RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

CRE COMMISSION DE RÉGULATION DE L'ÉNERGIE

2023 Activity Report

for the French Energy Regulatory Commission

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MESSAGE FROM THE CHAIRPERSON

EMMANUELLE WARGON

CHAIR OF THE ENERGY REGULATORY COMMISSION

For energy, 2023 was an exceptional year that saw our gradual emergence from the energy crisis, along with the first important choices being made to ensure the smooth running of the sector in the coming years.

For my second activity report as Chair of France's Energy Regulatory Commission, I would like to highlight the commitment shown by the institution and all its employees during a particularly busy year in 2023.

Security of supply: a priority during the winter of 2022/2023

Our first area of concern and action was, of course, security of supply for the second half of the 2022/2023 winter. Before a gradual easing in the supply-demand balance led to a drop in prices starting in the spring, uncertainties remained during the peak of winter. In line with its role and responsibilities, CRE acted responsively to contribute to the collective effort; I am thinking in particular of the adaptive management of gas flows from south to north, in order to avoid excessive congestion on the networks.

2023: a landmark year for energy and the energy transition

In addition to security of supply, energy prices remained a central issue in 2023. The Government opted to enact broad-reaching consumer protection measures, including extending the electricity price cap (or "tariff shield") to all offers, as well as introducing a gas price tariff shield, a "shock absorber" for businesses, and an "extra shock absorber" for very small businesses. CRE was heavily involved in designing, setting the rules for, implementing and monitoring these exceptional mechanisms, which are unique in their scope. We must also emphasise the rapid adaptiveness and pro-active involvement shown by energy suppliers, who have been there for their customers.

In an environment where energy prices remained high, CRE considered that its role was to provide consumers with as much information and support as possible. For the second year running, it published a benchmark electricity price for SMEs, as well as a best practices guide to help businesses, local authorities and social housing organisations choose their electricity and gas supply contracts. We also supported the legislature in abolishing regulated gas sales tariffs, which affected just over 2 million households. To provide consumers with the best possible guidance, CRE decided to publish a monthly benchmark price for gas (taxes and charges included) from July 2023, which consumers can use as a basis when comparing different offers.

As we tackled the challenges of these difficult months, it was also CRE's duty to work with all the stakeholders in the sector to implement the changes made necessary as a result of the energy crisis, at both the European and national levels.

Our energy system is profoundly European, and must remain so. The harmonisation of our rules within an integrated European market, and our many physical interconnections, mean that we can strengthen security of supply and solidarity between countries, and significantly increase the economic and environmental efficiency of the energy system. For example, the agreement reached in 2023 with our Spanish counterpart to develop the Bay of Biscay electricity interconnection will benefit both our countries and the continent as a whole.

As such, any reform had to be developed at the Community level first and foremost. The agreement reached by the Member States to improve the functioning of the electricity market is excellent news, and allows each country to put in place specific solutions to encourage the development of a genuine long-term segment in the wholesale markets. The result will be greater visibility for investment in renewable energies, and greater price stability. In France, this reform was partly reflected in the agreement announced between the French government and EDF on the regulation of nuclear generation from 1 January 2026, and the end of the ARENH system. It lays out a general operating principle based around wholesale market transactions, and CRE will remain vigilant to ensure that all the conditions are met to guarantee the measure functions optimally.

Boosting oversight and consumer confidence

Consumer confidence in our energy system and in their suppliers is also a major issue for CRE. Our primary action to strengthen this confidence was oversight. We monitored the sector closely and launched investigations whenever we had suspicions, particularly in the case of ARENH abuses. Over the course of the year, we also interrupted a number of ARENH deliveries when we noticed that there was a significant discrepancy between the amounts requested and actual consumption by suppliers. Our second action was to draw up proposals to strengthen consumer protection within contractual terms and conditions, and to improve consumer information. Today, it can be difficult for consumers to get their bearings if they are unfamiliar with the sector. This work is progressing efficiently, and will be completed in the next few weeks; it will then need to be consolidated by Parliament. For us, regaining consumer trust is a prerequisite for a healthy, innovative and dynamic market in which a diverse range of offerings can flourish.

A commitment to the energy transition

Of course, all the actions taken by the Energy Regulatory Commission are designed with the goal of achieving carbon neutrality by 2050.

First and foremost, our energy system will need to significantly increase its low-carbon production levels, in order to meet objectives for security of supply, reindustrialisation and industrial decarbonisation, as well as price control. To this end, it is important to reaffirm that all low-carbon energies must be supported, in particular biogas, wind, solar and nuclear power.

CRE plays its part in this collective effort by examining calls for tender, and issuing economic opinions on the methods of support provided to various sectors. 2023 was a significant year for this area of CRE operations, as around 6 GW of cumulative project capacity was awarded via tenders for solar and wind production. This is a record amount, and one that demonstrates the dynamism of these sectors.

The evolving nature of the energy mix, and the integration of clean but less controllable energies, are changing the pattern of grid stress, i.e. the moments when the supply-demand balance is the most difficult to establish. In order to adapt to this more variable production output, CRE believes that flexibility is an essential element of tomorrow's energy system. This means flexibility in production, flexibility of networks and flexibility in consumption. Efforts are under way to promote this idea, and will continue throughout 2024 as part of our work on electricity network tariffs and regulated electricity sales tariffs. By way of example, one of the avenues being explored is to shift some of the off-peak hours to peak hours during summer, in order to take advantage of the abundant solar production during this period.

Lastly, in 2023 CRE was particularly involved in supporting the gas sector as it underwent changes. First of all, we wanted to obtain a clear vision of the future of gas infrastructures by producing a report that assesses network requirements by 2035 and 2050, based on various hypothetical consumption patterns. Even in the most bearish trajectories, gas networks will remain necessary for security of supply and the sector's energy transition. Accordingly, as we do every four years, we have defined the new tariffs for use of gas distribution, storage and transmission networks for the 2024-2027 period, taking the sector's future economic model into account.

In conclusion, it is clear that the energy sector as a whole is currently experiencing a unique moment of simultaneous transformations in production, consumption, networks, market rules, and sovereignty choices. You can count on CRE's full commitment to work in the public interest, ensuring that the energy system functions smoothly so as to benefit consumers both in France and overseas. It will do so at both the national and European levels, which are fully intertwined in terms of security of supply, price stability and accelerating the ecological transition.

MESSAGE FROM THE BOARD

FROM LEFT TO RIGHT

Valérie Plagnol
Ivan Faucheux
Emmanuelle Wargon
Lova Rinel Rajaoarinelina
Anthony Cellier

2022 plunged the energy sector, and Europe in general, into a period of major crisis, during which we had to create and enact real-time solutions to the challenges posed by the war in Ukraine and the loss of nuclear and hydroelectric power generation. After this eventful year, 2023 was a period in which we had to discontinue protective measures that were only temporary in nature, while consolidating what we had learned in order to build an even more resilient system.

Over the course of what was an extraordinary year, the CRE Board upheld the three founding values that define its actions: impartiality, transparency and independence, while ensuring that the regulatory changes enacted in response to the recent crisis were aligned with its principles of action.

Guided by these three values, the Board sought to maintain a balance between protecting consumers, ensuring that public resources are used wisely, and providing a favourable framework for the investment needed to drive the energy transition forward.

Estimated at several hundred billion euros over the next ten years, for both networks and power generation facilities, the scale of these investments will certainly require a stable regulatory framework – and this framework remains one of the key pillars for supporting the ability to mobilise private resources. In particular, these resources should make it possible to address the historical and upkeep challenges that lie ahead, in terms of both investment and maintenance, to accelerate the production of low-carbon energies and to adapt electricity and gas networks.

Regarding energy grids, while gas network usage tariffs were the key focus of discussion in 2023 discussions, they were also an opportunity to implement, in a measured but proactive way, principles that should make it possible to keep pace with the downward trend in consumption, while maintaining a low-carbon gas system capable of fulfilling its role as an "insurance policy" for the national energy grid.

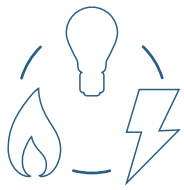
In the retail market, both via setting a benchmark price for gas and determining the compensation to be paid to suppliers for the application of "tariff shields", "shock absorbers" and "extra shock absorbers", CRE has always sought to strike a balance between consumer protection, a reflection of the actual costs borne by suppliers, and stringency and thoroughness with regard to the oversight required.

Similarly, when developing government schemes to support renewable energies, CRE has been able to strike the right balance between ensuring that low-carbon production sources are deployed rapidly across local regions, in order to help achieve the decarbonisation targets required to mitigate climate change, and ensuring that these schemes are as cost-effective as possible for the community.

As regards Non-Interconnected Zones (ZNI), CRE has been particularly proactive in establishing the conditions necessary for the development of energy policies specific to each territory. Day after day, local authorities are demonstrating their ability to take control of their own future energy prospects, through close cooperation with all stakeholders in the sector. This enhancement of technical skills is a tribute to national solidarity, enabling the ZNIs to develop unique expertise, and symbolising the success of the ecological transition in non-interconnected zones on a global scale.

Finally, CRE also maintains its role at the European and international level within the European cooperation agency (ACER), as well as the relevant associations (ERRA, REGULAE, MEDREG). It is only natural that CRE should contribute to these bodies through its analyses and its vision, which are designed to be both pragmatic and responsive to the needs of operators in the sector, and also capable of modernising the system – given that the status quo is often synonymous with delays in achieving the objectives of market integration, decarbonisation and consumer opportunities.

In a fast-changing world presenting multiple challenges, the Board will continue its commitment to maintaining a fair balance between consumer protection, security of supply and the need to decarbonise our energy systems.



CRE EXPLAINED IN 3 MINUTES

Values

INDEPENDENCE
from the Government in the performance of its legally-defined missions.

TRANSPARENCY
in its operations and procedures when preparing decisions and opinions.

IMPARTIALITY
in order to guarantee neutrality, fairness and objectivity in its decisions and opinions.

Missions

CONTRIBUTING
to the smooth operation of the electricity and natural gas markets, for the benefit of all consumers.

PARTICIPATING
in the construction of the European energy market.

IMPLEMENTING
schemes to support renewable energies through calls for tenders.

REGULATING
gas and electricity networks, which are monopolies: setting tariffs and ensuring quality of service.

ENSURING
that consumers remain well-informed.

Status

INDEPENDENT ADMINISTRATIVE AUTHORITY

160
agents (excluding the Board) as of 31 December 2023

13
CoRDiS decisions

19
CoRDiS referrals

371
CRE deliberations

18
advisory appearances before the French parliament by the CRE Chairperson, Chief Executive or departments

48
market operators interviewed by the Board

13
public consultations

77
commission meetings

Budget

24
million euros

The appropriations required for CRE's operations are proposed each year in the French Finance Act (national budget). The appropriations allocated are listed in the national general budget. CRE is subject to auditing by the Cour des Comptes ("court of accounts").

2 independent boards

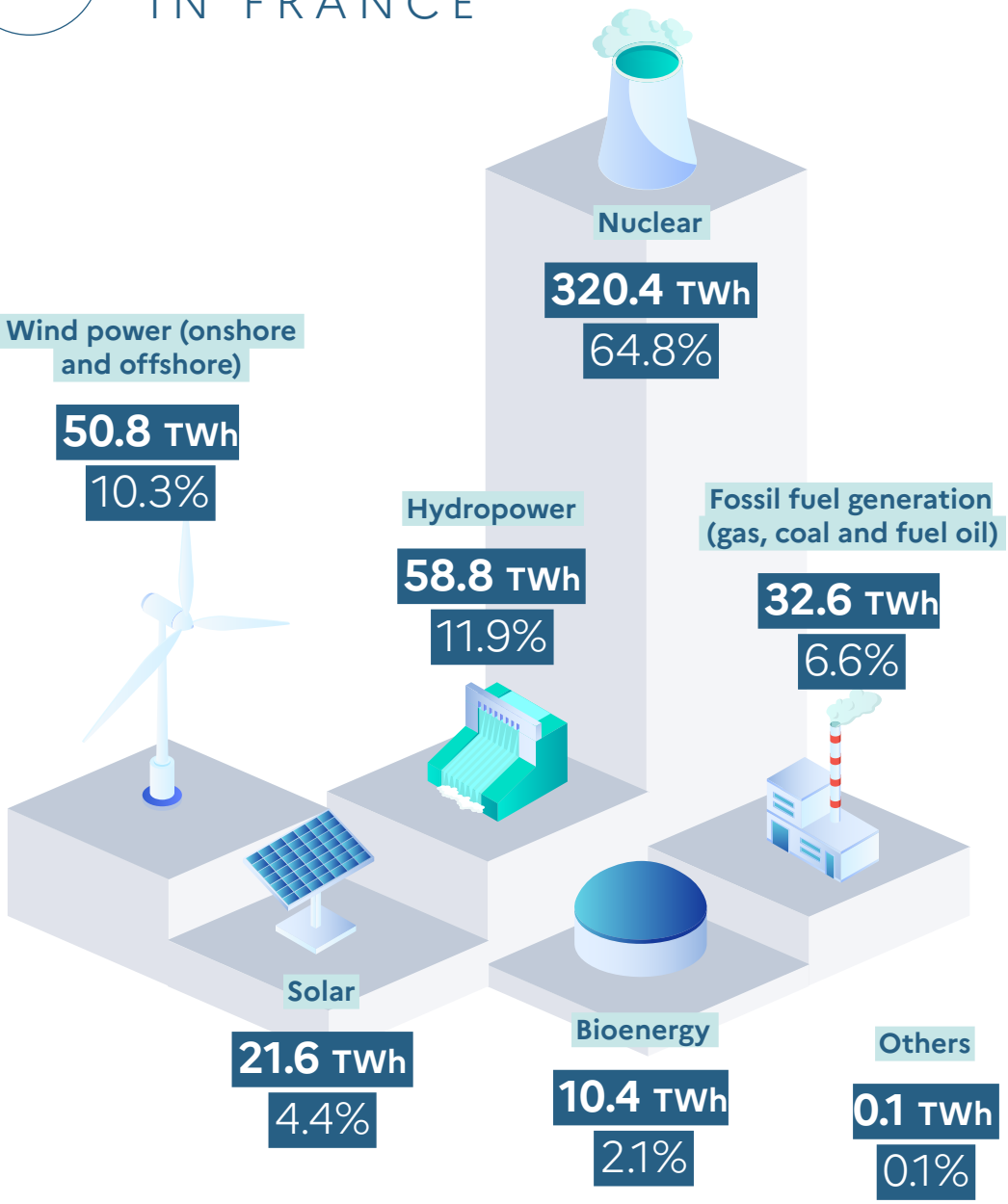
THE COLLEGIAL BOARD

Made up of five members, including the Chairperson, where neither gender may outnumber the other by more than one. Members are appointed on the basis of their legal, economic and technical qualifications. Their role is to define CRE's key orientations and adopt decisions and opinions, drawing on the expertise of the departments reporting to the Chairperson and the Chief Executive.

THE CORDIS

The Dispute Resolution and Sanctions Committee is made up of four full members and four alternates, an equal number of whom are members of the Conseil d'État and members of the Cour de Cassation. They are responsible for settling disputes between operators and users concerning access to and use of the public electricity and gas networks, and in particular for penalising breaches of the Energy Code and the REMIT Regulation.

