



REPORT

June 2026

Monitoring and functioning of the wholesale electricity and natural gas markets in 2025

SUMMARY

The CRE publishes an annual report on the monitoring and functioning of the wholesale electricity and gas markets. The report aims both to present its market monitoring activities and to provide insight into how these markets operate and evolve. This 19th edition covers the year 2025, marked by a gradual normalization of energy markets after the 2022–2023 supply crisis, while also highlighting the lasting effects of the structural transformations initiated in recent years.

The gas market is increasingly driven by global LNG supply, which now dominates price formation. The wave of LNG capacity expansion expected in the coming years is putting downward pressure on prices, but the European market remains exposed to global supply shocks. Overall, 2025 appears to be a transition year in which markets are returning to more predictable functioning while remaining sensitive to geopolitical dynamics and the development of new production capacity and flexibility. Thus, although Europe relies little on supplies passing through the Strait of Hormuz, the war in the Middle East at the end of February 2026 triggered a new rise in prices following the downward trend observed in 2025.

For electricity, the trends already observed in 2024 have been confirmed and intensified: increased nuclear availability and production, combined with higher installed renewable energy capacity, in a context where consumption remains stagnant below the pre-crisis average, have so far resulted in an overcapacity situation in the French generation fleet, characterized by low average prices and record export levels. However, prices are becoming increasingly volatile and variable throughout the day, highlighting the need for greater flexibility resources. In 2025, 15-minute contracts were introduced into coupled European markets, in January for the intraday market and in October for the day-ahead market. This is intended in particular to support the integration of renewable energy generation.

With the end of the ARENH mechanism¹ on December 31, 2025, the wholesale electricity market now plays a predominant role in determining electricity prices for consumers. Although the post-crisis prices decline mitigated the effects of this transition toward retail prices without ARENH, consumers are now more exposed to wholesale market prices.

The CRE is continuing the implementation of the amended REMIT regulation² by expanding the scope of its monitoring activities. The volume of market data it receives increased tenfold between 2022 and 2025, and it analysed more than 800 internal alerts and 23 external notifications of suspected behaviours for the year 2025³. It is also working to explain better the functioning of wholesale markets, which is the context for the publication of this report and, since early 2025, the quarterly report on wholesale electricity market activity.

¹ The scheme for regulated access to historic nuclear electricity (ARENH) was introduced by the Law of 7 December 2010 on the reorganisation of the electricity market (the 'NOME' Law). Between 1st July 2011 and 31st December 2025, consumers, regardless of their supplier, could access the electricity generated by EDF's existing nuclear power stations located on French territory and commissioned before 8 December 2010 at a regulated price (€42/MWh since 2012).

² European Regulation No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on the integrity and transparency of the wholesale energy market (REMIT). This Regulation was amended by European Regulation No 2024/1106 of the European Parliament and of the Council of 11 April 2024. The amended REMIT came into force on 7 May 2024.

³ Analyses carried out in 2025 and 2026 (the CRE's activity report mentions the analyses carried out in 2025)

The CRE is strengthening its monitoring of wholesale markets in cooperation with ACER⁴ and other European regulators.

The CRE's monitoring activities are governed by the French Energy Code and the REMIT Regulation. The revision of REMIT, which entered into force in May 2024, extended the prohibitions on market manipulation and insider trading to wholesale energy products that are also financial instruments, and strengthened reporting obligations for market participants. In 2025, the CRE continued implementing these new rules and reinforced its cooperation with ACER, the French Financial Markets Authority (AMF), and other regulators and financial authorities.

In 2025, the scope monitored by the CRE under REMIT represented more than 26 million transactions carried out on wholesale electricity and gas markets, covering more than 5,495 TWh traded and a total value of €203 billion. The number of transactions increased sharply again compared with 2024 (+74%), notably due to the introduction of 15-minute products on the day-ahead and intraday electricity markets, but also because of the continued development of new trading practices, particularly algorithmic trading. Beyond the number of transactions, submitted orders and their successive modifications account for the majority of the data collected by ACER and processed by the CRE.

The CRE's monitoring relies on both internal detection of suspicious behaviour and the analysis of external notifications. Internal detection is based on monitoring and detection tools, including automated alerts generated from the data collected by ACER. As part of an innovation and performance improvement initiative for detection tools, cooperation was established in 2025 between the CRE and the PEReN⁵. Two collaborative projects proposed by the CRE, one focused on developing a tool for detecting insider trading and the other on detecting market manipulation, were included in PEReN's 2026 roadmap. Operational implementation of this partnership is currently underway.

Internal detection is supplemented by external notifications of suspected behaviours, particularly from persons professionally arranging or executing transactions (PPAET⁶). Among them, exchanges, brokers, and certain transmission system operators remain one of the CRE's main sources of information. Being responsible for arrangement of trading activities on their platforms, they possess deep market knowledge and visibility into wholesale market operations. The CRE seeks to maintain active cooperation with these actors and remains attentive to the proper fulfillment of their monitoring duties, in accordance with the obligations set out in Article 15 of REMIT⁷.

More than 800 alerts and 23 external notifications of suspected behaviours were analysed by the CRE for the year 2025³. In 2025, the inflow of new external notifications was broadly equivalent to the number of cases closed⁸ following analysis. This dynamic helped maintain the stock of cases under review at a stable level of around fifty cases, as in 2024.

Following the detection of transactions at abnormal prices as part of its monitoring activities, the CRE revised the procedures for releasing cross-border capacity on one of France's borders so that additional capacity is now offered during the third intraday auction (IDA 3) rather than on the continuous market. This improves the functioning of the intraday market by promoting a better balance between supply and demand.

One investigation was opened in 2025. At the end of 2025, a total of ten investigations were under review by the CRE's investigative officers, and one request for sanctions was being processed by the Dispute Settlement and Sanctions Committee (CoRDiS).

In 2025, CoRDiS issued two sanction decisions related to REMIT or the monitoring of wholesale energy markets:

⁴ European Union Agency for the Cooperation of Energy Regulators (ACER)

⁵ In French, *Pôle d'expertise de la régulation numérique*, Digital Regulation Expertise Center

⁶ *Persons Professionally Arranging or Executing Transactions* (PPAET), primarily exchanges, brokers, certain system operators and certain market participants

⁷ Pursuant to Article 15 of REMIT, PPAETs are required to notify the relevant national regulatory authority and ACER without delay of any suspected breach of the prohibition on insider trading and market manipulation (Articles 3 or 5 of REMIT), or of any failure to comply with the obligations to disclose inside information (Article 4 of REMIT)

⁸ A market monitoring case may be closed, in particular, where there is no suspicion of a breach. It may also be followed by the opening of an investigation or the sending of a letter reminding the concerned market participants of the obligations and the prohibitions applicable to them.

- On 20 January 2025, CoRDIS imposed sanctions against Danske Commodities A/S and Equinor ASA amounting to €8 million and €4 million respectively for the breach of Article 5 of REMIT concerning market manipulation in the gas sector in 2019 and 2020, relating to transport capacity between France and Spain. This was the first decision in which CoRDIS ruled on collusion for the purpose of market manipulation. Both companies appealed the CoRDIS decision.
- On 22 April 2025, CoRDIS imposed a €500,000 sanction against J.P. Morgan SE for failing to comply with the obligation to provide information essential to CRE's market monitoring duties under Article L. 134-18 of the French Energy Code. This was the first CoRDIS decision relating to this type of breach. Through this decision, CoRDIS confirmed that market participants requested by CRE under Article L. 134-18 of the Energy Code are required to provide the requested information during CRE's monitoring activities. The company appealed the CoRDIS decision.

Finally, following the appeal by ENGIE in 2024, the French Council of State, in its decision of 18 June 2025, upheld the CoRDIS sanction decision of 26 December 2023 for the most part, while nevertheless reducing the financial penalty from €500,000 to €490,000.

CRE continues its discussions with the various AAIs⁹ regarding the challenges and opportunities that new technologies, including artificial intelligence (AI), could bring to monitoring methods and investigations. These exchanges enabled CRE to deploy in 2025 a new AI-based audio transcription tool.

At the European level, cooperation efforts in 2025 focused on the implementation of the amended REMIT framework, particularly the comitology process¹⁰ concerning the REMIT implementing regulation and the preparation of a delegated act. Both texts were adopted by the European Commission in 2026. ACER's guidance on data reporting is expected to evolve significantly thereafter. This work is still ongoing and is expected to be partially completed in 2026.

CRE is heavily involved in the working groups dedicated to wholesale market monitoring within ACER and CEER¹¹, which contribute to the coordinated and consistent operational implementation of REMIT by national regulatory authorities, the development of guidance on the application of REMIT published by ACER, and the improvement of the quality of transactional and fundamental data reported by market participants.

Finally, in 2025, CRE responded to the European Commission's public consultation on commodity derivatives markets.

Monitoring wholesale energy markets is now a major challenge for regulatory authorities in a context of high price volatility, geopolitical tensions, and the rapid transformation of energy systems. At the same time, the growing integration of renewable energy generation, the multiplication of flexibility mechanisms, the rise of algorithmic trading, and the arrival of new market participants are making the structure and dynamics of wholesale energy markets increasingly complex, while significantly increasing the volumes of data and information to be analysed. In the short and medium term, CRE will therefore need to continue strengthening its market data analysis and processing capabilities, deepen cooperation with national and European authorities, and continuously adapt its monitoring tools and methods in order to ensure market transparency, integrity, and participant confidence.

⁹ Independent Administrative Authorities

¹⁰ The so-called comitology procedure aims to ensure the involvement of Member States in the adoption, by the European Commission, of the technical rules necessary for the implementation of EU law, in this case the REMIT Regulation. In this instance, as provided for in Article 21 of REMIT, the adoption of its implementing regulation is subject to the examination procedure laid down in Article 5 of Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers: <https://eur-lex.europa.eu/legal-content/FR/TXT/PDF/?uri=CELEX:32011R0182>

¹¹ Council of European Energy Regulators (CEER)

The average decline in wholesale natural gas prices in 2025, driven by the predominance of LNG, appears to have been a period of relative easing before the geopolitical shock of 2026

The year 2025 was marked by a significant easing of wholesale gas prices in France and Europe, driven in particular by the increasing availability of LNG. As the wave of expansion in global liquefaction capacity began to impact supply, competition between Europe and Asia remained limited. By December 2025, prices had returned to their levels from early summer 2024, falling below €30/MWh across all maturities. Despite a temporary increase in volatility during the first quarter of 2026, volatility resumed its decline and, by the end of the year, had returned to its pre-crisis level before rising again with the outbreak of the war in the Middle East at the end of February 2026. At that time, the price of the front-month contract nearly doubled, peaking above €60/MWh in March. It subsequently declined, stabilizing around €45/MWh.

Reflecting the broader European trend, French LNG imports increased sharply in 2025 (+18%), now accounting for 56% of French imports (compared with 49% in 2024). France remained the leading LNG entry point in Europe for the fourth consecutive year, contributing to European security of supply and participating in making the French gas trading hub (*Point d'Échange Gaz*, or “PEG”) the cheapest hub in the European Union in 2025. This increase in imports was also associated with higher utilization rates at LNG terminals: average utilization reached 61% in 2025, compared with 50% in 2024. French LNG terminals accounted for 23% of European LNG imports in 2025.

Conversely, pipeline flows declined. In particular, Norwegian gas imports at Dunkirk fell by 7%. Yet, this entry point still accounted for 83% of total entries at French network interconnection points (PIRs) in 2025. Exchanges with Spain and Belgium remained limited, while the Obergailbach interconnector with Germany was practically unused. Most French exports were ultimately directed towards Switzerland (93 TWh in 2025), mainly for the Italian market.

Storage facilities were used less intensively in 2025 than in 2024, but they entered the winter of 2025–2026 with lower filling levels compared with the start of winter 2024. As a result, at the end of winter they reached their lowest level for this period since the energy crisis: storage facilities were 22% full on 1 April 2026, compared with 27% in 2025 and 39% in 2024. All storage capacity for the coming winter has been sold. French regulation requires storage capacity holders to reach an 85% filling rate before the start of winter, thereby supporting this summer's injection campaign.

French gas consumption declined again in 2025, reaching 350 TWh (-3% compared with 2024). The decrease was mainly driven by the industrial sector (-7%), while consumption by residential and commercial sectors and gas-fired power plants remained relatively stable.

Volumes traded at the PEG accelerated their growth in 2025, increasing by 19% compared with 2024 and reaching 6.8 times national consumption, thereby supporting the liquidity of the French wholesale gas market. This increase in volumes was uniformly distributed between the spot market (+16%) and the futures market (+20%).

At the end of summer 2025, the French gas transmission network experienced an incident at Saint-Rémy-de-Provence, resulting in the indefinite unavailability of the Rhône pipeline, a major north-south transit route within the TRF¹². Managing this incident required adapting the congestion management mechanisms available to transmission system operators for the winter of 2025–2026. It notably affected the trading of entry capacities at Pirineos and exit capacities at Oltingue. However, these restrictions had no observable impact on regional wholesale gas prices and, consequently, on price spreads with Spain and Italy.

¹² Trading Region France – the single natural gas market area in France

Finally, while 2025 confirmed in many respects the normalization of market fundamentals since the energy crisis, it also highlighted the growing exposure of the French and European gas systems to global LNG market dynamics. In the medium term, a new wave of global liquefaction capacity expansion is expected, and the increasing role of LNG in Europe's gas supply could suggest a significant easing of prices. Nevertheless, this may also give rise to new tensions, including regional competition to attract LNG flows and global supply shocks. The war in the Middle East that began on 28 February 2026 caused the PEG front-month price to rise by 76% in just two days, even though Qatar and the United Arab Emirates, whose productions were affected by the conflict, play only a limited role in European, and especially French, imports. As in the previous year, the market is concerned about storage refill levels ahead of winter 2026–2027. However, the European Union has now introduced flexibility measures enabling it to adjust its storage filling targets and therefore limit regulatory pressure on prices.

For electricity, 2025 confirms the trends observed in 2024, with lower but more variable prices

The year 2025 continues the upward trend in electricity generation observed in 2023 and 2024. Total generation increased slightly compared with 2024, reaching 547.5 TWh (+1.6%) and exceeding the 2014–2019 average. Nuclear generation continued its recovery, with 373 TWh produced (+11 TWh). Hydropower returned to levels consistent with historical averages (62.4 TWh), following the exceptionally wet year of 2024. Solar and wind generation continued to grow, driven mainly by the expansion of solar photovoltaic installations and, to a lesser extent, wind capacity: 30.4 TWh for solar (+5.9 GW of capacity) and nearly 50 TWh for wind power (including 5.7 TWh offshore). Thermal power plants continued their historical decline, with only 18.7 TWh generated, representing less than 4% of the energy mix. This situation of supply significantly exceeding domestic consumption led to a new record for net exports, reaching 92.3 TWh.

Temperature-adjusted electricity consumption remained almost stable at 446.6 TWh (+0.9%), but still stood around 6% below the pre-crisis 2014–2019 average. Structural trends related to energy efficiency and energy-saving measures continued to limit demand.

In this context of relative overcapacity, day-ahead prices remained relatively stable while forward prices continued to decline, reaching levels close to those observed before the crisis (2014–2019) by the end of 2025.

Average day-ahead prices reached €61.1/MWh, representing a slight increase of 6% compared with 2024. Price variability increased more significantly, notably with the average spread between the two most expensive and the two cheapest hours within a single day (the “TB2” indicator) rising by 25% this year, reflecting a growing need for short-term flexibility on both the supply and demand sides. The frequency of negative prices reached a new record of 513 hours in 2025, compared with 352 hours in 2024, mainly due to near-zero prices around midday resulting from peak solar generation in France and neighboring countries. Nevertheless, the French renewable fleet is increasingly incentivized to operate flexibly in order to limit episodes of highly negative prices.

On forward markets, 2025 confirmed the decline in electricity prices in France, widening the gap with most neighbouring countries. The average price of the French Y+1 baseload calendar product stood at €60.9/MWh in 2025, 20% lower than the equivalent French Y+1 calendar product traded the previous year. Forward prices declined throughout 2025 despite some rebounds in February and June (notably linked to changes in gas prices, CO₂ prices, and geopolitical developments), reaching an average of €49.5/MWh in December for the calendar product, close to 2014–2019 levels (€42/MWh on average over that period). This decline in forward prices can be explained by expectations based on the persistence of low spot prices, the prospect of additional generation capacity coming online, and the current overcapacity of the French market.

France maintains its distinctive position in Europe as one of the wholesale electricity markets with the lowest prices:

- Regarding day-ahead markets, the average price gap with neighbouring countries widened, with French prices trading at a discount of around €20–30/MWh compared with Germany, Belgium, or the United Kingdom. Among neighbouring countries, only Spain maintained prices close to those in France, with occasionally lower prices than France during winter periods.
- As for forward markets, prices remained significantly higher in most other European countries: the average spread for the calendar product was around €26/MWh with Germany, €33/MWh with the United Kingdom, and €45/MWh with Italy. Spain recorded annual prices only slightly above French prices in 2025, an unprecedented situation since 2019.

The year 2025 was also marked by the introduction by NEMOs¹³ of 15-minute contracts across all coupled European intraday and day-ahead markets (SIDC and SDAC): in January 2025 for intraday markets, and from 30 September 2025 for first next-day delivery on day-ahead markets. This development is notably aimed at improving the integration of renewable energy generation, whose generation can vary within the same hour.

In 2025, activity on the day-ahead market decreased by 6% between 2024 and 2025, with 139 TWh traded, while traded volumes on the intraday market increased to 28 TWh, up 12% compared with 2024, notably driven by the development of intraday auctions.

Activity on forward markets reached a historic record with 1,727 TWh traded (+22%), mainly driven by trading in annual and monthly products for near-term maturities, particularly in the context of the end of the ARENH mechanism. However, this momentum did not extend to longer-term contracts (Y+3 and Y+4 maturities), where traded volumes remained stable.

The year 2025 also represented an important milestone for balancing markets, particularly for aFRR¹⁴, with RTE's connection to the European PICASSO¹⁵ platform in April 2025. Balancing costs increased significantly, reaching €462 million for procurement and €667.6 million for activations, with a particularly strong increase in aFRR, which now accounts for 55% of total balancing costs. High prices are encouraging the development of new capacities. In particular, certified battery capacity participating in aFRR increased from 100 MW to 340 MW over the year, progressively reducing the role of conventional generation assets, which will then be able to allocate their full capacity to energy markets.

Regarding manual reserves, the end of service of the TERRE platform¹⁶ at the end of 2025 is preparing the transition to the MARI platform¹⁷ in 2026. Generation assets remain predominant within the balancing mechanism, while cross-border activations declined slightly.

Under the capacity mechanism, the 2025 auctions for the 2026 delivery year (January to March 2026 period) resulted in historically low average prices of €4,401/MW, reflecting a substantial capacity surplus and moderate demand. Total certified capacity for this period in 2026 reached 97.1 GW for an estimated need between 91.2 and 96.3 GW. This situation precedes the transition toward a new centralized capacity mechanism starting in winter 2026–2027, under which RTE will become the sole buyer of capacity.

The beginning of 2026 continued the trends observed in 2025 but was also marked by the war in the Middle East. The increase in gas prices had only a limited impact on French electricity prices, showing the growing decoupling between electricity prices in France and gas prices. The price of the year-ahead baseload calendar contract thus rose from €50/MWh on 27 February to a peak of €62/MWh on 3 March before easing back to around €55/MWh during May. An increasing number of negative-price hours was also observed during the spring 2026, including episodes of extremely negative prices, leading to a

¹³ NEMOs (*Nominated Electricity Market Operators*) are exchange operators designated by the regulators. They are responsible for organising the coupling of daily and intraday wholesale electricity markets within the European Union and for ensuring the smooth execution of transactions on these markets. Following a decision by the CRE, the authorised NEMOs for France are EPEX SPOT, Nord Pool and, from 27 January 2026, EXAA.

¹⁴ Automatic Frequency Restoration Reserve

¹⁵ Platform for the International Coordination of Automated Frequency Restoration and Stable System Operation

¹⁶ Trans-European Replacement Reserve Exchange

¹⁷ Manually Activated Reserves Initiative

lowering of the coupled day-ahead market price floor from -€500/MWh to -€600/MWh starting with the auction of 28 May 2026 for next-day delivery. Analysis on this change to the price floor may be addressed in the report covering the year 2026.

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THE CRE AND THE REMIT: WHOLESALE MARKETS MONITORING, A EUROPEAN CHALLENGE

Since 2006, the Energy Regulatory Commission (CRE) has been responsible for monitoring the French wholesale electricity and natural gas markets. Each year, it publishes its monitoring report on the functioning of the French wholesale electricity and natural gas markets.

Since 28 December 2011, the CRE's mandate for the monitoring of wholesale energy markets has been governed by European Regulation No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on the integrity and transparency of the wholesale energy market (REMIT). This Regulation was amended by European Regulation No 2024/1106 of the European Parliament and of the Council of 11 April 2024 amending Regulations No 1227/2011 and No 2019/942 to enhance the protection of the Union against market manipulation on the wholesale energy market. The revised REMIT came into force on 7 May 2024.

Pursuant to the provisions of Article L. 131-2 of the Energy Code, the CRE monitors the wholesale electricity and natural gas markets and, notably, ensures compliance with Articles 3, 4, 5, 7c, 7d, 8, 9 and 15 of REMIT.

In this regard, the CRE pays particular attention to the provisions designed to ensure the integrity and transparency of wholesale energy markets by:

- prohibiting market manipulation and insider trading (Articles 3 and 5);
- requiring market participants to disclose any inside information they hold (Article 4).

The CRE is also committed to ensuring that persons professionally arranging or executing transactions (PPAET)¹⁸ comply with their obligations under Article 15 of REMIT to detect and report suspected insider trading or market manipulation, as well as suspected failure to disclose inside information.

REMIT is implemented at European level under the provisions of Article 16, which provides in particular for cooperation between ACER, ESMA¹⁹, the energy regulators of the Member States of the European Union, and the financial and competition authorities.

¹⁸ *Persons Professionally Arranging or Executing Transactions* (PPAET), primarily exchanges, brokers, certain transmission system operators and certain market participants.

¹⁹ *European Securities and Markets Authority* (ESMA).

CRE ACTIVITY IN 2025 AS PART OF ITS MONITORING MANDATE

Over 26 million transactions monitored (+73%*)



5,495 TWh traded (of which 4,421 TWh on contracts for the supply of energy, i.e. +19%*)

€203 billion traded by value (of which €197 billion on contracts for the supply of energy, i.e. +9%*)



2,211 market participants registered with the CRE (+9%*)

Around 50 cases currently under review as part of monitoring activities



10 investigations underway

1 sanction procedure at the end of 2025

The wholesale market in France in 2025

Electricity prices



Average *day-ahead* price of **€61.1/MWh**, up **6%***

An average of **€60.9/MWh** for calendar forward prices for the following year (CAL+1), representing a fall of **20%***

Natural gas prices



€35.4/MWh on average for *day-ahead* prices and monthly forward prices for the following month (M+1), representing a **4%*** increase

€32.8/MWh average calendar forward prices for the following year (CAL+1), representing a fall of **9%***

* Compared with 2024

SECTION 1: THE CRE'S MONITORING OF WHOLESALE ENERGY MARKETS

1. CRE’s monitoring of wholesale energy markets under REMIT in 2025

CRE actively monitors wholesale electricity and gas markets, relying on the internal detection of potentially suspicious behaviour and the analysis of external notifications of suspected behaviours. The analysis of such behaviour may lead to the opening of investigations and the referral of a request for sanction to the Dispute Settlement and Sanctions Committee (CoRDIS).

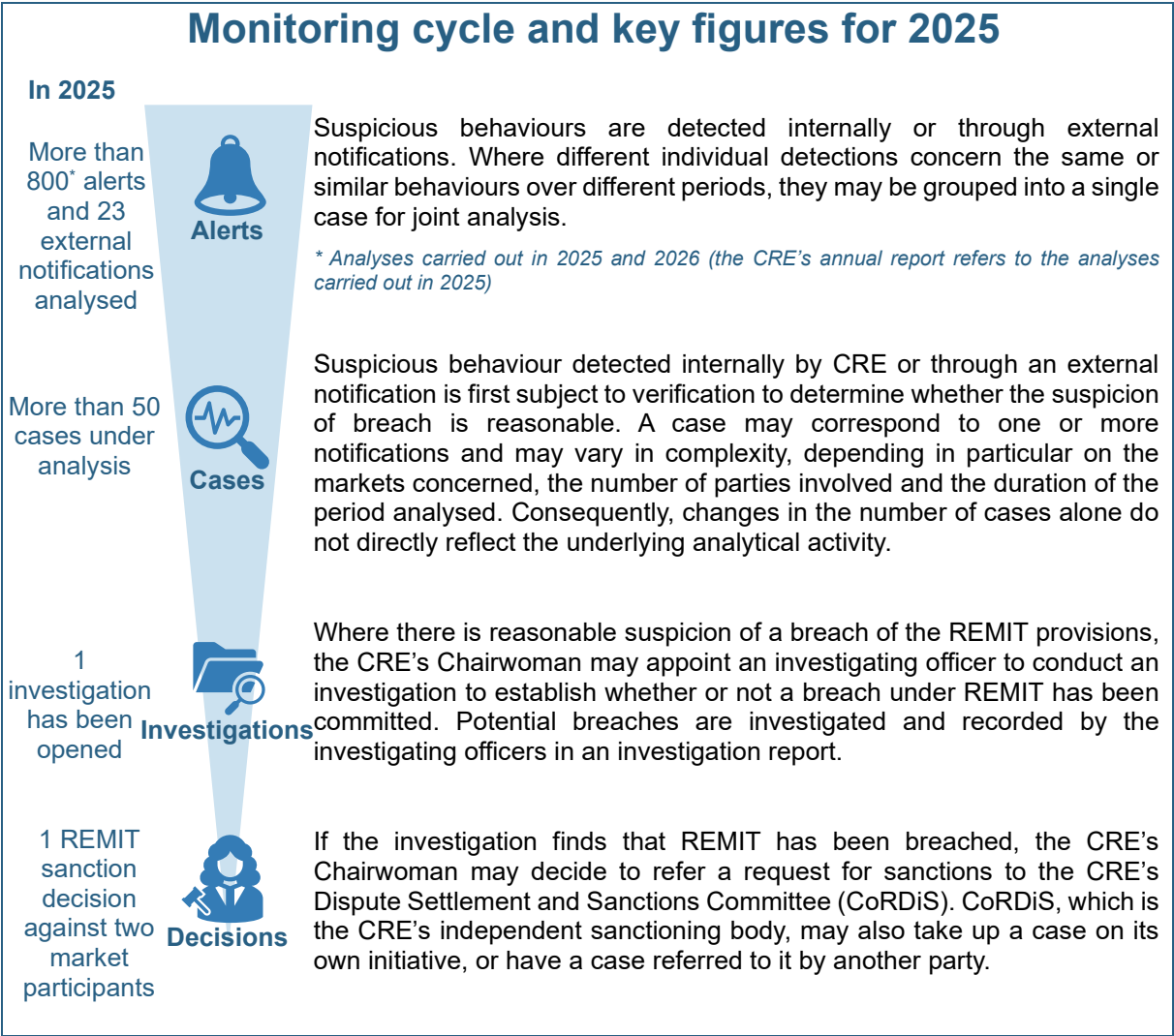


Table 1 below sets out the scope of the markets monitored by CRE. These markets are characterised by differing financial stakes and varying levels of complexity. The futures markets for gas and electricity account for the largest trading volumes and have a direct impact on price formation for consumers. Shorter-term spot markets involve a greater number of market participants, with extensive use of algorithms, and therefore require particular vigilance. Balancing markets have evolved significantly in recent years, with the opening of new market segments, which calls for support for market participants to raise their awareness of the obligations arising from REMIT.

Table 1 : Scope of markets monitored by the CRE (total transactions in 2025)

Electricity		Gas	
Futures markets 1,815 TWh, €109 billion	SDAC auctions 153 TWh, €9 billion	Futures markets 2,024 TWh, €64 billion	Short-term markets 397 TWh, €13 billion
ID SIDC market 24.8 TWh, €1.6 billion	IDA auctions 7.5 TWh, €0.4 billion	Cross-border capacity auctions²⁰ 620 TWh, €0.9 billion	Storage capacity auction²⁰ 126 TWh, €0.1 billion
Balancing capacity 2.9 GW on average, €0.5 billion	Balancing energy 10 TWh, €1 billion	Locational spread 1 TWh, €1.9 million	
Cross-border capacity auctions²⁰ 317 TWh, €3.9 billion	Capacity mechanism 28 GW for 200 hours, €77 million		

1.1. Overview of sources for detection of potentially suspicious behaviours in 2025

CRE's monitoring activities rely on the *ex-post* detection of suspicious behaviour, either through internal detection tools or following notifications submitted by external parties.

Internal detection relies on automated tools designed to monitor market segments in order to detect specific scenarios and behaviours of market participants, using market data collected by ACER under REMIT and data collected directly by CRE from certain market participants. Analyses may also be carried out based on monitoring market circumstances (periods of extreme prices, etc.) and fundamentals.

External detection relies on notifications of suspicious behaviours received from various sources, primarily from *Persons Professionally Arranging or Executing Transactions* (PPAETs)²¹. In particular, exchanges, brokers and certain transmission system operators, as responsible for arrangement of trading operations on their platforms, represent a valuable source of information for CRE.

²⁰ Auctions for capacity for the year 2025

²¹ Pursuant to Article 15 of REMIT, PPAETs are required to notify ACER and the relevant national regulatory authorities in the event of a suspected breach of Articles 3, 4 or 5 of REMIT without delay and, in any case, no later than four weeks from the date on which the PPAET becomes aware of the suspected behaviour. Breaches of this obligation may be sanctioned by CoRDiS pursuant to Article L. 134-25 of the Energy Code.

ACER also shares any suspicious behaviour it detects, accompanied by its preliminary analyses, as well as alerts generated by its automated detection systems, without any associated qualitative analysis. Some of these alerts relate exclusively to the French market, which falls under CRE's jurisdiction, while others involve cross-border trading and therefore also concern other regulators. ACER is gradually introducing new types of alerts, targeting new types of behaviour.

Similarly, other regulatory authorities, as well as market participants, both in France and abroad, provide CRE with information on suspicious behaviour.

CRE encourages PPAETs and all market participants to exercise the utmost vigilance and reminds them that anyone aware of behaviour that may constitute a REMIT breach may report it, including anonymously, via the European Notification Platform (<https://www.acer-remit.eu/np/home>) set up for this purpose or by emailing surveillance@cre.fr.

Key elements for 2025

Internal detection



- CRE's tools are designed to detect behaviours that may constitute a breach of the obligation to disclose inside information, or of the prohibitions of insider trading or market manipulation.
- Approximately 840 alerts concerning 2025²² were analysed by CRE; 14 % of these required further action, including requests for information from the market participants concerned.
- Specific analyses were carried out following the opening of new balancing markets.

External detection



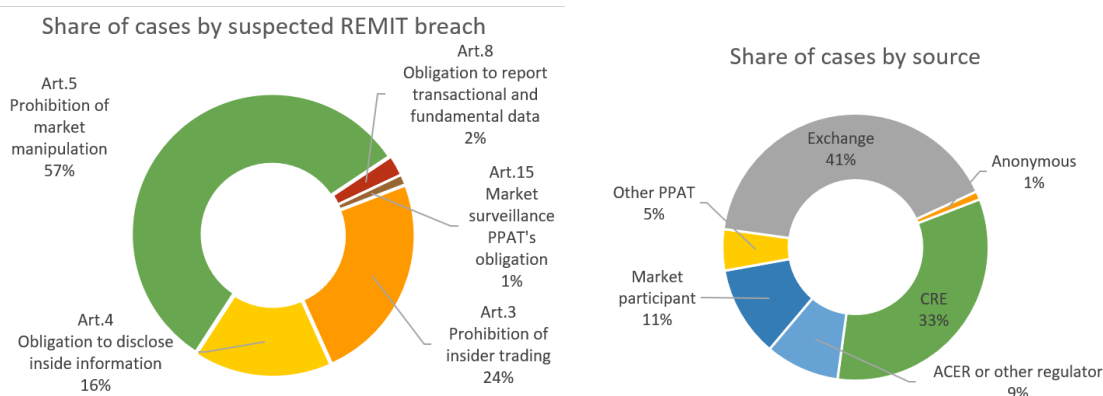
- CRE carried out analyses of 23 notifications received in 2025, of which 17 came from PPAET and 6 from market participants or ACER.
- CRE is involved in monitoring 13 additional notifications received in 2025, for which another European regulator is responsible for conducting the analyses.
- Seven PPATs are being closely monitored by CRE to ensure the proper implementation of market monitoring mechanisms in accordance with Article 15 of REMIT.
- 240 automatic alerts were received from ACER for 2025²³.

²² Analyses carried out in 2025 and 2026 (CRE's activity report mentions the analyses carried out in 2025).

²³ The sharp increase in the number of alerts received by ACER compared with 2024 (60 alerts received) is due in particular to a delay in the submission of alerts in 2024 linked to operational difficulties at ACER, which were resolved in 2025.

Depending on their complexity, case may take more or less time to analyse. Thus, over the course of a year, CRE examines new notifications while continuing to analyse previous detections. In 2025, the volume of new notifications is broadly equivalent to the number of cases closed²⁴ after their analysis. This trend helps to keep the stock of cases under analysis at a stable level, at around fifty cases, as in 2024. Figure 1 presents an overview of all cases analysed since 2012 and shows that suspected breaches of REMIT most frequently relate to Articles 3 and 5 (prohibition of insider trading and market manipulation), in 24 % and 57 % of cases respectively, and are most often opened following a notification from an exchange.

Figure 1 : Cases analysed by type of breach and source of detection



Furthermore, analyses carried out by CRE in 2025 following internal alerts and external notifications led to improvements in the functioning of the French intraday market. CRE, market participants and a PPAT identified transactions at prices significantly different from market prices, around 9:38 am, which had been observed since the introduction of intraday auctions (IDAs) in June 2024. In order to better understand the origin of these systematically observed transactions, the CRE consulted the French transmission system operator, RTE. The information gathered and CRE's analyses showed that these transactions involved cross-border exchanges made possible by a release of transmission capacity by a transmission system operator, occurring at 9:38 am, just before the closure, at 9:40 am, of continuous cross-border trading as part of the IDA 3 auction scheduled at 10:00 am. At the CRE's request, and via RTE, the transmission system operator concerned amended the timetable for releasing capacity at 9:40 am at the earliest, thereby enabling additional capacity to be offered during the IDA 3 auction and thus putting an end to the behaviour observed. Releasing this additional cross-border capacity during the IDA 3 auction allows for a better concentration of supply and demand during the auction.

1.2. Internal monitoring and detection mechanism

CRE relies on an internal process for generating automatic alerts, which are analysed in near real time and may lead to requests for information from the relevant parties, more in-depth analyses or, where appropriate, investigations. This process is complemented by active monitoring of market conditions, which may lead to in-depth analyses of market participants' behaviour to identify instances that may constitute potential breaches of REMIT (for example, episodes of high prices in specific market segments, selected sequences of information disclosure to the markets, etc.).

This entire framework is based on the use of data collected by ACER under REMIT and shared with CRE, as well as data collected directly by CRE from exchanges, brokers, transmission system operators (TSOs) or market participants.

In recent years, the volume of data generated, particularly with regard to orders transmitted on wholesale markets, increased sharply. The number of transaction events processed by CRE increased by more

²⁴ A case may be closed, in particular, where there is no suspicion of a breach. It may also be followed by the opening of an investigation or the sending of a letter reminding the party concerned of their obligations and prohibitions.

than 60 % between 2024 and 2025, with growth ranging from +10 % to +20 % per quarter. The number of order events processed by CRE increased by 125 % between 2024 and 2025. The processing of REMIT data therefore presents a challenge due to the sharp increase in data volume, while the diversity of data sources used by CRE is a constant challenge for the detection and analysis of potentially suspicious behaviour.

The automatic alerts put in place by CRE focus, on the one hand, on generic and statistical criteria, enabling the detection of values that deviate significantly from trends in prices and transaction volumes, positions, etc., and, on the other hand, to specific scenarios monitored on different market segments. The alerts are designed to detect insider trading or market manipulation prohibited by Articles 3 and 5 of REMIT, as well as to monitor the effectiveness of publications concerning the availability of generation facilities, pursuant to Article 4 of REMIT.

The alerts generated are then analysed by CRE using visualisation tools, requiring the expertise of analysts and, where necessary, additional data to determine whether or not the behaviour is likely to constitute a breach. In cases where an error in data reporting is suspected, or in order to explain a particular behaviour, requests for information may be sent to the concerned market participants.

If the analysis confirms the suspected REMIT breach, more detailed analyses are carried out, which may lead to the opening of an investigation.

Approximately 840 alerts relating to 2025 were analysed by CRE. 14 % of them required further action, including requests for information to relevant market participants. The latter generally showed a good level of responsiveness, particularly in correcting reported data where necessary.

Partnership between CRE and PEReN



Pôle d'Expertise de la
Régulation Numérique



As part of an initiative to innovate and improve the performance of internal detection tools, a partnership was established between CRE and the Center of Expertise for Digital Regulation (PEReN) in 2025. PEReN is a national-level body established by Decree No. 2020-1102 of 31 August 2020, placed under the joint authority of the Ministers responsible for the economy, communications and digital affairs, and attached to the General Directorate for Enterprise (DGE) for its administrative and financial management.

The aim of PEReN is to develop and capitalise on expertise within the State in the fields of data science, source code, computer programmes, algorithmic processing and auditing, and to make these pooled resources available to State administrations (both independent authorities and ministry) involved in the regulation of digital platforms and in the field of artificial intelligence.

CRE is listed in the annex to Decree No. 2022-603 of 21 April 2022, as amended by Decree No. 2025-385 of 28 April 2025, and as such may enter into a partnership with PEReN.

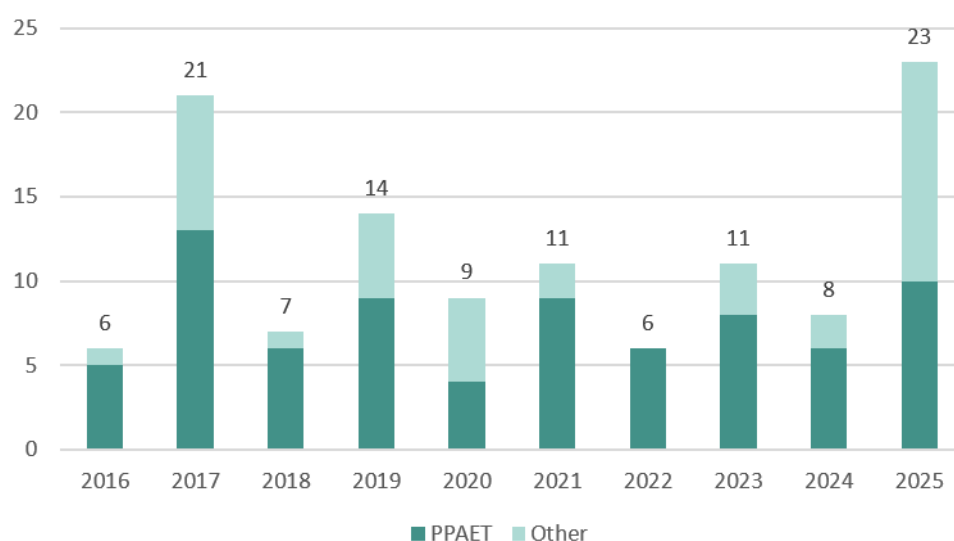
As part of the preparation of its annual roadmap, PEReN is seeking out administrations that may be interested in its technical expertise. Following initial discussions between CRE and PEReN, in 2025 CRE proposed several use cases relating to the monitoring of wholesale energy markets. This expression of interest led to the inclusion, in PEReN's 2026 roadmap, of two technical support projects focusing on the development of:

- a proof of concept for a new IT alert tool to detect insider trading based on market indicators;
- a proof of concept for a new IT alert tool to detect market manipulation based on orders.

The operational implementation of this partnership is currently underway.

1.3. External notifications and CRE's support for personness professionally arranging and executing transactions in their market monitoring role

Figure 2 shows the number of notifications of suspicious behaviour according to REMIT notified to CRE by PPAETs or other market participants in recent years.

Figure 2 : External notifications by source of detection

Article 15 of REMIT stipulates that PPAETs must:

- on the one hand, establish and maintain effective arrangements, systems and procedures to detect potential breaches of Articles 3 (prohibition of insider trading), 4 (obligation to disclose inside information) or 5 (prohibition of market manipulation) of REMIT, and
- furthermore, notify ACER and the relevant national regulatory authority if they have grounds to suspect that an order or transaction²⁵ may breach these provisions, without delay and, in any event, no later than four weeks from the date on which the PPAET becomes aware of the suspicious event.

The entry into force of the amended REMIT has, since the end of 2024, had an impact on the notifications received by CRE under Article 15. CRE is now receiving new types of notifications following to the extension of the obligation on PPATs to certain PPETs and to the extension of REMIT's scope to wholesale energy products that are financial instruments.

CRE considers the monitoring activities carried out by PPATs – primarily exchanges, brokers and certain transmission system operators (TSOs) – **to be essential**, and maintains regular dialogue with them, reminding them of their monitoring duties and critically assessing the measures put in place. This constant dialogue enables CRE not only to strengthen the monitoring of wholesale energy markets in France but also to benefit from the expertise of each of these PPATs in the market segments in which they operate. Such relationships also make possible to monitor the development and evolution of the monitoring tools and procedures put in place by PPATs and to share analyses of suspicious cases detected within their scope.

CRE ensures that PPAETs comply with their obligations under Article 15 of the amended REMIT, which only came into force in November 2024 for PPETs.

Although the overall number of notifications received from PPAETs is up in 2025 compared to 2024, CRE notes that some PPAETs notifications a low number of cases that is likely to be inconsistent to the size of the market within their monitoring scope. CRE reiterates that it is its responsibility, within the framework provided for by law, to launch investigations on PPAETs that fail to properly carry out their wholesale markets monitoring mission, and that such investigations may result in decisions to impose sanctions. CRE also notes that the number of notifications received is expected to continue to rise due to the extension of REMIT's scope to wholesale energy products that are also financial instruments.

²⁵ An order or a transaction, including any cancellation or amendment thereof, whether issued on an organised market place (OMP) or outside an OMP.

1.4. Gaining a better understanding of wholesale markets: enhanced monitoring and transparency efforts by CRE

To support the development of wholesale electricity markets, ensure their smooth functioning and enhance their transparency – particularly in the context of the phasing out of the regulated access scheme for historic nuclear electricity (ARENH)²⁶ – **CRE introduced, in early 2025, the publication of a quarterly bulletin on activity in the wholesale electricity markets. This bulletin brings together several key indicators that enable the monitoring and analysis of activity on these markets.**

With the end of ARENH, the wholesale electricity market has taken on a pivotal role in determining electricity prices for consumers. CRE has therefore stepped up its monitoring activities to ensure that wholesale prices accurately reflect the balance between supply and demand, and that they are not subject to any manipulation.

Proper price formation relies in particular on market liquidity, which must enable market participants to meet their needs effectively and adequately, i.e. to benefit from sufficient offers and volumes. As such, CRE closely monitors changes in liquidity across all delivery horizons.

Liquidity is defined as the ability to buy or sell assets quickly without causing significant price fluctuations. A liquid market limits volatility and facilitates the entry of new market participants. Liquidity is not a quantity that can be directly measured by a single indicator, but it can be assessed using a range of indicators. The data published in the bulletin covers, in particular, buying and selling volumes on wholesale markets as well as market depth.

Furthermore, as part of its commitment to informing public debate, **CRE launched in April 2026 a new set of papers analysing current issues relating to the energy sector, entitled ‘Spotlight on...’, covering topics relevant to CRE’s scope, whether these involve studying wholesale or retail energy markets, electricity or gas networks, or issues relating to the energy transition.** The first issue of this publication²⁷, provides an initial assessment of the effects of the daily market transition from hourly to quarter-hourly intervals, between 1 October 2025 and 31 January 2026, in terms of trading volumes, market participants’ behaviour and price formation on the French wholesale electricity markets.

2. Investigations and sanctions for REMIT breaches

Pursuant to Article L.135-3 of the French Energy Code, investigating officers among CRE staff authorized by the CRE’s Chairwoman conduct the necessary investigations to fulfil CRE’s missions. Thus, in case of a suspected breach of REMIT provisions, the CRE’s Chairwoman may appoint an investigating officer to conduct an investigation.

Any breaches of REMIT identified by the investigating officers shall be recorded in an investigation, report, which must be notified to the person(s) concerned. At the end of an investigation, pursuant to Article L.134-25 of the French Energy Code, CRE’s Chairwoman may, where appropriate, refer the matter to CoRDiS with a request for sanctions.

2.1. Investigations conducted by CRE

Between 2014 and 2025, CRE opened twenty-four REMIT investigations: two investigations in 2014, three in 2016, two in 2017, one in 2018, one in 2019, four in 2021, two in 2022, two in 2023, six in 2024 and one in 2025. Among these investigations, 14 relate to the electricity market and 10 to the gas market.

²⁶ The regulated access to historic nuclear electricity (ARENH) scheme was introduced by the Law of 7 December 2010 on the reorganisation of the electricity market (the ‘NOME’ Law). Since July 2011, this scheme has enabled consumers, regardless of their choice of supplier, to access electricity generated by EDF’s existing nuclear power stations located within France and commissioned before 8 December 2010 at a regulated price (set at €42/MWh since 2012). The ARENH scheme came to an end on 31 December 2025. From that date onwards, suppliers source their electricity from the market (wholesale market, contracts with generators, etc.) or from their own generation assets. In this context, wholesale electricity prices will serve as a reference for the supply component of retail bills.

²⁷ <https://www.cre.fr/documents/reports-and-studies/insight-into-wholesale-electricity-markets-issue-1-the-transition-from-the-day-ahead-market-to-the-15-minute-interval-market-a-review-of-trading-volumes-and-observed-price-fluctuations.html>

All of these investigations were opened following suspicions of insider trading, market manipulation (Articles 3 and 5 of REMIT) or breaches of the obligation to disclose inside information (Article 4 of REMIT).

