTE relies on actors to achieve balance in the electricity system and, by offering a financial incentive, encourages them to maintain a balance between the electricity injected into the grid and/or withdrawn within their area. One hour before real time, RTE "takes back control" of the electricity system. It is then the only one able to intervene to balance it.

RTE not only reacts to the onset of imbalances: it anticipates them by making proactive decisions. To do so, it draws on its detailed knowledge of the system, based in particular on information communicated to it by the various actors. To correct the imbalances, RTE selects some balancing supply bids with differing characteristics (bids from production and from consumption sites, available across different time periods, some that can be activated more rapidly or less rapidly) to achieve the best technical and economic compromise, its goal being to balance the system, at the same time ensuring the control of balancing costs.

RTE prefers to have more competition for the adjustment mechanism and has opened it up to allow the broadest possible access: production groups connected to the transmission network are required to supply their available power, actors who have no contractual adjustment capacity (through calls for tenders, ahead of real time) with RTE can submit tenders freely for the adjustment mechanism, aggregators can sell sites' flexibility independently of their supplier.

2.3. CRE is working on implementing European integration of electricity system balancing markets ahead of schedule

CRE plays a leading role in the integration of European energy markets, with the implementation ahead of schedule on projects for the trade of balancing reserves, as defined by a draft European regulation related to balancing.

Contracting of the primary reserve by RTE and neighbouring GRTs

In the last few years, CRE has been looking at the possibility of improving the method of building up initial reserves. In the past, producers were required by law to provide this reserve in return for payment at a fixed and regulated price. After consulting the actors in France, CRE came out in favour of RTE seeking cooperation from GRTs in Germany, Austria, Switzerland and the Netherlands (FCR1 cooperation) in 2017. As part of this cooperation, the GRTs jointly create their initial reserves through a weekly call for tenders which gives all actors direct access to the market. As they are cross-border, the sharing of reserves available in each country allows the selection of cheaper tenders, provided that trade remains within the limits of the European regulation in the *System Operation Guideline*.

CRE encouraged RTE to continue to work with its counterparts in order to seek, where appropriate, improvements in the architecture of this cooperation. A regional public consultation organised in the first quarter of 2017 by all GRTs involved will lead to a proposal for improvements.

BALANCING RESERVES USED BY RTE

RTE is responsible for maintaining the balance between supply and demand in the electricity system and also guarantees the safety of the network. With quickly mobilised reserves, RTE can modulate the levels of production and consumption, which it does by selecting the best bids available. There are three types of reserves.

– **Primary reserve.** This is provided by all interconnected European producers collectively to the transmission network of the area covered by the synchronous continental European system. All French actors with power greater than 40 MW are required to allocate a part of it for this reserve. It is activated automatically between 15 and 30 seconds after the network becomes out of balance, in order to stabilise the frequency. Once the primary reserve is activated, any remaining discrepancy between the network frequency and its reference value of 50 Hz, is covered by other reserves.

– **Second reserve.** This is provided by French actors who have production power greater than 120 MW, who are required to allocate a share of their power to this reserve. This reserve is activated automatically within 400 seconds, in order to restore the frequency to its reference level.

– **Third reserve.** This is provided by producers and consumers, either through specific calls for tenders, or by requiring producers connected to the transmission network to make their power available to RTE. The bids for this reserve are activated manually (with a delay in implementation of more than 9 minutes) in particular to replenish the second reserve when that is exhausted or inadequate, and to substitute for the primary and secondary reserves.

RTE participation in the compensation platform for imbalances in the secondary reserve

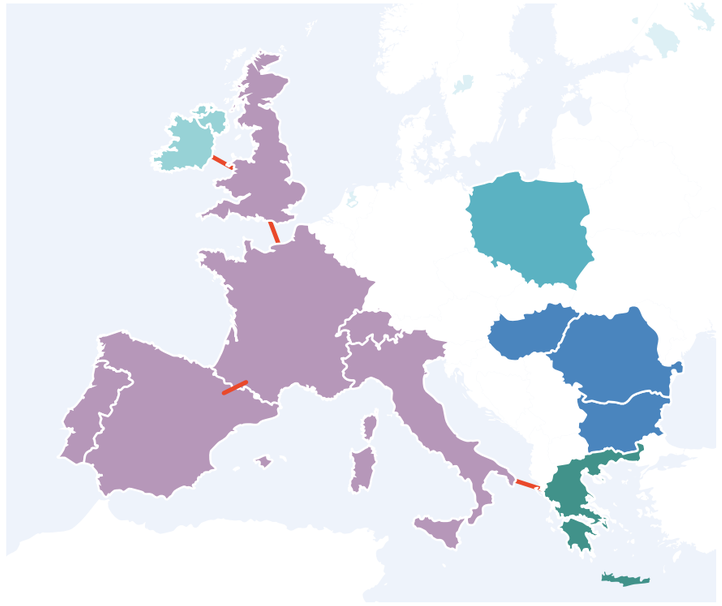
In February 2016, RTE also joined the iGGC platform (International Grid Control Cooperation) which allows member GRTs to offset their needs (activation upwards or downwards) among themselves as a secondary reserve, which avoids activating energy bids at the local level. This platform which brings together Germany, Austria, Belgium, Denmark, the Netherlands, Switzerland and now France, is intended to become the European platform to offset imbalances at the level of the continental system, as planned in the draft European regulation related to balancing.

This involvement goes hand-in-hand with a change in the balancing rules adopted by CRE on 10 March 2016, which allows redistribution of the benefits of the project (around €10 to €15 million per year within France) to those responsible for French balancing.

Continuation of the work on the trading platform for the third reserve TERRE

The TERRE project (Trans European Replacement Reserve Exchange) is a regional pilot for cross-border balancing, which involves RTE and the transmission system operators from Spain, UK, Italy, Portugal and Switzerland. It aims to implement for these countries, via a shared platform, adjustment energy trade offers from the supplementary reserve. Activated within 30 minutes, this power reserve will allow the restoration or maintenance of the necessary levels of secondary or third reserves to deal with additional imbalances in the system.

Countries participating in the TERRE project



- Member countries of TERRE
- Observer countries of TERRE
- Member countries of TERRE during the design phase, but declared an observer for the implementation phase
- Transmission system operators planning to use the supplementary reserve when the European regulation on balancing takes effect in 2018.
- Transmission system operators planning to use the supplementary reserve when the European regulation on balancing takes effect in 2018, with no neighbouring countries who plan to use the additional reserve.
- High voltage links with continuous current

The substantial progress made by the transmission system operators in constructing the architecture for the TERRE trading platform for energy reserves has led to the regulators publishing a *Common Opinion Paper* setting out their formal recommendations. In parallel, CRE presented its detailed guidelines to RTE during its deliberations on 28 September 2016.

This stage marked the starting point for the development phase of the platform. Prior to its commissioning, planned for the end of the second quarter of 2018, it will be tested for six months during an experiment under real-life conditions. To ensure an adequate level of involvement in this test phase, the regulators have asked transmission operators to make sure they adequately involve and inform market actors. A consultation phase, planned for the second quarter of 2017 will be followed by a new approval by regulators in the fourth quarter of 2017.

According to GRT analyses, these trades should generate profits of EUR 100 million per annum across the entire project, including €10 to €15 million for France. In particular, they will result in lower balancing costs: GRTs will be able to offset their imbalances among themselves, using the cross-border platform (thereby reducing the volume of activations of energy adjustment bids) and will have access to more economic bids. At the end of the day, the project should therefore benefit end consumers.

The implementation of the platform, which should take place no later than two years after entry into force of the draft regulation, in its current version is planned by the GRTs for the first quarter of 2019.

3. CRE APPROVES INVESTMENTS IN TRANSMISSION NETWORKS FOR ELECTRICITY AND NATURAL GAS

Under the provisions of part II of Article L. 134-3, of part II of Article L. 321-6, and of Article L. 431-6 of the Energy Code, the public electricity transmission system operator RTE, and the gas transmission system operators GRTgaz and TIGF must submit their annual programme of investments to CRE for approval.

During work on the new access tariffs to the public electricity transmission network (TURPE5 HVB) and to the natural gas transmission networks (ATRT6), the GRTs presented CRE with a roadmap of investment expenditure for the period of 2017 to 2020. As part of the tariff decisions on 17 November and 15 December 2016, for new transmission network tariffs, CRE defined a regulatory mechanism to act as an incentive for investment projects whose forecast budget was over €30 million for RTE and over €20 million for GRTgaz and TIGF.

– For gas transmission networks, CRE approved the GRTs investment expenditure during its deliberations on 15 December 2016. For GRTgaz, the investment programme for 2017 amounted to €640.3 million, an increase of +9.9% over the revised 2016 budget (€583 million). For TIGF, the investment programme for 2017 shows an increase of +2% over the revised 2016 budget (€106 million).
In terms of major investment projects, the operators presented the progress of the Val de Saône and Gascogne-Midi projects approved for the creation of the single marketplace in France by 2018. At this point, the progress made on the physical construction is in line with the forecast timeframes.

– For public electricity transmission networks, CRE approved RTE's investment expenditure for 2017 during its deliberations on 1 December 2016. The budgeted amount totals €1,525 million, a slight drop compared to the revised 2016 budget (€1,549 million).

Two thirds of RTE's investment expenditure is concentrated on regional networks, mainly for works on existing constructions. The increase in expenditure for updating networks, compared to the 2016 budget is offset by a fall in development costs.

A sizeable part of RTE's investment expenditure (around 10%) will be devoted to the development of information systems (IT) which were audited as part of the work on TURPE. This audit suggested a reduction of 6.2% in the investment plans requested by RTE. These conclusions can be downloaded from the CRE website.

The year 2017 will be marked by the completion of the Safety Net project in Bretagne, which strengthens the electricity supply to the region, and by continuing work on the Savoy- Piedmont interconnection between France and Italy.

4. CRE APPROVES AGREEMENTS AND PRICE LISTS FOR CONNECTIONS

4.1. CRE approved for the first time the template agreements for connection to the public electricity transmission systemté

Under the provisions of Article L.342-4 of the Energy Code, on 3 April 2015, RTE submitted for CRE's approval a draft template agreement for connection to the public electricity transmission system for the new exempt interconnections (NIEs). This template defines the connection terms and in particular the expected performance commitments of these new interconnections. CRE approved the template in its deliberations on 31 March 2016.

Under the same provisions, on 21 July 2016, RTE submitted for CRE's approval a draft agreement on connecting new production plants to the public electricity transmission system. This new draft agreement lays down a series of conditions:

- general conditions, apply to all production installations;
- conditions that define the *Characteristics of work to create connections*, apply to all existing and new production installations;
- conditions that define the *Characteristics and performance levels for the installation*, apply specifically to new production installations;
- conditions for the *Implementation and financing of work to create connections,* apply specifically to new production installations.

After approving the conditions that apply to all production installations in its deliberations on 11 June 2015, CRE then approved the specific conditions for new production installations during its deliberations on 16 November 2016.

4.2. CRE approves electricity distribution system operator connection rates

Under Article L.342-8 of the Energy Code, CRE must approve the connection rates for electricity distribution system operators who service more than 100,000 users.

New version of the Enedis connection rates: prices fall due to deployment of Linky meters

For the public electricity distribution networks for which Enedis holds the concession, the cost of carrying out low voltage connections for 36 kVA or less for production installations decreased by between €40 to €700 depending on the type of connection, due to the consistent installation of *Linky* smart meters. This meter, which records both the energy injected and withdrawn, in fact allows a reduction in the number of meters installed, reducing the costs of connection for production installations.

To take these improvements into account, Enedis submitted to CRE a new draft scale of connection rates which was approved on 30 June 2016. This new list of connection rates (version V4.1) entered into force on 30 September 2016.

New version of the Gérédis Deux-Sèvres connection rates

Following its deliberation of 20 July 2016, CRE also approved the new rates for billing operations to connect users to the public electricity distribution system, submitted by Gérédis Deux-Sèvres. This new connection price list entered into force on 20 December 2016.

The rates in the price list increased, on average, by 10% for connection of low voltage consuming or producing installations of 36 kVA or less. This increase was primarily due to taking into account Decree *DT-DICT* which increases the safety of persons and prevents damage to structures, by requiring precise mapping of the location of both new and existing structures. In addition, Gérédis Deux-Sèvres now offers prices for a single fixed term for connections at 36 kVA or less.

For the first time, Gérédis Deux-Sèvres introduced in its price list simplified cost formulae for the connection of infrastructures to allow electric vehicles to be recharged. CRE believes this measure improves the transparency of billing for these connection operations.

4.3. CRE approves the technical and commercial conditions for connection to the gas transmission network.

CRE carried out a public consultation, following which it approved the general conditions for connection contracts and interfaces with GRTgaz and TIGF at its deliberations on 20 April 2016

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The approval of the general connection contract terms allowed the harmonisation of the structure and provisions of the GRDs' connection contracts, for the biomethane injection sites and for industrial customers (work in progress in relation to TIGF), in order to ensure that no discrimination exists between various categories of customers or between different customers in the same category.

In addition, the newly approved general conditions include improvements in the benefits to network users. For example, they establish that the GRTs must bear the costs for updating the delivery points to comply with regulatory changes. They also exclude cases of force majeure (or similar circumstances), situations where measures are imposed by the public authorities, including the Gas Emergency Plan (PUG), and the implementation of any public service obligations (OSPs) which might be implemented following an incident attributable to the GRT.

5. CRE SUPPORTS NETWORK DEVELOPMENTS AND CONTRIBUTES TO DATA ACCESS MODALITIES

5.1. CRE drafts 17 new recommendations for developing smart grids

In 2016, CRE continued the work started in 2010 to support the development of smart grids. During its deliberations on 8 December 2016, it issued 17 new recommendations to operators, covering:

- support and encourage the development of new technologies and new services;
- improve the use of public electricity and natural gas networks;
- increase the overall performance of the electricity system.

The goal is to progress the smart grids from the experimental phase to industrial deployment, both in mainland France and in non-interconnected areas, not on national grids. CRE asked system operators who won the call for projects for smart electrical grids under the New Industrial France campaign, to present all the technologies and functionality which they intend to implement. It believes that publishing these will stimulate research and will help to speed up the deployment of smart grids on an industrial scale.

CRE encourages system operators to improve their coordination in publishing and using consumption data, a fundamental prerequisite for the deployment of smart grids.

CRE called on operators, in close collaboration with local authorities, to organise the management of various energy networks to improve their complementarity, for example by using a temporary surplus in production of renewable energy to supply an urban heating network. This approach of *multi-energy sources or multi-fluidity*, extracting benefits from the synergy between networks, should improve the efficiency of their management and reduce consumers' costs.

CRE encourages system operators to improve their coordination in publishing and using consumption data, a fundamental prerequisite for the deployment of smart grids. The goal is to provide consumers, local authorities and all actors involved with standardised and consistent data to facilitate their use.

CRE's recommendations also aim to improve the stability of the electrical system. They require the electricity system operators to publish the location of zones with limitations, meaning those zones where the quality of supply is compromised.

It also pays special attention to the development of smart grids in island areas, so called *non-interconnected zones* (ZNIs), more exposed to the risk of failure of the electricity grid, and therefore to power outages. Therefore, CRE asks the system operator EDF SEI to inform it of the measures taken to improve the stability of island-based electrical systems, and to inform it of the progress of electricity storage projects in particular.

5.2. CRE has set up a review committee to look at the data held by the electricity and natural gas system and infrastructure operators.

During its deliberations on 31 May 2016, CRE confirmed the creation of a review committee responsible for providing input into its reflections on the data held by the system and infrastructure operators for electricity and natural gas. The committee comprises three members of the CRE board, Yann Padova (the committee's rapporteur), Catherine Edwige and Jean-Pierre Sotura, assisted by members of CRE staff.

The committee's first goal is to draw up a status report of the energy data, by defining the various classes of data that exist and the various legal systems that apply, the actors who produce and manage them, and those who have access. The second goal is to identify the new needs of users, public authorities and economic actors, and to determine how to help meet these needs and support the emergence of new activities, while still respecting the confidentiality and security of protected data. The third goal is to make recommendations to the CRE board.

To collect input for its considerations, which will lead to a public report, the review committee met with representatives of all parties involved in the electricity and gas systems (system operators, suppliers, natural gas storage operators, electricity producers, regional authorities, licensing authorities), from the operators of heat and water networks, digital service companies, telecom operators, as well as administrators in the relevant ministries and other French sector regulators, totalling more than forty meetings. The committee also wished to meet with some of its European counterparts and the European Commission, so that input from countries with more experience in this area could help to shed light on the case in France.

6. CRE PREPARES THE FUSION OF TWO MARKET ZONES, TO CREATE A SINGLE MARKETPLACE FOR NATURAL GAS IN FRANCE

6.1. The benefits of better north-south integration

The zone covering the market in the south of France (TRS) has four input points for gas: the link between the north and the south, the methane terminals at Fos, the France-Spain network interconnection, and the PIR Jura backhaul capacity. As it has limited supply capacity from the north of Europe, TRS relies on LNG for 40% of its consumption. This region is therefore at the mercy of rising LNG prices, which explains why its prices do not match those in the north of Europe.

The creation of a single marketplace will help to:

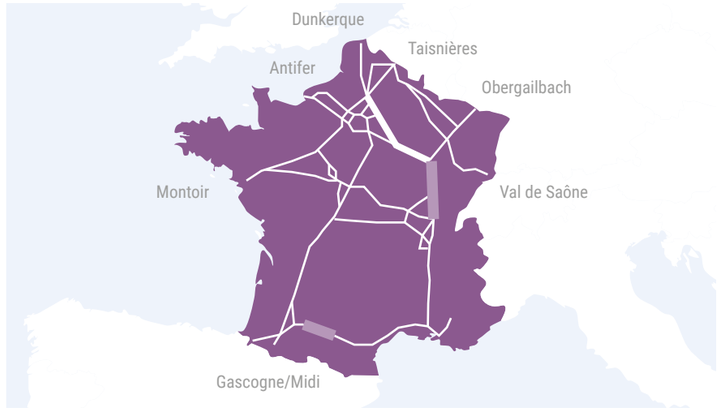
- render the French market "more liquid", more competitive and better integrated into the European market;
- create a uniform price on the wholesale markets in France for the benefit of French consumers, especially those in the south, who are currently penalised by the price differences between the two zones. As an example, from 2010 to 2015, around €1.4 billion could have been saved if the south had been able to purchase gas at the same price as the north of France (PEG North);
- to diversify supply by improving access to other sources of gas.

On 1 November 2018, a single marketplace will be created in France, subject to the investments at Val de Saône and Gascogne-Midi being completed on schedule by GRTgaz and TIGF.

6.2. An ambitious project, combining infrastructure and improvements in supply

€823 million of physical investments

CRE's research in 2013 and 2014 led to the conclusion that there was a need to create a single marketplace in France and remove the bottleneck between north and south. An investment schedule to achieve this, involving GRTgaz and TIGF, was approved by CRE in its deliberations on 7 May 2014[12]. This joint investment programme by GRTgaz and TIGF includes increasing the arteries through Bourgogne, the Val de Saône project (GRTgaz) and through Gascogne-Midi (TIGF), as well as adapting the compressor stations, for a total budget of €823 million.



GRTgaz
Doubling the Val de Saône artery
Renovation of the Bégude station
Changes to the Cruzy and Saint-Martin de Crau stations
Total budget €671 million

TIGF
Strengthening 60 km of pipelines
Additional compressor at Lias (10 MW)
Total budget €152 million

(12) CRE deliberations on 7 May 2014 define the approach to creating a single market in France by 2018

Contractual improvements defined in autumn 2017

- The tariff framework

As part of the work on the ATRT6 tariff, CRE defined in 2016 the overall structure of the tariffs once a single marketplace exists. With a single tariff adjustment on 1 November 2018, it needs to take into account the loss of earnings from the disappearance of the north-south link, as well as the increases in capital costs due the commissioning of the Val de Saône and Gascogne-Midi projects. The precise level of the change in tariff linked to the creation of the single zone will be set by CRE during its deliberations to set the annual changes on 1 April 2018, at the end of 2017.

- Improvements under study

Since 2016, work has been underway to identify remaining bottlenecks, to determine the mechanisms to relieve them and put the necessary improvements for supply in place once the merger has been carried out. During 2017 the focus will be on:

- constructing a network model to evaluate the risks of residual bottlenecks occurring;
- creating tools to relieve bottlenecks by calling on the strengths of market actors;
- evaluating in detail the costs of these tools and creating a system to recover them;
- preparing the operational implementation of the merger, especially defining the system of bottleneck alerts and the tools to manage them.

During the summer of 2017, CRE will initiate a public consultation to study the agreed approaches and deliberate on these in the autumn of 2017.

ENSURING THE INDEPENDENCE OF NETWORKS

The system operators perform their public service responsibilities for the benefit of the consumers whom they serve. They bear the responsibility to improve the networks they operate to meet the challenges of the energy transition and of improved competition, which challenges are all the more important following the removal in 2016 of the regulated sales tariffs in the industrial and business sectors.

The growth of free and fair competition for the benefit of end consumers requires in particular that the rules of independence from other activities (production or supply) are complied with by the vertically integrated electricity and natural gas companies, especially EDF and Engie. CRE ensures the independence of system operators vis-à-vis companies performing gas or electricity supply or production activities within the vertically integrated company to which they belong. Its verification focuses especially on the operators' internal organisation, their rules of governance and their operational autonomy. Understanding and adopting the principle of independence at all levels of the business and in all areas is, for system operators, the fundamental key to real and effective independence.

System operators also must respect their non-discrimination obligations. Being part of integrated groups cannot lead them to favour the latter at the expense of producers or alternative suppliers, with the risk of adversely affecting the development of new sources of production or the effective exercise by consumers of their right to freely choose their supplier. So users need to benefit from the same quality of public services, such as managing networks, regardless of their choice of supplier.

