

Effects Assessment

of the impact of the market correction mechanism on financial markets



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1 Executive Summary

Reasons for publication

On 22 December 2022, Council of the EU adopted Regulation (EU) 2022/2578 establishing a market correction mechanism to protect Union citizens and the economy against excessively high prices (the Regulation). The Regulation entered into force on 1 February with application from the same day for a period of one year while the provisions governing the market correction mechanism (MCM) started applying on 15 February 2023. Under Article 8 of the Regulation, following the publication of a preliminary data report on 23 January 2023, ESMA is required to publish an effects assessment on the introduction of the MCM by 1 March 2023. This report is the ESMA effects assessment. ACER is also required to publish such an effects assessment and ACER and ESMA have produced their respective reports in close cooperation.

Contents

Following an introduction (Section 2) where ESMA describes the MCM and the mandate received, the report is structured as follows:

Section 3 discusses recent developments in the granular market indicators used to assess the effects of the MCM on gas trading, including prices, trading activity, liquidity and execution. The report notably analyses whether some shift of trading from on-venue to OTC, from EU venues to non-EU venues, regulated markets to organised trading venues (OTFs) and in-scope TTF maturities to other maturities or contracts based on other gas hubs has unfolded as a consequence of the MCM. As in the preliminary report, no changes in the market indicators assessed could be identified so far that could be unequivocally and directly attributed to the MCM. ESMA however notes that avoidance mechanisms have started to materialise. EU and non-EU trading venues have recently developed initiatives to allow market participants to continue trading TTF and other gas contracts outside the scope of the MCM.

In light of the possible extension of the MCM to derivatives linked to other virtual trading points (VTPs) foreseen in the Regulation, Section 3 also provides an overview of those gas derivatives and their liquidity. This overview shows that there is a very high concentration of gas derivative traded volumes in TTF derivatives (95% of EU gas derivative volume). Considering other available circumvention mechanisms, the report notes that under the MCM framework it would be extremely difficult to curb trading on trading venues outside the scope of the Regulation or OTC. Bringing the residual trading activity on other EU VTPs under the scope of the MCM may on the opposite lead to further use of circumvention

mechanisms by market participants and would impose additional costs for market participants and create increased risks for smaller CCPs.

Section 4 focusses on clearing and considers a set of indicators to capture the impact of the MCM on the CCPs' capacity to conduct their risk management activities, in particular, to calculate their exposures and to manage potential clearing member defaults. This section also provides an overview of the relevant aspects of the MCM that may impact the clearing ecosystem and particularly the levels of margins charged to clearing member and clients. Based on the indicators considered, the analysis performed did not result so far in the identification of noticeable changes in CCP risk management or in margin requirements that could be attributed to the MCM. It also outlines the considerable challenges faced by ESMA in producing a reliable and complete analysis of the impact of the MCM on clearing, as it mainly relies on voluntary data contributions by NCAs and EU CCPs, which is highly inefficient and, at times, incomplete.

As already stressed in the preliminary data report, the fact that no noticeable impact effect of the MCM was detected in the assessment conducted does not mean that the MCM will have no consequences on gas derivative markets (also considering that ESMA's data analysis still only covers a very limited period since agreeing on the MCM at the political level and particularly since its formal application date). ESMA notes that some of the potential effects and risks in the trading and clearing environment may only unfold when the activation of the MCM would be anticipated by market participants which is not the case at current price levels. ESMA notes in particular that, while there may be a high first mover cost, the alternative execution venues developed by EU and non-EU venues may enable a swift and significant shift of trading outside the EU or outside EU regulated markets as TTF derivative prices move closer to the bidding limit.

ESMA believes that, as recent TTF derivative trading has been characterised by decreasing prices and lower volatility, the occurrence of a market correction event has been perceived as a more remote prospect. As a result, the negative impact on trade execution and risk management in the EU gas market has not materialised during the observation period considered for this report, which ends in the first half of February. The report therefore also does not include any assessment of the effects that the start of application of the MCM itself from 15 February 2023 may have caused.

In accordance with the mandate received, the final section of the report provides a few considerations on the need to review the definition of a market correction event and the dynamic bidding limit. Episodes of excessively high prices have however not occurred since the entry into force of the Regulation. Against this backdrop, there is a limited basis for ESMA to provide an assessment of whether the technical details underpinning the MCM have achieved the objective of limiting such episodes of high volatility or whether such

technical details should be reviewed. ESMA understands that the thresholds set in the Regulation for the triggering of a market correction event result from a political decision made by the Council of the EU in December 2022 and considers that providing advice on whether such decision should be amended exceeds its role as a technical body.

Next Steps

ESMA will continue monitoring developments in the trading and clearing of EU gas derivatives and stands ready to provide further technical advice on these topics upon request, including where the activation of the MCM is imminent in accordance with Article 4(8) of the Regulation and in case of the activation of the MCM under Article 6(4) of the Regulation.

2 Introduction

2.1 Legislative background

1. On 22 December 2022, the Council of the EU adopted Regulation (EU) 2022/2578 establishing a market correction mechanism to protect Union citizens and the economy against excessively high prices¹ (the Regulation). The market correction mechanism (MCM) initially covers natural gas transactions in the TTF exchange-traded derivatives (ETDs) with maturities between month-ahead and year-ahead as an instrument against episodes of excessively high gas prices. The Commission shall define the technical details of the application of the MCM to derivatives linked to other Virtual Trading Points (VTPs) by 31 March 2023.
2. The Regulation entered into force on 1 February 2023 with application from the same day. The provisions establishing the MCM started applying on 15 February 2023.
3. The MCM is activated upon a 'market correction event', i.e. when the front-month TTF derivative settlement price, as published by ICE Endex B.V (a) exceeds EUR 180/MWh for three working days; and (b) is EUR 35 higher than the reference price, mainly referencing Liquefied Natural Gas (LNG) prices, calculated by ACER during these three working days.
4. Once the MCM is activated, prices of TTF derivatives that are due to expire in the period from the expiry date of the front-month TTF derivative to the expiry date of the front-year TTF derivative shall be capped at the 'dynamic bidding limit', defined as the reference price + EUR 35. If the reference price is below EUR 145/MWh, the dynamic bidding limit remains at EUR 180/MWh.
5. The MCM can be deactivated or suspended subject to meeting certain conditions. The MCM should be deactivated 20 working days from the occurrence of the market correction event or later, if the reference price is below EUR 145/MWh for three consecutive working days. The MCM should be deactivated where a regional or Union emergency has been declared by the Commission, notably in case of a significant deterioration of the gas supply situation.