At the end of 2025, among these investigations:

- one was closed because the analysed behaviour occurred before the entry into force of Law No. 2013-312 of 15 April 2013, which conferred on CoRDIS the power to sanction such breaches;
- one was closed in 2020 due to prescription;
- two were closed as no breach was found;
- one was closed, followed by the sending of a letter of observations;
- eight were closed by a CoRDIS decision;
- one was under analyses by CoRDIS;
- for the remaining ten investigations at the end of 2025, the investigators' analyses were still ongoing.

As part of these investigations, the power to request information (accounting documents, invoices and any relevant records or documents, including telephone recordings and existing data exchanges), pursuant to Article L.135-4 of the Energy Code and Article 13(2) of REMIT, was exercised.

2.2. Summary of the main decisions sanctioning REMIT breaches issued by CoRDIS and regulators in the European Union

CRE presents here the recent sanction decisions in France and in other Member States in 2025. ACER maintains an up-to-date summary on its website²⁸ of public enforcement decisions of REMIT breaches at European level. It should be noted that several penalty decisions may relate to the same case.

The amended REMIT introduces minimum penalty thresholds, consisting of percentages of the total annual turnover for legal entities and fixed amounts for natural persons, depending on the type of infringement sanctioned. Article L. 134-27 of the French Energy Code was amended by Law No. 2025-391 of April 30, 2025, in line with these thresholds. It is important to note that the amount of each sanction decided by CoRDIS is determined individually for each case, taking into account the *specific* circumstances of the case under consideration. Thus, Article L. 134-27(2) of the French Energy Code states that the amount of the pecuniary sanction shall be "*proportionate to the seriousness of the breach, the situation of the person concerned, the extent of the damage and the advantages gained.*" The amounts of the pecuniary sanctions are therefore difficult to compare from one decision to another. Law No. 2025-391 of April 30, 2025 also introduced into Article L. 134-27 of the French Energy Code the possibility for the CoRDIS to impose other measures provided for in Article 18 of the amended REMIT relating to penalties.

²⁸ ACER publication: *Enforcement decisions – Overview of the sanction*: <https://www.acer.europa.eu/remit/coordination-on-cases/enforcement-decisions>

Table 2 : Sanction decisions in 2025 at European level related to breaches of Articles 3, 4 and 5 of the REMIT²⁹

Date of decision	Authority, Member State	Market participant(s)	Type of REMIT violation	Amount of sanction	Status of the decision
20 January 2025	CRE (FR)	Danske Commodities A/S and Equinor ASA	Article 5	€8 million for Danske Commodities A/S €4 million for Equinor ASA	Under appeal
28 February 2025	DUR (DK)	Energi Danmark A/S	Article 5	380,000 DKK (approx. €51,000)	Final
2 July 2025	DKER (BG)	Toplofikacia Sofia EAD	Article 4	10,000 BGN (approx. €5,000)	Under appeal
2 July 2025	DKER (BG)	Bulgargaz EAD	Article 4	10,000 BGN (approx. €5,000)	Under appeal
8 July 2025	ARERA (IT)	Enel Produzione S.p.A.	Article 4	No fine – ARERA has accepted the proposed commitments to fix the breaches of the applicable provisions	Final
4 November 2025	CNMC (ES)	Enet Energy S.A.	Article 5	€1 million	Final
11 December 2025	EV (FI)	Kinect Energy Sweden AB	Article 5	Proposal for an administrative fine submitted to the Commercial Court	Appeal possible

It should be noted that, on 18 June 2025³⁰, the Council of State (in French, *Conseil d'Etat*), which is the supreme administrative court in France, essentially confirmed the CoRDIS sanction decision of 26 December 2023 against ENGIE. This decision imposed a fine of €500,000 on the company for breaches of Articles 3 (prohibition of insider trading) and 4 (obligation to disclose inside information) of REMIT. However, the Council of State considered that 45 market transactions (out of 234 that were in dispute) did not involve the use of the inside information in question. The Council of State therefore ruled that *“given (...) the limited reduction in the number of market transactions carried out (...) on the basis of unpublished inside information, the financial penalty should be reduced from €500,000 to €490,000.”*

On 20 January 2025, CoRDIS imposed fines of €8 million and €4 million respectively on Danske Commodities A/S and Equinor ASA for breaching Article 5 of REMIT (prohibition of market manipulation) on the wholesale gas market in 2019 and 2020 concerning natural gas transmission capacities between France and Spain. This decision to impose fines follows an investigation by CRE. Both companies have appealed against the CoRDIS decision.

²⁹ Status at the end of 2025.

³⁰ <http://www.conseil-etat.fr/fr/arianeweb/CE/decision/2025-06-18/492318>

Finally, CRE considers it relevant to highlight the CoRDIS decision dated 22 April 2025 relating to CRE's exercise of its wholesale market monitoring role. In this decision, CoRDIS found that J.P. Morgan SE had breached, as referred to in Article L. 134-29 of the French Energy Code, the obligation to provide information laid down in Article L. 134-18 of that Code. J.P. Morgan SE has been fined €500,000³¹. This is the CoRDIS's first decision relating to this type of breach. Through this decision, CoRDIS confirms that parties reached out by CRE on the basis of Article L. 134-18 of the Energy Code are required to provide the information requested whilst the CRE is carrying out its market monitoring duties. The company has appealed against the CoRDIS decision.

2.3. Cooperation with other authorities and improving the effectiveness of investigation and sanctioning procedures

Cooperation with French independent administrative authorities (IAA), initiated in 2019, constitutes a key means of exchange with other French independent administrative authorities (ACPR, ADLC, AMF, ART, ARCEP, CNIL, HATVP)³².

The inter-IAA working group is a lever for innovation and exchange of expertise and experience, enabling CRE to question and enrich its monitoring and investigation methods. As an illustration, CRE exchanged views with the various IAAs on the challenges and advantages that new technologies, including artificial intelligence, could bring to methods and analyses used for monitoring and investigations, which has enabled CRE to develop a new AI-based tool for transcription of audio recordings.

Notably, CRE has been working for a long time with the French Financial Markets Authority (AMF), based in particular on the memorandum of understanding signed in 2010³³, which aims to enable the two authorities to benefit from each other's information and expertise in order to ensure the fulfilment and full effectiveness of their respective missions, in accordance with the provisions of Article L. 621-21 of the French Monetary and Financial Code and Article L. 134-17 of the French Energy Code³⁴.

As an illustration, CRE and AMF continued their discussions throughout 2025 on the implications of the amended REMIT, and in particular the extension of its scope to wholesale energy products which are also financial instruments.

The Chairwoman and Board of the CRE, together with the Chairman and Board of CoRDIS, jointly decided in 2023 to propose a reform³⁵ of the procedure for investigations, with the aim of increasing speed and efficiency, in particular through the introduction of a negotiated sanction procedure (settlement procedure). This reform requires, in particular, the introduction and amendment of certain legislative and regulatory provisions of the French Energy Code³⁶.

³¹ https://www.cre.fr/fileadmin/Documents/Decisions_du_CoRDIS/2025/03-40-24_Decision_CoRDIS.pdf

³² ACPR - Autorité de contrôle prudentiel et de résolution (Prudential Supervision and Resolution Authority), ADLC - Autorité de la concurrence (French Competition Authority), AMF - Autorité des marchés financiers (Financial Markets Authority), ART - Autorité de régulation des transports (anciennement ARAFER) (Railway and Road Activities Regulation Authority), ARCEP - Autorité de régulation des communications électroniques et des Postes (Electronic Communications, Postal and Print Media Distribution Regulatory Authority), CNIL - Commission nationale de l'informatique et des libertés (French Data Protection Authority), HATVP – Haute autorité pour la transparence de la vie publique (High Authority for Transparency in Public Life)

³³ For further information: https://www.cre.fr/fileadmin/Documents/Communiqués_de_presse/import/101210_MOU_CRE-AMF_101210105039_0001.pdf

³⁴ Previously Articles 28 and 29 of Law No. 2000-108 of 10 February 2000.

³⁵ This commitment to reform was identified as one of the objectives in the CRE's 2023–2024 roadmap: <https://www.cre.fr/Documents/Publications/Rapports-thematiques/feuille-de-route-2023-2024-de-la-cre> and was reiterated in the strategic guidelines for 2025–2030: <https://www.cre.fr/documents/rapports-et-etudes/orientations-strategiques-2025-2030-de-la-cre.html>

³⁶ These legislative changes were incorporated into the 'Simplifying Economic Life' Law, which was passed on 15 April 2026, but the relevant article was withdrawn by the Constitutional Council on 21 May 2026.

3. Cooperation on wholesale energy markets at European level

3.1. Activities carried out or coordinated by ACER on the monitoring of wholesale energy markets

Several working groups dedicated to wholesale energy market monitoring exist within ACER and the Council of European Energy Regulators (CEER). They contribute, in particular, to the operational implementation of REMIT by national authorities in a coordinated and consistent manner, notably through regular working groups and other events to share experience on the handling of monitoring cases and market abuse scenarios. ACER's working groups also contribute to the development of non-binding *guidance* on the application of REMIT published by ACER.

Furthermore, in line with new obligations set out in the amended REMIT, ACER published two reports on 8 May 2025, as specified in Article 15 of REMIT. Whilst the first report³⁷ analyses the activities of PPATs³⁸ (this report covers their arrangements, systems and procedures for monitoring wholesale markets), the second report³⁹ analyses the activities of national regulators (including CRE) regarding the handling of notifications of suspicious behaviour reported by PPATs, the regulators' response to poor-quality PPATs notifications and the failure to report suspicious transactions, and related enforcement and sanctioning activities.

CRE attaches great importance to the progress of work on REMIT within the framework of collaboration between European regulators and contributes actively to this.

In addition, cooperation with financial authorities is intensifying with the entry into force of the amended REMIT, the scope of which has been extended to wholesale energy products that are also financial instruments.

3.2. ACER's non-binding guidance

The non-binding guidance published by ACER currently consist of four main documents:

- General guidance on the application of REMIT, whose sixth edition, published in July 2021, was amended by ACER on 18 December 2024⁴⁰ to take account of certain developments relating to the amendment of REMIT, and
- three thematic guidelines focusing on behaviours likely to constitute market manipulation under Article 5 of REMIT:
 - guidance on "*wash trade*", defined as entering into arrangements for the sale or purchase of a wholesale energy product without involving a change in the ownership of the value concerned or in the market risk, or involving the transfer of ownership or market risk between participants acting in concert or in collusion, published in June 2017⁴¹ ;
 - guidance on "*capacity hoarding*" in the intraday electricity market, defined as acquiring all or part of the available transport capacity without using it or without using it effectively, published in March 2018⁴² ;
 - guidance on "*layering*" and "*spoofing*" on continuous wholesale markets, defined as the submission by a market participant of one large order or of multiple non-genuine

³⁷ <https://www.acer.europa.eu/sites/default/files/documents/Publications/ACER-Report-PPAETs-market-surveillance-2025.pdf>

³⁸ ACER excluded the analysis of PPETs' activities from this first report.

³⁹ <https://www.acer.europa.eu/sites/default/files/documents/Publications/ACER-Report-NRAs-activities-STORs-2025.pdf>

⁴⁰ https://www.acer.europa.eu/sites/default/files/documents/Other%20Documents/6.1st_Edition_ACER_Guidance.pdf

⁴¹ For further information: <https://www.acer-remit.eu/portal/document-download?documentId=u518na123yg>

⁴² For further information: <https://acer.europa.eu/Media/News/Pages/ACER-publishes-guidance-on-capacity-hoarding-in-intraday-electricity-markets-that-could-constitute-market-manipulation.aspx>

orders to trade on one side of the order book, in order to enter into one or multiple transactions on the other side of the order book, published in March 2019⁴³.

ACER also maintains a list of questions and answers (“Q&A”) concerning the implementation of REMIT, and published the latest update on 12 March 2025⁴⁴. This update aims at aligning the Q&A with the amended version of REMIT.

Finally, ACER may issue open letters when necessary to clarify certain guidances, with greater flexibility compared to the process for revising its general guidance documents. ACER did not publish any such documents in 2025, but published two open letters in 2026 (see below).

CRE contributes to the coordinated operational implementation of REMIT by national authorities and ACER and to the development of common positions on the definition and regulation of wholesale market abuse practices under REMIT.

3.3. REMIT data sharing with ACER

The centralized data collection by ACER under REMIT began in 2015. The CRE has been receiving data on the French market since 2016. As the quality of transactional and fundamental data is essential for the performance of its tasks, CRE is actively involved in ACER's work on this subject.

Furthermore, as part of the REMIT review, the European Commission was tasked with revising the REMIT Implementing Regulation⁴⁵, which sets out the data reporting requirements, and with adopting the delegated act⁴⁶ concerning, on the one hand, Registered Reporting Mechanisms (RRMs)⁴⁷ and, on the other hand, Inside Information Platforms (IIPs)⁴⁸. In 2025, CRE played an active role in the comitology process led by the European Commission, aimed at adopting the implementing regulation. Both texts were adopted by the European Commission and published on 9 April 2026.

⁴³ For further information: <https://www.acer.europa.eu/Media/News/Pages/ACER-publishes-guidance-on-layering-and-spoofing-in-continuous-wholesale-energy-markets-.aspx>

⁴⁴ For further information: <https://www.acer.europa.eu/sites/default/files/REMIT/Guidance%20on%20REMIT%20Application/Q%26As%20on%20REMIT/REMIT-30th-edition-QAs.pdf>

⁴⁵ Commission Implementing Regulation (EU) No 2026/256 of 30 January 2026 on the reporting of data pursuant to Article 7c, paragraph 2, and Article 8(1a), (2) and (6) of Regulation (EU) No 1227/2011 of the European Parliament and of the Council on the integrity and transparency of the wholesale energy market, and repealing Commission Implementing Regulation (EU) No 1348/2014 of 17 December 2014: https://eur-lex.europa.eu/legal-content/FR/TXT/PDF/?uri=OJ:L_202600256

⁴⁶ Commission Delegated Regulation (EU) No 2026/255 of 30 January 2026 supplementing Regulation (EU) No 1227/2011 of the European Parliament and of the Council as regards the details necessary for the authorisation and monitoring of insider information platforms and reporting mechanisms registered by the European Union Agency for the Cooperation of Energy Regulators: https://eur-lex.europa.eu/legal-content/FR/TXT/PDF/?uri=OJ:L_202600255

⁴⁷ *Registered Reporting Mechanism* – RRM

⁴⁸ *Inside Information Platforms* – IIP

ACER sets out and clarifies the obligations regarding data reporting, as well as their operational aspects, through documents which it publishes and updates in consultation with market participants, regulators and other relevant stakeholders. The main documents governing data reporting to ACER are the Manual of Procedures on Data Reporting⁴⁹ and the *Transaction Reporting User Manual* (TRUM)⁵⁰, the latest versions of which were published on 17 April 2023 and 17 December 2024 respectively. These are supplemented by a *Frequently Asked Questions* (FAQ) document⁵¹ on the reporting of transaction data, updated on 30 September 2024, as well as another FAQ document concerning the reporting of inside information and fundamental data⁵², the latest version of which dates from 26 March 2026.

These documents will evolve following the adoption of the REMIT Implementing Regulation and the Delegated Act on RRM and IIP. This work is ongoing and is expected to be partially completed in 2026. Pending the update of these documents, ACER published two open letters in 2026⁵³ setting out certain aspects of the new applicable framework, including a summary of the timetable for the entry into force of the changes to reporting obligations.

In 2025, the CRE continued to improve its data processing from the REMIT collection and requested reporting parties to clarify or correct data reported to ACER when necessary. One of the key challenges is adapting CRE's systems and processes to the significant increase in the volume of reported data since the end of 2022, as shown in the Figure 3, particularly related to the growth in market-making activities and algorithmic trading on French and European markets. CRE had to significantly adapt its data processing tools in order to cope with the approximately tenfold increase in the daily volume received from ACER between 2022 and 2025.

⁴⁹ *Manual of Procedures on transaction data, fundamental data and inside information reporting:*

[https://www.acer.europa.eu/sites/default/files/REMIT/REMIT%20Reporting%20Guidance/Manual%20of%20Procedures%20\(MoP\)%20on%20Data%20Reporting/ACER_REMIT_MoP-on-data-reporting.pdf](https://www.acer.europa.eu/sites/default/files/REMIT/REMIT%20Reporting%20Guidance/Manual%20of%20Procedures%20(MoP)%20on%20Data%20Reporting/ACER_REMIT_MoP-on-data-reporting.pdf)

⁵⁰ <https://www.acer.europa.eu/remit-documents/remit-reporting-guidance>

⁵¹

<https://www.acer.europa.eu/sites/default/files/REMIT/REMIT%20Reporting%20Guidance/FAQs%20on%20Transaction%20Reporting/FAQ-on-transaction-reporting.pdf>

⁵²

<https://www.acer.europa.eu/sites/default/files/REMIT/REMIT%20Reporting%20Guidance/FAQs%20on%20REMIT%20Fundamental%20Data%20and%20Inside%20Information/FAQs%20on%20REMIT%20fundamental%20data%20and%20inside%20information.zip>

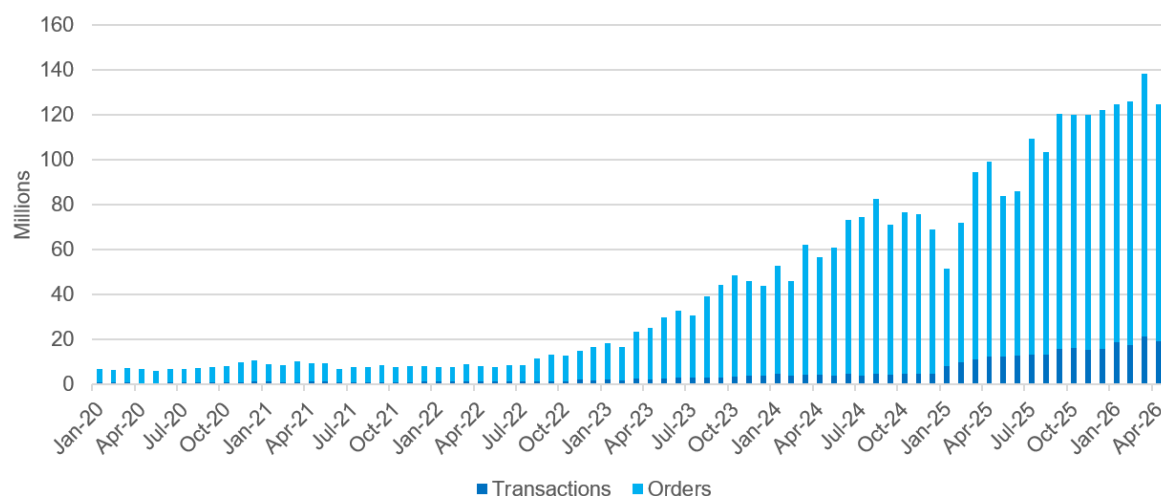
⁵³ *Open letter on the recast Implementing Regulation:*

<https://www.acer.europa.eu/sites/default/files/REMIT/Guidance%20on%20REMIT%20Application/Open%20Letters%20on%20REMIT%20Policy/ACER-Open-Letter-REMIT-Implementing-Regulation-2026.pdf>

Open letter on the new Delegated Regulation:

<https://www.acer.europa.eu/sites/default/files/REMIT/Guidance%20on%20REMIT%20Application/Open%20Letters%20on%20REMIT%20Policy/ACER-Open-Letter-REMIT-Delegated-Regulation-2026.pdf>

Figure 3: Number of orders and transactions processed monthly by CRE via REMIT data collection (standard contracts “Table 1”, all markets combined, electricity and natural gas)



Source: REMIT data⁵⁴ – Analysis: CRE

CRE is maintaining the national data collection system involving certain market participants (exchanges, brokers, TSOs, market participants) in order to establish a basis for comparison to continue improving the quality of reported data, and to complete data that are not subject to REMIT reporting requirements, thereby avoiding any discontinuity or interruption in market monitoring.

CRE specifically calls on market participants to be vigilant regarding the correct reporting of transaction beneficiaries, which are often poorly recorded or inaccurate, as well as the proper identification of bilateral transactions, ensuring that the unique transaction identifier reported by both counterparties is identical.

3.4. CRE's contribution to the European Commission's public consultation on commodity derivatives markets

In response to the public consultation⁵⁵ launched by the European Commission on commodity derivatives markets, CRE reaffirmed in 2025 its commitment to the effective, proportionate and transparent monitoring of wholesale energy markets⁵⁶. This position statement comes in a context of significant changes to the European regulatory framework, notably the reforms following the 2022–2023 energy crisis, including the amendment of REMIT.

⁵⁴ For orders filtered solely to French market areas from the start of 2025

⁵⁵ Targeted consultation on the review of the functioning of commodity derivatives markets and certain aspects relating to spot energy markets: https://finance.ec.europa.eu/regulation-and-supervision/consultations-0/targeted-consultation-review-functioning-commodity-derivatives-markets-and-certain-aspects-relating_en

⁵⁶ For further information, see:

- the summary of the CRE's response:
https://www.cre.fr/fileadmin/Documents/Actualites/2025/CRE_answer_DG_FISMA_PC_cover_note.pdf
- the CRE's full response:
https://www.cre.fr/fileadmin/Documents/Actualites/2025/CRE_answer_DG_FISMA_PC_answers_sent.pdf

CRE emphasised the structural interdependence between spot markets and derivatives markets, as well as physically settled and cash-settled products, which jointly contribute to the formation of electricity and gas prices. Their integrated monitoring is therefore an essential element in ensuring consistent, robust and effective regulation, in the interests of the smooth functioning of European energy markets.

The existence of fundamental differences between financial markets and energy markets has historically led to the establishment of a specific sectoral regulatory framework for their monitoring, built around REMIT. The amendment of REMIT in May 2024, which strengthens the powers of energy regulators over certain wholesale energy products also classified as financial instruments, represents a major step forward that CRE fully supports. In this regard, CRE considers that the current framework, consolidated by the REMIT amendment, is effective.

CRE encourages continuous improvement in cooperation between energy regulators and financial authorities, without, however, making the existing institutional architecture more complex.

Particular attention must be paid to access to reliable, comprehensive and high-quality data. Such access is an essential prerequisite for detecting abnormal market behaviour, preventing abuse and ensuring rigorous monitoring. ACER, as the central hub for the data collection relating to wholesale energy markets across Europe, is in a key position to address these challenges.

Finally, CRE reiterates that any structural changes or the introduction of new obligations for market participants must be preceded by rigorous impact assessments. In a context where markets have been severely affected by the energy crisis and where several major reforms were adopted in 2023 and 2024, regulatory stability appears more necessary than ever to maintain market participants' confidence and foster the development of wholesale energy markets in Europe.

Overall, the CRE's response is consistent with the position expressed⁵⁷ by the CEER in response to this consultation, confirming a shared vision amongst European energy regulators regarding the priorities for the monitoring of wholesale energy markets. ACER⁵⁸ also responded to this consultation.

3.5. Cooperation with other competent authorities in the performance of monitoring and investigative tasks

Following the amendment of REMIT, which came into force on 7 May 2024, the scope of the prohibitions on insider trading (Article 3) and market manipulation (Article 5) has been extended to wholesale energy products that are also financial instruments. Indeed, financial and physical products jointly contribute to the formation of wholesale prices and must therefore be subject to the same monitoring framework. As such, certain behaviours could fall within the scope of both REMIT and the Market Abuse Regulation (MAR)⁵⁹, leading to close cooperation and, where necessary, the possible intervention of several competent authorities in market monitoring: CRE, other energy national regulators, ACER, the competent financial authorities and ESMA⁶⁰.

As an illustration, the new investigation launched by the CRE in 2025, mentioned in section 2.1, concerns several regulators and wholesale energy products which are also financial instruments. This investigation falls within the scope of the new powers acquired by CRE following the entry into force of the amended REMIT.

⁵⁷ <https://www.ceer.eu/publication/ceers-respond-to-dg-fisma-consultation-on-commodity-and-spot-energy-markets/>

⁵⁸ <https://www.acer.europa.eu/sites/default/files/documents/Position%20Papers/ACER-response-PC-derivatives-markets-2025.pdf>

⁵⁹ Regulation (EU) No 596/2014 of the European Parliament and of the Council of 16 April 2014

⁶⁰ European Securities and Markets Authority (ESMA).

USEFUL REFERENCES

Regarding suspicions of market abuse

To ensure the most rigorous possible wholesale energy market monitoring, anyone who suspects market abuse is asked to alert CRE's services responsible for market monitoring:

- by visiting ACER's *ad hoc* Notification Platform: <https://www.acer-remit.eu/np/home>;
- or by emailing: surveillance@cre.fr.

Regarding the registration of market participants

For any questions relating to registration, market participants may contact the CRE's services responsible for market monitoring at enregistrement.remit@cre.fr.

Regarding REMIT

All public documentation related to the implementation of the REMIT can be found on the REMIT portal provided by ACER: <https://www.acer-remit.eu/portal/home>.

SECTION 2: WHOLESALE GAS MARKETS

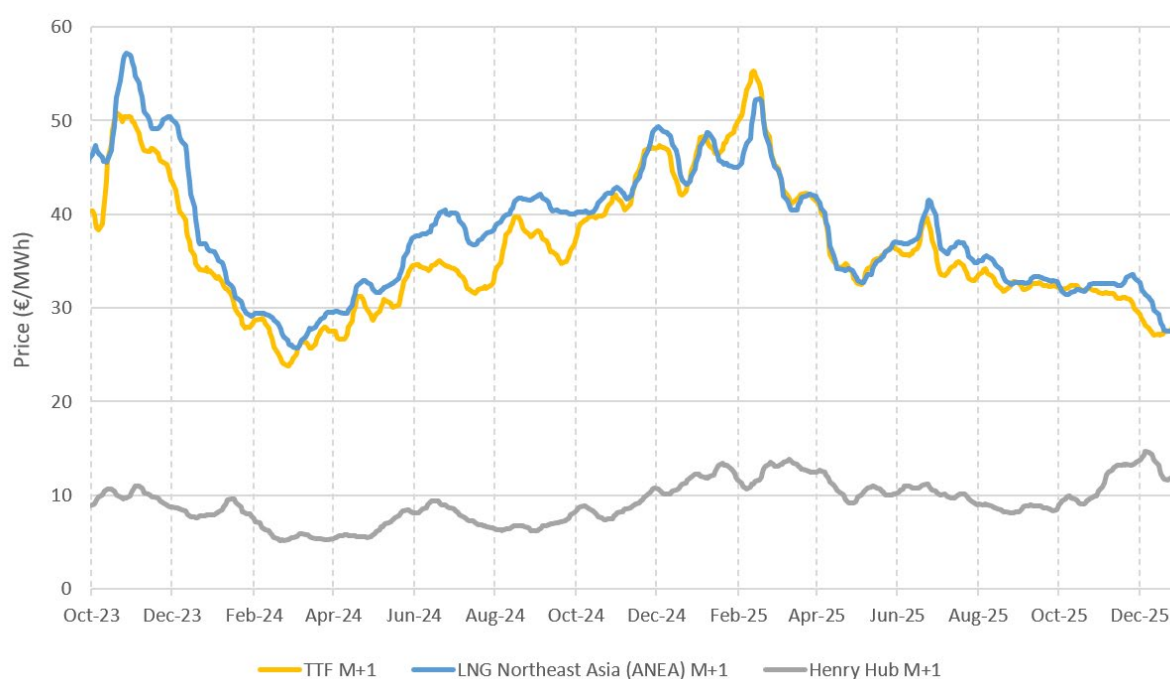
1. European and international context

In 2024, European natural gas markets had experienced a significant rise in prices, reflecting disruptions to the global supply of natural gas and heavy drawdowns from European storage facilities in the final quarter. The end of the year had been marked in particular by expectations that Russian gas transit through Ukraine would cease, leaving TurkStream as the sole pipeline entry point for Russian gas into Europe from 1 January 2025. Between February 2024 and February 2025, the M+1 contract price at the TTF had thus risen by 152 %, reaching €58/MWh – its highest level since February 2023.

Conversely, 2025 was characterised by a significant easing of prices, linked to abundant global supply and limited competition with Asia for LNG cargoes: the M+1 and Y+1 contracts at the TTF closed the year at €27.7/MWh and €27.5/MWh respectively.

The start of 2026, which is not covered in detail in this report, saw a further rise in prices and volatility caused by the war in the Middle East that broke out on 28 February 2026.

Figure 4: Front-month gas prices in Europe, North-East Asia and the United States



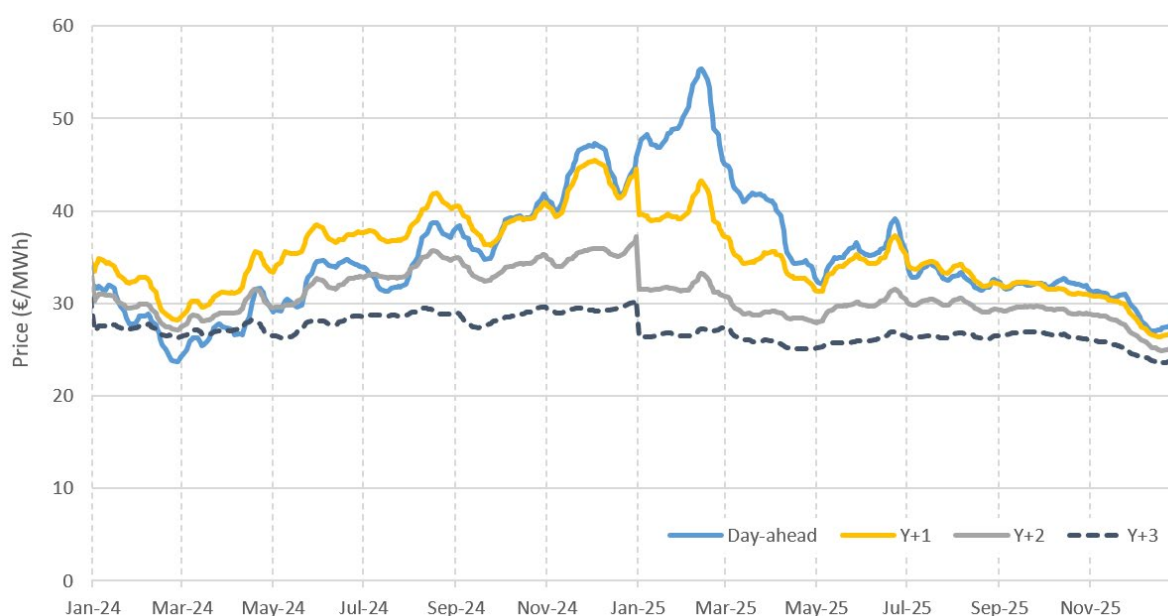
Sources: EEX, Argus

Despite a downward trend for most of the year, gas prices in Europe showed some volatility in the first quarter of 2025. In particular, announcements of new tariffs by the US President, followed by the Twelve-Day War between Israel and Iran in June, caused significant fluctuations in prices. In both cases, these fluctuations subsided within a few weeks.

During the second half of the year, prices fell at a more steady rate, reflecting the ease of supply to the European market. Indeed, while pipeline imports from Norway remained stable between 2024 and 2025, accounting for 27 % of the European Union's (EU) total supply, the availability of LNG rose sharply⁶¹. This is due in particular to lower-than-expected demand in Asia, which has limited competition with Europe for gas flows, but above all to the increase in global export capacity. In 2025, several new liquefaction projects began production, notably in North America – including Corpus Christi (Stage 3), Plaquemines LNG (Phase 2) and LNG Canada – and in Africa, with Greater Tortue Ahmeyim FLNG. In 2025, European LNG imports reached 1,468 TWh, 29 % higher than the previous year, and accounted for 41 % of the EU's total supply⁶².

Furthermore, the easing of short-term gas prices in Europe largely alleviated the situation of 'backwardation' – characterised by spot prices exceeding forward prices – which had emerged at the end of 2024 and then intensified in the first quarter of 2025, in relation to concerns regarding the filling of storage facilities. Indeed, longer-term contracts fell only slightly, as the surplus supply of LNG from 2027 onwards had been widely anticipated, with a significant wave of liquefaction capacity development planned up to 2030. Over the course of the year, the forward curve thus flattened, reflecting the initial effects of this wave of expansion.

Figure 5: Gas prices at the TTF by maturity



Source: EEX

The rise in European LNG imports also helped to offset a further decline in gas flows from Russia linked to the expiry, at the end of 2024, of the transit contract between Gazprom and the Ukrainian company Naftogaz. European imports of Russian gas via pipeline fell by 43 % between 2024 and 2025, reaching 206 TWh for the year. This represented 6 % of total European supply, compared with 11 % the previous year and 42 % in 2019⁶³.

⁶¹ Source: Joint Research Centre (JRC) of the European Commission

⁶² Source: Joint Research Centre (JRC) of the European Commission

⁶³ Source: Joint Research Centre (JRC) of the European Commission

As part of the REPowerEU plan aimed at fully ending the EU's dependency on Russian fossil fuels, the European Council formally adopted on 26 January 2026 a complete ban on these imports by autumn 2027. Russian LNG, meanwhile, will be banned from 1 January 2027 under the EU 19th package of sanctions against Russia, adopted on 23 October 2025. However, the announcements relating to these decisions, which were particularly prominent in the second half of the year, had no discernible impact on European benchmark prices, given Russia's already diminished role in the EU gas supply.

Finally, the European Parliament and the Council have also reached agreement on the extension of the Gas Storage Regulation, published on 10 September 2025. This introduces flexibility measures regarding the targets for filling European gas storage facilities before the start of the gas winter. The deadline for meeting the target may now fall between 1 October and 1 December, while the target level – which remains set at 90 % – may be reduced by 10 percentage points by each Member State, and by a further 5 percentage points following a decision by the European Commission, in the event of unfavourable market conditions. These changes aim to address the situation that arose in early 2025, characterised by price pressure linked to the regulatory filling targets themselves, thereby reducing the economic incentive to store gas and making it difficult to market storage capacity for the winter of 2025–2026. Indeed, European storage facilities had ended the winter of 2024–2025 34% full, well below the levels reached at the same date in the two previous years, due to high withdrawals between November 2024 and March 2025. Against a backdrop of already tight short-term supply, the additional demand associated with filling the storage facilities during the summer caused prices for that season to exceed those for the following winter. The prospect of a relaxation in regulatory measures then helped to ease prices and supported the European injection campaign. This campaign ultimately enabled a fill rate of 83 % to be achieved in Europe by 1 November 2025, 12 percentage points lower than in 2023 and 2024. However, Germany and the Netherlands – the countries with the first and third largest storage capacities in Europe, respectively – had not exceeded 75 %.

Despite lower net withdrawals during the winter of 2025–2026 compared with the previous winter, European storage facilities were 28 % full on 31 March 2026, their lowest level on that date since 2022. Rising prices and the contraction in global supply resulting from the war in the Middle East, which began on 28 February, are therefore raising fresh concerns about storage levels, and the flexibility measures introduced by the new regulation could be activated.

2. The fundamentals of the French gas system in 2025

2.1. Overview of commercial flows in the French system

As is the case across the European Union, LNG imports into France have risen significantly between 2024 and 2025. This increase breaks the downward trend that began in 2023. Conversely, imports via pipeline and net withdrawals from storage facilities have fallen sharply. LNG has thus become the leading source of gas injections into the French network, accounting for 56 % of French natural gas imports in 2025, compared with 49 % last year.

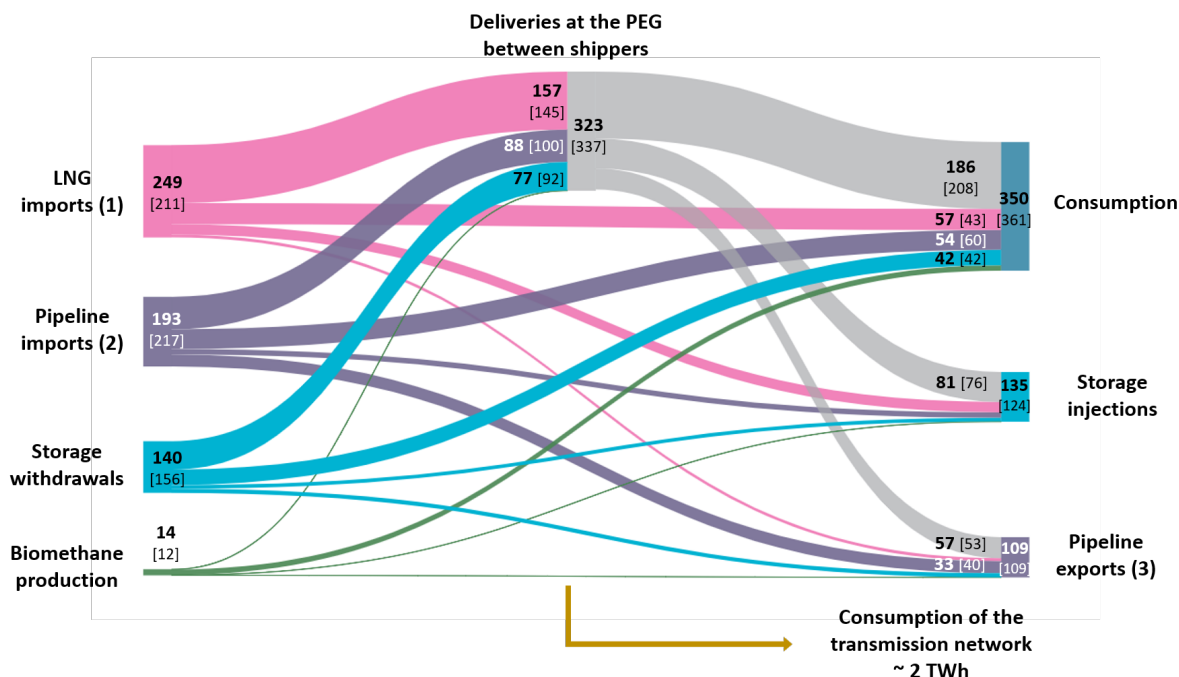
France remains, for the fourth consecutive year, the leading entry point for LNG in Europe, with its LNG terminals accounting for 23 % of European LNG imports in 2025. A significant proportion of French imports is re-exported via pipelines, contributing to European security of supply. French exports therefore remain high but appear to be more concentrated than in previous years: in 2025, they were largely directed towards Switzerland, bound for the Italian market, with which France has no direct gas interconnection.

After reaching 33 TWh in 2024, net withdrawals from storage facilities fell sharply to 5 TWh in 2025, reflecting an already relatively low fill level. Gross withdrawals fell by 10 % compared with the previous year, accounting for 23 % of the country's total supplies, down from 26 % in 2024 and 22 % in 2023.

The production of biomethane injected into the network continued to rise in 2025, reaching 13.5 TWh (up 17% compared with 2024), accounting for 4% of French consumption. Gas consumed in France is therefore 96% of fossil origin.

Figure 6 provides an overview of commercial gas flows in France. Since the 2022 gas crisis and the reconfiguration of flows in Europe, the PEG has taken on a central role, as the majority of LNG imported into France is now traded via the PEG, in contrast to the previous situation where the main suppliers had their own import contracts and relied less on the market.

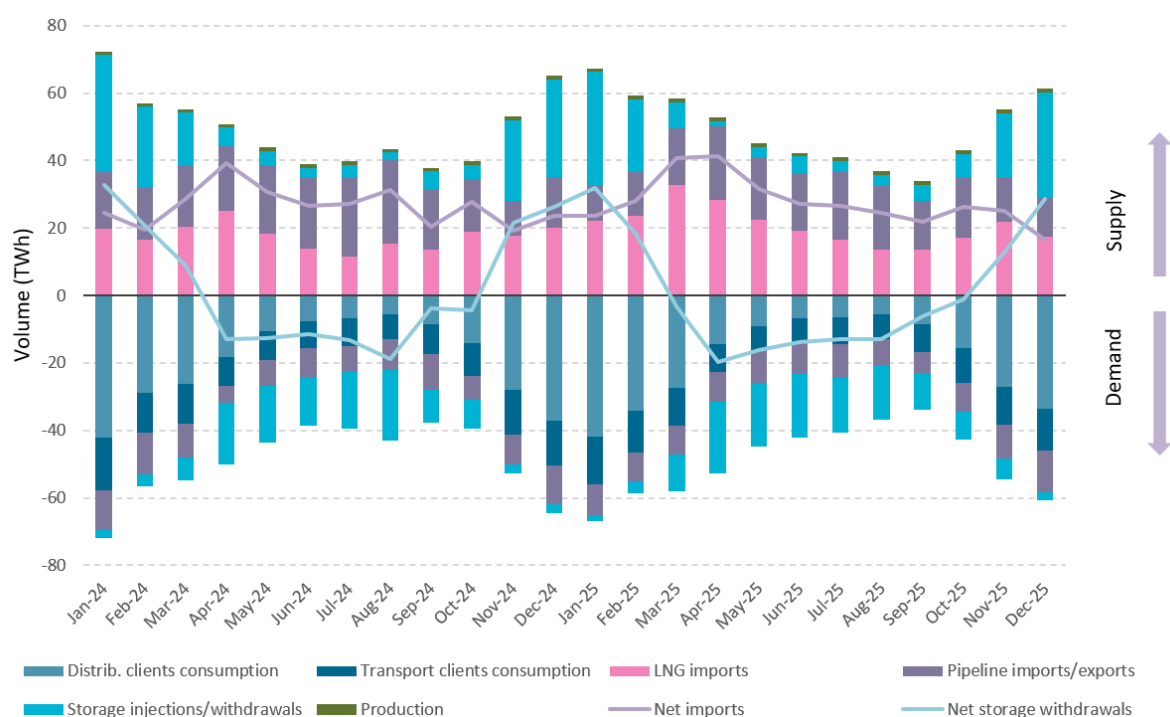
Figure 6: Balance of injections and withdrawals in the French gas system in 2025 [2024]
(commercial flows)



Sources: NaTran, Teréga, ODRE – Analysis: CRE

To ensure a clear understanding of this chart, certain conventions should be clarified.

- Commercial flows, as opposed to physical flows, reflect the daily allocations to market participants rather than the actual movements of gas on the network. Differences may arise, in particular, when market participants nominate opposite directions at the same point on the network. While commercial flows incorporate all shippers' transactions, physical flows correspond to a net balance of movements, which may offset one another.
- LNG imports (1) do not include LNG received at the Dunkirk LNG terminal directly sent to the Belgian network (approximately 80 TWh in 2025) as it does not transit via the French transmission network. If these flows were taken into account, they would increase LNG imports and exports to Belgium by the same amount.
- Imports via gas pipelines (2) include imports of L-gas via the Taisnières B interconnector (12 TWh in 2025).
- Exports via gas pipelines (3) include exports at PIRRs (regional network interconnection points) (10 TWh in 2025).

Figure 7: Monthly balance of the French system in 2024 and 2025 (commercial flows)

Sources: NaTran, Teréga, ODRE – Analysis: CRE

2.2. French consumption down for the fourth consecutive year

As has been the case every year since 2022, annual French natural gas consumption fell in 2025. Before climate adjustment, it stood at 350 TWh, compared with 479 TWh in 2019 – before the energy crisis – and 361 TWh in 2024. Gross consumption on distribution networks, which includes residential clients in particular, fell by 2 %, from 235 TWh to 231 TWh. However, this decline rises to 3 % when adjusted to climate, confirming the continuing impact of energy efficiency measures and efforts to reduce consumption that emerged in the wake of the energy crisis.