1. CRE CERTIFIES PUBLIC TRANSMISSION SYSTEM OPERATOR COMPANIES

The main purpose for the separation of system management activities and production or supply activities, is to prevent any risk of discrimination between users of these systems, and to ensure that decisions on investment by system operators are not dependent on the interests of supply and production companies.

On 26 January 2012, CRE certified GRTgaz and RTE as compliant, under the ITO *(Independent Transmission Operator)* model, to all their obligations in terms of independence and autonomy of resources and their independence of action in relation to production and supply activities.

In 2015 and 2016, GRTgaz and RTE took the necessary steps to improve their independence, thereby respecting the conditions under which the regulator initially granted them certification.

1.1. CRE maintains TIGF certification, following Prédica acquiring a share of its capital

On 3 July 2014, CRE certified that TIGF complied with the model of separation of assets and the organisational rules pursuant to the Energy Code.

On 11 March 2015, TIGF informed CRE that the company Prévoyance Dialogue du Crédit Agricole S.A (Predica) had acquired 10% of the capital of TIGF Holding.

Under the provisions of Directive 2009/73/EC and the Energy Code, CRE validated whether this change to the shareholdings in TIGF Holding would have any impact on TIGF's ability to fulfil its obligations arising from its certification.

Having completed its analysis, it determined in its deliberations on 4 February 2016, that the change in the TIGF Holding shareholders was not likely to infringe on the requirements for independence pursuant to the Energy Code and Directive 2099/73/EC. It confirmed TIGF's certification under the model of separation of assets.

CRE asked the GIC and Crédit Agricole groups to notify it of any share purchases of more than 5% of any business which produces or supplies gas or electricity in Europe, and in the countries that have interconnections with Europe for electricity or gas.

1.2. CRE will take a new decision on RTE's certification following the opening of its shares

In its deliberations on 26 January 2012, CRE certified that RTE was complying with the rules on independence defined by the Energy Code for a transmission system operator that belonged to an EVI (ITO model).

In November 2016, the planned acquisition by the Caisse des Dépôts and CNP Assurances of part of RTE's capital, held until that time solely by EDF, was presented to CRE.

The change in shareholders that is planned is such that a new review of RTE's certification is necessary. On this occasion, CRE will pay particular attention to the changes in governance and the maintenance of the financial capacity of the operator to carry out its responsibilities, to provide the best possible costs and quality for users.

2. CRE PUBLISHES ITS 10TH REPORT ON COMPLIANCE WITH THE CODES OF CONDUCT AND INDEPENDENCE OF SYSTEM OPERATORS

Each system operator has to adopt a code of conduct describing the internal organisational measures it has taken to avoid the risk of discriminatory practices related to access by third parties to the network. This code of conduct spells out the principles that must be applied by the operators in relation to independence, non-discrimination, objectivity, transparency and protection of commercially sensitive information (ICS).

Compliance officers for system operators, who ensure that the rules of independence and commitments set out in their codes of conduct are observed throughout the year, send CRE their *"reports on the implementation of the codes of conduct"* each year.

> *CRE also carries out audits among operators on the application of the principles of the code of conduct.*

Having analysed these reports, CRE regularly publishes its report on compliance with the codes of conduct and the independence of the system operators.

It also carries out audits among operators on the application of the principles of the code of conduct and monitors the effective implementation of the measures announced by system operators, especially in the action plans submitted to it each year by the operators. These actions are supplemented by regular discussions with the operators.

In February 2017, CRE published the 10th edition of its report on compliance with the codes of conduct, and the independence of electricity and natural gas system operators, (RCBCI) which covers the period of 2015 to 2016.

2.1. CRE enforces the separation of parties in relation to electricity

Alerted to the existence of meters bearing the EDF logo installed by the system operator at millions of sites, CRE conducted a very wide inquiry from September 2014 to December 2016 on this subject. A failure like this would not have been possible if Enedis had been fully independent and able to procure the equipment for itself.

Corrective measures and strong commitments were made by EDF and Enedis to correct the situation. The EDF markings were hidden and the role of Enedis in the procurement process for electrical and computer equipment was stepped up significantly, putting an end to a situation where the respective responsibilities of EDF and Enedis proved far too intertwined to consider the system operator sufficiently independent.

In view of these measures and in the context of the significant change in ERDF's brand and company identity from ERDF to Enedis, the chairman of CRE decided to close the inquiry. Having noted the failure of the internal warning procedures and the lack of awareness by employees of the principle on independence, Enedis was still required to complete its corrective measure and to send CRE an action plan by 1 July 2017.

Given the extent of the practices uncovered by the inquiry, CRE has continued to pay close attention to the implementation of the promised measures by Enedis and EDF, and also their reaction to demands placed on them by the Chairman of CRE.

2.2. CRE and the independence of actors in the gas sector

CRE has noted some practices that are likely to challenge the principle of independence in the area of human resources at GRDF. In practice, the recruitment, management and remuneration of its senior managers sometimes lead to interventions by Engie. CRE requested GRDF and Engie to put an end to such practices.

2.3. CRE was asked to consider the subject of how the structure of LDCs will evolve.

CRE analysed the organisational aspects of the local distribution companies (LDCs) to ensure that they provide the distribution system operator (GRD) with adequate independence in terms of production and supply activities carried out by the integrated group to which they belong. All LDCs where deficiencies were identified have committed to making the necessary changes to comply with the provisions of the Energy Code in 2017 and 2018. CRE will actively monitor the implementation of the required measures to guarantee their independence.

Électricité de Strasbourg

The organisation of the Électricité de Strasbourg group, where the electricity GRD is the parent company of an electricity supply company, leads to a situation in which it has an economic interest linked to the profits of its supply subsidiary.

> *CRE is checking he changes undertaken by the LDCs to comply with the principle of independence from their groups.*

In order to comply with CRE's demands, the board of directors of Électricité de Strasbourg approved in October 2015 a solution by creating two subsidiaries: for distribution activities on the one hand, and supply on the other. This proposal was submitted for approval to an extraordinary General Shareholders Meeting of Électricité de Strasbourg in April 2017. The separate subsidiary for the distributor has been in place since May 2017, with retroactive fiscal effect to 1 January 2017. The distributor's brand, *"Strasbourg Électricité Réseaux"* no longer creates confusion with the supplier's brand.

Gérédis-Deux-Sèvres

Since the creation of Gérédis, an electricity GRD, the staff responsible for managing the network, for reading meters and for work on the network continued to be employed by Séolis, an integrated company which is the incumbent in the area being supplied, and is also an electricity provider.

In its letter dated 7 November 2016, Gérédis informed CRE of the decision by SIEDS, an authority which organises the public electricity service and the majority shareholder in Séolis, to suggest to its public interest holding committee to transfer to Gérédis the Séolis directorates for Network Operations, and for Maintenance of Networks and Primary Substations whose officers spent 90% of their time working on behalf of the GRD. The target date was set for 1 July 2017.

SRD

The organisation at SRD, an electricity GRD, was similar to that at Gérédis when it was created: technical services for maintenance and support of the network were being sub-contracted to Sorégies, the incumbent electricity supplier in the area being supplied.

In November 2015, SRD informed CRE that it preferred to create a GRD which had its own resources capable of managing, operating and developing the network. This reorganisation would lead to an increase in the staff at SRD from 25 to 170 officers. The Énergies Vienne public interest group, the authority which organises the public electricity service, approved the transfer to SRD of the technical services for operating the network. In line with the requirements of the Energy Code, the statutes of the future GRD were approved in September 2016 by the governing bodies of SRD. SRD's new organisation has been effective since 1 January 2017, with the transfer of the employees involved.

Régaz-Bordeaux

Régaz-Bordeaux, a natural gas GRD, is the parent company of Gaz de Bordeaux, incumbent supplier of natural gas on the Régaz-Bordeaux network, and also of Néomix Méthanisation. This organisation led to a situation where the GRD has an economic interest linked to the profits of its subsidiaries involved in natural gas supply subsidiary and biomethane production.

Régaz-Bordeaux has initiated a process of reviewing how to move its organisation forward. The plan envisaged for 2018 would be to create a holding company with four subsidiaries, responsible respectively for distribution of natural gas, supply of natural gas, production of biomethane, and city heat systems.

Réseau GDS

Réseau GDS, a natural gas GRD, is the majority shareholder in Biogénère. This organisation led to a situation where the GRD has an economic interest linked to the profits of its subsidiary from biomethane production.

Réseau GDS initiated a process of reviewing how to move its organisation forward, presented in 2016 to the board of directors at Réseau GDS. The plan envisaged at this point would be to create a holding company with two subsidiaries: one responsible for distribution of natural gas, the other for the production of biomethane.

2.4. CRE asked GRTgaz to increase its independence from its parent company in terms of research (CRIGEN).

In its deliberations on 25 March 2015, CRE asked GRTgaz to submit, by 25 March 2016 at the latest, solutions to improve its independence from its parent company in the area of R&D.

In response to this request, GRTgaz proposed a plan for a partial buyback from Engie of around one third of the central research and development activities, the CRIGEN, on 1 January 2018.

CRE felt that this commitment would allow GRTgaz to comply with the provisions of Article L.111-18 of the Energy Code, by very substantially restricting recourse to Engie for R&D services.

3. CRE ENSURES THAT THERE IS NO CONFUSION BETWEEN THE BRANDING OF THE REGULATED OPERATORS AND THOSE OF THEIR PARENT COMPANIES

The independence of system operators is a fundamental requirement, which relates especially to the companies' image. Article L.111-64 of the Energy Code states that no confusion shall exist between the brand used by a system operator and that used by a supplier belonging to the same group. This obligation is intended to prevent the general public from associating or confusing these two categories of actors, who provide different services independently from each other.

3.1. ERDF became Enedis

Since the creation of the ERDF electricity distribution system operator in 2008, CRE had noted on many occasions, that the company identity and logo for ERDF were too similar to those of EDF.

Under Articles L.135-1 to L.135-16 of the Energy Code, CRE started an inquiry into the practices likely to contravene the provisions of the Energy Code related, in particular, to the independence of the system operator. The conclusions of this inquiry led the Chairman of CRE to refer the matter to the Standing Committee for Dispute Settlement and Sanctions (CoRDiS), on 20 July 2015, asking for sanctions against EDF and ERDF. As a result, ERDF changed its company name, the associated logo and brand to become Enedis on 1 June 2016, thereby removing all confusion with the brand of the incumbent supplier EDF.

Distribution system operator logo	Incumbent supplier logo
ENEDIS L'ELECTRICITE EN RESEAU	EDF

The system operator has started to roll out its new brand over two years for work clothes, vehicles and all forms of communication, such as publications and its website. Priority is being given to the communication tools that are most visible. By the end of 2017, 90% of the updates will be in place. To raise awareness and motivate all of its employees, Enedis created a tool for reporting situations where confusion was noted during the roll-out of the new brand.

For its part, EDF took into account the whole of this provision in its communication tools, and in particular refers explicitly to Enedis in the new general terms and conditions of sale for the blue tariff. Its invoice also mentions Enedis next to the trouble-shooting number.

Regarding the Linky smart meters, none of the equipment produced, in particular the series of equipment installed since September 2015, includes any ERDF mark.

3.2. CRE demands the removal of the regulated tariff gas brand GDF SUEZ

In April 2015, the parent company of GRDF announced that it was changing its commercial brand from GDF SUEZ to ENGIE. In its deliberations on 23 June 2015, CRE considered that *"the change of name from GDF Suez to ENGIE is a way of resolving the issue of confusion between GRDF and its parent company, the incumbent supplier of natural gas"*.

However, in September 2015, Engie informed CRE that it would use the brand "Tarif Réglementé Gaz GDF SUEZ" in communication documents sent to private customers on the regulated tariff, to allow them to differentiate the regulated tariffs from free market contracts. CRE regards this as a major change, which could lead it to revise the conclusions of its deliberations on 23 June 2015.

New GRDF logo	Brand used by Engie for its regulated sales tariff customers
GRDF GAZ RÉSEAU DISTRIBUTION FRANCE	TARIF REGLEMENTE GAZ GDF SUEZ

This new brand forms part of a communication strategy that is likely to bring back the risk of confusion which was removed by the introduction of the Engie brand. In fact, in its communications with its regulated sales tariff customers, especially on invoices, Engie refers to both GDF SUEZ and GRDF. In addition, Engie has created a specific tab for *Regulated gas tariff GDF SUEZ* on its website.

CRE feels that these practices are likely to create, or foster, the risk of confusion in a way that does not comply with the provisions of Article L.111-64 of the Energy Code. It therefore has asked Engie to remove, by 30 June 2018 at the latest, all references to GDF SUEZ in its sales literature for regulated sales tariffs and in their implementations.

KEY DATES

2016: APPROVAL OF LEGISLATIVE AND REGULATORY TEXTS RELATED TO THE SUPPORT AND INTEGRATION MECHANISMS FOR RENEWABLE ENERGY.

2 VISITS TO NON-INTERCONNECTED ZONES: MARCH 2016 TO FRENCH GUIANA, OCTOBER 2016 TO MARTINIQUE.

KEY FIGURES

€8 BILLION: TOTAL PUBLIC SERVICE CHARGES FOR ELECTRICITY IN 2016.

6 CALLS FOR TENDERS ISSUED FOR INSTALLED POWER OF 373 MW.

8 OPINIONS ISSUED ON DRAFT DECREES AND 9 ON DRAFT CALLS FOR TENDERS.

KEY WORDS

SUPPORT AND INTEGRATION OF RENEWABLE ENERGY

GREEN GROWTH

COST OF CALLS FOR TENDERS IN NON-INTERCONNECTED ZONES

CRE is involved in the implementation of the law on energy transition for green growth 122

CRE's opinions are an essential step in defining the support mechanisms for the use of renewable energies 132

CRE helps to manage the energy transition in non-interconnected zones 142

THE PUBLIC ENERGY SERVICE

CRE is actively involved in the energy transition. It takes part in defining the texts that set out the provisions to support renewable energy. It is involved in defining calls for tender that are now the main approach for developing these options, it supports the improvement of the electricity mix and of consumption habits in non-interconnected zones. It evaluates the public service costs for energy.

CRE IS INVOLVED IN THE IMPLEMENTATION OF THE LAW ON THE ENERGY TRANSITION FOR GREENGROWTH

The year 2016 saw the approval of legislative and regulatory texts related to the mechanisms for supporting and integrating renewable energy in mainland France and in non-interconnected zones.
Asked for its opinion on these developments, CRE sought above all to: ensure the effectiveness of the support mechanisms in order to reduce costs, enable the integration of renewable energy into the electricity system, encourage bids and simplify procedures.

1. PUBLIC SERVICE COSTS FOR ENERGY

The public service costs for energy comprise:

- for electricity, the excess costs linked to the support mechanisms for renewable energy and cogeneration, to the equalisation tariff in non-interconnected zones[1] (mainly excess production and storage costs, also the cost of managing demand for electricity) and the application of a special pricing scheme for vulnerable consumers;
- for gas, excess costs due to the enforced purchase of biomethane injected into the natural gas networks, and to the application of a special pricing scheme for vulnerable clients.

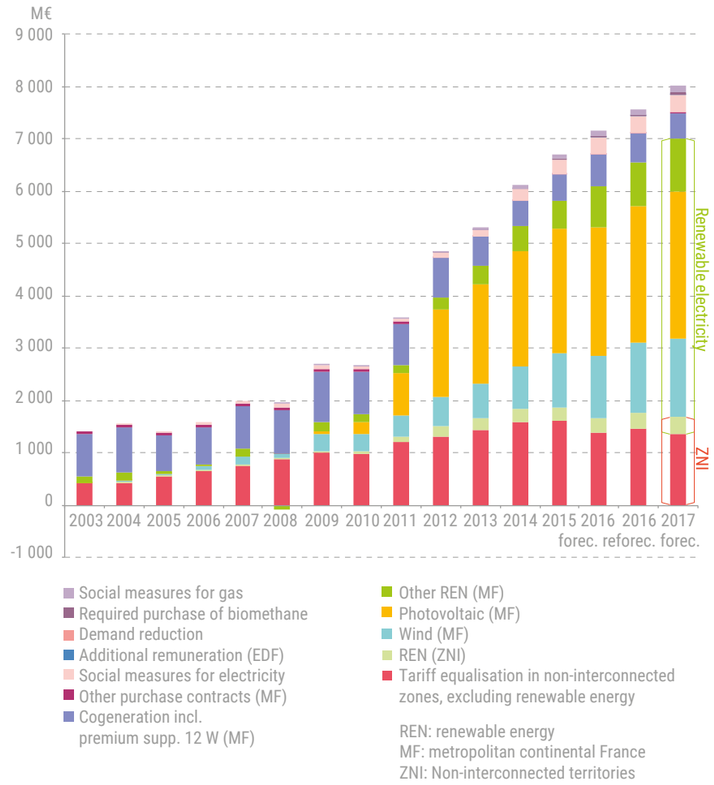
1.1. Steady growth in public electricity service costs

Public service costs related to electricity continue to grow at a steady rate (see Illus. 1). The forecast amount totals €8 billion for 2017, or 19% more than the actual amount in 2015 (€6.7 billion). This increase is primarily the result of the drive to develop the sub-sectors for production of electricity from renewable energies, combined with the fall in prices on the wholesale electricity market (a fall of €1 per MWh on the wholesale markets means an increase in excess costs of close to €50 million), and also of the expected growth in the number of beneficiaries for social provisions of electricity and gas.

The increase is partly offset by the reduction in excess costs resulting from the tariff equalisation in non-interconnected zones, due to lower commodity futures prices, with the expectation that some areas will have a higher percentage of hydro-electricity than in 2015, and thus less reliance on thermal production. These variations in costs resulted in an increase of approximately €1.3 billion between 2015 and 2017.

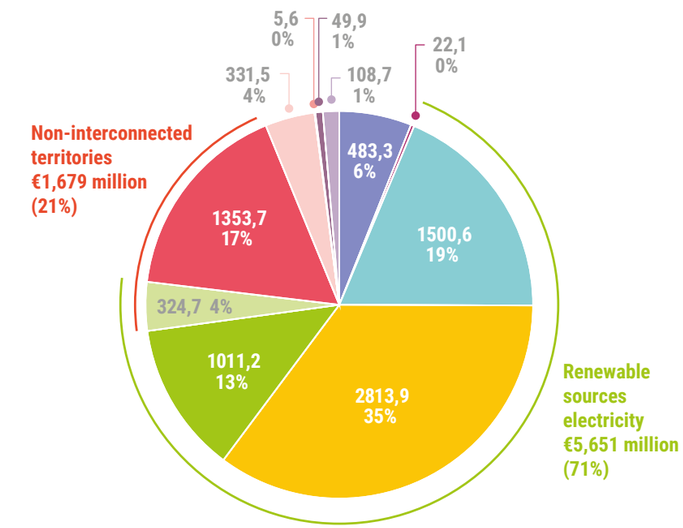
(1) Corsica, Guadeloupe, French Guiana, Martinique, Mayotte, Reunion, Saint-Barthélemy, Saint-Martin, Saint-Pierre-et-Miquelon, Wallis-et-Futuna and the French Channel Islands (Chausey, Molène, Ouessant, Sein)

Illustration 1: Annual trends of public service costs for energy



In 2017, support for renewable energy represents the main item in the forecast public service costs for energy, accounting for 71% of costs (see Illus. 2). The second item is the tariff equalisation in ZNIs, excluding support for renewable energy, at 17% (or 21% if renewable energy is included). Then there is support for cogeneration at 6%, social provisions at 5%, and costs linked to purchase contracts in metropolitan France excluding renewable energy, at less than 1%.

Illustration 2: Forecast public service costs for energy in 2017 (total €8 billion)



Given the growth of these costs, CRE pays special attention to the appropriate scaling of support mechanisms for each different renewable energy sub-sector.

1.2. Implementing the reform of the financing of public service costs for energy

Reform of budgeting process for public service costs for energy

In 2016, for the first time, CRE reviewed the costs of the new financing framework. The Act on Amended Finance 2015-1786 of 29 December 2015 (Amended Finance Law 2015) in fact enacted a reform of the finance system of public service costs for electricity and gas. These costs, grouped under the heading of public service energy costs are included in the state budget and split between an earmarked account for "Energy Transition" and "Public energy services" budget programme using the following breakdown:

- the account earmarked for "Energy Transition" includes costs connected to support for renewable energy (for electricity and gas) and load shedding as well as reimbursements to operators for the accumulated deficit in compensation for their public service costs for electricity as of 31 December 2015;
- the "Public energy services" budget heading includes the costs related to the equalisation tariff in non-interconnected territories (excluding support for renewable energy in these territories in the form of required purchases), to support for cogeneration and social measures for electricity and gas, as well as Caisse des Dépôts et Consignations (CDC) management costs.

The role of CRE in the evaluation of public service costs remains the same. However, its evaluation will, in future, differentiate charges for each operator for the specially earmarked accounts from those that are covered by the budget.

The reform of energy taxes has also meant changes in the way costs are financed, by suppressing the CSPE, CTSS and the biomethane levy, for consumption after 31 December 2015. The removal of these taxes has been offset by redefining the domestic taxes to energy end users. This new budget approach was approved by Parliament, so CRE's proposal on the amount of costs now needs to be published before 15 July, instead of 15 October, in order to meet the deadlines of the budget calendar. The supervision and evaluation of costs by CRE, which begins on 31 March, is therefore concentrated over a short period of time, requiring the allocation of many resources, the more so since the evaluation of costs has become more complicated. In fact, the public service costs of energy for a year now include an update to the forecast costs.

"In order to be included in the budget timetable, CRE must publish its proposal on the amount of costs before 15 July.