¹ OJ L 335, 29.12.2022, p. 45–60

6. Finally, the Commission should suspend the MCM at any time where unintended market disturbances or manifest risks of such disturbances occur, negatively affecting security of supply, intra-EU flows or financial stability.

2.2 ESMA mandate and approach

7. As required by Article 8(5) of the Regulation, ESMA published a preliminary data report on the introduction of the MCM on 23 January 2023.
8. In addition, under Article 8 of the Regulation, ESMA is required to assess the effects of the MCM on energy derivatives markets, notably to verify whether the key elements of the MCM are still appropriate in light of the developments regarding the derivatives market and submit its reports to the Commission by 1 March 2023. ESMA does limit its analysis to factors relevant for energy derivatives markets.
9. That assessment should notably verify whether the limitation to TTF-derivatives has led to arbitrage by market participants between corrected and non-corrected derivatives with negative impact on financial or energy markets, and to the detriment of consumers. The assessment should also include an analysis of the criteria to be considered by the Commission for possibly excluding derivatives linked to other VTPs from the scope of application of the MCM, i.e (a) the availability of information on the prices of derivatives linked to other VTPs; (b) the liquidity of the derivatives linked to other VTPs and; (c) the impact of the extension of the MCM to derivatives linked to other VTPs would have on the stability of financial markets, taking into account the impact on possible additional margins as collateral.
10. ESMA is also required to assess whether the exclusion of over-the-counter (OTC) trading from the scope of the Regulation led to a significant shift of TTF derivatives trading to OTC markets and whether the MCM led to a significant decrease in TTF derivatives transactions in the EU or a shift of TTF derivatives transactions to non-EU trading venues.
11. Lastly, ESMA should assess whether the definition of a market correction event under Article 4(1) of the Regulation, i.e the EUR 180/MWh threshold and the EUR 35 spread with the reference price, and the dynamic bidding limit should be reviewed.
12. This effects assessment is to an extent a continuation of the preliminary data report which already went into a wider assessment, including on clearing, and

many of the items to be analysed by ESMA in the 1 March report were already part of the 23 January report. The effects assessment expands on the market indicators considered to analyse the impact of the MCM, using more granular data sources over longer time series since the adoption and application of the Regulation.

13. The effects assessment is structured as follows. Section 3 analyses the impact of the MCM on gas derivatives trading, including on TTF price developments, open positions, liquidity and execution methods. The report notably assesses the potential shift of TTF derivative trading to OTC, non-EU venues, organised trading facilities (OTFs) and maturities outside the scope of the MCM. In light of the extension of the MCM to derivatives linked to other VTPs foreseen in Article 9 of the Regulation, ESMA provides an overview of those gas derivatives, analyses their liquidity and assesses the potential arbitrage between TTF derivatives and non-TTF gas derivatives.
14. Section 4 considers the impact that the MCM may have on clearing and financial stability, including in a case of an extension to other gas hubs and analyses the relevant interactions between the MCM and CCPs risk management as well as between the MCM and the clearing ecosystem. For each aspect, the report sets out the indicators reviewed by ESMA in both areas and assesses the developments that took place since the beginning of 2023.
15. In the final section of this report, ESMA provides some considerations as to whether the front-month TTF settlement price referred to in the definition of a market correction event, the spread with the reference price and the dynamic bidding limit need to be reviewed.
16. Due to time constraints associated with ESMA receiving and processing the relevant data, the observation period considered for this effects assessment ends in the first half of February, with cut-off dates depending on the data sources (see Annex). The report therefore does not include any assessment of the effects that the start of application of the MCM itself from 15 February 2023 may have caused.
17. ACER is also required to publish an effects assessment on the introduction of the MCM. ACER and ESMA deliver independent reports, given their different legal mandates but have produced their respective reports in close cooperation. ESMA focusses on the impact of the MCM on energy derivative markets and clearing while ACER follows up on energy markets and security of supply.

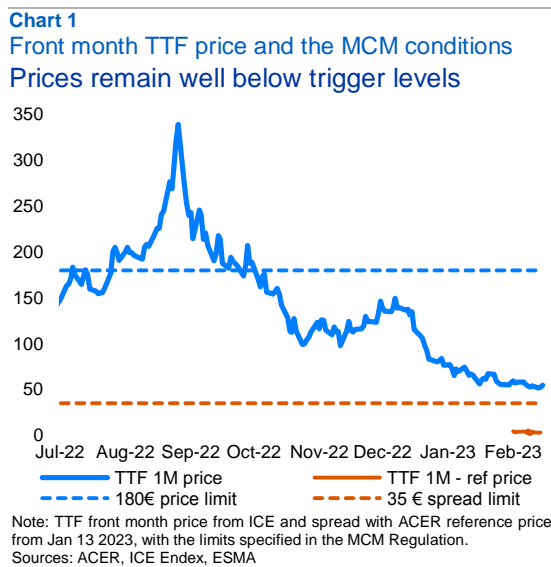
2.3 Data sources

18. This report is supported where possible by a quantitative assessment deriving from various data sources which are described in section 7.1 of the annex. The sources are both commercial datasets, as well as regulatory datasets either reported to ESMA or to which ESMA has access. In addition, voluntary data requests have been submitted to the relevant EU CCPs through their NCAs (and directly to the relevant Tier 2 CCP) that cover the first week of February. Also sample data was requested covering the first week of January in order for ESMA to be able to compare and analyse the provided data. Following the potential application of the MCM, ESMA will request weekly reporting from the relevant CCPs.
19. The level of granularity of the data, the scope and the time-lag to obtain the data vary depending on the sources, as described in section 7.2 of the annex. Regulatory datasets are systematically presented in an aggregated view to ensure that individual market participants are not identified.

