RÉPUBLIQUE FRANÇAISE
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COMMISSION DE RÉGULATION DE L'ÉNERGIE

REPORT

DECEMBER 2022

Electricity futures prices for winter 2022-2023 and the year 2023

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SUMMARY

Changes in market conditions since July 2022

During the year 2022, prices in the electricity futures market and particularly those for delivery in France in the first quarter of 2023, reflected the anticipation of a significant tightness affecting the supply and demand balance, as perceived by market participants. The futures market prices embed risk premia that seem very high compared to a reasonable anticipation of the day-ahead prices, which market participants wishing to hedge their exposure to market prices are willing to pay, as CRE indicated in its previous report published on July 26th, 2022[1]. The price spread between France and Germany for futures contracts with delivery periods during the winter 2022-2023 highlights this phenomenon and reflects market participants' doubts about the announced availability of the nuclear fleet.

Since July 2022, wholesale prices kept increasing until they peaked at the end of August, before dropping in autumn to levels close to those observed at the beginning of summer.

The French electricity system is particularly tight for winter 2022-2023. In its 2022-2023 winter outlook released on November 18th, 2022[2], RTE states that the supply and demand balance is subject to "heightened vigilance". RTE notes the deterioration in the planned availability of the French nuclear fleet compared to the first version of its outlook published on September 14th, 2022. This is consistent with EDF publications which revised downwards the availability of its nuclear fleet significantly, in particular on August 24th[3] and November 3rd, 2022[4]. RTE also lowers its consumption forecasts, particularly for industry, linking the drop in consumption to high prices. To some extent, these developments are consistent with the very high prices observed in July 2022.

On the one hand, RTE's "low" scenario in July (40 GW of nuclear generation in January 2023) is now its central scenario. On the other hand, high wholesale prices, reducing demand, lead to maintaining a similar level of security of supply compared to the first version of RTE's outlook, despite lower projections of nuclear generation.

Volumes traded in French futures markets for the year 2023 and the first quarter of 2023 dropped significantly in 2022 compared to previous years for equivalent products (by roughly 35% on average compared to 2021 taking into account the selling of "almost certain" generation from facilities under feed-in tariffs[5]) and made hedging more difficult, contributing to higher volatility in market prices.

CRE's request for information

As part of its wholesale market monitoring mission and as announced in its publication of July 26th, 2022, CRE requested information from French wholesale electricity market participants about their trading strategies in order to explain high price levels observed.

Market participants' answers show that, in this period of great uncertainty, hedging related to physical activities (production, supply, consumption, cross-border trading) leads, on the one hand, to buy higher volumes than the expected needs, and on the other hand, to a reduction in sales in the futures markets. This directly contributes to even greater tightness in the futures markets than that of the anticipated physical balance, which can explain the price rises in France, at least partially.

Besides, the French market will most probably be a significant importer on average for the first quarter of 2023, which contrasts with previous years. However, most cross-border capacity for 2023 was not sold before November 2022 (except for interconnections with the United Kingdom). Therefore, the corresponding imports, which are necessary to balance demand in France, cannot be taken into account risk-free on the futures markets. Some market participants responded that they were reluctant to bear the risk of a short exposure on the French

[1] Electricity futures prices for winter 2022-2023 and the year 2023, July 2022 (https://www.cre.fr/Documents/Publications/Rapports-thematiques/les-prix-a-terme-de-l-electricite-pour-l-hiver-2022-2023-et-l-annee-2023)
[2] https://assets.rte-france.com/prod/public/2022-11/Analyse-passage-hiver-2022-2023-actualisation-novembre.pdf
[3] Extended shutdowns published on RTE's transparency platforms concerning the Cattenom and Penly plants
[4] Press release revising the 2022 nuclear production target: https://www.edf.fr/groupe-edf/espaces-dedies/journalistes/tous-les-communiques-de-presse/edf-ajuste-son-estimation-de-production-nucleaire-en-france-pour-2022-0
[5] Legislative and regulatory mechanism requiring EDF and local distribution companies to buy the electricity produced by certain sources (wind, photovoltaic, biomass) under imposed tariff and technical conditions.

market that would not be hedged by the holding of cross-border capacity. Indeed, the financial risk related to such unhedged positions has considerably increased in the current context. Auctioning cross-border capacities earlier would help reducing risk premia and should be included in the scope of the market design reform discussions. Such changes require close collaboration with the regulators and the transmission system operators of neighbouring countries.

Given the low liquidity and the very high and volatile prices, market participants answers showed a general decrease in proprietary trading activities[6] in futures markets. Moreover, there is low short-selling activity for contracts to be delivered in France this winter, most likely because of the high risks involved in such positions.

Conclusion

The high risk premia observed these past few months in France are primarily explained as above and therefore do not result from large speculative positions from one or several market participants.

A deficit of supply as far as physical hedging is concerned, associated with a very limited risk appetite regarding short selling of energy, contribute to maintain risk premia and prices at very high levels.

Based on available information, and at this stage in its analyses, CRE is not aware of any behaviour likely to be qualified as market abuse under REMIT[7].

[6] Proprietary trading includes in particular “directional” strategies otherwise called “speculative” strategies where market participants bet on future price changes, thereby contributing in price discovery and supplying liquidity to the market (section 3.2).
[7] Regulation (EU) No. 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency (REMIT)

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1. CHANGES IN WHOLESALE ELECTRICITY MARKETS SINCE JULY 2022

1.1 French futures prices remain at very high levels especially compared with Germany

The major increase in electricity futures prices for winter 2022-2023 and the year 2023 accelerated in June 2022 and continued during summer, reaching an exceptional peak on 26 August (Q1 2023 baseload at €1,840/MWh and Y 2023 baseload at €1,115/MWh). Since then, prices became relatively stable during the months of September and October 2022, with the Q1 2023 price around €1,000/MWh and the Y 2023 around €550/MWh. More recently, the Q1 2023 price dropped significantly, from €1,028/MWh on 24 October 2022 to €624.50/MWh on 2 December 2022 (Figure 1).

The unprecedented increase during the month of August was seen throughout all Europe. It is due to the major rise in gas prices, when concerns about security of supply were at their highest because of the reduction in gas deliveries through Nord Stream 1[8]. Prices finally eased quickly at the end of August to reach July levels. More recently, gas prices dropped with a warm autumn and good gas storage levels. This evolution of the gas prices contributes to reduce the variable costs of electricity generation, while the extreme assumptions of gas shortage for the winter 2022-2023, appear more and more unlikely and tend to reduce anticipation of tightness of the European electricity system.

Figure 1: Evolution in French winter quarterly and annual 2023 base products (source: Heren)

Although these electricity price evolutions affect most European countries more or less uniformly, the French price stands out particularly and, especially reveals a considerable spread with German prices (Figure 2) which remains at very high levels since July. The price spread between France and Germany increased significantly in 2022 for the winter quarters (Q4 2022 and Q1 2023). In particular, it reached for Y 2023 its maximum level on August 19, 2022, at €173.5/MWh, before dropping sharply after the price peak of late August. On 2 December 2022, it dropped back to €86/MWh.