OVERVIEW OF ELECTRICITY IN FRANCE

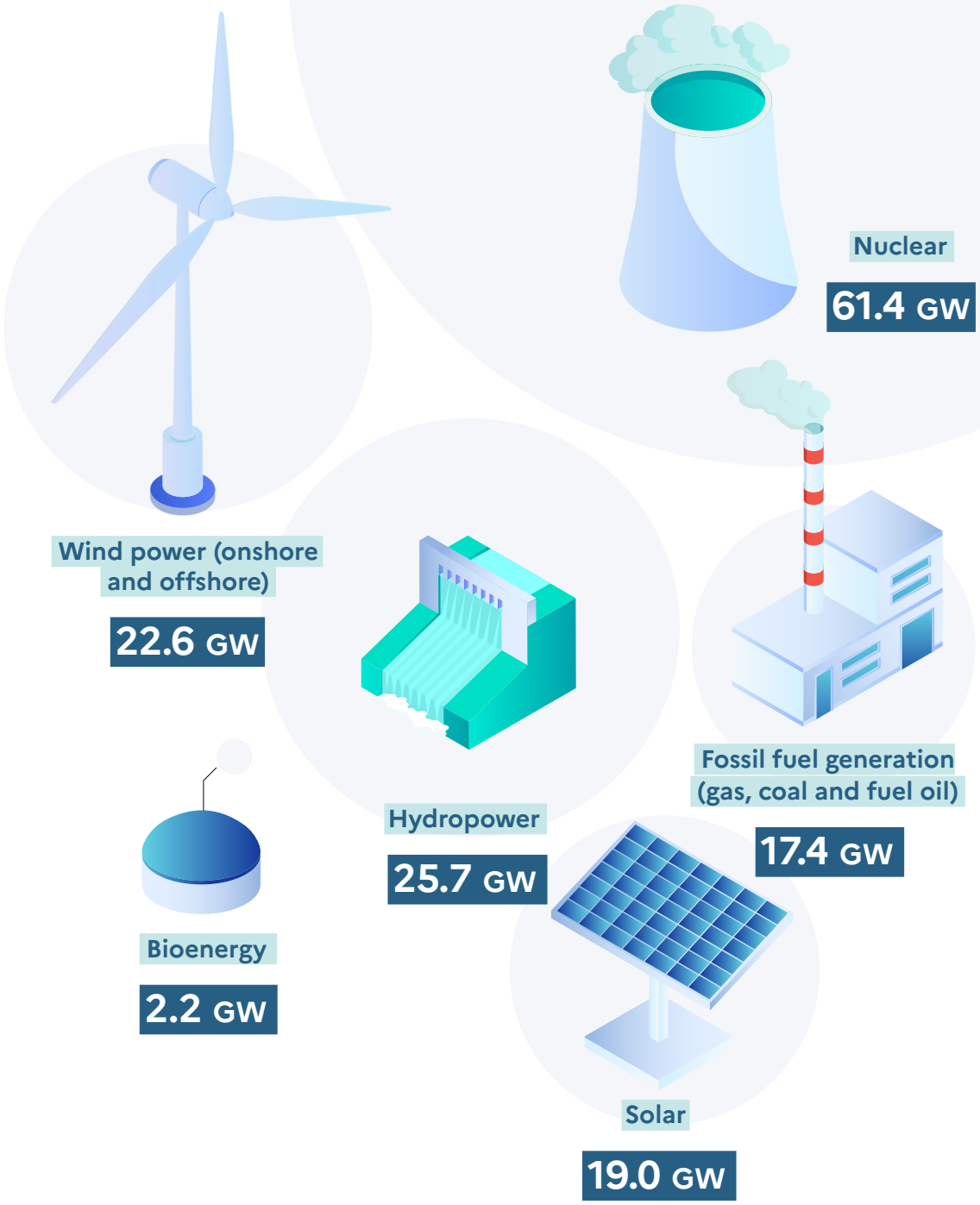


Energy mix

Electricity generation in 2023

Total production **494.7 TWh**

Source: RTE annual electricity review



Electricity generation capacity

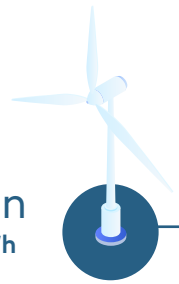
Total installed generating capacity in 2023

Installed capacity	148.4 GW

Source: RTE annual electricity review

ELECTRICITY

Generation
494.7 TWh

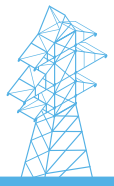


Nuclear generation
320.4 TWh

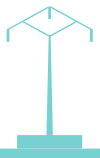
Fossil fuel thermal generation
32.6 TWh

Renewable generation fed into the RPT(1) (including hydro, wind, solar and bioenergy)
49.9 TWh

Renewable generation injected into the RPD(2) (RE + CHP and autoproduction)
91.8 TWh



Routing



Transport losses
11.1 TWh

Net RPT extractions (1) → RPD(2)
279.9 TWh

Distribution losses
24.6 TWh

TRANSPORT NETWORK (RTE)

DISTRIBUTION NETWORK (ENEDIS + ELD)

Net generation (taking electricity losses into account)
459.0 TWh

Export balance **50.1** TWh

Imports 25.3 TWh

Exports 75.4 TWh

Consumption **408.9** TWh

CVS(3)
445.7 TWh

Consumption on RPT(1) (including pumped-storage power)
61.8 TWh

Consumption on the RPD(2) (and self-consumption)
347.1 TWh

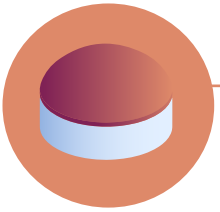
Source: RTE - mainland France, including Corsica. (1) RPT: public transmission network (2) RPD: public distribution network (3) Seasonally adjusted figure: the seasonal adjustment of the gross figures is used to take temperature anomalies and calendar effects (leap years) into account, so as to ensure consistent comparisons between years; as a result, the seasonal adjustment differs from the sum of the previous figures. For example, the seasonally adjusted national consumption figures for 2020 - 2022 were 459, 465 and 460 TWh respectively. Over the longer term, consumption in 2023 was 7% lower than the average for 2014-2019.

GAS

Imports and production
493 TWh

Gas pipelines
233 TWh

LNG terminals
251 TWh

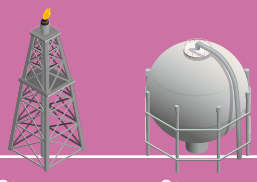


Biomethane
9 TWh

Routing and storage

TRANSMISSION NETWORKS (GRTGAZ AND TERÉGA)

DISTRIBUTION NETWORKS (GRDF + ELD)



Storage injection
137 TWh

Storage withdrawal
138 TWh

Network requirements and metering inaccuracies
1 TWh

Consumption
381 TWh

Transmission networks industrial customers
109 TWh

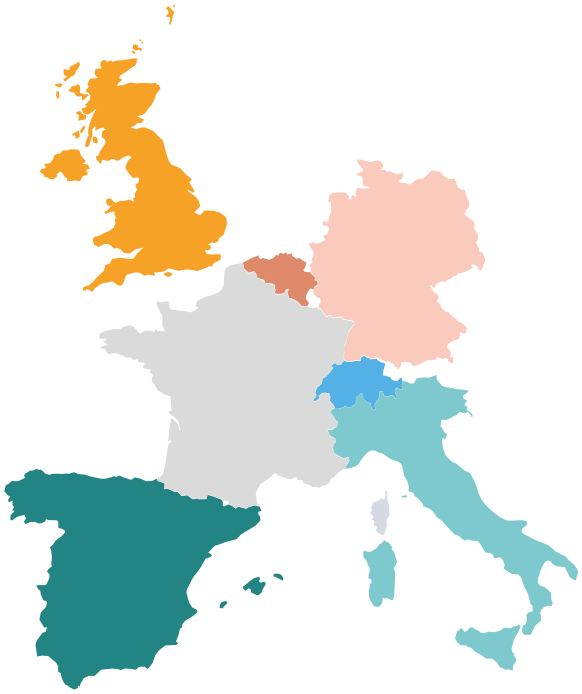
Extraction from gas-fired power stations
36 TWh

Distribution network customers
237 TWh

Exports
112 TWh

Source: GRTgaz 2023 annual report

OVERVIEW OF THE ELECTRICITY MIX IN COUNTRIES NEIGHBOURING FRANCE



United Kingdom

Total generation: 285.7 TWh

Nuclear
40.8 TWh

Hydropower
5.2 TWh

Thermal
103.8 TWh

Wind
82.0 TWh

Solar
13.8 TWh

Renewable heat and waste
34.0 TWh

Others
6.1 TWh

SOURCE: Department for Energy Security and Net Zero

Belgium

Total generation: 76.1 TWh

Nuclear
31.4 TWh

Hydropower
0 TWh

Thermal
19.2 TWh

Wind
14.3 TWh

Solar
7.2 TWh

Renewable heat and waste
2.0 TWh

Others
2.0 TWh

SOURCE: ELIA

Germany

Total generation: 447.7 TWh

Nuclear	Hydropower	Thermal	Wind	Solar	Renewable heat and waste	Others
6.7 TWh	25.6 TWh	178.9 TWh	142.3 TWh	55.2 TWh	39.0 TWh	0 TWh

SOURCE: BNETZA

Switzerland

Total generation: 63.9 TWh

Nuclear	Hydropower	Thermal	Wind	Solar	Renewable heat and waste	Others
23.5 TWh	35.7 TWh	0 TWh	0.2 TWh	4.5 TWh	0 TWh	0 TWh

SOURCE: SWISS ENERGY CHARTS

Spain

Total generation: 266.8 TWh

Nuclear	Hydropower	Thermal	Wind	Solar	Renewable heat and waste	Others
54.3 TWh	30.5 TWh	73.0 TWh	62.6 TWh	37.3 TWh	5.5 TWh	3.6 TWh

SOURCE: REE

Italy

Total generation: 257.0 TWh

Nuclear	Hydropower	Thermal	Wind	Solar	Renewable heat and waste	Others
0 TWh	39.4 TWh	133.8 TWh	23.4 TWh	23.8TWh	5.4 TWh	31.2 TWh

SOURCE: TERNA

CHAPTER 1

CRE: A COMMITTED INSTITUTION THAT LISTENS TO ITS STAKEHOLDERS

Since its creation, CRE has established itself as a key player in the energy sector, whose raison d'être is to protect consumers and ensure the smooth operation of the market.

As an independent administrative authority (a type of quango), it interacts with all stakeholders in the national energy sector, as well as with political and economic bodies.

Seeking to provide answers based on its knowledge and understanding of forthcoming challenges, CRE recently set up a Scientific Council in 2023, demonstrating its commitment to forging closer links with academic institutions and its partners, particularly in order to adapt to new energy challenges.

In 2023, as the sector was emerging from a crisis, CRE was fully active in its expert role, mobilising its capacity for cross-border action, particularly in Europe. Through its communications and interactions, CRE embodies France's commitment to making a significant contribution to the energy discussion, opening itself up to closer collaboration with its European counterparts and other global players.

Through these initiatives, CRE has helped to strengthen France's presence and leadership in the European and international energy sectors.

The CRE Board and departments

Since its creation on 24 March 2000, CRE has been responsible for ensuring that the electricity and gas markets in France operate smoothly, to the benefit of end consumers and in alignment with energy policy objectives.

Communications and Institutional Relations Department
Lydie Cieutat

Dissemination of information and media communications
Digital
Institutional relations

Human Resources Department
Alexis Vialle

Recruitment and training
Labour relations
Career paths
Payroll
Internal communications

CoRDiS

The CoRDiS is made up of four full members and four alternate members, each of whom serves on either the Conseil d'Etat or the Cour de Cassation. They are responsible for settling disputes between operators and users, concerning access to and use of the public electricity and gas networks. They are also responsible for sanctioning any infringement of France's Energy Code.

CHAIR
Thierry Tuot

FULL MEMBERS
Henri de Larosière de Champfeu
Fanélie Ducloz
Laurent-Xavier Simonel

ALTERNATE MEMBERS
Sylvaine Poillot-Peruzzetto
Françoise Salomon
Alain Seban

Legal Affairs Department
Alexandra Bonhomme

Litigation
Access to markets
Networks and infrastructures
Energy transition
Commission Secretariat

Networks Department
Nicolas Deloge

Coupling and Balancing
European interconnections and networks
Electricity transmission
Gas and Hydrogen Transport, Storage & Infrastructures
Connection and smart grids
Distribution

Market Development and Energy Transition Department
Anne-Sophie Dessillons

Retail markets
Upstream-downstream electricity
Renewable energy
Non-interconnected areas
Tariff Shields Unit

General Secretariat **Rachid Bouabane-Schmitt**

Transformation and Projects Department
Antoine Chaleat

Mass litigation management

Internal advisory and support services

Financial department
Nadine Redon

IT and Risk Management Department
Olivier Nony

Site management department
Carlos Vide

CRE Collegial Board

CHAIRPERSON
Emmanuelle Wargon

MEMBERS
Anthony Cellier
Ivan Faucheux
Valérie Plagnol
Lova Rinel Rajaoarinelina

The Board, which has five members including the Chairperson, makes its decisions based on the expertise of CRE departments. The members of the Board are appointed for their specific skills in relation to the energy sector, for a non-renewable term of six years.

Directorate General of Services

Dominique Jamme

Wholesale Market Surveillance Division
Kseniya Khromova

Market analysis and monitoring tools

In-depth monitoring and investigations

Department of Economic and Financial Affairs, Forecasting and Innovation
Arnaud Dietrich

Forward planning and innovation

Economic analysis

Financial analysis

Operator cost auditing

Expertise on cost of capital

Department of European and International Affairs and Cooperation
Claire Hellich-Praquin

Europe

International

Cooperation

The management committee

FROM LEFT TO RIGHT

Front row, seated
Alexis Vialle
Emmanuelle Wargon
Kseniya Khromova

Middle row
Claire Hellich-Praquin
Dominique Jamme

Back row
Arnaud Dietrich
Anne-Sophie Dessillons
Nicolas Deloge
Alexandra Bonhomme
Rachid Bouabane-Schmitt

CRE works closely with all its stakeholders

News and developments in the CRE's regulatory missions

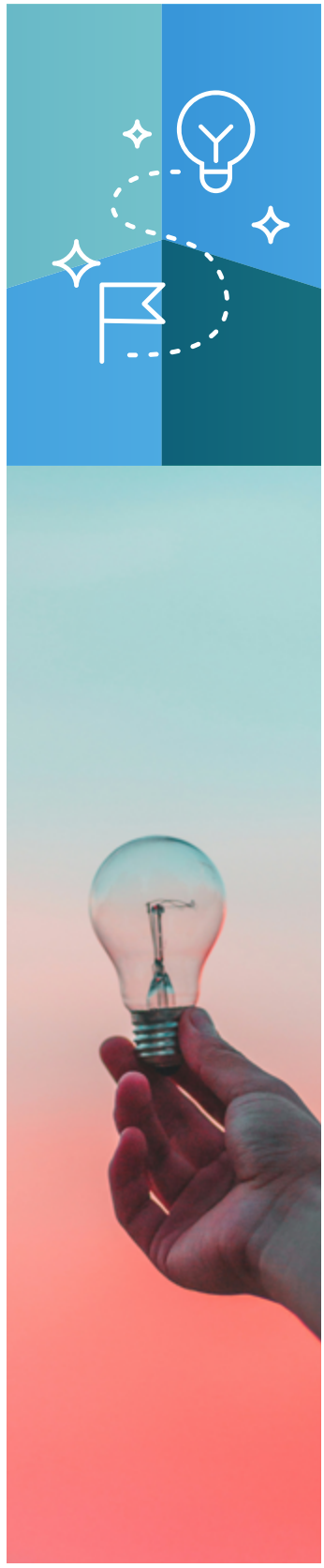
As an independent administrative authority (a type of quango), CRE operates via two distinct collegiate bodies: the CRE Board and the Dispute Resolution and Sanctions Committee (CoRDiS). CRE ensures that France's electricity and gas markets operate smoothly for the benefit of all consumers, and that access to these networks is both efficient and non-discriminatory.

In keeping with its responsibilities, in 2023 CRE played a central role in implementing measures to protect consumers, such as "tariff shields" and "shock absorbers", to lessen the impact of the rise in electricity and natural gas prices since the end of 2021.

In 2023, efforts will focus on gas network tariffs and electricity market reform...

In 2023, CRE set the tariffs for natural gas networks and infrastructures for the 2024-2028 period. It has launched discussions on tariff signals in energy supply offers, and on a future regulatory framework for hydrogen infrastructures. CRE began publishing a monthly benchmark price for the sale of gas, and also led efforts to reform the electricity market and develop the future regulatory framework that will follow on from the "regulated access to historical nuclear electricity" (ARENH) scheme.