In addition, the reform was accompanied by the introduction of a schedule for repayment of the EDF debt caused by a lack of compensation for public service costs for electricity, which accumulated until 31 December 2015, totalling €5.7 billion.

Therefore, the estimation of costs for 2017 performed in 2016 by CRE, includes the forecast costs for 2017, updated forecast costs as predicted in 2016, the settlement of costs defined in 2015, financial costs for operators who carried compensation deficits or over-compensation for costs in previous years, the repayment of the EDF debt, CDC management costs and remaining budgets from previous years. Despite the work CRE put into updating the forecast of charges for 2016, this forecast was not taken into account by the government.

The provisions of the Finance Law for 2017 related to the financing of public service costs for energy

Since the reform, four taxes are now used to cover public energy service costs: the Domestic Tax on Final Electricity Consumption (TICFE) known as "contribution to electricity public service" (CSPE), the Domestic Tax on Natural Gas Consumption (TICGN), the Domestic Tax on Energy Product Consumption (TICPE) and the Domestic Tax on Coal Consumption (TICC).

The Finance Law for 2017 defined that the special allocation account for the "Energy Transition" will receive funds from the TICPE (39.8%) and the TICC (9.1%), therefore bringing the increase in public service costs to bear on the support for renewable energy and carbon energy. The balance of the TICPE (60.2%) and the TICC (90.9%), plus the whole of the CSPE and the TICGN will fund the programme "Public Service for Energy" under the general budget. The amount of the CSPE has been set at €22.5 /MWh since 1 January 2016 and has not been changed for 2017. As for the amount of the TICGN, it was increased, from €4.34 /MWh to €5.88 /MWh on 1 January 2017.

"CRE will no longer be involved in recovery and operator compensation operations, as soon as all of the operations related to consumption prior to 31 December 2015 have been completed.

These taxes are recovered by Customs and returned to the special allocation account or to the central state budget. The state, in collaboration with CDC, ensures that compensation is paid out to operators bearing the costs. CRE will no longer be involved in recovery and operator compensation operations, as soon as all of the operations related to consumption prior to 31 December 2015 have been completed.

Refunds of the contribution to public electricity service processed by CRE

CRE has yet to carry out operations related to the CSPE before the reform of energy taxes in December 2015, in particular the mechanisms for partial exemption from public service energy contributions. The ceiling of the total contribution paid by industrial companies consuming more than 7 GWh per year, to 0.5% of their added value is one of the former exemption mechanisms. The ceiling takes the form of a reimbursement granted after payment of the contribution, once the final added value has been determined.

In 2016, CRE processed 444 applications for reimbursements under this exemption mechanism, for the years 2011 to 2015, for a total amount of nearly €449 million.

2. RENEWABLE ENERGY DECREE

In May 2016, CRE was asked for an opinion on a draft order under Article 119 of the Act on Energy Transition for Green Growth, or LTECV, enabling the government to take any measures needed to facilitate the integration of renewable energy. With reservations about this text, CRE issued an unfavourable opinion and informed Parliament of the proposed changes to be made during its hearing under the ratification law.

CRE's opinion related mainly to:

- value to be attached to guarantees of origin, based on the requirement to buy, proving that the electricity produced was from renewable sources.
- the principle of assuming part of the connection costs of renewable installations by network tariffs;
- the priority of calling for renewable facilities in non-interconnected zones.

2.1. The arrangements related to the guarantees of origin arising from the requirement to buy

The draft order provided for the ban of any valuation or use of guarantees of origin issued by facilities under purchase obligations. CRE ruled against this ban, for two main reasons:

- as production under a purchase contract constitutes, for the procurement of renewable energy on the French market, the main alternative to hydro-electric production owned by EDF and Engie, CRE believes the provisions of the draft order would have eliminated any possibility for independent suppliers to acquire guarantees of origin, unless imported from abroad, and to propose "green" supply offers based on them. They would thus have had the effect of giving an unfair competitive advantage to EDF and Engie;
- in addition, given that Article R.121-31 of the Energy Code provides that the financial valuation of guarantees of origin is deducted from the amount of compensation of the required buyer's public service costs for energy, the *"methods for evaluating this financial value [being] fixed by the decision of the minister responsible for energy"*, these provisions would have created an obstacle to reducing these costs.

The legislature amended the draft order in line with recommendations by CRE. An auction mechanism has been created for guarantees of origin, organised by the State, the receipts from which will be used to offset the costs.

2.2. The principle of assuming part of the connection costs of renewable installations by the network usage tariff

The draft order provides for the reinstatement of the principle of assuming part of the connection costs of renewable installations by the t RE, the latter was retained by legislature, which limited the level to 40%.

Since then, CRE has been asked for an opinion on the draft decree to establish the rates of reduction to be applied. In its opinion on 13 April 2017(2), it identified two risks created by the reduction, especially if high rates are defined: development of more costly projects for the community, and the need to strengthen the network.

CRE also noted that the reduction was not necessary for the facilities selected through a competitive tendering procedure, insofar as these procedures make it possible to internalise in the price of electricity offered by bidders, all the costs they incur including connections costs.

(2) The Energy Regulatory Commission's deliberation on 13 April 2017, leading to an opinion on the draft decree related to taking over the costs of connections to the public electricity network, under Article L.341-2 of the Energy Code

It therefore recommended differentiating the reduction rates applicable under the proposed support mechanism, setting it at 0% for installations supported by competitive procedures and at a maximum of 20% for installations supported by an open-ended mechanism. In addition, to avoid creating windfall effects, CRE asked for a similar revision to be applied to all purchase tariffs or rates for additional remuneration.

2.3. In non-interconnected zones, the priority for calling on production facilities based on renewable energy sources

The order, ratified by Act No. 2017-227 on 24 February 2017, introduced the principle of priorities in non-interconnected zones, for calling on production facilities based on renewable energy sources. In its opinion dated 2 June 2016[3] on the draft order, CRE noted that although this provision made it possible to achieve more rapidly the targets related to the share of renewable energy in the energy consumption in ZNIs, it could in return lead to a sharp increase in the public service costs for energy.

In addition, changes to the call order of facilities could lead to prices at peak hours falling below prices during hours of low consumption, while the most expensive resources would continue to be used during peak hours. This situation would result in reversing the tariff signal sent to consumers, leading them to change their behaviour contrary to the objectives desired for managing peak consumption.

CRE recommended carrying out an impact study prior to implementing this measure, and to consider other measures likely to increase the share of renewable energy installations in the energy mix. In particular, a high carbon price would allow this objective to be achieved without changing the relevance of the tariff signal sent to consumers.

Entering the draft order on defining the conditions of application of the priority of call, now codified in Article L.322-10-1 of the Energy Code, the CRE in its opinion of 16 March 2017[4], expressed regret that the impact study it had recommended had not been carried out, while welcoming the provisions that allow the system operator to call on renewable energy installations as a priority, while taking into account their technical specifications and their overall interest for the electricity system. CRE also made two recommendations to avoid the priority of call working against the aim of reducing the level of carbon in the electrical mix in ZNIs, and leading to under-utilisation of hydro-electric dams.

(3) Deliberations by the Energy Regulatory Commission on 2 June 2016, leading to an opinion on the draft order under Article 119 of Act No. 2015-992 on 17 August 2015, related to the energy transition for green growth.
(4) The Energy Regulatory Commission's deliberation on 16 March 2017, leading to an opinion on the draft order adopted under Article L.322-10-1 of the Energy Code, introduced by Decree 2016-1059 on 3 August 2016, related to the production of electricity from renewable energy

3. REFORM OF THE COMPETITION PROCEDURE

CRE was asked for an opinion on two decrees: one on the simplification of calls for tenders, the other to introduce a new procedure, a competitive dialogue, better adapted to the characteristics of offshore windfarms.

CRE has stressed for some time the relevance of organising support for renewable energy through calls for tenders, provided an acceptable level of competition exists. In fact, purchase tariffs, or those for supplementary payments, generally tend to create a windfall effect in that they are rarely able to reflect the disparities in installation costs even for the same energy option.

“CRE has stressed for some time the relevance of organising support for renewable energy through calls for tenders, provided an acceptable level of competition exists.

In 2016, the use of calls for tenders grew substantially, and spread to include options other than photovoltaic power, to which they had previously been restricted. The volume of bids to be reviewed grew strongly. With a view to generalising calls for tenders, CRE had stressed the need to review the procedure in order to make it easier to follow for bidders, and to improve efficiency in reviewing their submissions. So it delivered a favourable opinion on 3 February 2016 for a draft order to this effect.

The new procedure changes the responsibilities: CRE is now responsible for issuing an opinion on each draft call for tenders drafted by Ministry of Energy officials, but is no longer responsible for drafting them. Some simplifications were introduced, in particular:

- widespread submission of online bids;
- review of tenders limited to those that fully meet the criteria for the calls for tenders (CRE now has the option to not follow through on reviewing all the information for a bid if it can be eliminated due to non-compliance).

CRE is proposing the introduction of more improvements to encourage more applicants. In its opinion on the procedure for competitive dialogue related to calls for tenders for an offshore wind turbine farm at Oléron, it suggested reducing the number of documents required and recommended extending the deadlines given to applications for submitting their application documents between each step in the procedure.

4. THE COMPETITIVE DIALOGUE PROCEDURE FOR THE DEVELOPMENT OF OFFSHORE WIND POWER.

In 2011 and 2013, contracts for the construction and operation of six offshore wind turbine farms were awarded in the English Channel (Le Tréport, Fécamp, Courseulles-sur-Mer, Saint-Brieuc) and in the Atlantic (Saint-Nazaire and the islands of Yeu and Noirmoutier).

From 2016 onward, these projects are selected on the basis of a new procedure, the so-called competitive dialogue, which introduces a phase of negotiation between pre-selected applicants and State offices to draw up the specification for the final call for tenders. Organised as part of a transparent and non-discriminatory regulatory process, the discussions are intended to make it easier to take into account the specific features of the offshore wind turbine market, especially its high capital costs and risks[5], and to reduce development costs.

The procedure includes three phases:

- an initial phase where applicants are pre-selected based on technical and financial criteria;
- a second discussion phase between the State and preselected applicants, to develop the specification;
- a phase of submitting bids followed by a review of these in order to determine the winner.

Asked for an opinion, CRE felt that this procedure only partially met the aims of reducing costs and increasing the level of competition. It recalls, in this context, that only three industrial ventures had actually responded to the initial calls for tenders, one of them winning a very high proportion of the projects. To improve this measure, CRE proposed:

- providing geo-technical studies on wind speeds or soil quality to the applicants;
- before starting up any kind of competitive dialogue, holding a round table discussion with all the parties involved, to identify the legislative or regulatory changes needed to provide the optimum conditions for a real and efficient improvement in this energy sub-sector.

An initial competitive dialogue was started on 16 December 2016, for the construction and operation of an offshore wind turbine farm off Dunkirk. Having given an opinion on the consultative document for the selection of applicants taking part in the dialogue, CRE reviewed the applications. The selected companies or groups of companies were invited to take part in a dialogue in the second quarter of 2017.

CRE was asked for an opinion on a similar consultative document for the selection of applicants to take part in a dialogue on the construction and operation of an offshore wind turbine farm off the island of Oléron.

(5) The Energy Regulatory Commission's deliberation on 26 May 2016, leading to an opinion on the draft order related to the competitive dialogue procedure for facilities that produce electricity

5. THE CONTROL DECREE

The right to benefit from support mechanisms for a renewable production facility is often conditional on meeting technical and environmental requirements. However, no regulatory mechanism existed for controlling facilities subject to purchase obligations, while the financial stakes have become substantial: the costs related to purchase obligations are estimated at €5.3 billion for 2016 in metropolitan France. For public service costs, CRE is requesting the introduction of controls on the facilities subject to purchase obligations. It will now be vigilant in their implementation.

The possibility of fraud was identified, notably for photovoltaic power: in its deliberations on the CSPE tax for 2013, CRE noted that *"98.5% of the contracts presented benefit from a building integration premium, providing for a more profitable tariff of up to €580 /MWh against €420 /MWh for simplified building integration. Given the complexity of this building integration, it is very likely that some of these contracts are fraudulent. A simple sworn statement is sufficient to receive the feed-in premium. Given that purchase contracts have a term of twenty years, if such fraud is proven it should be corrected immediately and sanctioned."*

CRE was asked to provide an opinion on a draft order related to the methods of inspection and sanctions against facilities for the production of electricity benefiting from purchase obligations. On 29 September 2016, it issued a favourable opinion on this draft, which took into account its recommendations. The facilities will in future be monitored systematically before the purchase contract or additional payment comes into effect, which will only be disbursed on presentation of a certificate of compliance issued by an approved body. The installations may also be subjected to random inspections at any time for the duration of the contract. In case of non-compliance, the contract may be suspended or cancelled.

CRE may send the Minister for Energy a list of cases where it believes on-site inspections are necessary. To identify these, it will look for anomalies in its analysis of public service costs. It may also report situations that require sanctions to be imposed, where producers have not met their requirement to provide data about the costs and revenues of their facility.

CRE'S OPINIONS ARE ESSENTIAL IN DEFINING SUPPORT MECHANISMS FOR RENEWABLE ENERGIES

The year 2016 saw the implementation of supplementary remuneration and the calls for tenders to numerous sectors. CRE contributed to this important reform of the measures for supporting renewable energy, issuing an opinion on eight draft tariff decrees and nine specifications for competitive calls for tenders. In addition, it reviewed six calls for tenders intended to allow the development of new production capacity using renewable energy, with a total installed power of 373 MW.

CRE opinions		
Energy sub-sector	**Draft tariff decisions**	**Draft specifications for competitive calls for tenders**
Solar	- Installed on buildings in metropolitan mainland France - Installed on buildings in ZNIs	- Ground installations (3 GC) - Installed on buildings (1.4 GWe) - Installations with storage in ZNIs (50 MWp)
Bioenergy	- Cogeneration installations - Installations primarily using biogas produced by methanation of materials from the treatment of city or industrial wastewater - Installations primarily using biogas produced by storage sites for non-hazardous waste - Installations mainly using biogas produced by methanation of non-hazardous waste and plant biomass - Installations mainly using energy released by the thermal processing of household waste and similar waste	- Installations cogenerating from biomass (180 MWe) - Installations cogenerating from biomass, replacing installations cogenerating from natural gas (40 MWe) - Installations cogenerating with gradual incorporation of biogas (550 MWe)
Wind	- Installations using mechanical wind energy - Installations using mechanical wind energy with no more than six wind turbines	- Installations using mechanical wind energy, land-based (3 GW) - Offshore wind turbines off Dunkirk (250–750 MW)
Hydro-electricity	- Installations using gravity-driven hydro-electricity from lakes, rivers and collected water	- Hydro-electric installations (55 MW)
Self-consumption		- Installations located in mainland France (40 MW) - Installations located in ZNIs (20 MW)

1. REFORMED SUPPORT MECHANISMS FOR NEARLY ALL SUB-SECTORS, FOLLOWING THE CREATION OF NEW GUIDELINES BY THE EUROPEAN COMMISSION ON STATE AID FOR ENVIRONMENTAL PROTECTION AND ENERGY

The guidelines from the European Commission related to state aid for environmental protection and energy for the period of 2014 to 2020 were published on 28 June 2014. They define the criteria by which the European Commission will evaluate compatibility with the internal market of support mechanisms for electricity production introduced by Member States.

To improve the integration of production from renewable energy on the electricity wholesale market, the guidelines require in particular that from 1 January 2016, support for installations over 500 kW power are paid from a premium that is added to the sales price of the electricity. The guidelines also require, from 1 January 2017, the designation, following competitive tender, for installations with more than 1 MW of power with public subsidy. As an exception, for wind turbines, the thresholds have been set at 3 MW or three wind turbines, and 6 MW or six wind turbines.

As a result of this, the French government has changed the support measures for production of electricity, on the one hand introducing additional remuneration, on the other hand widening the scope of the calls for tenders.

CRE has therefore needed to issue eight opinions on draft decrees, and nine on draft calls for tenders.

2. CRE'S EXPERT REVIEWS OF THE SUPPORT MECHANISMS

The law provides that the purchase tariff or additional remuneration in the case of open-ended support mechanisms, shall not result in a total repayment of the capital invested exceeding a reasonable level. Therefore, to provide an opinion on the level of support proposed for installations on an open-ended basis, CRE initially needs to define the level of a reasonable return on the capital invested, before comparing that to the profitability resulting from the proposed mechanism. To achieve this, it carried out several audits[6].

“CRE is working to create a virtual platform intended to collect all the declarations from all 10,000 facilities over 100 kW that are currently in service.

To provide the public authorities with more precise information, Article R. Article 314-14 of the Energy Code requires that in future producers with installations of more then 100 kW power must submit their annual costs and profits to CRE. They must also keep at their disposal the corresponding accounting documents. For installations of lower power, the same information is required on simple request by CRE. This requirement is linked to a control and sanction mechanism included in the control decree referred to above. In this context, CRE is working to create a virtual platform intended to collect all the declarations from all 10,000 facilities over 100 kW that are currently in service. It plans also to start a series of audits on certain energy sub-sectors before the end of 2017.

(6) CRE report published in April 2014 on the costs and profitability of renewable energy in metropolitan France

CRE believes that these procedures for competitive tenders represent a more powerful support measure for the mature industrial sub-sectors, provided a satisfactory level of competition exists. In its opinions on calls for tenders, it checks that there is a good balance between the level of power, the number of projects being sought and the competitive situation. In mainland France, it favours the generalisation of calls for tenders for most mature sub-sectors.

However, in the ZNIs, it believes that calls for tenders are only effective for photovoltaic installations. For the other sub-sectors, given the lack of adequate competition, it feels that directly negotiated contracts are the best support measure, as the parties carrying out the project will have to provide CRE with a business plan and document all the costs involved. For these territories, CRE also pays particular attention to adjusting the project characteristics to the technical features of each electrical system and the policy trends defined or being defined in the multi-year energy programmes (PPEs).

3. ACTIVITIES FOR EACH SUB-SECTOR

3.1. Photovoltaic

Metropolitan continental France

CRE provided an opinion on the tariff ruling that provides support to photovoltaic installations below 100 kWp and that introduces the specific provisions for self-consumption installations.

For self-consumption, CRE recommended abolishing the proposed provision. It emphasises that the relevance of support must be analysed in terms of the benefits in generates to the community, and must not create windfall effects. In addition, it believes that unless the purchase obligation takes into account the diversity of situations, very important in the case of self-consumption, compliance with the criterion of reasonable remuneration cannot be guaranteed.

For facilities that sell all their electricity, CRE would agree to the creation of a multi-year framework, defined in the calls for tenders, in order to provide the sector with the industrial predictability necessary to improve costs over the long term.

In a call for tenders related to self-consumption installations, CRE's reservations related to the methods of payment, which do not allow all invoice savings to be taken into account.

Non-interconnected zones

In the ZNIs, low-power photovoltaic installations have benefited over the last few years from the same type of support offered in mainland France.

On 9 March 2017, CRE issued an opinion[7] on a draft decree setting out differentiated purchase conditions for Corsica, Guadeloupe, French Guiana, Réunion, Martinique and Mayotte. These provisions aim to achieve the goals of the energy policy defined as part of multi-year energy programmes (PPE). The tariff decree also creates a compensatory mechanism for disconnections carried out by the system operator when intermittent electricity from renewable sources passes the 30% limit. This provision, recommended by CRE, makes it possible to eliminate the risk that a growth in the number of hours of disconnection might represent for the profitability of installations throughout their lifetime.

CRE issued an unfavourable opinion on the proposed tariff level, due to the inadequate returns on low power installations, and excessive returns on others.

A call for tenders was also issued for photovoltaic installations with storage. CRE issued an unfavourable opinion because the inadequate methods of storage did not allow for involvement in managing reserves, and in the absence of territory allocation did not enable taking into account the energy policy targets and the technical specificities of each electricity system.

More generally, CRE considers that support schemes for the photovoltaic and storage sectors would be improved by separating them to promote, on the one hand, the emergence of shared storage facilities managed by the GRD, and on the other hand the development of standard photovoltaic installations to allow the provision of better service to the electricity system at a lower cost.

3.2. Land-based wind turbines

The decree dated 13 December 2016, on which CRE had issued an opinion on 3 November 2016[8], introduced a mechanism of supplementary remuneration for land-based wind turbines. In December 2016, CRE was asked for an opinion on a decree defining the conditions for supplementary remuneration to small installations of six wind turbines or less, and in February 2017, on the draft specification for a call for tenders for installations with six wind turbines or more. It issued an unfavourable opinion on the draft decree[9] and a positive opinion on the draft call for tenders, recommending in particular:

- to limit the benefits of open-ended support to installations of less than 6 MW;
- to extend the scope of the call for tenders, including covering extensions to existing installations;
- to install an annual ceiling for remuneration, to restrict the profits of facilities which have better wind conditions;
- to define the quality of investments that create entitlement to the benefits of a contract under this decree.

(7) Deliberations by the Energy Regulatory Commission on 9 March 2017 to issue an opinion on the draft decree defining the terms of purchase for electricity produced by facilities installed on buildings using photovoltaic solar energy, with power of 100 kW or less, and located in Corsica, Guadeloupe, French Guiana, Martinique, Mayotte or Réunion.
(8) CRE deliberations on 3 November 2016 resulting in an opinion on the draft decree defining the terms for supplementary remuneration for electricity produced by electricity production installations using mechanical wind energy
(9) CRE deliberations on 23 March 2017 resulting in an opinion on the draft decree defining the terms for supplementary remuneration for electricity produced by electricity production facilities using mechanical wind energy with a maximum of six wind turbines

3.3. Biogas

The facilities for methanation, and the storage of non-hazardous waste (ISDNDs) and sewage plants (STEPs) formed the focus of three draft decrees submitted for CRE to deliver an opinion during 2016[10][11][12].