The France-Germany price spread for Y 2023 is mainly driven by the price spread for Q1 2023, which was over €600/MWh on October 25, 2022, while the price spreads for the Q2 2023 and Q3 2023 were negative.

[8] On 19 August 2022, Gazprom announced the shutdown of the Nord Stream 1 pipeline from 31 August to 2 September for maintenance.

Figure 2: Evolution in price spreads between France and Germany for the quarterly and the 2023 annual baseload products (source: Heren)

Higher futures prices for the winter quarters (Q4 and Q1) in France compared to Germany are usual, because of the more highly temperature-sensitive[9] nature of French electricity consumption. The French price is sensitive to commodity prices (gas, coal, CO_2), but also, to a large extent, to the forecast availability of its nuclear fleet for the coming year and especially for winter, which is particularly apparent for the winter 2022-2023.

The price spreads between France and Germany for the winter 2022-2023 reflect market's concerns about the security of supply of the French electricity system.

In its 2022-2023 winter outlook of 18 November 2022[10], RTE states that the supply-demand balance is under a greater attention and is affected by numerous uncertainties regarding weather conditions (cold waves, low wind), the level of hydraulic stocks, the effective recommissioning dates of nuclear reactors after outages and the availability of gas in Europe. In addition, RTE presents a downward revision of nuclear availability for early 2023, due in particular to the consequences of social movements affecting the nuclear fleet in the autumn and the actual progress of maintenance work, which contributes to explain the sharp rise in the France-Germany price spread in September and October. This revision of the nuclear availability forecast, which was not anticipated in summer, also illustrates the high risk weighing on the availability of the nuclear fleet. It is offset, in RTE's analysis, by an anticipated reduction in consumption of around 3 to 4 GW, particularly in industry, because of the high prices. According to RTE, both effects offset each other, leading to a similar level of risk compared to the one estimated in early September. High wholesale prices therefore contribute to the security of supply, even though the French market has the particularity of a lower exposure of consumption to market prices because of ARENH[11], which tends to reduce the sensitivity of consumption to prices.

1.2 The production margin of thermal plants remains very high in France

The production margin of thermal coal and gas plants is modelled by taking into account the potential revenue generated by the sale of electricity, the cost of fuels per sector, the average efficiency of the plants per sector, the price of CO_2 and the emission factor of the plants per sector. The production margin of a coal-fired plant thus modelled is measured by the Clean Dark Spread. For combined cycle gas turbine plants, it is measured by the Clean Spark Spread. The production margin of a turbines is also presented below (Clean Spark Spread TAC).

[9] In France, electricity consumption is heavily dependent on temperatures, because of the relatively greater use of electric heating. This sensitivity is estimated at 2.4 GW of additional consumption for every -1°C drop in winter when temperatures are cold.
[10] https://assets.rte-france.com/prod/public/2022-11/Analyse-passage-hiver-2022-2023-actualisation-novembre.pdf
[11] Regulated access to incumbent nuclear energy (ARENH) is a mechanism which took effect on July 1, 2010, requires EDF to sell a portion of its nuclear energy to alternative suppliers at the regulated price of €42/MWh in 2020.

The most expensive and least used production means, of production gas-fired combustion turbines, are usually only profitable for a limited number of hours in the year. However, for the Q1 2023 baseload in France, the theoretical production margin of gas-fired combustion turbines is positive on average over the entire quarter since April 2022.

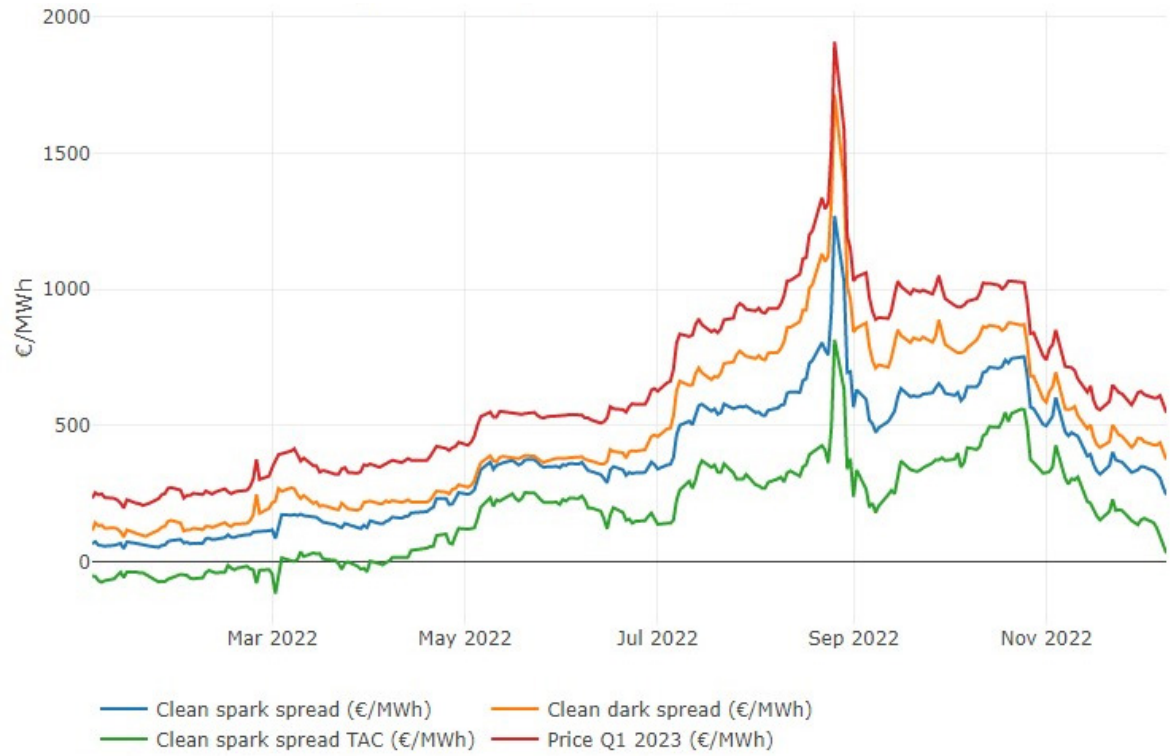

Figure 3: Profit margins of thermal plants for the French Baseload Q1 2023 contract (sources: Refinitiv, Heren, analysis: CRE)

The high values of the Clean Spark Spread of gas-fired combustion turbines in France show that futures prices are higher than the costs of the most expensive means of production. Therefore, these prices may be explained by the anticipation of extremely high prices (fixed by load shedding or the reach up of the price cap in the daily market over a great number of hours). Prices may also reflect the existence of very high "risk premiums", with the price exceeding the average short-term prices expectations. CRE had already made this observation in July; since then, the Clean Spark Spread of gas-fired combustion turbines continued to increase (culminating with the gas price peak at the end of August), before returning very recently to levels close to those of July, amidst some easing in the market.