3 Impact of the MCM on trading

20. Once activated, the MCM will impose a price limit above which counterparties will no longer be allowed to place an order on regulated markets for the TTF contracts specified in the Regulation. In this context, it is likely that market participants will explore other ways to keep meeting their gas futures trading objectives and may act pre-emptively of an MCM activation forcing them to do so. Market participants who would lose revenue from the capped price, in particular, might explore methods to trade outside the MCM, for example, by changing the method and/or venue of execution to avoid TTF contracts being subject to the MCM. This could be achieved by switching to third-country trading venues or to other types of venues in the EEA (MTFs, OTFs) not subject to the MCM, or by executing off-venue ('over-the-counter' OTC).
21. If gas suppliers move to execution venues not covered by the Regulation, it appears likely that other market participants would follow. Exchanges for contracts in scope of the Regulation have an incentive to facilitate non-MCM scope alternatives. Other market participants will trade the contract where liquidity is the highest. As a result, the activation of the MCM would affect participants widely (suppliers, brokers, exchanges, CCPs...) and may have market-wide effects visible in the set of indicators we set out below (prices, positions, liquidity, ETC vs. OTC etc.).

22. Market impacts would be expected to be linked to the extent to which the activation of the MCM is anticipated by the markets. Thus far, with prices trending downwards for several months, and remaining well-below the activation conditions (chart 1 below), the prospect that the MCM will be activated is judged to be remote (see section 2.2 of ACER effects assessment report). Thus, visible impacts on the market to date have been limited.



23. Nonetheless, in light of the creation of the MCM through the Regulation, there have been important market developments. In particular, the two EEA exchanges that account for the bulk of European natural gas futures trading in the form of TTFs, ICE Endex and EEX, have taken measures to facilitate the use of alternative venues for TTF trading outside the MCM. ICE introduced a parallel listing on ICE Future Europe (UK) of its ICE Endex TTF contracts from 20 February 2023, while EEX made an announcement regarding its OTF,² making it clear that natural gas futures currently executable on its OTF venue are contractually identical to those on the EEX exchange and are not subject to the MCM. EEX also stated that they would offer the full set of EEX Regulated Market Natural Gas products on the OTF, and that compression of cleared products would be possible between products traded on its regulated market and OTF.

24. These actions aim to enable market participants to continue trading TTF contracts not subject to the dynamic bidding limit on ICE and EEX in the face of

² EEX '[Q&A on implementation of the Market Correction Mechanism by EEX/ECC](#)', 3 February 2023.

a potential MCM activation. They seem to be motivated by a wish to prevent loss of trading to venues outside the scope of the MCM (such as CME's Nymex where TTF contracts can be traded) or to venues with comparable contracts outside of the MCM scope (e.g. UK NBP). Also, given these developments provide relatively straightforward channels for existing clients of ICE and EEX to continue trading outside the MCM, the effects of the MCM, once activated, could be largely confined to shifts towards ICE UK for ICE clients and to shifts towards the EEX OTF for EEX clients.

3.1 Impact on price

25. Price indicators are important because they show the nearness to the triggering for the MCM and thus, whether market impacts are increasingly to be expected; and the price divergences between substitutable contracts inside and outside of scope of the MCM, which would be expected once the MCM becomes imminent (e.g. EU vs TC TTFs, on-venue TTFs vs OTC TTFs, TTFs vs other non MCM contracts) indicating a splitting of product markets into those subject to the MCM and those not.
26. As already outlined and as shown above, natural gas prices have fallen in recent months across maturities, and front month prices remain well below the levels required to activate the MCM. There are also no signs of divergences between price trends on TTF contracts on exchanges subject to the MCM (ICE Endex, EEX) versus those on third country exchanges not subject to the MCM (currently Nymex and ICE UK going forward) (see charts 2 and 3 below). This is unsurprising given the activation of the MCM appears unlikely.

Chart 2
Front month TTF price, EEA vs TC venues
No sign of price divergence – front month TTFs

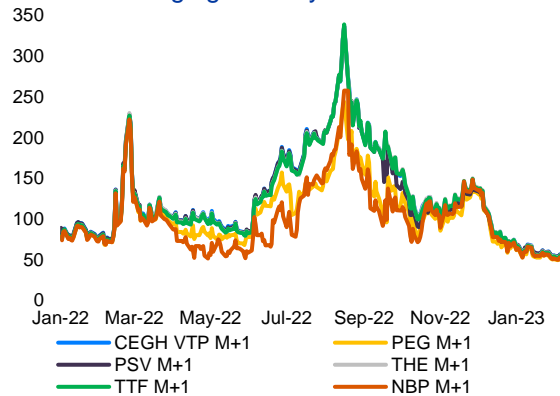


Chart 3
12 month TTF price, EEA vs TC venues
No sign of price divergence – 12 month TTFs



27. Similarly, as in chart 4, there is also little sign of price divergence between the prices of TTF contracts and non-TTF contracts that could potentially be used as substitutes, both on the EEA venues and the UK NBP. In fact, prices have converged recently, again consistent with the market not anticipating a near-term activation of the MCM.

Chart 4
Front month EEA and UK contracts prices
Prices converging recently



Note: Daily close prices of natural gas future front-month contracts traded in EEA hubs (CEGH VTP, PEG, PSV, THE and TTF) and in the UK (NBP), in EUR.
Sources: Refinitiv EIKON, ESMA.