The draft decrees on ISDNDs and STEPs provide for a purchase contract for installations of less than 500 kW power, and a contract for supplementary remunerations for installations with higher power. The decree covering ISDNDs states that those who have already received a support mechanism can benefit from a new contract with an adjusted level of support.

The methanation business was the subject of an in-depth analysis by CRE in 2016. The producers' data suggested in fact that the proposed level of the tariff would lead to excessive return on the capital invested. With the support of representative trade unions, CRE obtained technical and economic information on 54 methanation installations which it validated on the basis of their documentation. The new elements confirmed the diversity of the costs in this sub-sector, and the relevance of organising growth by using calls for tenders across the country in order to provide a level of support that is appropriate for each installation. CRE also recommended paying special attention to the interaction between the tariff decree and other support mechanisms that apply, in order to avoid excessive returns.

CRE also recommended paying special attention to the interaction between the tariff decree and other support mechanisms that apply, in order to avoid excessive returns.

The decree issued on 13 December 2016 authorises installations with less than 500 kW power to benefit from a purchase contract. For installations with more power, a call for tenders was issued on 17 February 2016 for applications for three time periods spread over three years. It imposes specific requirement on the supplies used, and stipulates that the installations may not create conflicts of use with other bidders or pre-existing uses. The tenders are rated against the reference tariff suggested, and increased if the bidder undertakes to respect more restrictive thresholds than the current regulations in terms of air quality. The winners for the first period of the call for tenders were announced on 21 March 2017. They will have a contract for supplementary remuneration. The application deadline for the second period is set for 1 September 2017.

(10) CRE deliberations on 10 February 2016 to issue an opinion on the draft decree defining the terms of purchase and of supplementary remuneration for electricity produced by facilities using mainly biogas produced by methanation of materials from the treatment of urban or industrial wastewater
(11) CRE deliberations on 18 February 2016 to issue an opinion on the draft decree defining the terms of purchase and of supplementary remuneration for electricity produced by facilities using mainly biogas produced from storage facilities for non-hazardous waste
(12) CRE deliberations on 27 July 2016 to issue an opinion on the draft decree defining the terms of purchase for electricity produced by facilities using mainly biogas produced by methanation of non-hazardous waste and biomass

CRE has also issued an opinion[13] on a draft decree extending for 15 to 20 years[14] the duration of the purchase contracts for existing methanation facilities. From the data obtained in collaboration with trade unions representing the sector, CRE noted that the existing installations displayed varying levels of profitability and that this measure would create a sizeable windfall effect for almost half of them, without resolving the most difficult situations. Therefore, it recommended an extension subject only to the duration of the contract or the use of targeted financial measures. This recommendation was not taken into account and the decree published on 24 February 2017 authorises signing an amendment to extend the contracts' duration, with a limit on the annual operational period during the last five years.

3.4. Co-generation with natural gas and fuel wood

Natural gas cogeneration.

CRE gave a favourable opinion on 10 March 2016[15] on the decree dated 3 November 2016. This authorises installations with less than 300 kW power to benefit from a contract of purchase obligation, and those with between 300 kW and 1 MW of power to benefit from a contract for supplementary remuneration. CRE felt in particular that the premium should not be calculated solely on the basis of the spot price, but should also look at the forward market price for electricity, to reflect the options for selling electricity from facilities that are to form part of the base supply during winter.

CRE issued two opinions on the calls for tenders involving existing cogeneration gas facilities with more than 12 MW power, which benefited from a support mechanism until the end of 2016.

A first call for tenders related to cogeneration facilities using biomass, and replacing a gas cogeneration facility[16]. In its opinion on 29 September 2016[17], CRE voiced doubts about the relevance of a transitional supplementary premium being paid to the gas-powered cogeneration facilities, and in particular, it recommended:

- that the supplementary remuneration made to gas and biomass facilities should be calculated ex post, and should take into account other payments available to them, in particular the capacity mechanism;
- that the level of premium paid to a gas facility should be reduced, or have an annual cap, so that remuneration made to the cogeneration installations powered by gas are not significantly more that what is paid under the terms of the currently applicable provision, and that it does not cover more, at a maximum, than the difference between the operating costs and revenues of the facility.

(13) CRE deliberations on 8 July 2016 to issue an opinion on the draft decree amending the decree on 19 May 2011 to define the purchase conditions for electricity produced by facilities that sell biogas.
(14) CRE deliberations on 3 September 2015 to issue an opinion on the draft decree amending the decree on 19 May 2011 to define the purchase conditions for electricity produced by facilities that sell biogas.
(15) CRE deliberations on 10 March 2016 to issue an opinion on the draft decree defining the terms of purchase and of the supplementary remuneration for electricity produced by cogeneration facilities
(16) http://www.cre.fr/documents/appels-d-offres/appel-d-offres-porte-sur-la-realisation-et-l-exploitation-de-nouvelles-installations-de-cogeneration-d-electricite-et-de-chaleur-a-partir-de-biomasse-situees-en-france-metropolitaine-continentale
(17) CRE deliberations on 29 September 2016, to issue an opinion on the draft call for tenders related to the creation and operation of cogeneration electrical and heating facilities powered by biomass, replacing cogeneration electrical and heating facilities powered by natural gas

A second call for tenders related to the maintenance and operation of cogeneration facilities of more than 12 MW, subject to gradually include more biogas. In its opinion on 25 January 2017[18], CRE considered that as these depreciated installations had already benefited from support mechanisms, there is no reason they should benefit from them further, except where the provision allows existing installations to be maintained rather than building new ones, and provided that the subsidy is proportionate to the difference between the installation's operating costs and revenues. It therefore recommended that:

- the level of the reference tariff for each winning producer can be adjusted each year, following an audit, and depending on the changes in the installation's operating costs, up to the limit of the value quoted by the bidder in the tender;
- the supplementary remuneration is defined ex post;
- the market capacity revenue is cut back by this amount.

Wood energy cogeneration

Decree No. 2016-691 of 28 May 2016 removed the electricity production facilities from wood energy from the list of who may benefit from a contract pursuant to a decree. Since 2003, calls for tenders have been the main method employed. From 2016, calls for tenders will now be the only relevant measure for supporting these facilities.

A call for tenders was issued on 17 February 2016 for bidders for three time periods spread over three years. It imposes specific requirement on the supplies used, and stipulates that the installations may not create conflicts of use with other bidders or pre-existing uses. The tenders are rated against the proposed reference tariff, and increased if the bidder undertakes to respect more restrictive thresholds than the current regulations in terms of air quality, or to use heat from fumes. This call for tenders relates to new installations and to increases in power of existing installations.

The winners for the first period of the call for tenders were announced on 21 March 2017 and will benefit from a contract for supplementary remuneration. The application deadline for the second period is set for 1 September 2017.

3.5. An overview of the calls for tenders issued in 2016

In 2016, nine calls for tenders were issued in five different renewable energy sub-sectors. In addition to the recommendations for a common procedure for all calls for tenders mentioned above, CRE issued individual opinions on the draft specifications, thereby ensuring that each call for tenders works efficiently in terms of competition and implementation.

(18) CRE deliberations on 25 January 2017, to issue an opinion on the draft call for tenders related to keeping in operation cogeneration electrical and heating facilities powered by natural gas, with gradual inclusion of biogas in these installations

Of these nine calls for tenders, four relate to multiple periods. A summary of the main features of these calls for tenders is included in the following table:

	Energy sub-sector	Type of facilities	Cumulative power demand (for all periods where relevant)	Number of periods
1	Biomass	Production of electricity from biomass	180 MWe	3
2	Hydraulic	Hydroelectric	+55 MW*	1
3	Self-consumption	Production of electricity for self-consumption in metropolitan France	40 MW	2
4	Solar	Solar energy installations on the ground	3,000 MWp	9
5	Solar	Solar energy installations on buildings, greenhouses, agricultural barns and car park roofing	1,350 MWp	5
6	Biomass	Cogeneration of electricity and heat fuelled by biomass replacing cogeneration facilities	40 MWe	1
7	Self-consumption	Electricity production for self-consumption in ZNIs	20 MW	1
8	Solar	Solar energy power stations in ZNIs, with storage facilities	50 MWp	1
9	Wind turbines	Competitive dialogue for offshore wind turbines off Dunkirk	250-750 MW	1

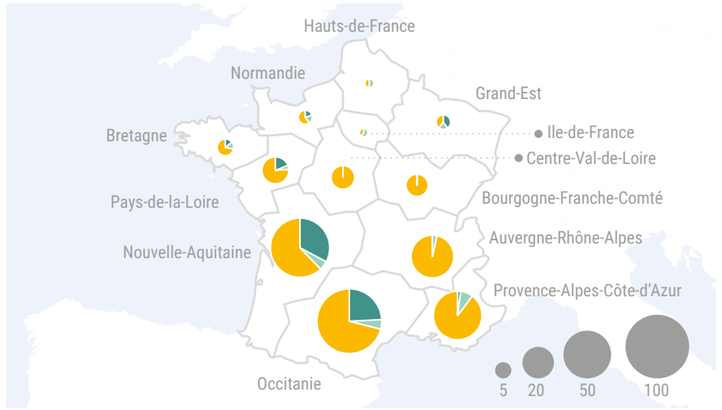
* The third batch sets a number of projects being sought rather than power

4. CALLS FOR TENDERS REVIEWED IN 2016

In 2016, CRE's officials adjudicated on four calls for tenders, for which 1,621 applications were reviewed. The cumulative power covered by the applications that CRE proposed to the Ministry for Energy for approval at the end of these reviews was 373 MW. The estimated level of public service costs involved in these projects over the full duration of the operating contracts totalled around €1.5 billion.

Calls for tenders		End of the bidding period	Date of the CRE deliberation on the adjudication	Applications received (excluding known duplicates)	Applications reviewed	Cumulative power covered by the applications that CRE proposed approving (in MW)	CSPE charges created (in €million)
Biomass	1st Period	22/08/2016	03/11/2016	41	41	60	685
Self-consumption in metropolitan France	1st Period	30/09/2016	03/11/2016	249	81	21	10
Photovoltaic on buildings, metropolitan France	1st Period	21/09/2015	24/02/2016	633	375	80	170
	2nd period	21/05/2016	23/06/2016	712	444	80	163
	3rd period	21/07/2016	21/09/2016	760	463	80	156
Solar power with storage in ZNIs		20/11/2015	11/05/2016	217	217	52	309
Total				**2,612**	**1,621**	**373**	**1,493**

For the calls for tenders covering installations in continental mainland France, the breakdown by region of the cumulative power covered by the applications that CRE recommended accepting in 2016, shows that the four regions in the South were most strongly represented, with about one third of the total in Occitanie, one quarter in New-Aquitaine, 15% in Provence-Alpes-Côte d'Azur and 9% in Auvergne-Rhône-Alpes.



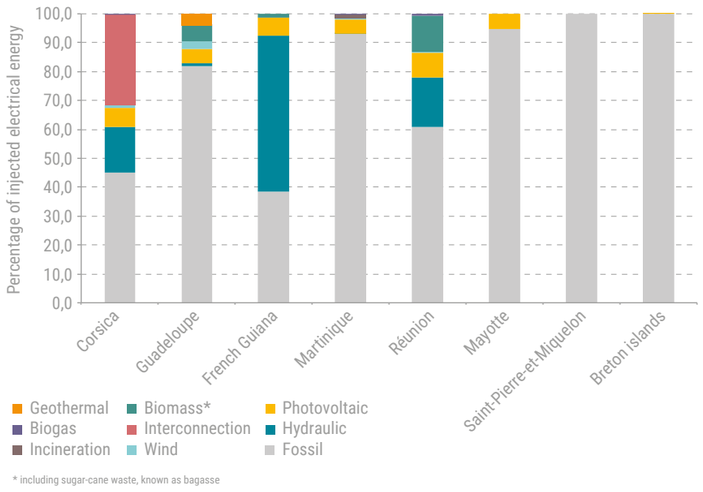
Cumulative power covered by the applications that CRE proposed approving by region and by energy option:
- biomass
- self-consumption
- solar

CRE FOLLOWS UP THE ENERGY TRANSITION OF NON-INTERCONNECTED ZONES

Corsica, overseas departments and regions (Guadeloupe, French Guiana, Martinique, Réunion, and Mayotte), some overseas communities (Saint-Pierre and Miquelon, Saint-Barthélemy and Saint Martin), the Breton Islands of Molène, Ouessant, Sein, the Glénan archipelago and the French Channel Island of Chausey are not connected to the continental electrical grid (or only in a very limited manner in the case of Corsica).

Non-interconnected zones (ZNIs) have some specific technical and economic characteristics, compared with metropolitan France. Their climatic and geographical characteristics (in particular, islands, volcanic and mountainous zones) and their related logistical constraints (limited port and road infrastructures), as well as the small scale of their electrical systems all justify the use of appropriate technological solutions which are generally different to those developed in metropolitan France. Historical choices in these zones have led to a more carbon-intensive energy mix than in metropolitan France (Illustration 3).

Illustration 3: Electricity production mix in the main non-interconnected zones in 2015



* including sugar-cane waste, known as bagasse

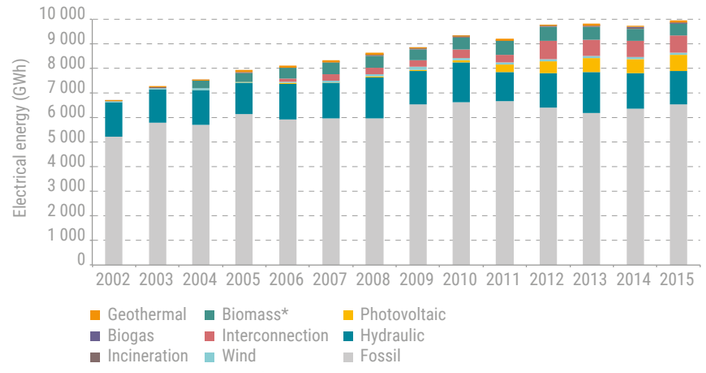
Electricity production in ZNIs still relies strongly on thermal methods that emit CO_2. However, efforts already underway to deploy renewable energy have reduced dependency on electricity generation from fossil energy. This has fallen from an average of 78% in larger ZNIs in 2002 to 66% in 2015 (see Illustration 4). This desire to reduce is

confirmed by the Act on Energy Transition for Green Growth (LTECV)[19] which defined ambitious targets for ZNIs: That means 50% of renewable energy in end user consumption by 2020, and energy independence from 2030.

In addition, the LTECV provides for each zone to develop a Multiannual Energy Programme (PPE) to suit its own needs. The PPEs for Corsica, Guadeloupe, French Guiana, Mayotte and Réunion have already been approved and others are being finalised, which demonstrates the growing involvement of local authorities in the energy policy for their zones. The choices for growth laid down in the PPEs will define the financial burden for public service costs in the medium and long term. They are therefore an important factor in terms not only of managing costs linked to new projects, but also of the stranded costs for existing facilities.

The Energy Code also strengthens the role of local authorities in energy policy matters. The chairmen of local authorities can in fact require, if the development of an energy production option may compromise progress towards achieving the aims defined in the PPE, that a competitive tender be set up for their area and ask CRE's opinion on whether the purchase tariffs reflect the costs of the investment and operation of installations.

Illustration 4: Changes in the volume of electricity generated per sub-sector in non-interconnected zones between 2002 and 2015



* including sugar-cane waste, known as bagasse

The composition of the energy mix and the small scale of these isolated networks, which means technical constraints apply in order to ensure the safety of the network, lead to a production cost for electricity which far exceeds that on the mainland.

However, given the principle of national solidarity, energy tariffs are the same as those on the mainland, and in ZNIs the excess structural costs are covered using profits from energy taxes paid by all consumers. Given the high level of these costs, managing electricity consumption, especially at peak times, is a critical factor. The excess costs of the networks in ZNIs are also compensated by the Electricity Equalisation Fund (FPE) which receives funds from TURPE[20]. Act LTECV introduced an

(19) Act No. 2015-992 of 17 August 2015 related to the energy transition for green growth.
(20) Tariff for use of public electricity networks

equalisation mechanism for the distribution costs for electricity. This is based on the analysis, carried out by CRE, of the accounts of the system operators who request it, in the context of the FPE. In this way, CRE can determine the grants to be received by EDF SEI, after analysing its accounts at its request, and in 2017 will be carrying out an audit of the EDF SEI network costs for this purpose.

“CRE's role in non- interconnected zones is to guarantee the effectiveness of the energy transition.

Another fundamental factor for growth in ZNIs, the quality of energy services, requires greater synergies in managing the means of production for electricity, the networks and areas of consumption. The development of storage facilities and the arrival of smart meters in these zones will provide an answer to this set of issues.

In this context, CRE's role in non-interconnected zones is to guarantee the effectiveness of the energy transition. To do so, and to meet the requirements of Act LTECV, it has taken on additional responsibilities for: managing electricity consumption, supporting the growth of renewable energy and its overall positioning, and the effective operation of the existing means of production. To better define problem areas and the potential local gains linked to these topics, and to provide appropriate solutions, CRE regularly carries out on-site visits, such as those to French Guiana and Martinique in 2016.

1. CRE PROMOTES THE MANAGEMENT OF ELECTRICITY CONSUMPTION

1.1. Electricity tariffs that provide consumer incentives, while guaranteeing tariff equality

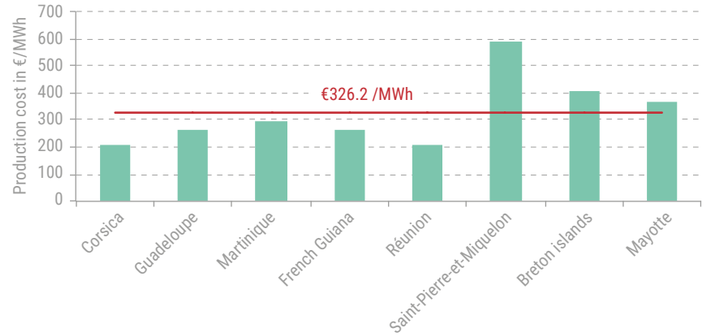
In ZNIs, regulated sales tariffs continue to be offered to all consumers, unlike in mainland metropolitan France where they have been removed for consumers who contract for more than 36 kVA of power. As required by the provisions of the Energy Code, CRE is responsible for defining these tariffs in non-interconnected zones and must *“submit its proposals, with supporting arguments, for regulated tariffs for the sale of electricity, to the Minister of Economy and the Minister of Energy.”*

Under Article L. 121-5 of the Energy Code, the regulated sales tariffs offered to consumers in non-interconnected zones are built up on the basis of tariff equalisation, which allows consumers to enjoy the same financial terms for access to electricity, despite the costs of production or supply varying from one zone to the next. The average price of each regulated sales tariff in non-interconnected zones must, as a result of tariff equalisation, be consistent with the stacking of electricity cost elements in metropolitan continental France, as defined in Article L.337-6 of the Energy Code.

In addition, the structure of the regulated sales tariffs differentiates clearly between the various prices of energy at defined time periods, in order to send a clear pricing signal to consumers. This enables the latter to adapt their consumption patterns in order to reduce the level of their invoices. These adjustments in consumption also help to reduce the overall costs for the public, and reduce the risk of the failure of the electricity system during periods of high consumption. Article L.337-6 of the Energy Code states that: *“provided the total proceeds from regulated electricity sales tariffs cover all of the costs mentioned above, the structure and level of these tariffs, before taxes, may be set in a manner which encourages consumers to reduce their consumption during times when overall consumption is at its highest.”* The characteristics of the electrical systems varies significantly from one ZNI to the next, as do therefore the production costs and the hours of high consumption (see Illus. 5). It is therefore necessary to create tariff details separately for each ZNI, while still applying the principle of tariff equalisation. In fact, if the regulated sales tariff structure is not consistent with the operation of the electrical systems, the price signals sent to end users, and therefore the way they adjust their consumption, could have a limited or even opposite effect of what is desired.

Given recent changes in production capacity, and changes in end user consumption patterns, regulated sales tariffs that currently apply in ZNIs are no longer appropriate. To realign this imbalance, CRE is working, on the basis of responses from local actors during two public consultations initiated on 17 February 2016 and 15 December 2016, on a methodology for creating new regulated sales tariffs for non-residential customers. It is currently in negotiations to try and agree on the solution that yields the best outcome for the good functioning of the electricity systems while being most acceptable to local economic actors.

Illustration 5: Average production cost in non-interconnected zones in 2015



1.2. Support to prepare projects for managing consumption

Over the last few years, demographic growth and improvement in the standard of living have accelerated the growth of consumption in non-interconnected zones. Deploying measures for electricity demand management (MDE) has become a priority, in order to manage the increase in public service costs for energy (SPE) for as long as unitary production costs remain so high.

To reduce excess production costs and SPE charges which finance the tariff equalisation in ZNIs, the Act on Amended Finance for 2012[21] extended the scope of projects covered by the costs for MDE projects. These projects, which aim to reduce consumption, enable a reduction in the reliance on marginal means of production, which have the highest costs, and avoiding or reducing future investment. However, this kind of project will only create a saving in SPE costs if, as provided under Article L.121-7 above, the compensation paid to those who implement them is lower than the excess production costs that they manage to avoid.

(21) Act No. 2012-1510 of 29 December 2012 for Amended Finance for 2012

In its deliberations on 10 June 2015, CRE defined a methodology for looking at MDE projects that require infrastructure development with a cost exceeding €1 billion[22]. This aims to check that the costs of these projects are actually lower than the savings they will create. In addition, to ensure the effectiveness of the new MDE installations, the cost borne by the party financing the project and the cost of the kWh actually saved needs to be regularly controlled. This follow-up should allow for a regular re-evaluation of the compensation amount to be paid to the operator, while still ensuring the security of the investment. So far, CRE has not been approached about any projects that fall within the scope of this methodology. However, some innovative projects seek, for example, to deploy a district cooling network fed by cold water pumped from the depths of the ocean[23] instead of using electric air conditioning systems, or the production of cooling from the waste heat of some types of thermal production.