In Germany, the Clean Spark Spread of a CCGT remained quite stable (Figure 6 in the ANNEX) during the entire period of rising prices, reaching a peak in late August before decreasing in the months of September and October. This observation suggests that, apart from the August peak, futures prices in Germany tend to reflect that gas is the marginal price-setting fuel source.

French prices therefore clearly reflect specific tightness in the French market, which has not eased since July, and which is particularly justified by a deterioration in autumn 2022 of the nuclear availability forecasts at the beginning of 2023. Concerns about gas supply disruptions in Europe, common to all markets, no longer seem to be a significant factor.

Recent French prices reflect, as in July, expectations of very high spot prices and significant risk premiums, which can be explained by the strong uncertainties about nuclear availability. The further deterioration of the nuclear availability forecast for the winter observed during the autumn illustrates the uncertainty perceived by the market.

1.3 Liquidity in French futures markets remains low

The considerable drop in traded volumes (including the sale of so-called "almost-certain production" from production facilities under feed-in tariffs [12]) on the annual and Q1 2023 products (see Figure 5 in ANNEX) observed in July continued. Volumes traded in 2022 remain much lower than those of previous years. At the time of the August price

[12] Legislative and regulatory mechanism requiring EDF and local distribution companies to buy the electricity produced by certain sources (wind, photovoltaic, biomass) under imposed tariff and technical conditions.

peak, traded volumes were very low showing very poor market liquidity. This improved clearly early September as the market eased, but remains low compared to the volumes usually traded at this period for this type of contract.

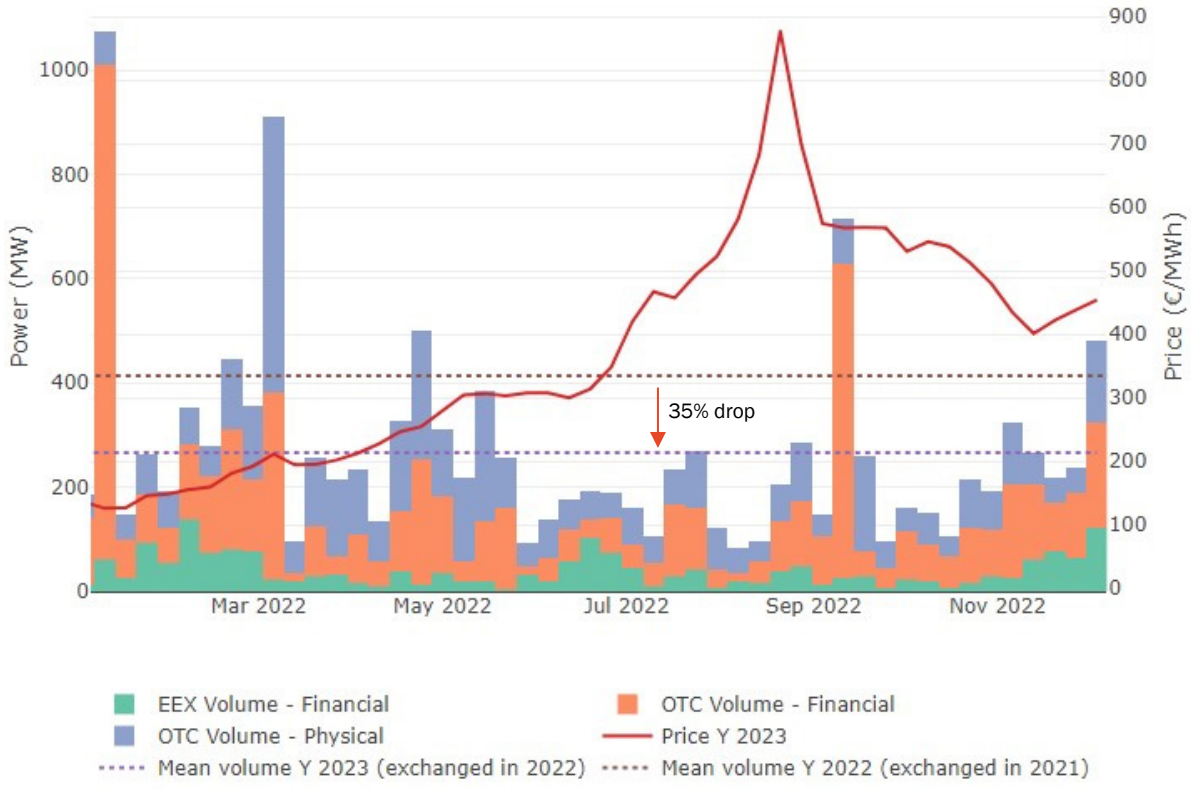

Figure 4: Weekly volumes traded in the Y 2023 Baseload contract according to settlement type (sources: EEX, brokers - analysis: CRE)

There is a decrease of about 35% in the average volume traded in 2022 for the 2023 annual product compared to the average volume traded in 2021 for the 2022 annual contract. Similarly, for the Q1 2023 contract, a 34% drop in the volume traded in 2022 is observed compared to the average volume traded in 2021 for the Q1 2022 contract (see Figure 5 in the ANNEX).

2. INTERROGATION OF MARKET PARTICIPANTS

As announced by CRE in July, CRE addressed on 2 August 2022 an request for information to the main market participants having a significant trading activity or positions on futures products, with physical or financial settlement, for the delivery of electricity in France in the fourth quarter of 2022 (Q4 2022), the first quarter of 2023 (Q1 2023) and the entire year 2023 (Y 2023).

In total, 44 market participants, of different nationalities and activity sectors, were interrogated. This selection of market participants is an almost exhaustive overview of the traders active on the French electricity futures market. The breakdown of market participants interrogated according to their trading activity type is as follows:

- **Central energy players** (producer, supplier): 52% of market participants interrogated (23);
- **Financial players** (bank, trading house, funds): 32% of market participants interrogated (14);
- **Intermediate energy players** (Oil & Gas player[13], aggregator/trader, consumer): 16% of market participants interrogated (7).

On the basis of the information currently available and analyses conducted, at this stage CRE is not aware of any behaviour likely to be qualified as market abuse under REMIT.

3. SUMMARY OF ANSWERS

The analysis of market participants' answers reveals some common features. These correspond in general to the nature of the market participant's trading activity on the French electricity markets. Three main types of trading activity in the markets are exposed, which are complementary for certain market participants:

[13] Oil and gas industries

- hedging of physical needs (mentioned by 28 market participants),
- proprietary trading (mentioned by 21 market participants),
- intermediation on behalf of third parties (mentioned by 15 market participants).

Besides, a large portion of market participants raised the topic of managing liquidity constraints due to of the sharp increase in margin calls. This topic as well as solutions found by some market participants and their respective behaviour changes is addressed in a specific section (section 3.4).

3.1 Hedging of physical needs

Market participants involved in production, consumption, supply, or cross-border capacity exchanges, operate in the futures markets mainly to hedge the risks associated with their underlying physical needs.