3.2 Impacts on activity and liquidity of gas derivatives in scope of the MCM

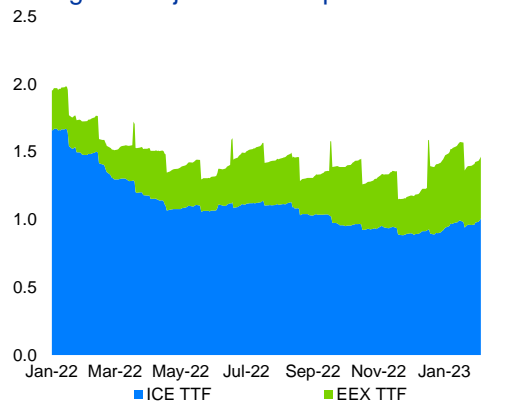
28. The MCM could drive shifts in trading from contracts and venues subject to the Regulation to those that are not, making it important to assess impacts on market activity in relation to contracts in scope of the MCM. Those aspects are covered by ESMA's mandate to assess whether the MCM led *inter alia* to a significant decrease in TTF derivatives transactions within the Union (Article 8(3)(b) of the Regulation).
29. This section looks at recent impacts using a few key indicators: the open positions, trading volumes, number of market participants and a couple of dedicated liquidity indicators. The aim is to assess how the market is evolving in terms of shifts in trading, in particular signs trading may be migrating away from the EEA venues subject to the Regulation and possible reductions in liquidity for these venues.

3.2.1 Open positions

30. The open positions (open interest) indicator provides a measure of the stake or interest in the market. At any time, the number of long positions is equal to the number of short positions. The open interest is the sum of all long positions (or equivalently, the sum of all short positions). It can also be measured in terms of the value associated with these contracts.

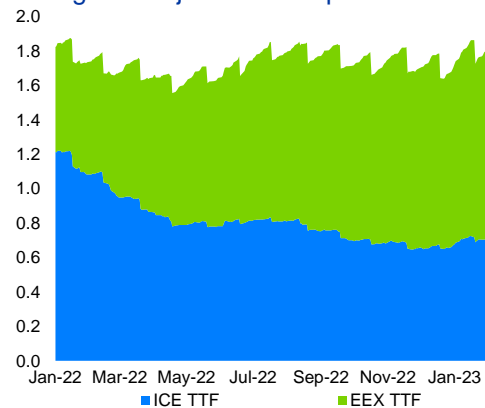
31. Although there are some noticeable trends, such as a decline in ICE’s share particularly in the first half of 2022, the recent trends for TTFs executed on regulated markets, as presented in charts 5 and 6,³ show no discernible change in trends since the MCM came into force in February, again consistent with the market not reacting yet in light of the continuing low gas prices. There is also little sign of change in the relative shares of EEX and ICE Endex in recent months.

Chart 5
 Evolution of open interest in number of contracts
 No sign of major shifts in open interest



Note: Daily total open interest, in million of contracts, for TTF natural gas futures traded on ICE Endex and EEX, all maturities combined.
 Sources: Refinitiv EIKON, ESMA.

Chart 6
 Evolution of open interest in MWh
 No sign of major shifts in open interest



Note: Daily total open interest, in billion of MWh, for TTF natural gas futures traded on ICE Endex and EEX, all maturities combined.
 Sources: Refinitiv EIKON, ESMA.

32. There is also no noticeable shift in the relative distribution of the open interest of TTF contracts across different maturities. The shape of the cumulative sum of open interest for February remains very similar to that for January, in both number of contract and MWh terms (charts 7 and 8 below). As observed in ESMA’s preliminary assessment, there is however the noticeable shift towards shorter maturities as compared to a year earlier, likely related to the very significant increase in uncertainty in gas markets with the Russian invasion and subsequent developments.

³ One explanation for the greater share for EEX in chart 6 compared to chart 5 is the difference in how contracts with maturities longer than one month are reported by EEX and ICE. On ICE, contracts with maturities longer than one month are set up as strips (multiple sequential monthly contracts). Therefore, a yearly contract counts 12 times in chart 6 for ICE but only once for EEX, while in MWh they would contribute the same in chart 6.

Chart 7
Cumulative distribution of open interest in contracts
Little sign of maturity distribution shifts for TTFs

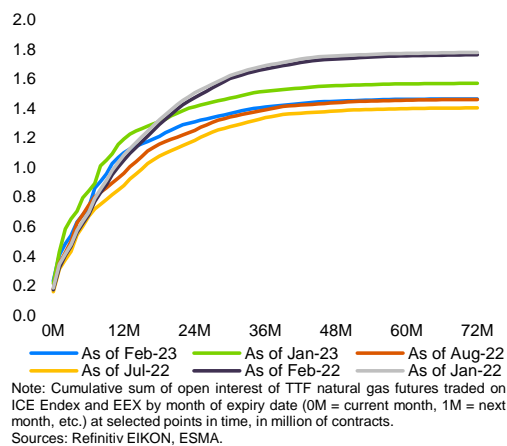
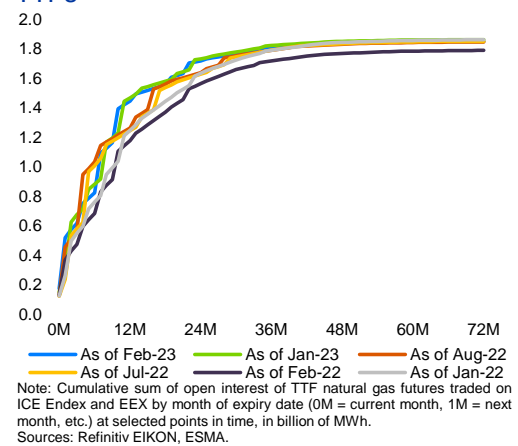


Chart 8
Cumulative distribution of open interest (MWh)
Little sign of maturity distribution shifts for TTFs



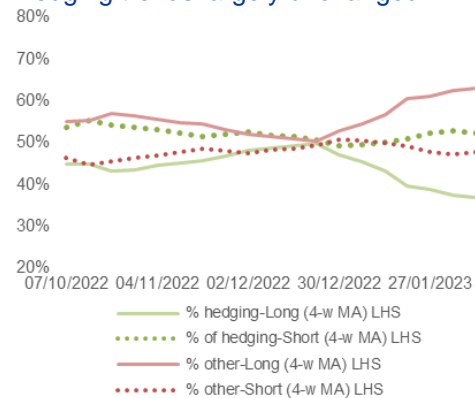
33. As per the preliminary assessment, the breakdown by type of position holders in TTF contracts remains in line with the expected functioning of the market where most positions continue to be held by non-financial counterparties. Looking at the positions held by these, as measured using the MiFID ESMA weekly position data for both ICE Endex and EEX, around 60% of the long and around 80% of the short positions continued to be held for hedging purposes on ICE Endex. These values have been broadly stable so far in 2023. On EEX, the distribution of hedging versus non-hedging positions has remained almost evenly distributed in case of short positions. In case of long positions, the share of hedging has slightly decreased to around 40% (charts 9 and 10). As with the other indicators, there is again little sign of MCM impacts so far.