This methodology adopted for major projects was supplemented on 2 February 2017 by a measure that is more suitable for "minor" MDE initiatives[24] that involve the distribution or installation of energy efficient equipment to individuals and companies.

"The stakes are high. The rate of air conditioning installation is expected to increase from 20% in 2000 to 68% by 2030.

The stakes are high, as the number of households with electrical appliances with high consumption is growing rapidly in non-interconnected zones. For example, EDF SEI estimated in its forecast report that 68% of households in French Guiana would be equipped with air conditioning by 2030, whereas this figure was only 20% in the year 2000. With regard to household water heating, the rate of installation is expected to increase from 36% in 2000 to 93% in 2030. At a time when households in ZNIs are rushing to buy appliances, the deployment of – for example – solar water heaters or efficient air conditioning systems among private individuals seems as essential as the development of large-scale energy demand management projects to tackle excess electricity production costs.

CRE consulted the parties involved, especially local authorities who expressed their desire to be involved in this matter, alongside the incumbent suppliers. We recommend setting up a local committee devoted to MDE. By involving the local authorities, the ADEME, the incumbent supplier and State services – DEAL the Directorate for the Environment, Town Planning and Housing, this supplies CRE with analytical information about the political trends in each zone, the excess production costs avoided by each action, and the best level of subsidy.

Taking into account the diversity of these initiatives, the draft contracts will be grouped for the same zone and submitted for CRE to approve, who will define the compensation mechanism for each of the various actions.

(22) Deliberation by the Energy Regulatory Commission on 10 June 2015 to prepare a communication on the methodology applied for to review infrastructure projects to manage demand for electricity consumption in non-interconnected zones.
(23) SWAC, Sea-water air conditioning
(24) Deliberation by the Energy Regulatory Commission on 2 February 2017 to prepare a communication on the methodology to review minor initiatives to manage demand for electricity consumption in non-interconnected zones

2. CRE SUPPORTS THE DEVELOPMENT OF RENEWABLE ENERGY IMPROVING ITS INTEGRATION WITHIN THE ENERGY SYSTEM

2.1. Support for renewable energy and its framework for development

The development of renewable energy is another priority of energy policy in ZNIs. The multi-annual energy programmes (PPEs) which have already been approved, and those which are being prepared, define the targets for development of each sub-sector and zone. The special conditions in each zone in fact define the potential for each sub-sector. For example, the volcanic islands of Martinique and Guadeloupe offer potential for developing geothermal energy. In French Guiana, where wood is an abundant resource, biomass projects can be increased without requiring imports. For each of the PPEs' objectives, CRE stresses that it is essential that the pace at which new production methods develop is appropriate to the growth and changes in consumption and also takes into account the lifespan of existing production methods, in particular those whose investment is not yet amortized, to reduce the risk of stranded costs.

THREE ECONOMIC LEVERS TO INCREASE ELECTRICITY PRODUCTION FROM RENEWABLE SOURCES

In order to promote the development of electricity generation from renewable energy sources in ZNIs, the French government primarily uses three economic instruments:

– purchase obligation, where producers of renewable energy benefit from a guaranteed purchase tariff over a fixed period, for example twenty years for photovoltaic. At the beginning of 2017, CRE delivered an opinion on a photovoltaic decree providing tariffs differentiated according to zones;

– the calls for tenders, under which the implementers of the approved projects receive a purchase contract for their production for a fixed period at the bidding price in their tender. In 2016, two calls for tenders were issued specifically in ZNIs, one for photovoltaic installations with storage capacity, the other for self-consumption installations (see page 134);

– direct contracts allowing the operator of a power plant to sell electricity production to the incumbent supplier at a tariff that is defined following an in-depth analysis by CRE of the investment costs and production costs applying the methodology it published on 23 April 2015[25].

(25) Deliberations by the Energy Regulatory Commission on 23 April 2015 to issue a communication related to the amended methodology to be applied to review the investment and operational costs of electricity production facilities located in non-interconnected zones and financed by EDF SEI or Électricité de Mayotte, or that are the subject of direct contracts between third-party producers and EDF SEI or Électricité de Mayotte.

CRE believes that the tariff decree is only suitable for sub-sectors where the cost levels are sufficiently well-known and consistent from one project to the next to avoid producing windfall effects. It is only in favour of this approach for small photovoltaic installations and has asked for the withdrawal of the other decrees. On the other hand, it believes that use of calls for tenders is the best approach for large photovoltaic installations where there is greater competition.

In other cases, in order to adjust the support provided to the actual costs, CRE recommends using a purchase contract concluded with the incumbent operator, after analysis of the costs.

In this case, CRE deliberated in early 2016 on a direct contract between the parties to bring together in a single sales contract to EDF SEI the electricity produced by the two geothermal units located in the town of Bouillante in Guadeloupe. CRE also carried out an in-depth analysis of the two projects for a biomass power station in French Guiana which lead to two deliberations to define compensation in April 2017. Understanding the complexity of the biomass sub-sector in this country was one of the aims of the visit CRE carried out to French Guiana in 2016 (cf. page 150).

2.2. Storage, an accelerator for the integration of renewable energy in ZNIs

Act LTECV[26] set a target of 50% renewable energy in ZNIs' energy mix by 2020. In this context, the integration of intermittent renewable energy sources, such as photovoltaic and wind turbines is an important factor for the electricity systems in ZNIs, mainly because of their small size and the lack of opportunities for proliferation. To guarantee the safety of the electrical system, Article L.141-9 of the Energy Code allows the distribution system operator (GRD) to disconnect the last photovoltaic or wind turbine installations[27] connected to the network when the total power injected by intermittent means of production exceeds the threshold defined in the multi-annual energy programme (PPE) of the ZNI in question. In fact, the power reserve available may prove inadequate (or creating it may prove too expensive) to compensate for the loss in frequency if there is a significant reduction in intermittent production facilities.

(26) Act No. 2015-992 of 17 August 2015 related to the energy transition for green growth.
(27) These provisions apply more generally to any production facility which recovers energy that is a by-product on an ad hoc basis.

In its opinion of 27 October 2016 on the draft specification for a call for tenders for photovoltaic power with storage[28], CRE noted that the necessary reserves of power to handle the fluctuations in photovoltaic and wind turbine production and to achieve the targets for raising the thresholds for disconnection planned by the PPEs can be provided by centralised storage facilities. Managed by the GRD, these central facilities would be able to provide a high level of flexibility in the services provided, enough to meet the changing needs of the system, unlike the small decentralised storage units which are deployed under calls for tenders for photovoltaic supplies with storage.

For this item, Article 60 of the Act on Amended Finance for 2012[29] expanded the scope of definition of projects falling under the definition of electricity public service costs in electricity storage projects managed by the GRD. The costs related to this will not be taken into account for the cap on excess production costs that the storage projects help to prevent.

To evaluate the compensation linked to a storage project, CRE defined a methodology based on responses from local authorities, ADEME, the GRDs and parties who may potentially carry out the project, during the public consultation initiated at the end of 2016. This methodology, approved on 30 March 2017[30], relates to projects sponsored by any of the parties involved. It provides for the GRD publishing the technical requirements required for this type of facility, to ensure that the solutions match the needs of the electricity system.

“To evaluate the compensation linked to a storage project, CRE defined a methodology based on responses from local authorities, ADEME, the GRDs and parties who may potentially carry out the project.

Apart from the supply of reserve power to allow regulating the frequency, the load transfer will facilitate using those means of production which work at base levels, thus avoiding the use of more expensive peak hour means. Using storage in this way could generate savings in variable production costs, for example, fuel and maintenance, but also fixed costs from potentially deferred investment in the means of production.

The centralised storage facilities that were reviewed on the basis of this methodology defined on 30 March 2017, will also deliver solutions to handling bottlenecks in power and current on the distribution and transmission networks in ZNIs. Thanks to storage, the control of electrical power by injections and withdrawals in one part of the network can more easily be adjusted and the management of the flow of electricity can be improved. The necessary investments to improve the networks can be spread across time, leading to a reduction in costs which in turn helps to reduce the TURPE network tariff.

(28) Deliberations by the Energy Regulatory Commission on 27 October 2016 leading to an opinion on the draft call for tenders for the creation and operation of solar power based electricity generation facilities with power of over 100 kWp located in non-interconnected zones.
(29) Act No. 2012-1510 of 29 December 2012 for Amended Finance for 2012
(30) Deliberation by the Energy Regulatory Commission on 30 March 2017 to issue a communication on the methodology applied to review electricity storage in non-interconnected zones

3. CRE ENSURES THE MEANS OF GOOD PRODUCTION FUNCTION

CRE's methodology for evaluating the investment and operational costs of the means of production for electricity in ZNIs allows producers to request a review of their payments, especially in the event of any significant changes in the level of the contract following an event which is beyond their control.

On this basis, CRE was approached several times in 2016 on behalf of power stations operated by Albioma (hybrid power stations co-generating from bagasse[31]-coal, Bois Rouge 1 and 2, Le Gol-A and Le Gol-B in Réunion, Caraibes thermal coal-burning power station in Guadeloupe) following changes to their environmental regulatory context in terms of:

- Treatment of gaseous effluent (IED Directive). The amendment to the regulatory framework applies new emission limits for some pollutants, especially sulphur dioxide (SO_2) and the nitrogen oxides (NOx); these values will apply in ZNIs from 1 January 2020.
- Treatment of liquid effluent. The new regulatory framework requires producers to put in place much more substantial resources for treatment of liquid effluent;
- management of solid waste from combustion. The decree of 12 December 2014[32], which defines the system of storage of inert waste (ISDI) from 1 January 2015, requires certain producers to revise their plans for the disposal of solid waste from combustion. For example, the waste from the Caraïbes d'Albioma power station, previously used as landfill in quarries, must now be disposed of, depending on its type, in non-hazardous waste storage facilities (ISDnDs) or inert waste storage facilities (ISDIs).

Considering, in its analysis, that the impact of aligning production facilities to these standards would be substantial, CRE took into account the excess investment and operational costs involved, and revised the compensation levels.

4. CRE CARRIES OUT ON-SITE VISITS TO BETTER UNDERSTAND LOCAL CHALLENGES AND TO DELIVER SUITABLE SOLUTIONS

In view of past and future financial challenges associated with the development of electricity production in ZNIs, CRE decided to initiate, to the extent that resources permit, a cycle of visits to these zones in order to better understand problems and local issues. Its teams therefore visited production sites, and met representatives of local authorities and various actors in the energy sector.

After an initial visit to Mayotte and Réunion in October 2014, CRE visited French Guiana and Martinique in 2016.

(31) Bagasse is the sugarcane waste left upon extraction of the sugar.
(32) The decree of 12 December 2014, related to the conditions for acceptance of inert waste in the facilities referred to in Sections 2515,2516,2517 and in the relevant inert waste storage facilities in Section 2760 of the nomenclature of classified facilities.

4.1. La mission de mars 2016 en Guyane

In its report of February 2017, CRE presented an inventory of the specific factors affecting French Guiana and analysed the situation in the electricity sector, as far as was possible from its visit.

Its main conclusions highlight the issues shared with other zones: the risk of stranded costs, difficulty in establishing reliable cost estimates, risk of the public energy service funding other public policies, the robustness of the electricity system, lack of MDE efforts.

Development based on the use of biomass and hydro and solar resources

French Guiana is the only ZNI where the share of renewable energy in the energy mix is over 50%. This significant percentage has been achieved due to production from the Petit-Saut dam, which does vary depending on climatic conditions.

Apart from Petit-Saut, the potential for renewable energy is little exploited, most of what there is being in the photovoltaic sub-sector. On this point, the PPE plans to exploit substantial local biomass resources, with some very ambitious development objectives of more than 40 MW installed by 2023. Achieving these objectives would require simultaneous exploitation of nearly all identified sources of supply. These are very diverse, and need varying approaches to exploitation: co-products from sawn lumber, biomass from forestry production, urban and farm waste products, energy plantations, and even recovery of some of the wood flooded behind the Petit-Saut dam. CRE carefully examined the development constraints on the biomass sub-sector with the aim to assess the production costs of the two biomass power projects proposed by Voltalia and Albioma, on which CRE deliberated in April 2017.

Although the Territorial Authority of French Guiana sees biomass as being one of the priority development approaches for the electricity system, the energy aspect is only one of the economic aspects of this still emerging sector. To provide structure, the Authority plans to create synergies between the sectors of electricity production, agriculture, forestry and wood manufacturing. Production of electricity from biomass, which benefits from specific subsidies through the public service costs for energy, provides the Authority with an opportunity to improve the profitability of this sub-sector, to facilitate the establishing of industrial and economic infrastructure, creating jobs at different stages of the value chain.

To counter the risk of bringing the total costs of structuring the biomass sub-sector to bear entirely on public energy service costs, CRE alerted the authorities to the choices related to the economic development of the sub-sector. In addition, it recommended that, while waiting for the sub-sector to be structured, State services should establish reference prices for all proposed sources of supply.

The hydro-electric sub-sector also has some interesting aspects with regard to its potential. Several sites have been identified for new run-of-river installations and for a large dam. However, in order to ensure consistency between the developmental aims of competition, differentiated uses of water resources, and reduction of public service costs, CRE has recommended that a call for interested parties should be organised and reviewed by the Territorial Authority of French Guiana.

As for the photovoltaic sub-sector, whose costs are falling, it would be useful to continue its development. However, taking into consideration the needs of the Guianese electricity system, reliance on centralised storage by the system operator would have the advantage that it allows greater flexibility and reduces the financial impact on the public service costs.

Developing flexible means of production alongside the far-reaching changes initiated by the PPE

The strong population growth in the West of French Guiana, a long way from electricity production sites, and the likely development of a mining industry means revisiting the question of geographic spread and the sizing of future means of production for the electricity system on the coast.

The age of the power station in Dégrad des Cannes, one of the two pillars of the electricity system in French Guiana, alongside the Petit-Saut dam, makes it vital that a new thermal power station be built before 2023. Optimising its design means taking into account the development of the biomass power stations which meet the same need by producing base electricity and which also have benefited, since the issue of Order No. 2016-1059 on 3 August 2016, from a priority for injecting power into the network. Poor alignment of the development of these two sub-sectors could generate sizeable stranded costs if the new thermal power station was oversized. It could also increase the risks for security of supply if biomass grows less than is forecast.

> *With the intention of diversifying means of production, it is important to look to shift the electricity system towards solutions that offer good guarantees of flexibility and allocation of reserve power.*

In general, with the intention of diversifying means of production, it is important to look to shift the electricity system towards solutions that offer good guarantees of flexibility and allocation of reserve power. The imbalances between production and consumption sites exposed to an increased reliance on renewable energy, require special attention be paid to the overall inertia in the system and the potential need to increase the HVB/HVA lines and stations.

Now equipped with a tool, due to the preparation of the PPE, the Authority is hoping to lift the technical and economic constraints that adversely affect the electricity system in French Guiana. On this point, collaboration with the system operator would need to be expanded to examine the reliability and relevance of various upstream options, in order to improve the quality of supply to customers and optimise production capacity, while controlling the level of public service costs.

The challenge of supplying communities in the interior and the distances by which they are not connected to the coastal electricity system

Communities in the interior are basically supplied by small diesel-powered stations. The cost of diesel delivered there is very high. As some communities are not accessible by road, the diesel is transported by canoe, which creates problems when the rivers are near their low-water mark and are not really navigable.

For sites with difficult access, other means of production can prove relevant both economically and technically, like the “diesel/photovoltaic” hybrid systems linked to storage solutions, small hydro-electric dams, or small biomass power stations. The application of the Amortization Fund for Electricity Costs (FACE) would benefit from being extended to cover financing these production facilities.

Strengthen collaboration on demand management (MDE) between the Authority, EDF SEI and ADEME.

During its visit, CRE noted that the collaboration between the teams from the Territorial Authority, ADEME and EDF on demand management actions, needed to be improved over time. Looking at what is at stake, CRE feels it is necessary to inject new life into the synergy between these actors. This is also the approach it has adopted in its methodology for the development of small MDE actions, published on 2 February 2017.

Given the speed in the growth of new housing required by the demographic curve in French Guiana, it would seem appropriate to structure the MDE policy using regulatory measures. These could relate particularly to the energy rating of housing and electrical and electronic equipment, and making aid conditional on the construction of housing and infrastructures that respect the energy rating criteria.

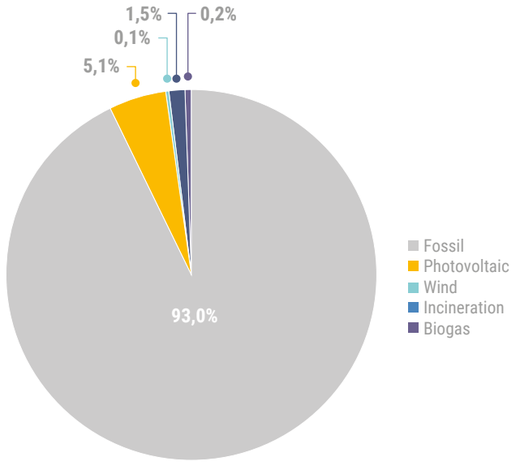
4.2. Visit to Martinique in November 2016

While awaiting the publication of the report of the visit made during 2017, this section reports some of its preliminary conclusions.

Martinique is an island which is also a French territory, located in the middle of the Lesser Antilles, between Dominica to the north and Saint Lucia to the south. Martinique differs from most other French territories in that it is very small, and has a high density of population. With fairly even temperatures throughout the year, Martinique’s tropical climate has two seasons with a varying number of hours of sun and rainfall. During the “winter” season, weather disturbances may turn into depressions or tropical storms and sometimes hurricanes. In addition, Martinique’s geographical location and its geology mean it is at risk of earthquakes.

Electricity production is based mainly on thermal processes, with the principal ones being the new power station at Bellefontaine which was recently commissioned to replace an older power station, the Pointe des Carrières power station, and the combustion turbine at Galion. The proportion of renewable energy is low, being only 7% (see Illus. 6).

Illustration 6: Electricity production mix in Martinique in 2015



Limited opportunities to increase the share of renewable energy, but ambitious targets

The share of renewable energy in the Martinique energy mix is strongly dominated by the photovoltaic option, with other options remaining marginal. It should, however, be noted that Martinique is the only ZNI which has a facility to produce electricity by incinerating household waste, which in 2015 provided 1.5% of total production on the island.

Other than the wish to support the growth of photovoltaic installations and wind turbines, with concomitant development of storage, the Martinique Territorial Authority is keen to help make innovative projects happen. These are aimed at reducing reliance on thermal energy production, such as an electricity power station using heat energy from the sea, or power stations based on bioethanol from sugar cane planted in areas

contaminated by kepone, or even urban micro-STEPs (energy transfer pumping stations) to avoid relying on combustion turbines. However, the execution of these projects is still conditional on the realisation of feasibility studies and absence of conflicts of use, as well as obtaining various permits. In addition, special attention needs to be paid to the inevitable stranded costs, especially the availability costs of thermal power stations, resulting in excess capacity in the current facilities compared to consumption growth which is almost at a standstill.

Despite the geothermal potential shown by various studies, there is no operational facility in Martinique as yet. The identified strata require drilling boreholes to estimate their potential more accurately and confirm there is no conflict between the planned installations and the status of some protected areas. Martinique is also being studied, as is Guadeloupe, as a potential area for interconnection with a future geothermal production plant on the neighbouring island of Dominica.

Among the most advanced projects, the commissioning in 2017 of the first power station (34 MW) using a mix of bagasse (sugar cane waste) and biomass will strengthen the renewable energy mix.

Adequate production, but poorly located

Electricity production is mainly provided by the thermal power stations at the two main sites of Bellefontaine and Pointe des Carrières. This regrouping of production facilities close to the capital of Fort-de-France and in the north no longer corresponds to the pattern of concentration of demand growing in the centre and south of Martinique. The combustion turbine at Galion (40 MW) helps to provide security of supply in the east, but is more of a back-up facility than a base level supply. The configuration of production, plus the need for better connections to the HVA network, means there are two extremes within the electrical system.

> *To avoid a worsening of the quality of supply to customers, and regular blackouts, the stability of the network needs to be improved.*

Apart from the imbalance between where the production facilities are located and where consumption is located, and the absence of grid coverage, the system is constrained by the technical design of the main production facilities, and the growth of intermittent renewable energy sources. All these factors taken together lead to inadequate stability in the network, which has lost inertia and reacts more violently to fluctuations in frequency, even as far as total load shedding. To prevent a deterioration of quality of supply to customers, and regular outages, the stability of the network must be improved, which means exceptions are being made in applying economic precedence between installations when used as fall-backs, in turn leading to higher public service costs.

Work has recently been initiated by the system operator to revise plans for load shedding and amend the thresholds for load shedding. Other related work is also being planned.

The upcoming commissioning of the bagasse-biomass power station in the east of the island and more generally the forecast of renewable energy deployment linked to the Authority's targets require a fresh approach if they are going to be successfully integrated into the current, fragile system. In this context, setting up some means of centralised storage, such as batteries or STEPs(33) could improve the system by providing initial or secondary reserves, and by reducing the number of drops in frequency.

In this context, the system operator's role in educating and highlighting the operational features of the Martinique electrical system is essential. In particular, explicit guidelines on the geographic distribution of demand, of production and storage facilities, looking at the outlook for overall growth, and on the weaknesses of the network need to be added to the PPE and into the forecast overviews of balancing supply and demand for electricity by the system operator.