Most of the interrogated market participants having these physical needs establish an accounting separation between their entities in charge of trading and those in charge of managing marketing activities and/or production assets. The transfer of physical hedging needs[14] to the trading entities is achieved through internal transactions (sales to the marketing activity and/or purchases from the production activity). Thus, trading entities have a "residual position" accounted as the result of all internal transactions and "market" transactions. A market participant seeking only to reduce its exposure to price risk will try to close out this residual position completely.

3.1.1 Production hedging

Market participants having electricity production assets mentioned more or less complex strategies to hedge market risk. When assets have variable costs that are, a priori, lower than the market price, the foreseen production simply generates a long position that the market participant will generally sell forward in a smoothed manner to limit its exposure to price risk.

For assets whose production margin depends on commodity prices, market participants take into account the "option value" of the power plant (delta hedging). In this case, producers value the optionality of whether or not to operate their plant. They will sell forward electricity production and buy forward their fuel (if necessary) when this operation is profitable at a given time (i.e. they plan to produce), and buy back the production and resell fuel when production is no longer profitable (i.e. they plan to no longer produce).

Market participants also mentioned other types of hedging needs. For instance, long-term contracts (e.g. the right to withdraw production from certain of EDF's nuclear power plants, held by some Swiss market participants in particular), contracts for the purchase of renewable production (Power Purchase Agreement - PPA), and participation in auctions organised by *EDF Obligation d'Achat* for the sale of so-called "almost certain" electricity volumes from production facilities under feed-in tariffs, also generate long energy positions that can be hedged by sales on the futures markets. This hedging pursues similar goals and entails risks comparable to the hedging of own production assets.

However, the use of these hedging strategies implies that in case of power plant unavailability, the seller, in the absence of any other means to offset it, would have to purchase back the missing energy on the short-term market. In case of a high price increase, the seller could be forced to buy back the energy it can no longer produce at a steep price. In that regard, several market participants explained that they have reduced the hedging of their production, preferring to be more exposed to the price risk but less to the volume risk (risk of power plant unavailability), by selling their production in the short-term markets.

Lastly, market participants mentioned the important cash flow constraints caused by forward energy sales. Indeed, clearing houses' margin calls are particularly high for sellers when prices increase (see section 3.4). This cash flow requirement corresponds to the safeguarding, for the producer's counterparties, against the risk of the power plants unavailability. In that regard, certain market participants indicated their decision to reduce forward energy sales to reduce their cash flow constraints.

The volume risk related to any power plants unavailability amidst a significant price increase, coupled with cash flow constraints related to margin calls, may have led to a reduction of physical production volumes sold in the futures markets.

[14] The holding of production assets (respectively consumption sites or supply contracts) generates a long position (respectively short), i.e. financial exposure proportionate (respectively inversely proportional) to the electricity price trends. Within this framework, market participants will seek to "hedge" this position to limit their financial risks, by purchases or sales in the futures markets: an initially long position will be "closed" by selling energy in the futures market, while an initially short position will be closed by buying energy in the futures markets.

3.1.2 Hedging of consumption and supply needs

Market participants that have consumption sites generally purchase their supplies in advance on the futures markets in order to limit their exposure to price risk and smooth out their supply cost, for the portion that is not covered by other supply sources, and particularly by ARENH[15].

Precise hedging of consumer's needs is a critical issue for the latter. Indeed, if consumer underestimates his consumption, he exposes himself to the risk of having to buy the missing volume in the short-term markets at a steep price. Conversely, if consumer is over-hedged compared to his needs, he exposes himself to the risk of having to sell the surplus on the spot market or to settle it financially at a price lower than the price of his long-term contract. According to market participants, different hedging strategies are mentioned.

For example, to precisely hedge volumes, some market participants preferred to hedge with shorter-term products (e.g. monthly or quarterly timeframes rather than annual).

In contrast, other market participants mentioned having traded way ahead of the delivery period, reflecting more anticipation of their hedging needs given the context of sharp rise in prices. For example, one big consumer has decided to change its usual hedging strategy. In January 2022, this market participant purchased almost all of its electricity needs for the year 2023 on the futures markets within the liquidity limits of the market, rather than proceeding with progressive purchases throughout the trading period as it usually did.

Lastly, some end-users have reduced their forward hedging with the current price increase and are therefore more exposed than before to the day-ahead market (perhaps considering the cost of hedging to be prohibitive).

Similarly, a market participant that take part in the purchase of transmission losses (RTE and ENEDIS) or who has a portfolio of customers (a supplier) purchases electricity in advance on the futures markets in order to hedge its needs.

For a supplier, portfolio risk management depends on the nature of the supply contracts (e.g. fixed-price contracts, price indexed on futures prices, price indexed on spot prices, etc.). Thus, the supplier adapts its hedging strategy on the markets to neutralise the price risk depending on the indexing arrangements of its supply contracts. The supplier also remains heavily exposed to the volume risk because of the variability of withdrawal volumes. The supplier must therefore manage this volume risk over time, as the contract expiry date approaches and the fundamental data allowing to estimate the withdrawal volume of its balance perimeter becomes clearer.

Like consumers, suppliers have a strong incentive to reduce their exposure as early as possible and adjust their volume hedge as accurately as possible (although the volume is not necessarily known in advance and must often be estimated). However, volumes consumed and prices are positively correlated. Therefore, a supplier will prefer to be slightly long (i.e. to have bought "too much") rather than short to avoid having to purchase the missing energy at a very steep price, for example if a cold wave occurs. This is strengthened by the existence of very significant price peaks (asymmetrical risk between high prices and low prices). The aversion for very high prices and preference for a slightly long rather than a short position was reported by several market participants[16].

Therefore, for the year 2023, more suppliers have chosen to hedge their portfolio "in value" rather than "in volume". Indeed, to precisely hedge the profile of its volume positions, a supplier may need to use more fine-tuned short-term products (monthly, weekly, day products, etc.) and in particular peakload products. However, since the liquidity of these latter products is limited on futures markets, a supplier may prefer to purchase more liquid baseload products to hedge its price risk exposure. This method structurally tends to over-hedge the baseload product needs, since peakload products are more expensive and therefore require comparatively more volume in baseload product to cover an equivalent value in euros.

The natural trend observed, within the framework of a normal activity of hedging consumption needs, to purchase more energy on the futures markets than the average consumption of their portfolio has been amplified with the price increase for 2023, which mechanically contributed to the price rise.