Chart 9
Hedging vs. non-hedging NFC positions: ICE
Hedging trends largely unchanged in 2023



Note: TTF natural gas futures.
Sources: ESMA weekly position reports

Chart 10
Hedging vs. non-hedging NFC positions: EEX
Hedging trends largely unchanged in 2023



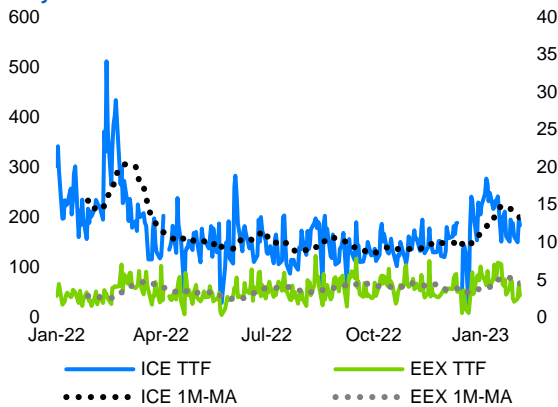
Note: TTF natural gas futures.
Sources: ESMA weekly position reports

Note: In case of the ICE Endex the cut-off date is 27 January 2023 due to the delay in publishing the weekly reports in the aftermath of the cyberattack on a third-party software vendor. In case of EEX the cut-off date is 10 February 2023.

3.2.2 Volumes

34. Volumes measure trading activity and refer to the number of transactions or the number of contracts which are exchanged every day, and to the size of those transactions. They are an important indicator of market activity shifting in anticipation or in response to an activation of the MCM. As volumes react much more quickly than position data, they are an important early indicator of potential shifts in trading. Trading volumes are also an indicator of liquidity, with markets with greater volumes (all else being equal) tending to be more liquid.
35. Chart 11 below shows how TTF trading volumes have evolved since January 2022. There is a recent increase and then fall in trading volumes over the last weeks for both ICE and EEX, perhaps related to seasonal effects at the start of a new year. The recent movements, however, appear in line with previous movements over 2022. The chart also does not indicate a change in the relative share of volumes for ICE Endex and EEX.

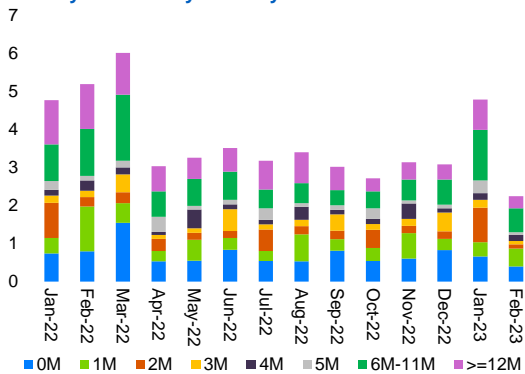
Chart 11
Daily volumes for Dutch TTF on ICE and EEX



Note: Daily total volume, in thousand of contracts, for TTF natural gas futures traded on ICE Endex, EEX and NYMEX, all maturities combined, with one-month moving average.
Sources: Refinitiv EIKON, ESMA.

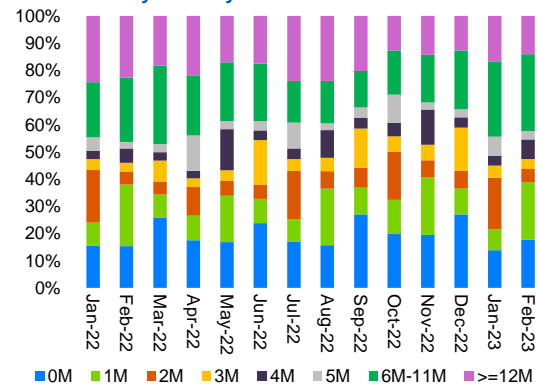
36. One potential impact of the MCM could be to affect the volumes of maturities traded, for example, if market participants were to gravitate to maturities outside the scope of the MCM. Charts 12 and 13 present the volumes split by maturity and the relative distribution since January 2022. While these show some variations in the distribution by maturity through the year, there is no clear sign that the market is reacting in anticipation of the MCM by more systematically changing the maturity of derivative contracts. Overall, the trends in volumes by maturity appear in line with those seen previously, also with little change observed since the preliminary data report in late January.

Chart 12
Monthly volumes by maturity on ICE and EEX



Note: Volumes of TTF natural gas futures traded ICE Endex and EEX by month of expiry date (0M = current month, 1M = next month, etc.) at selected points in time, in billion of MWh. Month-to-date data for the most recent month.
Sources: Refinitiv EIKON, ESMA.

Chart 13
Distribution by maturity for ICE + EEX

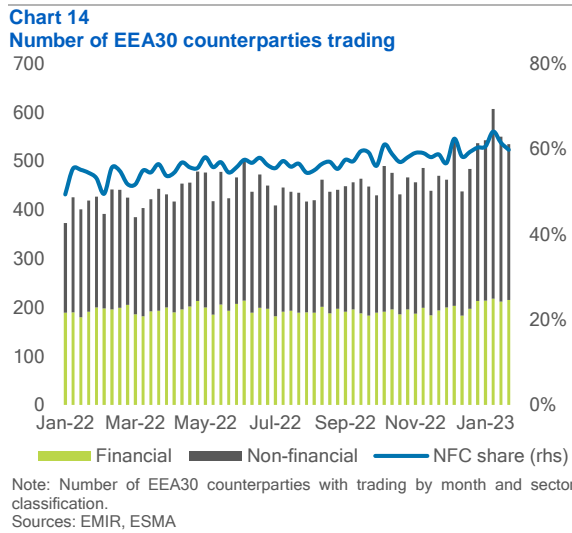


Note: Volumes of TTF natural gas futures traded ICE Endex and EEX by month of expiry date (0M = current month, 1M = next month, etc.) at selected points in time, in % of total volume. Month-to-date data for the most recent month.
Sources: Refinitiv EIKON, ESMA.