Development of storage: clear guidelines needed

To support the growth of renewable energy, especially the photovoltaic sub-sector, it is planned to install centralised storage facilities, at the level of a neighbourhood, with a high level of photovoltaic equipment. Although still under study, the technical and economic benefits of this solution, referred to as "smart grid neighbourhoods" are of interest. If this approach is adopted, it will be necessary to step up the official flow of information in order to avoid setting up parallel means of decentralised storage, with a much higher impact on the level of public service costs, without necessarily providing real added value to the electricity system.

Tariff incentives, an important mechanism in energy saving

Despite the long-term involvement of the Territorial Authority, ADEME and the system operator in developing and promoting energy efficiency campaigns, consumer behaviour has not sustainably changed. In this respect, the role of tariff signals would benefit from greater sharing.

In fact, even though the sales tariffs for electricity in ZNIs are equalised in level, their structure is based on the marginal production costs of the facilities in each zone, namely the variable production costs of the last facility drawn from. Therefore, reducing consumption at peak hours allows consumers to reduce their electricity bills and reduces the use of facilities with high production costs, and who are generally among the heaviest polluters. Hence the need to increase consumer awareness of the tariff signal.

(33) Pumped Storage Power Plant (STEP)

ANNEXES

SOME CRE DELIBERATIONS

1. REGULATED SALES TARIFFS

CRE deliberation of 31 May 2016 leading to a decision on access to consumption data and contact details for customers who are benefiting from interim contracts under the provisions of parts III and VI of Article 25 of Act No. 2014-344 of 17 March 2014 on consumption.

CRE deliberation on 4 May 2016 leading to a decision on the appointment of suppliers to provide continuity of supply for interim contracts in the gas and electricity market

CRE deliberation on 14 December 2016 leading to a decision on the appointment of suppliers to provide continuity of supply for interim contracts in the market for gas and electricity

Since 1 January 2016, non-domestic consumers whose sites have a contract for over 36 kVA of power, or who have annual consumption of natural gas of over 30 MWh are no longer able to subscribe to the regulated sales tariffs. In order to avoid electricity and gas cuts, their contracts were automatically transferred to a default arrangement, a so-called “interim contract”, for six months, up to 1 July 2016.

Article 2 of Order No. 2016-129 on 10 February 2016 also provides that CRE shall define arrangements for access by companies approved by the ministry to supply natural gas and electricity, and who request it to the consumption data and contact details for customers who are benefiting from interim contracts under the provisions of parts III and VI of Article 25 of Act No. 2014-344 of 17 March 2014 on consumption.

In its deliberations on 31 March 2016, CRE defined the arrangements for transmitting data about consumption and contact details held by the incumbent suppliers, to alternative suppliers who requested it. It decided that the following data should be provided:
For natural gas:

- the identification details for clients and sites: gas meter PCE number or equivalent, site address, invoice address, customer trading name, name and address of contact person, customer sector classification;
- consumption data: last known annual reference consumption (CAR) and profile.

For electricity:

- the identification details for clients and sites: electricity meter point reference number (PRM) or equivalent, site address, invoice address, customer trading name, name and address of contact person, customer sector classification;
- consumption details: power contracted for by tariff period, minimum monthly consumption per tariff period over the last year, and if relevant, minimum 10 mN load curves over the last year.

CRE defined that the provision of data must be done in accordance with the provisions of Act No. 78-17 of 6 January 1978 on Information Technology, data files and civil liberties, related to the requirement to inform the persons concerned and for security of data required of those responsible for processing data, and the rights of the persons involved concerning the processing of personal data.

In addition, under the provisions of Order No. 2016-129 of 10 February 2016 related to a continuity of supply following the end of the interim contracts for gas and electricity, CRE issued a call for tenders on 17 March 2016, for the appointment of suppliers to supply customers who had not yet chosen a supplier at the end of the interim contract period pursuant to paragraph III of Article 25 of Act No. 2014-344 of 17 March 2014 concerning consumption.

In two deliberations, on 4 May and 14 December 2016 CRE appointed suppliers by assigning batches of sites for which they were to supply without a contract. In its deliberations on 14 December 2016, CRE noted that given the number of sites still remaining on interim contracts as of the month of December 2016 (around 2,700 for electricity and 3,600 for natural gas), it appeared that the current level of interim contracts was not encouraging customers to sign up for a free market contract.

Given all these factors and the failure of the second call for tenders (32 batches declared void for electricity and 9 for gas), CRE recommends that the price for interim contracts should be set in such a way that this incentive is increased.

2. THE PUBLIC ELECTRICITY SERVICE

CRE deliberations of 13 July 2016 related to assessment of public service costs for energy for 2017

Under Act No. 2015-1786 of 29 December 2015 on Amended Finance for 2015, which introduced reforms of the financing of public service costs, CRE will proceed with an assessment of the level of public service costs for energy, which it will submit to the Minister of Energy by 15 July of each year, this under the provisions of Articles R. 121 -30 of the Energy Code.

Public service obligations assigned to companies in the electricity and gas sectors, under the Energy Code, mean that they accept costs that are then reimbursed by the State:

- for electricity: the public service costs, as defined in Articles L.121-7, L.121-8 and L.121-8-1 of the Energy Code, are excess costs resulting from support mechanisms for renewable energy and cogeneration, additional costs related to the equalisation tariff in non-interconnected zones and additional costs in connection with social provisions for vulnerable households and excess costs linked to load shedding;
- for gas: the public service costs, as defined in Article L.121-36 of the Energy Code comprise the excess costs resulting from social provisions for the benefit of vulnerable clients, and additional costs resulting from the purchase obligation of biomethane injected into natural gas networks.

In its deliberation on 13 July 2016, CRE assessed the total level of the public service costs for energy to be paid as compensation in 2017 at €8,005 million.

CRE therefore noted an increase of 19% compared to the amount assessed for 2015, which totalled €6,712 million. This increase of €1.3 billion is primarily the result of:

- seeking to develop options for production of electricity from renewable energy and cogeneration, together with a fall in prices in the electricity wholesale market;
- expected growth in the number of beneficiaries of social payments for electricity and gas. This, however, is in part offset by the reduction in the excess costs resulting from tariff equalisation in ZNIs, due to the fall in commodity futures prices, in the expectation that some areas will have a higher percentage of hydro-electricity than in 2015, and less reliance on thermal production.

These public service costs for energy in 2017, include 71% for the support for renewable energy, 17% for tariff equalisation other than renewable energy (21% including renewable energy), 6% for cogeneration, 5% for social provisions, and finally costs linked to purchase contracts in metropolitan France excluding renewable energy, at less than 1%.

As part of evaluating the level of the public service costs for energy, CRE is also responsible for applying an update to the forecast public service costs for energy for the year 2016. The total amount of these charges is now €7,553 thousand, which is a variance of €394 thousand compared to level of costs initially planned for 2016 (€7,160 million). This variance, included in the evaluation of the public service costs to be refunded in 2017, results mainly from the fall in prices seen on the electricity wholesale markets.

Finally, as part of the timetable agreed by the ministers responsible for finance and for energy related to the repayment of the shortfall in compensation for EDF, CRE assessed the total amount of the cumulative shortfall for compensation to EDF for public service costs for electricity it has borne at €5,879 million as of 31 December 2015. Applying the timetable for repayment of this deficit, defined by a decree on 13 May 2016, has led to including in the assessment of EDF charges only a part of the deficit plus related interest charges, amounting to €1,327 million.

As a result, CRE assessed the total amount of the public service costs for energy to be paid as compensation in 2017 at €9,705 million.

3. REGULATED SALES TARIFFS

CRE deliberations on 13 July 2016 related to proposed regulated tariffs for sale of electricity

Under Article L.337-4 of the Energy Code, CRE is now responsible for sending proposals to the Ministers of Energy and the Economy on the regulated sales tariffs for electricity in mainland continental France, and also in non-interconnected zones who are not connected to the mainland continental network.

Regulated sales tariffs in metropolitan mainland France

In metropolitan mainland France, regulated sales tariffs for electricity are available only to customers who have contracts for 36 kVA or less.

CRE's proposal applies the price stacking method pursuant to Article 337-6 of the Energy Code to define the level and structure of regulated sales tariffs, in order to make sure that all customer regulated sales tariff can be matched or bettered by alternative suppliers, in order to invoice each customer with a tariff that reflects the costs they engender and to make the tariff financially balanced, by improving the cost coverage by tariffs regardless of climatic conditions.

It also adds:
the price of regulated access to incumbent nuclear electricity (ARENH);

- the cost of additional procurement at market prices which reflects the algebraic cost of procurement of the point on the supply curve not covered by ARENH, and modelled using a forward price curve model. This procurement is smoothed over two years in order to enable it to be reproduced by alternative suppliers. The risks related to market procurement are included in the element to cover commercial activities. The structure of energy procurement reflects the price signals sent by the market and, where relevant, by ARENH;
- the capacity guarantee, whose cost is considered to be zero for 2016, and will be reflected in tariffs in the first year where the provision applies;
- the costs of electricity transmission;
- the costs of selling, with CRE applying those of the incumbent operator;
- the costs related to supply activities, including trading fees, clearing fees, and product delivery fees. CRE also includes the fees for access to the stock markets, which are publicly available. CRE also includes a cost of €0.3 /MWh for variances in the level of balancing, and costs of €0.15 /MWh for RTE withdrawal. The amount included in the regulated sales tariffs for the C3S (Company social solidarity tax) is €0.2 /MWh;
- as well as the normal profit on supply activities.

In addition, CRE proposed including part of the backlog deficit in covering costs for the tariff period from 23 July 2012 to 1 August 2013.

CR also noted that the proposed tariffs provide coverage for all accounting costs for supply activities, including financial charges, but excluding guaranteed returns.

Under Article R.337-20-1 of the Energy Code, CRE smoothed the changes in the structures of tariffs.

In terms of electricity sales regulated tariffs in mainland France, the changes in tariff consist of an increase on current average levels of:

- 0.5% for blue residential tariffs;
- 1.5% for blue business tariffs.

Regulated tariffs in ZNIs

Under Article L. 337-8 of the Energy Code, the regulated sales tariffs are offered to all consumers in non-interconnected zones.

CRE's proposal applies the stacking approach pursuant to Articles R. 337-18 to R.337-24 of the Energy Code, which has applied since 1 January 2016.

Article R.337-19-1 of the Energy Code defines in particular how the principle of tariff equalisation is to apply.

For ZNIs:

- the blue tariffs applicable in continental metropolitan France apply identically, in terms of level and structure, to consumers in ZNIs with low voltage connections of 36 kVA or less;
- the "blue plus" tariffs apply to consumers in ZNIs (except Corsica) with low voltage connections of over 36 kVA. They are based on the blue non-residential tariffs in mainland metropolitan France for contracts of 36 kVA, and track the changes in those;
- the yellow tariffs, which apply only in Corsica, and the green tariffs reduce prices by 1.0% and 1.3% respectively for these consumer categories, which reflects the price trends for electricity in mainland metropolitan France.

N. B.: in a decision on 28 July 2016, published in the French Official Journal on 29 July 2016, the ministers for energy and for the economy set the regulated sales tariffs exclusive of electricity, in line with CRE's proposal.

4. ARENH

CRE deliberations of 7 November 2016 on a proposed decree in application of Article L.336-2 of the Energy Code, and amending the decree of 28 April 2011, issued in application of Title II, Article 4-1 of Act No. 2000-108 on the modernisation and development of the public electricity service.

The decree based on Article L.336-2 of the Energy Code, and issued based on a proposal from CRE, defines, on the one hand, the conditions of sale of regulated access to incumbent nuclear electricity (ARENH) from EDF (the vendor) by suppliers (the purchasers), and, on the other hand, the mandatory terms of the framework agreement between these same parties (the "Framework Agreement" below).

Article 2 of the decree of 28 April 2011 states that changes to the template Framework Agreement can only be made by a decree issued on the basis of a proposal from CRE.

Although no suppliers exercised their rights under ARENH between 1 January 2016 and 7 November 2016, the implementation of the capacity mechanism, and the recent increase in forward product prices on the wholesale market are likely to make ARENH more attractive.

In this context, under Article 2 of the decree of 28 April 2011, CRE proposed various changes to the decree of 28 April 2011, and its attached framework agreement, following its deliberations on 7 November 2016.

Developments related to cancellation provisions:

CRE is proposing to restrict the option of early cancellation by the purchaser, by only making it available if the price of ARENH changes by more than 2%, or if there is a substantial amendment to the Framework Agreement, or changes in the regulations governing ARENH which affect the terms of supply substantially and to the Purchaser's disadvantage.

As an exception, CRE proposes that should it occur before 1 April 2017, the change to the arrangements in Article R.336-16 of the Energy Code related to the ban on price fluctuations cannot be used to justify cancellation.

CRE also proposes that one of the parties to the Framework Agreement can cancel in the event that they are facing bankruptcy proceedings.

In the case of a cancellation instigated by the Purchaser, CRE suggests getting rid of the cooling off period of one year during which the Purchaser may not request a new Framework Agreement from the Vendor.

Developments related to guarantees:

CRE has proposed extending the list of ratings agencies for guarantors to include Fitch Ratings (in addition to Moody's and Standard & Poor's), and to lower by one notch the long-term rating level that guarantors must have.

CRE suggests that when renewing a guarantee, required whenever the Purchaser changes the amounts purchased for a new ARENH request, this may be done by means of an amendment.

CRE proposes that the purchaser does not need to provide any security if he makes a zero volume ARENH request. It also suggests that the Caisse des Dépôts et Consignations (the state Deposits and Consignments Fund) be responsible for releasing the guarantee to the Purchaser.

Finally, CRE suggests that the guarantee should begin on the last working day of the first month of supply, and be valid for up to 20 working days after the end of the supply period.

Changes required to implement the capacity mechanism:

CRE proposes that the capacity guarantees linked to the ARENH volume which is not actually delivered, should be cancelled, the evaluation of the size of the guarantees involved being pro rata of the time period during which delivery did not take place.

CRE suggests introducing a digital compensation mechanism in the draft decree concerning the methods for selling capacity guarantees linked to ARENH, in the case where a debtor for capacity certificates linked to ARENH does not hold any such guarantee.

N. B.: the decree was published in the French Official Journal (JORF) on 15 November 2016, and includes CRE's proposal without any changes, and assigns the execution of the decree to the Ministry's Director for Energy.

5. TURPE 5

CRE deliberations on 17 November 2016 leading to a decision on tariffs for the use of HVB public electricity networks

Under Articles L.341-2 to L.341-4 of the Energy Code, CRE defined the new tariffs for use of the public electricity transmission networks, known as "TURPE 5 HVB", which will apply to users connected to high voltage and very high voltage networks (HVB), and intended to apply for a period of around 4 years, from 1 August 2017, so that they are synchronised with TURPE 5 HVA-LV (which will apply to users connected at medium and low voltage).

TURPE 5 HVB gives RTE the necessary resources to meet the challenges of the energy transition, by integrating all the investment programmes and research and development proposed by the transmission system operator, and by opening up the option for RTE to obtain additional budgets during the course of the tariff period to finance smart grids.

The tariff structure for TURPE 5 HVB is based on the forecast trends in electricity volumes on RTE's transmission networks during the period from 2017 to 2020. It plans an increase in the time/seasonal indicator, which is the difference in the tariff between peak hours and the hours with a lower load on networks, to encourage actions to manage peak consumption.

Because of these factors, TURPE 5 HVB will increase on average by +6.76% on 1 August 2017, and will then track inflation on 1 August of each year (excluding any corrections through the clearing account for costs and profits). The increase in the tariff decided for 2017 is the result of a number of varying factors, some of which are outside RTE's control:

- the end of the under-estimation of TURPE 4 HVB linked to the clearing of the settlement accounts (CRCP and CRFI) from the time of TURPE 2 and 3;

capital costs remaining stable due to a drop in the nominal interest rate,

- offset by the increase in the RAB (+11% approx. during the lifetime of TURPE 5 HVB) given the continuation of the ambitious programme of investments undertaken by RTE since the time of TURPE 4 HVB, to drive forward the energy transition;
- an increase in net operating costs of +5.7% (or +2.7% excluding interruptibility) between 2015 actual levels and the forecast costs covered by the tariff in 2017, allowing RTE to adapt to the energy transition and the digital transformation;
- taking into account lost earnings due to the measure to reduce bills introduced under Article L.341-4-2 of the Energy Code;
- a reduction in withdrawals from the public transmission network (RPT);
- inclusion of the costs of putting initial rapid reserves and supplementary reserves under contract, as well as the additional costs caused by accepting a bid out of cost sequence in order to adjust levels and rebuild margins (+1.2%).

TURPE 5 HVB gives all parties involved a clear view of the tariff changes between 2017 and 2021, and raises RTE's performance incentives:

- introduction of an incentive for the costs of main projects to expand networks and for "non-network" capital costs;
- introduction of an incentive to control the costs of electricity losses;
- increasing the incentives for continuity of supply.

Deliberation by the Energy Regulatory Commission on 17 November 2016 leading to a decision on tariffs for the use of the HVA and LV public electricity networks

Under Articles L.341-2 to L.341-4 of the Energy Code, CRE defined the new tariffs for use of the public electricity transmission networks, known as "TURPE 5 HVA-LV", which will apply to users connected for medium voltage A (HVA) and low voltage (LV), and intended to apply for a period of around 4 years, from 1 August 2017, so they are synchronised with TURPE 5 HVB (which will apply to users connected at high and very high voltage (HVB)).

TURPE 5 HVA-LV gives RTE the necessary resources to meet the challenges of the energy transition, by including all the investment programmes and research and development proposed by ENEDIS, taking into account the impact of the deployment of Linky meters – especially the reduction of losses from the networks – and also introducing the option for Enedis to submit smart grid projects during the course of the tariff period.

The tariff structure for TURPE 5 HVA-LV is based on the forecast trends in electricity volumes on the networks submitted by RTE and Enedis for the period of 2017 to 2020. It plans an increase in the time/seasonal indicator, which is the difference in the tariff between peak hours and hours with a lower load on networks to encourage actions to manage peak consumption, as well as the increase in decentralised renewable energy production and self-consumption linked to electricity storage.

Given these factors, TURPE 5 HVA-LV will increase on average by 2.71% on 1 August 2017, and will then track inflation on 1 August of each year (excluding any corrections through the clearing account for costs and profits).

This modest level of growth is the result of a number of varying factors:

- a high level of investment that automatically leads to an increase in the regulated base assets;
- an increase in operating costs linked to new Enedis projects;
- an increase in the TURPE for HVB;
- a reduction in rates on the financial markets;
- a reduction in the costs of losses;
- integration of the productivity improvements carried out during the period of TURPE 4.

TURPE 5 HVA-LV gives all the parties involved a clear view of the tariff changes between 2017 and 2021, and increases performance incentives for operators, mainly by:

- introducing incentives for the unit costs of investments, on the "non-network" capital costs, and on the costs linked to compensation for electricity losses;
- increasing the incentives for continuity of supply and quality of service.

Finally, the mechanism for deferred tariff changes planned for the Linky project means that the regulated smoothing account will receive the expected effects on

6. SMART GRIDS

CRE deliberations on 8 December 2016 to publish information about the level of progress on the system operators' roadmap in this area, and proposing new recommendations on the promotion of smart grids for electricity and natural gas

Since 2010, as part of its responsibilities related to the good operation and growth of energy networks, and in line with energy policy targets to reduce greenhouse gas emissions, managing energy demand and increasing the share of renewable energy in end user energy consumption, CRE has been encouraging the transition of electricity and natural gas networks to smart grids.

This step, initiated in 2010, has led in particular to:

- setting up a dedicated website for smart grids,
- drawing up 41 recommendations for developing the legal, technical and economic framework needed to extend the smart grids, published in the CRE's deliberations on 12 June 2014,
- the publication by 1 November 2014 of a roadmap for the implementation of recommendations that affect them by each of three major system operators (RTE, Enedis and EDF SEI).

RE published a second deliberation in favour of the development of smart grids, in order to present an updated roadmap, establish the principle of an annual update of the roadmap, and to propose some new recommendations, in particular allowing the scope to be extended to natural gas and seeking synergies between the various energy networks.

As part of this, during its deliberations on 8 December 2016, CRE proposed a detailed progress report on the implementation of previous recommendations, and issued 17 new recommendations to operators, covering:

- support and encourage the development of new technologies and new services;
- improve the use of public electricity and natural gas networks;
- and increases in the overall performance of the electricity system.

The goal is to shift smart grids from the experimental phase to industrial deployment, both in mainland France and in non-interconnected zones to the continental grids.

CRE therefore asked especially those system operators who won the call for projects for "Smart electrical grids" under the New Industrial France campaign, to present all the technologies and functionality which they intend to implement, in order to stimulate research in this area and to speed up the deployment of smart grids on an industrial scale.

CRE also called on operators to adopt a "multi-energy" or "multi-flow" approach, meaning the organisation – in close collaboration with local authorities – of the management of various energy networks to complement each other, in order to benefit from synergies to manage them more efficiently and so reduce consumer's bills.

CRE also invited system operators to improve their coordination in the area of publication and use of consumption data, which are intended to be made available to consumers, local authorities and all parties involved.

CRE's new recommendations also related to the improvement of the stability of the electrical system. CRE in fact asked the operators of the public electricity transmission and distribution networks to put in place the necessary IT tools to allow reporting the locations of bottleneck areas of power and current in the networks they manage, in order to allow third parties to propose appropriate solutions to handle this congestion.

In addition CRE is paying special attention to the development of smart grids in island areas, in so called non-interconnected zones, inevitably more at risk of failure of the electricity network. CRE therefore asked the system operator EDF SEI, to inform it of the measures taken to improve the stability of islands' electrical systems, and to inform it of the progress of projects related to electricity storage in particular.