3.1.3 Hedging of long-term transmission rights

Long-term transmission rights enable market participants to purchase the right to move electricity across borders up to one year in advance, for each border and each direction. These rights are auctioned by the Transmission System Operators (TSOs) and offer, depending on the case, physical delivery (possibility to nominate effectively cross-border exchanges at contract term through Physical Transmission Rights - PTRs), or financial settlement (Financial Transmission Rights - FTRs – payment to the rights holder of a remuneration equal to the daily electricity price spread between France and the neighbouring country, when it is positive in the direction of the transmission

[15] Regulated access to incumbent nuclear energy (ARENH) is a mechanism which took effect on July 1, 2010, requires EDF to sell a portion of its nuclear energy to alternative suppliers at the regulated price of €42/MWh in 2020.
[16] Economist Craig Pirrong speaks of "spikeophobia" to designate the fact that suppliers prefer to have a long imbalance rather than a short imbalance.

right (otherwise the option is not exercised and no remuneration is paid), multiplied by the capacity volume purchased). These two types of long-term rights are economically equivalent.

Border	Type of products	Form of products	Products	Trading deadline for 2023
FR-BE	FTR	Baseload	Annual/Monthly	16/11/2022 / between the 13th and 21st of the previous month
FR-GER	FTR	Baseload	Annual/Monthly	16/11/2022 / between the 13th and 21st of the previous month
FR-GB	PTR	Baseload	Annual/Half-yearly/Quarterly/Monthly/Weekend	Auctions smoothed over the previous period (3 to 6 auctions in year Y-1 for the calendar product)
FR->CH (one direction)	PTR	Baseload	Annual/Monthly	16/11/2022/ between the Wednesday and Friday of the third week of the previous month
FR-SP	PTR	Baseload	Annual/Monthly	22/11/2022 / between the 13th and 21st of the previous month
FR-IT	PTR	Baseload	Annual/Monthly	16/11/2022/ the Wednesday of the second week of the previous month

In their answers, a significant number of market participants (16) explained that they operate on the futures markets as part of cross-border arbitrages and in particular following their participation in cross-border capacity auctions. Indeed, a market participant that owns electricity transmission rights on a border can value the optionality of its transmission capacity in the futures markets (the reasoning is similar to the hedging of a power plant, or more generally to delta hedging of financial options) by taking opposite positions in the two respective countries, which vary based on price spreads.

In principle, this strategy is valid since the capacity has effectively been contracted by the market participant. Thus, this hedging activity can be done on the futures markets for those borders where the capacity has effectively been sold in advance. In the case of France, capacities on the British border for the annual product are sold starting from January of year Y-1, in several auctions (between three and six depending on the interconnections). However, for the other French borders, the transmission capacities for the annual product are not sold before the end of November of the previous year. Thus, a market participant that does not yet have the transmission capacity between two countries, and that takes positions on both sides of this border for delivery in 2023 is engaging in an activity which could be seen as speculation rather than hedging. In this case, the market participant is wagering on a favourable price spread movement between these two countries.

It is expected that France will probably be an importer in the year 2023, and significantly in the first quarter. However, most of the transmission capacity was not sold until late November 2022. Several market participants mentioned that such a late auctioning of cross-border transmission capacities limits the liquidity on the French markets and may amplify the risk premia seen in France. Therefore, an auction schedule for France's other borders (Germany, Belgium, etc.), similar to the one applicable at the border between France and the United Kingdom, with more auctions scheduled significantly in advance of delivery, could be beneficial to bring liquidity to the markets.

Moreover, certain market participants informed about their decision to reduce hedging of their cross-border capacity because they anticipate a risk that certain neighbouring countries might decide to reduce their export capacity.

Sales on the futures energy markets associated with cross-border capacities hedging are likely to contribute to easing futures prices, but this effect is limited by the fact that only annual import capacities from the United Kingdom are sold in advance, while the French market will most likely be an importer in the year 2023, particularly in the first quarter.

3.2 Proprietary trading

Proprietary trading consists in trading on the markets to make a profit, for example, by taking advantage of favourable price variations. Different activities are mentioned by market participants:

- "directional" (or speculative) strategies: strategies consisting in "wagering" on future price movements, and generating a profit or loss depending on the effective price movements;
- arbitrage between similar contracts (e.g. locational spreads between two countries, commodity spreads, time spreads, etc.);

- market making: this consists in supplying liquidity and depth to markets. To this end, the market maker quotes both sides of the order book (bids and asks) and is remunerated through the bid-ask spread.

Whereas for some market participants, proprietary trading is their main activity (pure traders) and therefore directly corresponds to the transactions that can be observed on the markets, for others, proprietary trading can also exist alongside other activities (hedging, intermediation, liquidity service, etc.).[17]

Proprietary trading (including "directional" strategies, i.e. speculative strategies), despite the negative connotation often attributed to it, is essential for the proper functioning of the markets. It provides three elements required for proper market functioning: liquidity, risk sharing and price discovery. Being present on the markets, these market participants enable physical market participants (producers and consumers) to execute transactions rapidly and at a lower cost. In addition, these same physical market participants can rely on financial market participants as counterparties to hedge, thus sharing risks. Lastly, financial market participants' orders to buy and sell contribute to the price discovery process. By interacting with the other economic stakeholders, they provide information and contribute to ensuring that the fundamentals for the delivery period are reflected in prices.

The market participants interrogated indicate a general decline in directional trading on the futures markets. The markets are considered to be too volatile with very high prices, which implies dynamic and careful portfolio management given the very significant risks to which investors might be exposed. Indeed, a significant open position can quickly generate losses, as soon as the price moves in an unfavourable direction. Moreover, market participants also mentioned the very high margin calls, which limit the ability to intervene in the markets and exacerbate liquidity risk (see more details in section 3.4). In this context, a large number of market participants stated that they had reduced or even stopped their directional trading activity because of related considerable risks increase.

Among the directional strategies employed, the following two stand out:

- speculation on an increase in cross-border spreads (particularly the France-Germany spread, buying in France, selling in Germany);
- speculative positions for purchases (long position) on the Y 2023 annual contract and 2023 quarterly contracts.

Both of these strategies proved to be successful until August 2022 as prices rose in France and relative to Germany. Some market participants, trading on a proprietary basis, anticipated lower nuclear production than EDF's estimates between December 2021 and January 2022. They therefore took long positions (buy) for the France-Germany spread or for French futures contracts (Q4 2022, Q1 or Y 2023) which they sold later on in the year.

None of the market participants interrogated reported having open short (sell) speculative positions for 2023. Indeed, even if a significant number of market participants consider that the risk premiums compared to a reasonable expectation of daily prices are presumably very high, the levels of risk and cash flow constraints, linked to margin calls, are considerable for these positions. However, the interrogation of market participants only covered the period up to July 2022, a period of continuous price increases, before the overall downturn observed since the end of August.

Market participants stated that they had significantly reduced their proprietary trading in futures products for the year 2023 because of the high risks involved in these positions. In particular, market participants are reluctant to sell short, which is unlikely to contribute to easing the markets in a context of energy scarcity. In any case, the high-risk premiums observed these last months in France do not result from directional positions that would have been taken by one or several market participants.

3.3 Intermediation and third-party access to the market

Some market participants interrogated explained that they provide a "market access service" on behalf of their clients (these may be of very different types: alternative suppliers, large industrial companies, grids operators, renewable energy producers, purely financial traders, etc.) (mentioned by 16 market participants). Thus, a market participant may decide to intervene in the market either directly or through a market access service.