The year 2023 was also marked by a high level of market oversight activity. The CRE's chairperson referred seven requests for sanctions to CoRDiS: four concerning REMIT – the European regulation on the integrity and transparency of the wholesale energy market – and three concerning potential abuses within ARENH claims. The detection of these potential abuses, committed during the energy price crisis in 2022, was made possible thanks to the mobilisation of the CRE's departments. In this way, the Commission ensures that such practices, which undermine the proper functioning of electricity markets, do not go unpunished.



… and CoRDiS operations that will implement new powers

2023 was a year of intense activity for CoRDiS, which investigated thirteen requests for dispute resolution. The subjects involved were as varied as they were novel – such as the obligation for network operators to ensure the quality of electricity supply, or the absence of a competing electricity supply offer, in areas serviced by local electricity distribution companies. It also took steps to reconcile the need for rapid resolution of disputes with the need to guarantee a sufficiently thorough adversarial procedure. For the first time, CoRDiS imposed a penalty on one of its dispute resolution decisions, which was subsequently settled.

CoRDiS also received eight referrals concerning sanctions, and its panel of judges issued three decisions in this area, while also significantly reducing the time taken to investigate cases. Two of these three decisions were handed down six months and eleven months respectively after the matter was referred to the committee. In particular, the CoRDiS sanctioned market operators under the REMIT regulation (for breaches of the obligation to publish inside information and the ban on insider dealing). Finally, 2023 marked the first time the CRE Chairperson referred eight requests to CoRDiS for the suspension of delivery of ARENH volumes to suppliers, resulting in the same number of decisions being handed down within a period of less than two months.

CRE's human resources initiatives

In 2023, CRE's human resources (HR) department implemented Management Guidelines (LDGs). In addition to their regulatory nature, these are intended to offer all CRE employees an attractive and stimulating working environment, whether in terms of the nature of their contract, its associated compensation, or salary progressions marking the number of years spent with the authority. The LDGs also endeavour to use a number of tools (training, coaching, etc.) to offer staff the opportunity to build a varied career path, with the prospect of taking on managerial responsibilities or discovering new areas of expertise.

Over the course of the year, the Human Resources Department (DRH) also took steps to strengthen the prevention of psychosocial risks within the institution, in particular by making two advisers available to staff and by drawing up a charter on disconnection from work.

AVERAGE JOB TENURE

5.5
YEARS

AVERAGE AGE

35.3
YEARS

INTERNAL MOBILITY

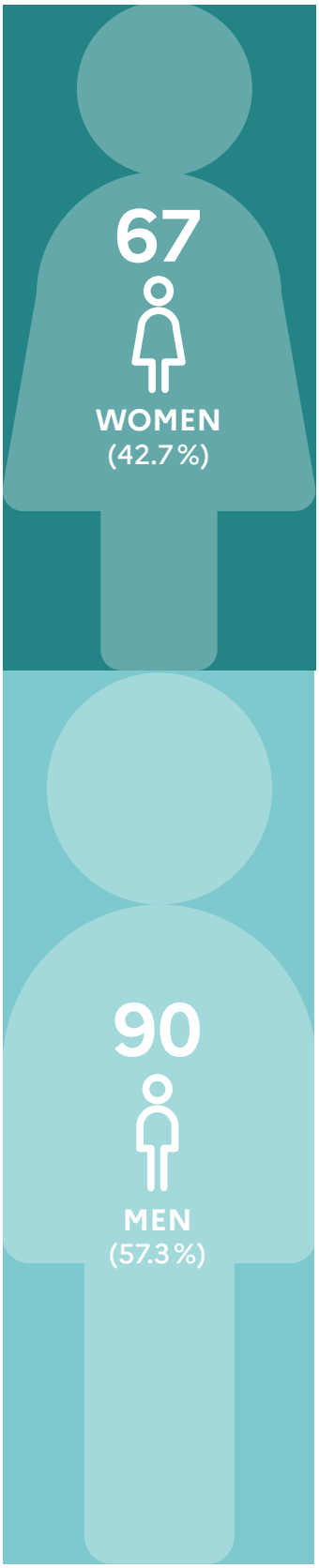
16
internal transfers, including 10 horizontal transfers and 6 vertical transfers

PUBLICATIONS

54
jobs advertised in 2023

APPLICATIONS

2,209
applications received for open positions



CIVIL SERVANTS

6.4%

CONTRACT WORKERS

93.6%

160

Full-Time Equivalents (FTEs) including board members

BOARD GENDER BALANCE

3
WOMEN

2
MEN

Relations with the French parliament

As an independent administrative authority (a type of quango), CRE reports annually on its activities to the National Assembly and the Senate. In addition to this legal obligation, the regulator is regularly consulted and questioned by national elected representatives, in order to contribute to the drafting of legislation and to keep officials informed of developments in the sector.

CRE attaches particular importance to this dialogue with Parliament, which it considers fundamental to the proper functioning of institutions. A number of training modules have been developed in recent months to enable members of parliament to specialise in the mechanisms governing the energy sector and the activities of the CRE.

In 2023, Parliament was particularly active on energy issues, both in its lawmaking and in public policy oversight roles. The main issues discussed were reform of the European electricity market, speeding up the energy transition and maintaining the exceptional mechanisms designed to protect consumers.

CRE testified before the members of the National Assembly and the Senate on nineteen occasions. It also responded to fourteen written questionnaires.

At the start of 2023, members of parliament adopted a bill aimed at speeding up the deployment of renewable energies in France. The text includes a number of measures pertaining to energy generation facilities themselves, as well as major advances in terms of networks; in particular, by enabling planning, forecasting and pooling between certain connections. The CRE's expertise was sought throughout the examination of the text.

Members of parliament also wanted to hear the CRE's views on several bills pertaining to the extension of regulated tariffs for the sale of electricity (TRVE), improved consumer information and specific protection mechanisms for small businesses and local authorities.

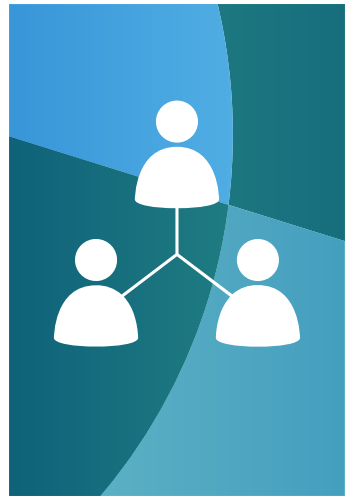
At the same time, Parliamentary efforts focused on monitoring the application of the law and the implementation of public policies. CRE reported to the National Assembly and the Senate on the application of exceptional consumer protection mechanisms: the "tariff shield", "shock absorber" and "extra shock absorber". The Commission was also asked to address parliament regarding a mission to implement the Energy-Climate Act.

A major issue for the sector in 2023 was the reform of the European electricity market. Several fact-finding missions were also carried out, notably by the European Affairs committees of both chambers. CRE provided input to this work, on a subject that is not only technical but also has major repercussions for the functioning of the electricity market in France over the coming years. It was also interviewed by the Senate Committee of Inquiry into the conditions of use for "regulated access to historical nuclear electricity" (ARENH).

Lastly, during the examination of the Finance Act for 2024, CRE was interviewed by several committees of the National Assembly and the Senate on the subject of its budget and its expertise. The themes of these hearings were varied, with some representatives wishing to focus on a single issue, such as electro-intensive industries, while others questioned CRE representatives on energy issues directly related to the State budget: consumer protection mechanisms, energy public service charges (CSPE), and support for renewable energies.

In addition to its contribution to the work of Parliament, throughout 2023 CRE responded diligently to requests from Members of Parliament and Senators regarding specific situations encountered in their constituencies, providing technical assistance and clear, detailed information.

Work with other independent administrative authorities



Part of the CRE's activities involves collaboration with independent administrative authorities (AAIs) and independent public authorities (APIs). This takes the form of regular thematic workshops, or more ad-hoc projects with the various AAIs and APIs.

In 2023, in addition to its regular exchanges with the Financial Markets Authority (AMF) in the performance of its supervisory and investigative powers over wholesale markets, CRE also worked with the AMF on a project to reform the procedures for investigations and sanctions, sharing with the AMF its feedback on the administrative settlement procedure that could be introduced into CRE's own procedures.

In addition, CRE and the French Competition Authority (ADLC) drafted a joint letter to the Government at the end of the year, putting forward proposals to ensure fair competition in the implementation of electricity market reform. Lastly, the ADLC asked CRE to contribute to its work on competition in the electric vehicle charging infrastructure sector. CRE issued an opinion to this authority, and was asked to address its Board on the topic.

In the wake of the exceptional energy crisis, and as part of its remit to ensure the smooth operation of energy markets, CRE initiated discussions and took measures to strengthen consumer protection through regular meetings with consumer associations.

Emmanuelle Wargon, CRE Chairwoman, and Benoit Cœuré, Chairman of the ADLC

The CRE Scientific Council

Since 1 September 2023, the Foresight and Innovation Department, which until then had been attached to the Presidency and the Executive Board, has been part of the Economic and Financial Affairs, Foresight and Innovation Department.

As part of its foresight missions, the department steers the work of CRE's Foresight working groups, monitors economic and industrial matters, and supports local authorities in their capacity for local innovation, which enables further reflection on future regulation.

The Foresight, Innovation and Economy departments are now supported by CRE's Scientific Council. The Scientific Council is an advisory body that was set up in March 2023 by the CRE Chairwoman. Members are appointed in their own name. This appointment strives to ensure that the members have the necessary skills and expertise to respond to requests from the Scientific Advisory Board, and that any opinions or conflicts of interest they may have on the subjects being dealt with are known to the members.

Made up of academics, experts in the field of energy and heads of research centres or institutes, the Scientific Advisory Board is asked to participate in CRE activities, notably including its contributions to working groups as an academic reviewer, or by consulting on CRE deliberations on energy-related legislative and regulatory developments. As part of this process, the Scientific Council was asked to give its opinion on CRE's contribution to the French energy-climate strategy, and on CRE's report on the management of tertiary buildings. These contributions have been made public. After consultation with the Scientific Council, CRE launched a working group on carbon capture, storage and utilisation (CCUS).

The integration of these activities is significant in terms of our ambition to provide the CRE Board with proposals for promoting and supporting innovation and forward planning, and then transposing these into economic and financial analyses. They will contribute to the public interest, helping the energy system to function smoothly and accelerating the energy transition.

Members of the CRE Scientific Council

Olivier Appert
Member of the Academy of Technologies

Claude Arnaud
Chairman of Efficacity

Monique Axelos
Scientific Director for Food and the Bioeconomy at the French National Research Institute for Agriculture, Food and the Environment (INRAE)

Pierre-Franck Chevet
Chairman of IFP Énergies nouvelles (IFPEN)

Valérie Faudon
General Delegate of the French Nuclear Energy Society (SFEN)

Jean-Luc Fugit
Vice-Chairman of the Parliamentary Bureau for Assessment of Scientific and Technological choices (OPECST) and Chairman of the Senior Energy Council (CSE)

Emmanuelle Garnaud Gamache
Managing Director of b<>com

Patrice Geoffron
Professor of Economics at the University of Paris Dauphine-PSL and Director of the Centre for Geopolitics of Energy and Raw Materials (CGEMP)

Jean-Michel Glachant
President of the International Association for Energy Economics (IAEE) and Professor at the Florence School of Regulation

Frédéric Gonand
Professor of Economics at the University of Paris Dauphine-PSL

Hubert de La Grandière
Managing Director, SuperGrid Institute

Madeleine Lafon
Managing Director of France Gaz

Cécile Maisonneuve
Senior fellow at Institut Montaigne and Chairman of Decysive

Nadia Maïzi
Professor at Mines ParisTech and Director of the Centre for Applied Mathematics (CMA)

Laurence Piketty
Deputy Director General at the French Atomic Energy and Alternative Energies Commission (CEA)

Carine Staropoli
Professor at the Paris-Sorbone Economics Centre

Sébastien Treyer
Managing Director of the Institute for Sustainable Development and International Relations (IDDRI)

Anne Varet
Deputy Executive Director of the French Agency for Ecological Transition (Ademe)

— Focus

CRE's contributions to the next French energy-climate strategy

In accordance with its remit, CRE has contributed to discussions on France's next energy-climate strategy (SFEC). With European and national targets to be met from 2030, the next multi-annual energy programme (PPE) will not be a continuation of previous ones: its aim will be to move the country towards carbon neutrality by 2050, by setting France's energy trajectory for the period 2023-2033.

The goal is to increase the production of low-carbon electricity, in order to electrify those sectors of activity that emit the most greenhouse gases, such as transport, industry and heating, while at the same time integrating energy efficiency objectives as a cornerstone of energy policy. The challenge is also to develop renewable energies while laying the groundwork for the future of nuclear power, which will enable us to produce more electricity. To this end, it will be necessary to extend the lifespan of existing nuclear power plants while committing to the construction of new power plants and small modular reactors, as well as decarbonising the production of other energy carriers. This pursuit of growth must not overlook the issue of economic efficiency, as the expected transition requires considerable financial investment. It is therefore essential to prioritise technologies that are already competitive, to opt for efficient, competitive procedures and to encourage the use of renewable energies that require little or no financial support from the State.

Secondly, consumers (individuals, businesses and local authorities) have a role to play in the energy transition, by adopting low-energy habits and investing in energy-efficient equipment. Local and regional authorities also have a responsibility to encourage the development of low-carbon energies, and to adapt their infrastructures. Achieving these ambitious targets also means decarbonising industry.

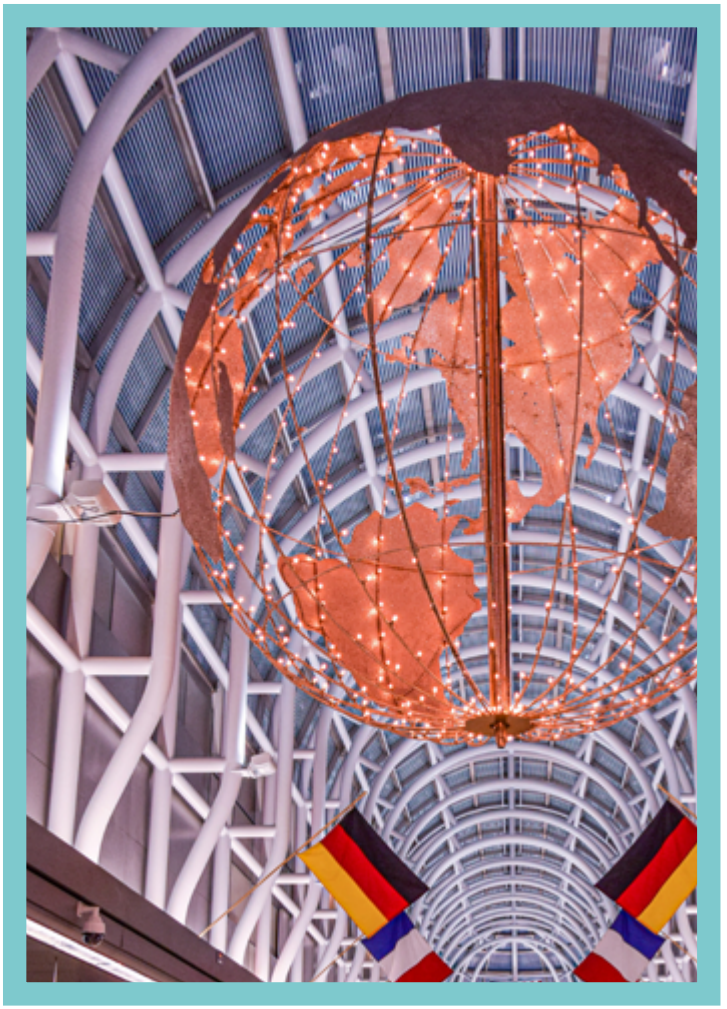
To encourage investment, a long-term wholesale market needs to emerge, providing the right economic signals.

Electricity grids and gas infrastructures will have to be transformed to meet the growing demand linked to the electrification of new uses. It is therefore important to guarantee reasonable connection times, maintain quality of service and promote coordinated management of the various energy networks.