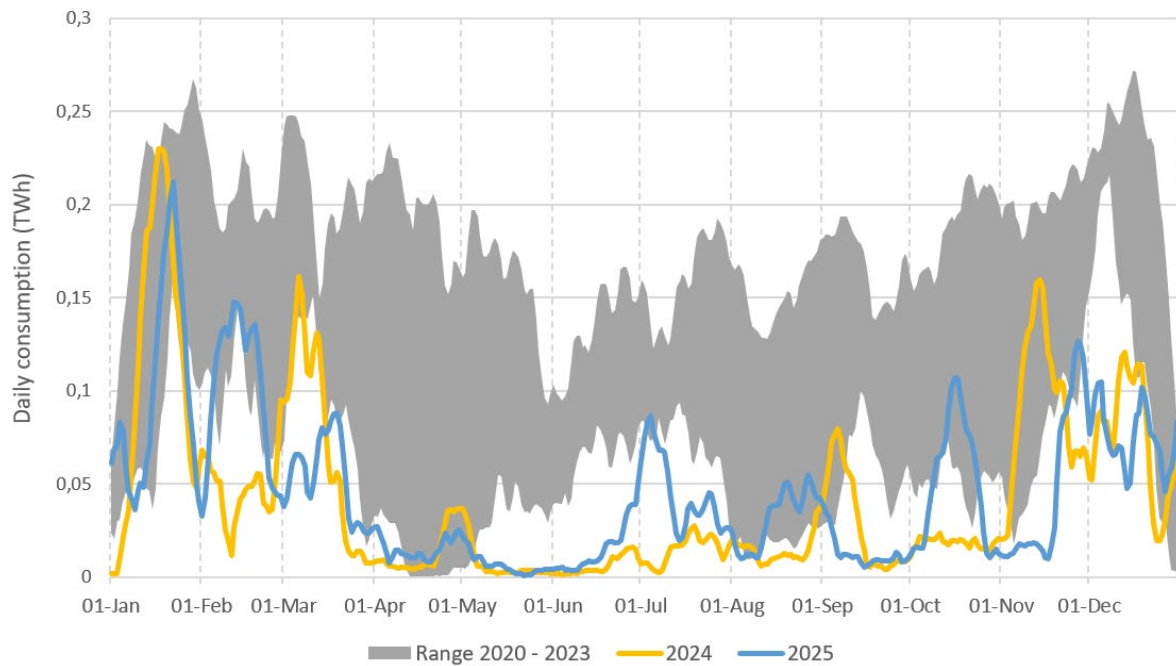
Table 3: French gas consumption in 2024 and 2025 [TWh]⁶⁴

	2024	2025	Change
Distribution networks	235	231	-2%
Clients directly connected to the transmission network (excluding power plants)	109	102	-7%
Gas-fired thermal power plants	16	17	+7%
Total consumption	361	350	-3%

Source: NaTran – Analysis: CRE

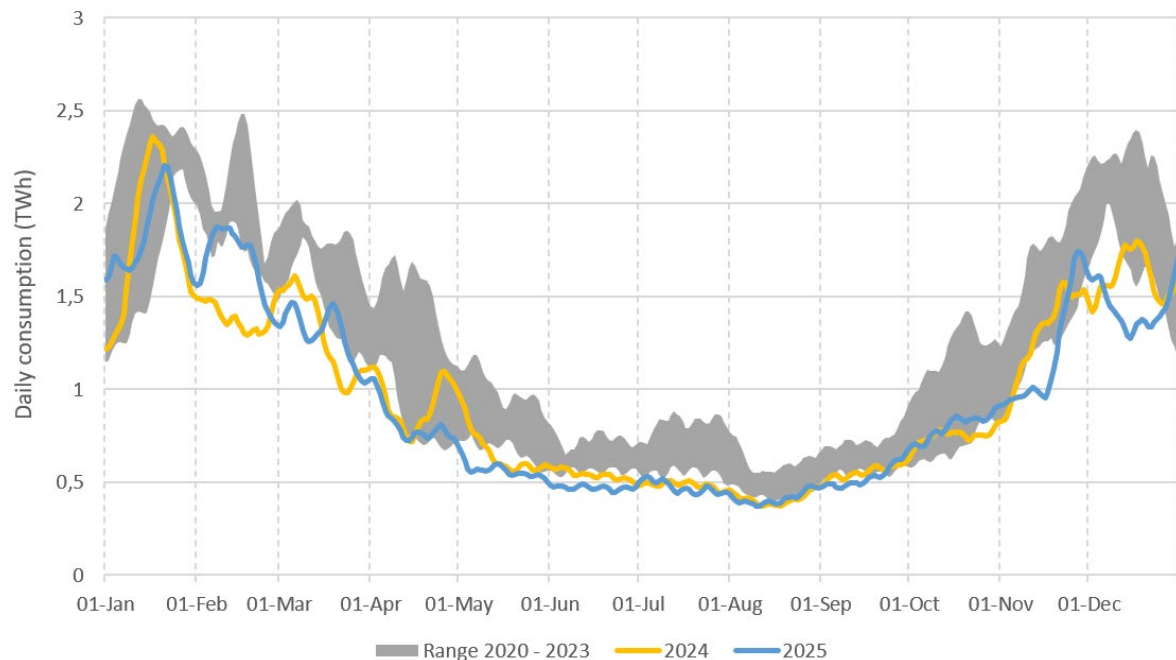
⁶⁴ Excludes deliveries at regional network interconnection points (PIRRs), which are counted as exports via gas pipelines.

Figure 8: Daily consumption of gas-fired power plants connected to the transmission network in France (weekly moving average)



Source: NaTran – Analysis: CRE

Figure 9: Total daily natural gas consumption in France



Sources: NaTran, Teréga, ODRE – Analysis: CRE

Conversely, consumption by natural gas-fired power plants rose slightly in 2025. It reached 17 TWh, compared with 16 TWh in 2024 (Figure 8). However, it remains much lower than in 2023, when it stood at 38 TWh.

Finally, the bulk of the decline in domestic gas consumption is driven by the industrial sector (clients directly connected to the transmission network, excluding power plants), where demand has fallen by 7 % to 102 TWh in 2025.

2.3. Gas entries and transit via the TRF: LNG deliveries have increased while pipeline flows are down

LNG imports rose significantly in 2025. They reached 249 TWh, compared with 211 TWh in 2024 (+18%)⁶⁵, and came mainly from the United States, Russia and Algeria. They are thus approaching their 2023 level (252 TWh) but remain below the peak reached in 2022 (292 TWh). Since 2022, France has played a key role in the transit of LNG within Europe, against a backdrop of shifting trade flows (Figure 10). Imports via LNG terminals were particularly high in March 2025, setting a new monthly record of 33 TWh. This reflects the peak in demand caused by uncertainties over Russian supplies and concerns about storage levels in early 2025. At that time, European gas prices, which had risen sharply, diverged from those of Asian LNG and remained higher for several weeks before starting to decline (Figure 4).

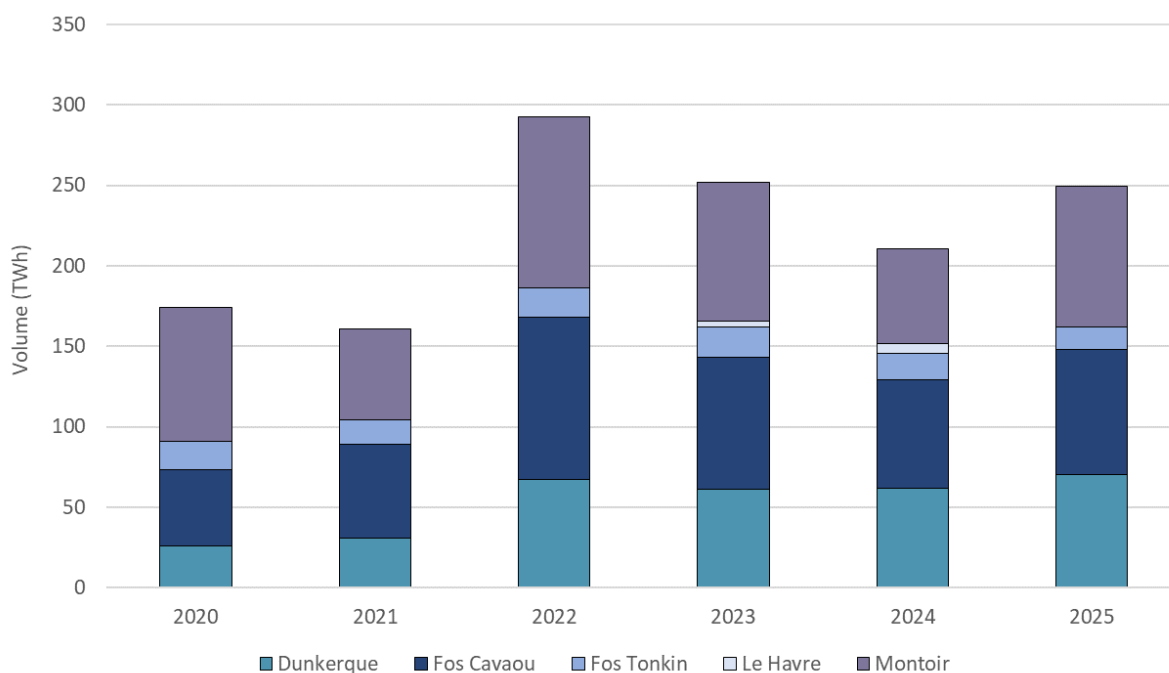
The rise in LNG imports was less pronounced in the second half of the year, in relation to lower storage injections in the third quarter compared with previous years and significant withdrawals in the fourth. Send-outs from French LNG terminals reached 57 TWh between October and December 2025. They thus remain at the same level as in the final quarter of 2024, despite the restrictions at the Fos PITTM caused by the incident of Saint-Rémy-de-Provence. The volumes in question were notably offset by an increase in arrivals at the Dunkirk terminal.

The rise in LNG imports is also associated with higher utilization rates at LNG terminals: an average of 61 % over the year, compared with 50 % in 2024 (Figure 11). However, these rates remain well below those achieved in 2022, when they exceeded 80 % on an annual average. In particular, the floating terminal in Le Havre has remained unused since July 2024. In October 2025, two years after its installation, the Administrative Court of Rouen ruled that it was no longer necessary for French security of supply and ordered the government to revoke TotalEnergies' operating licence. The terminal was finally decommissioned in November 2025 and has since left the port of Le Havre.

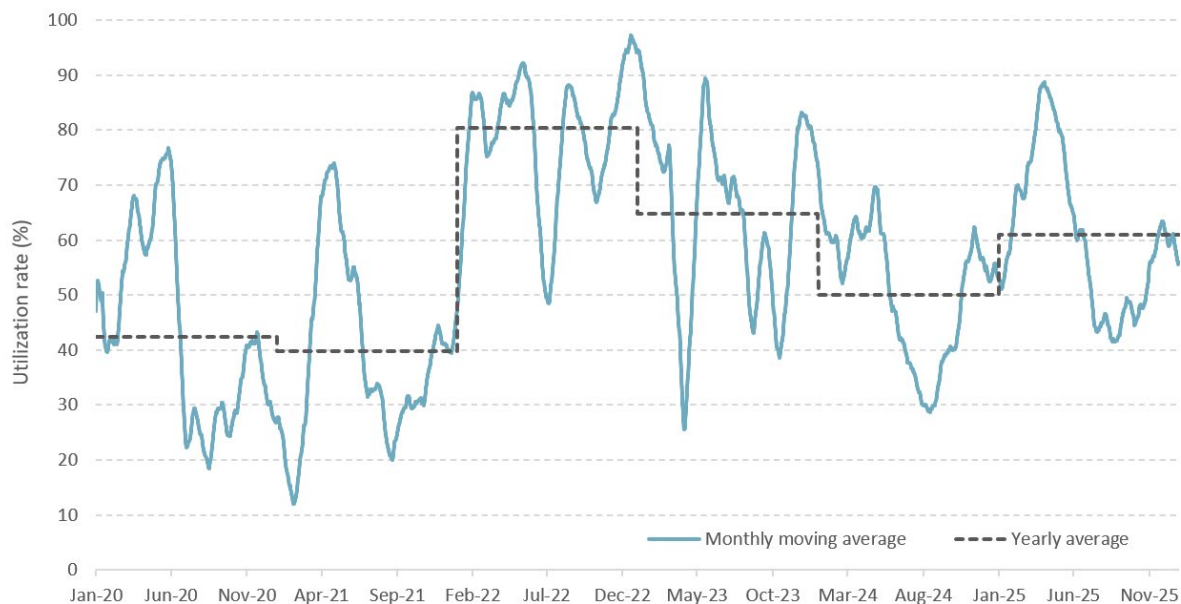
Imports via gas pipelines, meanwhile, continue their long-standing downward trend, which has been exacerbated since 2021 by the reconfiguration of gas flows brought about by the energy crisis. They amounted to 193 TWh in 2025, compared with 217 TWh in 2024 and 369 TWh in 2021. Despite a slight decrease compared with 2024 (-7%), gas flows coming from Norway at the Dunkirk interconnector now account for 83% of these imports, while the share from France's neighbouring countries is steadily declining.

Finally, annual gross exports remained unchanged in 2025 compared with the previous year, totalling 109 TWh, thus confirming France's role as a transit country in the European gas market. The vast majority of these flows were directed towards Switzerland, bound for the Italian market: exports via the Oltingue interconnector reached 83 TWh, representing 76 % of the total. Added to this are deliveries to the PIRRs (10 TWh) as well as trade with Spain and Belgium.

⁶⁵ These figures reflect commercial flows and exclude exports corresponding to LNG delivered at Dunkirk for direct transfer to the Belgian network (i.e. approximately 80 TWh in 2025).

Figure 10: Send-outs from French LNG terminals

Sources: NaTran, Teréga, ALSI – Analysis: CRE

Figure 11: Utilization of LNG terminals compared with regasification capacity⁶⁶

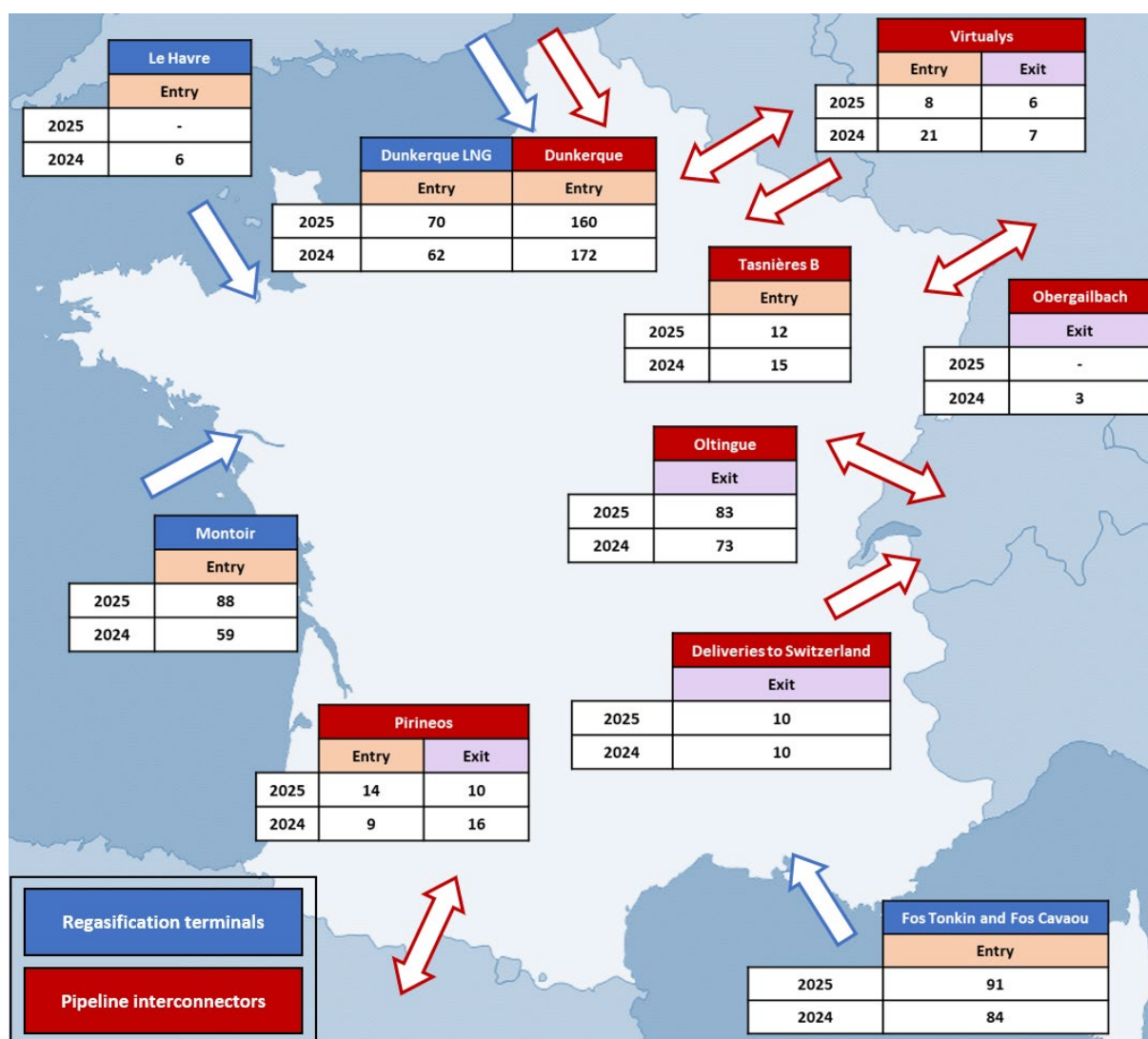
Source: ALSI – Analysis: CRE

⁶⁶ The theoretical maximum capacity considered here corresponds to the aggregate regasification capacity of French LNG terminals. However, other limiting factors (such as unloading and storage capacities) may also restrict output, resulting in a lower maximum capacity in practice.

As in 2022 and 2023, France was a net importer at the Pirineos interconnector in 2025, amounting to 4 TWh. This was also the case with Belgium, although net import volumes continued to fall, both for L-gas at the Taisnières B interconnector (12 TWh, a 22 % decrease) and for H-gas at Virtualys (2 TWh, a 90 % decrease). Unlike Switzerland and Germany, however, bidirectional flows with Spain and Belgium were maintained in 2025, creating favourable conditions for price convergence across market areas.

While Germany exported 71 TWh of natural gas to France in 2021 and subsequently became a net importer after October 2022, the Obergailbach interconnector remained virtually unused in 2025. In particular, the country has expanded its regasification capacity since the energy crisis and, in 2025, received a significantly higher volume of LNG: 94 TWh, 36 % more than the previous year. Germany also made extensive use of its storage facilities, with net withdrawals totalling 58 TWh over the year.

Figure 12: Utilization of interconnectors and LNG terminals in 2024 and 2025 (commercial flows) [TWh]



Sources: NaTran, Teréga – Analysis: CRE

2.4. Storage levels have not been this low since the energy crisis

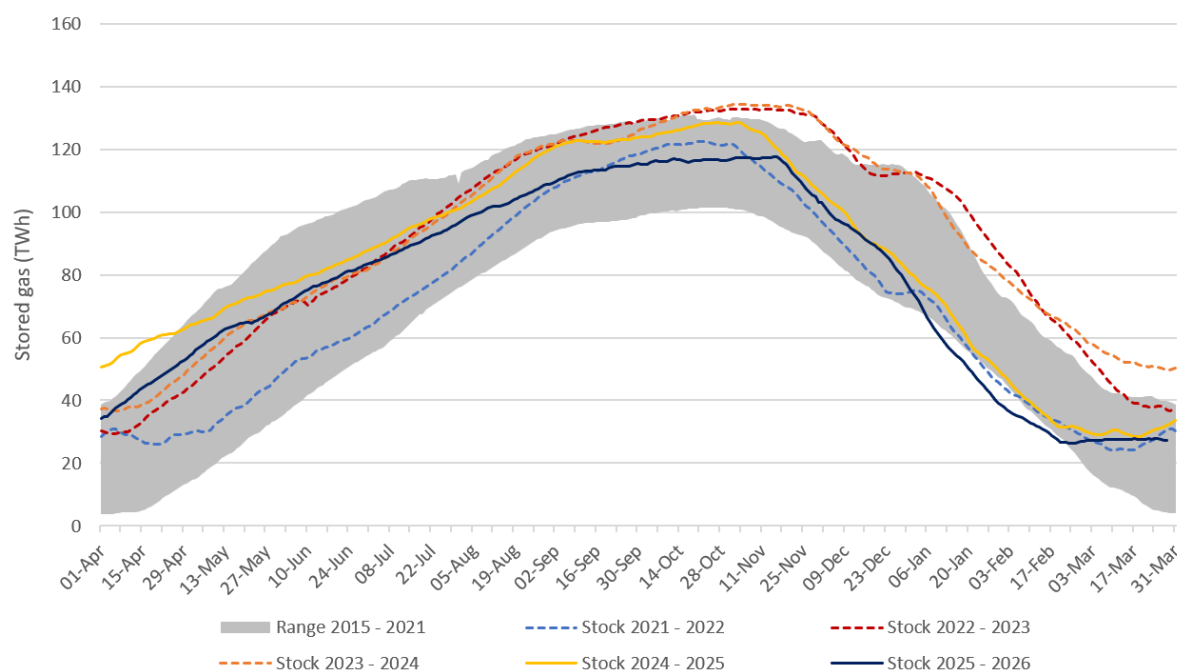
French storage facilities ended the winter of 2024–2025 at 27 % of their maximum capacity, reflecting significant withdrawals from November 2024. This fill rate was well below the 39 % reached on 1 April 2024 – a historically high level for that time of year – due to a very mild winter of 2023–2024.

The contrast with 2024 led the markets to anticipate strong demand across Europe for filling storage facilities in the summer of 2025. This pressure, which contributed to the price peak in February 2025, was quickly alleviated by high levels of LNG imports and the prospect of a relaxation of regulatory filling targets.

In France, net injections between April and October 2025 stood at 83 TWh, compared with 78 TWh a year earlier. As a result, storage facilities reached a fill rate of 93 % on 1 November 2025, 10 percentage points higher than the European Union-wide average. However, this was the lowest level on that date since 2017. Since the energy crisis, the fill rate of French storage facilities on 1 November had consistently exceeded 98 %, except for 2024, when it stood at 95 %.

Having started the winter of 2025–2026 at a lower level than in previous years, French storage facilities reached by the end of the season their lowest level for this period since 2018. Indeed, withdrawals were substantial during the winter of 2025–2026: 90 TWh, compared with 94 TWh the previous year but 83 TWh during the winter of 2023–2024. French storage facilities therefore ended the winter at 22 % of their maximum capacity. The trend at the European level, which was very similar, resulted in a fill rate of 28 % on 1 April 2026, suggesting further supply pressure during the summer. It should be noted, however, that in France, the regulation encourages market participants to hedge their positions when booking storage capacity, all of which has already been sold for the winter of 2026–2027 (see section 3.4).

Figure 13: Storage levels in France by gas year



Source: AGSI – Analysis: CRE

2.5. The French network has experienced few instances of congestion since February 2025, despite the unavailability of the Rhône pipeline

Historically, congestion on the French gas transmission network mainly occurred in the north-south direction, with the most critical period being the gas summer, in connection with the gas injection campaign into storage facilities⁶⁷. Since the energy crisis and the reconfiguration of gas flows in Europe, congestion now occurs in the south-north direction and most frequently during the winter.

Since the winter of 2017–2018, the locational spread has been one of the mechanisms available to transmission system operators (TSOs) for managing congestion. It enables them to issue a call to market participants to buy and resell gas at specific points on the network, upstream and downstream of the congestion respectively. This mechanism was heavily used during the winter of 2022–2023, due to the redirection of significant flows of Norwegian gas to the United Kingdom, as well as during the following winter.

In 2025, TSOs used locational spreads 25 times at a total cost of 1.9 million euros. However, of all these instances, 13 occurred in February 2025 following a significant drop in gas entries from Norway at the Dunkirk interconnector. In particular, the mechanism was used only six times during the winter of 2025–2026, despite the incident of Saint-Rémy-de-Provence.

Thus, despite concerns in relation to the unavailability of the Rhône pipeline since 26 September 2025, the use of locational spreads by French TSOs confirms its downward trend, in terms of the number of occurrences, the volumes allocated as well as the amounts involved (Table 4).

The behavior and bids of market participants as part of the locational spread mechanism are subject to regular monitoring. The CRE is particularly vigilant to nominations that could exacerbate congestion, made at the start of the day by market participants active in the locational spread mechanism.

Table 4: Summary of locational spread activations by gas season

	Winter 22/23	Summer 23	Winter 23/24	Winter 24/25	Summer 25	Winter 25/26
Number of activations	110	16	42	17	6	6
Total allocated volumes (GWh)	5,145	796	2,391	729	205	145
Average transaction price (€/MWh)	10.6	3.9	4.0	2.1	2.2	1.4
Total cost (millions €)	54.6	3.1	9.6	1.5	0.4	0.2

Source: NaTran – Analysis: CRE

⁶⁷ The French storage facilities with the largest capacities are located at the south of the TRF. These include, in particular, those corresponding to the virtual points of Lussagnet (Teréga) and Serene Atlantique (Storengy).

3. Prices and volumes traded on the French market

3.1. PEG prices eased significantly in 2025

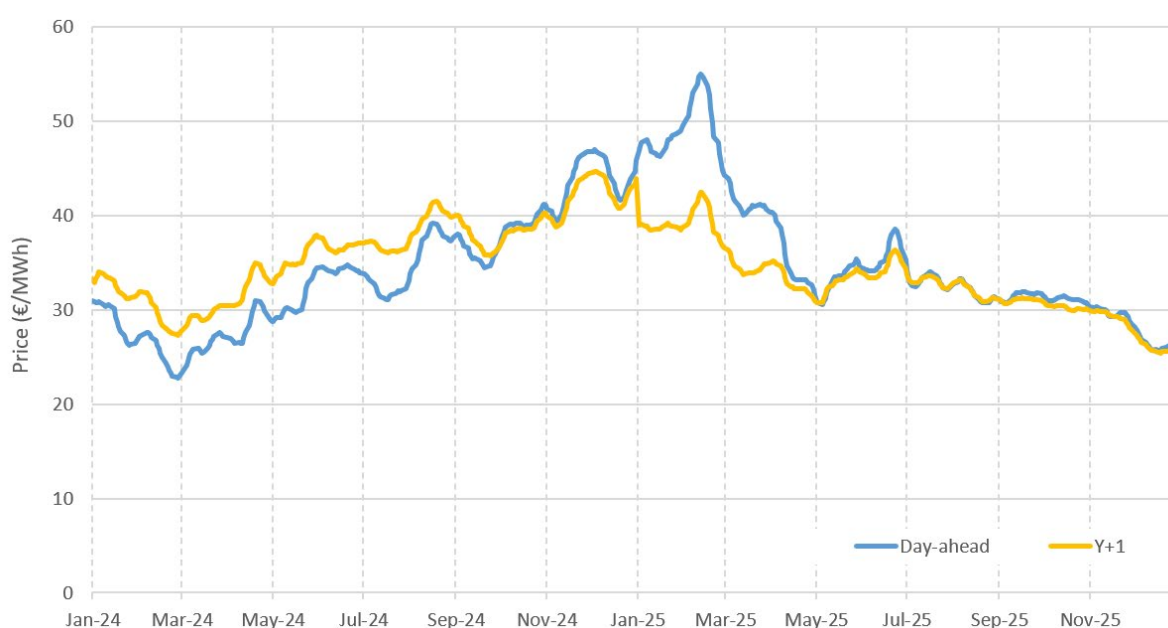
Like the TTF, the European benchmark, PEG prices eased significantly in 2025. They first peaked at the end of February, bringing an end to the upward trend that had persisted for a year, before declining rapidly until early May. While these movements were seen across all maturities, they were particularly pronounced for short-term products. For instance, the day-ahead price for delivery in France stood at €57.8/MWh on 10 February and then at €28.9/MWh on 1 May. Despite an unstable geopolitical context and occasional upward spikes, notably during the Twelve-Day War in June 2025, prices continued their downward trend until the end of the year. On 16 December, the day-ahead price at the PEG reached €25.2/MWh, its lowest level since March 2024. Prices rose again at the end of February 2026 with the outbreak of the war in the Middle East.

Forward prices followed a similar trajectory in 2025. In particular, the Y+1 contract at the PEG fell from €43.9/MWh on 11 February to €25/MWh on 16 December 2025. Notably, the price of this instrument converged with the day-ahead product (Figure 14), suggesting an alignment of short- and medium-term fundamentals as well as a sustained easing of supply constraints. On the contrary, 2024 had seen a worsening of the 'backwardation' in gas prices, characterised by spot prices exceeding forward prices. In 2026, disruptions to global LNG supply caused by the war in the Middle East have reintroduced a significant price differential between the day-ahead and front-year contracts.

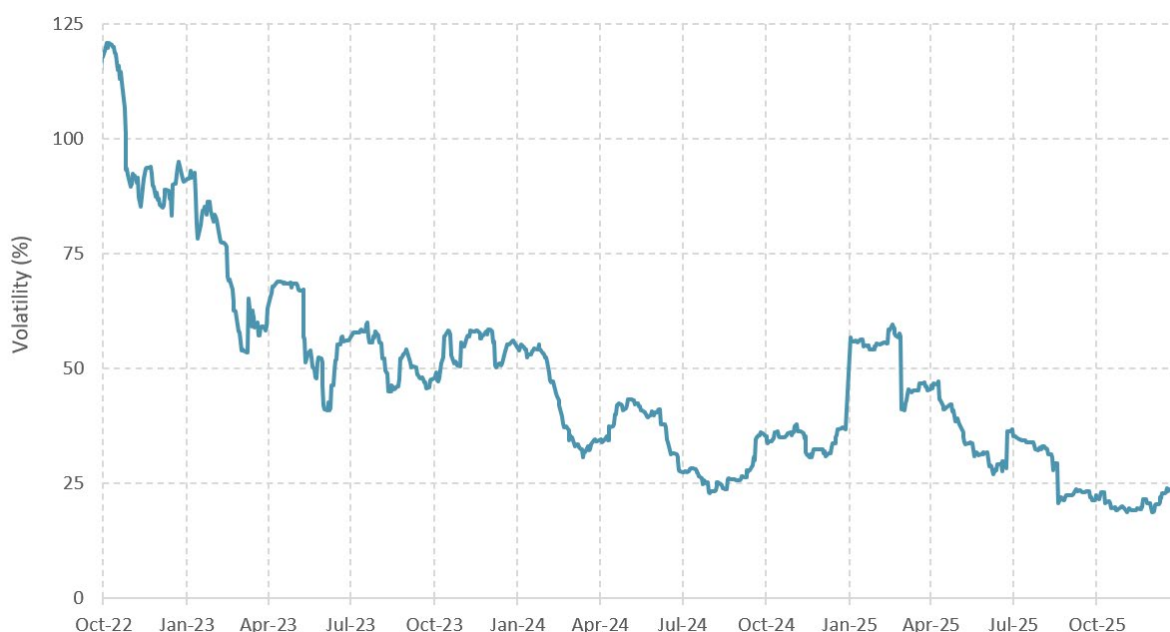
On an annual average, the price of the front-year product has continued its downward trend, which began following the energy crisis: it has fallen by 9 % compared with 2024 to reach 32.8 €/MWh. By contrast, the average day-ahead price rose by 4% compared with the previous year, driven by high prices in the first quarter. It stood at €35.4/MWh, compared with €34.1/MWh in 2024.

Furthermore, price volatility on the French market, which had been falling steadily since the energy crisis, spiked sharply at the start of the year before resuming a downward trend (Figure 15). Volatility for the Y+1 contract thus returned to its end-2024 level in the summer of 2025 and even reached its lowest point since April 2021 in November. It ultimately stood at an average of 34% for the year, compared with 36% in 2024 and 59% in 2023.

Figure 14: Day-ahead and front-year prices at the PEG since 1 January 2024



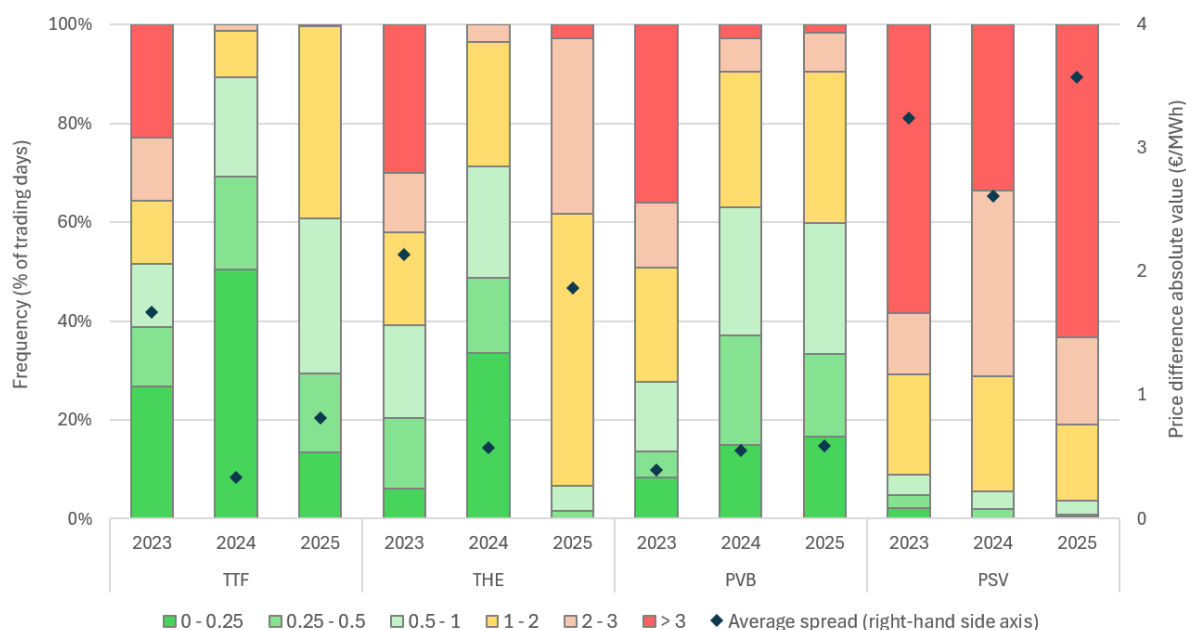
Source: EEX

Figure 15: Volatility of the front-year product at the PEG

Source: EEX – Analysis: CRE

3.2. The PEG was the cheapest gas hub in the EU in 2025

Despite a consistently strong correlation between the PEG and neighbouring countries' markets, price differentials were on average higher in 2025 than in 2024. The level of convergence between the main hubs in Western Europe was therefore more limited than in the previous year. Given the dominant role played by LNG in European supply in 2025, France consolidated its advantage and confirmed its status as the cheapest hub in the European Union.

Figure 16: Annual distribution of day-ahead price differentials between the PEG and the Dutch (TTF), German (THE), Spanish (PVB) and Italian (PSV) hubs, in €/MWh

Sources: EEX, Argus – Analysis: CRE

While the level of convergence between the PEG and the PVB remained stable between 2024 and 2025, it deteriorated slightly for the TTF and more markedly for the THE and the PSV: for example, day-ahead prices in France and Italy diverged by more than €3/MWh 63 % of the time in 2025 (Figure 16), with an annual average of €3.6/MWh, namely €1/MWh higher than the previous year. This increase in price differentials with Germany and Italy is also evident on the futures markets, with the German Y+1 contract exceeding its French equivalent by an average of 2.2 €/MWh in 2025 (Table 5). It should be noted, however, that a particularly high level of convergence between Western European hubs was achieved in 2024. Consequently, most of the corresponding price differentials in 2025 remain lower than those in 2023.

Table 5: Average annual differentials by maturity between the PEG and the Dutch (TTF), German (THE), Spanish (PVB) and Italian (PSV) hubs, in €/MWh

		Netherlands (TTF)	Germany (THE)	Spain (PVB)	Italy (PSV)
Day-ahead	2023	1.7	2.1	0.4	4.0
	2024	0.3	0.6	0.5	2.6
	2025	0.8	1.9	0.6	3.6
M+1	2023	1.5	2.0	-0.2	2.0
	2024	0.5	0.8	0.2	1.8
	2025	0.9	2.0	0.2	2.8
Y+1	2023	1.7	3.0	-0.2	2.2
	2024	0.7	1.6	-0.1	1.9
	2025	0.8	2.2	0.1	2.5

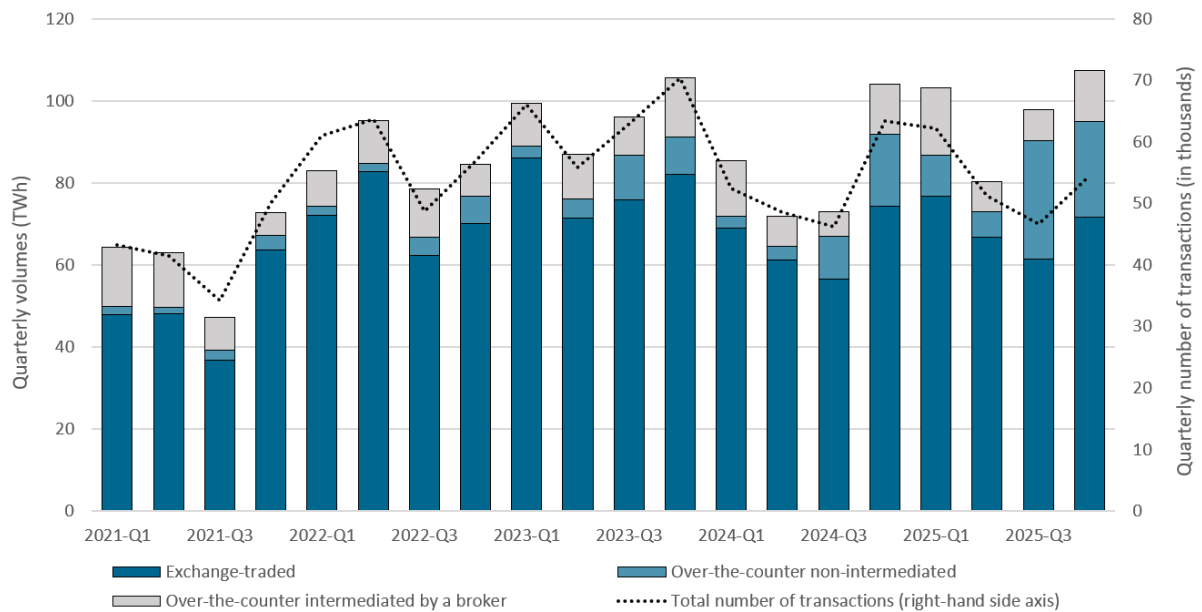
Sources: EEX, Argus – Analysis: CRE

Finally, the restrictions on the trading of entry capacities at the Pirineos interconnector, introduced for the winter of 2025–2026 following the incident of Saint-Rémy-de-Provence⁶⁸, do not appear to have had any discernible effect on the PVB–PEG spread. The spread remained positive for most of the season, significantly limiting the economic case for importing gas into France from Spain. Similarly, these restrictions, which also impacted the trading of exit capacities at the Oltingue interconnector, had no practical impact on exports to Switzerland and, consequently, to Italy. These flows stood at around 23 TWh in the final quarter of 2025, a very high level by historical standards. Therefore, these constraints did not hinder the convergence of the French and Italian markets.

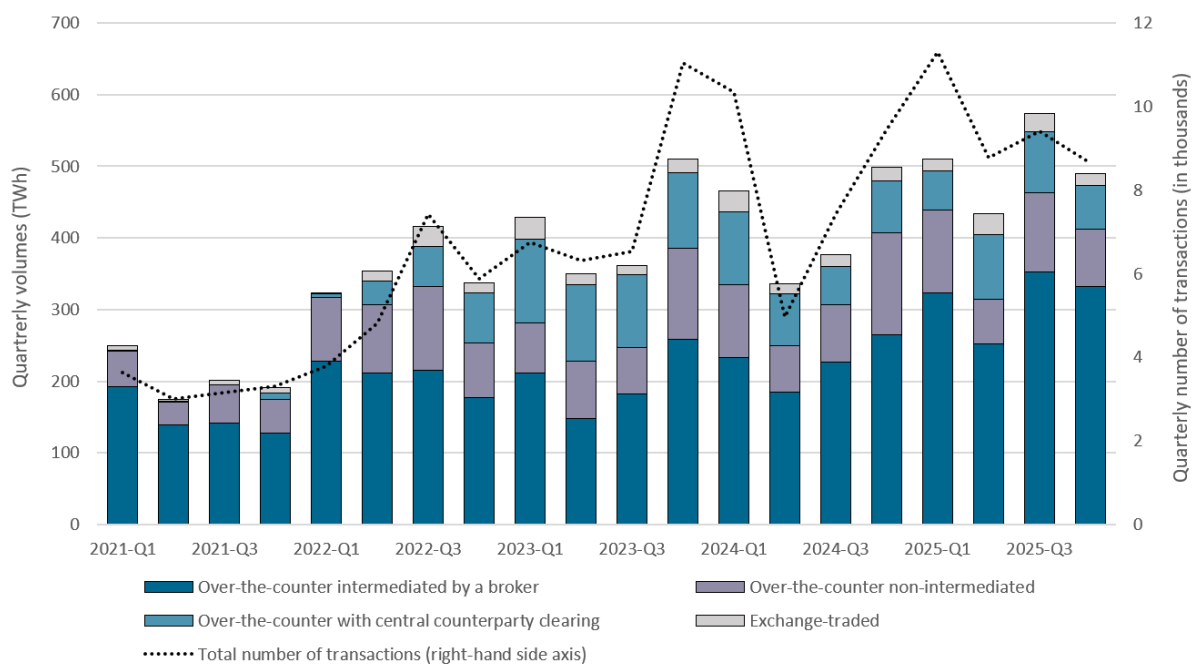
3.3. Volumes traded at the PEG rose sharply, particularly on the futures market

In 2025, volumes traded at the PEG increased significantly compared with 2024, rising from 2,010 TWh to 2,397 TWh, an increase of 19 %: they returned to their 2023 level on the spot market (+16 %) and continued to grow on the futures market (+20 %). This rise was notably driven by calendar products, for which volumes traded more than doubled. Yet, Y+1, Y+2 and Y+3 contracts continue to account for the bulk of the corresponding volumes. Although volumes have also grown for Y+4 and Y+5 maturities, liquidity remains very low for these products on the French market.

⁶⁸ See CRE deliberations [2025-248](#) and [2026-47](#).

Figure 17: Volumes traded at the PEG on the spot market

Source: REMIT data – Analysis: CRE

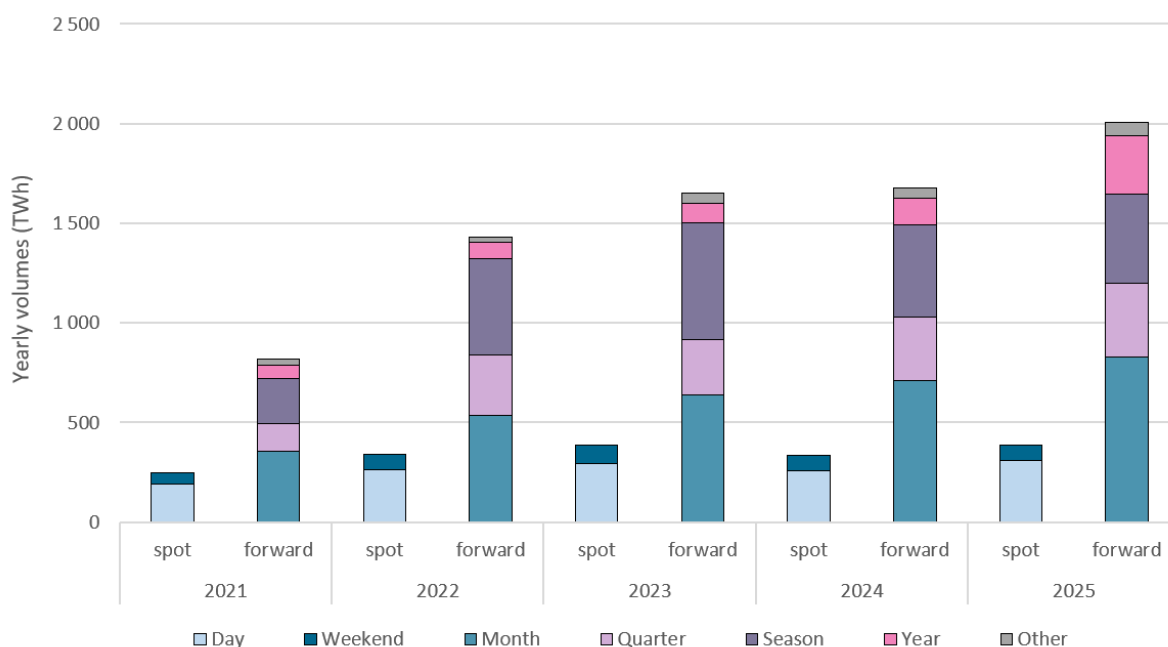
Figure 18: Volumes traded at the PEG on the futures market

Source: REMIT data – Analysis: CRE

The characteristics of transactions at the PEG remain stable compared with previous years. In particular, the vast majority is still subject to physical delivery: on the futures market, only 3 % of the volume traded in 2025 was settled in cash, compared with 4 % in 2024 and 5 % in 2023. 82 % of the volumes traded at the PEG in 2025 were concluded on an exchange or via a broker, compared with 77 % in 2024 and 79 % in 2023. Furthermore, the same structural difference as in previous years can be observed in the use of intermediation depending on the product traded: short-term contracts are overwhelmingly traded on an exchange, while transactions on the futures markets are mostly concluded via a broker. The registration of over-the-counter transactions with clearing houses continued to decline in 2025: while it covered 27 % of total volumes on the futures markets in 2023 and 19 % in 2024, this share fell by a further 4 percentage points to stand at 15 % in 2025.

Finally, the total value of transactions at the PEG rose by 16 % compared with 2024 but remains 12 % below the level reached in 2023, against a backdrop of high prices in the wake of the energy crisis. On the spot market, it reached €13 billion in 2025, compared with €11 billion in 2024 and €15 billion in 2023. On the futures markets, traded volumes totalled €64 billion in 2025, compared with €55 billion in 2024 and €73 billion in 2023.

Figure 19: Volumes traded at the PEG by product duration



Source: REMIT data – Analysis: CRE

3.4. The 2025–2026 trading campaign for storage capacity was successfully completed, under better conditions than in 2024–2025

By the end of 2024, storage levels – which were lower than a year earlier – combined with the EU requirement to fill storage facilities to 90 % of their maximum capacity by 1 November pointed to strong demand for gas during the summer of 2025. In addition, the market was already anticipating a short-term supply risk in relation to the end of Russian gas transit through Ukraine. Prices for delivery during the summer of 2025 thus rose above those for the winter of 2025–2026, significantly reducing the attractiveness of storage capacity for that season. The winter-summer spread at the PEG then remained negative until the start of the injection campaign (Figure 20). It even reached -€5.6/MWh in early February, after the German market operator (THE) presented a subsidy mechanism envisaged by the federal government to ensure the country's storage facilities would be filled. This announcement was interpreted as a signal suggesting that they would be filled at any cost, pushing the price of the summer product even higher. Considering the price correlation between European hubs and given the size of German storage facilities, this proposal had a major impact on all markets across Europe.

In France, these tensions had only limited consequences on the 2024–2025 trading campaign for storage capacity. First, the prospect of regulatory relaxation helped to ease price pressures and made this capacity more attractive: on 5 March 2025, the European Commission proposed lowering the mandatory filling targets, which was confirmed, subject to certain conditions, by the new European regulation on gas storage, published on 10 September 2025. Furthermore, at the national level, part of the capacity for the 2025–2026 storage year had already been sold in previous years. Finally, the remaining capacity was sold in the form of multi-year products, running, for example, over two or three years. As the winter-summer spread was more favourable at that time for subsequent years, these contracts proved to be more attractive.

Figure 20: Winter-summer spread at the PEG between April 2023 and December 2025



Source: EEX – Analysis: CRE

The 2025–2026 trading campaign took place under more favourable market conditions. In particular, the winter–summer spread remained positive between November 2025 and January 2026. It subsequently decreased but remained only slightly negative until the end of February. By that date, French storage operators had completed the trading of 2026–2027 capacities, thereby avoiding the impact of the shock caused by the war in the Middle East, which broke out on 28 February. By worsening the supply outlook for the summer of 2026, the conflict effectively pushed the winter–summer spread to -€8.5/MWh on 3 March. This price differential has largely narrowed since then, reaching -€0.4/MWh on 27 March 2026.