3.2.3 Liquidity: number of market participants

37. In this subsection and the next two, we consider liquidity metrics to monitor whether liquidity is being affected in EEA markets where products in scope of the MCM are being traded. Liquidity is a desirable market characteristic, capturing the ease with which buyers and sellers in a market can find each other, trade numerous and/or large contracts and do so without affecting the market for others who want to trade.
38. A simple indicator of liquidity is the number of market participants. While a high number of market participants does not suffice for a liquid market, more liquid markets tend to have numerous market participants, making it easier for actions with various investment strategies and horizons to interact and trade with one other.
39. The number of EEA30 counterparties trading in natural gas derivatives tended to increase in 2022⁴, from around 400 in January 2022 to 600 in late January 2023 (chart 14). Those counterparties were mainly non-financials. The share of non-financial counterparties increased in 2022, from 49% in early 2022 to 64% in late January 2023. The increase in the number of non-financials active in the market also largely accounted for the growth in counterparties overall, as the number of financials remained relatively stable. The trend has remained linear throughout the period, so again there is little sign of MCM-driven shifts, and in particular no sign here of falling liquidity as a result of the MCM.

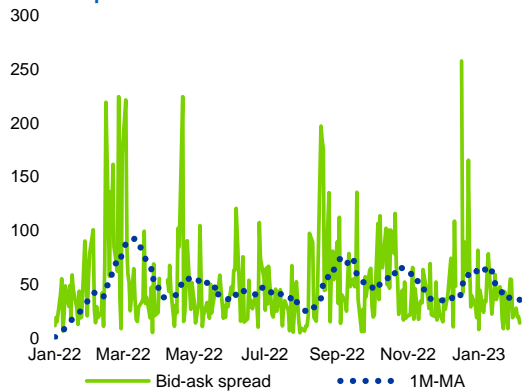
⁴ This observation is based on EMIR data. Transactions between two non-EU counterparties are not reportable under EMIR.



3.2.4 Liquidity: bid-ask spread

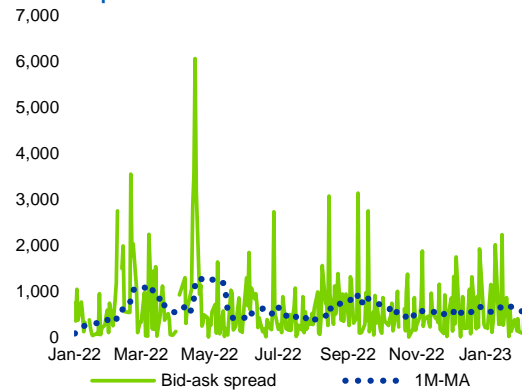
40. The bid-ask spread, the difference between the price requested to sell (ask) and the price offered for purchase (bid) as a proportion of the ask price, is a widely-used liquidity metric. It reflects the premium the supplier demands to meet an immediate purchase, capturing the transaction costs of the trade, including any premium the supplier requests to transfer some liquidity to the buyer. Less (more) liquid markets will have higher (lower) bid-ask spreads.
41. Charts 15 and 16 below, do not show major recent changes in liquidity trends for the two exchanges that account for the bulk of TTF trading (ICE Endex and EEX), including since our preliminary assessment in late January. The difference in the absolute level of the bid-ask spread between ICE Endex and EEX is understood to be in line with the respective volumes taking place on both venues, where ICE Endex is by far the most liquid market with roughly 95% of trading activity as shown in chart 11.
42. If the MCM were having an impact, net decreases in liquidity (and so increases in bid-ask spread) might be expected as market participants become more reluctant to trade, for example, in light of uncertainties about potential migration to non-MCM venues or contracts. The lack of a recent increase in bid-ask spreads at this stage is in line with the MCM remaining unlikely in the short term and market participants not yet adapting their behaviour.

Chart 15
Bid ask spread front month TTF on ICE Endex



Note: Bid-ask spread of the front-month TTF natural gas future traded on ICE Endex, in bps, computed using bid and ask close prices. 1M-Moving Average. Sources: Refinitiv EIKON, ESMA.

Chart 16
Bid-ask spread front month TTF for EEX

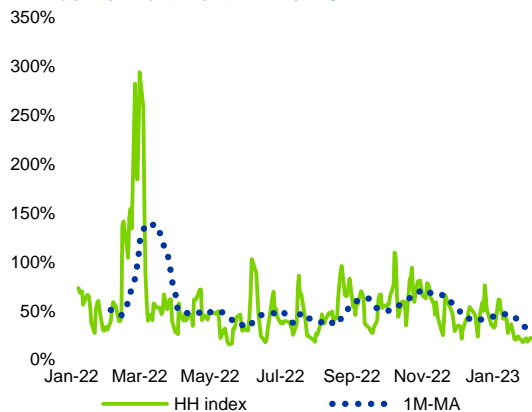


Note: Bid-ask spread of the front-month TTF natural gas future traded on EEX, in bps, computed using bid and ask close prices. 1M-Moving Average. Sources: Refinitiv EIKON, ESMA.