The ambition to move away from flexible fossil fuels is leading to the development of intermittent renewable energies, which subsequently increases the need for greater flexibility in order to overcome congestion and balance supply and demand. It is therefore necessary to mobilise various sources of flexibility, such as storage, load shedding and generation adjustment. These needs are even greater in non-interconnected areas (ZNI).

Decarbonated hydrogen also represents an opportunity to address the climate emergency. CRE recommends concentrating efforts on sectors where hydrogen is essential, such as industry and heavy transport. The most important infrastructures will have to be regulated, but it will first be necessary to build a regulatory framework that is adapted to the sector's pace of development. Lastly, biomethane is essential given the desired inter-compatibility of energy sources, particularly in terms of decarbonising the construction sector.

II. The commitment of CRE staff at the European and international levels



Created as the result of European legislation liberalising the electricity and gas markets, the Energy Regulatory Commission has inherently European DNA, which cultivates on a daily basis. In order to ensure a strong impact on the European and international scene, CRE relies on a dedicated department that ensures the consistency of CRE's action at the European level, and regular contact with European institutions and representatives of French institutions in Brussels.

At the European level, 2023 was marked by far-reaching legislative changes made during the emergence from the crisis; these include the implementation and continuation of emergency regulations, as well as more structural changes aimed at achieving a 55% reduction in the EU's greenhouse gas emissions by 2030, and improving the way energy markets operate.

The EU has opted to accelerate the deployment of renewable energies, in order to move away from dependence on Russian gas. It has also put in place a new market framework for electricity, while making decisive progress on the gas package. At the request of the French authorities, CRE was able to offer up its technical expertise during the negotiation stages for several European texts.

Intense negotiations on the gas package — a regulation and directive aimed at establishing common rules for infrastructure and the market for renewable and low-carbon gases and hydrogen — took place in 2023. The trilogues began under the Swedish Presidency of the Council in June 2023, and will be completed under the Spanish Presidency. They resulted in provisional political agreements on the directive and the regulation, dated 28 November and 8 December 2023; these agreements include the main proposals made by CRE and other European regulators.

CRE is also particularly attentive to its relationship with the European Commission, submitting an annual report to the Directorate General for Energy (DG ENER) on its activities, the performance of its duties and the main developments in the French electricity and gas markets over the period in question. Regular contact with DG ENER departments, as well as an exchange of personnel between the two institutions, provide CRE with a clear perception of the Commission's priorities, along with a superior channel of communication.

As a member of the European cooperation bodies making up the CEER, the Association of European Energy Regulators and the Agency for the Cooperation of Energy Regulators (ACER), CRE has a high-level presence at meetings of decision-making bodies, as well as in the many working groups that enable regulators to shape and perfect European integration of the energy market on a daily basis. While CEER preceded the creation of ACER, and functions more as a body for exchanging and comparing national practices with a view to building a resilient and protective market, ACER has significant decision-making powers, both on individual cases (with a cross-border impact) and on regional methodologies and network codes intended to apply throughout the EU. It should also be noted that, while for many years CEER and ACER member-regulators were one and the same, Brexit had the effect of excluding the UK regulator Ofgem from the work of ACER. However, dialogue with Ofgem continues within the framework of CEER, which has adapted its articles of association to allow the UK regulator to remain a full member.

In the same spirit, CEER has developed a strong international outlook through its International Relations Group, which has been chaired and led by CRE since 2019. At the CRE's instigation, CEER has strengthened its links with international institutions and regulators outside the EU, as well as its knowledge of foreign energy markets, thereby ensuring constant enrichment of its own deliberations. Current international events and the cross-cutting issues involved in the energy transition have led CEER to update its international strategy for 2023, focusing on 3 key areas:

– strengthening multilateral dialogue with international institutions and partners;
– promoting good regulatory practice;
– contributing to the energy transition outside the EU.

In addition to each institution's own specific roles, CEER and ACER cooperate closely within communal working groups, namely the electricity, gas and REMIT (Regulation on Wholesale Energy Market Integrity and Transparency) groups. At CRE, more than fifty experts are active in one or more of these working groups, representing 33% of the total CRE workforce.

CRE's involvement in these working groups is important, as this is where many of the commission's methodologies and strategic positions are developed. Wherever possible, CRE acts as a leader or framer, with the aim of having an effective impact on the most important regulatory texts produced.

In addition to this multilateral approach, CRE also strives to maintain close links with its fellow regulators, particularly with interconnected cross-border countries. For Emmanuelle Wargon, who took up her post in August 2022, 2023 was an opportunity to meet the presidents of several European and non-European regulatory authorities (Germany, Belgium, Spain, Italy, the United Kingdom, Albania, Algeria, Morocco, Senegal and Côte d'Ivoire) and to continue or initiate dialogue with them on various subjects of common interest.

— Focus

CRE's international cooperation initiatives

As regards cooperation with non-EU countries, CRE is particularly active and involved in two bodies, RegulaE.Fr and MedReg. RegulaE.Fr, the network of French-speaking energy regulators, was created in 2016 and brings together thirty-two French-speaking regulators from Africa, Europe, America and Asia-Pacific. In 2023, the network's members examined two particularly important themes for the African continent – which hosted its two annual events – namely, off-grid electrification at the workshop in Kinshasa (July 2023), and interconnections at the workshop in Rabat (November 2023). At the workshop, Abdellatif Bardach, Chairman of the Moroccan regulator, the Autorité Nationale de Régulation de l'Electricité (ANRE), took over as head of the network for a one-year term.

Mr. Bardach is concomitantly the Chairman of MedReg, the association of Mediterranean energy regulators based in Milan, whose work is financed by the European Commission and aims to promote the emergence of a Euro-Mediterranean energy market. Recent changes in gas flows and the ever-increasing deployment of renewable energies (RE) on both sides of the Mediterranean make the work carried out within this framework, and CRE's involvement, even more relevant.

CRE is also an associate member of the Budapest-based Regional Energy Regulators Association (ERRA), which brings together a wide number of regulators from Eastern Europe and the rest of the world. At the latest ERRA annual conference, CRE presented the framework applicable for biomethane in France.

Last but not least, RETA (*Regulatory Energy Transition Accelerator*), created at the initiative of the British regulator Ofgem on the sidelines of COP 26 in Glasgow, is now financed and hosted by the International Energy Agency (IEA) in Paris. RETA now brings together more than fifty regulators from all regions of the world. The topics addressed in this forum (the role of regulators in accelerating decarbonisation, regional integration via interconnections) are an opportunity for CRE to share its expertise and contribute to accelerating the energy transition in non-EU countries.


2

CHAPTER 2

IN 2023, CRE MOBILISED TO MANAGE THE SECTOR'S EMERGENCE FROM THE CRISIS AND BUILD A NEW REGULATORY FRAMEWORK FOR ENERGY MARKETS

In 2023, CRE oversaw the sector's gradual emergence from the crisis, in particular via its roles in market oversight and tariff shield management. It also made an active contribution, at both the French and European levels, to discussions on the lessons to be learned from the crisis and the overhaul of the regulatory framework for energy markets.

CRE's primary objective has been to protect the interests of consumers while ensuring market stability. During this period, CRE strengthened its oversight of the wholesale and retail markets, and fully exercised its powers of intervention, which were recently reinforced by the Government and Parliament.

CRE's mobilisation in 2023 demonstrates its determination to guarantee a competitive and transparent market, while promoting reliable and accessible energy supply. CRE has thus played an essential role in preserving the equilibrium of the energy sector, acting as the guarantor for market regulation and efficiency.

The retail market

1 The practical application of shields and shock absorbers

Given the extremely high supply costs for gas and electricity in 2023, the gas and electricity tariff shield mechanisms were extended in France's 2023 budget, which supplemented these measures with an additional "electricity shock absorber" mechanism.

So-called "tariff shields" consist of a cap on the increase in gas and electricity regulated sale tariffs for consumers, accompanied by compensation for the loss of revenue borne by energy suppliers (including for their market offers when they pass on a price cut to their customers), up to the difference between the frozen tariff and its theoretical equivalent had a price cap not been applied, as calculated by the CRE.

The electricity tariff shield applies to all residential consumers, and to very small businesses (VSEs) for sites with a capacity of less than 36 kVA. In 2023, the gas price cap will apply to all domestic end users, as well as owners and co-owners of buildings used mainly for residential purposes, with a broader scope than in 2022. Given the drop in gas prices on the wholesale markets, the gas price shield was not activated for the second half of 2023.

Electricity shock absorbers apply to very small businesses (for premises not eligible for the electricity tariff shield), small and medium-sized enterprises (SMEs) and public sector entities, as well as local authorities, associations and similar bodies. The variable part of each customer's bill that exceeds a target price is partially covered by State. The support parameters have been strengthened for VSEs.

CRE has issued a number of rulings providing a detailed framework for the implementation of these measures. The compensation paid to suppliers under these schemes is drawn from public energy service charges (CSPE), whose rates are evaluated by CRE.

At the beginning of 2023, suppliers who wished to do so were able to make advance payments on their charges, following a simplified declaration process using portals set up by CRE in January, February and March 2023.

CRE then delivered its annual assessment of CSPE rates, in a decision dated 13 July 2023. This included an assessment of the costs incurred in 2021 and 2022 in connection with the gas and electricity shields in those years (€4.8 billion), and an estimate of the projected costs for the mechanisms in 2023 (€27.8 billion). The charges as evaluated for 2023 were paid to suppliers in 2023.

Throughout the year, and notably vis-a-vis the various declarations made by suppliers, CRE assisted suppliers with the implementation of the mechanisms, organising webinars on the topic and ensuring regular exchanges in particular. CRE also set up two optional information desks, in June and October 2023, to help suppliers understand the mechanisms, calculate their projected final compensation levels, and prepare their final declarations. These exchanges have helped to identify and clarify certain specific cases, and CRE regularly informs all suppliers of the clarifications made, by e-mail and by updating its dedicated FAQ.

Lastly, CRE also carried out monitoring to ensure that subsidies paid to energy suppliers were being duly passed on to customers. It conducted a survey of suppliers on this subject in September 2023, helping to clarify any difficulties they may have encountered. The final amount of the charges to be paid to suppliers (via tariff shields and shock absorbers) for 2023 will be determined by CRE at its meeting in July 2024, on the basis of the actual cost of the impact observed.

2 Benchmark electricity price for SMEs and best practices guide for business consumers

CRE has taken action to support professional consumers who saw the terms and conditions of their electricity and gas contracts deteriorate during the crisis, particularly in the second half of 2022. As a result, many consumers experienced a sharp rise in their supply prices, compounded by the scarcity of offers available to them.

To give businesses greater visibility, CRE published indicative benchmark electricity prices between October and December 2022, for SMEs, local authorities and purchasers subject to the public procurement code. These benchmark prices were updated every week, and were intended to serve as a reference point for consumers wishing to compare them with the offers proposed by suppliers. Publication of these reference prices resumed between October and November 2023, for contracts covering 2024.

Some professional consumers have expressed an increased need for support in a market that has become more complex due to the crisis. To ensure greater transparency, CRE published a best practices guide for professional consumers on 14 September 2023. Following workshops between suppliers and representatives of social housing associations, CRE has also issued recommendations to help those involved in social housing with their energy purchases.

3 Benchmark gas prices for residential consumers

Since June 2023, CRE has published a benchmark natural gas sale price (PRVG) for residential consumers. Issued monthly and as a reference guide, this benchmark price includes a subscription price and a kilowatt-hour price. Its initial aim was to help consumers stay informed with regard to the removal of regulated gas tariffs on 30 June 2023.

The PRVG reflects an average estimate of the costs borne by suppliers for the supply of natural gas to a residential customer, and differentiates between "cooking/hot water" and "heating" uses. This benchmark price includes both supply costs, such as the cost of energy on the wholesale market, and "non-supply" costs: commercial costs, transmission or storage costs and supplier remuneration.

This benchmark price is designed to help consumers compare supply offers. CRE stresses that the GWP is purely indicative, and that suppliers are free to compile their offers according to their supply conditions, their commercial choices and the contractual terms they offer.

For example, the price of a fixed-rate one-year offer is likely to differ significantly from the CRE reference price, which reflects monthly and quarterly variations in the price of gas. When comparing offers from suppliers, consumers should take into account the contractual terms and conditions they carry.

4 ARENH: assessment of the 2023 window and impact of ARENH+ in 2022

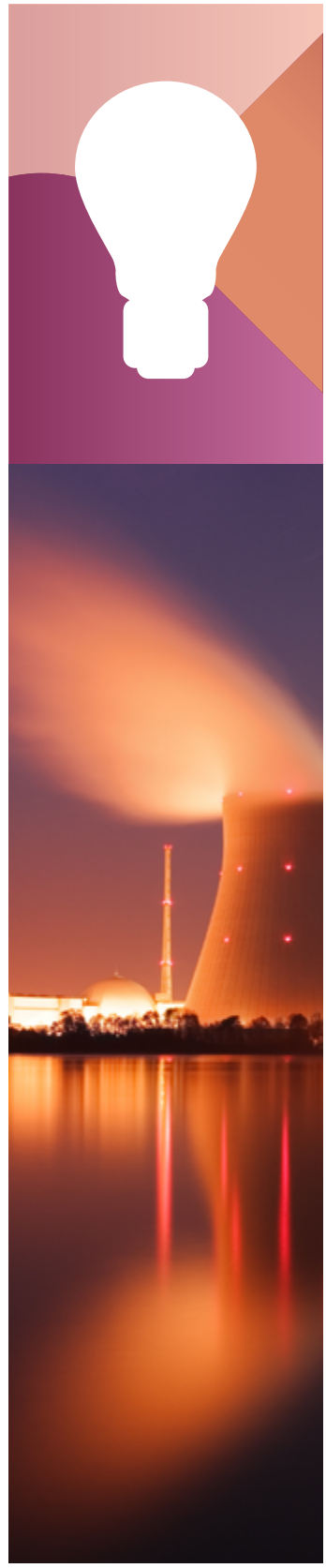
Since 2011, and until 2025, the "regulated access to historical nuclear electricity" (ARENH) scheme has allowed all French consumers to benefit from the competitiveness of France's historical nuclear fleet. Under this system, since 1 January 2011 EDF has been obliged to sell a maximum of 100 TWh of its nuclear output at the regulated price of €42/MWh to suppliers who request it.

On 1 December each year, CRE publishes the total amount of ARENH requests submitted by suppliers for the coming year. When this total demand exceeds the 100 TWh threshold, CRE allocates this volume *pro rata* to each supplier's requested amount. Since the window for the 2023 delivery year, CRE has had the power to correct suppliers' individual requests if it identifies the risk of evident overestimation.

For the year 2024 (November 2023 request window), CRE notes that suppliers have, on the whole, duly justified their requests for ARENH, leading it to correct suppliers' requests by only 0.04 TWh, bringing total demand to 130.41 TWh. The result of this request is an allocation rate of 76.68%, given that the 100 TWh threshold has been reached.

Once the year is over, CRE compares the ARENH amounts allocated with the actual consumption of each supplier's portfolio, and determines the price supplements (CP1) owed in order to compensate for any excess deliveries, as well as any potential penalties (CP2) to be applied to suppliers.

As regards deliveries for 2022, 74 suppliers were required to pay CP1, amounting to a total of €1.6 billion. This unprecedented amount is mainly due to the sharp fall in consumption observed, and the high market prices in 2022. A total of €20m in CP2 penalties were also issued.



In 2022, the final count of ARENH claims amounted to 151.1 TWh, while demand during the November 2021 window was 160.05 TWh, representing a surplus demand of 5.6%. This discrepancy can be explained by two factors: a historic 4% fall in electricity consumption in 2022, due to the energy crisis and warm weather conditions, and the fact that consumers returned en masse to the historic supplier as a result of the crisis. CRE attributes these changes to unforeseen events, such as stress corrosion on nuclear reactors and Russia's invasion of Ukraine – factors which had not been anticipated when ARENH requests were made. CRE concludes that this surplus is not due to deliberate over-demand on the part of suppliers, and that there is no evidence of seasonal arbitrage in the ARENH scheme.