Ultimately, 78 TWh of storage capacity was sold during the latest trading campaign at an average auction price of 0.7 €/MWh, compared with 0.2 €/MWh the previous year. The significant drop in volume compared with 2024–2025 – during which 147 TWh had been allocated – is largely due to the sale of multi-year products. In particular, 80 TWh of capacity had already been sold for the 2026–2027 storage year.

Table 6: Prices and volumes of storage capacity auctions by campaign and maturity

Auction campaign	Capacity sold (TWh)					Average auction price per campaign
	2025/2026	2026/2027	2027/2028	After 2028	Total	
Before 2023	19	1	-	-	20	2.1
2023/2024	46	21	1	-	68	2.0
2024/2025	61	57	23	6	147	0.2
2025/2026	-	44	22	12	78	0.7
Total	126	124	46	17	313	0.8
Average auction price per maturity	1.1	0.7	0.6	0.6	0.8	(€/MWh)

Sources: Storengy, Teréga (figures as of 28 February 2026) – Analysis: CRE

SECTION 3: WHOLESALE ELECTRICITY MARKETS

1. Trends in supply and demand in France in 2025

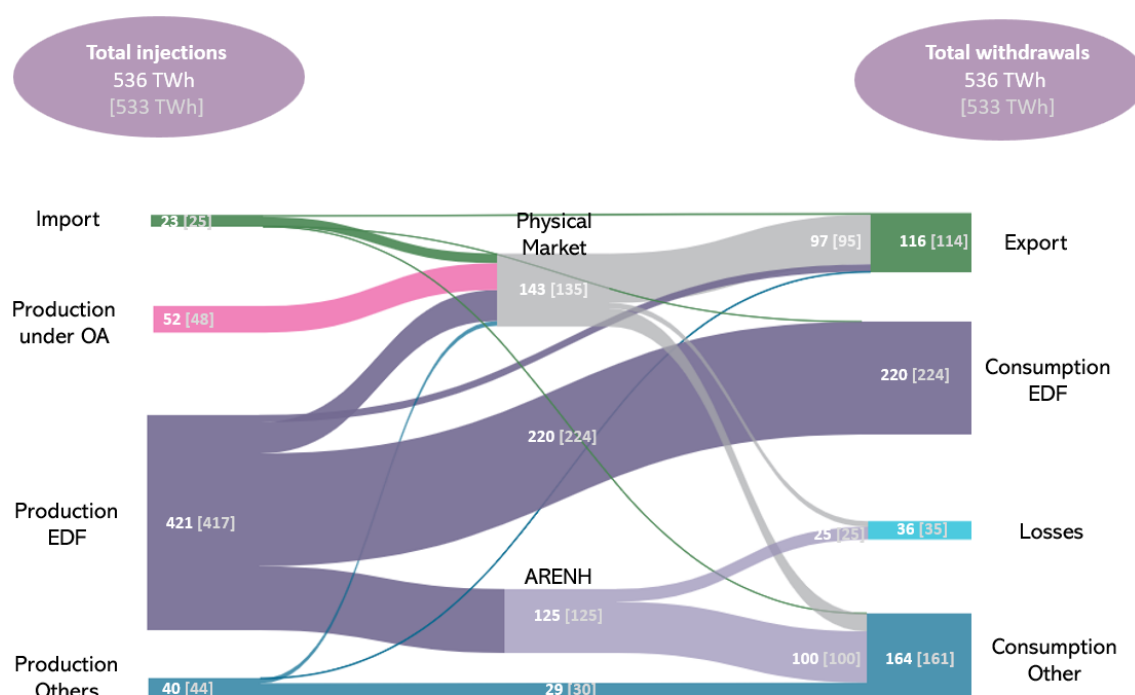
1.1. Balance of the French electricity system: stabilisation of injections, moderate growth in generation and exports

The balance between injections and withdrawals take did not change significantly between 2024 and 2025. Following two years of recovery in nuclear generation in the wake of the 2022 crisis, output has stabilised, with moderate growth. The slight increase in consumption, which was lower than that of production, led to a new record for exports, whilst maintaining a level comparable to that observed in 2024.

Figure 21 presents a simplified view of the physical flows for the year 2025 on the French electricity system. This diagram incorporates several assumptions which should be clarified for a full understanding:

- only physical flows passing through the balance sheets of balance responsible parties are accounted for, and not purely financial exchanges;
- the physical market includes the day-ahead and intraday markets operated by EPEX SPOT and Nord Pool, as well as block exchange programmes between balance responsible parties, reflecting over-the-counter (OTC) forward transactions with physical delivery;
- the link between each balance sheet allocation is established in proportion to each balance responsible party's supply for each time period;
- the figures relating to imports and exports refer to trade recorded within the areas of responsibility of the balance responsible parties at different maturities, and do not correspond to net physical trade at the borders (however, the net balance of trade is the same in both cases);
- unlike other sources of generation and consumption data used in this report, Corsica is not included here, and self-consumption by generation auxiliaries and pumping at pumped-storage hydroelectric power stations (PSPPs) are deducted from generation.

Figure 21 : Balance of injections and withdrawals by balance responsible parties in 2025 [2024]
(TWh)



Source: RTE, Analysis: CRE

Injections into the grid remained broadly stable (+0.5%) between 2024 and 2025, rising from 533 TWh to 536 TWh.

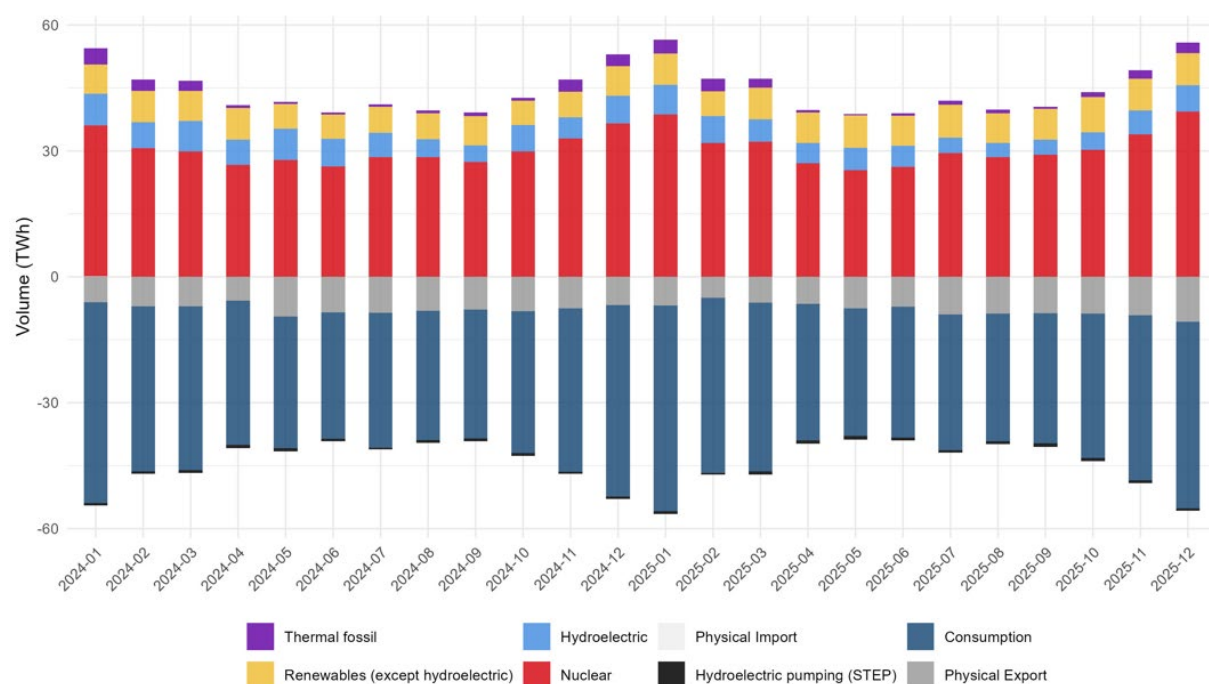
ARENH⁶⁹ subscriptions for delivery in 2025, the final year of the mechanism, remained at the same level as in 2024, reaching 125 TWh (of which 25 TWh was to cover network losses). The 100 TWh cap for end-user suppliers has been reached. From 2026 onwards, the volumes in question will, in principle, be traded on the physical market.

A significant proportion of EDF's electricity generation does not pass through the wholesale market: 52.4% is intended for consumption by EDF's customers and 23.8% goes directly to other suppliers via the ARENH. In total, 14.5 % of EDF's generation is sold on the wholesale markets, 5.9 % is used to cover network losses and 3.4 % is exported directly. EDF's total generation and its breakdown remain similar to 2024.

Electricity generation in France remained fairly stable compared with 2024, recording a slight increase of +0.8%.

In 2025, France set a new record for net electricity exports, with a net export balance of 92.3 TWh, surpassing the previous year's record (89.0 TWh).

Figure 22 : Monthly balance of the French electricity system in 2024 and 2025 (physical flows, + injections; - withdrawals)



Source: RTE – Analysis: CRE

Figure 22 shows the monthly balance of physical flows on the French grid during 2024 and 2025. It is clear that the absolute levels of injections and withdrawals, as well as their distribution, are very similar between these two years.

⁶⁹ Regulated Access to Historic Nuclear Electricity (ARENH) is a scheme that came into force on 1 July 2010, requiring EDF to sell a portion of its nuclear electricity to alternative suppliers at regulated prices of €42/MWh in 2023.

1.2. Consumption remains stable in 2025

In 2025, electricity consumption in France remained stable following the end of the downward trend observed in recent years. However, it remains significantly below pre-crisis levels (2014–2019).

Electricity consumption in France stood at 446.6 TWh in 2025, representing a slight increase of 0.9 % (+3.8 TWh) compared with 2024. Taking into account weather-related fluctuations, the increase is limited to 0.4%⁷⁰ . This figure remains well below the average for the 2014–2019 period (474.8 TWh), representing a 6% decline.

Table 7 : Annual gross electricity consumption (TWh)

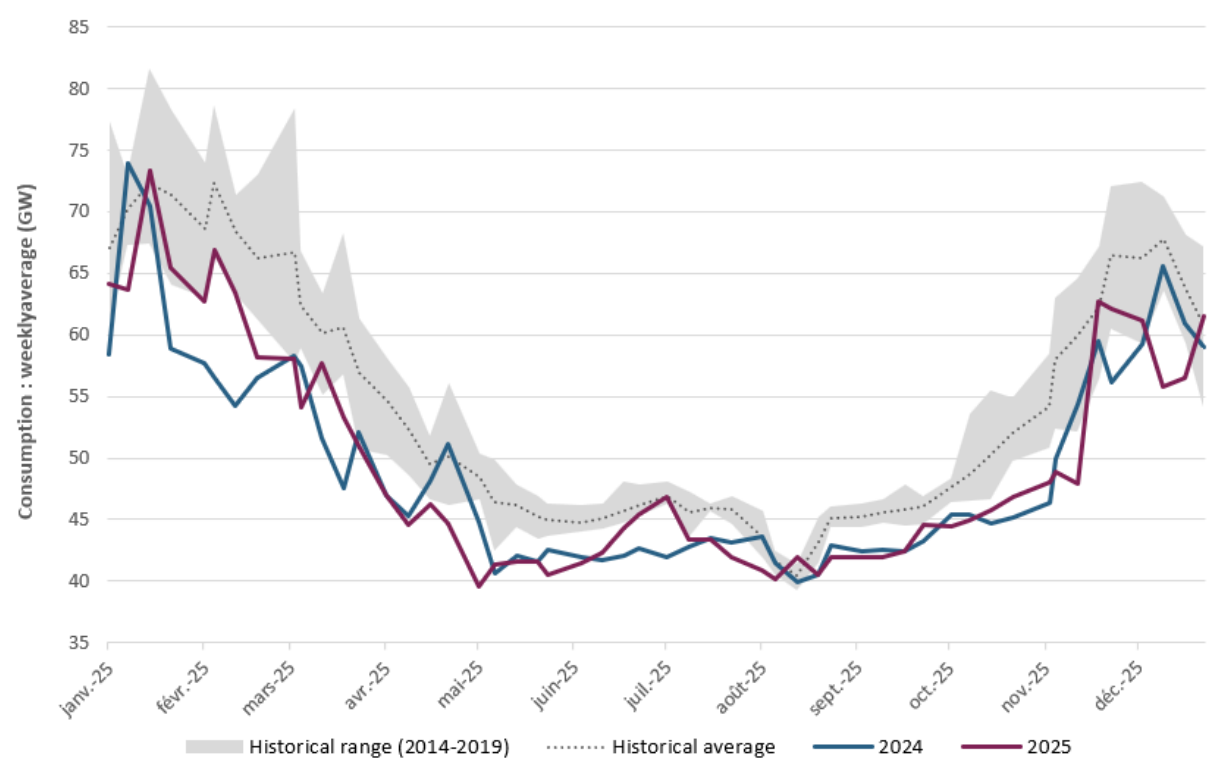
Year	2018	2019	2020	2021	2022	2023	2024	2025
Consumption (TWh)	477.2	472.0	448.5	471.5	453.9	438.5	442.3	446.1

Source: RTE

The sustained decline compared with the 2014–2019 period is the result of a combination of factors. On the one hand, rising electricity prices and the ongoing energy-saving measures adopted during the energy crisis have had a lasting impact on consumption patterns. On the other hand, the progress made in energy efficiency over the last decade continues to show results.

As it is shown in the Figure 23 , the year-on-year decline in consumption is evenly spread throughout the year, with a few isolated instances where the weekly average returns to the 2014–2019 average.

Figure 23 : Consumption in France (weekly average)



Source: RTE – Analysis: CRE

⁷⁰ RTE estimate

1.3. Power generation rises slightly

In 2025, power generation in France rose slightly, reaching 547.5 TWh, an increase of 1.6% (+8.5 TWh) compared with 2024. This level exceeds the average for the 2014–2019 period, which stood at 537.5 TWh. Following two years of strong growth in 2023 and 2024, at around 10 % per year, driven mainly by the restoration of nuclear power plant availability and improved hydroelectric generation, production stabilised due to broadly unchanged fundamentals.

Table 8 : Total annual power generation (TWh)

Year	2018	2019	2020	2021	2022	2023	2024	2025
Generation (TWh)	547.6	536.1	499.7	522.4	445.8	494.7	539.0	547.5

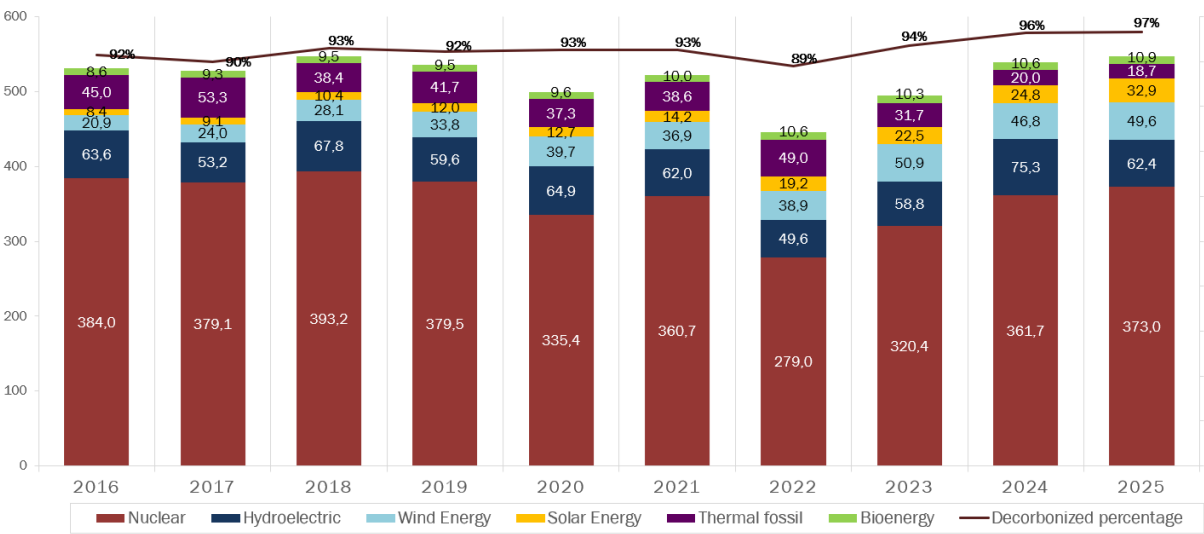
Source: RTE

At the same time, generation from fossil fuels fell once again, reaching a new all-time low for the second year running. The share of carbon-free generation reached a record high of 97 %.

France’s electricity generation capacity has expanded significantly, reaching 164.5 GW by the end of 2025, driven by strong growth in solar photovoltaic installations and, to a lesser extent, wind power.

Hydropower generation included in the overall generation figures (Table 8) is gross of consumption associated with pumping.

Figure 24 : Annual electricity generation by energy source (TWh)



Source: RTE – Analysis: CRE

1.3.1. Nuclear generation rises for the third consecutive year

Nuclear generation

In 2025, nuclear generation in France rose for the third consecutive year, reaching 373.0 TWh, an increase of 11.3 TWh (+3%) compared with 2024. This growth was significantly more moderate than that observed in 2023 and 2024, which stood at +11% (+23 TWh) and +13% (+30 TWh) respectively.

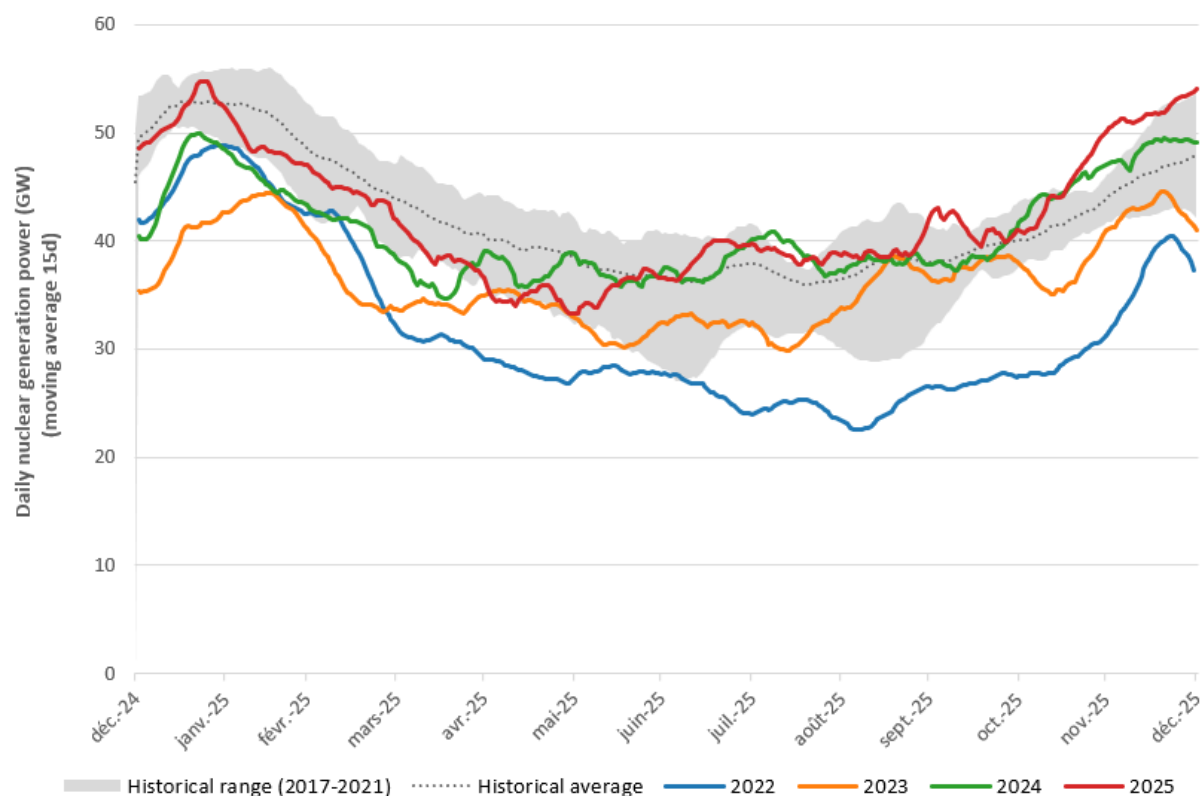
The strong growth in nuclear generation during this period is mainly due to the recovery following the stress corrosion phenomenon, which had significantly affected the availability of the nuclear fleet in 2022. By 2024, annual generation had returned to a level comparable to that seen before the crisis.

Figure 25 shows the trend in average daily nuclear generation, smoothed over 15-day periods, for the years 2022, 2023, 2024 and 2025, compared with that for the years 2017 to 2021. A significant increase

in generation between 2022 and 2024 is clear, as is the stabilisation of generation in 2024 and 2025 at levels comparable to those observed before the crisis.

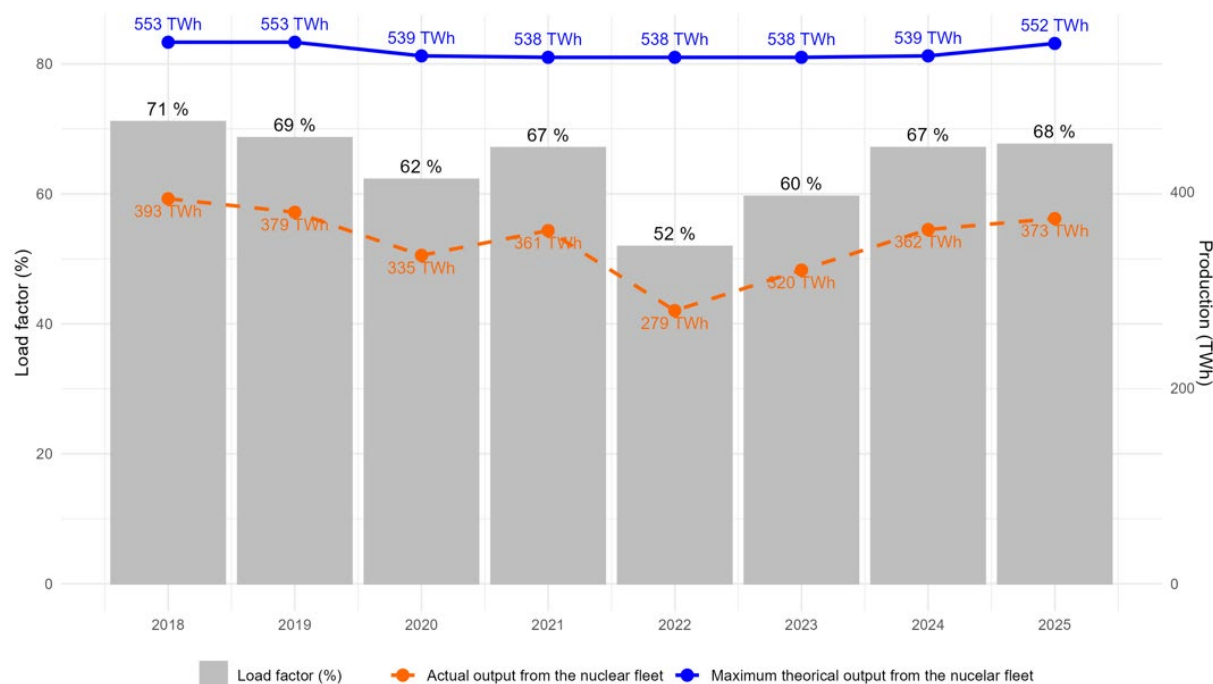
The Flamanville EPR reactor was connected to the grid on 21 December 2024. This reactor remained in the testing phase throughout 2025 before reaching full power on 14 December 2025, producing 1,669 MW of gross power (before deduction of its own consumption), equivalent to 1,563 MW net fed into the national electricity grid. During 2025, this reactor contributed approximately 2.2 TWh net to French electricity generation.

Figure 25 : Smoothed average daily production of the French nuclear fleet



Source: RTE – Analysis: CRE

Figure 26 shows annual nuclear generation since 2018, and the theoretical maximum generation, calculated on the basis of constant generation at the level of installed capacity. The utilisation rate, or load factor, is calculated as the ratio of these two figures. Not only did output increase between 2024 and 2025, but so did the load factor, rising from 67% to 68%, despite the addition of the new installed capacity at Flamanville 3.

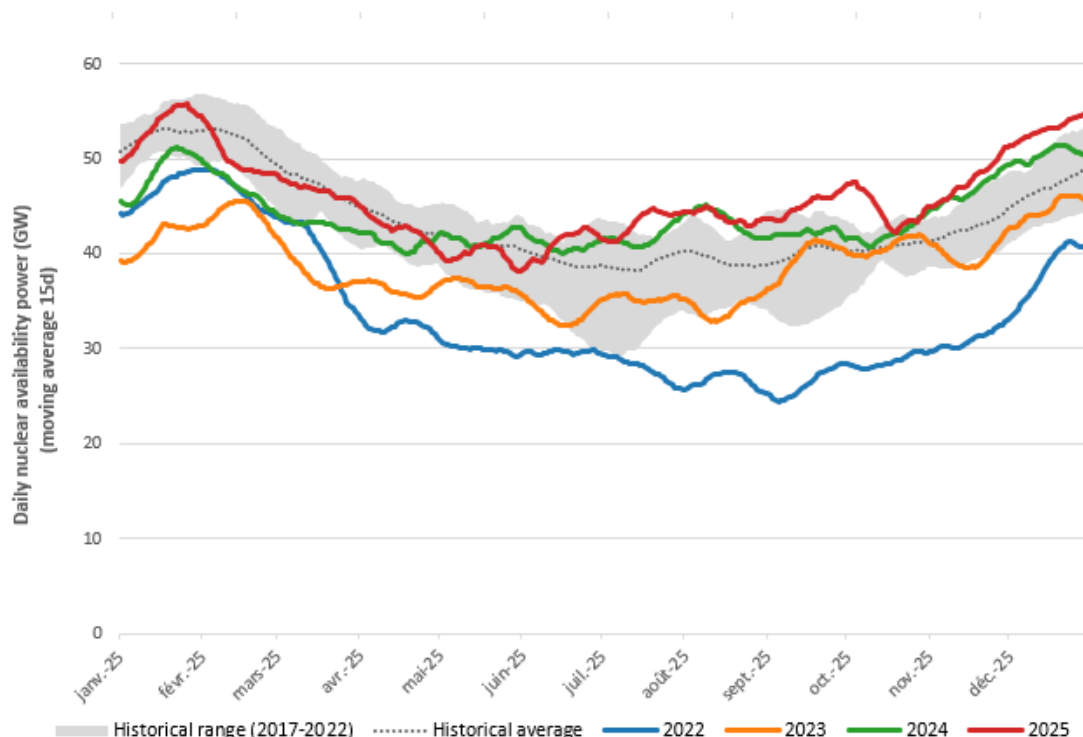
Figure 26 : Maximum capacity and actual production of the French nuclear fleet

Source: RTE – Analysis: CRE

Availability of the nuclear fleet

The year 2025 was marked by a significant improvement in the availability of France's nuclear fleet, reaching an average available capacity of 45.9 GW, an increase of 1.8 GW compared with 2024. This level of availability is higher than the historical average of 43.6 GW observed over the period 2017–2021. This performance can be attributed in particular to a particularly favourable availability rate during the second half of 2025.

Figure 27 shows the available capacity for 2022, 2023, 2024 and 2025 (smoothed 15-day average) and the historical trend for the years 2017 to 2021 for comparison.

Figure 27 : Smoothed average daily availability of the French nuclear fleet

Source: EDF – Analysis: CRE

Modulation of nuclear power

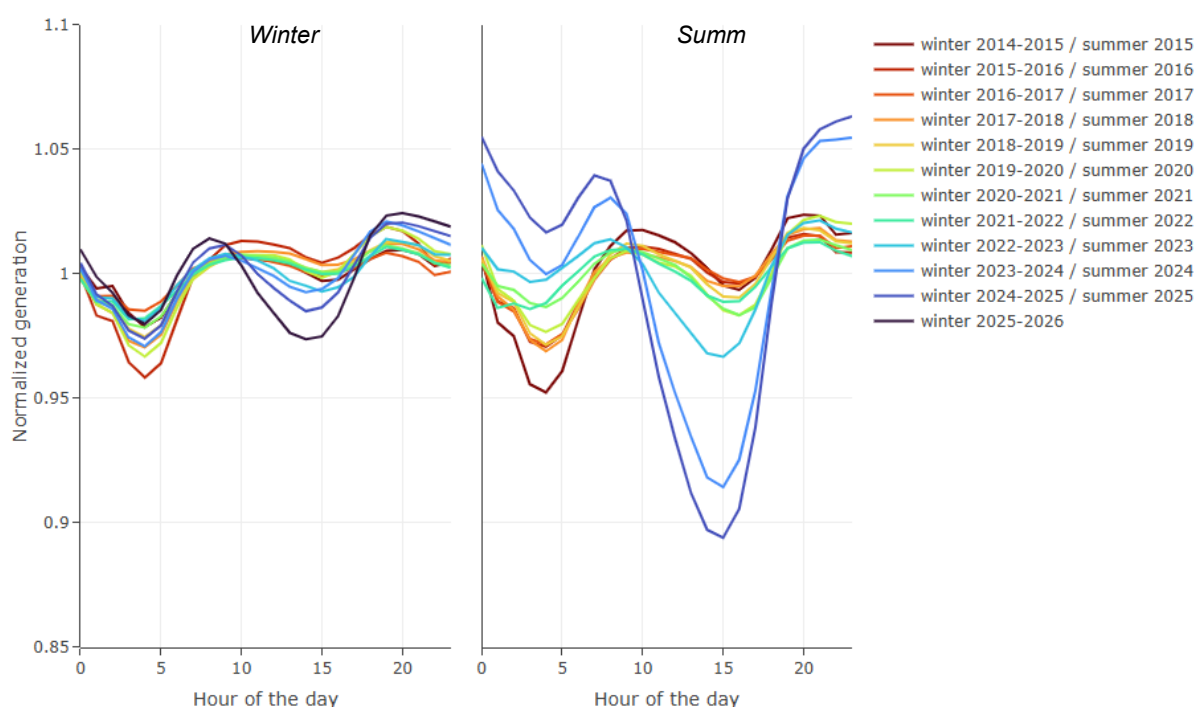
In recent years, the French and European electricity mixes have gradually become decarbonised through the replacement of fossil-fuel-fired power plants with renewable sources, primarily solar and wind power. Consequently, dispatchable generation sources with high variable costs are gradually being replaced by sources with low or zero variable costs but which are not dispatchable. Against this backdrop, the economic optimisation of other generation sources, such as nuclear and hydroelectric power, may need to evolve.

Figure 28 illustrates the trend in intraday modulation of nuclear generation as reflected in variations in generation throughout the day. The phenomenon of nuclear modulation is not new: since the start of operations, France's nuclear fleet is able to modulate to adapt to fluctuations in demand. Modulation is always driven by economic optimisation, either because market prices are lower than variable generation costs over a given period, or because the need to save fuel ahead of a scheduled refuelling requires generation to be scheduled for periods with the highest prices. In winter⁷¹, the modulation of nuclear generation did not change significantly between 2015 and 2025: generation is maximised during morning and evening consumption peaks, with reductions in output overnight and in the middle of the day. The last two winters (2024–2025 and 2025–2026), however, saw an increase in night-time generation, offset by a greater reduction during the day compared with previous years, with the evening peak also rising.

⁷¹ The year is divided here into two seasons: winter from 1st October to 31st March and summer from 1st April to 31st September

By contrast, modulation changed significantly in summer from 2023 onwards, with nuclear generation no longer being reduced primarily at night, but instead during the middle of the day and to a significant extent. This trend intensified further in the summer of 2025, with generation falling by more than 10 % between 2 pm and 3 pm compared with the seasonal average. This change is driven by economic factors: in summer, spot prices reach their lowest point at midday rather than at night, due to higher solar generation across Europe. This midday modulation, coupled with high generation during the morning (7 am–9 am) and evening (6 pm–8 pm) peaks—which directly flank the solar peak—results in steeper slopes than the historical night-time modulation. This trend is gaining momentum as more solar capacity is installed, but the gradual introduction of flexibility in 2025 and 2026 for renewable energy plants subject to feed-in tariffs is helping to partially limit this modulation.

Figure 28 : Hourly generation of the French nuclear fleet normalised against average seasonal generation, 2015–2025



Source: RTE – Analysis: CRE

1.3.2. Hydropower generation is down compared with 2024, returning to historical averages

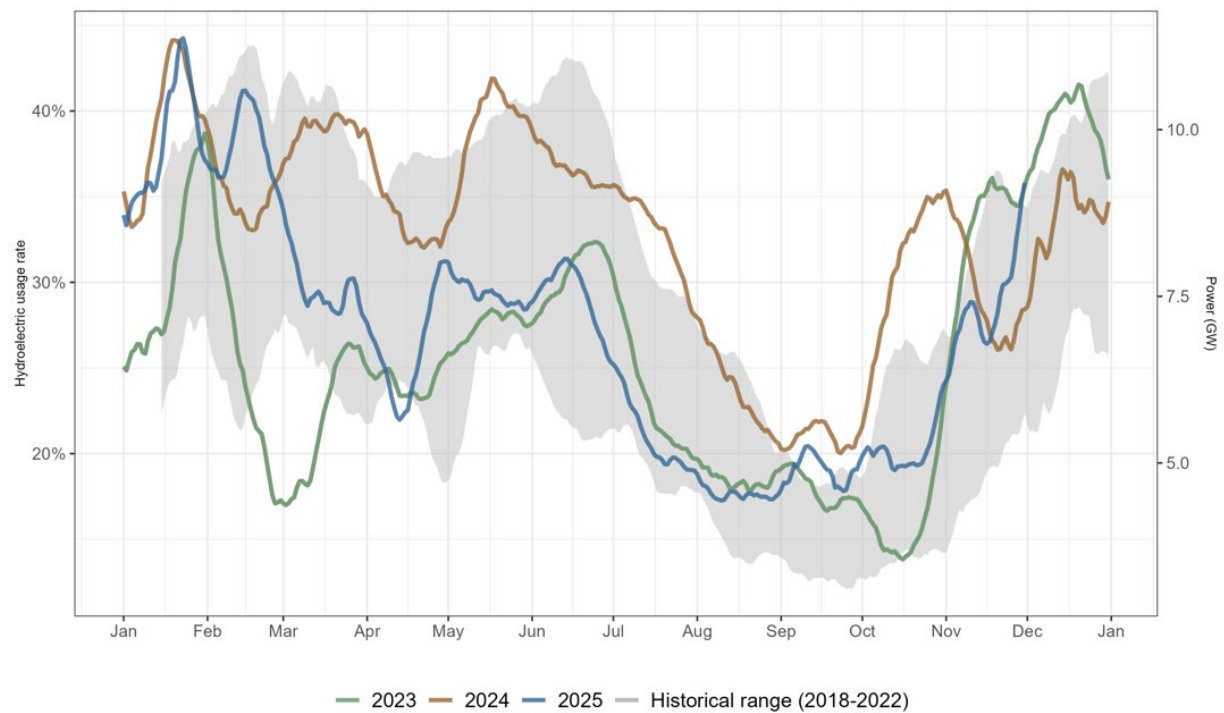
In 2025, hydroelectric power generation in France reached 62.4 TWh, down 17 % on 2024. The year 2024 had, in fact, been characterised by very heavy rainfall. Hydropower generation thus returned to near its historical average, with production levels in 2025 very similar to those of 2023 (58.9 TWh) and 2021 (62.0 TWh).

Hydropower accounted for 11.4% of total electricity generation, making it the second-largest source after nuclear power in terms of generation volume.

Hydropower reservoir levels remained in line with the historical average (Figure 30), with slightly lower levels in the second half of the year.

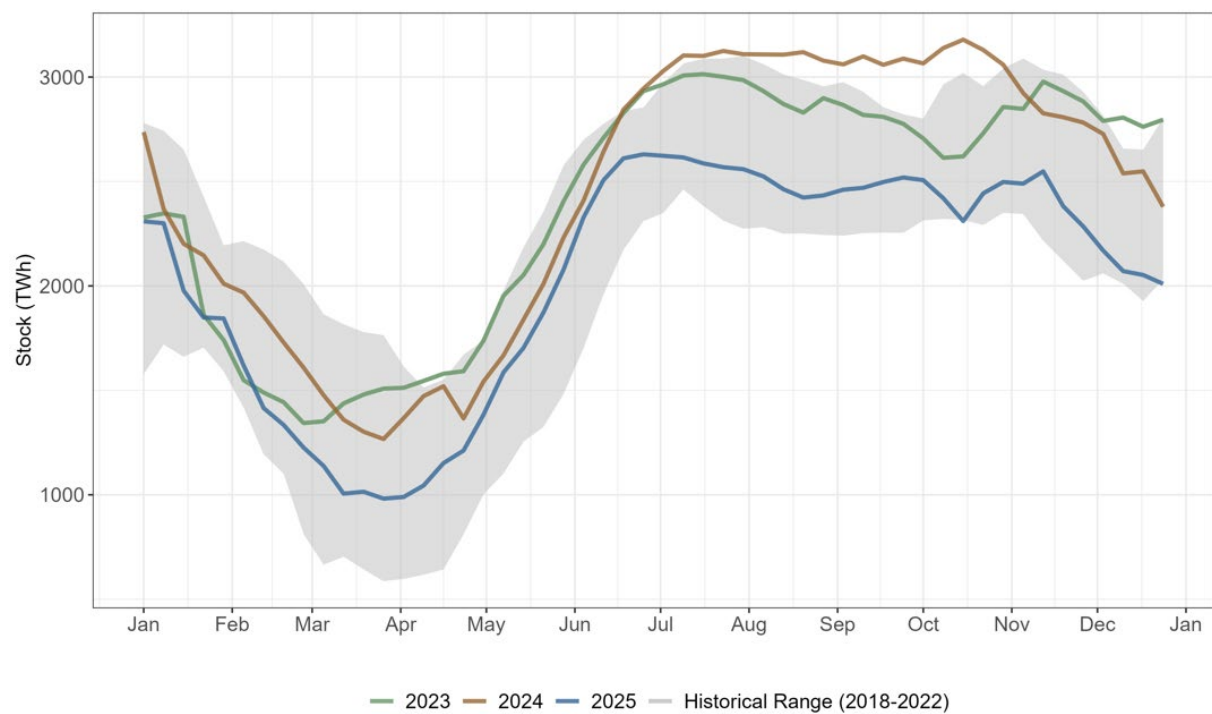
Installed capacity remained unchanged at 25.7 GW.

Figure 29 : Capacity utilisation rate (left-hand axis) and power (right-hand axis) for hydropower, 15-day rolling average



Source: RTE – Analysis: CRE

Figure 30 : Weekly hydraulic stock (GWh)



Source: RTE – Analysis: CRE

1.3.3. Wind and solar: new generation records due to increased installed capacity

In 2025, France's solar capacity increased by 5.9 GW, representing a rise of 24 %. For the fifth consecutive year, the growth rate remained above the historical average, at +18.9 % per annum (Table 9). As a result, installed solar capacity has now surpassed that of wind power.

Photovoltaic generation reached 30.4 TWh, setting a new record for France. The load factor for solar installations rose to 13.6 %, up 0.8 % compared with 2024, due to higher levels of sunshine than in 2024, and despite reductions in generation during periods of negative spot prices.

The wind farm fleet recorded an additional 1.4 GW of capacity in 2025 (+5.7% compared with 2024), whilst the increase was 1.7 GW in 2024.

Onshore wind generation reached 43.9 TWh, a slight increase of 2.5% compared with 2024, despite unfavourable weather conditions which resulted in an exceptionally low load factor (21.4%). Offshore wind generation increased significantly to 5.7 TWh, due to newly installed capacity and a capacity factor of 38.2% (+3% compared with 2024).

Solar and wind power generation is thus on the rise following a period of relative stagnation in 2024, due to unfavourable weather conditions.

The volume of curtailed solar and wind power generation in 2025 during periods of negative spot prices doubled compared with the previous year, reaching approximately 3 TWh according to RTE's estimate, comprising 1.3 TWh of onshore wind power and 1.6 TWh of solar power.

Article 175 of the 2025 Finance Act and Article 185 of the 2026 Finance Act, as set out in the decrees of 22 December 2025 and 19 March 2026, have enabled the contracting parties to OA contracts, for photovoltaic and wind power installations exceeding 10 MW/MWp, to request a reduction in the installations' output in the event of negative market prices. This measure aims to limit the public service obligations for energy (CSPE) and helps to increase the share of flexible capacity within the electricity generation fleet.

Table 9 : Evolution of installed wind and solar capacity

	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR ⁷² 2017–2025
Wind power (GW)	13.5	15.1	16.5	17.6	18.8	21.1	22.7	24.5	25.8	+ 8.4%
Solar (GW)	7.6	8.6	9.5	10.4	13.1	16.1	19.5	24.5	30.4	+ 18.9%

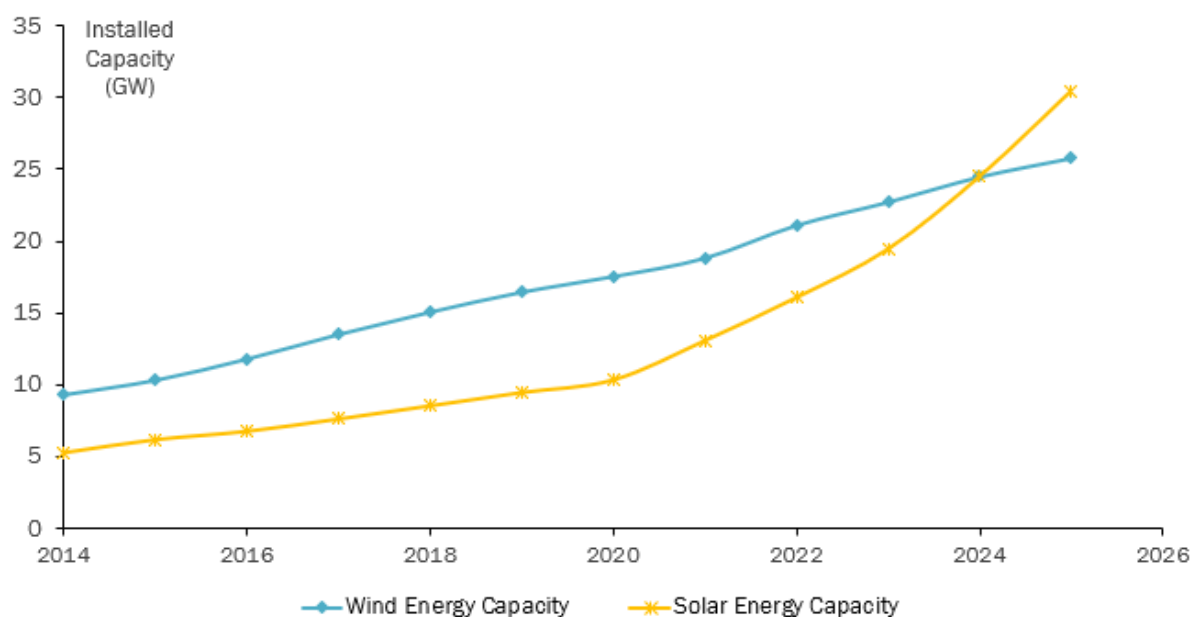
Source: RTE

Table 10 : Evolution of wind and solar power generation

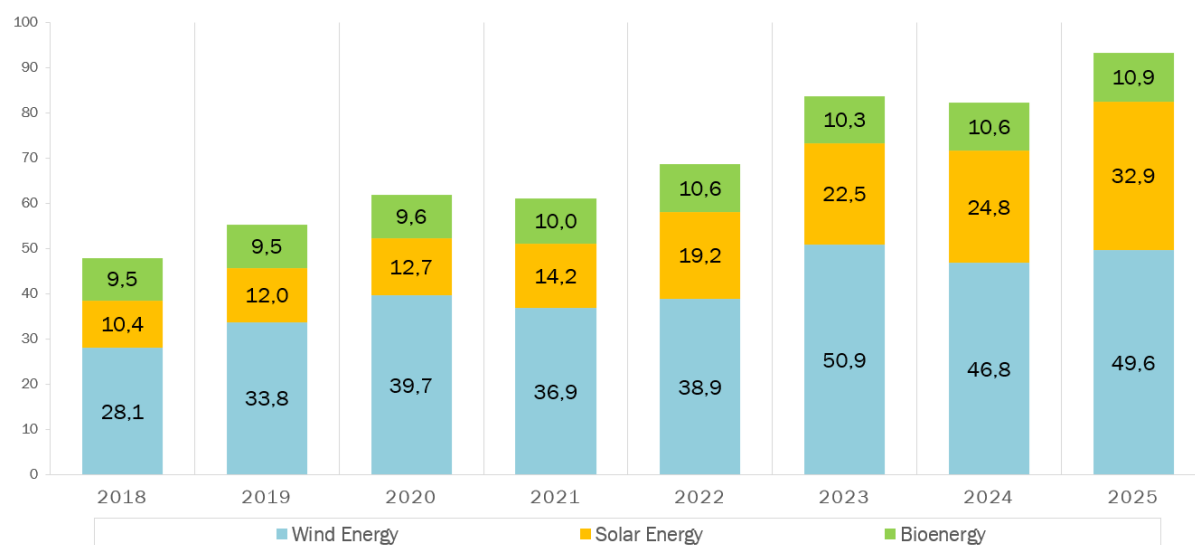
	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR 2017–2025
Wind power (TWh)	24.0	28.1	33.8	39.7	36.9	38.9	50.8	46.8	49.6	+ 9.5%
Solar (TWh)	9.1	10.4	12.0	12.7	14.2	18.5	21.6	24.8	32.9	+ 17.3%

Source: RTE

⁷² Average annual growth rates.