3.2.5 Liquidity: Hui-Heubel index

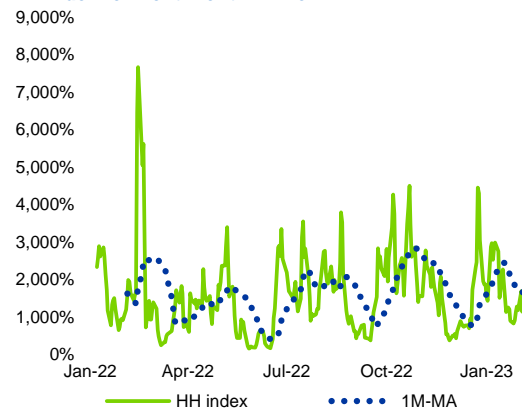
43. The final indicator of liquidity presented here is the Hui-Heubel (HH) index, the ratio of relative change in price to the turnover ratio. It provides a measure of extent to which price is being impacted by trading volumes. In less liquid markets prices are more impacted by the volumes traded and, conversely, less impacted in more liquid markets. Thus, a higher HH index is indicative of a less-liquid market.
44. Charts 17 and 18 present the HH index for the TTF front-month contracts traded on ICE Endex and EEX. As with the above bid-ask spread charts, liquidity as measured by the HH index shows the ICE Endex market to be more liquid than EEX. However, as with the bid-ask spreads, the trends for both exchanges do not show any sign of a step-fall in liquidity with the coming into force of the MCM.

Chart 17
HH index for front month TTF on ICE



Note: Hui-Heubel liquidity ratio for ICE Exend TTF front-month contract, and one-month moving average. Higher values indicate less liquidity.
 Sources: Refinitiv EIKON, ESMA.

Chart 18
HH index for front month TTF on EEX



Note: Hui-Heubel liquidity ratio for EEX TTF front-month contract, and one-month moving average. Higher values indicate less liquidity.
 Sources: Refinitiv EIKON, ESMA.

45. Thus, in sum, the three liquidity metrics here show no sign of change from market participants at this stage, in line with other market indicators.

3.3 Impact on execution

46. As mentioned above, the MCM could lead market participants to shift trading from EEA regulated markets subject to the MCM to venues not subject to the MCM, and potentially drive trading off-venue, to be executed bilaterally as OTC trades. In addition to potentially undermining the effectiveness of the MCM, such shifts to OTC would have other adverse effects, leading to reduced transparency, both to the market and for regulatory purposes, and to lower levels of clearing and a loss of the beneficial risk reduction effects of higher margins, netting and compression.

47. This section covers issues related to changes in execution by market participants and in so doing addresses Article 8(3)(a) of the Regulation, which requires ESMA to assess whether the exclusion of OTC trading from the scope of the Regulation led to significant shifts of TTF derivatives trading to OTC markets, endangering the stability of financial or energy markets (Section 3.3.1); as well as Article 8(3)(b) of the Regulation, requiring ESMA to assess whether the MCM led inter alia to a significant shift of TTF derivative transactions to trading venues outside the Union (Section 3.3.2).

48. This section also analyses other avenues that market participants may consider to avoid being impacted by the MCM, namely by trading on an OTF (Section 3.3.3) and trading in maturities not covered by the MCM (Section 3.3.4).

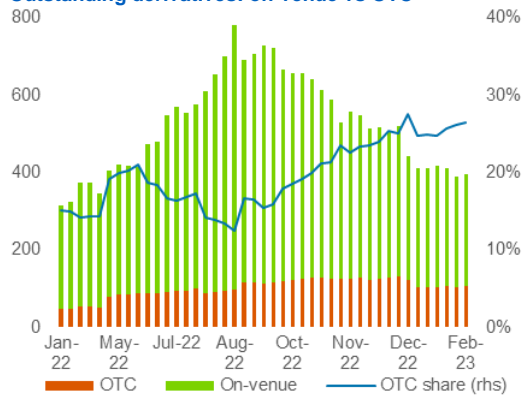
3.3.1 Execution: OTC versus on-venue

49. For the purpose of this report, ESMA analysed the breakdown between contracts traded OTC and on-venue, where on-venue comprises (1) transactions executed on EU trading venues (regulated markets, multilateral trading facilities (MTF) and organised trading facilities (OTF)); and (2) transaction executed on third-country trading venues⁵. Transactions which are negotiated bilaterally and subsequently formalised on a trading venue (also referred to as negotiated trades or block trades) are reported in the same way as on-venue trading under all the EU reporting regimes and they are therefore grouped under the on-venue denomination.
50. As mentioned in ESMA's preliminary report, the sharp price rises in commodity derivative markets, observed until end-August 2022, and the corresponding increase in margin requirements on regulated markets have been associated with a migration of derivative transactions to non-cleared OTC markets (measured on outstanding notional amounts), especially by non-financial corporates. Some firms may have migrated to OTC markets to reduce liquidity risk linked to rapidly changing variation and initial margins to be posted in cash or in high-quality collateral. On OTC markets, less restrictive collateral arrangements could potentially be negotiated, particularly by highly-rated commodities firms.
51. Since the publication of the preliminary report, ESMA complemented the set of indicators using EMIR data and provides the split between OTC and on-venue not only based on outstanding notional amounts but also based on trading activity (volumes).
52. Based on outstanding notional amounts (charts 19 and 20), the share of OTC has continued to rise as a proportion of outstanding notional amount for gas derivatives since the beginning of 2023, albeit more slowly than in the latter part of 2022. As shown in both charts, the continuing rise in the proportion of OTC is associated with the on-venue outstanding notional amounts falling more quickly than those for OTC.
53. Here, the falling outstanding notional amounts in part reflect falling gas prices, with outstanding notional amounts for both on-venue and OTC falling as contracts expire and are replaced by new contracts with smaller notional amounts than in the preceding months, due to the lower price. Also, as on-venue contracts

⁵ This is different from the definition of OTC derivatives under Article 2(7) of EMIR, which treats as OTC derivatives also transactions execution on EU MTF, EU OTF, and non-equivalent third-country venues.

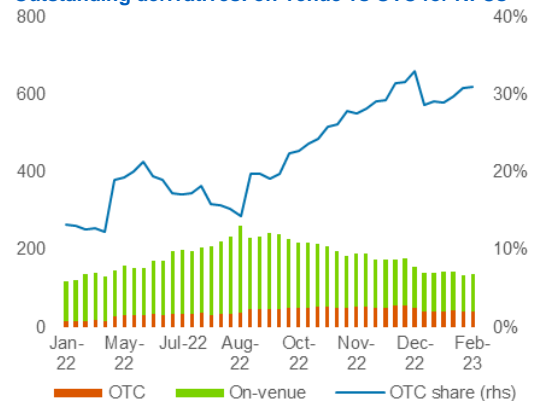
generally have shorter maturities than OTC contracts, this decline in outstanding notional amount occurs at a faster rate for on-venue contracts than for OTC, so contributing to the rise in the OTC share of notional amount outstanding. So, the increasing OTC rate as a share of notional amount reflects, at least in part, the ongoing fall in price and the generally shorter maturities of on-venue contracts.