2022 also saw the exceptional provision of an additional 20 TWh of ARENH allocations from 1 April 2022. Ensuring that these volumes were duly passed on to consumers was the focus of an analysis by CRE, published in September 2023, which shows that this system did enable consumers to significantly reduce their bills during the crisis.

Strengthening CRE's supervisory role

CRE has detected behaviour by a minority of suppliers that may potentially constitute "ARENH misuse", or which may even seriously undermine the functioning of the energy market. With a view to punishing any and all misconduct, CRE opened three investigations between September 2022 and January 2023. These investigations have led to three referrals to CoRDiS, which may, if necessary, impose sanctions on the operators concerned.

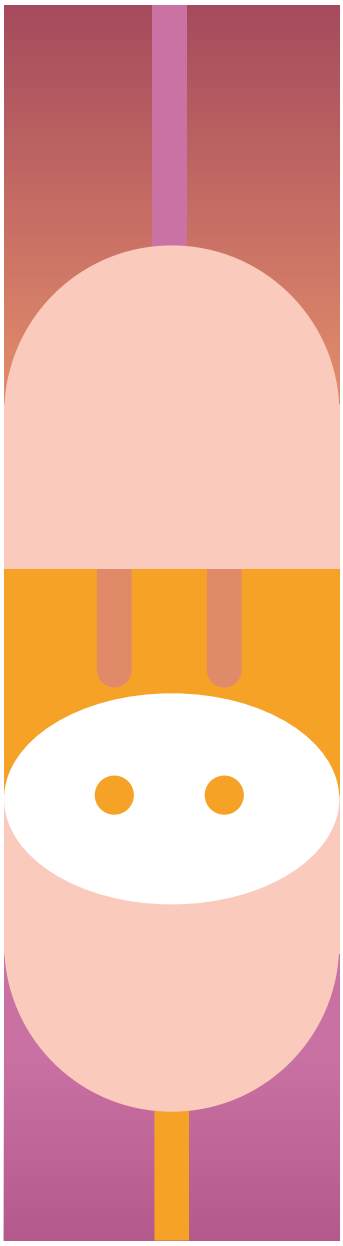
5 Strengthening consumer protection and the functioning of the retail market

In the wake of the exceptional energy crisis and as part of its remit to monitor the smooth operation of energy markets for the benefit of end consumers, CRE has initiated discussions aimed at strengthening the protection of residential consumers, businesses and local authorities. Indeed, despite the responsible attitude shown by the majority of suppliers during the crisis, certain actions by a minority highlighted the need to improve the framework of the electricity and natural gas retail market.

As such, CRE worked with all stakeholders to improve the framework for information and contractual conditions applying to residential consumers and very small businesses. It has also strengthened the framework for awarding and monitoring supply authorisations, including the obligation to display a clear estimate of the price and the creation of prudential obligations for suppliers.

At the same time, CRE met with energy suppliers and consumer associations to identify ways of improving how retail markets operate.

6 Launch of public consultations on the 2024 and 2026 TRVE methodology



In 2023, CRE held two public consultations on the proposed guidelines for regulated electricity sales tariffs (TRVE):one for the 2024 tariff and the other for 2026. All these deliberations fall under CRE's broader work on tariff signals.

The consultation for 2024 focused mainly on the structure of the TRVEs, with the aim of questioning stakeholders about the most appropriate method for encouraging consumers to adjust their consumption based on the needs of the electricity system. The context behind this consultation was the risk that the peak/off-peak time (TOU) option, which more than 9.3 million residential consumers subscribe to, would lose its economic appeal under the TRVEs. In agreement with the majority of respondents to this consultation, CRE opted to use a method for constructing the 2024 TRVE that would maintain the economic incentive for consumers to subscribe to the TOU option whenever their off-peak consumption exceeds 30% of their total consumption.

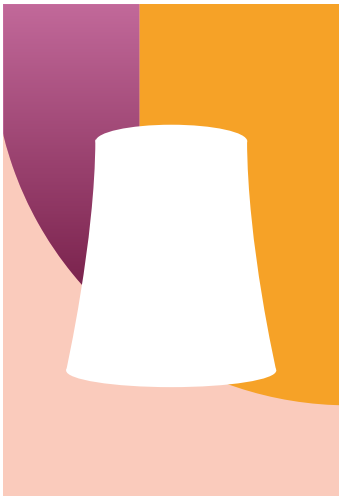
The consultation for 2026 looked at the method for constructing the TRVEs after 31 December 2025, the date on which the ARENH system comes to an end. In particular, the question of supplying corresponding volumes for the calculation of TRVEs for the year 2026 needed to be resolved, in order to provide maximum visibility for TRVE suppliers and players wishing to replicate TRVEs. The more general question of how well the markets will function after the end of the ARENH scheme was also addressed during the consultation.

CRE received 33 contributions, 27 of which concerned issues relating to the supply of TRVEs. Taking into account all the information provided by market players, CRE announced that it would:

– use the supply of all "Base" and "Peak" calendar products, spread over two years, for the calculation of the TRVEs for 2026;
– initiate work to analyse the risks borne by suppliers, so as to adapt the method for drawing up TRVEs where necessary.

CRE has endeavoured to maintain the stability of the TRVEs despite volatile wholesale prices, and to ensure continuity with the TRVE calculation currently in use. In view of the ongoing discussion regarding the regulatory system that could succeed ARENH, CRE has announced that it will specify the final methodology for constructing the TRVEs for 2026 at a later date.

7 The report on the cost of nuclear power



At the beginning of 2023, the Government sent CRE a mission statement asking it to determine the production cost of the existing nuclear fleet, including the fifty-six units in operation and the Flamanville 3 EPR.

CRE's analyses focused on the following aspects:

- the forecast trajectory for nuclear power generation, incorporating a statistical and contextual analysis of the industrial and operating risks faced by EDF;
- a component-by-component analysis of the full cost of the existing nuclear fleet;
- the method used to calculate the weighted average cost of capital (WACC) for operating the existing nuclear fleet, and a detailed analysis of all its parameters;
- revenues from the nuclear fleet linked to the valuation of its form of production, capacity guarantees and its participation in system services, aiming to determine a base load sale price for electronuclear energy.

CRE's investigation was drew upon all the documentation and data made available to it, and included an in-depth adversarial phase with EDF.

The full cost of existing nuclear power calculated by CRE, on the basis of the deliverability trajectory and the level of WACC applied, comes to €60.7$_{22}$/MWh over the period 2026-2030, €59.1$_{22}$/MWh over 2031-2035, and €57.3$_{22}$/MWh over 2036-2040.

Based on this comprehensive cost analysis, CRE calculated the base load cost at which nuclear electricity from the existing nuclear fleet could be sold. This is set at €56.7$_{22}$/MWh over the period 2026-2030, €55.1$_{22}$/MWh over 2031-2035, and €53.2$_{22}$/MWh over 2036-2040.

— Focus

Report on the functioning of the retail gas and electricity market

At the end of 2023, as part of its remit, CRE published a report on the workings and challenges of the retail market for electricity and natural gas in France. The period covered by the report (2020 to 2022) was characterised by the exceptional crisis in wholesale electricity and natural gas prices in 2022, which followed almost immediately in the wake of the sharp fall in prices that occurred at the height of the health crisis in 2020.

In its report, CRE points out that, despite the crisis, the primary objective of protecting consumers against the rise in wholesale energy prices was achieved on the whole. In particular, the vast majority of consumers were able to benefit fully from the tariff shield and the ARENH+ scheme through their supplier.

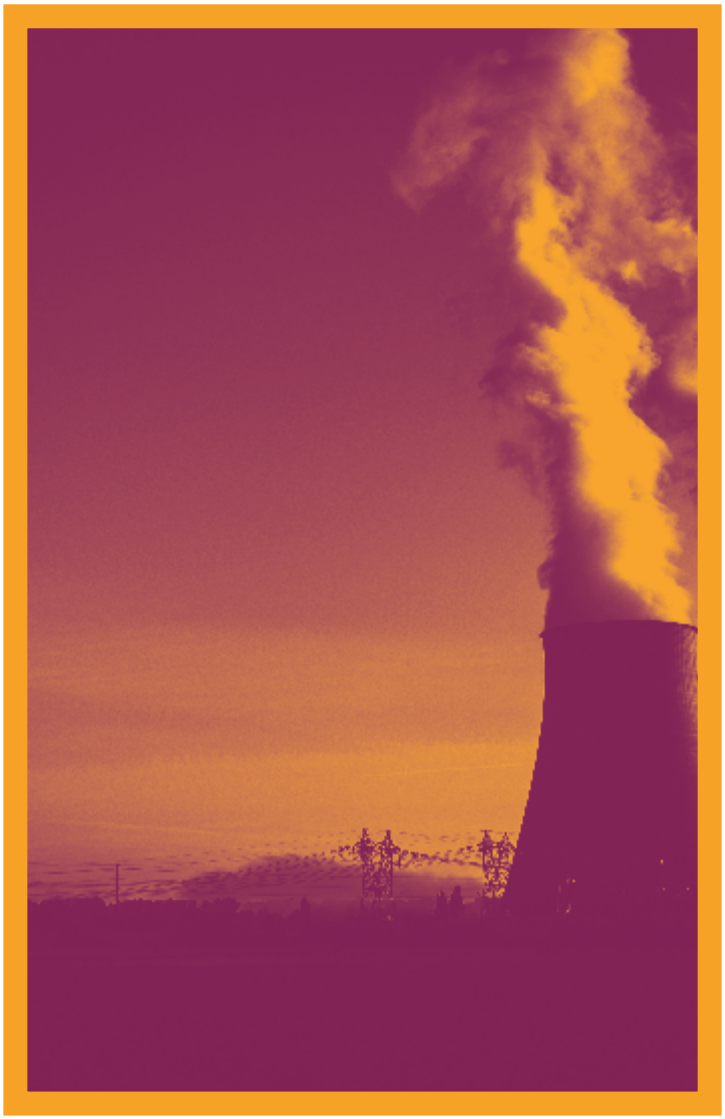
However, the crisis highlighted that there is room for improvement in the way the retail market operates. CRE has used all the means at its disposal to prevent misuse of the ARENH, and to initiate the necessary sanction procedures.

The report sets out a list of working priorities for the coming months, in order to absorb the lessons learned during the crisis and improve how the retail market functions:

- the introduction of prudential obligations to ensure that all suppliers source in accordance with their commitments to consumers;
- a better framework for the information and contractual conditions applying to residential consumers and very small businesses.

The cost crisis has had a major impact on the competitive dynamics of the retail market. During this period, the variety of market offers available to consumers diminished considerably, as a large proportion of offers were aligned with tariff shields. The fall in wholesale prices in recent months has seen the removal of tariff shields and the return of fixed-price offers, a useful tool for guaranteeing medium-term prices for consumers. CRE will be closely monitoring competitive trends in the retail market over the next few years.

II. Wholesale markets



1 The need to reform the European electricity market: CRE's contribution to the European Commission's public consultation

Given its influence within the sector, CRE has played an active role at every stage of the reform of the electricity market, with the aim of:

– protecting consumers;
– preserving the current functioning of the wholesale market, while strengthening and developing it over the longer term;
– securing investments by using a variety of tools, while leaving Member States sufficient leeway to devise financing methods that are suitably adapted to investments in a competitive low-carbon mix; this leeway also extends to the way in which the full cost will be passed on to consumers.

CRE has taken action in a number of ways. Firstly, from 23 January to 13 February 2023, CRE contributed to the public consultation on the reform of the electricity market launched by the European Commission. With the aim of informing national and European public authorities, CRE also set up a group of academic experts from various backgrounds (United Kingdom, France, Spain, Italy, Germany), who submitted a report in March 2023 entitled *"Beyond the crisis: re-thinking the design of power markets"*. Finally, throughout the negotiations that took place in the Council and the European Parliament in 2023, CRE made its technical expertise available to the negotiators, either at the request of the French authorities or jointly with its European colleagues through ACER/CEER common positions. In December 2023, the Council and the European Parliament reached a provisional political agreement on the reform, demonstrating the European Union's capacity for responsive action.

2 Post-ARENH: Government discussions and agreement with EDF

From 1 January 2026, France's historic nuclear fleet will no longer be subject to the ARENH regulation system, which has been in force since 2011. At the end of 2023, discussions between the French government and EDF led to an agreement setting out the principles of the future regulatory system. Its exact arrangements will need to be set out in law, in order to clarify any uncertainties facing electricity producers, suppliers and consumers in the run-up to the end of ARENH.

The reform of the French electricity market is part of the wider framework of European reform. The aim is to learn from the crisis of 2022-2023, by making the internal electricity market more resilient to supply shocks, protecting consumers more effectively against wholesale price volatility, and promoting the development of low-carbon generation, storage and demand flexibility. CRE is committed to the smooth operation of the integrated European electricity market. This includes the spot market, which minimises the cost of production of the existing fleet and optimises border exchanges, and the forward (futures) market, which hedges the price risk to which players are exposed and delivers the economic signals that contribute to security of supply.

At the national level, CRE is actively involved in discussions aimed at preserving the benefits of healthy competition both upstream and downstream. Whatever the future regulatory framework, the wholesale electricity market will play a greater role in ensuring the exchange of nuclear generation volumes (which were previously off the market). Its smooth operation is therefore crucial, particularly over timeframes of 3 years or more. Although the French market is characterised by the presence of a vertically integrated incumbent operator with a dominant position in production, simple structural measures are needed to ensure that the market operates efficiently for all stakeholders. CRE has made proposals along these lines in conjunction with the French Competition Authority, in particular to improve transparency and liquidity on the wholesale markets, possibly by means of a market-making mechanism.

3 CRE's supervisory activities under the REMIT regulation

Since 2014, CRE has opened eighteen formal investigations under REMIT – the European regulation concerning the integrity and transparency of the wholesale energy market – thirteen of which pertain to the wholesale electricity market and five to the natural gas market.

In 2023, two new investigations were opened on the wholesale electricity market, and four investigations resulted in a referral to CoRDiS.

In addition, two investigations, opened in March 2021, resulted in two penalty decisions being issued by CoRDiS, for a total amount of €580,000:

– on 27 July 2023, against TotalEnergies Electricité Gaz France, for failing to comply on seven occasions with its obligation to publish insider information in a timely manner, concerning the unavailability of electricity generation capacity between 1 January 2019 and 31 December 2020. The penalty of €80,000 pertains solely to delays in publication, as no use of this insider information was observed in the markets;
– on 26 December 2023, against Engie for having failed on twenty-two occasions to comply with its obligation to publish privileged information in a timely manner, concerning the unavailability of electricity generation capacity between 1 January 2019 and 31 December 2020. During the same period, Engie also breached the provisions of REMIT relating to the prohibition of insider trading. The penalty issued was €500,000.

To date, five investigations into wholesale energy markets are underway, including one opened in March 2024 on the gas market and four opened between March 2021 and May 2023 on the electricity market. Two cases are currently being examined by the designated members of CoRDiS.

— Focus on

The report on the functioning of the wholesale market in 2022

In July 2023, CRE published its annual report on monitoring of the wholesale markets for 2022 – a year that saw an exceptional crisis in European gas supplies following the near-complete shutdown of Russian pipeline gas deliveries, which led to a spike in wholesale gas and electricity prices in Europe.

France, which is relatively non-dependent on gas for its electricity production, nonetheless found itself in difficulty due to the simultaneous occurrence of a major crisis in nuclear power production. Electricity supply during the winter of 2022-2023 was eventually secured thanks to the mild weather, a drop in consumption in France and Europe, and the measures taken within the gas market – in particular the refilling of storage facilities and floating liquefied natural gas (LNG) terminals – along with a part of France's nuclear fleet returning to service just before the winter.

In this period of high prices and high volatility, CRE's task of monitoring the wholesale markets took on particular importance. CRE stepped up its monitoring of the wholesale market in real time, or close to real time, throughout 2022.

In particular, it published a report on the formation of wholesale electricity prices for the winter of 2022-2023, based on formal questioning of market players about their trading strategies. It closely monitored the behaviour of operators in the wholesale market, focusing in particular on detecting and punishing any insider dealing.