Figure 31 : Development of solar and wind capacity

Source: RTE – Analysis: CRE

Figure 32 : Annual production from renewable energy generation units (excluding hydropower)

Source: RTE – Analysis: CRE

The third multi-annual energy programme (PPE 3)⁷³, published on 13 February 2026, sets out the national targets for the development of renewable energy for the period 2026–2035.

With regard to solar photovoltaics, this document sets the maximum capacity eligible for public support at 2.9 GW between 2026 and 2028, and at 5 GW for 2029 and 2030.

⁷³ [Third Multi-Annual Energy Programme \(PPE3\)](#)

The rate of development for onshore wind power is expected to remain unchanged at 1.3 GW per year. As for offshore wind power, two tenders are planned for 2026, for a total planned capacity of between 9.5 GW and 11.5 GW, with a target of 15 GW in operation by 2035.

1.3.4. Fossil fuels: power generation at its lowest level in 70 years

Aggregate generation from fossil fuel-fired power stations fell again in 2025, reaching 18.7 TWh, compared with 20.0 TWh in 2024. For the second year running, this figure represents a historic low since 1952, when production stood at 18.3 TWh. This decline is mainly due to the fall in gas-fired generation, a consequence of the abundance of low-carbon electricity in 2025.

Electricity generation from fuel oil stood at 1.6 TWh in 2025, a slight decrease of 0.2 TWh compared with 2024. Electricity generation from coal, meanwhile, remained very low at 0.7 TWh in 2025, and was almost negligible in the French electricity mix, accounting for 0.1 % of total generation.

1.3.5. France’s electricity exports have reached a new record high

In 2025, France set a new record for its net export balance, with a net export balance of 92.3 TWh, surpassing the previous year’s record of 89.0 TWh. The Figure 33 provides a breakdown of trade by border and quarter since 2022. In 2025, the most significant trade flows were with Italy, with a balance of +26.2 TWh, followed by Germany and Belgium (+23.1 TWh), Great Britain (+22.6 TWh), Switzerland (+20.1 TWh) and finally Spain (+0.2 TWh).

Exports to Great Britain and Italy also increased due to improved availability of interconnection capacity. Exports to Germany and Belgium, however, fell, mainly due to maintenance work on the interconnection lines at these borders in the spring and summer of 2025.

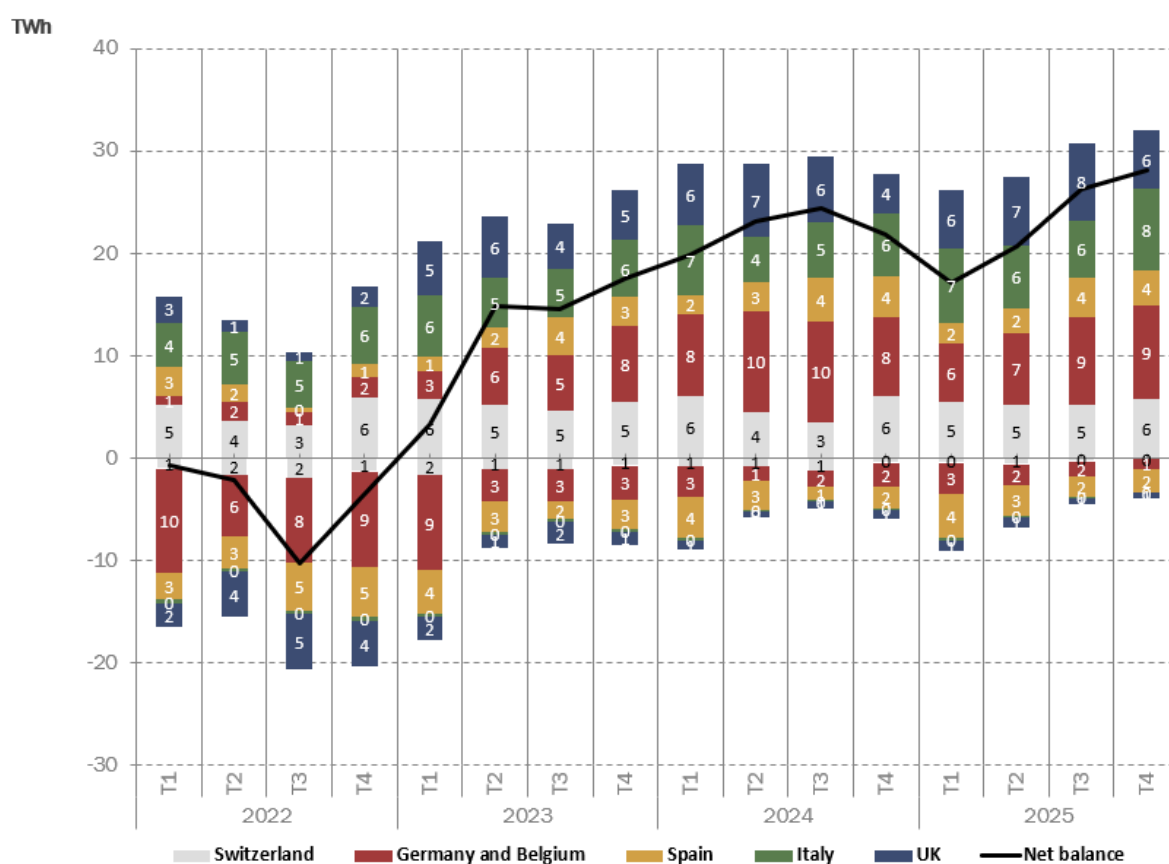
Since 2023, trade with Spain has been characterised by net imports during the first half of the year, offset by exports in the second half.

France was a net importer of electricity for just 1 % of hours during 2025 (2 % in 2024).

Table 11 : France’s export trade balance

France’s export trade balance (TWh)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	47	65	62	39	38	60	56	43	43	-16	51	89	92

Source: RTE

Figure 33 : Quarterly volumes traded at borders by country (+ exports; - imports)

Source: RTE – Analysis: CRE

1.4. CO₂ emission allowance prices driven upwards by a gradual reduction in supply

The EU Emissions Trading Scheme (ETS) was established by the European Union in 2005 to reduce greenhouse gas emissions from its industry and electricity producers. The annual volume of allowances is determined by European Directive 2003/87 based on the emissions of covered companies and the targets for reducing these emissions. This volume is allocated free of charge or sold at auction. The allowances are then freely traded by market participants to adjust the coverage of their CO₂ emissions within their scope.

The price of a CO₂ allowance rose on average over 2025, reaching €74.9/tCO₂ for the December 2025 benchmark contract, compared with €66.5/tCO₂ in 2024 – an increase of 13 %. Prices fluctuated within a fairly wide range, from €61.1/tCO₂ (on 9 April 2025) to €88.5/tCO₂ (on 23 December 2025).

The price of allowances started 2025 at around 75 €/t but rose rapidly during January, reaching 83.9 €/t on 31st January, driven by rising gas prices. This trend was immediately followed by a fall in prices until April, when prices reached their annual low, again driven by an easing in gas prices.

The price of CO₂ has historically been correlated with gas prices due to the trade-off between using coal or gas for electricity generation. If gas prices fall relative to coal, electricity generation from gas can become more competitive than generation from coal, which reduces demand for CO₂ allowances from fossil fuel-fired power generators and thus exerts downward pressure on the price of CO₂; the opposite is true when gas prices rise.

Following a relatively stable summer with prices ranging between €70 and €75/tCO₂, an upward trend set in from September and continued unabated until the end of the year, rising from €74.1/tCO₂ on 1st September to €87.3/tCO₂ on 31st December, representing an 18 % increase. These developments

stand out due to their lack of correlation with fuel prices and appear to be linked to fundamentals specific to the carbon market.

Indeed, developments within the scope of the EU ETS suggest a significant tightening of the supply-demand balance in the CO₂ market, which is driving prices upwards. The shipping sector, which was due to provide allowances for 50 % of emissions from non-European transport in 2024, must cover 70 % of emissions in 2025 and 100 % in 2026. The aviation sector is gradually receiving fewer free allowances at a rate of -4.4 % per year. Finally, from 2026 onwards, the number of free allowances for sectors at risk of carbon leakage (steel, cement, aluminium, fertilisers, etc.) will decrease year on year until they are phased out in line with the implementation of the Carbon Border Adjustment Mechanism (CBAM), with 2.5 % of allowances to be purchased in 2026, 5 % in 2027 and up to 100 % in 2035. All of this is in addition to the reductions in allowance caps already planned on a sector-by-sector basis.

This upward trend reversed in the first half of 2026 against a backdrop of discussions at European level regarding a possible revision of the ETS, causing the price to fall to €63.7/t in March. The measures ultimately agreed upon, which were less far-reaching than expected, caused allowance prices to rebound, though they did not return to the level seen at the end of 2025.

Figure 34 : Trend in the price of CO₂ allowances in 2025



Source: Argus

2. Short-term markets

2.1. Introduction of 15-minute products on the day-ahead and intraday markets

On the 1st of January 2025, the *imbalance settlement period* (ISP) for balance responsible parties⁷⁴ was reduced to 15 minutes in France.

In accordance with the European regulatory framework⁷⁵, all transmission system operators (TSOs) in all Member States of the European Union (EU) were required to apply a 15-minute time resolution for imbalance settlement before this date.

This 15-minute time resolution is intended to enable market participants to fine-tune electricity generation and consumption within their areas of responsibility. This finer granularity is intended, in particular, to facilitate the integration of intermittent renewable energy generation, whose output varies within the course of a single hour, but also to better track actual changes in consumption, thereby reducing the need for network operators to intervene to balance the system. This change may also benefit batteries, which will now be able to take advantage of more granular price signals to optimise their value.

This change also introduces an obligation for all NEMOs⁷⁶ to offer 15-minute products for trading on all wholesale electricity markets – both day-ahead and intraday – that participate in European market coupling. This harmonisation aims to create consistency across Europe's energy markets (with some TSOs already applying a 15-minute settlement interval) and to improve the efficiency of electricity balancing processes.

Consequently, in January 2025, the NEMOs introduced 15-minute contracts on the French continuous intraday market as part of the Single Intraday Coupling (SIDC). On the continuous market, 15-, 30- and 60-minute contracts are therefore available, but without the 'Cross-Product Matching' functionality that enables the matching of orders with different durations.

In intra-day auctions (IDA), only 15-minute contracts have been offered on the French market since that date, in line with harmonised developments at European level.

On 30 September 2025⁷⁷, the NEMOs introduced 15-minute contracts across all coupled day-ahead markets (SDAC), with the first delivery on 1 October 2025. Market participants can therefore place orders at 60-, 30- or 15-minute intervals. Furthermore, a 'Cross Product Matching' feature has been implemented on this market, enabling the matching of orders with different time resolutions.

2.2. Daily market prices remain stable compared with 2024

Daily market prices (*spot*, or *day-ahead*) play a vital role in the smooth operation of the European electricity system by determining, in a coordinated manner at European level the day before for the following day, on an hour-by-hour basis, the generation mix used to meet forecast consumption. Furthermore, futures prices are set in particular by reference to expectations of future *spot* prices over the period in question.

⁷⁴ A balancing responsible party is a participant in the wholesale electricity market responsible for ensuring that, within its balancing area, electricity generation, consumption and exchanges are balanced in real time. It bears the financial cost of any discrepancies between forecasts and actual figures, thereby incentivising participants within its balancing area to balance their positions.

Imbalance settlement is the mechanism by which the differences between forecast and actual injections or withdrawals within a balancing area are financially valued, in order to ensure the balance of the electricity system and to make market participants accountable.

For further information: <https://www.cre.fr/electricite/reseaux-deelectricite/responsables-deequilibre.html>

⁷⁵ Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity

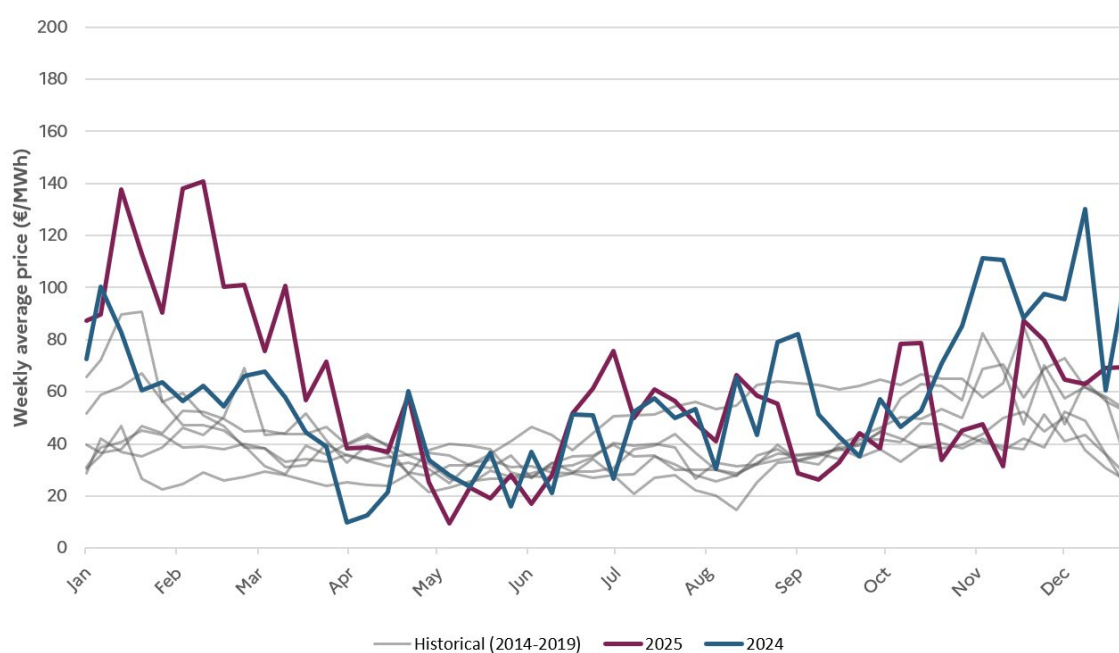
⁷⁶ NEMOs (*Nominated Electricity Market Operators*) are exchange operators designated by the regulators. They are responsible for organising the coupling of daily and intraday wholesale electricity markets within the EU and for ensuring the smooth execution of transactions on these markets. Following a decision by the CRE, the authorised NEMOs for France are EPEX SPOT, Nord Pool and, from 27 January 2026, EXAA.

⁷⁷ The transition to 15-minute intervals on SDAC, originally scheduled for 11 June 2025, had been postponed to 30 September 2025.

In 2025, *spot* prices on the French market remain relatively stable, averaging 61.1 €/MWh, representing a slight increase of 6 % compared with 2024 (57.8 €/MWh). This moderate trend follows a normalisation of the market in 2023 and 2024, after the crisis of 2022, and suggests the establishment of a new structural equilibrium. Whilst this price level remains above historical benchmarks in nominal terms, the gap narrows significantly when adjusted for inflation (Table 12).

The strong fundamentals observed in 2024 continued into 2025, despite a decline in hydroelectric generation, which was offset by an increase in nuclear, wind and solar generation. Prices remained high during the winter of 2024–2025 but fell rapidly from March onwards and rose only slightly at the start of the winter of 2025–2026. Forward prices for the annual contract for delivery in 2025 averaged €76.6/MWh, 20 % higher than the average spot prices realised this year.

Figure 35 : Trend in daily prices in France compared with prices in previous years (weekly average)



Sources: EPEX SPOT, Nord Pool – Analysis: CRE

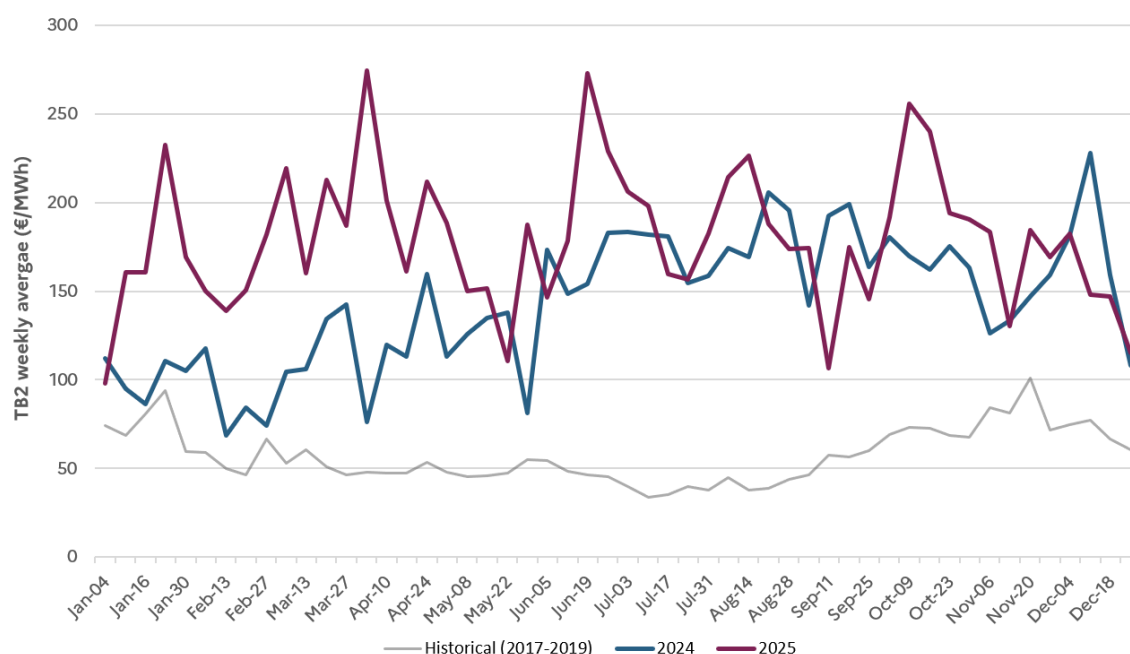
Table 12 : Annual average spot prices in France since 2010, nominal and inflation-adjusted values

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
€/ MWh	48	49	47	43	35	38	37	45	50	39	32	109	276	97	58	61
€ ₂₀₂₅ / MWh	61	62	58	53	42	47	45	54	59	46	37	125	299	100	58	61

Sources: EPEX SPOT, Nord Pool – Analysis: CRE

The growing expansion of renewable energy generation in Europe is exacerbating the variability of hourly prices both within a single day and from one day to the next (see Figure 36 and Figure 37), as well as the significant price differentials between the *day-ahead* market and the intraday market (see Figure 38). More specifically, the TB2 (*Top-to-Bottom 2*) indicator, illustrated at Figure 36, measures the difference between the sum of the prices of the two most expensive hours and the sum of the two cheapest hours in a day. This metric, which represents the maximum potential revenue from a 2-hour battery in daily arbitrage – taking into account only daily market prices and disregarding all other costs, notably grid usage charges – reveals volatility that has been rising steadily since 2023 as a result of the addition of renewable capacity, and signals a significant need for flexibility. Previously concentrated exclusively during night-time hours, the periods of minimum prices now show a marked seasonal pattern, with low prices concentrated at night in winter during periods of high wind power generation and occurring in the middle of the day in summer, coinciding with peaks in solar power generation. The year 2025 sees this trend intensify, with an average 25 % increase in the TB2 indicator compared with 2024, particularly at the start of the year with high price peaks and during summer heatwaves, which also drove up peak prices relative to zero prices during the day.

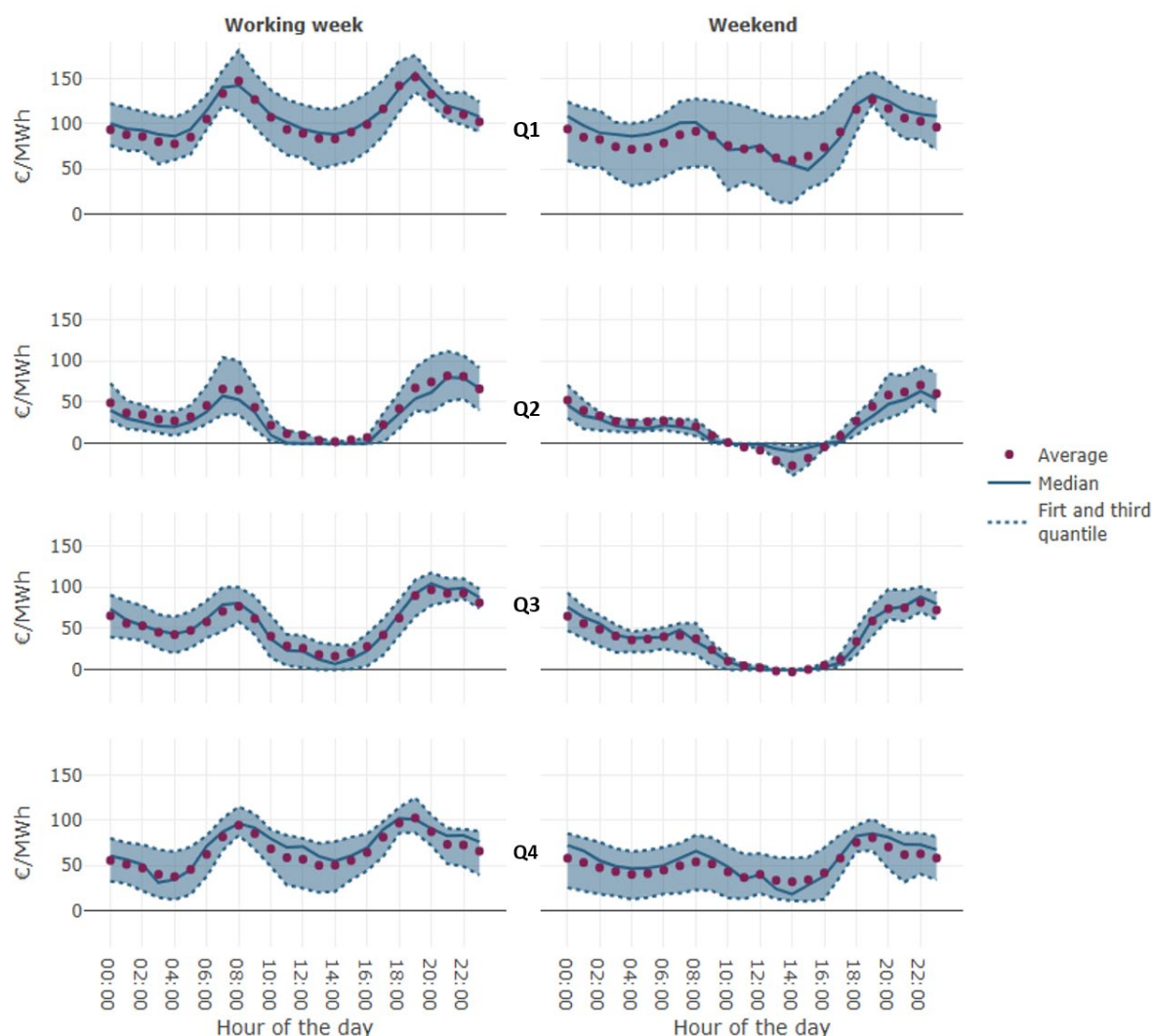
Figure 36 : Weekly average of the difference between the two most expensive hours and the two cheapest hours, per day, on the day-ahead market (TB2) in 2024 and 2025



Sources: EPEX SPOT, Nord Pool – Analysis: CRE

Figure 37 shows the average observed *day-ahead* prices by hour, weekday or weekend, and quarter of the year 2025 (quarters in rows, weekdays in columns). For example, the average price for 10 am on a weekday in the second quarter is 22.0 €/MWh. The figure highlights the significant fluctuations in *day-ahead* prices from one hour to the next, between weekdays and weekends, and from one day to the next (as indicated by the thickness of the line between the first and third quartiles). In particular, the impact of daily consumption peaks, around 8 am and 6 pm, is clearly visible, as are the peaks in solar generation between 11 am and 4 pm in summer, which drive prices down to zero. Very low and very high prices frequently coexist within the same day: in 2025, 55 days saw at least 2 hours with prices below 10 €/MWh and 2 hours with prices above 100 €/MWh.

Figure 37 : Distribution of daily prices in France in 2025 between weekdays and weekends, by quarter and by hour of the day



Sources: EPEX SPOT, Nord Pool – Analysis: CRE

Prices in the first quarter of 2025 initially remained high due to a harsher winter than in 2024, combined with low wind power generation (3.7 TWh in February compared with 5.8 TWh last year) and rising gas prices. A rapid decline set in during March with the arrival of milder temperatures and an easing of pressure on the gas and CO₂ markets with prices averaging 99.9 €/MWh for the quarter.

The lowest prices of the year were recorded during the second quarter against a backdrop of sluggish demand and high solar generation throughout the quarter (up by 2.5 TWh compared with 2024). The number of hours with negative prices soared, with more than 130 hours in May and June, including seven instances of prices falling below -100 €/MWh. On weekdays, prices were also heavily concentrated around 0 €/MWh between 11:00 and 17:00. The quarterly average thus stood at 34.0 €/MWh.

Prices then rose in July, with heatwaves driving up consumption and keeping prices high during evening peak hours. This was due to the restart costs for gas-fired power stations, which have to come online after solar generation has tapered off, as well as environmental output restrictions on nuclear reactors. In September, the return of wind and hydroelectric generation, coupled with less extreme temperatures, helped to bring *spot* prices back down, resulting in a three-month average of 49.2 €/MWh.

Towards the end of 2025, prices rose only slightly, averaging 61.8 €/MWh. Temperatures remained generally above seasonal norms and wind conditions were particularly favourable (+3.6 TWh of wind power generation over the quarter compared with last year). This situation of overcapacity enabled significant exports, particularly in December, with an all-time record monthly net balance of 10.5 TWh.

Table 13 : Average day-ahead and intraday prices in France

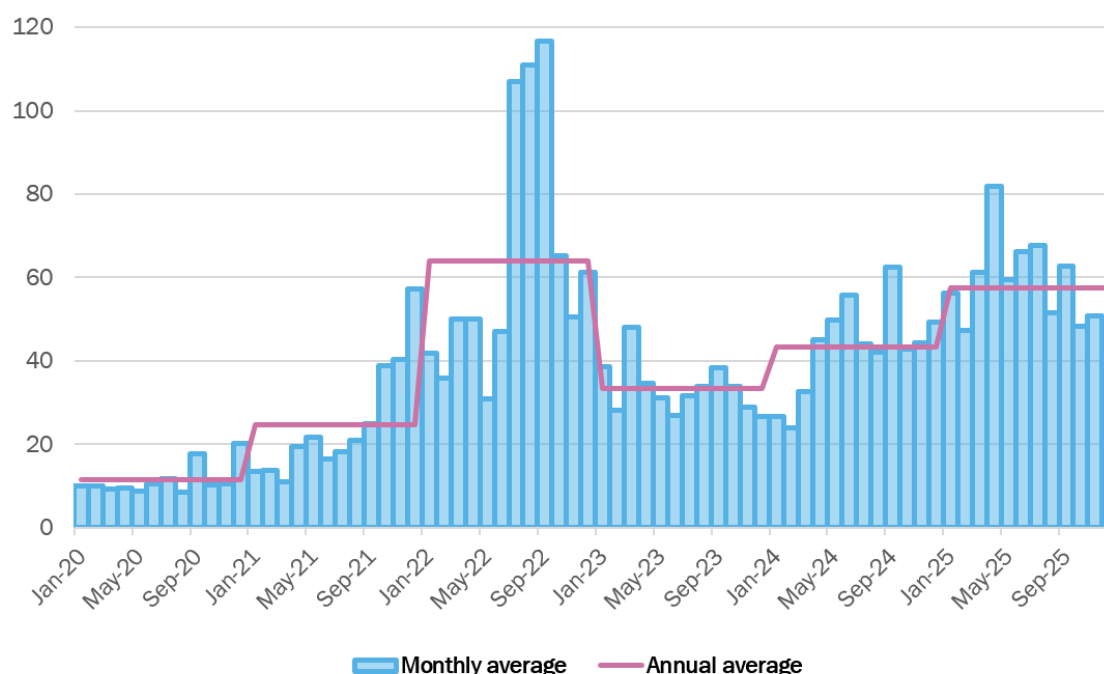
Period	Average day-ahead price	Average intraday price
2019	€39.5/MWh	€39.7/MWh
2020	€32.2/MWh	€32.9/MWh
2021	€109.2/MWh	€109.7/MWh
2022	€275.8/MWh	€276.3/MWh
2023	€96.9/MWh	€98.4/MWh
2024	€57.8/MWh	€57.8/MWh
2025	€61.1/MWh	€61.4/MWh

Sources: EPEX SPOT, Nord Pool – Analysis: CRE

Intraday prices (weighted average prices) were, on average, very close to *spot* prices, standing at €61.4/MWh in 2025. However, there is significant variability in the intraday price within its trading period (i.e. from 3:00 pm on the day before delivery) compared with the day-ahead price. Figure 38 shows the monthly and annual averages of the price range within which a given product is traded for delivery at a specific hour⁷⁸. The average width of this range is €57.5/MWh in 2025, which is almost equivalent to the average annual *day-ahead* price itself. Although this level is lower in absolute terms than in 2022, it is higher in relative terms than in any previous year. This increase in volatility between *spot* prices and intraday prices for the same delivery period is partly due to the growing share of renewables in French and European generation, which introduce greater uncertainty due to their dependence on weather conditions, leading to a wider spread in months when solar generation is high.

Figure 38 : Monthly and annual averages of the differences observed between the extremes of day-ahead prices and the extremes of intraday prices

Spread €/MWh



Sources: EPEX SPOT, Nord Pool – Analysis: CRE

⁷⁸ i.e. the difference between the higher of the *day-ahead* price and the maximum price of the corresponding intraday product, on the one hand, and the lower of the *day-ahead* price and the minimum price of the corresponding intraday product, on the other.

In summary, 2025 confirmed the trends that began in 2024: abundant generation at low variable costs, with nuclear and renewables improving their performance, and stagnant demand that has not returned to its historical level. This situation of overcapacity is keeping prices low, comparable to pre-crisis levels, alongside inflation and unprecedented levels of exports. Nevertheless, winter remains vulnerable to price spikes, particularly when unfavourable wind conditions coincide with high fuel prices. In 2025, we also saw episodes of high prices in summer during heatwaves for the same reasons: sustained demand for air conditioning and light winds.

These low prices, however, mask volatility that continues to rise. The integration of a growing share of renewable energy has led to significant variations between daily and intraday prices, with substantial fluctuations both within the day and from one day to the next. The frequency of negative prices is on the rise again, although it is prices close to 0 €/MWh that have contributed most to this increase. The controllability of renewable generation is improving to offset the intermittency of their resources, but this volatility primarily reflects the market's need for flexibility, the means of which are being deployed less rapidly than renewable capacity.

The number of zero or negative spot prices continues to rise

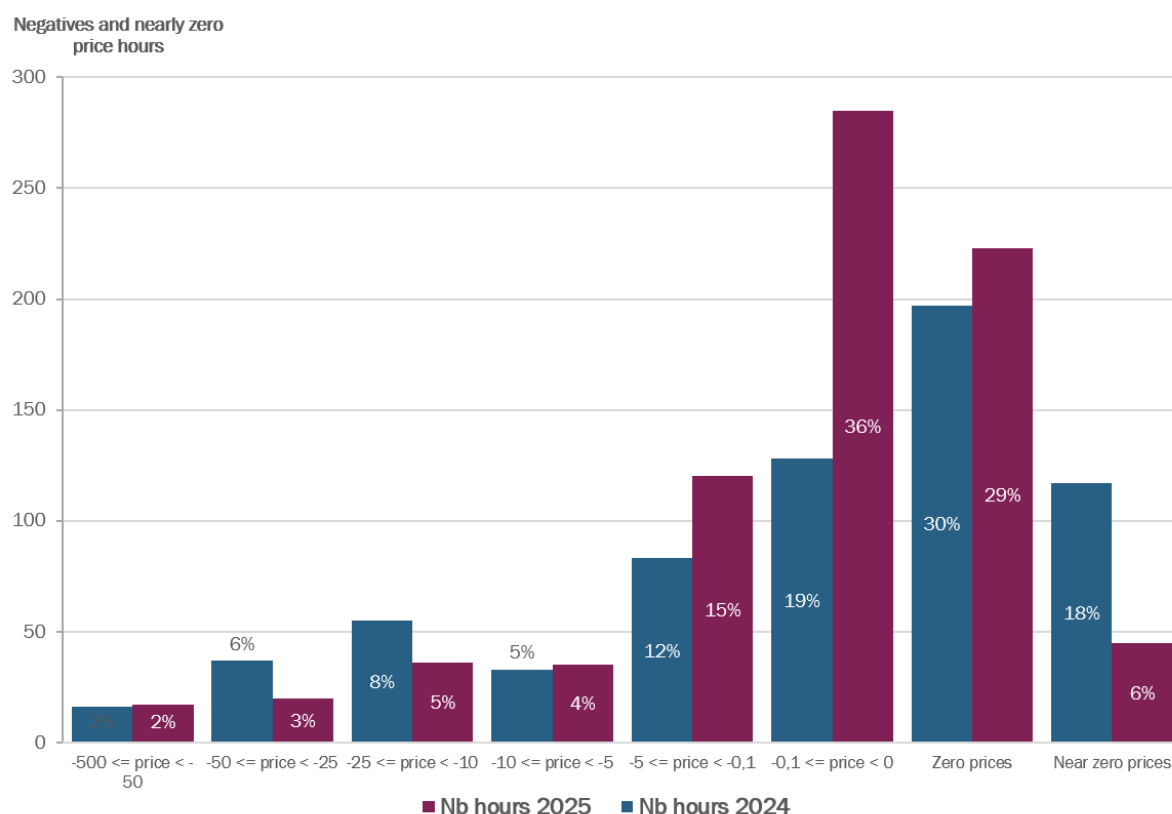
Zero or negative prices reflect an oversupply relative to demand, occurring when generators agree to pay to generate (as they do not wish to shut down their assets even though this results in a financial loss on the electricity market) or if generators are price-insensitive (assets under feed-in tariff contracts are gradually incentivised to shut down when prices are negative, but the majority of the fleet would not stop generating in 2025).

In recent years, with electricity consumption remaining stable, the increase in generation has contributed to a rise in the number of hours with zero or negative prices. Dispatchable assets exposed to zero or negative prices – particularly those receiving supplementary remuneration – contribute to an increase in the number of hours with prices around €0/MWh, whilst non-dispatchable assets or those insensitive to negative prices drive prices even lower by selling their output at any price. The rise in generation from such assets in other European countries has also contributed to the fall in prices, due to the interconnection of European markets.

The year 2025 saw a record level of zero or negative prices in France, with:

- 49 hours of near-zero prices (prices between 0 and 1 €/MWh), the only figure to have fallen compared with 2024 (117 hours),
- 219 hours of zero prices, an increase of 11% compared with 2024 (197 hours),
- 513 hours of strictly negative prices, 46 % more than in 2024 (352 hours).

Hours with negative prices were concentrated in April, May and June, and during the night (2 am–5 am) and midday (11 am–5 pm). The number of negative hours during the day, when solar generation is high, increased compared with 2024, whilst the number of negative hours at night fell this year. It was mainly hours with prices between -0.1 and 0 €/MWh that contributed to the rise in negative prices in 2025, whilst hours with prices between 0 and 1 €/MWh decreased this year.

Figure 39 : Distribution of near-zero, zero and negative hourly prices in France in 2024 and 2025

Sources: EPEX SPOT, Nord Pool – Analysis: CRE

The public authorities and EDF OA are working to increase the flexibility of the generation fleet under the feed-in tariff scheme, which in 2024 was completely insensitive to negative prices. Since May 2025, offshore wind farms under feed-in tariff contracts are shut down in the event of negative prices, representing 1.5 GW of capacity, of which 0.5 GW was added in 2025. Furthermore, in April 2026, an additional 842 MW comprising onshore wind farms and large-scale solar farms will also be incorporated into this dispatchable portion, which will gradually increase to 7.4 GW. This controllability helps to limit very negative prices by bringing them down to around €0/MWh instead.

2.3. Marginality of the various generation sectors in 2025

A generation source is said to be marginal when the last generation unit called upon to meet demand belongs to that source. Its variable generation cost then, in theory, determines the wholesale price of electricity at that moment. The marginality of a generation source can differ significantly from its share of annual generation.

However, in practice it is difficult to identify the marginal generation sector. The main problem in identifying the marginal source is the closeness of the variable costs across different sectors. Furthermore, generators are not required to submit a bid in the *day-ahead* auction that is strictly equal to their variable cost: for example, they may include their start-up costs, opportunity costs of fuel or the primary resource (see below), or agree to sell at a loss for a given hour to avoid restart costs or to participate in balancing reserve markets.

The definition of 'marginal technology' itself can pose a problem, as it is often the case that several generation units (possibly using different technologies) must adjust their output to cope with even a small variation in demand. Indeed, this may be the case: (i) due to the European coupling of markets and (ii) when the management of one generation source, even marginally, affects others. For example, 'block' bids on the market that cover several time steps and are accepted or rejected simultaneously can create threshold effects.

Finally, it should be noted that so-called 'stock-based' generation resources participate in the market not on the basis of their variable production cost, but on the basis of their opportunity cost, calculated by taking into account the value that future production would have. The sectors concerned are primarily hydroelectric power generated by dams, and to a lesser extent nuclear power, for power stations that do not have sufficient fuel to operate at full capacity until their scheduled refuelling date.

Thus, the determination of marginal rates for the various sectors is of a normative nature. The 'stacking' of generation resources and marginality over a given hour are therefore merely a 'figurative' way of understanding the optimisation of the electricity system.

The method for each hour of the year is described below:

1. The calculation is based on three data sources: the dispatch schedules submitted by generators to RTE, spot prices in France and neighbouring countries, and the variable costs reported directly to the CRE by generators operating controllable generation assets. The latter do not include the variable costs of generation assets with low or zero variable costs, such as renewables and run-of-river hydropower. In this new version of the report, these generation sources are explicitly included in the estimate, with a variable cost set at zero; this is necessitated by the sharp increase in hours at prices close to zero. The analysis is limited solely to the generation sources specified in the dispatch schedules.
2. Generation sources whose variable cost is close to the *spot* price are classified as marginal sources. The contribution of each source to marginality decreases exponentially as the difference between the *spot* price and its variable cost increases⁷⁹.
3. If the daily price is equal to that of at least one other neighbouring country (coupling threshold of €0.01/MWh), and if there are no generation sources in France whose variable cost is within €1/MWh of the *spot* price, then the border is included among the marginal generation sources.
4. During hours when France is not coupled to any neighbouring country, and when there are no generation sources with a cost sufficiently close to the *spot* price, marginality is assigned to the 'other' category. The 'other' category may be partially assigned to a given hour when there are generation sources further removed from the spot price, but which result in a non-zero marginality for their sector.

Value in use of hydro and nuclear power

The variable costs of hydroelectric generation, reported by generators to the CRE, can reach high levels, whilst intuitively the water in reservoirs might appear to be a free resource for generators. This is due to the 'opportunity cost' management of hydroelectric generation facilities with limited water reserves: in order to reserve hydroelectric generation for periods when prices are highest, producers define a 'value in use' for the water, which reflects anticipated prices during the most expensive future periods. Consequently, the prices offered by hydroelectric dam operators can be very close to the costs of gas-fired generation.

Part of the nuclear fleet is also optimised in terms of value in use, independent of fuel costs, when fuel stocks are constrained. Consequently, certain nuclear power stations may at times be more expensive than CCGTs. Various factors can lead to high values in use, such as very high forward prices or changes to unit outage schedules.

As mentioned *above*, high utility values reflect the need to conserve fuel until the next refuelling. Conversely, negative values are possible to reflect the need to operate at maximum power regardless of price when fuel must be consumed before the next scheduled outage.

Opportunity cost management is essential to ensure that the flexibility of generation sources with limited reserves (hydro, and in some cases nuclear) is available during periods of strain on the electricity

⁷⁹ The formula has been adjusted to take account of rising prices. The contribution therefore now decreases more slowly in line with the difference between the spot price and its marginal cost. Several technologies may be considered marginal at the same time.

system, and that the entire stock of available generation capacity is not unnecessarily consumed during periods of lower demand.

Key findings

A comparative analysis of the data for 2024 and 2025 reveals relative stability in the marginality structure of the various electricity generation technologies, with the variations observed remaining moderate and reflecting a degree of continuity in the fundamentals of generation and price formation on the electricity markets.

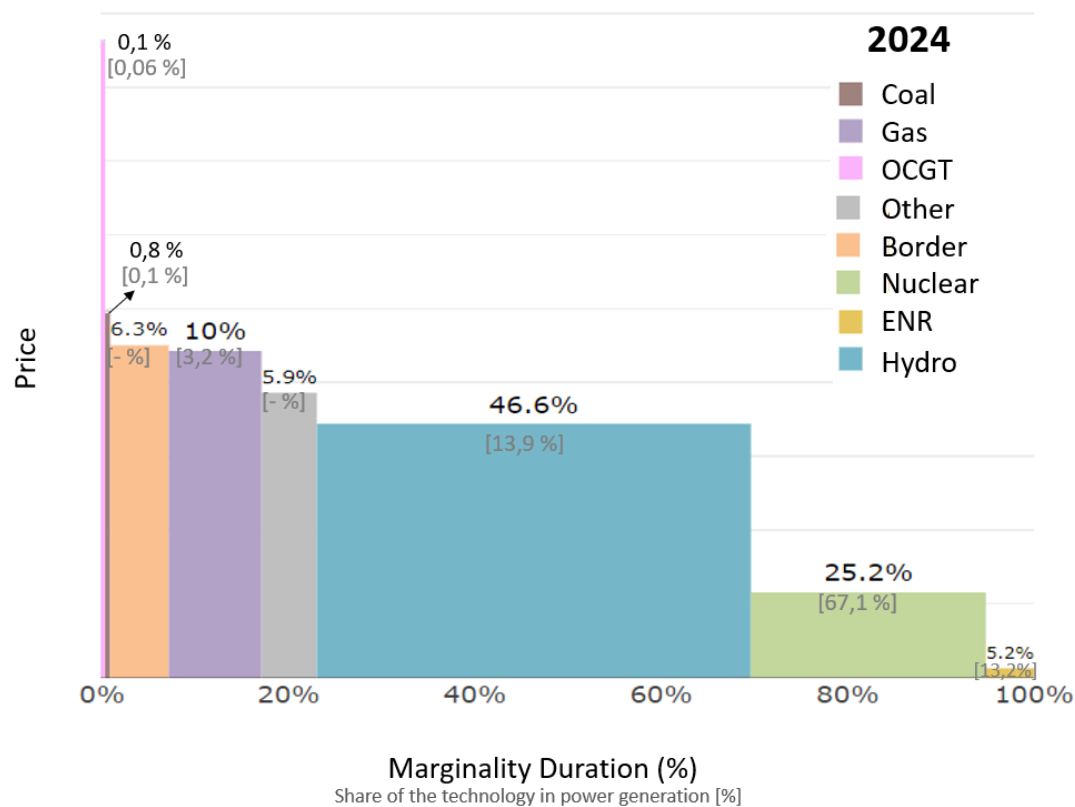
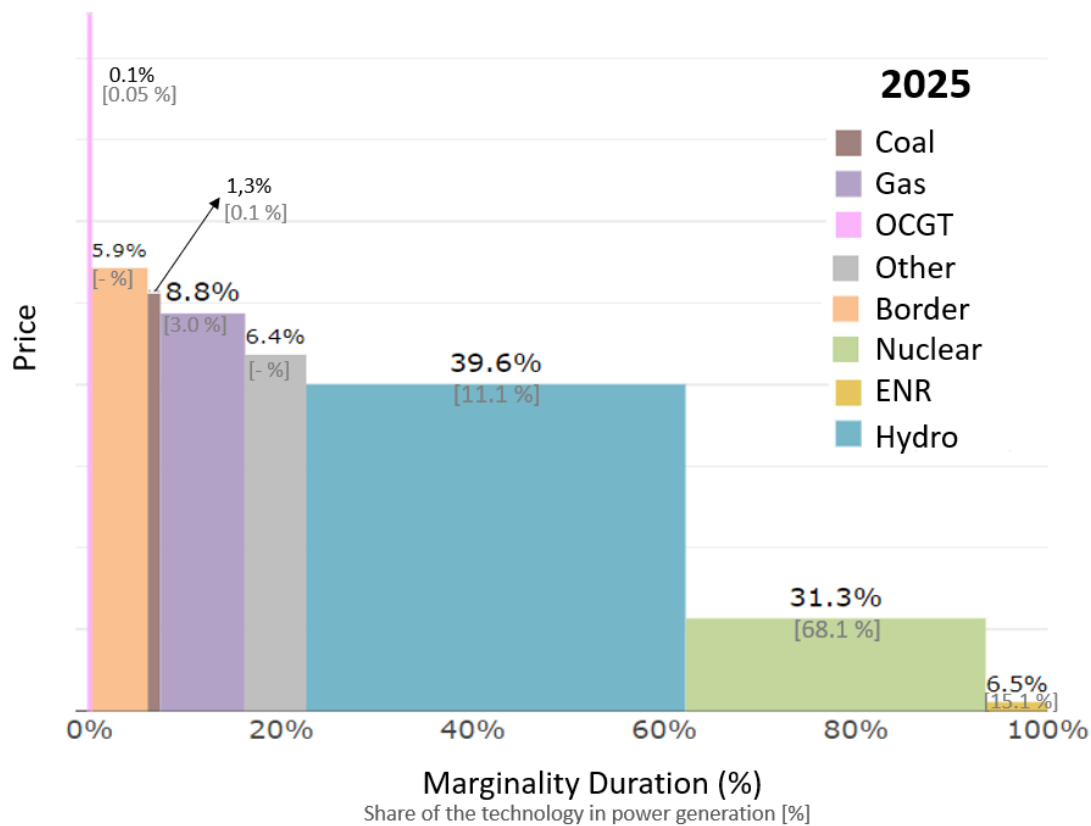
The main difference between the results for 2024 and 2025 lies in the trend in hydro margins, which fall by 7.0 %, and those for nuclear power, which rise by 6.2 %.