SUMMARY OF DECISIONS BY CORDIS AND BY THE COURTS

The connection of a group of buildings to a single public network distribution point is ignoring the monopoly on the operation of electricity distribution networks.

PARIS COURT OF APPEAL, 12 JANUARY 2017, ENEDIS / VALSOPHIA

The company Valsophia had referred to CoRDiS a dispute it was involved in with ERDF concerning the conditions for connecting a new group of buildings under construction to the public electricity distribution network.

In its decision of 6 May 2015, CoRDiS required Enedis to send Valsophia a technical and financial proposal with a single point of electrical connection for the entire property project, together with the provision of a metered breakdown statement.

Enedis appealed to the Court of Appeal of Paris to have that decision overturned.

By a ruling on 12 January 2017, the Court overturned it because the indirect connection of installations that consumed electricity was not permitted by the law in force at the time of the events.

In fact, until such time as Article 28 of Directive 2009/72 on closed distribution networks is implemented in national law *"only those companies referred to in Article L.777-52 of the Energy Code were authorised to manage an electricity distribution network on French territory"*.

The Paris Court of Appeal states that private electrical installations managed by Valsophia, enabling electricity to be transmitted to end users who are the owners or tenants of building lots, do indeed constitute electricity distribution networks. It felt that the solution of a single connection point enforced by Enedis therefore meant that Valsophia was operating an electricity distribution network. This solution ignored the monopoly on the operation of electricity distribution networks in France, and violated article L.111-52 of the Energy Code.

The Court also applies a distinction between an indirect connection for an electricity producer, and an indirect connection to the public distribution network for a consumer installation.

Procedure: details of the content of cases awaiting new rulings before the Paris Appeal Court

COURT OF APPEAL, APPEAL NO. 14-25830, RETZVOLTS/ ERDF

The company Retzvolts had referred to CoRDiS a dispute it was involved in with ERDF, now Enedis, related to the terms for connection of a planned photovoltaic production facility to the public electricity distribution network.

In a decision of 3 July 2013, CoRDiS decided on the one hand, that the cost of the extension for connecting the production facility to the public distribution network shown in the technical and financial proposal should, under Article L.341-2 of the Energy Code, be borne by the operator, and, on the other hand, that the deadline for acceptance of this proposal was suspended from the date of submission of the request for settlement of the dispute until the date that CoRDiS publishes the decision.

Retzvolts appealed to have the above decision overturned.

In a ruling on 25 September 2014, the Paris appeal court ruled this appeal inadmissible, under Article 9 of Decree No. 2000-894 of 11 September 2000. In fact, Enedis had not submitted a full statement of pleas in the month following the submission of the appeal declaration, even though it contained a summary statement of the pleas.

The Court of Appeal reversed and annulled this judgment by holding that the absence of a summary statement of the pleas in the declaration appeal put forward within the required deadline is sanctioned by the inadmissibility of the appeal. Therefore, failure to file a full statement of the pleas within one month following the submission of this declaration does not render the appeal inadmissible.

CoRDiS authority to define the financial terms for services provided by a supplier as part of customer management

PARIS APPEAL COURT, 2 JUNE 2016, GRDF, DIRECT ÉNERGIE AND ENI

In a decision on 19 September 2014, CoRDiS instructed GRDF to send the company Poweo Direct Énergie, now Direct Énergie, a new contract for transmission on the natural gas distribution network (hereafter: CAD) within six months, so as to no longer impose terms on the supplier to make it liable for payment, in its own name or on its behalf, of the tariff related to the natural gas distribution activities (hereafter: ATRD) or any other amount not covered by this tariff, particularly in connection with the processing of debts related to the share of transmission.

GRDF, Eni and Direct Énergie appealed against this decision to the Paris Court of Appeal.

Under a ruling on 2 June 2016, the Court confirmed the solution proposed for the handling of arrears related to transmission, as well as the retroactive nature of the CoRDiS decision. However, it did overturn the CoRDiS decision in that it rejected the request by Direct Énergie that CoRDiS determine the remuneration of the services which it provides to end users on behalf of GRDF. The court clarified that *"CoRDiS had no need to define the nature of the contract by which the supplier acted on behalf of the system operator vis-a-vis the final customer, but simply to define which services were involved, and to lay down a calculation method for the remuneration of the supplier when interacting with the final customer on behalf of the system operator"*.

As a result, the Paris Appeal Court urged GRDF to propose to Direct Énergie and ENI a contract amendment to the CAD covering in particular *"a fair and proportional repayment of the costs which [GRDF] did not incur due to the services provided on its behalf to the customers". These amendments and the relevant tariff that applies should be proposed"within a period of two months from the signature of the ruling and be submitted to CoRDiS by the same deadline"*.

Clarifications related to the concept of a serious and immediate breach of the rules governing access to the networks in the sense of Article L.134-22 of the Energy Code

CORDIS, ELICIO BRETAGNE, 31 AUGUST 2016

Elicio Bretagne referred to CoRDiS a request for protective measures in the context of settling a dispute with Enedis concerning the execution of a contract for access to the public distribution network for electricity for its wind turbine production facility.

In 2009, the company Elicio Bretagne signed an access contract for injection into the public electricity distribution network (hereafter: CARD-I) as well as an operation agreement with Enedis, the operator of the public distribution network for electricity in the area of the district where Elicio runs a wind turbine farm.

In 2016, Enedis told Elicio Bretagne that a period of disconnection (i.e. loss of access to the network or unavailability) was planned due to heavy maintenance work of the "RTE works" type on the source point to which the wind turbine facilities are connected. The initial disconnection planned was then delayed and increased in length due to heavy maintenance of the type "Replacement of input connection".

Elicio Bretagne asked Enedis for compensation for the loss of production during the period of disconnection. Enedis refused to meet this demand for compensation on the basis that the intervention consisted of a "Replacement of an installation" and that the general and specific terms of the contract did not provide for any such compensation.

Elicio believes that Enedis broke the general and specific terms of the CARD-I in that:

- The works that could lead to unavailability of the network, without compensation, are listed exhaustively in the contract. The work planned by Enedis is not included on this list.
- Enedis breached the contract stipulations by failing to organise advance consultations with Elicio about this unavailability.

As a precautionary measure, Elicio Bretagne asked the committee to instruct Enedis to maintain access by its production site to the public distribution network for electricity from the date of cut-off from the network, and for any other period of unavailability planned by the distribution system operator.

In its decision on 31 August 2016, CoRDiS rejected Elicio Bretagne's request for precautionary measures.

First of all, CoRDiS regarded the request as admissible, noting that:

- the obligation to produce summary records pursuant to Article R.134-13 of the Energy Code does not apply to precautionary measures.
- Article R.134-18 of the Energy Code does not require that a request for precautionary measures must be presented in a separate memorandum. Therefore, *"the fact that the introductory memorandum was recorded administratively under two separate numbers for the request for settlement of the dispute and for the request for precautionary measures has no effect on the correctness of the procedure"*.
- The request for precautionary measures was presented in addition to a request on the substance of the matter, in line with Article R. 134-18 of the Energy Code, and relates to an interruption to access to public distribution network for electricity and to a disagreement on the interpretation and performance of an access contract, referred to in Article L. 111-91 of the Energy Code.
- The contract did not provide for a mandatory mediation procedure before referral to the committee. The fact that ENEDIS had not put forward any proposal for an amicable settlement of the dispute is therefore not a reason to invalidate referral to the Committee.

On the merits, the committee noted, on the one hand, that concerted action had taken place between Enedis and Elicio Bretagne to limit, to a certain extent, the impact on the continuity of the network's operation. On the other hand, the committee noted that ENEDIS proposed an alternative solution to Elicio Bretagne, allowing it to continue production at a level of 20%, throughout the works, and that Elicio Bretagne, who had not submitted a forecast report of production, did not challenge this alternative solution.

Given the above, CoRDiS decided that *"Elicio Bretagne has not justified the assertion that the conditions under which the works were planned and the limitation in power that was intended by Enedis were such as to constitute a serious and immediate breach of the rules governing access to the network, therefore justifying the suspension of the work involved."*

Clarifications related to the concept of a serious and immediate breach of the rules governing access to the networks in the sense of Article L.134-22 of the Energy Code

CORDIS, MOULIN DU TEULEL/ENEDIS, 17 OCTOBER 2016

Moulin du Teulel referred to CoRDiS a request for protective measures in the context of a dispute it is involved in with ERDF, now Enedis, related to the use of an isolation unit of type DIN VDE 0126 in a hydroelectric production facility.

During a request for connection to the public distribution network, Moulin du Teulel challenged the choice of isolation unit required in the technical and financial proposal. Enedis was proposing to use isolation type B.1 given that the use of an isolation unit of type DIN VDE 0126 is not approved in the rules, especially when it involves a hydroelectricity plant.

According to Moulin du Teulel, the refusal by Enedis to install an isolation unit or type DIN VDE 0126, which is not based on any technical or safety grounds, would deprive it of access to the public electricity distribution network and would constitute a serious and immediate breach of the rules governing access to the networks in the sense of Article L.134-22 of the Energy Code.

Therefore, Moulin de Teulel requested the committee to order precautionary measures to be taken to use its isolation protection of type VDE 0126 for the period between commissioning the power station until the final ruling on the issue by the committee.

In its decision of 17 October 2016, CoRDiS decided that as a precautionary measure, the temporary use of an isolation unit complying with standard DIN VDE 0126 – with a VFR2014 regulator, may be implemented in the hydroelectric generating plant belonging to Moulin du Teulel.

CoRDiS first clarified that the time elapsed since the refusal by Enedis that was challenged by the operator could not, on its own, provide grounds for ruling out an immediate breach of the rules governing access to the network.

It then considered that the serious nature of the refusal applied for more than two years to Moulin du Teulel, who had carried out significant investment in renovating two existing turbines and installing two new turbines in order to increase the power of its plant, from which it is now unable to feed into the network, is not in dispute. Therefore, this refusal does constitute a serious and immediate breach of the rules governing access to the networks in the sense of Article L.134-22 of the Energy Code.

Finally, the committee noted that the use of an isolation unit that complies with the DIN VDE 0126 standard is not forbidden for production units, other than photovoltaic, provided that the installed power is 250 kVA or less.

Removal of an electricity line for safety reasons

CORDIS, MR. A / ERDF, (NO. 16-05-30), 30 MAY 2016

Mr. A. referred to the Standing Committee for Dispute Settlement and Sanctions of the Energy Regulatory Commission a dispute he has with ERDF, now Enedis, related to the removal of the electricity line and connection of a building to the public electricity distribution network.

The claim on the merits was accompanied by a request for precautionary measures rejected by CoRDiS in a previous decision (CoRDiS, 17 December 2014, no. 21-38-14).

On the one hand, CoRDiS deemed that Enedis was within its rights to remove the electricity line in question, at the request of the local authority, for safety reasons.

On the other hand, looking at the renewed request by Mr. A. for reconnection, the committee stated that under the provisions of Article L.111-6 of the Town Planning Code and the stipulations of Article 23 of the concession specification, Enedis was within its rights to agree with the unfavourable opinion issued by the town planning office responsible, and inform the applicant that his request for connection could not be approved.

The committee also declared inadmissible the requests from Mr. A for compensation, as there is no legislative or regulatory provision that allows it to accept this type of request.

Finding of non-execution of a CoRDiS decision related
to a contract for transport on the natural gas distribution network,
especially in relation to processing unpaid debts

CORDIS, DECISION OF 20 JANUARY 2016 RELATED TO THE EXECUTION OF THE DECISION ON 19 SEPTEMBER 2014

In a decision of 19 September 2014, CoRDiS instructed GRDF to send the company POWEO DIRECT ENERGIE, now Direct Énergie, a new contract for transmission on the natural gas distribution network (hereafter: CAD) within six months, in line with the principles restated in its decision, under which this contract either intentionally or as a side-effect requires the supplier to pay the amounts related to distribution activities which are incumbent upon the distribution system operator, (hereafter: GRD), notably in the context of processing arrears related to transmission.

The committee stated that unless an agreement was reached and a new contract signed within six months from the date of notification of the decision, the parties *"would be able once again to refer to CoRDiS to establish the compliance of a new draft contract with the principles of the present decision"*.

In a decision of 20 January 2016, CoRDiS considered that, in the absence of signing a new contract, as a result of disagreement between the parties, it was its role to assess the conformity of the draft amendment of 20 October 2015 handling the transmission in the event of arrears.

The committee reviewed each of the disputed points of the draft amendments to check their compliance.

Looking at the process of handling the "flow" of unpaid debts, the committee considered that setting up a measure to advance the amounts invoiced to a supplier for the benefit of the GRD did not, in itself, ignore the principles set out in the decision of 19 September 2014. CoRDiS also considered that the repayment of claims held by the supplier against the GRD could be made subject to their classification as "irrecoverable debts".

However, CoRDiS restated that these contractual adjustments may not be used to result in *"making the supplier bear the cost of payment of the ATRD tariff and any other sums owed to the system operator that were not covered by this tariff."* It noted that some of the contractual arrangements resulted in the transfer of the financial risk linked to non-payment of the sums due for transmission to the supplier, and therefore did not meet this requirement. The committee, for example, noted that the supplier could not be forced to establish, at its own cost and risk, using confirmation by an independent third party, that its claims exactly correspond to the amounts due for the usage of the distribution network by each end user, when this information is normally held by the GRD in the course of its operations. CoRDiS also considered that the

stipulations allowing the GRD to suspend repayment of the sums due the supplier, or even those related to a unilateral determination of the approach for auditing the sums involved, as was provided for in the draft amendment, were likely to allow the transfer to the supplier alone, of the risk related to providing the public service which is part of the role of system operator.

Looking at the "backlog" of debts due to DIRECT ENERGIE for the transmission of unpaid debts, the committee took into account that this backlog of debts will continue to grow up to the date of signature of the amendments. A detailed review of the draft amendment by CoRDiS then led to similar conclusions to those it had reached on the processing of the "flow" of arrears.

The committee recalled in particular that the retroactive calculation of the amount of the debts for each delivery point, was within the scope of the GRD, and therefore the supplier could not be required to carry out the costs and risks. Given the large number, the variety and the low unit value of the amounts to be reimbursed retroactively by the GRD, the committee stated that the parties could agree on a statistical method that was accurate enough to determine the value of the arrears built up over past periods before the CAD was amended.

CoRDiS concluded that the committee's decision on 19 September 2014 had not been implemented, and that GRDF shall within one month send DIRECT ENERGIE a new contract that complies with the principles set out, and notify CoRDiS within the same deadline.

Finding of correct execution of a decision by CoRDiS related
to the contract for transmission on the natural gas distribution network,
especially the handling of unpaid debts

CORDIS, DECISION OF 18 MAY 2016 RELATED TO THE EXECUTION OF THE DECISIONS OF 19 SEPTEMBER 2014 AND 20 JANUARY 2016

In a decision on 18 May 2016, CoRDiS noted that the new draft amendments to the contract for transmission on the natural gas distribution network (hereafter: CAD) handling unpaid debts for transmission, and submitted on 23 March 2016 by GRDF, complies with the principles restated in the CoRDiS decisions of 19 September 2014 and 20 January 2016, and that these decisions have been implemented, subject to the application of the new version of the contract.

Looking at the process of handling the "flow" of unpaid debts, the committee recalled that setting up a method to advance amounts to the GRD is only one of the potential operational solutions, and needs to verify whether it is compliant.

Within the framework of this arrangement, CoRDiS considered that the draft amendment could provide that the system operator refund the debts to the supplier as soon as they are recorded as unpaid debts in its accounts, without disregarding the principles defined by CoRDiS in its previous decisions.

Following through on these principles, the new wording of the draft amendment could also provide that the amount of these debts should correspond *"to the sums invoiced by the supplier to the customer for the use by the customer of the distribution network"* and the services provided to the customer by the system operator.

The committee noted that the other stipulations did not include the option of suspending reimbursement of sums advanced by the supplier, and refers to *"the agreement by the parties, both for the definition of the methods to be used for the audit and for the potential consequences of this audit"*. They therefore comply with CoRDiS' decisions of 19 September 2014 and 20 January 2016.

Looking at the processing of the "backlog" of debts owed to the supplier, CoRDiS noted in particular that the draft amendment included defining their value using two alternative methods: either by calculating an *"average proportion of the transmission cost"* of the total amount of transmission invoiced by the supplier, or by making sure that for each point of delivery or point of metering and estimation involved, the amount of the *"transmission of customers' unpaid debts"* correctly matches the amounts due for the use of the distribution network and the services provided by the system operator. It concluded that the wording provided in the draft amendment *"no longer permits transferring the financial risk related to non-payment of sums due for the use of the public distribution networks to the supplier"*.

The committee also noted, that where it referred to the stipulations related to the "flow" of unpaid debts, by referring to the agreement between the parties, both the determination of the audit methods for the "backlog" of unpaid debts and the potential consequences of these audits, the new wording of the draft amendment does indeed respect the principles set out by CoRDiS.

CoRDiS concluded from all these factors combined that the new amendment put forward does comply with the principles set out in its preceding decisions.

GLOSSARY

2020
See Climate and energy package

3RD ENERGY PACKAGE
Published in August 2009, the 3rd energy package aims to establish a level playing field in the EU Member States with a view to creating the internal energy market. It consists of two directives, on the electricity and gas markets (2009/72/EC and 2009/73/EC), two regulations, one on the conditions for access to networks for cross-border trading in electricity (Regulation (EC) No 714/2009), and one on the conditions for access to the natural gas networks (Regulation (EC) No 715/2009), as well as Regulation (EC) No 713-2009 establishing the Agency for the Cooperation of Energy Regulators (ACER).

ADJUSTMENT MECHANISM
RTE has power and energy reserves which can be mobilised when the balance between the production and consumption of electricity is at risk (loss of a production group or an element of the network, poor estimation of the level of consumption,...): system services (initial and secondary reserves) and the adjustment mechanism (third level reserve). The initial and secondary reserves are activated automatically within seconds of any disruption to the balance of the network. The activation of the third level reserve is performed manually, by requesting producers and consumers connected to the network to activate their adjustment bids for their production or consumption, upward or downward, in order to maintain the balance between production and consumption. Any actor may submit a bid under the adjustment mechanism and choose the offered activation price (excluding the existence of a ceiling for bids made by consumers under contract with RTE). When RTE activates an upward adjustment bid, that is to say a bid that can solve imbalances where "production is below consumption", RTE pays the actor who submitted this bid. Conversely, when RTE activates a downward adjustment offer, RTE collects the bid price. The costs and profits related to the activation of adjustment bids are managed by RTE in the adjustments-variance account, a management account which aims to be balanced: the costs of imbalances are charged to the actors involved in gap calculation and resolution process.

AGENCY FOR THE COOPERATION OF ENERGY REGULATORS (ACER)
The Agency for the Cooperation of Energy Regulators (ACER) is a European Community organisation with a legal personality, established by Regulation (EC) No 713/2009 and implemented in 2010. ACER has been operational since 3 March 2011. It is headquartered in Ljubljana, Slovenia. The objective of ACER is to assist the national regulatory authorities in performing and coordinating their regulatory tasks at the community level, and if necessary, to take complementary actions. It plays a key role in the integration of the electricity and natural gas markets.

Its responsibilities are as follows:
- develop and submit non-binding framework guidelines to the European Commission;
- take part in the development of the European electricity and natural gas codes, in line with framework guidelines;
- take binding individual decisions on the means and conditions of access and the operational security of cross-border infrastructure where national regulatory authorities fail to agree or jointly request ACER to intervene;
- decide on exemptions, if the affected infrastructure is located on the territory of more than one Member State, if national regulatory authorities fail to agree or jointly request ACER to intervene;
- provide opinions to the ENTSOG (European Network of Transmission System Operators for Gas) and ENTSO-E (European Network of Transmission System Operators for Electricity), in particular on network codes and on the draft network development plan in the entire Community;
- monitor the implementation of tasks for the ENTSOs;
- monitor the regional cooperation of the ENTSOs;
- advise European institutions on issues related to the domestic electricity and natural gas markets;
- monitor, in cooperation with the European Commission, the Member States and national regulatory authorities, the domestic electricity and natural gas markets, in particular retail prices for electricity and natural gas, access to the networks, including access to electricity produced from renewable energy sources, and respect of consumer rights.

ALTERNATIVE SUPPLIER
Suppliers that are not incumbent suppliers are considered alternative suppliers.

ARENH
Since 1 July 2011, suppliers have had the right to regulated access to incumbent nuclear electricity (ARENH) by purchasing electricity from EDF at a regulated price, in volumes determined by the regulator. Given that the production cost of nuclear electricity is lower than the price of electricity on the wholesale market to which private suppliers have access, this access provided by the law on the new organisation of the electricity market (NOME) of 7 December 2010 must allow consumers to continue to benefit from the competitiveness of French nuclear plants regardless of their electricity supplier, creating the conditions for real downstream competition and for all customer segments, individuals and businesses.

The law states that CRE proposes the prices, calculates the rights and controls regulated access to incumbent nuclear electricity.

The main parameters of the regulated access to incumbent nuclear electricity are:

- The total annual ceiling of incumbent nuclear electricity sold by EDF to private suppliers: it was fixed at 100 terawatt hours, which represents about one fourth of the annual production of the incumbent nuclear plants.
- The volume of electricity requested by each private supplier benefiting from ARENH during a given delivery period, which depends on the consumption of its customers. The law provides that this volume should reflect the share of nuclear production in the final electricity consumption representing on average, for 2011, 85% of the electricity consumption of customers.
- The price of ARENH: it must reflect the economic conditions of electricity production by the EDF nuclear power plants. It is calculated by totalling the production costs of EDF's incumbent nuclear electricity.