III. Adapting gas networks to the crisis

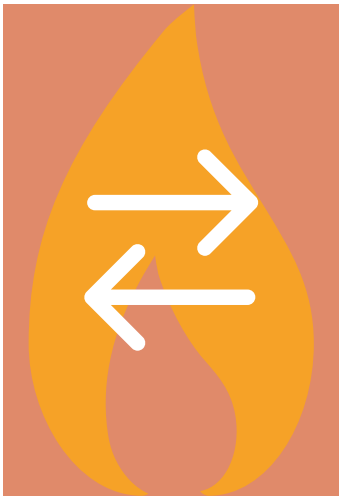
1 Congestion management procedures between the south and north of France on the gas transmission network

In the winter of 2022-2023, France faced an unprecedented situation in terms of its gas supply, with the cessation of Russian gas imports via pipelines and the reversal of dominant gas flows. In addition, France experienced a series of sudden drops in Norwegian gas imports at the Dunkirk network interconnection point. This situation resulted in a gas deficit in the north of France and a surplus in the south, as this region is well supplied with LNG. This exposed certain limitations in the congestion management mechanisms, which had been designed to handle gas flows coming from the north.

CRE implemented emergency congestion management measures at the end of 2022, and the network operators organised several consultation meetings in 2023 to discuss measures to be taken to better prevent and resolve these congestion issues. CRE then consulted stakeholders from 15 June to 6 September 2023 on the improvements to be made to the operating rules for the Trading Region France (TRF).

In its deliberation of 12 October 2023, following this consultation, CRE decided to maintain the measures taken in 2022 and to strengthen them by improving or creating new mechanisms to manage congestion (with a UIOLI storage cut-off mechanism, storage swap, early restriction, etc.).

2 France's new role in European gas flows



The reversal in gas flows observed at France's borders in 2022 as a result of the fall in Russian pipeline supplies to Europe has continued in 2023, confirming France's role as a transit nation for exporting gas to countries to the north and east - in particular Belgium, Germany and Italy - thanks to increased use of French methane terminals and imports from Spain. In 2023, as in 2022, France was a net exporter to Belgium and a net importer from Spain: its exports to Italy were maintained at higher-than-historical levels. For the first time, it became a net exporter at the border with Germany. It now appears that this new dominant direction of gas flows will be sustainable.

To enable gas to be exported to Germany, in autumn 2022 CRE adapted the regulatory framework applicable to the Obergailbach interconnector, which was initially designed to operate solely for imports, by allowing the creation of physical gas exit capacity following a technical adaptation of the interconnector by the Transmission System Operators (TSOs).

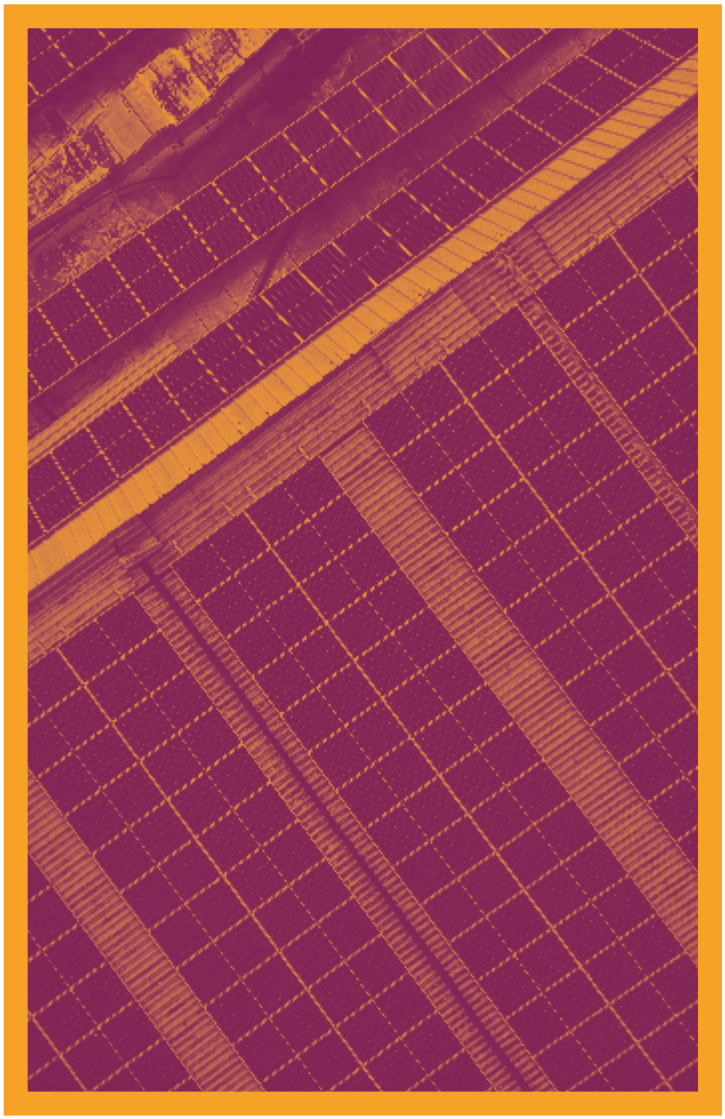
Throughout the crisis, wholesale gas prices in France were significantly lower than in the rest of Europe, excluding the Iberian Peninsula, thanks to the massive influx of LNG enabled by the four French LNG terminals operating at full capacity. This helped to reduce France's soaring gas bill and the cost of the gas tariff shield by several billion euros.

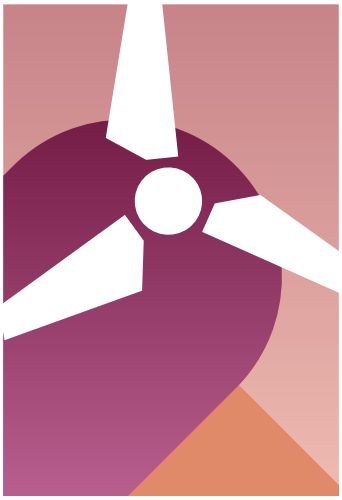
France/Spain interconnections

The year 2023 confirmed the structural reversal of flows at the interconnection point with Spain, which had been observed since the start of the gas crisis. In the spring and at the end of 2023, France imported most of its gas from Spain, when wholesale gas prices were lower than French prices, reflecting the arrival of LNG at Spanish terminals, and gas coming into Spain from North Africa by pipeline.

In this context, the French and Spanish TSOs were able to optimise the operating conditions of their networks, which enabled Teréga, on the French side, to firm up import capacity from Spain during the summer period (May to October).

IV. The challenges faced by energy producers during the crisis





1 Adapting support for renewable energies during the crisis

In the context of rising costs for renewable energy production facilities, due to the increase in the cost of raw materials and transport and the rise in interest rates, the State assumed part of the risk relating to these evolving costs: in late 2022, the government introduced a new tariff indexing mechanism prior to facilities going online, to be applied within several support measures: calls for tender and tariff decrees. This new indexation, which will operate both upwards and downwards, is designed to reflect changes in the investment and operating costs of projects during their development phase. It had already been included for several years in offshore wind tenders, and was added to the "classic" annual indexation of support tariffs, which reflects variations in operating costs over the operational duration of the support contract.

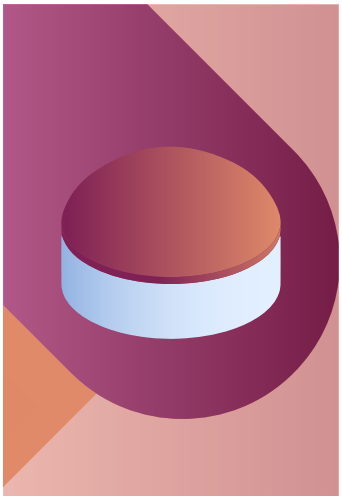
This development helped avoid any slowdown in new project development in 2023. As a result, several calls for tender in wind and solar power experienced a high level of interest, contrary to the situation in 2022 when calls for tender drew substantially fewer submissions. CRE was able to suggest that public authorities draw up additional lists of successful bidders for the periods in which it considered the bids to be sufficiently competitive.

In 2023, the terms and conditions for re-application by projects that had already won in previous calls for tender were clarified, thereby freeing up the development of certain projects by restoring their economic balance. CRE considers that this option must remain the exception if the tender process is to function properly, and has recommended that it be explicitly prohibited for projects benefiting from the new indexation mentioned above.

In addition, CRE's deliberations on the various tender periods, and the fifteen or so opinions it has issued on draft amendments to tariff decrees or specifications, have enabled it to make recommendations on adaptations to the support mechanisms in mainland France and in non-interconnected zones (ZNIs), particularly with regard to:

- appropriate scaling of price ceilings in calls for tender for all sectors;
- adjustments to the mechanisms for tariff changes and, more generally, the appropriate scaling of tariffs for all support measures allocated by decree: biomethane injection, electricity production from biogas, small-scale hydroelectricity, PV solar on buildings and on the ground, and onshore wind power.

2 Data collection from producers of injected biomethane

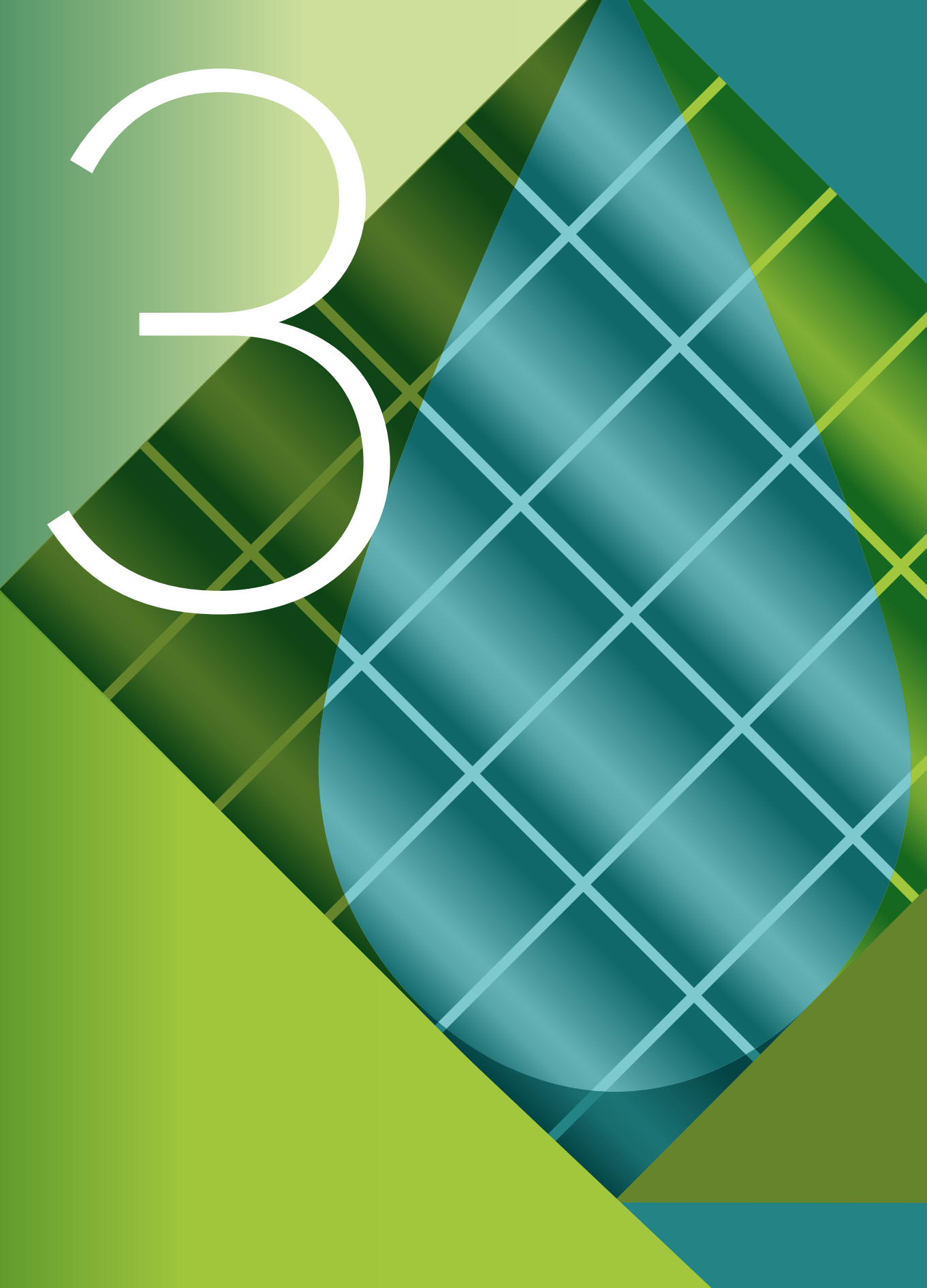


In 2023, CRE launched a campaign to collect economic data from producers of injected biomethane, as provided for in article R. 446-15 of the Energy Code. The aim of this audit is to gain a better understanding of the economic and financial characteristics of facilities producing injected biomethane, so that the public authorities can:

- characterise the impact of the crisis on the economics of projects whose feed-in tariffs are already guaranteed by government support contracts;
- ensure that the support levels from which projects will benefit in the future are appropriately scaled (tariff levels, indexation formulas, etc.).

The industry has been impacted by the 2020 health crisis, the energy crisis in 2022 and 2023, and more generally by cost inflation since the second half of 2021. In addition, the signing of new support contracts came to a halt in 2021 following the when a new tariff decree came into force, designed to stop the surge in the number of projects sparked by previous tariff levels.

The panel of facilities surveyed includes all facilities producing injected biomethane which were in service at the end of April 2023, as well as certain planned production facilities having already signed a purchase contract. The CRE report will be published in 2024.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CHAPTER 3

CRE: AN ECONOMIC REGULATOR WORKING TOWARD THE ENERGY TRANSITION

As part of its network regulation remit, CRE is at the heart of discussions on the development of gas infrastructures, both in France and internationally. To this end, CRE conducted an extremely thorough process, interspersed with workshops and public consultations, to draw up the new tariffs for gas networks and infrastructures.

In 2023, the gas networks will undergo a major overhaul in terms of investment and tariffs, incorporating a growing proportion of biomethane. Electricity grids, meanwhile, are undergoing a profound transformation, driven by the promotion of electric mobility and initiatives in low-carbon industrial zones.

In this way, CRE is speeding up the deployment of renewable energies, such as solar and wind power, while guaranteeing consumer protection. These initiatives are crucial to the deployment of these energies, which is a major challenge for all players in the energy sector.

I. The evolution of gas networks

1 Investments by transmission system operators and gas storage operators in 2023

The energy crisis, and in particular the sharp fall in Russian gas deliveries by pipeline, has served as a reminder of the importance of storage sites in guaranteeing security of supply. This episode confirmed the effectiveness of the regulatory legislative framework put in place in 2018, and since then implemented by CRE, to ensure the filling of gas storage facilities.

In July 2023, CRE approved two storage capacity development projects submitted in this context by Storengy and Teréga:

– 1.6 TWh at Storengy's Etrez site, for a budget of €71.8 million;
– 0.9 TWh at the Teréga site, for a budget of €27.5 million.

Operator investment programmes approved by CRE for 2023 amounted to €196m for Storengy, €69m for Teréga's storage business and €39m for Géométhane.

With regard to the gas transmission system, CRE approved the investment programmes of GRTgaz and Teréga (transmission) for 2023, which amount to €462.8 million and €101.3 million respectively. For the two transport operators, this expenditure mainly concerns safety and maintaining their existing network in operational condition.

CRE is pleased to note that after the creation of the single market zone in France in 2018, which initially required significant reinforcement of the gas transmission network, investment by transmission system operators has fallen significantly. Since 2019, these investments have stabilised overall, reflecting a more balanced and optimised network situation.

2 The report on the future of gas infrastructures

In April 2023, CRE published a report on the future of gas infrastructures, providing particular insight into the various scenarios for gas production and consumption in 2030 and 2050. The report takes into account both the fall in gas consumption, which is set to continue over the coming years, and the development of low-carbon and renewable gas production.