As regards cross-border trade, there is a slight decline in the marginality of neighbouring countries, falling from 6.3% to 5.9%. The marginality of gas, which had already fallen considerably between 2023 and 2024, continues to decline moderately, with a reduction of 1.2% in 2025.

The decline in the marginality of gas does not automatically lead to a decoupling of electricity and gas prices. Indeed, the price of gas can influence the price of electricity even when no gas-fired power stations are generating electricity in France, notably through cross-border trade and the value of water held in reservoirs.

As explained above, this year's analysis includes, for the first time, the marginal cost of renewable energy (solar and wind). This is estimated at 5.2% for 2024 and 6.5% for 2025.

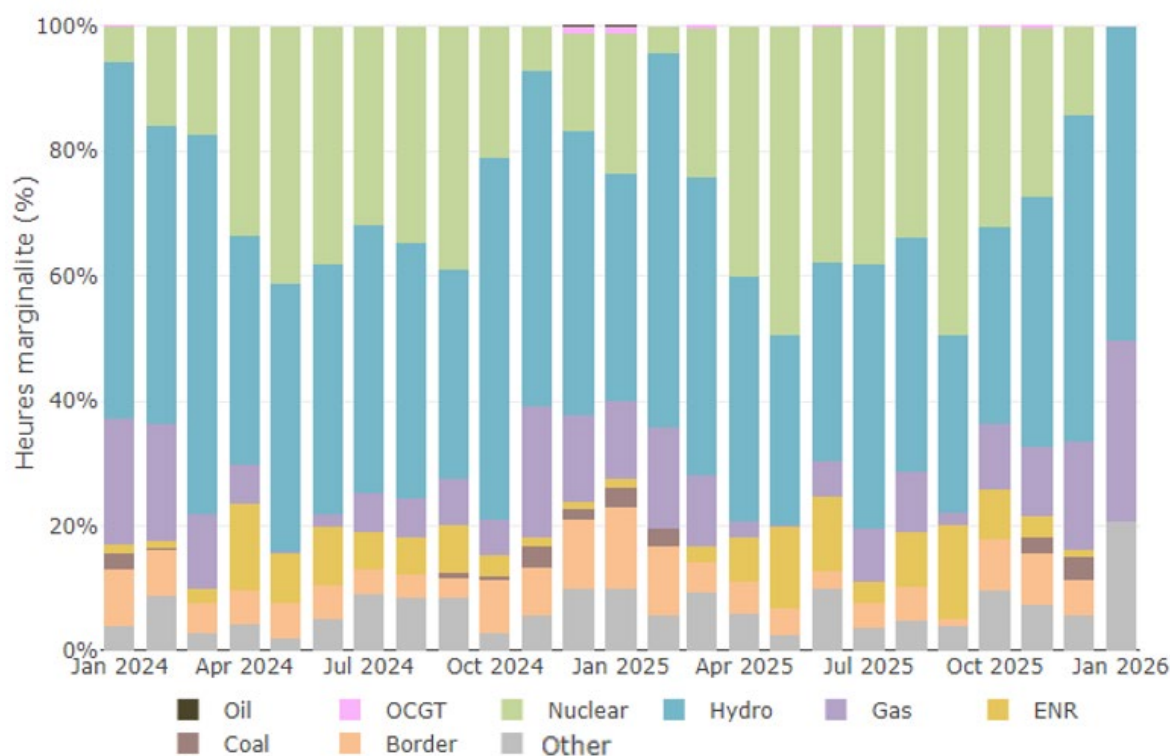
Figure 40 : Marginality of the various generation sources in 2024 and 2025



Sources: EPEX SPOT, Nord Pool, Generators – Analysis: CRE

Figure 41 shows the marginality of energy sources month by month in 2024 and 2025, revealing a strong similarity between these two years. The analysis highlights characteristic seasonal trends: the marginality of gas-fired, coal-fired and hydroelectric power stations increases significantly in winter, a period of high energy demand, whilst renewables and nuclear power exert a more decisive influence on price formation during the summer months.

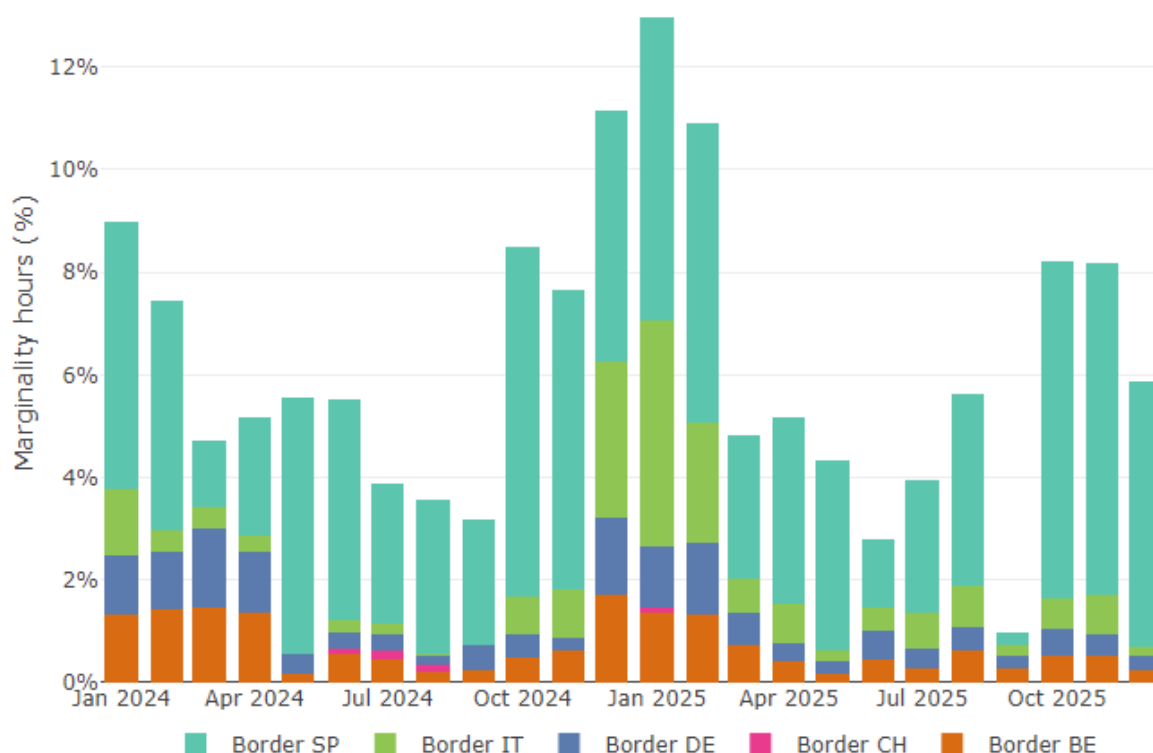
Figure 41 : Marginality of different generation sources in 2024 and 2025 by month



Sources: EPEX SPOT, Nord Pool, Generators – Analysis: CRE

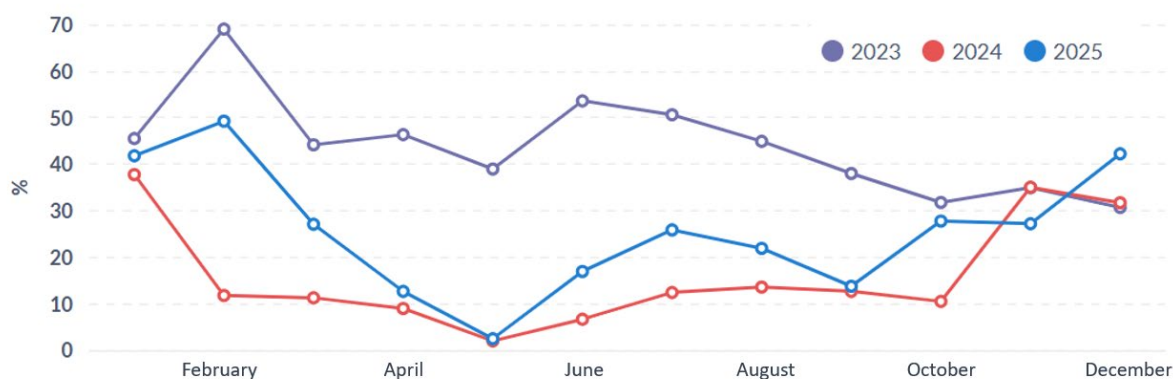
Figure 42 provides a breakdown of the borders that contributed to price formation in France. A seasonal trend can be observed, with France showing a greater dependence on neighbouring countries during winter than in summer. In particular, there was a significant increase in the marginality of the Italian interconnection during the winter of 2024–2025, reflecting a slightly higher than usual number of hours during which the two countries were coupled. The Spanish interconnection remains marginal more frequently, reflecting interconnections with that country that are less often saturated.

It should be emphasised, however, that the overall marginality of the borders remains relatively moderate, and even during periods when it reaches its highest levels, it does not exceed 12 % of hours. This is consistent with the chosen methodology, which does not assign any weight to the marginality of interconnections when French prices are close to the costs of production in France.

Figure 42 : Marginality of the various borders in 2024 and 2025 by month

Sources: EPEX SPOT, Nord Pool, Generators – Analysis: CRE

Figure 43 shows the proportion of hours per month, in 2024 and 2025, during which the daily French electricity price is higher than the variable cost of gas-fired generation. The estimate of the variable cost of gas-fired generation is based on daily gas prices at the PEG, CO₂ allowance prices and a theoretical efficiency of 55% for a combined-cycle power station, as well as the corresponding CO₂ emission rate⁸⁰.

Figure 43 : Proportion of hours during which the French daily price exceeds the variable cost of gas-fired generation

Sources: EPEX SPOT, Nord Pool, EEX, Argus – Analysis: CRE

This analysis presents another illustrative approach to estimating the influence of gas on electricity pricing, and also takes into account the hours during which no gas-fired power stations are generating

⁸⁰ <https://www.statistiques.developpement-durable.gouv.fr>

electricity in France, but when the price of electricity is nonetheless influenced by the price of gas, via cross-border trade where the opportunity costs of other energy sources are themselves influenced by gas prices.

According to this metric, there is a slight increase in the number of hours during which the price of electricity is influenced by gas prices in 2025 compared with 2024, following a substantial decline observed between 2023 and 2024.

2.4. Difference between spot prices and EDF's marginal costs

With regard to *spot* price formation, the CRE analyses the differences between *spot* market prices and the marginal costs reported by EDF, derived from the calculations of its daily optimisation models.

Since 2017, the indicator presented by the CRE has been calculated as the monthly arithmetic mean of the differences between the *spot* price and the marginal cost⁸¹ of EDF's generation fleet, divided by the average *spot* price.

$$\text{Average difference} = \frac{1}{12} \sum_{m=1}^{12} \frac{\sum_{hem} (price_{spot,h} - cost_{marginal_{EDF,h}})}{\sum_{hem} (price_{spot,h})}$$

On average, the price–cost gap in 2025 stood at 3.0%. The gaps published in successive monitoring reports⁸² are set out in the table below.

Table 14 : Trends in EDF's price–cost differentials

Year	Price-cost gap
2008	6.0%
2009	6.5%
2010	3.2%
2011	5.0%
2012	2.2%
2013	4.5%
2014	5.5%
2015	5.3%
2016	2.9%
2017	1.5%
2018	3.5%
2019	1.5%
2020	1.5%
2021	2.6%
2022	1.2%
2023	3.0%
2024	6.3%
2025	3.0%

Source: EDF, EPEX SPOT, Nord Pool – Analysis: CRE

⁸¹ That is to say, the cost to EDF of generating an additional 1 MWh from its generation fleet. EDF reports this figure for each hour to the CRE.

⁸² The method for calculating the average spread changed in 2017.

This indicator is based on self-reported data and does not prejudge the accuracy of EDF's marginal costs. Furthermore, the average deviation does not reflect instances of exceptional deviations, for which the CRE may implement additional checks. Finally, the indicator takes into account all market periods, including those in which EDF may not be a marginal player on the *spot* market.

Without prejudging any further checks, the CRE considers that the average deviation measured in 2025 does not indicate that EDF is exercising manifest market power.

2.5. Level of convergence of French *spot* prices relative to neighbouring countries

The coupling of European day-ahead markets enables the optimised use of interconnectors, generation capacity and flexibility across Europe, through what is known as 'implicit' interconnector capacity allocation. This allocation enables the simultaneous allocation of the energy demanded or supplied by market participants and the interconnection capacity⁸³, thereby equalising prices across the various European markets as long as interconnection capacity is not saturated.

Market coupling is essential for interconnected European countries, as it enables them to make the most of the complementarities between national generation and consumption patterns, to promote the integration of renewable energy, and to strengthen the resilience of national electricity systems. France benefits greatly from this European integration, enabling it to export its surplus electricity production to Europe and to secure imports that are crucial to its security of supply.

In 2025, the surplus capacity in France's generation fleet once again led to a record level of exports. *Spot* prices rose slightly by 6% in France due to less favourable weather conditions, but this increase was more pronounced in neighbouring countries, with an average rise of 14% compared with 2024, widening the price differential with France. Germany, the United Kingdom and Italy saw their price spreads increase by around €5/MWh, with spreads of €28.3/MWh, €33.2/MWh and €54.8/MWh respectively in 2025. The spread with Belgium also increased by €9.0/MWh to reach €21.5/MWh, whilst Switzerland experienced a significant rise in its *spot* prices in 2025, doubling the gap with France to €40.6/MWh. Only Spain maintains a spread comparable to last year's, with a premium of 4.1 €/MWh over French prices.

Beyond its neighbouring countries, France, as was the case last year, had the lowest *spot* prices in Europe apart from Norway, Sweden and Finland, with a discount of at least €20/MWh compared with all other countries except Spain and Portugal. This price level is directly linked to the share of electricity generated from fossil fuels, which will stand at just 4% in 2025 (only Finland, Norway and Sweden fare better, at 3%, 1% and 0% respectively).

⁸³ The transmission capacity required for energy exchange is allocated 'implicitly' within the auction system. Since 2015, the coupling of the CWE area has been carried out using a multi-boundary optimisation method based on 'flow-based' data. There are specific cases where capacity allocation may be carried out 'explicitly', either instead of or in parallel with 'implicit' allocation.

Table 15 : Spreads between European monthly spot prices and the French spot price between 2021 and 2025 (country price – French price)

	Germany					Belgium					Switzerland				
	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
January	-5,7	-49,7	-16,2	-2,9	10,5	-1,6	-24,2	-1,4	0,4	8,6	2,2	10,1	23,7	8,8	31,4
February	-0,4	-45,4	-20,2	4,2	6,4	-0,8	-16,5	-7,2	3,4	6,5	3,6	19,2	2,7	9,6	26,5
March	-3,4	-60,1	-6,6	12,3	17,2	-3,8	-38,1	-0,3	8,1	14,1	6,7	12,4	16,7	20,7	40,8
April	-10,2	-57,4	-5,8	35,5	36,1	-6,5	-42,6	-1,0	20,6	31,1	0,0	-7,6	8,5	35,4	44,1
May	-1,7	-18,9	4,1	38,5	46,1	0,5	-20,9	2,5	25,9	40,3	1,9	0,4	7,1	33,7	48,6
June	0,9	-34,2	2,2	52,6	24,0	0,9	-31,0	2,0	25,9	25,4	0,4	7,9	2,0	12,5	23,1
July	5,5	-83,5	2,7	21,2	28,3	-0,2	-83,5	-2,0	7,8	23,7	4,6	-18,7	5,4	-9,6	31,3
August	2,8	-30,7	2,1	26,8	22,7	2,9	-42,9	1,4	10,5	14,5	3,7	-1,4	2,3	7,4	24,9
September	-10,3	-43,3	12,4	27,6	46,9	-2,0	-40,0	5,6	15,7	28,0	6,3	13,9	8,6	29,3	62,1
October	-33,5	-24,3	3,6	22,6	30,5	-6,0	-21,2	2,4	15,1	19,4	24,8	2,7	19,9	21,0	49,9
November	-54,4	-17,7	1,0	13,6	42,9	-23,1	-8,8	2,0	8,1	27,1	4,3	27,3	14,2	25,6	57,2
December	-44,3	-17,1	0,1	13,8	27,3	-25,9	-1,3	1,0	9,5	18,3	8,4	10,0	12,6	29,7	48,3
Average price	97,3	235,5	95,2	79,6	89,3	104,6	244,6	97,3	70,2	82,6	115,5	281,7	107,5	76,0	101,7
	Great-Britain					Spain					Italy				
	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
January	28,4	5,7	13,3	6,1	34,8	-1,7	-10,4	-58,7	0,7	-5,2	3,9	13,9	37,1	25,2	37,8
February	15,1	17,3	4,6	11,8	5,7	-17,6	11,3	-12,9	-27,2	-14,9	7,6	23,3	11,1	26,9	28,8
March	13,4	-0,9	25,2	19,0	28,9	-4,7	-20,3	-25,5	-30,2	-23,2	11,3	15,4	35,5	37,7	45,3
April	11,3	-22,6	6,3	35,8	49,6	2,4	-36,8	-32,1	-15,3	-15,3	4,3	18,7	27,1	61,4	59,2
May	28,4	-44,0	14,2	56,0	60,0	12,4	-5,8	-0,8	2,6	-3,9	13,3	33,3	26,6	65,1	72,0
June	17,3	-65,7	5,2	49,3	40,9	8,1	-102,4	1,7	23,4	33,6	10,8	29,3	18,9	66,7	71,2
July	38,1	-115,7	5,8	35,6	32,7	19,9	-269,7	9,9	26,1	10,8	26,4	57,1	30,9	60,4	53,9
August	45,2	-52,9	2,8	12,0	27,3	26,9	-353,8	5,2	37,1	15,7	25,5	42,6	15,6	71,0	52,5
September	90,6	-75,0	7,7	38,6	41,3	24,0	-228,1	16,5	18,2	26,6	31,8	42,6	28,9	62,9	74,2
October	33,4	-37,0	17,4	37,6	24,5	15,2	-44,6	-0,7	7,8	16,8	37,0	28,1	48,6	51,3	55,8
November	-1,3	-31,2	13,4	15,2	29,3	-30,9	-109,9	-25,3	5,6	-1,7	3,9	36,1	28,3	30,6	57,7
December	18,7	22,3	14,4	11,8	18,4	-31,4	-154,0	7,8	11,0	9,1	14,0	41,3	56,6	37,9	49,5
Average price	138,3	241,6	107,9	85,5	94,3	112,5	167,5	87,1	63,0	65,2	125,8	307,8	127,8	107,4	115,9

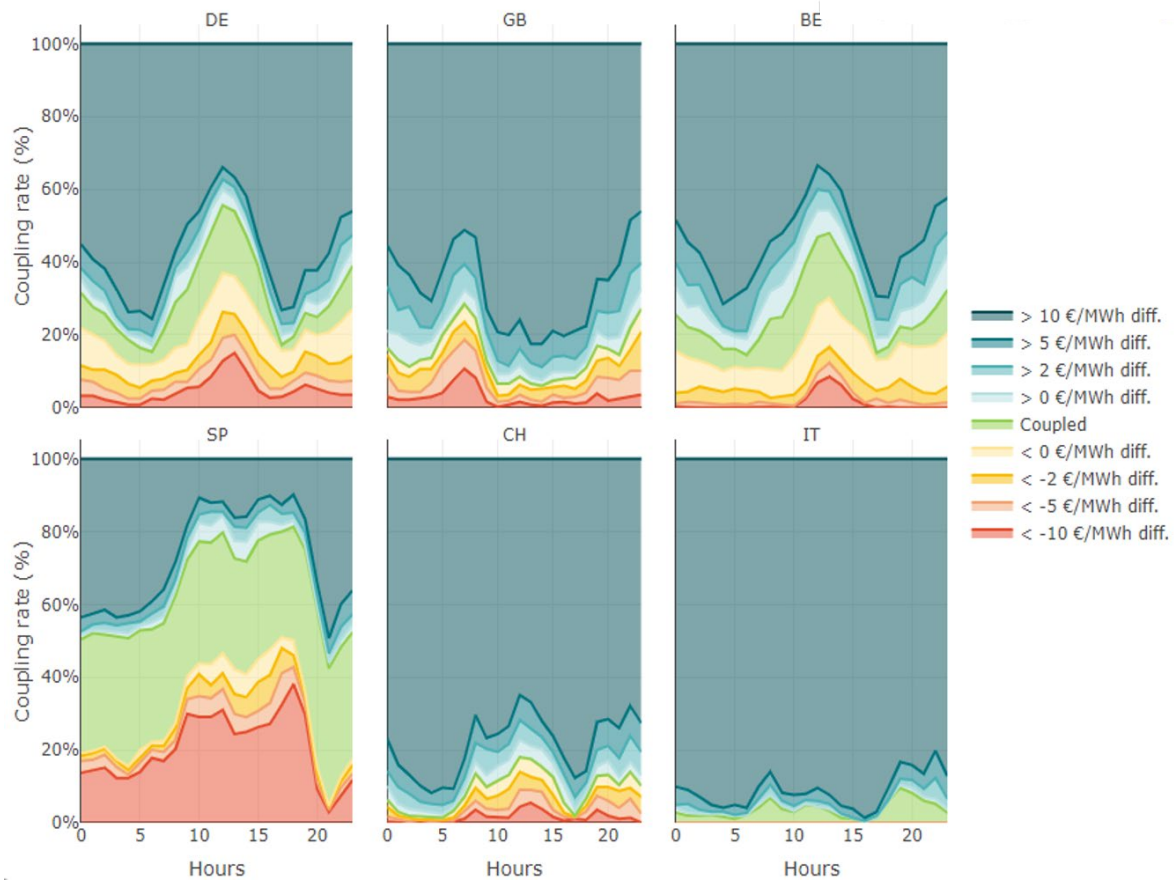
Sources: EPEX SPOT, Nord Pool, ENTSOE – Analysis: CRE

Table 15 below shows the average monthly spreads between European *spot* prices and the French *spot* price since 2021. It shows that the French price has been significantly lower than that of its European neighbours throughout the year. The spread is generally smaller in winter and is even reversed in the case of Spain, due to the increased temperature sensitivity of French consumption.

Figure 44 illustrates the distribution of spreads between the French *spot* price and those of neighbouring countries by time of day. Overall, in 2025, the French *spot* price was consistently lower than the Belgian price 74% of the time, 69% of the time for Germany, 36% of the time for Spain and 96% of the time for Italy (of which 91% of the time the French price was more than €10/MWh lower), 91% for Switzerland and 86% for the UK. The French price was equal to the Spanish price for around 33% of the time, 10% for Belgium and Germany, and 4% for Italy. French prices are almost never equal to those of Switzerland and the UK, which are not members of the European Union and are therefore not included in the coupling mechanism. Looking in detail at the times of day, it becomes clear that prices are more often aligned with or lower in Germany and Belgium than in France at midday, when sunshine is at its peak due to greater penetration of solar capacity. The situation is similar in Spain, but with prices that are closer to or lower than those in France throughout the rest of the day, particularly in winter.

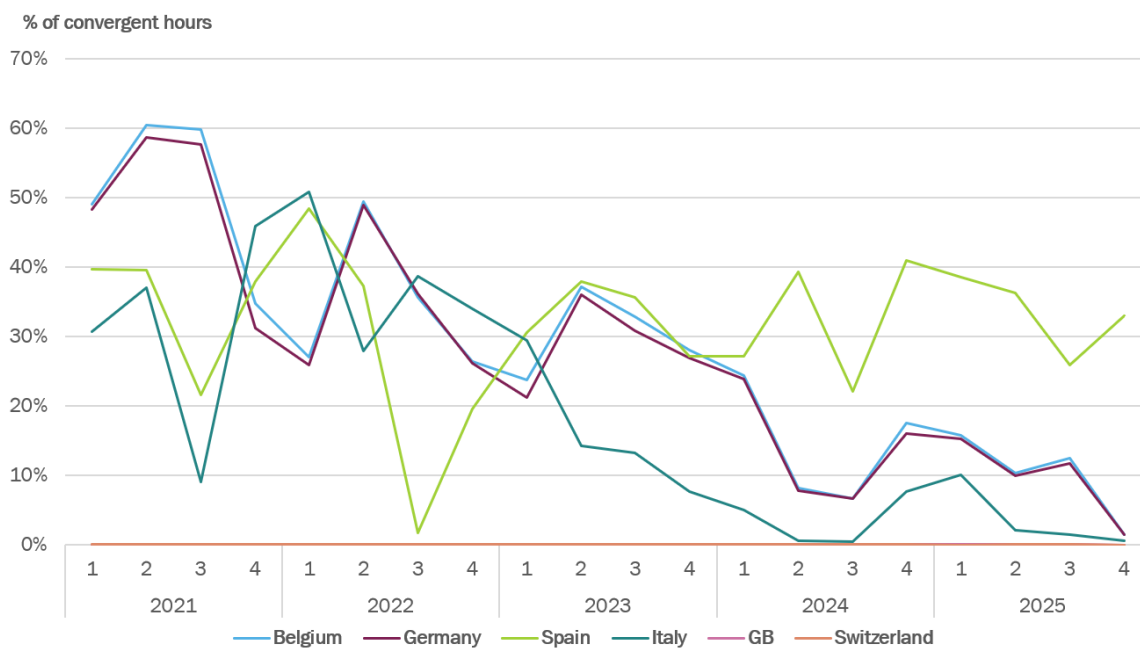
The trend in the rate of convergence between French prices and those of its European neighbours is shown in Figure 45, at quarterly resolution. Overall, convergence with Germany, Belgium and Italy has been declining since 2022; although it rose slightly for the winter of 2024–2025, this trend did not recur in the final quarter of 2025. Convergence with Spain has remained between 25 and 40 %, as in 2024, with a decline in the third quarter of 2025 due to strong demand in Spain for air conditioning during the summer.

Figure 44 : Spreads between European spot prices and the French spot price by time of day in 2025 (country price – French price)



Sources: EPEX SPOT, Nord Pool, ENTSOE – Analysis: CRE

Figure 45 : Quarterly convergence rate of French spot prices with those of neighbouring European countries



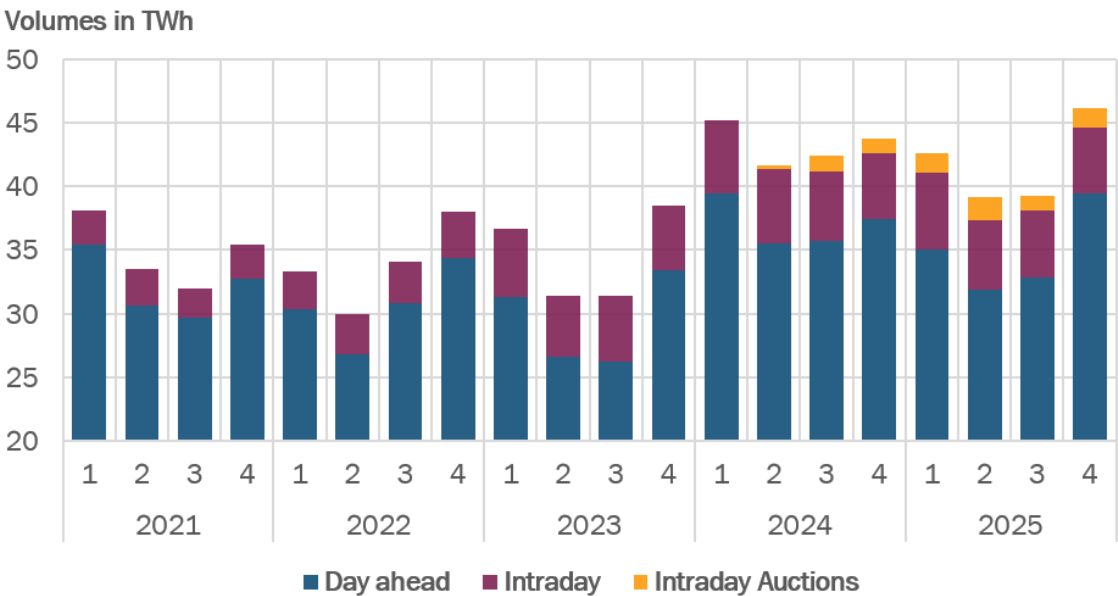
Sources: EPEX SPOT, Nord Pool, ENTSOE – Analysis: CRE

2.6. Trading volumes on the day-ahead market are falling, whilst intraday trading is rising

The majority of *day-ahead* and intraday trading takes place on the EPEX SPOT and Nord Pool exchanges, which are the designated operators in France for the European coupling of day-ahead and intraday markets. Trading in *day-ahead* products takes place via daily auctions (day-ahead coupling or *Single Day-Ahead Coupling* – SDAC); trading in intraday products takes place on a continuous market or via intraday auctions (intraday coupling or *Single Intraday Coupling* – SIDC – and the national market).

Short-term markets – the coupled day-ahead and intraday markets – are essential, in particular, for optimising the generation fleet and the use of interconnectors. Although the volumes traded on the day-ahead market are lower than those on the futures market, the day-ahead market nevertheless involves very significant volumes, particularly as it can be used to buy or sell electricity whose price is already hedged by a purchase or sale of a cash-settled futures contract. The intraday market has grown in importance in recent years due to the increased need for balancing as close as possible to the actual delivery time, driven by the growing installation of renewable capacity.

Figure 46 : Trading volumes on French short-term markets



Sources: EPEX SPOT, Nord Pool, ENTSOE – Analysis: CRE

The coupled day-ahead market saw a 6% decline in activity between 2024 and 2025. Total trading volume fell from 148 TWh in 2024 to 139 TWh in 2025. Conversely, the intraday market recorded 12% growth, with trading volume rising from 25 TWh in 2024 to 28 TWh in 2025. This increase is largely due to the expansion of intraday auctions, the volume of which doubled to reach 6 TWh, compared with just 3 TWh the previous year.

As soon as the 15-minute products were launched on 1st October 2025, the majority of the volumes previously traded on hourly products shifted to these new products (Figure 47). Between 1st October 2025 and the end of the year, 5.7 TWh were purchased and 3.8 TWh were sold on an hourly basis. Meanwhile, an average of 17.9 GW was purchased and 32.3 GW was sold⁸⁴ at 15-minute intervals. As regards block products⁸⁵, trading stood at 1.7 TWh for purchases and 6.0 TWh for sales. As for half-hourly products, 0.14 TWh was purchased and 0.06 TWh was sold. These products were used regularly

⁸⁴ The differences between volumes traded in France on the buy and sell sides are due to trading at interconnections, with exports accounting for the majority on average over the period analysed.

⁸⁵ A block product is characterised by a volume profile spread across several time slots, offered at a single price, and subject to the ‘all-or-nothing’ principle; or, under certain conditions, it may be executed with the same ratio of the proposed volume across the different time slots.

in the very first few days following the switch to the quarter-hourly grid, but were subsequently used only sporadically.

Market participants who continue to use hourly products may also simultaneously place orders for 15-minute products. Furthermore, some market participants who submit orders at the 15-minute interval continue to simply replicate the hourly volumes and prices across each of the four quarter-hours, thereby exactly replicating the price-volume curves within each hour.

In the continuous intraday market, quarter-hourly products have gradually gained ground since their introduction in January 2025, whilst remaining marginal (Figure 48). On the buy side, trading volumes rose from 213 GWh in the first quarter to 912 GWh in the last, representing a steady increase throughout the year, with no apparent impact from the transition of the daily market to a 15-minute tick size. Conversely, trading volumes for half-hourly products contracted significantly, falling from 131 GWh in the first quarter of 2025 to just 36 GWh in the final quarter. Hourly products remain by far the most widely used, accounting for 89 % of trading volumes.

Figure 47 : Daily volume traded on the day-ahead market by product granularity (GWh)



Sources: EPEX SPOT, Nord Pool – Analysis: CRE

Figure 48 : Daily volume traded on the continuous intraday market by product granularity (GWh)



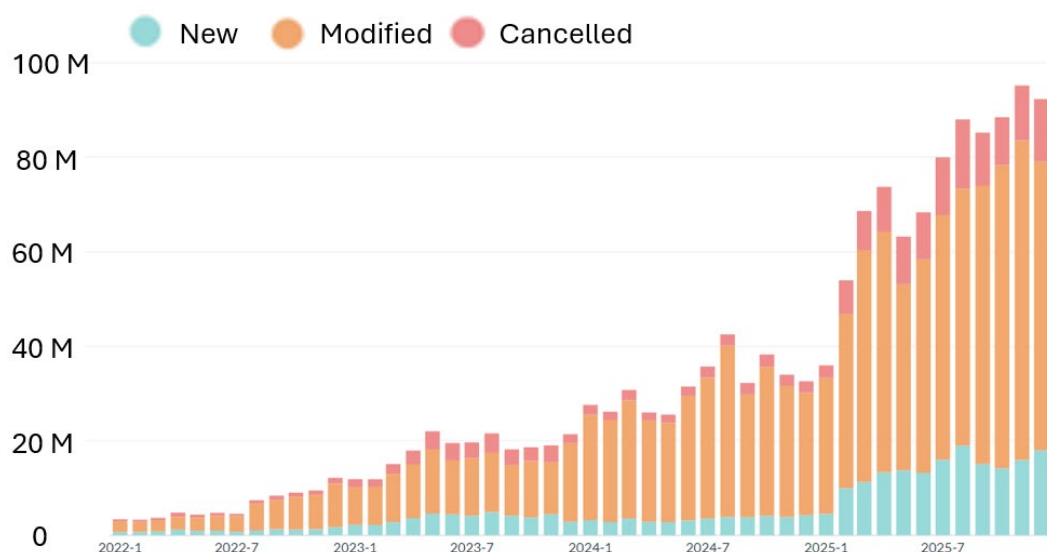
Sources: REMIT data – Analysis: CRE

Figure 49, shows the trend in the number of orders submitted on the French continuous intraday market since 2022. This graph takes into account all order-related events, namely their submission (new order), modification and cancellation.

There has been a steady increase in order volume, reaching almost 100 million per month by the end of 2025. In total, orders rose from 75 million in 2022 to 217 million in 2023, 382 million in 2024 and 892 million in 2025, illustrating particularly strong growth.

This growth is mainly due to the increasing use of trading algorithms in this market, which are capable of submitting and modifying orders at high frequency. Furthermore, a marked acceleration is evident between late 2024 and early 2025, linked to the introduction of 15-minute products on the intraday market, which added 96 new daily products to the existing hourly and half-hourly products.

Figure 49 : Number of order events submitted on the continuous intraday market (in millions), by type



3. Futures markets

3.1. Fall in French forward prices, which are approaching historic price levels

Wholesale forward prices, particularly the annual contract, play a major role in the economics of the electricity system: they largely determine the price paid by consumers, particularly in retail markets dominated by fixed prices or prices that change at regular intervals, as in France, and also constitute a significant proportion of generators' revenue.

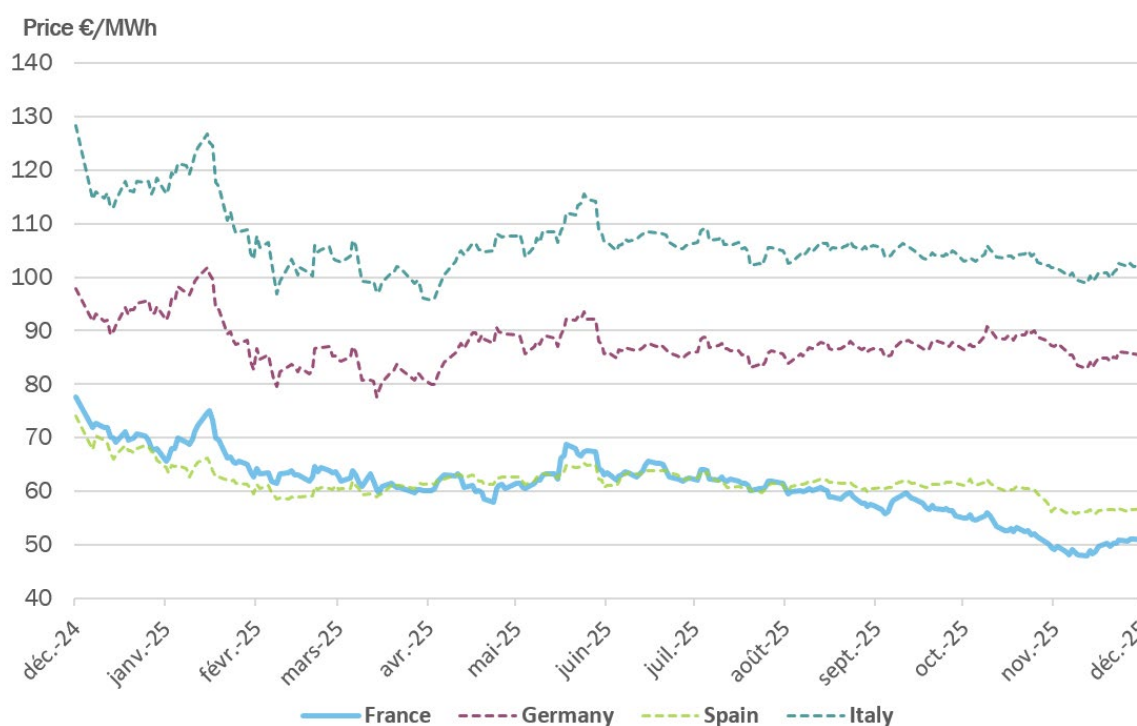
Futures markets enable electricity to be traded in advance for specific delivery periods in the future. They encompass products covering various time horizons, ranging from a few days to several years in advance. A market participant requiring physical delivery at a given maturity date can adopt two approaches if they wish to hedge financially: a purchase on the *spot* market, whilst hedging the price risk using a cash-settled futures contract, or a direct purchase of a physical contract on the futures markets.

For cash-settled contracts, settlement prices are calculated daily up to the contract's final delivery date and *ultimately* correspond to the average of the spot prices realised over the contract's delivery period. These contracts are widely used by market participants to hedge against the risk of price fluctuations.

For example, a producer may use them to secure a volume and a price prior to delivery, whilst a supplier may use them to set a supply price for consumers and secure a supply margin. In the longer term, forward prices serve as a signal for investment and can act as a benchmark in the negotiation of long-term contracts.

During 2025, electricity forward prices in France fell once again compared with 2024. The price of the French Y+1 base calendar contract thus averaged 60.9 €/MWh, 20 % lower than in 2024 (76.6 €/MWh). The historical price level (an average of €42/MWh over 2014–2019; see Table 16) remains lower than the 2025 annual average. Nevertheless, it is approaching this level given the prices reached at the end of the year. Indeed, the price of the Y+1 contract fell from €71.9/MWh on 2 January 2025 to €50.8/MWh by the end of the year, reaching a low of €47.9/MWh on 8 December 2025 – its lowest level since 18 December 2020, at the very start of the price surge.

Figure 50 : Prices of Y+1 baseload calendar products in Europe



Source: Argus – Analysis: CRE

Table 16 : Trend in the average annual price of the French and German Y+1 base calendar contracts since 2013

Year	France	Germany	FR-DE spread	Relative spread
2013	43.3	39.1	4.2	10%
2014	42.4	35.1	7.4	17%
2015	38.2	30.9	7.2	19%
2016	33.3	26.6	6.7	20%
2017	38.3	32.4	5.9	15%
2018	49.0	43.9	5.0	10%
2019	50.9	47.7	3.1	6%
2020	44.9	40.2	4.6	10%
2021	96.4	88.8	7.6	8%
2022	367.7	298.4	69.2	19%
2023	162.7	136.8	25.9	16%
2024	76.7	88.7	-12.0	-14%
2025	60.9	87.4	-26.5	-30%

Source: Argus – Analysis: CRE

During 2025, the price of the French Y+1 calendar product trended downwards overall, initially from February to April, when the price fell from 70 €/MWh to 60 €/MWh, aligning with its Spanish equivalent. Then, following a relatively stable period at around 60 €/MWh, the French price fell again by 10 €/MWh during October and November, ending the year at a discount of 5.9 €/MWh compared with Spain.

Fall in French forward prices in the first half of 2025 following a rise driven by fuel prices

At the start of 2025, the trend in electricity prices was driven by rising gas and CO₂ prices which peaked on 10 February 2025, followed by a significant easing. French prices, although less sensitive to these underlying factors than those of its European neighbours, thus rose to €75.0/MWh before falling back very rapidly. Spain was even less affected by the volatility of the gas market as it is less interconnected with major, high-carbon hubs such as Germany and Italy. Nevertheless, the price spread with France returned to its very low initial level at the start of April.

A slight downward trend then set in from April 2025, driven by spot prices that continued to rise in May and very satisfactory replenishment of hydro storage. These stocks were at their lowest level in five years at that time but have since caught up, rising to their historical average. However, the announcement on 11 June of suspected stress corrosion cracking at the Civaux 2 reactor, combined with a rebound in gas prices on 13 June, triggered a rise of €6.5/MWh within a few days. This sudden increase was absorbed fairly quickly, with EDF and the ARSN reassuring the market about the minor impact of the discovery, whilst a ceasefire announced in the Middle East brought gas prices down.

As can be seen on the Figure 52, the France-Germany price spread widened temporarily for nearby annual maturities in February due to the rise in gas prices, and in May due to exceptionally low daily prices in France.

A downward trend is taking hold throughout the second half of 2025

In July and August, pressures on gas prices caused volatility in European electricity prices. Ultimately, the trend was slightly downward for prices in France, which reached €57.6/MWh for the annual contract, against a backdrop where the rest of the fundamentals were very favourable, notably with the ramp-up of Flamanville 3 scheduled for the autumn.

This trend is confirmed from October onwards, with prices falling steadily. The market is factoring in very low realised daily prices for the period, the additional capacity brought online and held in reserve, and stagnant demand, thereby recognising overcapacity in France as the cause of this fall in the futures market. This trend is reinforced by a fall in gas prices in November, which is also evident in neighbouring markets. Prospects of a cold winter pushed prices up slightly at the end of the year, but the price for the first quarter of 2025 for delivery in France remains below 70 €/MWh.

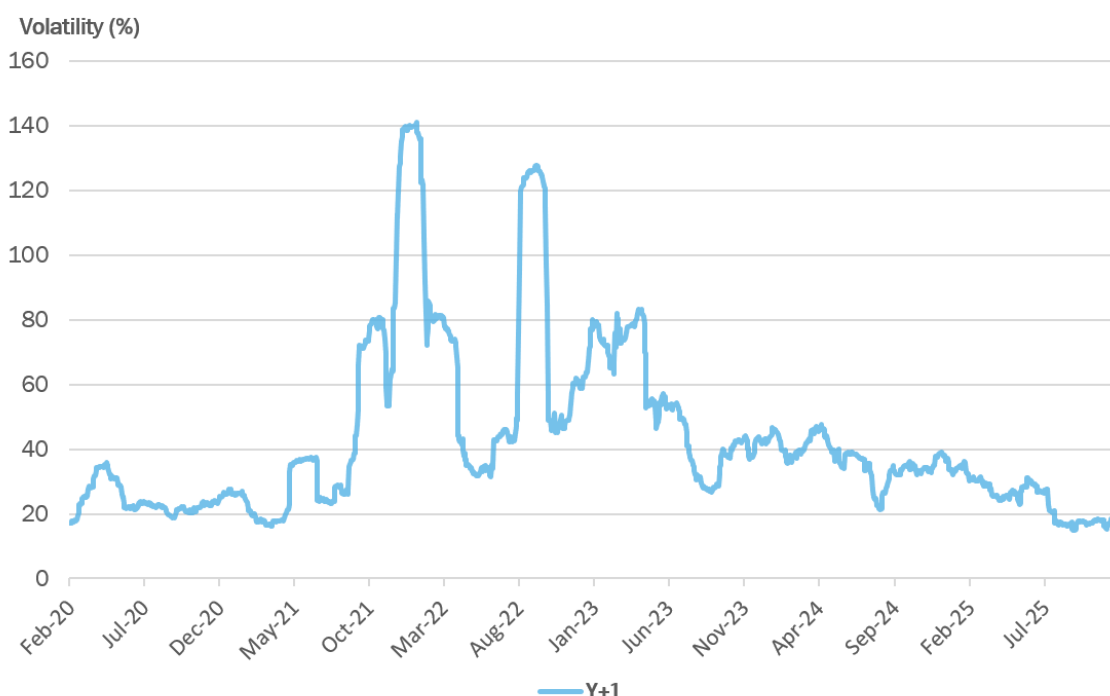
From August onwards, the price differential between France and Germany widened until the end of the year across all annual contracts, driven by a continuous rise in the price of CO₂ allowances, which weighed on German prices. French prices are trading at a discount ranging from €18.9/MWh for the 2029 contract to as much as €34.5/MWh for the 2026 contract.

Volatility edged down slightly in 2025

In 2025, volatility fell compared with the previous year – which had itself already seen a drop in volatility (25% on average, compared with 37% the previous year) – and is approaching the volatility levels seen in 2018 and 2019 (20% on average).

Volatility initially fell by around 40% at the start of the year to 25% in May 2025, with a day-on-day variation in the Y+1 price of around 0.9 €/MWh. Some fluctuations were significant, mainly linked to the impact of the gas or CO₂ markets, but they were fewer in number and less pronounced than in 2024. In June, volatility rose briefly due to geopolitical events before falling sharply in August to around 16%, remaining largely unchanged until the end of the year.