Several types of market access services exist:

[17] For the regulator, this complicates the identification of positions that are physical hedges compared to those that are proprietary trading positions. The positions of individual market participants are currently being analysed thoroughly and an additional request for information is in progress to precisely determine their hedging needs (relating to consumption, the holding of physical assets or supply contracts) and the associated hedging strategies. It will then be possible to determine the participant's "open" position (i.e. the difference between positions taken on the markets and the position resulting from strict hedging needs). The latter measures the participant's real exposure to price risks and may correspond to the participant's speculative position.

- Direct market access (DMA): clients can execute their orders automatically through a platform supplied by the DMA provider; a mirror transaction is then automatically executed bilaterally between the DMA provider and the client in order to neutralise the DMA provider's exposure;
- Indirect market access (e.g. aggregation): the energy needs of all clients are grouped together by the aggregator which procures or values the energy;
- Some market participants provide market risk management services for their clients such as (see more details in section 3.4):
    - Liquidity or funding service;
    - Execution and clearing activity.
- Other services can be highlighted such as sleeve trading[18].

The intermediation and direct market access services favour liquidity because they facilitate market access for a wide scope of market participants, especially for small ones with limited leverages for financial guarantees, etc.

The majority of market participants interrogated did not provide precise information on the identity of their clients, i.e. third-party market participants for whom they provide the above-mentioned services. CRE highlights the fact that information relating to the identity of transaction beneficiaries is often poorly described in the reporting of wholesale energy market transactions that market participants have to provide under Article 8(1) of REMIT, despite the technical guidelines and specifications given by ACER[19]. In that regard, CRE reiterates that the failure to report data on its trading on the wholesale energy markets or the transmission of erroneous or incomplete data may constitute, according to the circumstances, a breach of the reporting obligations under Article 8(1) of REMIT.

The intermediation and market access services are very common and promote market liquidity by enabling a certain number of market participants to operate on the markets. CRE reiterates that market participants providing this type of service must ensure proper reporting of the information relating to their trading in the wholesale energy markets, and particularly on the identity of transaction beneficiaries.

3.4 Management of margin calls

Margin calls aim to financially secure transactions on futures markets (especially on exchanges), by eliminating the counterparty risk, i.e. the risk that one of the two contracting parties does not deliver the expected product at the agreed price. Since 2021, the extreme rise in wholesale energy market prices and volatility have caused an exceptional growth in the margins required by clearing houses to take or maintain positions on the futures electricity and gas markets, significantly impacting market participants' cash flow needs. There are two main types of margins:

- **Initial margins** are a guarantee deposit with the clearing house, the amount of which is calculated as a fraction of the nominal value of the contract at the time of the transaction;
- **Variation margins** are financial flows regularly paid (in the case where market prices move unfavourably for the market participant) or received (in the opposite case) by the market participant.

Almost all market participants interrogated informed about their decision to reduce cash flow risks: preferring lower positions on futures markets to avoid significant margin calls.

Therefore, they adjusted their guarantee provisions or modified their trading strategies. The changes they informed about include:

- **Use of financial liquidity solutions.** Some market participants decided to limit their exposure to margin calls by modifying the nature of their hedge without changing their position in volume through the use of physical/financial swaps;
- **Reduction of financial settlement trades** to avoid the risk of a physical delivery default and to limit margin calls. Some market participants avoid entering into new transactions with counterparties requiring margin calls and avoid exchanges. However, in contrast to market participants' statements, a drop in transactions with financial settlement has not been observed (see Figure 7 and Figure 8). This information is being analysed more thoroughly;
- **Temporary increase in internal risk limits.**

[18] According to the ACER's Trade Reporting User Manual (TRUM): a market participant (A) would like to enter into a transaction with another market participant (B) which has advertised a price and quantity on the broker's screen. However, because market participant A and B do not have an agreement to trade (or limited credit status), the broker may find a third market participant (C) who has an agreement to trade with both A and B and is willing to sleeve the trade (buy and sell the same contract simultaneously) for them.
[19] ACER provides specifications about the way in which this information must be presented within the framework of the transaction record in the TRUM, page 46.

Given the cash flow constraint encountered by wholesale market participants, it appears that several financial market participants propose suitable financing solutions:

- Exchange For Related Position (EFRP): a financial market participant takes a position on the futures market in the place of the market participant seeking to hedge, and enters into an over-the-counter swap agreement with that market participant without a margin call;
- Margin call fixing: solution for a market participant with margined positions on an exchange, which consists of simultaneously entering into two similar over-the-counter transactions with a financial market participant, but in opposite directions, one margined and the other not. Thus, the margin calls paid by the financial market participants will offset the variation margins requested by the exchange.

Some market participants in Europe have received financial support from governments to fund their margins requirements to trade in organised marketplaces. Other market participants rely on the support of their parent company when they are integrated into groups. Lastly, some market participants stated that they have reduced the volumes of physical production sold forward because of the substantial margin calls.

Since the end of 2021, the surge in futures prices has generated very significant cash flow constraints for market participants because of margin call mechanisms designed to protect them from counterparty risk. These new constraints have led to significant changes in behaviour and strategies by certain market participants and may have contributed to reducing their trading on the markets.