The three consumption scenarios studied for 2050 assume a balanced supply-demand situation in France, where all demand would be met by domestic production of green gas.

The study concludes that most of the transmission and distribution networks will remain essential by 2050, and that the investment needed to accommodate green gas, estimated at between €6 billion and €9.7 billion by 2050 depending on the scenario, i.e. between €200 million and €300 million a year, is reasonable compared with the investment currently being made by infrastructure managers.

Storage facilities will have to be adapted to meet the needs of both the gas and hydrogen sectors, which will be competing for the use of salt caverns. Large LNG terminals would continue to be necessary for security of supply, and in the interests of European solidarity.

Since 2000, the gas distribution network has been largely renewed and secured: the reception of green gases will therefore be its main scaling factor in the long term. In areas with high production potential, developing the network for the injection of green gas would constitute a significant increase in the current length of the network, but also offers significant potential for economies of scale by 2050.

Finally, the study of four specific areas (Le Havre, Fougères, Volonne and Grenoble) shows that a certain number of assets will not be needed in the long term, particularly where district heating networks will result in the disconnection of a large number of gas consumers.

The report also suggests taking a broader view of France's gas infrastructure. Firstly, France will continue to play an important role in the European gas system, and gas transit with neighbouring countries will mean maintaining a network that is oversized in relation to national needs alone. Secondly, it will be necessary to strengthen the synergies between gas networks and other networks:

- coordination at local level between heating networks and gas distribution networks needs to be improved, starting now;
- The interweaving of gas and electricity networks is also an important issue, even though the outlook is still unclear for certain areas and will depend on the evolution of the electricity mix and heating choices. The consequences of any massive transfer of peak gas demand to the electricity sector must be analysed from this perspective.

3 New gas infrastructure tariffs: ATRD7, ATRT8 and ATS3

At the beginning of 2024, CRE set the tariffs for gas transmission, supply and storage infrastructures for the 2024-2027 period, following extensive consultation with stakeholders.

Between February and September 2023, CRE held five thematic workshops which were open to the public, focusing on:

- changes to the structure of gas distribution and transmission tariffs;
- the development of green gas, and changes to the tariffs applicable to the injection of renewable and low-carbon gas into the networks;
- the future of gas infrastructures and possible adjustments to the regulatory framework, in order to take declining gas consumption into account.

CRE also held three public consultations on the next tariffs for natural gas transmission, storage and distribution. Finally, following these consultations, CRE brought together suppliers, consumer associations, licensing authorities and local authorities at several round tables.

In addition to the objectives of simplicity, predictability and continuity generally pursued by CRE in its tariff decisions, the ATRT8, ATS3 and ATRD7 tariffs adopted as a result of these efforts will address the challenges of the coming tariff period, as well as the longer-term issues facing the gas system.

These challenges include the sharp fall in natural gas consumption in 2022 and 2023, which will continue over the long term. This reduction should automatically lead to a reduction in the base from which gas infrastructure operators collect their revenues.

This prospect led CRE to change the framework for regulating tariffs, in order to guarantee the long-term economic sustainability of the gas system:

- recording the new assets in RAB at their book value, to which the nominal WACC rate (i.e. including inflation) is applied;
- for transmission and storage tariffs, the reduction of depreciation periods for new long-life assets (pipelines, new wells, etc.) from 50 to 30 years, to reduce the risk of stranded costs for these assets;
- for the distribution tariff, an incentive for GRDF to control and prioritise its investments, without penalising the development of green gas and its injection into the networks.

In this context, controlling operators' costs is a key issue, and CRE has set the trajectories for operators' operating costs accordingly. CRE will be particularly vigilant and selective when examining any new investment project submitted by transmission and storage operators.

The distribution network is increasingly operating in an "insurance policy" capacity, in particular via the development of "back-up" or "emergency" uses for certain consumers who are connected to the gas network but only use gas for a few days a year. Until now, the structure of the distribution tariff did not reflect the costs of sizing and maintaining these customers' networks. CRE has changed this structure by introducing a new dedicated charge based on throughput, which will apply to network users with high throughput meters.

Finally, to enable the development of renewable and low-carbon gases, the tariffs give operators the means to contribute to the associated research and development work, as well as resources to study the conversion of part of the assets to hydrogen or CO_2.

4 Integrating biomethane into networks

CRE is supporting the development of the biomethane sector, in particular by validating connection zones, which are local plans that define the most attractive injection points from a technical and economic point of view.

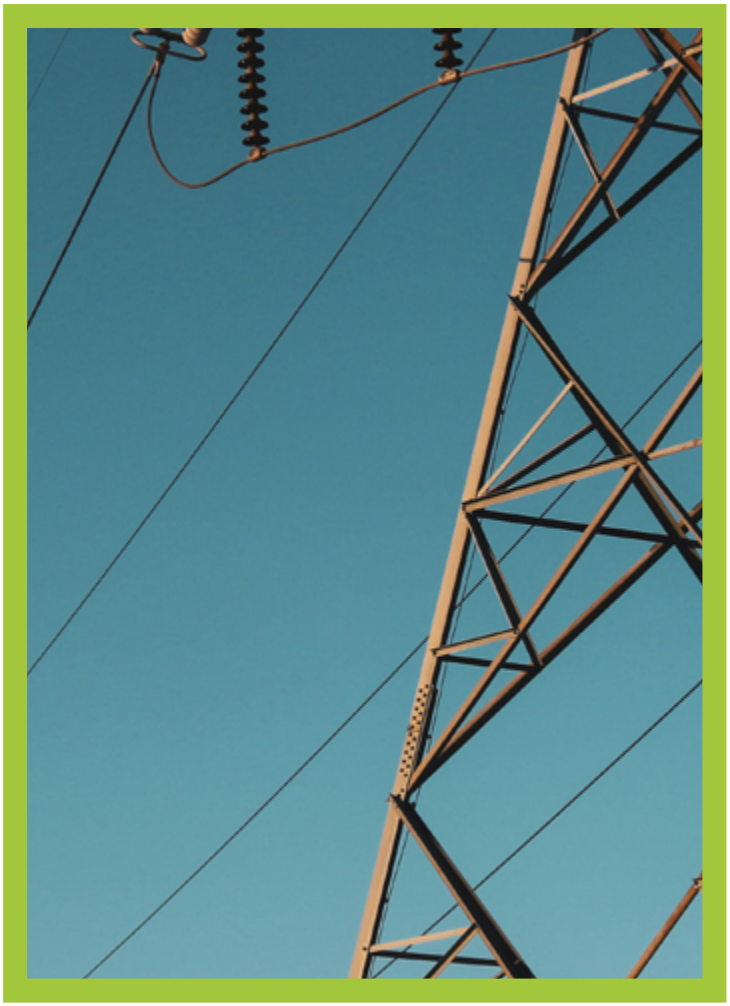
CRE has already validated more than 350 zones, covering around 70% of the country. In the medium term, over 1,200 projects could be carried out in these validated zones, representing almost 27 TWh of production.

CRE is also responsible for approving the upgrading work required for the integration of biomethane into the distribution network and the transmission network. It has approved more than 400 projects on the distribution network, representing a total investment of around €250m, and nearly forty reverse flow stations - compression facilities enabling gas to flow from a distribution network to a transmission network - worth around €100m.

In addition, CRE will issue calls for tenders for large-scale facilities (25 GWh annual production), which until now did not receive public support. The first period will end mid-way through2024, with two other periods set to follow.

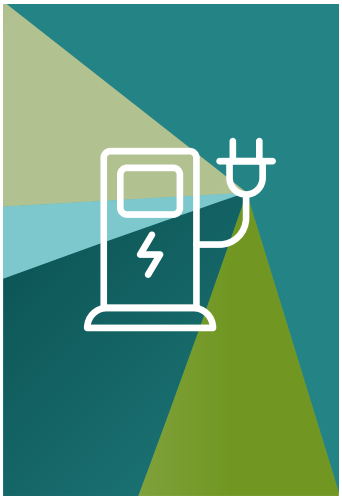
Lastly, CRE issued its opinion on the decree on biomethane certificates, an extra-budgetary mechanism designed to involve suppliers in the development of the sector.

II. Electricity networks on the cusp of a major transformation



At the end of 2023, CRE launched work on the next tariffs for the use of public electricity networks, known as "TURPE 7", which will come into force in 2025, with an initial public consultation on the tariff structure.

Until the end of 2024, CRE will be organising a number of workshops and public consultations in order to ensure optimal involvement from market players. These tariffs will have to take account of and support the rapid transformation of the energy system, particularly as a result of the high level of investment required in electricity grids, the development of decentralised renewable energy production and new uses such as electric mobility and storage, and the growing need for flexibility that this entails.



1 CRE's work to support the deployment of electric mobility

France is committed to decarbonising mobility, with over 1.5 million electric or hybrid vehicles already on the road – a figure that is set to increase tenfold by 2035. This electrification poses a number of challenges for the network and the connection of charging points, while at the same time creating opportunities if this new use brings added flexibility to the electricity system.

In 2023, CRE published its recommendations for the rapid and cost-effective integration of electric mobility into the electricity system.

With more than 111,000 charging points open to the public across the country, CRE notes that there is good nationwide coverage, but that the number and power level of charging points will now have to adapt to changes in traffic. CRE has identified several ways of optimising connections so that they do not delay or increase the cost to local authorities of deploying charging stations.

Furthermore, recharging vehicles at peak times could prove costly for users and for the electricity system. CRE is therefore drawing attention to the need for more widespread measures to control home recharging, using either a simple option (postponing to off-peak hours) or a smart version (making better use of flexibility). CRE will ensure that all flexibility markets are open to the participation of electric vehicles.

Lastly, CRE has helped draw up a pre-financing framework, via the TURPE, for solutions to pre-equip car parks in the collective residential sector, as an alternative to the solutions proposed by private recharging operators. Once the financial framework for the system has been established, CRE will ensure that it is appropriately scaled, that stranded costs are kept under control, and that there is a level playing field with competing private offerings.

2 The evolution of electricity networks in low-carbon industrial zones

France is heading for a sharp rise in electricity consumption by industry, driven by the electrification of existing sites and the establishment of new low-carbon industries. Requests from industrial consumers to be connected to the public transmission network (more than 20 GW) have already exceeded the power currently drawn by French industry (around 15 GW) from this network.

In order to speed up and optimise these connections, changes to the current framework have been introduced under the law enacted on 10 March 2023 on accelerating the production of renewable energy, known as the APER law.

While awaiting the main implementing decrees, RTE (with CRE's agreement) has set up several shared connection zones – in particular Dunkirk, Fos sur Mer, Le Havre and the Vallée de la Chimie – which will make it possible to meet more than 15 GW of connection requests, scheduled to come into operation between 2027 and 2032.

However, connection requests in these areas still need to be streamlined, in order to optimise network investment and avoid stranded costs. The APER law now allows regional prefects to depart from the "first come, first served" principle when allocating network capacity, in order to prioritise the most mature projects.

Lastly, the APER law provides for procedural exemptions for the connection of renewable hydrogen production, decarbonisation of existing installations, or projects of major national interest for a two-year period, depending on the needs associated with each project. Taken together, these measures should enable France to succeed in both decarbonising its industry and reindustrialising its economy.

3 The structure of the next TURPE and its contribution to flexibility needs: the public consultation launched by CRE

In December 2023, CRE launched a consultation dedicated to changes in the structure of the tariff for use of the public electricity network (TURPE); this marks the start of the process of setting the forthcoming TURPE 7 HVB and HTA-BT tariffs, scheduled to come into force on 1 August 2025. This work will be carried out over the course of 2024, leading to a decision in late 2024 or early 2025.

In February 2024, CRE also held two public workshops dedicated to the tariff structure and data management, attended by almost 200 participants, at which CRE presented its preliminary guidelines and held discussions with stakeholders. Four other workshops are planned for the first half of 2024, focusing on connection, flexibilities, investment and quality of service.

The TURPE tariff signals and their contribution to the electricity system's flexibility needs are a major focus of these initiatives. Changes in the electrical production mix and future growth in demand for electricity make flexibility a key issue, both in terms of balancing supply and demand – the idea being to limit the use of peak power plants and reduce production costs – and in terms of controlling network costs and facilitating the integration of renewable generation and new uses.

Tariff signals are a historic pillar of flexibility in electricity consumption in France. This is why CRE is considering changes to the placement of the "peak" and "off-peak" time slots in its consultation. These time slots could be adapted to reflect the changing points of strain within the electricity system, in particular to take advantage of photovoltaic production during the day in summer, while at the same time addressing the severe strain on the system at certain peak consumption times in winter.

In the same consultation, CRE is proposing to introduce a new specific pricing system to keep pace with soaring growth in the storage sector. The aim of this optional pricing system would be to issue tariff signals that would enable storage capacity to be used to the network's maximum advantage. In this way, those who adapt their behaviour to reduce network peaks and thus limit the need for network development, could benefit from a lower TURPE bill, reflecting their costs more accurately.

— Focus on

The building management report

Commercial buildings represent an untapped source of efficiency and flexibility: today, only 6% of commercial buildings over 1,000 m^2 are equipped with an energy management system, and those buildings which are equipped do not systematically use these systems to their full potential. Few of these buildings have an electricity package that varies by time period, thereby encouraging consumers to adjust their usage habits to avoid peak consumption times.

In addition, energy optimisation solutions can take this progress even further, using commercial buildings to help boost electricity network flexibility by simultaneously "consuming less" and "consuming better." The deployment of these energy optimisation solutions could represent up to 6 GW at peak times for commercial buildings.

The CRE report published on 11 September 2023, and co-piloted by Schneider Electric, identifies the conditions for the successful deployment of energy optimisation solutions in commercial buildings, including best practices for the industry, necessary skills development, and support and assistance mechanisms.

The report also presents solutions for exploiting this potential through regulatory and organisational levers. This is illustrated in particular by initiatives such as the Cube Flex competition, launched by RTE and the French Institute for Building Performance (IFPEB), which confirmed the feasibility of rescheduling or adjusting certain uses (such as heating, ventilation, air treatment or recharging electric vehicles) on a regular, day-to-day basis, and during test days such as EcoWatt. The results showed that between 5% and 40% less electricity was consumed at peak times on weekdays in the various buildings concerned.

Finally, the report explores the economic mechanisms that need to be put in place to make the most of this flexibility, and align the economic interests of all players involved.

— Focus on

The report on smart electricity networks

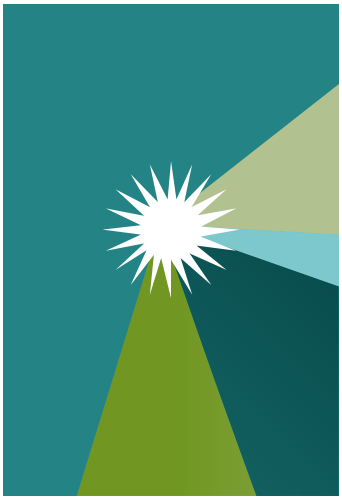
In December 2023, CRE published the first edition of its report assessing the performance of network operators in developing a smart electricity grid. This falls under the European Directive of 5 June 2019 concerning common rules for the internal electricity market, which entrusted this task to the national regulatory authorities.

First of all, CRE notes that French electricity transmission and distribution system operators have a very high level of deployment of digital technologies on their networks. To take full advantage of this, CRE is making a series of recommendations and requests, which it will monitor every two years.

Among the main recommendations made are that connection times must be reduced and costs kept under control by making optimised connection solutions more widespread, so that the integration of renewable energies and new uses does not fall behind schedule. CRE is also asking network operators to industrialise the use of flexibilities, which should become "standard" whenever they are more appropriate than network reinforcements. Finally, CRE is asking network operators to ensure the reliability of the data they make available to other stakeholders, given their essential role in developing new offers and smart services that will benefit both the electricity system and consumers.

III. Deployment of renewable energies

The deployment of renewable energies (RE) lies at the heart of France's energy policy, and CRE plays a central role in putting this policy into practice. As a regulator, CRE plays a crucial role in accelerating this roll-out, guaranteeing its effectiveness while ensuring a sustainable energy transition. By encouraging a significant increase in renewable energies, CRE is not only helping to achieve the long-term objectives of the energy transition, but also bolstering the country's security of supply.