Figure 51 : Volatility⁸⁶ of the Y+1 calendar-based product in France



Source: Argus – Analysis: CRE

⁸⁶ That is $x_n = \ln(\text{Price}_n) - \ln(\text{Price}_{n-1})$; Volatility = $100 * \sqrt{252 * \text{var}(\{x_1, x_2 \dots x_{40}\})}$;

Figure 52 : Changes in France-Germany price differentials for Y+1 to Y+4 base products since 1st January 2024



Source: EEX – Analysis: CRE

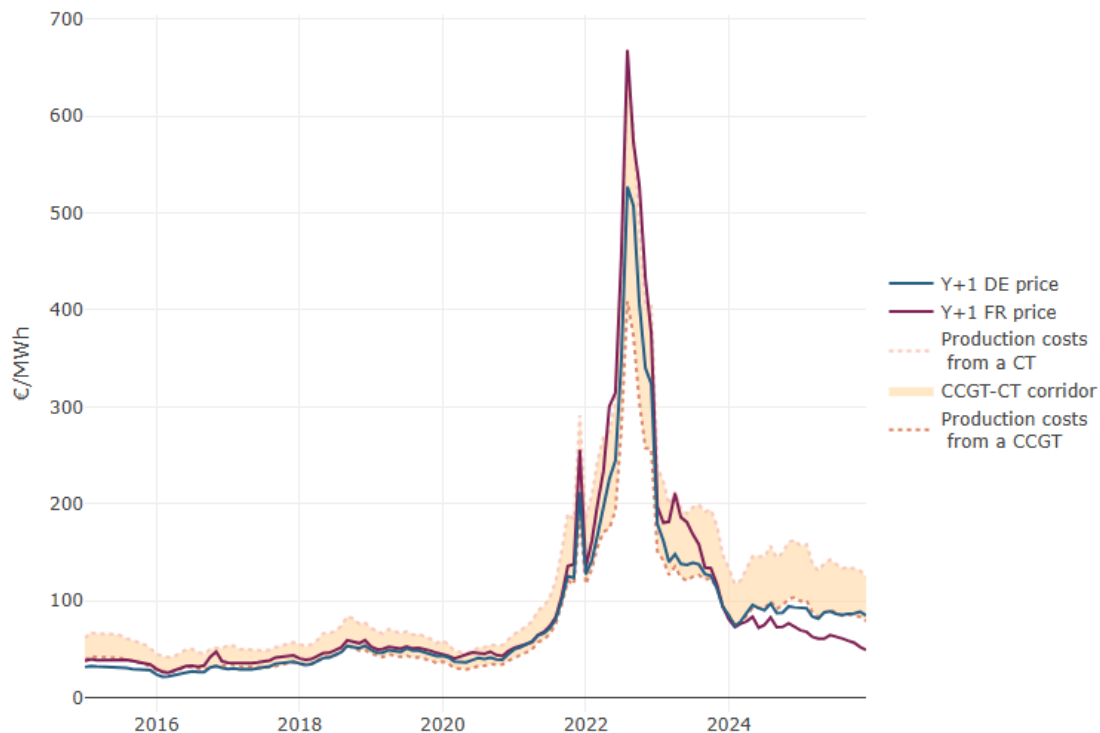
In order to estimate the influence of gas and CO₂ prices on French futures market prices, the Figure 53 compares the price trends of French and German annual (Y+1) futures contracts with the marginal costs of electricity generation from gas, defined by two technological benchmarks: combined cycle gas turbines (CCGT) and combustion turbines (CT)⁸⁷.

Between 2015 and 2020, electricity prices in both countries fluctuated within the cost of gas-fired power stations, mostly close to CCGT costs. This correlation reflects an assumption of average gas marginality over the year: the market anticipates that, on average over the year, gas-fired power stations will help determine the *spot* price for a significant proportion of the time. During the crisis, electricity prices soared and moved towards the upper end of the cost corridor. Historically low nuclear availability in France led to intense demand on gas-fired capacity, whilst the incorporation of risk premiums linked to supply uncertainties drove prices up. Gas came to play an increased role in both the French and German energy mixes to ensure the balance between supply and demand.

However, since 2024, French prices have begun to gradually decouple from gas and CO₂ fundamentals. The gap is widening between German prices – which continue to move within the lower part of the price corridor, still reflecting the dominance of gas margins – and French prices, which are breaking free from this corridor and falling independently of its fluctuations. The reduction in the use of thermal power stations in France has altered the formation of forward prices, and the market is now reflecting a shift in the dominant marginal technology: *spot* prices are now more frequently determined by assets with zero, near-zero (renewables) or low (nuclear, hydro) marginal costs.

⁸⁷ The standard efficiency of a CCG is set here at 55 %, and that of a CT at 35 %. For both types of power station, standard emissions are assumed to be 0.198 tCO₂e per MWh of gas consumed (<https://www.statistiques.developpement-durable.gouv.fr>).

Figure 53 : Comparison of the monthly average Y+1 electricity price and gas-based generation costs in France and Germany



Source: Argus – Analysis: CRE

3.2. Activity on the French futures market continues to grow

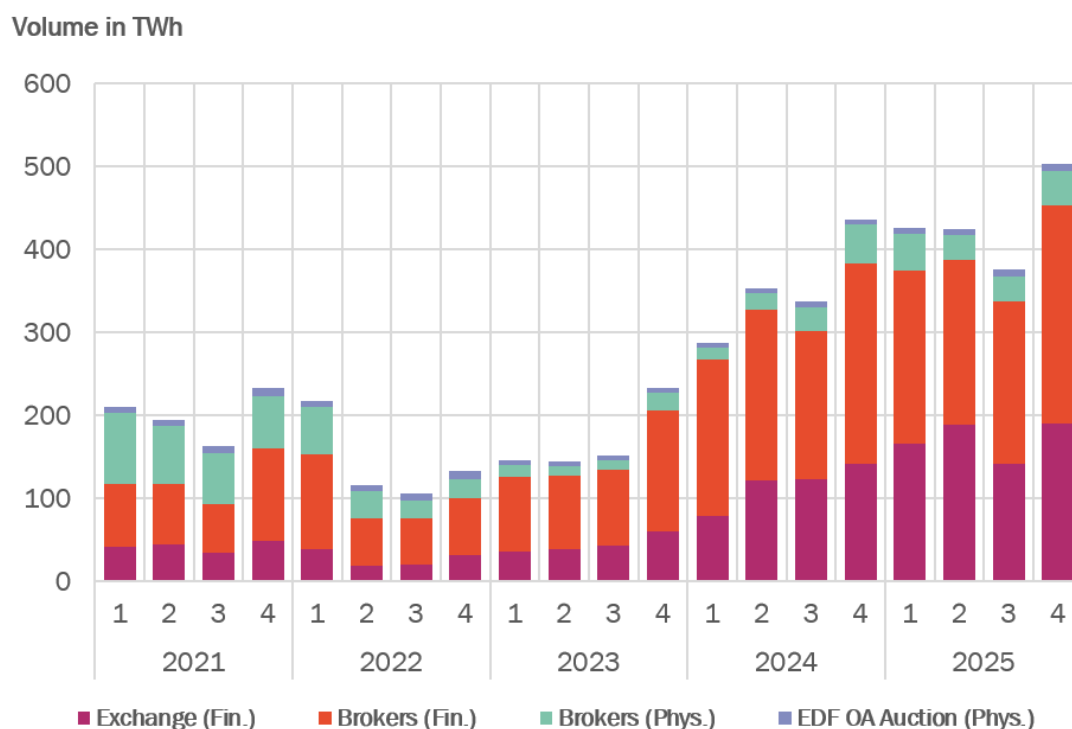
Trading on wholesale markets takes place over-the-counter (OTC) or on an exchange. The vast majority of OTC trades are facilitated by brokers. The products traded may be for physical delivery or cash settlement. On the French market, cash-settled products can be traded directly on exchanges (primarily EEX) but may also be brokered and then registered with an exchange for settlement via the clearing house (transactions primarily registered on EEX). Physical-delivery products are mainly brokered, but may also be traded bilaterally.

Auctions organised by EDF Obligation d'Achat ('EDF OA') on behalf of the State, on a platform dedicated to the forward sale of 'quasi-certain' volumes of energy acquired under State-guaranteed purchase obligation contracts, also account for significant volumes of energy.

On the futures markets (over-the-counter, EEX exchange), the products mainly traded in France range from a 3-year horizon (*calendar* Y+3 product) up to one day before delivery.

Volumes traded on the French electricity futures market are set to rise again by 22 % in 2025 (1,727 TWh) compared with 2024 (1,413 TWh), which had already set an all-time record for the French market.

Figure 54 : Volumes traded on the EEX exchange or via brokers on the futures markets; volumes sold at auctions organised by EDF for energy subject to a purchase obligation

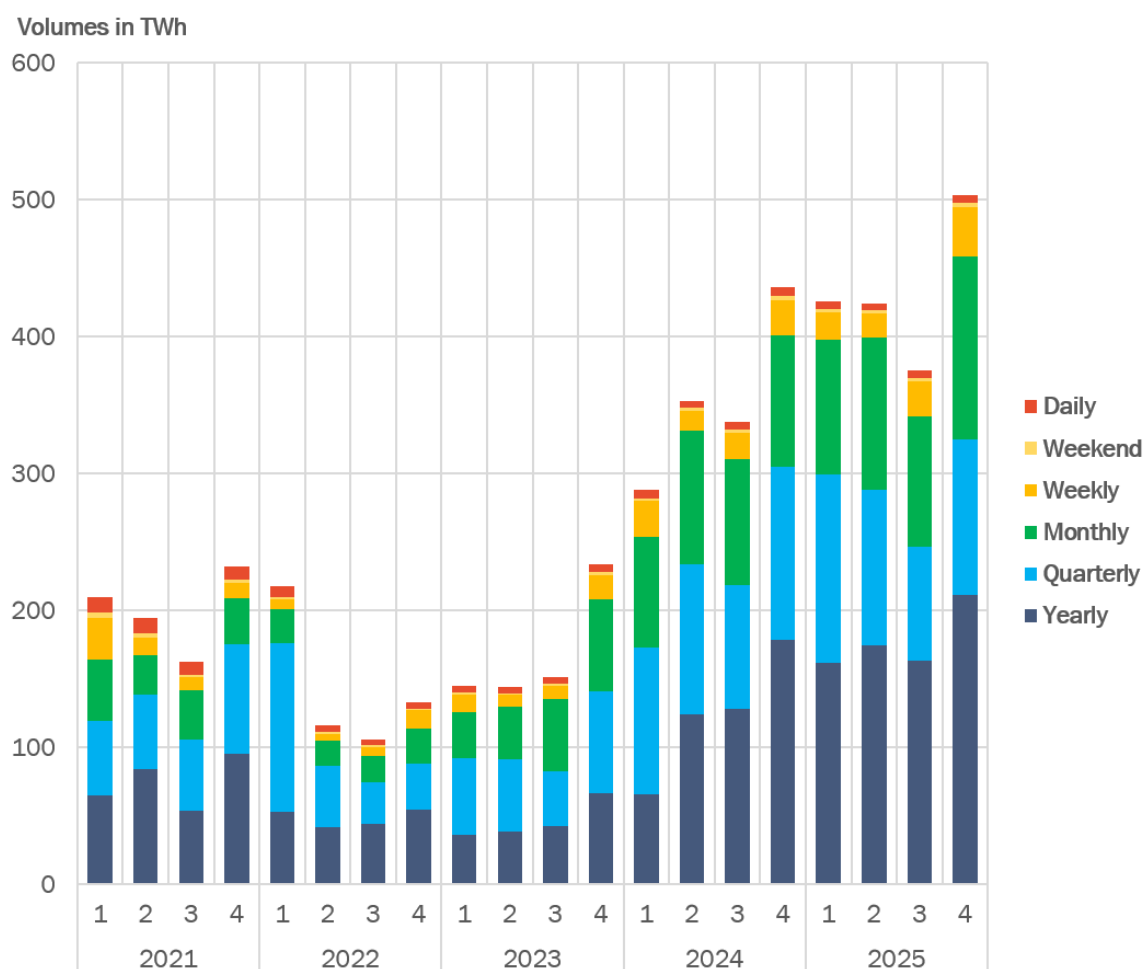


Sources: EEX, REMIT data, EDF OA – Analysis: CRE

Volumes are rising across all types of contracts, whether for physical or financial settlement, driven mainly by volumes on exchanges. Volumes sold by EDF OA at auctions are also on the rise, due partly to additional capacity and partly to new products to be marketed in Y+3 from September 2025:

- + 48% in volumes traded on the EEX exchange (683 TWh in 2025 compared with 461 TWh in 2024),
- + 6% in over-the-counter trading for financial products (867 TWh in 2025 compared with 817 TWh in 2024),
- + 35% in over-the-counter trading for physical products (147 TWh in 2025 compared with 109 TWh in 2024).
- + 16% in volumes sold at EDF OA auctions (30 TWh in 2025 compared with 25 TWh in 2024).

It should be noted that the volumes sold at auctions organised by EDF OA on behalf of the State for energy subject to the purchase obligation are not directly comparable with the others. This is because they do not involve 'two-way' trading but only sales by EDF OA.

Figure 55 : Volumes traded on futures markets by maturity (physical and financial combined)

Sources: REMIT, EEX, Nord Pool, EPEX SPOT and EDF OA data – Analysis: CRE

Figure 55 shows the total volumes traded on wholesale markets by maturity, focusing on futures markets, whose products account for the largest share of trading on wholesale electricity markets, as market participants seek to hedge their medium- or long-term exposure and are required to adjust this hedging over time.

Between 2024 and 2025, volumes are generally on the rise, particularly for annual and monthly products:

- annual products: a 43% increase, from 494 TWh traded in 2024 to 709 TWh in 2025,
- quarterly products: a 3% increase, from 434 TWh traded in 2024 to 448 TWh in 2025,
- monthly products: an increase of 20 %, from 366 TWh in 2024 to 440 TWh in 2025,
- weekly products: an increase of 16 %, from 86 TWh in 2024 to 99 TWh in 2025,
- weekend contracts: up 5 %, from 9.0 TWh in 2024 to 9.4 TWh in 2025,
- daily futures contracts⁸⁸ : down 8%, from 23 TWh in 2024 to 22 TWh in 2025,

The exceptional activity on the French markets in the fourth quarter of 2024 continued throughout the year and was even surpassed by the final quarter of 2025, confirming France's position as the second most liquid market in Europe, behind Germany. This activity reflects a stable market that is attracting

⁸⁸ Daily futures are one-day futures contracts that may be settled even several months after the transaction, whilst day-ahead contracts are hourly *spot* contracts traded each day for the following day.

new players. Among them, an increasing number are using trading algorithms to improve the efficiency of transactions and capitalise on market opportunities, which is helping to increase trading volumes, particularly in quarterly and monthly products, and to improve their liquidity.

The year 2025 also marks the end of the ARENH, which required EDF to sell around 130 TWh of its nuclear generation at a regulated price. These volumes were allocated without going through the wholesale markets. All contracts with delivery dates in 2026 and beyond are no longer subject to this mechanism, meaning that suppliers and consumers will source all their electricity from the market by that date, and EDF will sell all its production in excess of its own customers' consumption on the market, which partly explains the increase in the volumes of annual and monthly contracts.

The Figure 56 and Figure 57 illustrate the trend in market participants' open positions by category, for annual baseload products for delivery in France in 2026 and 2027 (including both physical and financial products). This shows the trend in open positions over the years preceding delivery.

The market participant categories have been defined as follows:

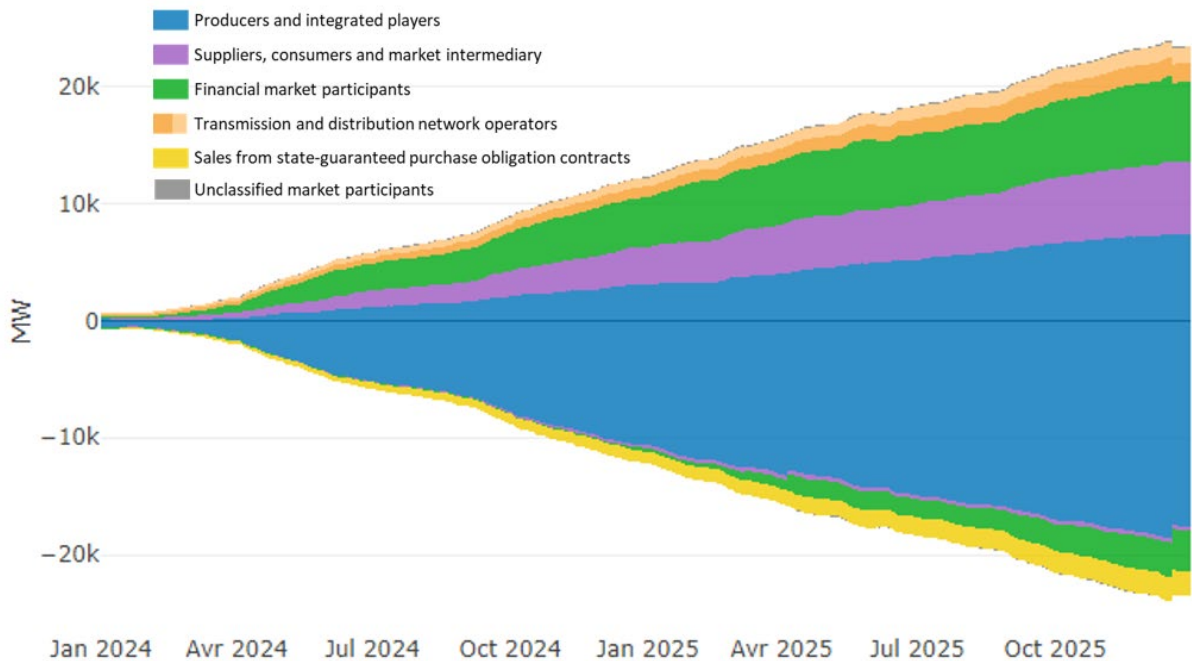
- integrated players and producers: vertically integrated players engaged in production and supply in France, or players engaged solely in production in France;
- suppliers, consumers and intermediaries: players engaged solely in supply activities, also known as 'alternative suppliers'; large consumers sourcing directly from wholesale markets; and players acting as intermediaries in the trading of wholesale energy products between producers and suppliers, or acting as buyers on behalf of large consumers (including so-called pre-brokerage and aggregation activities).
- financial players: players who do not have consumption points or generation plants in France but may be active on French wholesale markets across various time horizons and in cross-border electricity trading.
- Network operators: transmission or distribution network operators that source electricity on the futures markets to cover network losses.
- EDF OA: a regulated entity selling, on behalf of the State, the volumes of generation arising from contracts subject to a purchase obligation, in accordance with the terms established by the CRE⁽⁸⁹⁾.

On the 2026 base-year annual contract, market participants have been steadily building up their positions since September 2024 at a rate of approximately +1 GW of open positions per month, ending up with a total of 24.1 GW in open positions – an increase of 12.7 GW and 111 % compared with the open position on the 2025 base-year annual contract recorded at the end of 2025. Physical market participants account for the vast majority of open positions; however, financial market participants have nevertheless taken significant long positions since trading on the contract began.

In terms of the 2027-based annual product, momentum really began to build from the second quarter of 2025 onwards. Until then, only financial market participants had taken short positions; this trend reversed from April 2024 onwards, when integrated market participants significantly increased their short positions and suppliers increased their long positions. By the end of the year, total open positions for this contract stood at 14.0 GW.

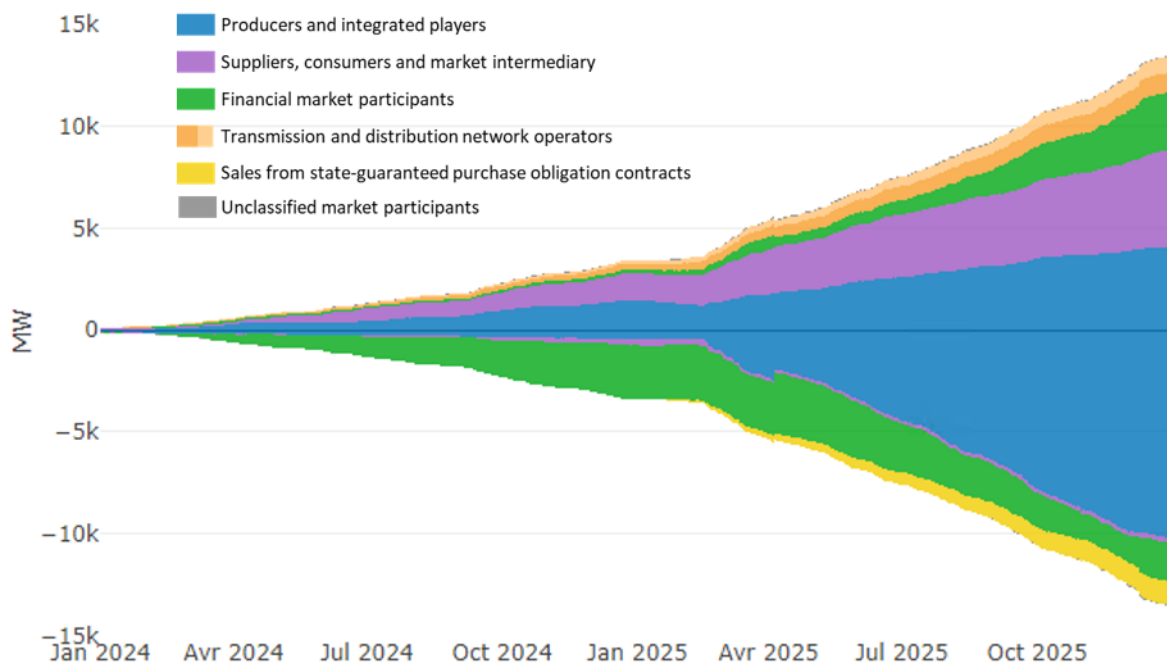
⁸⁹ CRE Decision No. 2019-259 of 28 November 2019 concerning the methodology for calculating the avoided cost of electricity generated under the feed-in tariff scheme

Figure 56 : Change in market participants' positions by category for the French 2026 annual base product (combining physical and financial products), from 1st January 2024



Sources: REMIT data, EDF OA – Analysis: CRE

Figure 57 : Changes in market participants' positions by category for the French annual contract with a 2027 base year (combining physical and financial delivery contracts), from 1st January 2024



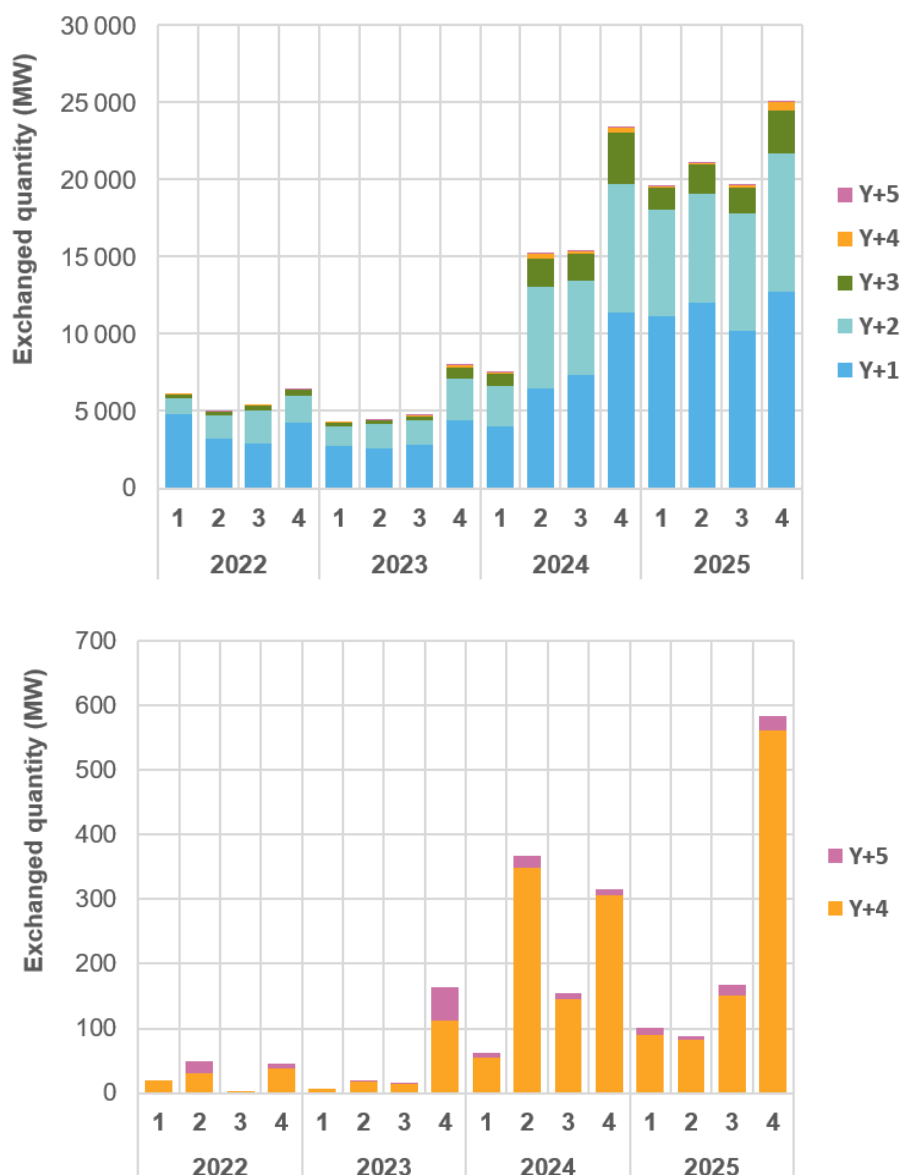
Sources: REMIT data, EDF OA – Analysis: CRE

The Y+3 and Y+4 maturities are growing strongly, whilst Y+5 remains very low

The 2022–2023 energy price crisis highlighted the need for electricity consumers who so wish to have stable and predictable prices in the medium and long term (three to five years) to protect themselves from volatility linked to short-term economic fluctuations.

Against this backdrop, EDF has been running daily auctions⁹⁰ since 27 September 2023 for the sale of physical products for delivery in the Y+4 and Y+5 years, with a volume capped at 5 MW/day for each of the two products. These auctions will run until *at least* the end of 2026.

Figure 58 : Quarterly total of quantities traded on annual Y+1 to Y+5 contracts on the French base market (in MW)



Source: REMIT, EEX, EDF OA data – Analysis: CRE

⁹⁰ <https://www.edf.fr/groupe-edf/edf-en-bref/optimisation-et-trading/appels-doffres-sur-des-rubans-annuels-deelectricite-a-horizon-y4y5> & <https://opendata.edf.fr/explore/dataset/prix-de-vente-suite-aux-encheres-rubans-d-edf-sa/table/?sort=-tr>

However, liquidity for maturities exceeding two years is low (Y+3 and Y+4), or even non-existent in France (Y+5), as shown in Figure 58 . Whilst traded volumes had risen sharply in 2024, they remain stable in 2025 compared with last year. Furthermore, activity has been highly uneven across the quarters, with the fourth quarter of 2025 accounting for a higher volume than the previous three quarters combined.

As part of its remit to oversee wholesale markets, the CRE pays particular attention to trading on these maturities and to the operation of EDF's auctions.

In summary, activity on the futures markets strengthened further in 2025, reaching 1,727 TWh in traded volumes, 22 % more than in 2024 – a year which had itself seen strong growth compared with previous years. This trend is evident in short-term contracts (annual and monthly maturities) but has not extended to long-term contracts (Y+3 and Y+4 maturities), where trading volumes have stagnated.

4. Balancing markets: system services, adjustment and reserves

Products traded on the balancing markets are classified under the REMIT Regulation as wholesale energy products. As such, the CRE is responsible for monitoring these markets. Furthermore, pursuant to the European Regulation on balancing⁹¹ (the '*Electricity Balancing*' Regulation, hereinafter the '*EB Regulation*') and Article L. 321-11 of the Energy Code, the CRE approves the operating rules for these markets, as proposed by RTE.

4.1. General principles and future developments of balancing markets

In order to balance consumption and generation at all times, RTE, as the body responsible for the stability of the electricity system, requests services from market participants that enable the modulation of electricity generation or consumption. To ensure this balance, various types of reserves can be mobilised: on the one hand, frequency system services comprising frequency containment reserve (FCR) and automatic frequency restoration reserve (aFRR), which can be activated automatically; and, on the other hand, tertiary reserves, which can be activated manually. Furthermore, balance responsible parties are financially incentivised to balance their feed-in and imports, on the one hand, and their off-take and exports, on the other, in advance of real time, in order to limit the imbalances that RTE must resolve during its operational window.

The activation and contractualisation of balancing reserves are moving towards the widespread adoption of market-based mechanisms, particularly in the context of the European integration of balancing markets. The CRE is heavily involved in these developments, which aim to improve the efficiency of the electricity system for the benefit of consumers, and ensures the smooth functioning of these markets.

4.1.1. Frequency containment reserve (FCR)

The frequency containment reserve aims to contain frequency deviations on the interconnected grid of continental Europe by adjusting the injection or withdrawal of the resources involved, in response to real-time frequency deviations. FCR is contracted by RTE with French and foreign balancing service providers through the '*FCR*' (*Frequency Containment Reserve*) cooperation, which RTE joined in early 2017. This cooperation involves daily tenders conducted jointly by the TSOs of nine countries (Germany, Austria, Belgium, Denmark, France, the Netherlands, Slovenia, Switzerland and the Czech Republic).

Only FCR capacity is subject to a market mechanism. Owing to the way in which this reserve is activated (automatically and in a decentralised manner, based on frequency deviations), there is no competition between energy activations, which are remunerated at the spot price. Furthermore, cross-border exchanges resulting from the activation of FCR are not constrained by cross-border transmission capacity, as they are accounted for within the safety margins at interconnections.

4.1.2. Automatic frequency restoration reserve (aFRR)

The automatic frequency restoration reserve is contracted by RTE in advance of real-time operations, via a daily tender process, and is then automatically activated by RTE by means of a signal sent to the resources participating in this reserve. Its purpose is to absorb discrepancies between the planned commercial exchanges at interconnectors and the actual exchanges.

⁹¹ [Commission Regulation \(EU\) 2017/2195 of 23 November 2017 on a guideline on electricity system balancing](#)

Historically, the real-time activation of this reserve involved sending a single signal to all participants, without any competitive bidding for activations. In November 2023, the energy-based activation of aFRR capacity evolved into a market-based mechanism following an economic order of precedence, in which energy activations are subject to bids submitted by market participants close to real time, with selection optimised by RTE. On 2 April 2025, RTE connected to the European PICASSO platform for aFRR activations (PICASSO: '*Platform for the International Coordination of Automated Frequency Restoration and Stable System Operation*'). Since that date, the optimisation of bid selection for aFRR activation has been carried out at European level *via* this platform.

The PICASSO platform came into service in June 2022 and enables the optimisation of aFRR activations at European level, taking into account all bids submitted across Europe, the real-time requirements of each TSO and the available cross-border interconnection capacities. To date, the German, Austrian, Czech, Dutch, Slovak, Belgian, Bulgarian, Lithuanian, Greek, Estonian, Latvian, Lithuanian, Spanish, Italian, Polish, Swedish and French TSOs are connected to the PICASSO platform.

RTE's activation of aFRR is also optimised through the European IGCC ('*International Grid Control Cooperation*') platform, which enables the offsetting of opposing demands between member countries, thereby limiting the simultaneous activation of aFRR in opposite directions on either side of national borders. RTE joined the project in 2016. To date, the TSOs of 24 countries participate in the IGCC platform.

4.1.3. Manual reserves (mFRR and RR)

Manual reserves are activated by RTE through the balancing mechanism – a market organised by RTE since 2004 – and *via* the European platform for the exchange of standard supplementary reserve products (hereinafter the 'TERRE platform'), to which RTE connected on 2 December 2020.

Under the balancing mechanism, participants – known as 'balancing providers' – submit bids to RTE, drawn from contracted or non-contracted resources. These balancing providers may be sites located in France (withdrawal, injection, storage), or operators or system operators based abroad, accessed via interconnectors. The bids specify technical activation conditions, a price for the activated energy and, where applicable, a start-up price. RTE activates this reserve according to its needs, whilst adhering to a 'technical-economic' priority system, which takes into account not only the price of the bids but also their technical characteristics. RTE activates bids to manage the supply-demand balance in France, but also to resolve any congestion on the grid, to increase the provision of system services, or to restore a sufficient level of available flexible capacity on the system.

Historically, all generation facilities connected to the transmission network were required by regulation to offer their available upward flexibility through bids submitted via the balancing mechanism. In December 2025, pursuant to the DADDUE Law of 30 April 2025, the CRE approved a significant extension of this obligation: all generators connected to the transmission and distribution networks with a capacity exceeding 10 MW are now required to make their technically available capacity available to RTE, for both upward and downward adjustments. This new provision in RTE's market rules came into force on 1 January 2026.

The European TERRE platform, meanwhile, was the result of a collaboration launched in 2014 by European TSOs that use supplementary reserve products to balance their zones, including RTE. The platform was officially launched on 15 January 2020, and up to six TSOs have been connected to it. RTE connected to this platform on 2 December 2020.

Any balancing player with balancing capacity that could be mobilised in under 30 minutes could participate, starting from 1 MW. The TERRE platform enabled, within the limits of available interconnection capacity after the close of intraday trading, the exchange of so-called 'standard' ancillary reserve bids, i.e. bids with certain predefined technical characteristics harmonised amongst the TSOs participating in the platform. The bid selection algorithm carried out an hourly optimisation, covering the four quarter-hours of the following hour, in order to select the bids to be activated. Balancing bids were remunerated at the marginal price of the zone in which they were activated.

Following a decision by all the regulators whose TSOs were participating in the TERRE platform, the platform ceased operations at the end of December 2025, as part of the reform of the electricity market organisation. Regulation (EU) 2024/1747, adopted on 21 May 2024, amends Article 8 of the Electricity Regulation, which now stipulates that *'from 1 January 2026, the closing time for the intra-day trading window between zones shall not be more than 30 minutes before real time'*. This new deadline is incompatible with the use of the TERRE platform, as it has an activation time of 30 minutes. RTE disconnected from the TERRE platform on 17 December 2025.

A European platform for trading standard manual frequency restoration reserve (mFRR) products (hereinafter the 'MARI platform') was also launched at European level in October 2022. This platform enables the Europe-wide trading of so-called 'standard' mFRR products, which can be activated within 13 minutes, for units of more than 1 MW and within the limits of available interconnection capacity after the close of intraday trading. RTE plans to connect to the MARI platform in April 2026.

Furthermore, in terms of contractual arrangements, part of the tertiary reserve is subject to capacity booking by RTE in advance of real-time operations. These reserves, known as manual frequency restoration and replacement reserves (hereinafter 'mFRR-RR'), enable RTE to have, at any time, 1,000 MW available for activation in under 13 minutes (mFRR) and an additional 500 MW available for activation in 30 minutes (RR). For 2025, RTE has contracted approximately half of the mFRR-RR through an annual tender. The other half has been contracted through a daily tender throughout the year.

4.1.4. The Balance Responsible Party (BRP) mechanism

The balance responsible party (BRP) mechanism provides financial incentives for market participants to match energy injections and withdrawals as closely as possible within their area of responsibility, as each grid connection point must be assigned to a balance responsible party's area of responsibility. Any imbalances (energy deficit or surplus for a given 15-minute period) are subject to a financial settlement representing the value of the balancing energy that RTE may have had to mobilise to resolve these imbalances.

Up to one hour before real time, generation schedules may be amended, and market participants may import or export energy via cross-border markets, thereby altering the RE spread and the 'physical' position of the France zone. After this point, and up until real-time, French market participants may continue to trade energy amongst themselves on the French intraday market, without being able to amend generation schedules or import/export plans. These latter trades therefore have an impact on the RE imbalances concerned, but not on the physical balance of the France zone. During this period, known as the 'activation window', RTE is therefore the only market participant to undertake 'physical' balancing actions.

Regulation (EU) 2024/1747, which came into force on 16 July 2024, provides for the harmonisation across Europe of the duration of transmission system operators' (TSOs) operational window to 30 minutes before real time. For RTE, this implies a reduction of thirty minutes in the operational window compared with the current situation. In order to prepare for this change under the right conditions, the CRE granted RTE a three-year derogation in July 2025 for the implementation of this change, extended to¹January 2029.

4.2. Review of the balancing markets in 2025

4.2.1. Overview

Table 17 below presents the physical and financial summary of the balancing reserves contracted by RTE, as well as the balancing energy activated.

Table 17 : Balancing reserves contracted by RTE, activated balancing energy and associated costs in 2025

2025		Contractualisation (paid by the TURPE)		Activations (paid by the RE)			
Reserve	Direction	MW (average)	M€	Upward	Downward	Upward	Downward
				GWh	GWh	M€	M€
FCR	Upward and Downward	516	56	547	535	27.1	-27.6
aFRR	Upward and Downward	767	381	1,286	1,535	235.6	
mFRR	Upward	1,500	25	1,801	1,181	484.8	-52.3
RR				97	2,327		
Total		2,783	462	3,731	5,578	667.6	

Source: RTE – Analysis: CRE

Contractual costs are covered by the tariffs for use of the public electricity transmission network (hereinafter ‘TURPE’).

The contracting cost for FCR, at €56 million, has increased by €30 million in 2025 compared with 2024, linked in particular to the increase in RTE’s requirement (average requirement of 516 MW in 2025 compared with 486 MW in 2024). Furthermore, the assets bidding for FCR now factor into their prices the opportunity to bid for aFRR, which is more lucrative.

The cost of contracting aFRR, at €381 million, has increased by €85 million in 2025 compared with 2024. In 2024, the reserve had been contracted for half the year on the basis of a regulated-price mandate, then on the basis of a daily marginal-price tender from June onwards. Operating under a full-year market-based contracting regime has led to an increase in contracting costs. This rise in costs is linked, on the one hand, to a still-limited competitive environment for this reserve – due in particular to the gradual roll-out of new certified assets – and, on the other hand, to the high costs of building up this reserve during spring and summer afternoons (bids from certified thermal assets for the aFRR include start-up costs and costs of selling at a loss on the wholesale markets during these periods). RTE’s demand is also set to rise in 2025, with an average requirement of 767 MW compared with 747 MW in 2024.

The cost of contracting mFRR and RR remained broadly stable in 2025, at €25 million (compared with €27 million in 2024).

Activation costs are borne by the balancing responsible parties through the imbalance settlement price, except for additional costs relating to activations for reasons other than balancing, which are borne by consumers via the TURPE.

The activation of balancing resources via the adjustment mechanism and the TERRE platform represented a net cost of €433 million in 2025, down from €497 million in 2024. The difference compared with 2024 is mainly due to the fall in the price of upwardly activated bids, which follows the downward trend in wholesale electricity prices.

Energy activated from the FCR is valued at the *spot* price. As activations from this reserve are, on average, centred on zero, their net value is close to zero.

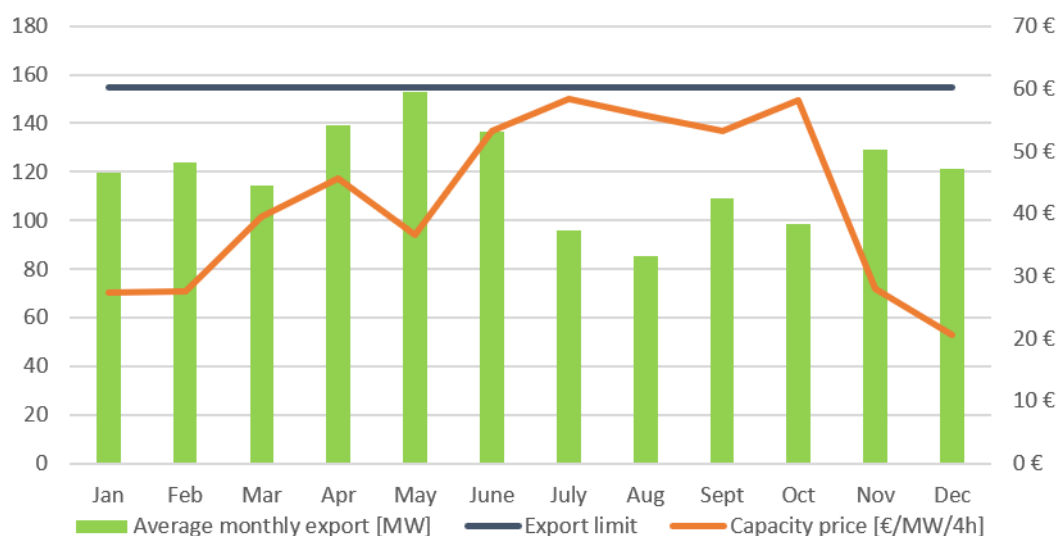
Finally, the net cost of aFRR energy activations is up, at €235.6 million compared with €160 million in 2024. On the one hand, the volumes activated have increased, particularly for upward regulation (1,286 MWh for upward regulation vs. 1,061 in 2024 and 1,535 MWh for downward regulation vs. 1,501 MWh). On the other hand, the growing contribution of storage assets (storage and demand response) is driving up costs, as their activation prices tend to be higher than those of conventional generation sources, for both upward and downward regulation. This phenomenon is exacerbated by the low volumes of 'open' bids (i.e. the provision of a certified asset not selected on the capacity market on D-1) currently offered by French market participants in the aFRR energy market. From April onwards, RTE's connection to the PICASSO platform has helped to partially limit this rise in activation costs by enabling bids to compete at a European level, although this remains limited due to the restricted interconnection volumes available at the balancing deadline.

4.2.2. The FCR cooperation

Since¹July 2020, FCR has been contracted through a daily cross-border tender held at 8.00 am each day for the following day, divided into six four-hour slots constituting six different products. In 2025, France's contracted FCR requirement stood at 516 MW.

Figure 59 shows the monthly averages for prices in France and the volumes of FCR traded by France within the FCR cooperation.

Figure 59 : FCR contract prices in France and net trading position in FCR Coopération (monthly average)



Source: FCR Co-operation (www.regelleistung.net) – Analysis: CRE

In 2025, the average price of contracted FCR in France *via* the FCR Coopération scheme stood at €42/MW/4h, up from €21/MW/4h in 2024.

Generally speaking, throughout 2025, contract prices rose sharply compared with 2024. The trend shows an increase in the costs of contracting FCR during the period from April to October. This rise, along with these fluctuations, correlates with those observed in the aFRR capacity market, as market participants now factor in an opportunity cost component relative to selection from the aFRR. This price dynamic tends to make the FCR market more attractive to market participants.

Furthermore, generally speaking, the French FCR market stands out within the FCR cooperation framework due to its high liquidity and large volumes of low-price bids, linked to the development and certification of a significant fleet of batteries dedicated to this reserve. France therefore remains a major

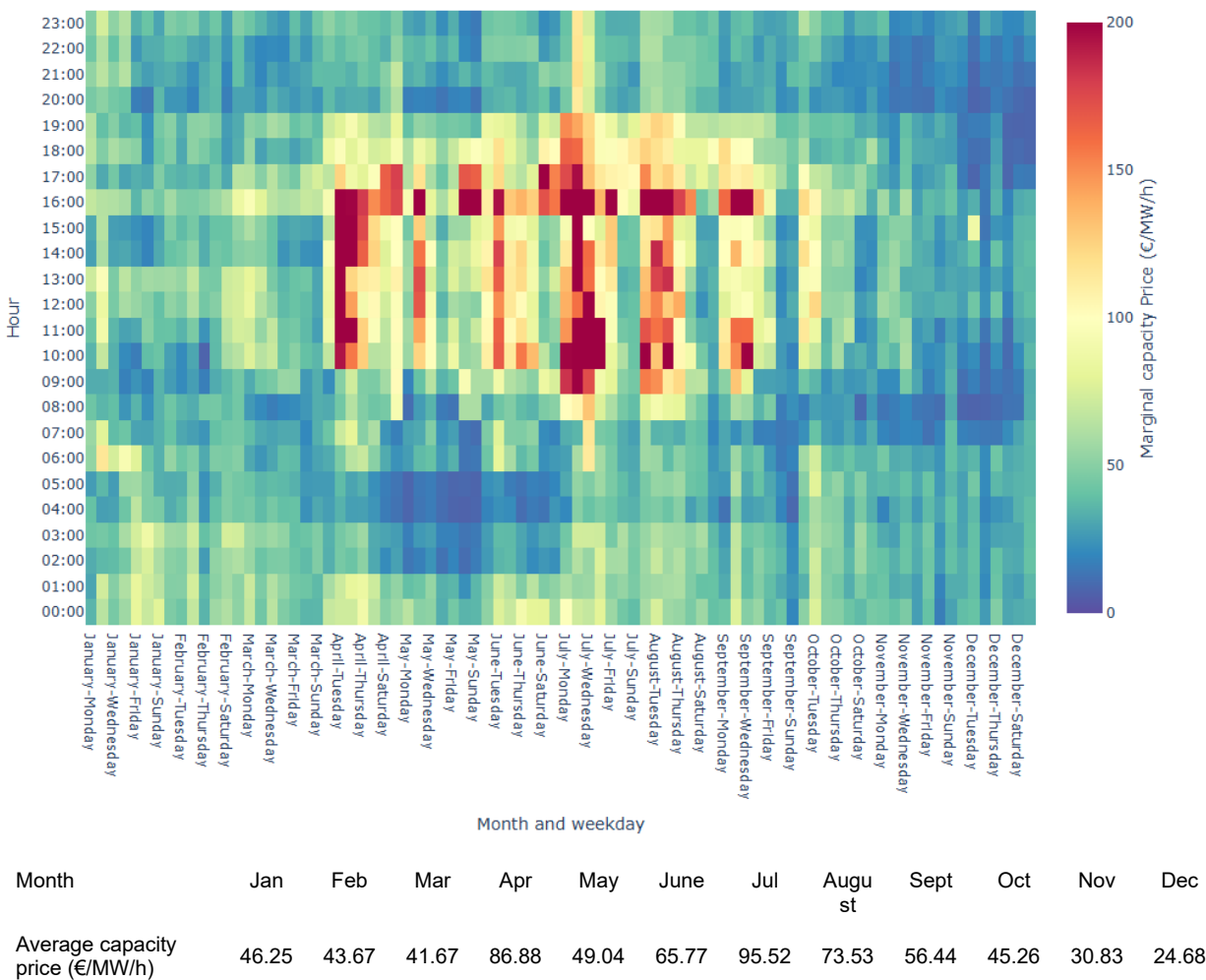
exporter of FCR to other European TSOs, with an average surplus of 118 MW (the average European contract price for 2025 standing at €71/MW/4h). These exports generated additional revenue for RTE of around €16 million in 2025.