4. ANNEX

4.1 Profit margin of thermal plants in Germany

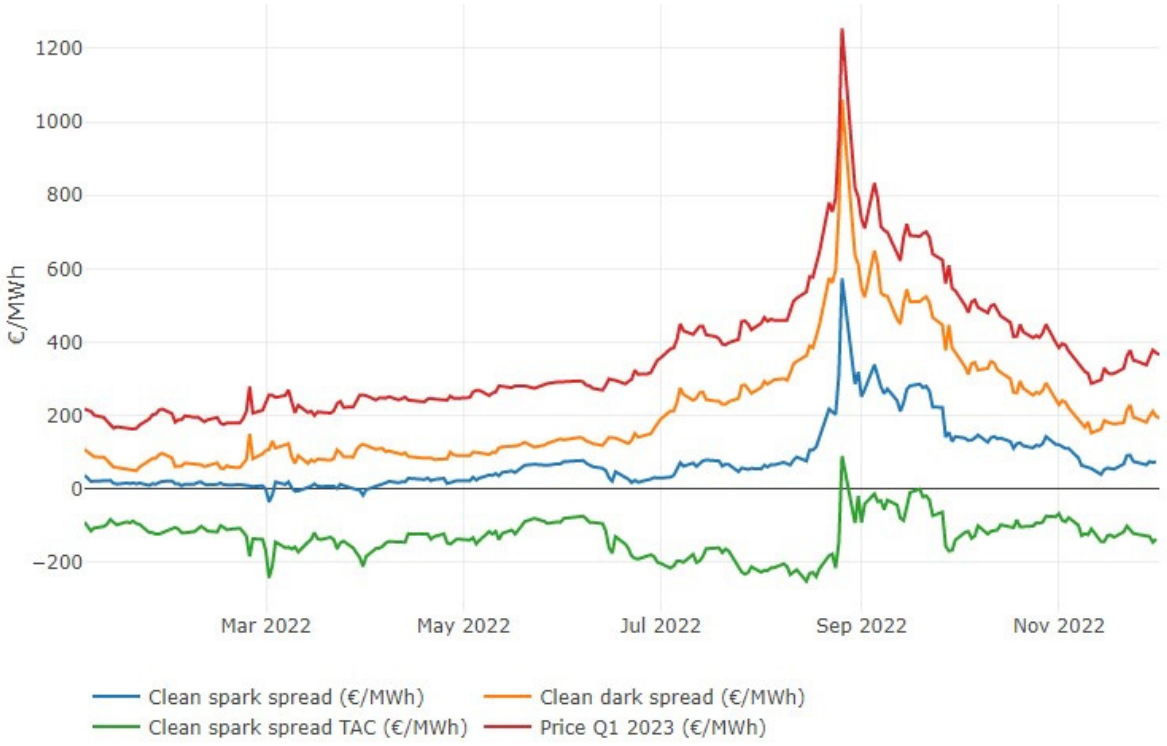

Figure 5: Profit margins of thermal plants for the German Q1 2023 Baseload contract (sources: Refinitiv, Heren, analysis: CRE)

In Germany, the Clean Spark Spread of a CCGT remained quite stable during the entire period of rising prices, reaching a peak in late August before decreasing in September and October. This observation suggests that, apart from the August peak, futures prices in Germany are driven by gas marginal price-setting.

4.2 Liquidity in French futures markets remains low

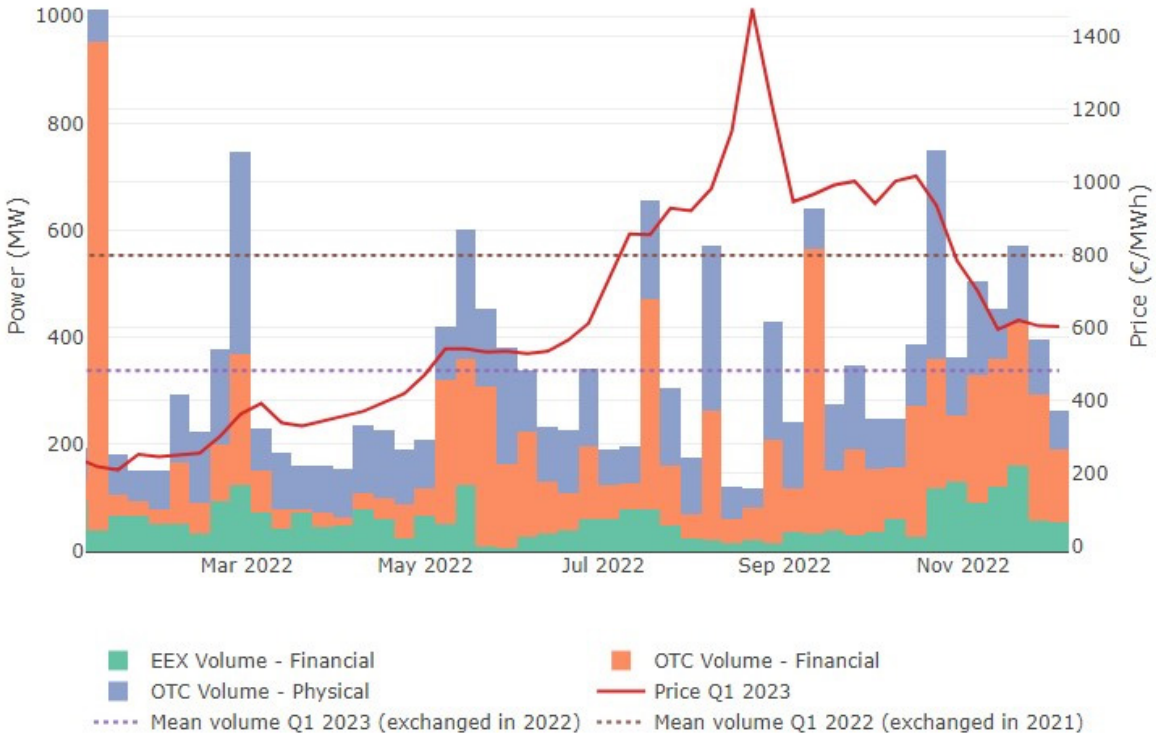

Figure 6: Weekly volumes traded in the futures Q1 2023 Baseload contract according to settlement type (sources: EEX, brokers - analysis: CRE)

For the Q1 2023 contract, a 34% drop in the volume traded in 2022 is seen compared to the average volume[20] traded in 2021 on the Q1 2022 contract. An increase in volumes traded is seen during the year 2022 as the delivery period approaches. As for the annual product, the volumes traded were low at the time of the August's price peak.

[20] The graph shows the trends in trading volumes settled both physically and financially. Indeed, there are two settlement types of futures delivery contracts:

- **Physical settlement**: the contract aims an electricity delivery which will be "withdrawn" from the balance perimeter of the seller's balance responsible party and "credited" to that of the buyer.
- **Financial settlement**: the parties agree to a price and a reference price (generally the spot day-ahead market). Parties carry out financial transfers between themselves corresponding to the difference between the price agreed and the reference price multiplied by the set volume.

From an economic point of view, these two types of settlement are equivalent.

The following graphs show the longer-term view on monthly volumes traded for Q1+1 and Y+1 contracts, i.e. for delivery in the first quarter and for annual delivery respectively.