1 Development of photovoltaic, wind and small hydroelectric power plants

In 2023, CRE examined eleven tender application periods for onshore renewable electricity production facilities:

- Two application periods for the "PPE2 PV Building" call for tenders
- Two application periods for the "PPE2 PV Sol" call for tenders
- Three application periods for the "EPP2 Onshore Wind" call for tenders
- One application period for the "PPE2 Auto-consumption" call for tenders
- One application period for the "PPE2 Neutral" tender
- One application period for the "AO2 Small Hydro" call for tenders
- One application period for the "2019 PV ZNI" call for tenders

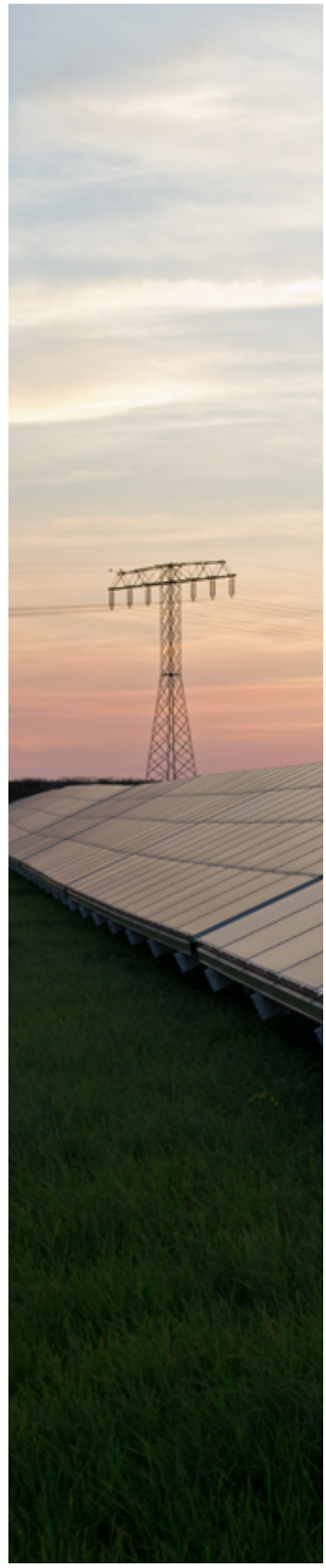
In all, some 1,500 applications were examined and a cumulative capacity of almost 5 GW was proposed by CRE. CRE has also issued a number of opinions on draft amended specifications for some of the above-mentioned calls for tenders, as well as on two draft specifications for new calls for tenders: firstly, the "AO3 Petite Hydroélectricité" call for tenders, which follows on from the AO2, and secondly, a call for tenders for facilities producing injected biomethane. The results of the first tender application periods will be examined during the first half of 2024.

CRE also contributed to the preparation of the following decrees, in particular through its public opinions:

– a new tariff decree for small photovoltaic installations on buildings in the ZNIs, which was finally published in the JORF on 17 January 2024;
– a new tariff decree for small ground-mounted photovoltaic installations in mainland France;
– a decree amending the current tariff decree (known as "H16") for small hydroelectric installations.

With regard to offshore wind power, the winner of the "AO4" competitive procedure (for the development of a 1 GW wind farm located off the coast of Normandy) was selected in March 2023, following CRE's review of the five applications submitted. Examination of the "AO5" competitive procedure, for the development of a 250 MW floating wind farm south of Brittany – the first call for tenders in Europe for a commercial floating wind farm – began in autumn 2023, with the aim of submitting a winner to the Minister at the beginning of 2024. CRE issued an opinion on the specifications for this procedure in March 2023. In addition, in February 2023 CRE provided the Minister for Energy with a shortlist of candidates for participation in the competitive dialogues for the "AO7" (1 GW wind farm off the coast of Oléron Island) and "AO8" (1.5 GW extension to AO4) procurement tendering procedures.

Finally, CRE also contributed to the more general debate on accelerating the deployment of offshore wind power in France, by publishing its response in July 2023 to the consultation carried out by public authorities on allocation procedures and remuneration arrangements for future offshore wind projects. CRE's response was based on an analysis of international best practices, summarised in a comparative study of eight countries, commissioned from Compass Lexecon and published at the same time.



2 "*Power Purchase Agreements*" and CRE's requests for information

High wholesale prices between 2021 and 2023 made *Power Purchase Agreements*(PPAs) for renewable electricity generation assets much more attractive to large consumers and suppliers. For buyers, these contracts provide greater visibility and stability in their supply costs. For producers, this type of contract represents a supplementary outlet to public support schemes.

The French law enacted on 10 March 2023, on the acceleration of renewable energy production, introduced provisions relating to PPAs into the Energy Code. Producers having signed up to "physical" PPAs must now carry a "supplier authorisation", or delegate this requirement to an entity which already carries this authorisation. In January 2024, CRE issued a favourable opinion on a draft decree implementing these legal provisions. However, further work will be required in order to ensure the decree's operational applicability prior to its publication.

The law also allows for the introduction of "mixed" calls for tenders, which would enable the winning producers to benefit from a support contract for only portion of the energy produced, and to implement a PPA for the other portion (the CRE had the opportunity to express its support for this type of competitive procedure, specifically for the offshore wind sector). In addition, the law entrusts CRE with the task of supervising PPAs concluded as part of mixed tenders. CRE believes that this scope is too narrow (there are currently no mixed tenders), and that a legislative amendment is needed to ensure that its supervisory role (and the related reporting obligations of PPA signatories) covers all PPAs signed.

Pending these changes being made to the Energy Code, in July 2023 CRE sent a questionnaire to signatories of PPAs with a minimum duration of 10 years concerning new renewable electricity generation assets. CRE received 46 responses, covering 75 contracts, 110 generation assets and 1.8 GW of installed capacity. CRE will publish a summary analysis of these responses in 2024: the aim will be to identify trends in the prices of these contracts, their main contractual issues and any obstacles to their development.

3 Public service energy charges: revenue for the State in 2023, and industry sectors' contribution to consumer protection mechanisms

Each year, CRE assesses the public service energy charges (CSPE) to be compensated to the operators having incurred them. The CSPEs associated with supporting renewable energies in mainland France are made up of:

the additional costs incurred by the obligated purchasers (EDF OA and local distribution companies), as well as by the approved bodies involved in managing purchase obligation contracts for electricity produced from renewable energy sources. These additional costs correspond to the difference between the feed-in tariff and the market value of the volumes produced by the facilities benefiting from these contracts;

the costs incurred by EDF OA in managing additional remuneration contracts. These costs correspond to the difference between the reference tariff provided for in the additional remuneration contract, and a benchmark market price;

the additional costs incurred by gas suppliers in managing purchase obligation contracts for biomethane injected into natural gas distribution or transmission networks. These additional costs correspond to the difference between the biomethane feed-in tariff and the market value of the volumes produced by the facilities benefiting from these contracts.

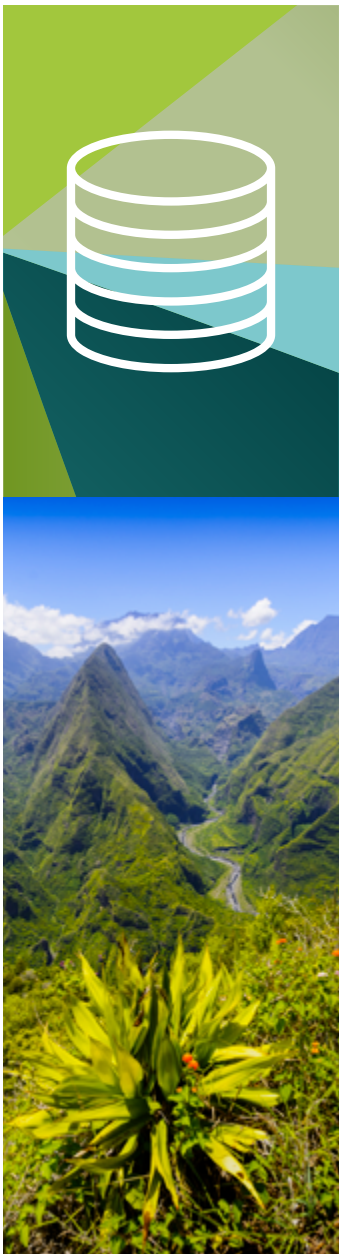
The very sharp rise in wholesale prices between 2021 and 2023 upset the traditional pattern of support for renewable energies. As such, in the latest revaluation of charges for 2023, carried out exceptionally in July 2023 as provided for in the French Finance Act for 2023, the revenue linked to support for renewable energies in mainland France amounts to €13.7 billion, enabling the financing of around 50% of the public expenditure linked to the "tariff shield" and "shock absorber" schemes.

CRE has also evaluated the amount of costs to be compensated to CSPE operators in 2024: these amount to €0.6 billion. This amount does not include expenditure relating to exceptional consumer protection measures, as figures for these measures were not available for 2024 at the time of the assessment. Using the snapshot of wholesale prices set in May 2023, the revenue from support for renewable energies (€2.7 billion) in mainland France will broadly offset the costs of support for biomethane injection (+€0.9 billion) and support in non-interconnected areas (+€2.2 billion).

The amount of costs to be compensated in 2024 will also be subject to an exceptional reassessment in July 2024, as provided for in the Finance Act for 2024, at the same time as the final calculation of costs for 2023 and the assessment of costs to be compensated in 2025. The fall in wholesale prices observed since the second half of 2023 should lead to an increase in the charges to be offset for 2024, when compared with the previous assessment.

IV. Non interconnected areas

CRE supports non-interconnected zones (ZNI) in the French Overseas Territories and Corsica in the development of their local renewable resources.
CRE is highly attentive to the safety of the electricity system, to controlling public expenditure and the interests of consumers, and undertakes a number of missions to support these territories: providing technical expertise to local authorities so that they can draw up their multi-annual energy plans, helping to define the terms and conditions of support for renewable energy installations, guaranteeing tariff equalisation, calculating regulated tariffs for the sale of electricity, and providing guidance for PPA production projects (renewables or in transition), in order to validate compensation for the additional costs inherent to electricity production in non-interconnected zones, and to compensate initiatives designed to control electricity demand.



1 Storage in ZNIs: launch of a new office for Réunion and Martinique

In order to support the development of renewable energies in the ZNIs, which is necessary to achieve the energy transition objectives, CRE mobilised its resources to support the development of storage facilities managed by the grid operator. These facilities help to secure the electricity system, while also generating operating savings by optimising the use of generation resources and better integrating non-controllable renewable generation.

Following the publication of its new methodology at the beginning of 2023, CRE organised a referral window for projects located in Martinique and Réunion, with bids due in the first quarter of 2024. The results of this first window should be announced before the summer of 2024.

The next windows will concern Guadeloupe, then Corsica, with bids due in 2025, and finally French Guiana and Mayotte, depending on the needs and ambitions set out in the multi-annual energy plans for these territories.

2 CRE and New Caledonia renew their partnership

Since 2017, CRE and the Government of New Caledonia have been working together to address the territory's key energy challenges, in particular under a previous agreement covering the period 2018-2021, during which CRE provided New Caledonia with its expertise on a number of structural issues in the sector, particularly with regard to pricing. In October 2023, the CRE chair Emmanuelle Wargon and the President of the Government of New Caledonia, Louis Mapou, agreed to continue a multi-year partnership to support New Caledonia in the success of its ambitious energy transition policy for the 2023-2027 period. CRE is making its expertise available to the New Caledonia government, in particular through structured studies, information and ad hoc advisory services in the context of the next New Caledonian multi-annual energy plan, regarding the development of New Caledonia's electricity mix, the decarbonisation of New Caledonian industry and electricity pricing arrangements.

3 Assessment of actions to control electricity consumption

In 2019, CRE approved a five-year scheme to support investment in electricity demand-side management (DSM) in the ZNIs. By 2022, the trend had levelled off for private customers across the board, with the exception of the installation of air movers, which continues to rise sharply. Among professionals, deployment has resumed after a sharp fall during the crisis.

Between 2019 and 2022, €422 million will be paid out in premiums, of which €286 million (67%) will come from public energy service charges (SPE), with the remainder mainly financed by "Energy Savings Certificates" (CEE). The initiatives financed will reduce consumption by 850 GWh, and greenhouse gas emissions by 570 kt eq. CO2 emissions each year, and will save around €2 billion in SPE costs over their lifetime of up to 30 years.

In view of this positive assessment, CRE wishes to renew the scheme for the 2024-2028 period. It has therefore extended the scheme to 2024 on a transitional basis, to allow each region to put forward its own proposals. CRE has also extended the scheme to Saint-Martin.

— Focus on

The mission in French Guiana

Emmanuelle Wargon and the departments in charge of the ZNIs visited French Guiana in March 2023, to discuss energy issues with local stakeholders.

French Guiana's future multi-annual energy plan is currently being drawn up, and is the subject of discussions with the Collectivité Territoriale de Guyane and the Prefect of French Guiana. Visits to the various production facilities in operation or under construction (the Petit Saut dam, Larivot power station, power stations using local biomass, etc.) also helped to illustrate the issues at play, particularly the links between the various renewable production sectors, the location of production facilities and the reinforcement of the coastal grid, on the one hand, and the development and reinforcement of power generation facilities in inland communities on the other.

The issues involved in securing the power supply to western Guyana were also addressed during discussions with elected representatives at the Saint-Laurent du Maroni town hall.

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The SACOI interconnection

The SACOI (SArdinia-COrsica-Italy) interconnection is a direct current line built in the 1960s to allow electricity production from Sardinia to be sent to the mainland, while also supplying Corsica. In 2023, CRE and its Italian counterpart, ARERA, worked together to upgrade and increase the power level of this link, which is vital to Corsica's security of supply. In particular, the work focused on:

– supporting the operators (EDF and Terna) in the contracting process with the main supplier;
– determining the appropriate level of French participation in Italian investments made for the benefit of both countries;
– setting up the basic principles for use of the SACOI 3 link.

The project represents a total investment of around €1.5 billion, including €450 million from EDF. Over its lifetime, it is expected to generate savings of around €500m in public energy service costs.

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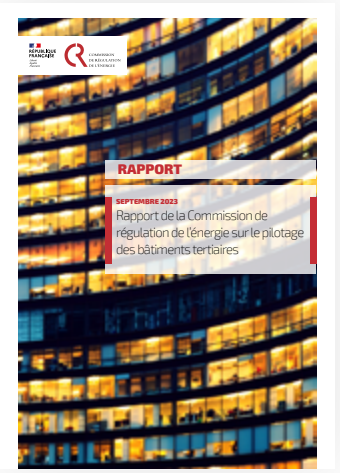
2022 Activity Report

CRE recommendations to support the deployment of electric mobility



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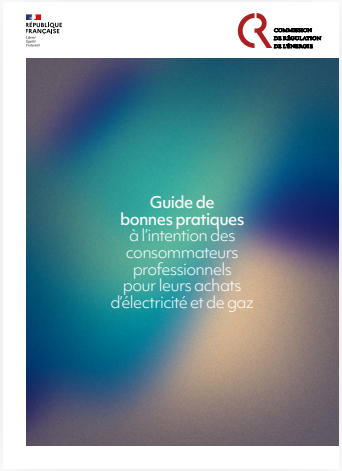

Best practices guide for professional consumers purchasing electricity and gas

Findings of the Dispute Resolution and Sanctions Committee (CoRDiS)

The functioning of the wholesale electricity and natural gas markets in 2022

Implementation of the minimum threshold of 70% interconnection capacity for electricity exchanges at French borders: review of the year 2022 and highlights

ACKNOWLEDGEMENTS

The CRE Activity Report is a collective effort, involving contributions from staff in all CRE departments. The Management Committee and the CRE Board would like to thank all the staff for their contribution to this highly useful communications tool for the energy sector.

CREDITS

The sole purpose of this document is to inform the public about CRE activities. Only CRE deliberations may be taken as fact.

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