In the absence of the decree in the Council of State provided for by the NOME act, specifying the identification and accounting method of these costs, CRE had to establish the method it considers appropriate to reflect the economic conditions of incumbent nuclear electricity production. This method led, according to criteria adopted, to a price for ARENH of between €36/MWh and €39/MWh. The government justified the price of €42/MWh proposed in its decree of 17 May 2011 by allowing for expected investments required to ensure the security of the nuclear power plants.

CERTIFICATION

The certification procedure is designed to ensure that transmission system operators (GRTs) comply with the rules of organisation and independence in relation to companies performing production or supply activities within the vertically integrated company to which they belong. The main purpose of the effective separation of transmission system management activities and production or supply activities, is to prevent any risk of discrimination between users of these systems and to make independent investment decisions independent of the internal interests of integrated groups. The assessment of the independence of the transmission system operator covers three main topics, in line with the application of the organisational rules pursuant to Articles L. 111-11 and L. 111-13 to L. 111-39 of the Energy Code. Firstly, the internal organisation of the governance rules for the transmission system operators must comply with the rules intended to guarantee the functional and organisational independence of the system operator. Secondly, the transmission system operator must provide sufficient guarantees of its operational autonomy. Thirdly, the transmission system operator must ensure the appointment of a compliance officer, in charge of monitoring compliance with the independence requirements and with the code of good conduct.

CONTRIBUTION TO THE PUBLIC ELECTRICITY SERVICE (CSPE)

Established by Act No. 2003-8 of 3 January 2003, the Contribution to the Public Electricity Service (CSPE) aims to:

- offset public electricity service charges, which are supported by the incumbent suppliers, mainly EDF, Électricité de Mayotte and local distribution companies (LDC);
- offset a part of the costs related to the regulated interim tariff for market adjustment (TaRTAM), after compensation for the charges of public electricity service have been applied (in practice, the CSPE no longer offsets charges related to TaRTAM since 2009);
- finance the French Energy Ombudsman's budget

Public electricity service charges include:

- excess costs resulting from policies supporting cogeneration and renewable energy and extra costs resulting from "dispatchable" contracts;
- excess production costs in non-interconnected zones outside the French continental metropolitan electricity grid, resulting from the national tariff equalisation scheme (Corsica, overseas departments, Mayotte, Saint-Pierre and Miquelon and the Breton islands of Molène, Ouessant and Sein). The tariffs in these zones are the same as in metropolitan continental France although the production costs are higher;
- revenue losses and costs incurred by suppliers due to the implementation of the social tariff for electricity and their participation in the mechanism established for people in vulnerable situations;
- management costs of the Caisse des Dépôts et Consignations (Deposits and Consignments Fund).

COUNCIL OF EUROPEAN ENERGY REGULATORS (CEER)

The Council of European Energy Regulators (CEER) is an association created in 2000 at the initiative of national energy regulators of the Member States of the European Union and the European Economic Area. The CEER structure includes a general assembly, which is the sole decision-maker, a board, working groups specialised in various areas – electricity, gas, consumers, international strategy, etc. – and a secretariat in Brussels. A work programme is published every year. In accordance with its articles of association, decisions are made by consensus, failing that, by qualified majority vote.

DAY-AHEAD

See Day-ahead market

DAY-AHEAD MARKET

Market on which exchange transactions as well as purchases/sales of quantities of electricity or gas deliverable the following day are performed.

ELECTRICITY TRANSMISSION AND DISTRIBUTION SYSTEM

System designed for the transmission of electricity between the production and consumption locations. It consists of power lines that provide connections at given voltage levels and substations consisting of voltage transformers, connection and cut-off devices, measuring instruments, command and control equipment and equipment to compensate reactive energy. There are three system hierarchies:

- the bulk transmission and interconnection system which routes large amounts of energy at 400 kV or 225 kV over long distances, with a low level of losses;
- the regional distribution system that distributes energy at a regional level over 225 kV, 90 kV and 63 kV power lines, supplying the public distribution systems and large industrial customers;
- the distribution systems at 20 kV and 400 V supplying end consumers with medium voltage (SME-SMI), or low voltage (household customers, tertiary sector and small industrial facilities).

ENERGY MIX

Or power mix. Share of primary energy sources within the consumption of a country, usually expressed as percentages.

ENERGY-CLIMATE PACKAGE

Published in June 2009, this set of 3 directives (2009/28/EC, 2009/29/EC and 2009/31/EC) and one decision (No. 406-2009/EC) aims to reduce the greenhouse gas emissions (GHG) in the EU and to improve its energy security and competitiveness through the development of renewable energy sources. It is commonly linked to the so-called "3x20 by 2020" objective: increasing renewable energies in the EU's primary energy consumption to 20%, reducing its greenhouse gas emissions by 20% compared to 1990 levels and increasing its energy efficiency by 20% by 2020.

EUROPEAN NETWORK CODES

Developed by the European Network of Transmission System Operators for electricity and gas (ENTSO), the European network codes are common rules related to various cross-border issues listed in the Community regulations. They can become legally binding via comitology if the Agency for the Cooperation of Energy Regulators (ACER) makes a recommendation to this effect to the European Commission.

EUROPEAN NETWORKS OF TRANSMISSION SYSTEM OPERATORS (ENTSO)

There is a European Network of Transmission System Operators for Electricity (ENTSO-E) and for Gas (ENTSO-G). Transmission system operators cooperate at the European Union level via the ENTSOs, to promote the creation and the operation of the internal electricity and natural gas markets and cross-border trading, and to provide optimum management, coordinated operation and reliable technical development of the electricity and natural gas transmission systems. Within this framework, the ENTSOs create European network codes, on the basis of the framework-guidelines pursuant to the Agency for the Cooperation of Energy Regulators (ACER) and working closely with ACER.

FLOW-BASED

Calculation method for cross-border exchange capacities based on flow. It can take advantage of the interdependence between trade on several borders by dedicating the physical capacity of lines to trade with those of the greatest economic value (where the price differential is the largest). Bids are in fact accepted based on their impact on the lines, in addition to their price and volume.

FRAMEWORK GUIDELINE

Developed by the Agency for the Cooperation of Energy Regulators (ACER), these non-binding guidelines set out clear principles and objectives with which the European network codes developed by the European Network of Transmission System Operators for Electricity (ENTSO-E) and for Gas (ENTSO-G) must comply.

FREE MARKET CONTRACT

The prices of free market contracts are agreed freely on by suppliers as part of the contract.

FRENCH ENERGY OMBUDSMAN

An independent administrative authority, the French Energy Ombudsman is responsible for recommending solutions to disputes related to the performance of electricity or natural gas supply contracts and helping to inform consumers of their rights. All individual consumers and small businesses that have contracted to an electrical power equal to or less than 36 kVA or who consume less than 30,000 kWh of natural gas per year may appeal to the Ombudsman. The Ombudsman's scope of competence is governed by the Act of 7 December 2006 on the energy sector.

GAS TRADING POINT (PEG)

Trades on the wholesale natural gas market are performed at virtual points on the French gas transmission called gas trading points. This is where trades between gas suppliers occur and where gas is supplied to transmission system operators for daily balancing. There is a gas trading point in each of the French network's balancing zones: the North PEG and the South PEG located on GRTgaz's transmission network and the South-West PEG located on TIGF's transmission network.

GEOGRAPHICAL DISPERSION

The reduction in temporary fluctuations in the intermittence and variability of energy production by ensuring the geographical dispersion of remote sources is called the dispersion effect. In fact, the unpredictable fluctuation in production from "unavoidable and unpredictable" sources of energy (that is to say, those whose production cannot be controlled and that depend on natural elements, such as wind farms or photovoltaic facilities) are statistically reduced when this production is injected into the same electrical power grid. The greater the number of various energy sources, the more the average power level is smoothed.

INCUMBENT SUPPLIER

For electricity, the incumbent suppliers are EDF, the local distribution companies (LDCs) and their subsidiaries; for gas, (ENGIE), Tegaz, the LDCs and their subsidiaries. An incumbent supplier is not considered an alternative supplier outside its incumbent service area.

INDEPENDENT ADMINISTRATIVE AUTHORITY (AAI)

An independent administrative authority (AAI) is a State institution, which is responsible on behalf of the state for ensuring the regulation of sectors considered essential, and where the government wishes to avoid intervening too directly. The AAIs have three characteristics. These are:

- the authorities: they possess a certain number of powers (recommendation, decision, regulation, sanction);
- administrations: they act on behalf of the State and some administrative responsibilities are delegated to them (e.g. regulatory powers);
- independents: both in controlled sectors but also of the government.

The AAIs are placed outside the traditional administrative structures and do not report to anyone. The government cannot give them orders, instructions or even simple advice. Their members cannot be removed.

LNG TERMINAL

A port facility used to receive and store liquefied natural gas, and then ship liquefied natural gas to the main transmission network, after regasification.

LOAD SHEDDING

Load shedding is the ability of consumers to adapt their consumption level (by forgoing some consumption or shifting its timing) depending on external signals they receive. These signals may be automatic (remote control of consumer appliances) or economic (price variances encouraging consumers to change their behaviour). Load shedding introduces flexibility in electricity demand both for industrial consumers and for individuals, enabling the consumption level to be adjusted according to the needs of the system or price levels.

LOCAL DISTRIBUTION COMPANY (LDC)

Private company or authority, also called non-nationalised distributor, which distributes and/or supplies electricity or gas in a particular territory, not served by ERDF or GRDF.

MAIN AND REGIONAL GAS TRANSMISSION AND GAS DISTRIBUTION NETWORK

- the main transmission network is a set of large-diameter, high-pressure pipes linking interconnection points with neighbouring networks, underground storage facilities and LNG terminals, to which the regional transmission networks, distribution networks and high consumption industrial customers are connected;
- the regional transmission network is part of the transmission network used to transport natural gas to the distribution networks and high-consumption end customers, who are directly connected to it;
- the distribution network is a set of medium and low pressure pipelines transporting gas to end customers and to other distribution networks, as necessary. It comprises mainly distribution pipes, connection pipes, riser pipes, pressure regulators and meters, valves and accessories.

MARKET COUPLING (EXPLICIT AUCTIONS, IMPLICIT AUCTIONS)

The coupling of several markets means the common handling of their supply and demand curves according to their economic relevance, that is to say, matching the highest purchase orders with the lowest sales orders, regardless of the market on which they have been placed, but allowing for daily interconnector capacity. In other words, within the limits of the interconnector capacity that is available, the counterparty for an electricity exchange transaction may be found on a foreign exchange, without the participants being required to explicitly purchase the corresponding capacity at the relevant border. This is a form of implicit auction, as opposed to explicit auctions where the actors carrying out cross-border exchanges of energy must purchase the corresponding interconnector capacity.

MOTHBALLING

Extended shutdown of an electricity power plant, which still continues to be maintained in view of possible re-commissioning later.

NOME ACT

Act No. 2010-1488 of 7 December 2010 on the organisation of the electricity market, called the NOME Act, aims to enable effective opening up of the market, given that EDF, the incumbent operator in the market, has a near monopoly of the electricity production sector in France. As the European Commission found, following an investigation procedure concerning State aid, the existence of regulated tariffs combined with the lack of access by EDF's competitors to electricity sources as cheap as the incumbent nuclear facilities, do constitute an obstacle to the development of effective competition. The Nome Act, resulting from the work of the Champsaur Commission, must therefore:

- provide alternative suppliers regulated access to incumbent nuclear electricity, called ARENH (see ARENH), on a transitional basis with a limited volume, under the same conditions as for the incumbent supplier EDF;
- preserve EDF's incumbent nuclear power plants (ensure funding for the existing plants by enabling EDF to secure its long-term commitments for the dismantling and management of waste and also to make the necessary investments required for extending the operating life of the reactors of its incumbent plants);
- maintain competitive prices in France for end consumers.

The Nome Act provides, among other things, for the maintenance of regulated sales tariffs for small customers (blue tariffs) and the elimination of regulated tariffs for large customers on 31 December 2015 (green and yellow tariffs).

NON-NATIONALISED DISTRIBUTOR (NND)

See local distribution company

OFFER UNDER REGULATED SALES TARIFF

The prices of electricity or gas offers under regulated tariffs are fixed by the government. For electricity, the main categories of regulated tariffs depend on the contracted power and the connection voltage. With the entry into force of Act No. 2010-1488 of 7 December 2010 on the new organisation of the electricity market (NOME Act), the yellow and green tariffs will be removed as from 1 January 2016.
For gas, there are two types of regulated tariffs:

- public distribution tariffs for residential and business customers connected to the distribution network and consuming less than 4 GWh per year;
- subscription tariffs for business customers connected to the gas transmission system and those connected to the distribution system consuming more than 4 GWh per year. These tariffs are no longer available: only those customers benefiting now may retain their contract.

PROJECTS OF PUBLIC INTEREST

Projects for the development of gas and electricity transmission infrastructure, the list of which is drawn up by the European Commission after a selection procedure. These projects may benefit in particular from simplified authorisation procedures or, if necessary, special incentives and will be eligible for funding assistance.
PUBLIC SERVICE CONTRACT BETWEEN THE STATE AND GDF SUEZ (ENGIE)
Article 16 of the Act of 3 January 2003 on gas and electricity markets and the public energy service and the decrees for the implementation of this law specify the public service obligations imposed on transmission and distribution operators and suppliers of natural gas. Article 1 of the Act of 9 August 2004 on the public electricity and gas service, and electricity and gas companies provides for their formalisation in a public service contract, covering the following points in particular:

- the public service requirements concerning security of supply, regularity and quality of the service provided to consumers;
- the means of providing access to public service;
- the multi-year development of gas regulated sale tariffs;
- company policy on research and development;
- environmental protection policy, including the managed use of sources of energy and combatting the greenhouse effect.

The current public service contract between the State and GDF SUEZ (ENGIE) covers the period from 2010 to 2013. It may be extended for a period of six months, failing that a new contract shall be signed.

It aims over time to become the reference point for the commitments entered into by GDF SUEZ SA (ENGIE), for the directly managed activities of, and the activities relevant to the distribution system operator (GRDF), the transmission system operator (GRTgaz), the storage subsidiary (Storengy) and the subsidiary responsible for the operation and development of LNG terminals (Elengy), with a view to ensuring the long-term stability of public service missions conferred on it by legislature.

PURCHASE OBLIGATION

Legal and regulatory device obliging EDF and the local distribution companies (LDCs) to purchase electricity produced by certain production sectors (wind, photovoltaic, biomass...) under compulsory tariff and technical conditions.

REGIONAL INITIATIVE

Regional initiatives were implemented in 2006 by the European Commission and the European Regulators' Group for Electricity and Gas (ERGEG) to gradually shift up from national markets to the European level, in order to facilitate the integration of regional electricity and gas markets by means of specific actions. CRE is actively involved in the regional initiatives in four of the seven electricity regions and two of the three gas regions.

REGULATION ON ENERGY MARKETS INTEGRITY AND TRANSPARENCY (REMIT)

European Regulation No. 1227/2011, named REMIT (Regulation on Energy Markets Integrity and Transparency) entered into force on 28 December 2011. This prohibits abuses in the gas and electricity wholesale markets, including:

- insider trading, consisting of using inside information (non-public information whose publication would likely have an impact of the price of the energy concerned) to intervene in the market for profit. Inside information must be published;
- market manipulations consisting of giving a misleading signal about the price or the balance of supply and demand on the energy markets.

This approach is inspired by financial markets regulation, adapted for use on the energy markets. The concept of inside information refers in particular to information related to the physical facilities for production, transmission, storage and LNG terminals. It is linked to the transparency obligations set out by the 3rd energy package.

RENEWABLE ENERGY

Renewable energy sources comprise wind, solar, geothermal, aerothermal, hydrothermal, marine and hydraulic energy, as well as energy from biomass, landfill gas, gas from sewage and wastewater treatment plants and biogas.

RETAIL MARKET
The retail market for electricity and natural gas is divided into two customer segments:
- residential customers, these are the consumption sites of individual customers;
- non-residential customers, which includes all other clients: businesses, large industrial sites, public services, etc.

SECURITY OF SUPPLY
Ability of electricity and gas systems to continuously meet expected market demand.

SMART ELECTRIC GRIDS
Intelligent electricity networks, called smart grids. These are public electricity networks with added functions drawn from new information and communication technologies (NICTs). The aim is to ensure a balance between electricity supply and demand at all times and to provide a safe, sustainable and competitive supply to consumers. Making smart grids entails improving the integration of energy systems and the involvement of grid users. These grids must be thoroughly reconfigured to integrate large-scale decentralised production from renewable sources, and to promote supply that matches demand by providing end consumers with tools and services enabling them to track their personal consumption and therefore react accordingly.

SMART METERING
Smart metering is intended to allow the provision to consumers, at a minimum of every month and not every six months, of accurate information on their consumption of electricity or gas, with the aim of improving the quality of billing and better management of energy consumption by customers. A smart metering system stores data (index, load curves), records information (interruption of supply, power overload), can be optionally configured, interrogated and operated remotely (bi-directional operation). Smart metering involves the introduction of smart meters capable of storing the measurement information and the establishment of data transmission systems enabling the rapid and reliable flow of information contained in the meters between the users, system operators and suppliers.

SPOT MARKET
Short-term market, including short-term delivery operations.

SUPPLIER
Legal entity holding a licence for gas, or having registered with the public authorities for electricity, that supplies at least one end consumer with electricity or gas, either from energy it produced itself or from energy it has bought.

TARIFFS FOR THE USE OF PUBLIC ELECTRICITY TRANSMISSION AND DISTRIBUTION SYSTEMS (TURPE)
In order to transport energy to its customers, a supplier pays a transport and distribution system operator for the use of its network and then passes on the cost to its customers. These apply identically to all customers. CRE sets these tariffs. They are calculated in a transparent and non-discriminatory manner, in order to cover all the costs borne by system operators to the extent that the costs reflect those of an efficient system operator.

TELEMETERING
Remote reading of the quantity of electricity injected into and withdrawn from the system, measured in meters. This metering method, often associated with meters that record load curves and not only indices, is primarily used by sites with a high level of consumption or by production sites.

TEN-YEAR NETWORK DEVELOPMENT PLAN (TYNDP)
The ten-year European plan for the development of the electricity transmission system published by ENTSO-E related to the priority investment planning process for the electricity transmission infrastructure under the 3rd package. This plan must be published every two years, but is not binding.

THIRD PARTY ACCESS TO THE NETWORK
Right guaranteed to each user (eligible customer, distributor, producer) to use a transmission or distribution system against the payment of a right of access.

TRANSMISSION SYSTEM OPERATORS (GRT) OR DISTRIBUTION SYSTEM OPERATOR (GRD)
Company responsible for the design, construction, operation, maintenance and development of a transport or distribution system for electricity or natural gas, ensuring the performance of contracts for third-party access to these systems.

WHOLESALE MARKET
The wholesale market means the market where electricity and gas are traded (bought and sold) before being delivered over the network to end customers (individuals or companies).

ABBREVIATIONS AND ACRONYMS

ACER: Agency for the Cooperation of Energy Regulators
ADEME: Agency for the Environment and Energy Management
AMF: Financial Markets Authority
AMM: Automated Meter Management
ANODE: National Association of Retail Energy Operators
ARENH: Regulated access to incumbent nuclear electricity
ATRD: Third party Access to the Distribution Network
CACM: Capacity Allocation and Congestion Management (framework guidelines)
CAM: Capacity Allocation Mechanisms (network code)
CASC: Capacity Allocation Service Company (auction platform)
CDC: Deposits and Consignments Fund
CEER: Council of European Energy Regulators
CMP: Congestion Management Procedures
CNIL: National commission for IT and civil liberties
CoRDiS: Standing Committee for Dispute Settlement and Sanctions
CRE: Energy Regulatory Commission
CSPE: Contribution to the Public Electricity Service (tax)
CTA: Routing Tariff Contribution (tax)
DG COMP: Directorate General for Competition (European Commission)
DG ENER: Directorate General for Energy (European Commission)
DGEC: Directorate General for Energy and Climate
EC: European Commission
ENTSO: European Network of Transmission System Operators
ENTSO-E: European Network of Transmission System Operators – Electricity
ENTSOG: European Network of Transmission System Operators – Gas
EPR: Evolutionary Power Reactor
EUA: European Union Allowance (CO emission quota, European)
FTE: Full-Time Equivalent
FTET: Worked Full-Time Equivalent
GRD: Distribution System Operator
GRT: Transmission System Operator
GTC: Consumers Working Party
GTE: Electricity Working Party
GTG: Gas Working Party
HVA: High Voltage A (medium voltage)
HVB: High Voltage B (high and very high voltage)
ITO: Independent Transmission Operator (model of separating assets)
LDC: Local Distribution Company
LTECV: Act no. 2015-992 on 17 August 2015 related to the energy transition for green growth
LV: Low voltage
NBP: National Balancing Point (gas trading point in the UK)
NOME: New Organisation of the Electricity Market
PEG: Gas Trading Point
PPE: Multi-Year Energy Programme
PPI: Multi-Year Investment Programme
REMIT: Regulation on Wholesale Energy Market Integrity and Transparency
SI: Information System
TPN: Urgent Needs Tariff (social)
TSS: Special Solidarity Tariff
TTF: Title Transfer Facility (gas trading point in the Netherlands)
TURPE: Tariff for use of public electricity networks
TYNDP: Ten-Year Network Development Plan
ZNI: Non-Interconnected Zones

CRE Activity Report 2016
ANNEXES

Graphic design and production:
Julie Lamy et Cédric Pabolleta

Photo credits:
Joëlle Dollé - ©EDF : Eyeem / Getty Images / Wanwisa Hernandez / Cornut Cyrus

Printing:
L'encrier

Completion of text editing in july 2017

Printed in July 2017

ISSN : 1771-3188

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