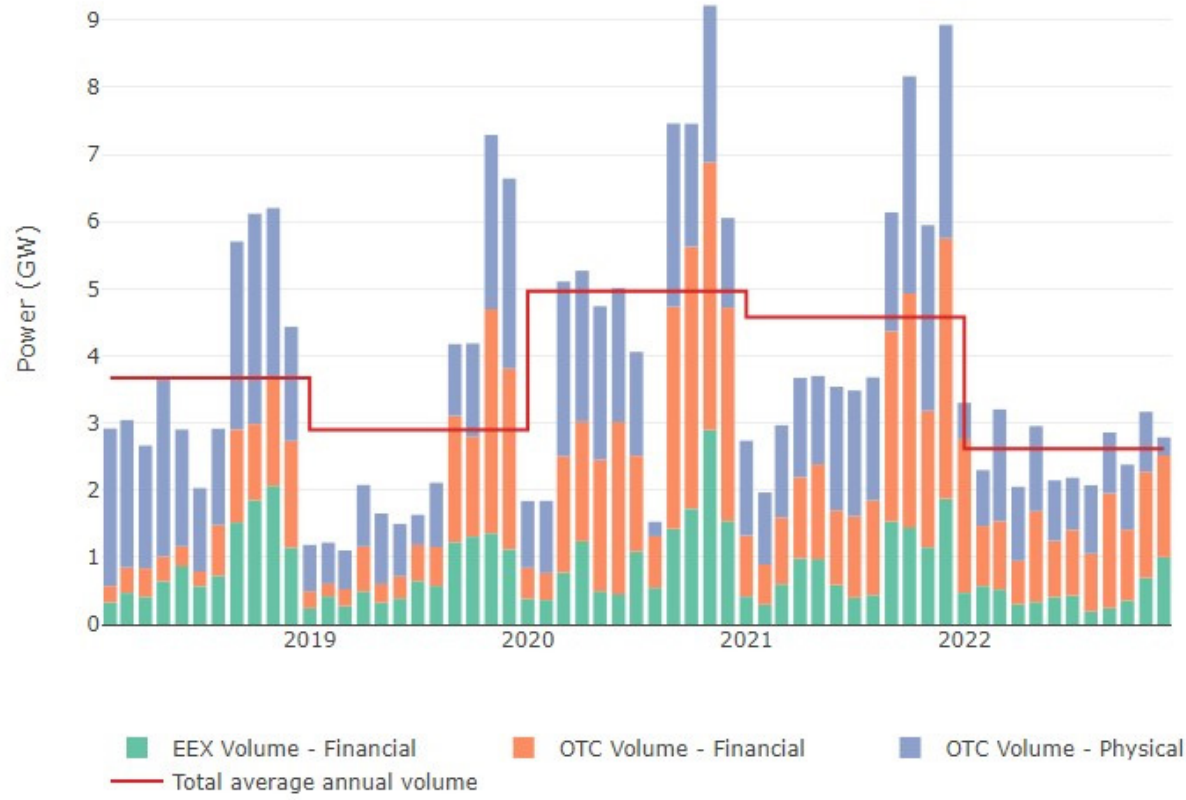

Figure 5: Monthly volumes traded in Q1+1 and Y+1 contracts based on settlement type since 1 January 2018 (sources: EEX, brokers - analysis: CRE)

For the Q1 2023 and Y 2023 products traded in 2022, the monthly volumes are significantly lower compared to previous years, especially for physical trades.

The following graph shows the share of settlement types in total trades.

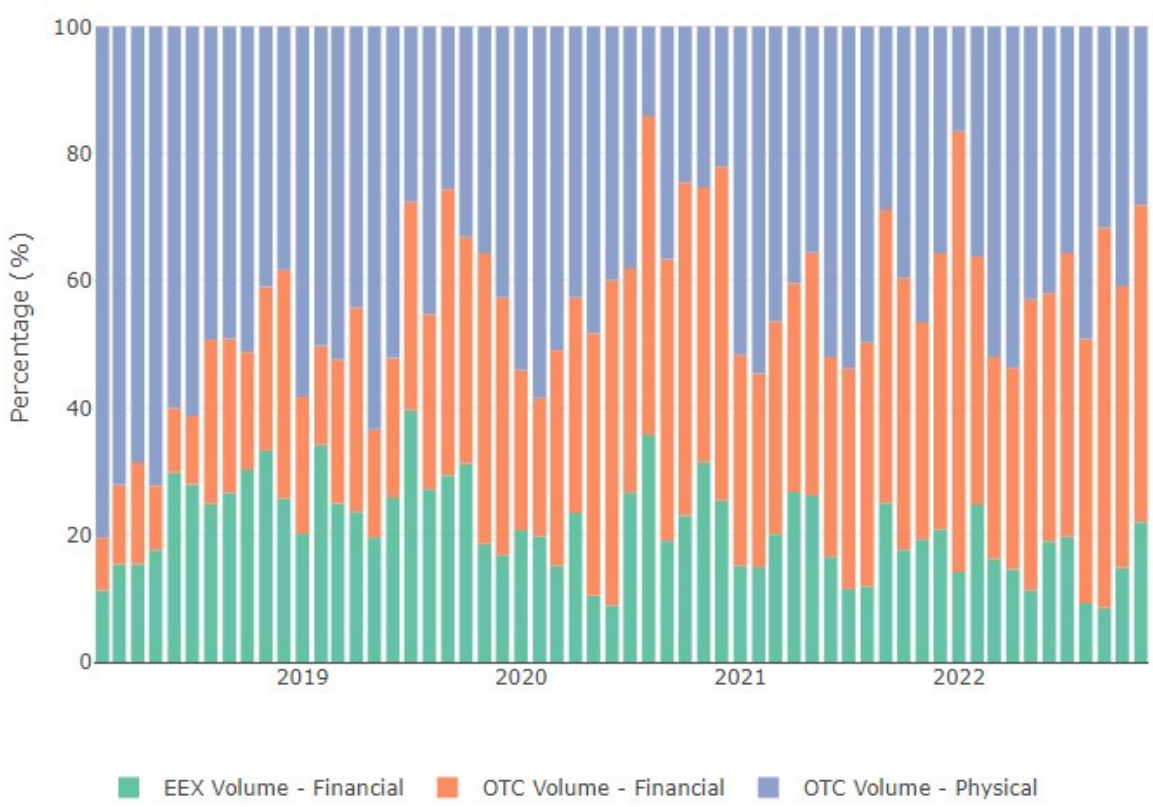

Figure 6: Settlement type share in monthly volumes of Q1+1 and Y+1 contracts (sources: EEX, brokers - analysis: CRE)

In general, market participants that hedge with financially settled products are exposed, for their missing volumes, to the spot price, and are therefore only hedged up to the spot market price cap of €3,000/MWh, the reference level. However, in the case of extreme tightness, all buyers risk not being delivered in the spot market and find themselves exposed to the intraday market price and then to the imbalance settlement price, which can reach €10,000/MWh. Therefore, when extreme tightness is anticipated, market participants might prefer physical delivery futures products, because of the cap difference between the day-ahead market on the one hand and the intraday market and the imbalance settlement price on the other hand. Therefore, in theory, the tightness anticipated in the French market should have led to a preference for physical exchanges.

However, in the general trend of decreasing volumes traded, a progressive increase in financial settlement contracts traded on exchanges or intermediated by brokers or bilateral (OTC[21] – financial) can be observed to the detriment of physical settlement contracts. This phenomenon has increased since mid-2020. Thus, during the month of October 2022, 17% of transactions on Y 2023 (Y+1) and Q1 2023 (Q1+1) products were executed directly on the EEX exchange, 51% of transactions were financially settled OTC transactions (generally cleared on EEX) and only 32% of transactions were physically settled OTC transactions.

This change in the type of contract settlement in favour of financial settlements can be explained by several factors:

- some market participants trade in exchanges to avoid counterparty risk (especially in a context of high volatility); but within the limits of their capacity to bear margin calls;
- as part of their risk management, market participants generally have OTC trading limits per counterparty, to reduce the risk of counterparty default. In a context of high prices, these limits between market participants are more easily reached and require the use of cleared financial instruments.

[21] Over The Counter (OTC) trades correspond to trades that are not arranged by a regulated exchange but are bilateral or arranged by brokers.