4.2.3. Automatic frequency restoration reserve (aFRR)

As part of the development of an integrated European balancing market, the procedures for contracting and activating aFRR capacity – which historically operated under regulated arrangements – have evolved towards market-based mechanisms open to all assets certified for this reserve. Consequently, the market for the activation of aFRR energy opened in November 2023 and the market for contracting aFRR capacity reopened in June 2024. On 2 April 2025, RTE connected to the European PICASSO platform, thereby making the market for the activation of aFRR a European one (see section ‘4.1.2’).

Figure 60 shows the trend in capacity prices by hour and by day of the week for the year 2025.

Figure 60 : Average daily prices for aFRR capacity in 2025 by hour, month and day of the week (hours on the y-axis and days of the week on the x-axis)



Source: RTE – Analysis: CRE

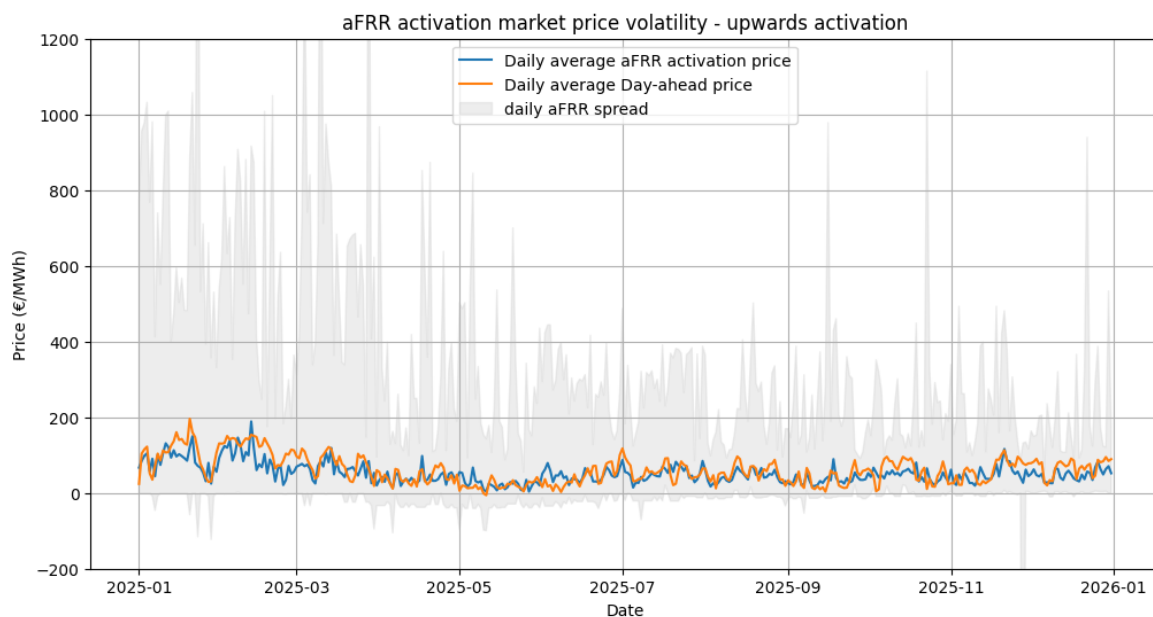
The price of aFRR capacity rises during the spring and summer months, reaching an average price of €95.52/MW/h in July. As this graph shows, high prices are mainly concentrated during the summer months at the start of the week between 9 am and 6 pm. These midday price peaks, when spot prices are low (due to low consumption and high solar generation), reflect the start-up and generation costs of power stations that are unprofitable on the wholesale markets but which nevertheless meet RTE's

capacity requirements. Furthermore, RTE's aFRR requirements are higher during the summer months, reaching, for example, up to 1,081 MW between 4 pm and 8 pm in 2025.

Towards the end of the year, however, prices fell significantly, almost returning to the previous regulated price (€24.68/MW·h in December, compared with a regulated price of €22.10/MW·h until mid-June 2024). These prices indicate that the market is gradually maturing during the winter period, in particular, because of the steady increase in the number of storage sites certified for aFRR. This competitive situation is reinforced during the winter by the seasonal rise in *spot* prices, which leads to thermal power stations returning to the wholesale market and thus to the provision of aFRR at a lower cost.

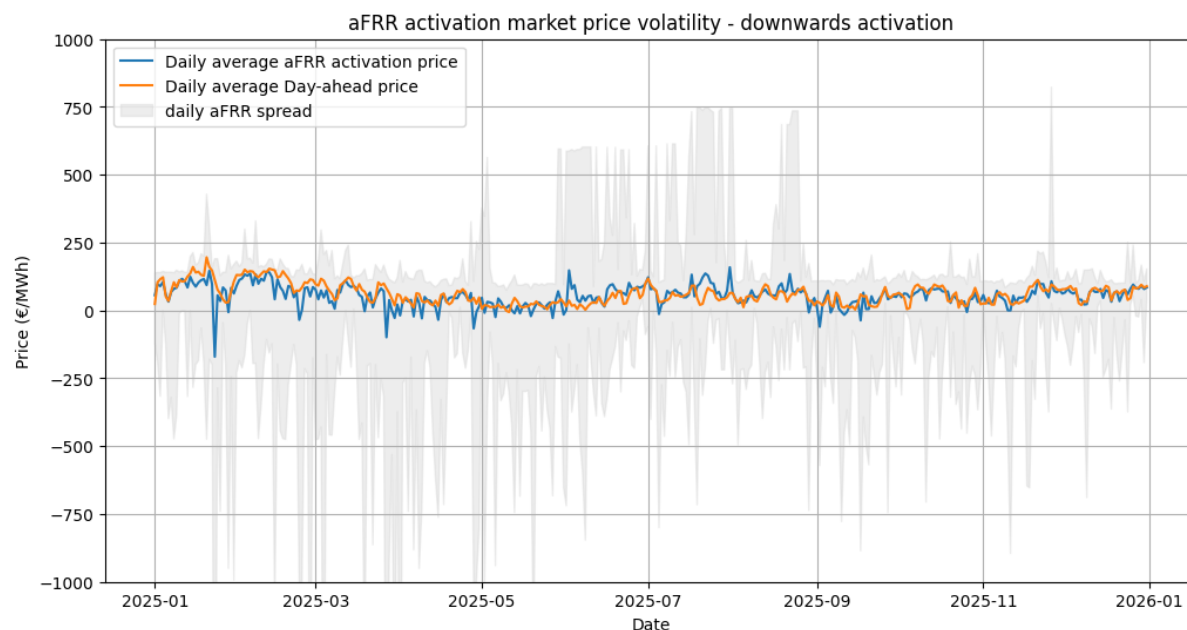
With regard to the market for the activation of aFRR in the form of energy, the Figure 61 and Figure 62 show the average daily prices for upward and downward aFRR activation compared with prices observed on the spot market, as well as their volatility⁹².

Figure 61 : Average daily prices on the aFRR activation market (upward)



Source: RTE – Analysis: CRE

⁹² The y-axes of these graphs have been truncated to improve readability.

Figure 62 : Average daily prices on the aFRR activation market (downward)

Source: RTE – Analysis: CRE

The graphs show that average aFRR activation prices are close to those of the daily wholesale market, both when prices are rising and when they are falling.

However, these charts reveal a significant daily price spread for aFRR activations, and therefore high volatility in marginal activation prices at this stage of the market opening. RTE's connection to the PICASSO platform on 2 April helped to reduce the volatility of activation prices, by bringing French bids into competition with those of other European market participants. This positive effect of the PICASSO platform is mainly observable in the upward direction. As France is a net exporter on the wholesale markets, the interconnectors are in fact regularly saturated in the export direction once the balancing deadline has been reached. In the upward direction, RTE therefore faces few restrictions on importing activations from abroad. The effect is, however, the opposite in the downward direction: due to the saturation of interconnections in the export direction, RTE has limited access to bids from foreign market participants and is more dependent on the price levels set by French market participants.

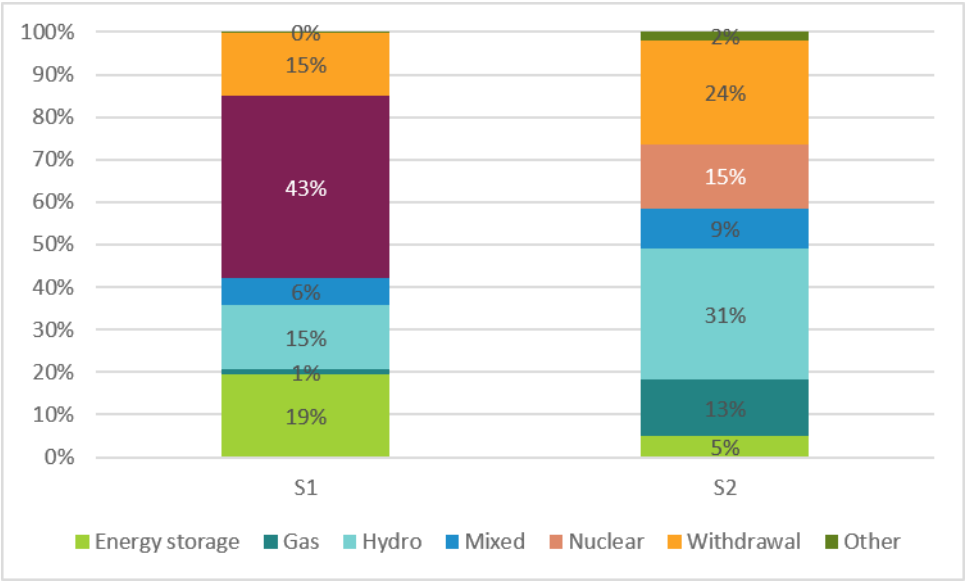
The Figure 63 and the Figure 64 show the marginality of the various energy sources in the aFRR for upward and downward flows respectively.

In the first half of 2025, batteries accounted for a share of marginal prices in line with that observed in the second half of 2024, with a margin ranging between 13% and 19% depending on whether prices were rising or falling (12% and 20% respectively in H2 2024). However, this share fell significantly in the second half of 2025, with a margin of 5% for both upward and downward adjustments. As the amount of activated energy from batteries did not decrease during the second half of the year, this trend could indicate a gradual improvement in the competitiveness of bids submitted by storage providers. The year 2025 is also notable for the increased role of draw-off sites in determining marginal prices for aFRR energy, reaching a marginality of up to 24% for upward regulation in the second half of the year (compared with 7% in 2024 over the same period). This notable trend reflects the growing contribution of this type of asset to the provision of aFRR, particularly on the upward side (around 4% of volumes activated on the upward side in Q4 2025), as well as the higher average prices quoted by this type of asset, due in particular to their operational and storage constraints. Finally, 2025 was marked by a significant increase in the CCG sector's margin during the second half of the year, reaching around 15% for both upward and downward adjustments (compared with a maximum of 6% in 2024), reflecting increased activation of this type of asset over this period.

In conclusion, the shift of balancing costs towards the aFRR continued to be observed in 2025, with the latter now accounting for 55 % of total balancing costs (compared with 41 % in 2024). This increase is mainly due to the first full year of the capacity market for aFRR being open (the market opened in June

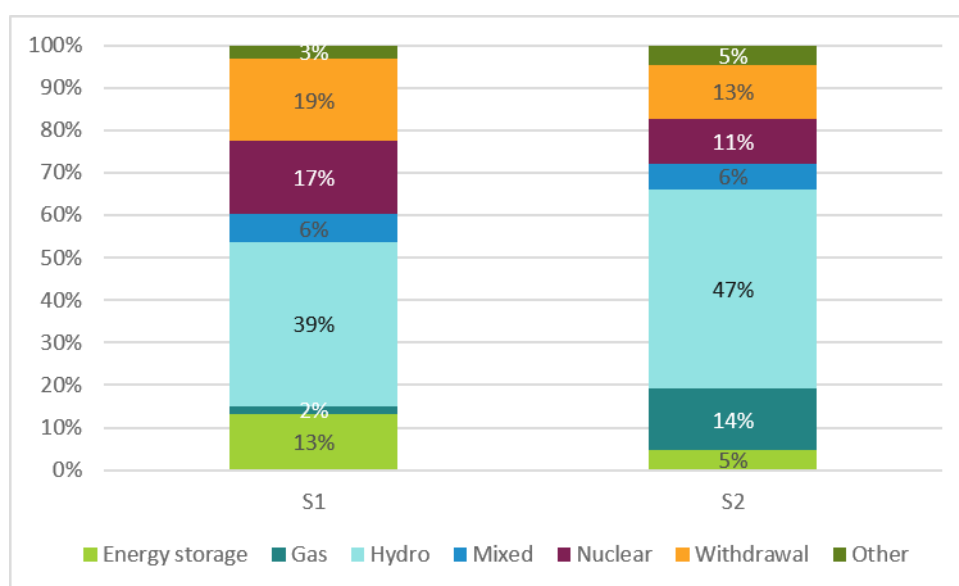
2024), with high prices observed on the capacity market during the summer season due to a lack of flexible assets to meet RTE’s requirements. This trend is steering players’ investments towards more responsive forms of flexibility, thereby paving the way for the balancing of the future. The market is indeed continuing to open up to this type of asset, notably with the ongoing development of storage sites: the capacity of batteries certified for aFRR rose from around 100 MW at the start of 2025 to around 340 MW by the end of December 2025, and this trend is continuing into the first few months of 2026. This expansion of battery capacity will free up conventional generation capacity, allowing it to utilise its full output on the energy market. As regards the energy activation market, 2025 was marked by RTE’s connection to the European PICASSO platform, which helped to reduce the volatility of upward price movements for activations by enabling bids from French market participants to compete with those from European counterparts.

Figure 63 : Marginality of the various sectors in the aFRR activation market on the upside



Source: RTE – Analysis: CRE

Figure 64 : Marginality of the various energy sources on the aFRR activation market (upward)



Source: RTE – Analysis: CRE

4.2.4. The balancing mechanism

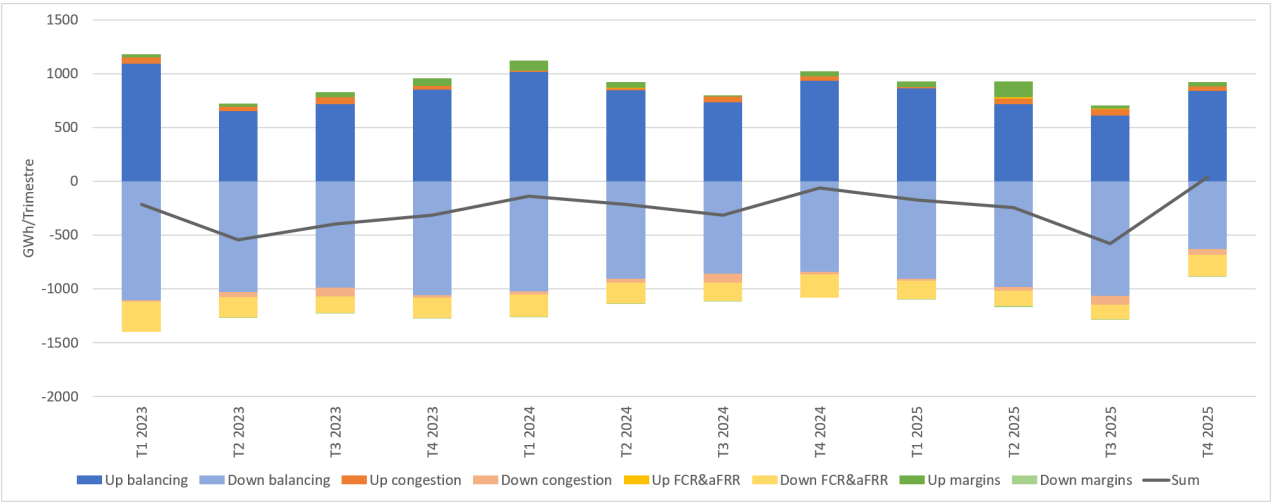
Figure 65 shows the volumes of energy activated upwards and downwards by RTE since 2023 for various reasons.

Activations to manage system balance (reason ‘P=C’) account for the majority of activations, but the replenishment of system services (‘SSY’) constitutes a significant cause of downward activation (17% of downward activation volumes in 2024 and 15% in 2025). Activation for congestion (‘Network’) and margin (‘Margin’) reasons accounts for small volumes. Net activated volumes are on average negative, reflecting a tendency among balance responsible parties to over-hedge for fear of having to pay a settlement price for significant negative imbalances.

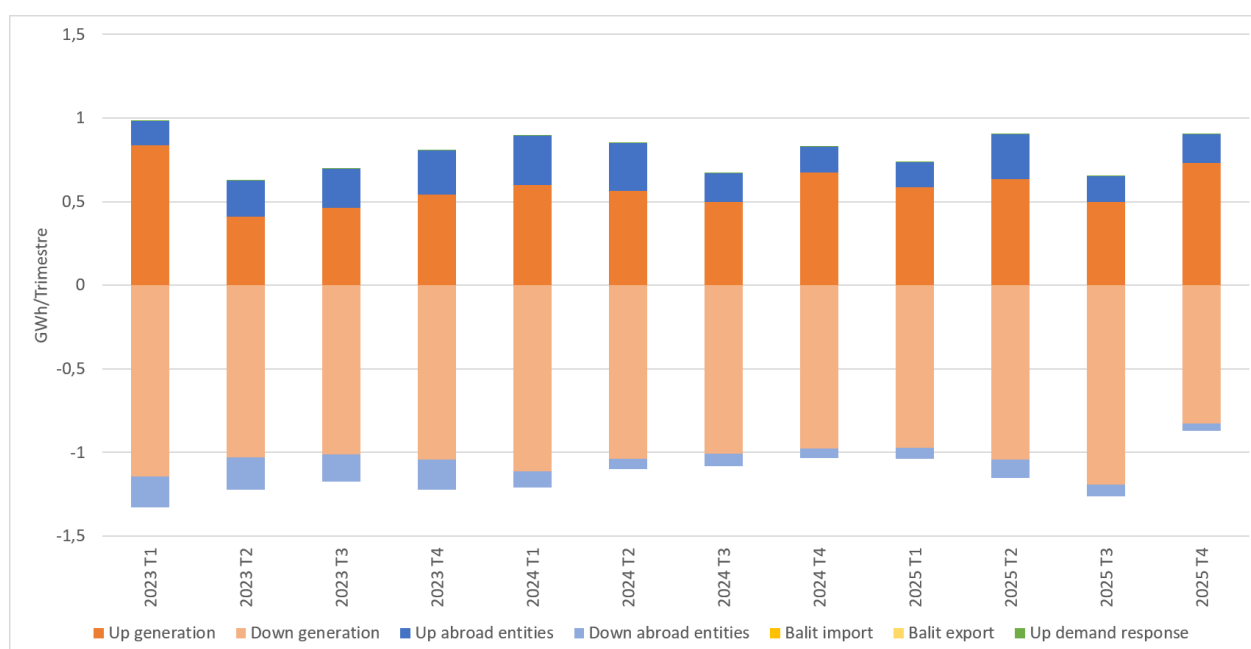
Figure 65 shows the average volumes of balancing by entity type and direction of activation.

Injection-type balancing entities (generation groups) play a dominant role in the balancing mechanism, accounting for 76 % of upward activations and 93 % of downward activations in 2025. Load shedding accounts for only 0.2 % of the volumes activated by RTE in 2025. Balancing entities located abroad (‘exchange points’) account for a significant proportion of activations under the balancing mechanism, although this is slightly down on 2024 (28 % of upward activations in 2024 compared with 23 % in 2025).

Figure 65 : Monthly activation volumes by reason and net volume



Source: RTE – Analysis: CRE

Figure 66 : Adjustment volumes by type of entity

Source: RTE – Analysis: CRE

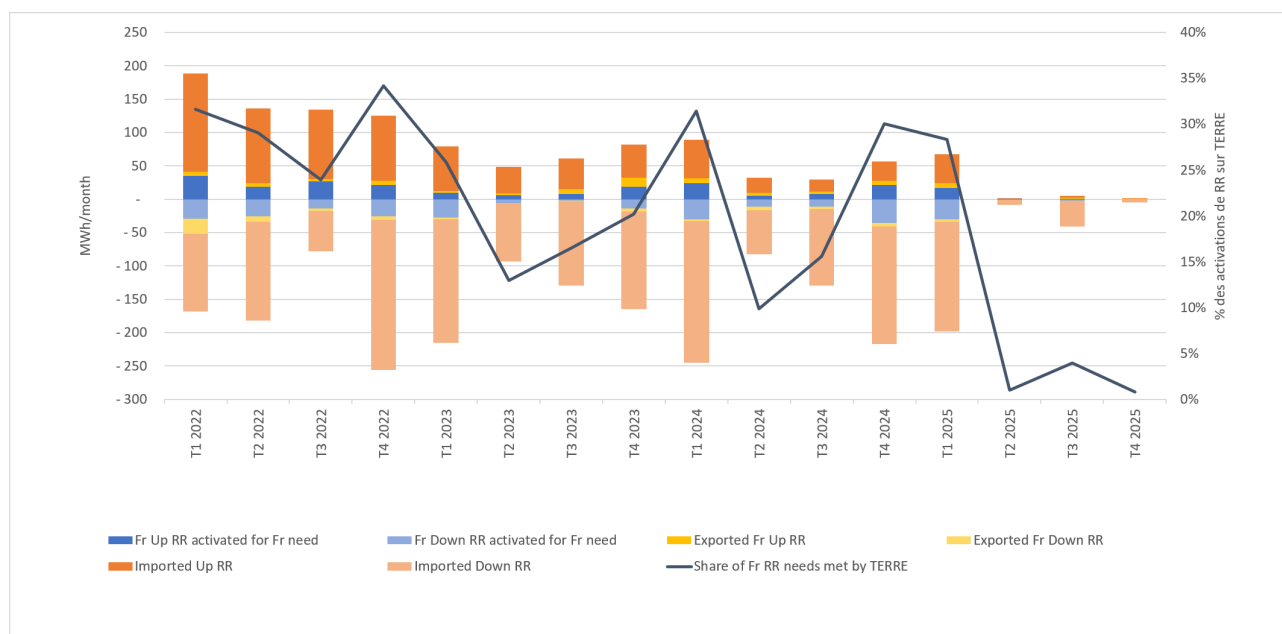
4.2.5. The TERRE platform

In December 2020, when it first connected, RTE was only connected to the TERRE platform for 4 hours a day. RTE's participation in the TERRE platform has increased gradually, reaching usage in every time step since 21 March 2022. The figure below shows the monthly volumes activated by RTE on the TERRE platform.

In the first quarter of 2025, RTE activated, on average, 28 % of its supplementary reserve requirements on the TERRE platform. The liquidity of French bids on the platform remained low, and the majority of French demand was met by foreign bids, which were, on average, cheaper than those from French market participants.

Following a decision by all the regulators whose TSOs participated in the TERRE platform, the platform was permanently closed at the end of 2025, in line with the reform of the organisation of the European electricity market (see 4.1.3). During the last three quarters of 2025, RTE's use of the platform had already been significantly reduced. This phased withdrawal led to a shift in activations to the balancing mechanism.

Figure 67 : Volumes activated on the TERRE platform



Source: RTE – Analysis: CRE

4.3. The CRE's monitoring of balancing markets

Balancing markets play a major role in the smooth operation of the electricity system, and this role will become increasingly important as less controllable and decentralised generation sources are developed.

The CRE reminds market participants that balancing markets are wholesale energy markets. The actions of market participants in these markets are therefore subject to the obligations and prohibitions set out in the REMIT Regulation. In particular, ACER has issued⁹³ setting out examples of practices which, in certain circumstances, may be considered abusive within the meaning of the REMIT Regulation.

RTE, as a PPAET, plays a central role in the monitoring of these markets and works closely with the CRE to ensure compliance with REMIT on balancing markets.

In this context, the CRE regularly analyses the functioning of the balancing markets, paying particular attention to new markets, such as the aFRR energy market, which opened in November 2023, and the aFRR capacity market, which reopened in June 2024. The CRE also monitors bids activated in France on the European TERRE, PICASSO and MARI platforms, and has powers of investigation and sanction in relation to the balancing markets.

The CRE once again reminds market participants that it is prohibited to procure supply on the French intraday market in order to respond to a request from RTE via the balancing mechanism. Such behaviour is explicitly contrary to the RE-MA rules (Article 4.2.1.2): *'The activation of a bid from an exchange point balancing entity must not result in procurement (for upward bids) or a sale (for downward bids) by the balancing participant on the French intraday market, whether through an explicit flow or an implicit nomination.'*

⁹³ ACER reported on these practices in issue No 24 of its quarterly newsletter, ACER REMIT Quarterly Q1 2021: https://documents.acer-remit.eu/wp-content/uploads/REMITQuarterly_Q1_2021_1.0.pdf

5. The capacity remuneration mechanism

In its decision of 8 November 2016, following a year-long investigation, the European Commission authorised, under EU state aid rules, the French capacity mechanism⁹⁴ for a period of 10 years. Implementation of the current mechanism began in December 2016, with the first year of supply (AL) in 2017, and the final period covered will end in March 2026. A new capacity mechanism will take over from November 2026, following authorisation by the European Commission on 22 December 2025.

5.1. A reminder of the key principles of the French capacity mechanism

The provisions of Articles L. 335-1 et seq. of the Energy Code establish a capacity obligation scheme. This stipulates that 'each electricity supplier shall contribute, in terms of power and energy, to the security of electricity supply in mainland France, in accordance with the consumption patterns of its customers'. Each supplier is therefore required to secure capacity guarantees to cover the consumption of its customer portfolio during periods of peak national demand. These guarantees may be obtained by investing in generation or demand response facilities, or by purchasing them from capacity operators and on the market. The cost of this obligation, introduced to ensure security of supply for consumers, is passed on freely by suppliers to their customers.

Obligated parties and capacity operators may trade capacity guarantees bilaterally, on the over-the-counter (OTC) market, or via the market organised by EPEX SPOT in the form of auctions. The rules governing the capacity mechanism stipulate a minimum of 15 auctions prior to the delivery year. Auctions also take place during and after the delivery year.

The price of capacity guarantees is determined by the interaction, in the market, between the supply from operators—who commit to the availability of their resources—and the demand from obligated parties, corresponding to their consumers' contribution to the risk of system failure.

In theory, the price of capacity should be set at the cost of the least expensive resource capable of meeting the security of supply criterion. The rules defining the administered price, which acts as a price cap on the capacity mechanism's auctions, are consistent with the tension that is likely to arise in the event of under-capacity in the generation fleet: '[the administered price] corresponds to the minimum annual capacity revenue required to ensure the economic viability of developing or maintaining the capacity necessary to meet, on average, the security of supply criterion defined by the public authorities over the medium-term horizon covered by the Forecast Report'.

The main principles of the new capacity mechanism are set out in section 19 of the No. 2025-127 of 14 February 2025 on the Finance Act for 2025. The mechanism is becoming centralised and the role of the 'obligated party' is being abolished. For each delivery period – which will now cover one electricity winter – it is the responsibility of the transmission system operator, RTE, to enter into contracts with operators for the required generation, storage and demand response capacity at the French grid level through a limited number of auctions. The resulting cost of the capacity mechanism is shared amongst suppliers, based on the consumption of their customer portfolios during periods of strain, and takes the form of a levy. Suppliers are then free to choose how to pass this levy on to end consumers. Finally, the CRE's CoRDs will be able to impose sanctions on operators who fail to comply with certain obligations specific to the capacity mechanism (the obligation to obtain certification and to offer a minimum volume at auction), as well as breaches covered by REMIT (the prohibition of insider trading and market manipulation, and the obligation to disclose inside information). Decree No. 2025-1441 of 31 December 2025 on the capacity mechanism sets out the regulatory framework for the implementation of the Act.

5.2. In 2025, the price of capacity remained stable and particularly low

The year 2025 was primarily characterised by auctions for the 2026 delivery year, which was a shortened year (January to March 2026). Consequently, the CRE had revised the administered price to €44,000/MW instead of €60,000/MW in previous years.

⁹⁴ The operating principles of this market were outlined in the 2016–2017 monitoring report on the functioning of wholesale markets (Section 3, page 45: 2.5 First trades in capacity guarantees in 2016).

Table18: Clearing prices and volumes traded for auctions relating to the 2026 delivery year

AL 2026	6 March 2025	22 May 2025	19 June 2025	18 September 2025	23 October 2025	4 December 2025
Price (€/MW)	3,152.3	3,646.2	3,299.9	3,469.6	2,620.0	98.6
Volume (MW)	2,917.3	2,708.4	2,653.1	2,896.7	3,721.9	10,345.3

Source: EPEX SPOT – Analysis: CRE

The average capacity price for the 2026 Allocation Round (AL 2026), used as a reference price for additional capacity procurement in regulated electricity supply tariffs, is €4,401/MW, compared with €14,652/MW for AL 2025 and €27,094/MW for AL 2024. The capacity price has therefore reached an all-time low.

The price set by the last auction prior to the delivery year is the imbalance settlement price (PREC), which serves as a benchmark for:

- the settlement of rebalancing costs, when operators or obligated parties reassess their level of certified capacity or their capacity requirements;
- the settlement of imbalances, which takes place in AL+3 on the basis of actual figures;
- the capacity component of the TRVE cap⁹⁵;
- long-term and demand response tenders (AOLT and AOE), in the calculation of the supplementary remuneration.

The price resulting from this PREC auction reached €98.6/MW in December 2025 for AL 2026, a very slight increase following the exceptional PREC auction in the previous AL (zero price).

Such a price reflects a particularly relaxed situation in terms of peak supply-demand balance. Market participants anticipate a very low probability of strain for the 2026 AL, in line with market fundamentals which, in particular, show no increase in peak consumption and nuclear generation that continues to grow.

The CRE points out that even if the equilibrium price in the PREC auction is very low, in accordance with the rules of the capacity mechanism, a system imbalance of more than 2 GW would cause the PREC to rise to the administered price of €44,000/MW. Furthermore, operators remain incentivised to make their capacity available during periods of strain through energy signals.

5.3. The low capacity price for the 2026 delivery year once again highlights the significant margins available within the electricity system

As with the 2024 and 2025 Annual Lists, capacity supply significantly exceeds demand and the overall balance is very favourable in terms of security of supply. The high availability of the nuclear fleet continued in 2025, with generation at its highest level since 2019, driven by strong operational performance. However, the Flamanville EPR is expected to be out of service for most of the shortened AL 2026 period. Consumption is stable compared with last year, but remains around 6 % below pre-health and energy crisis levels, suggesting comfortable margins for the electricity system during AL 2026.

⁹⁵ Prior to the 2024 Allocation Round (AL), only the last auction before the AL was taken into account for the capacity share. To take account of the auction schedule, the average of the last two auctions was subsequently used.

However, the fall in electricity prices observed since spring 2023 and which continued until the end of 2025 has reduced the profitability of thermal power generation. The CRE notes that *the 'missing money'*⁹⁶ for thermal technologies is once again positive in 2025 for the year 2026, with the exception of the most efficient combined-cycle gas-fired power stations. However, the CRE has no insight into how capacity operators facing positive *'missing money'* intend to recoup their costs in 2026 under the current mechanism and the new mechanism.

The level of capacity certification (Table 19) compared with RTE's estimated capacity obligation (Table 20) illustrates how the margins of the electricity system are constituted for the 2026 AL. The CRE points out that any comparison with previous ALs must take into account the fact that the 2026 AL is shorter and does not cover the same load periods. The certified capacity is slightly lower but remains stable across all energy sources, with the exception of nuclear power, which contributes 2.3 GW less at peak (an effect that cannot be attributed to any particular plant or plants), interconnections (-0.7 GW due to the reduced contribution from the interconnection with the CORE region and Italy), and the renewable energy sector, which is up by 0.4 GW, driven by batteries (+0.3 GW).

Table 19 : Capacity certification levels for AL 2024 and AL 2025

Sector	March 2024 (AL 2024) (GW)	March 2025 (AL 2025) (GW)	March 2026 (AL 2026) (GW)	Trends 2025–26 (GW)
Nuclear	43.9	49.5	47.2	-2.3
Lake/WTP	10.2	9.8	9.5	-0.3
Renewable energy + other of which batteries	16.6 0.7	15.8 0.8	16.2 1.1	+0.4 +0.3
Write	3.5	3.7	3.5	-0.2
Gas	7.1	7.8	7.9	+0.1
Coal	1.4	1.7	1.0	-0.7
Petrol/heating oil	1.8	1.7	1.8	+0.1
Total – excluding interconnections	84.6	90.0	87.1	-2.9
Interconnections	7.7	10.7	10.0	-0.7
Total – including interconnections	92.3	100.7	97.1	-3.6

Source: RTE – Analysis: CRE

⁹⁶ The revenue required to keep an existing generation asset in operation or to construct a new one, but which is not provided by the energy market. The methodology is detailed in the 2019 and 2018 wholesale market monitoring reports.

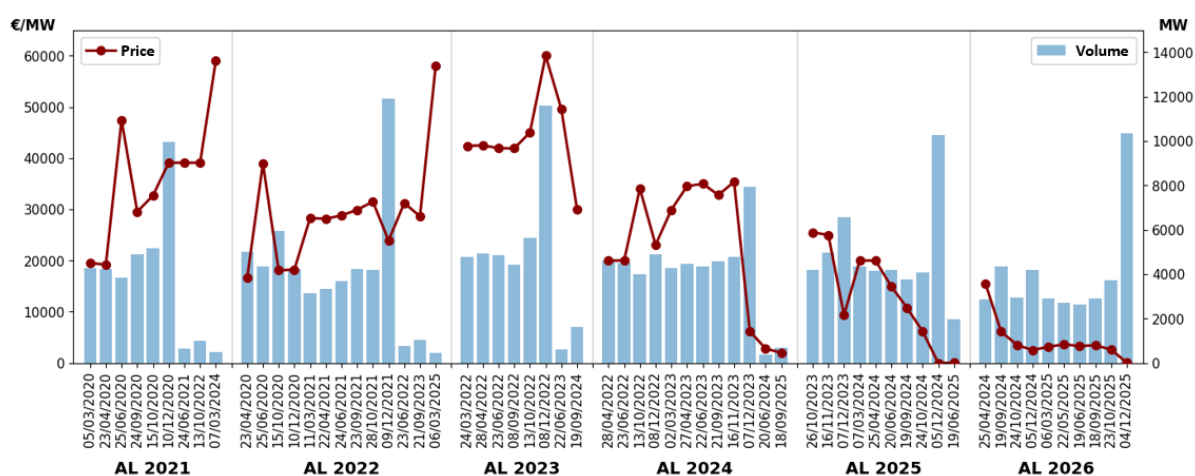
Table 20 : Estimate of the capacity requirement updated by RTE

	Estimated requirement for the 2024 financial year (GW)	Estimated capacity requirement for AL 2025 (GW)	Estimated capacity requirement for AL 2026 (GW)	Trend 2025–26 (GW)
Low trajectory	90.0	90.2	91.2	+1.0
Central trajectory	91.6	92.9	95.0	+2.1
High trajectory	93.8	93.9	96.3	+2.4

Source: RTE – Analysis: CRE

Given the trend in consumption (compared with pre-crisis levels), the capacity market is likely to be 'long' *in hindsight*. The capacity price for the 2026 allocation year should therefore remain low during the balancing auctions.

As for the winter of 2026/27, the system appears to have sufficient margins due to good nuclear availability and the continued development of renewable energy generation capacities. Furthermore, the anticipated profitability of thermal power generation could continue to deteriorate with the fall in wholesale prices observed since 2023, and the end of the lingering effect of high prices in early 2024. Finally, the redesign of the new capacity mechanism, which is becoming centralised, could also have a significant impact on the price of capacity.

Figure 68 : EPEX SPOT capacity auction prices

Source: EPEX SPOT – Analysis: CRE

KEY FIGURES

1. Gas markets

Table 21 : Gas market fundamentals in France (commercial flows)

Market fundamentals	Yearly values			Year-on-year change 2025/2024	
	2023	2024	2025	As a percentage	Value
Entry and exit flows					
Supply (TWh)	633	596	596	0%	0
Storage withdrawals	138	156	140	-10%	-16
Imports	486	428	442	3%	14
<i>Pipeline</i>	234	217	193	-11%	-24
<i>LNG</i>	252	211	249	18%	38
Production	9	12	14	17%	2
Demand (TWh)	633	596	596	0%	0
Storage injections	137	124	135	9%	11
End consumers demand	381	361	350	-3%	-11
<i>Distribution customers</i>	237	235	231	-2%	-4
<i>Customers directly connected to the transmission system</i>	145	125	119	-5%	-6
Exports	112	109	109	0%	0
Other	2	2	2	0%	0
Deliveries at the PEG (TWh)	948	980	1,126	15%	146

Sources: NaTran, Teréga – Analysis: CRE

Table 22 : Gas prices in France

Price	Yearly values			Year-on-year change 2025/2024	
	2023	2024	2025	As a percentage	Value
Spot prices (€/MWh)					
PEG day-ahead (avg.)	38.9	34.1	35.4	4%	1.3
TTF-PEG day-ahead spread (avg.)	1.7	0.3	0.8	148%	0.5
Forward prices (€/MWh)					
PEG M+1 (avg.)	39.9	34.1	35.4	4%	1.3
PEG Y+1 (avg.)	50.6	36.2	32.8	-9%	-3.4
TTF-PEG M+1 spread (avg.)	1.5	0.5	0.9	94%	0.4
Winter-summer spread at the PEG (avg.)	3.5	0.9	-0.3	-134%	-1.3

Source: EEX – Analysis: CRE

Table 23 : Gas trading in France

Trading activity	Yearly values			Year-on-year change 2025/2024	
	2023	2024	2025	As a percentage	Value
Natural gas exchanged at the PEG (TWh)	2,038	2,010	2,397	19%	387
As a % of national consumption	535%	557%	685%		128pp
Trading volumes on the French market					
Spot market (TWh)	388	334	389	16%	55
Within-day	53	45	51	14%	6
Day-ahead	231	203	246	21%	42
Exchanges (DA, WD, WE, other spot)	315	261	276	6%	15
Brokers (DA, WD, WE, other spot)	45	39	44	13%	5
Bilateral (DA, WD, WE, other spot)	28	34	68	100%	34
Forward market (TWh)	1,650	1,676	2,008	20%	332
M+1	376	379	502	33%	123
Q+1	155	147	185	26%	39
S+1	224	182	155	-15%	-27
Y+1	47	57	141	148%	84
Exchanges (all maturities)	78	77	88	14%	11
Clearing (all maturities)	430	301	290	-4%	-11
Brokers (all maturities)	800	909	1,259	39%	350
Bilateral (all maturities)	342	389	370	-5%	-19
Number of transactions on the French market					
Spot market (in thousands)	255.0	210.5	214.4	2%	3.9
Intraday	50.0	43.2	43.4	1%	0.3
Day-ahead	164.1	134.0	136.7	2%	2.7
Exchanges (DA, WD, WE, other spot)	238.6	196.3	195.5	0%	-0.8
Brokers (DA, WD, WE, other spot)	13.8	10.9	14.7	35%	3.9
Bilateral (DA, WD, WE, other spot)	2.6	3.3	4.2	26%	0.9
Forward market (in thousands)	30.6	32.2	38.2	19%	6.0
M+1	7.9	8.8	15.5	76%	6.7
Q+1	1.7	1.6	2.0	20%	0.3
S+1	1.6	1.2	1.2	-3%	0.0
Y+1	0.9	0.8	1.2	53%	0.4
Exchanges (all maturities)	5.6	6.5	12.3	89%	5.8
Clearing (all maturities)	3.9	2.2	2.3	6%	0.1
Brokers (all maturities)	9.4	10.6	13.7	29%	3.1
Bilateral (all maturities)	11.8	12.9	9.9	-24%	-3.1

Source: REMIT data – Analysis: CRE

2. Electricity markets

Table 24 : Installed generation capacity in France

	Yearly figures			Year-on-year change 2025 / 2024	
	2023	2024	2025	As a percentage	By value
Installed capacity (GW)	149.1	155.6	164.0	5.4%	8.4
Nuclear	61.4	61.4	62.3	1%	1
Hydro	25.7	25.7	25.7	0%	0
Fossil fuel-fired thermal	17.5	17.5	17.5	0%	0
Coal	1.8	1.8	1.8	0%	0.0
Oil	3.1	3.1	3.1	0%	0
Gas	12.6	12.6	12.6	0%	0.0
Renewables (excluding hydro)	44.5	51.0	58.5	15%	7.5
Wind power	23.3	24.4	25.8	6%	1.4
Photovoltaics	19.0	24.3	30.4	25%	6.1
Bioenergy	2.2	2.3	2.3	0%	0.0

Source: RTE – Analysis: CRE

Table 25 : Production by different technology sectors in France

	Yearly figures			Year-on-year change 2025 / 2024	
	2023	2024	2025	As a percentage	By value
Production (TWh)	468.9	539.0	547.5	1.6%	8.6
Nuclear	320.4	361.7	373.0	3%	11.3
Hydro	56.8	75.1	62.4	-17%	-12.7
Fossil fuel-fired thermal	30.5	20.1	18.7	-7%	-1.3
Coal	0.9	0.7	0.7	0%	0.0
Oil	1.7	1.8	1.6	-13%	-0.2
Gas	27.9	17.5	16.4	-6%	-1.1
Renewables (excluding hydro)	83.7	82.1	93.4	14%	11.3
Wind power	50.9	46.8	49.6	6%	2.8
Photovoltaics	22.5	24.8	32.9	33%	8.1
Bioenergy	10.3	10.5	10.9	4%	0.4
Gross consumption, of which losses (TWh)	438.5	442.3	446.1	1%	3.8

Source: RTE – Analysis: CRE

Table 26 : Imports and exports in France

	Yearly figures			Year-on-year change 2025 / 2024	
	2023	2024	2025	As a percentage	In value
Cross-border balance (TWh)					
CWE	2.5	27.2	23.1	-15.1%	-4.1
Italy	20.0	22.3	26.2	17.5%	3.9
Spain	-1.9	2.8	0.2	-92.8%	-2.6
Switzerland	16.4	16.7	20.1	20.4%	3.4
Great Britain	13.3	20.1	22.6	12.4%	2.5
Total (TWh)	50.3	89.1	92.2	3.5%	3.1

Source: RTE – Analysis: CRE

Table 27 : Injection and Withdrawal Balances for the French electricity system

	Yearly figures			Year-on-year change 2025 / 2024	
	2023	2024	2025	As a percentage	By value
Injections, in TWh					
Production excluding ARENH, in TWh	345	385	388	1%	-3
ARENH, in TWh	129	125	125	0%	0
Imports, in TWh	42	23	23	0%	0
Withdrawals, in TWh	516	533	536	0.6%	3
End-user consumption, in TWh	389	384	384	0%	0
Exports, in TWh	93	114	116	2%	2
Losses, in TWh	34	35	36	3%	1

Source: RTE – Analysis: CRE

Table 28 : Spot and forward prices on the French electricity market

	Yearly figures			Year-on-year change 2025/2024	
	2023	2024	2025	As a percentage	By value
Short-term market price					
Intraday price in France, €/MWh	98.4	57.8	61.4	6%	3.6
France Day-Ahead Price €/MWh	96.9	57.7	61.1	6%	3.3
France Day-Ahead Peak Price €/MWh	109.6	64.2	62.4	-3%	-1.8
France-Germany Day-Ahead Base Spread €/MWh	1.7	-21.8	-28.2	29%	-6.4
France-Germany Day-Ahead Peak Spread €/MWh	3.4	-24.0	-29.9	25%	-5.9
France-Germany Day-Ahead Convergence Rate %	29%	14%	10%	-29%	-0.04
Futures market prices					
M+1 France price (€/MWh)	108.9	61.4	59.3	-3%	-2.1
France-Germany M+1 spread (€/MWh)	-29.2	-17.3	4.9	-128%	22.2
Q+1 price in France, €/MWh	128.2	72.7	61.4	-16%	-11.3
France-Germany Q+1 spread (€/MWh)	-26.4	-10.4	11.3	-209%	21.7
Y+1 price in France (€/MWh)	162.7	76.7	60.9	-21%	-15.7
France-Germany Y+1 spread (€/MWh)	-26.4	-12.0	25.9	-316%	37.9

Sources: Argus, EEX, EPEX SPOT, Nord Pool – Analysis: CRE

Table 29 : Spot and forward volumes on the French electricity market

	Yearly figures			Year-on-year change 2025/2024	
	2023	2024	2025	As a percentage	By value
Intraday Market – TWh (continuous and auctions)					
Purchases	20.4	24.9	28.8	16%	4.0
Sales	19.0	24.2	28.4	18%	4.2
Spot market – TWh					
Purchases	117.6	148.2	139.2	-6%	-8.9
Sales	117.8	144.4	153.0	6%	8.5
Futures markets					
Volumes (TWh)	673.0	1,412.7	1,728.3	22%	316
Stock market (financial)	175.4	461.2	683.5	48%	222.29
Brokers (financial)	414.4	816.6	866.9	6%	50.33
Brokers (physical)	60.0	109.5	148.4	36%	38.95
EDF OA bid (physical)	23.1	25.4	29.5	16%	4
Y+1 Product					
Volumes (TWh)	123.2	224.2	263.4	18%	39.2
Q+1 Product					
Volumes (TWh)	81.9	167.3	219.2	31%	52.0
M+1 Product					
Volumes (TWh)	106.1	247.5	394.4	59%	146.9

Sources: REMIT data – Analysis: CRE

Table 30 : Concentration index (HHI) for the various wholesale electricity market segments in France

	HHI – Market concentration	
	2024	2025
Delivery		
Futures markets (Physical) – purchases	538	339
Futures markets (Physical) – sales	1,480	1940
Futures markets (financial) – purchases	429	540
Futures markets (Financial) – sales	1136	687
Day-ahead market – purchases	665	1034
Day-ahead market – sales	4080	2,548

Sources: RTE data, REMIT – Analysis: CRE

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This report covers data for the calendar year 2025. Key developments in monitoring activities or trends in the wholesale markets during the first few months of 2026 may also be mentioned.

The sole purpose of this report is to inform the public about the CRE's activities in the context of its mandate to monitor the French wholesale energy markets and to provide useful insights into their functioning. Only the CRE's deliberations and, where applicable, the decisions of CoRDIS or the Council of State are authoritative.