Chart 19
Outstanding derivatives: on-venue vs OTC



Note: Outstanding notional amounts (EUR bn) on gas derivatives, by on-venue/OTC. All sectors included, intragroup trades excluded.
 Sources: EMIR, ESMA

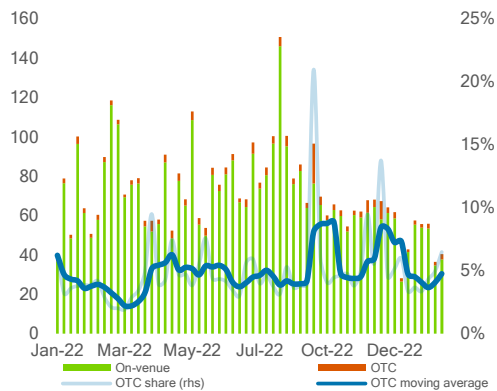
Chart 20
Outstanding derivatives: on-venue vs OTC for NFCs



Note: Outstanding notional amounts (EUR bn) on gas derivatives reported by NFCs, by on-venue/OTC. Intragroup trades are excluded.
 Sources: EMIR, ESMA

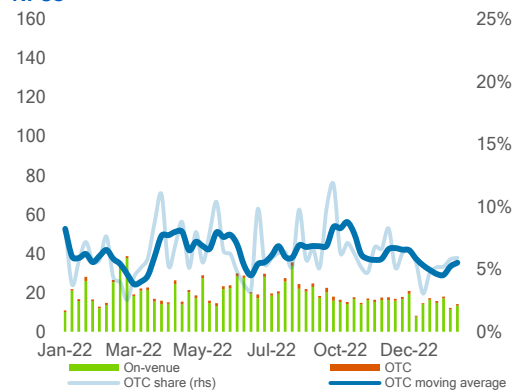
54. Trading activity: Traded activity provides another angle to OTC vs on-venue dimension, (charts 21 and 22). The share of notional amount that is OTC in the traded volume chart is significantly lower in these than in the corresponding outstanding notional amount charts. This also relates to the generally shorter maturities of on-venue derivatives, which implies a greater frequency of on-venue trading than OTC, which increases their share in trading volumes, and so lowers the OTC rate in trading volumes as compared to the share of OTC in the outstanding notional amount of open positions.

Chart 21
Gas derivative trading volumes: on-venue vs OTC



Note: Notional amounts (EUR bn) traded on gas derivatives, by on-venue/OTC. All sectors included, intragroup trades excluded. OTC share displayed on a weekly basis and as a monthly moving average.
 Sources: EMIR, ESMA

Chart 22
Gas derivative trading volumes: on-venue vs OTC for NFCs



Note: Notional amounts (EUR bn) traded on gas derivatives reported by NFCs, by on-venue/OTC. All sectors included, intragroup trades excluded. OTC share displayed on a weekly basis and as a monthly moving average.
 Sources: EMIR, ESMA

55. In terms of potential impacts of the MCM, there is no discernible sign in the charts above to suggest it has driven movement from venues towards OTC at this stage. For the outstanding notional amount, the share of OTC has risen steadily since late summer 2022, with little sign of acceleration in early 2023 in the upward trend that might be attributed to the MCM. As for the trading volumes chart, the share of OTC has oscillated between 5% and 10% of the total traded volumes since the beginning of 2022, both for NFCs and generally, without any apparent step change visible at this stage that might indicate an impact of the MCM. Although this could change if market participants began to anticipate an activation of the MCM.

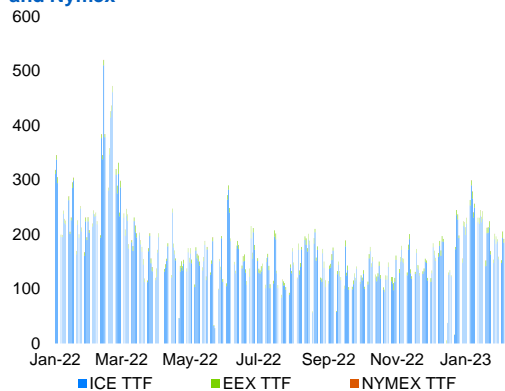
3.3.2 Execution: EU venues versus third-country venues

56. As mentioned in the preliminary data report, TTF derivatives are also available for trading in the US on Nymex (CME group). In addition, as mentioned above, ICE announced on 27 January 2023 its intention to provide for the parallel listing of TTF derivatives on its UK venue ICE Futures Europe from 20 February 2023. Now that this operation is completed, the same TTF derivatives are available for trading on both ICE UK and Dutch platforms⁶.

⁶ For completeness: prior to the announcement of the parallel listing, ICE Futures Europe was already offering “Dutch TTF Natural Gas 1st Line Financial Futures (USD/MMBtu)” (contract symbol TFU), which are cash-settled futures contract based upon the average of the daily settlement prices as published by ICE Endex for Dutch TTF Gas Base Load Futures (contract symbol TFM) traded in USD per MMBTU

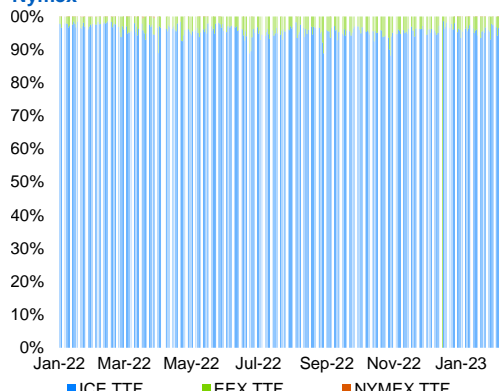
57. Regarding TTF derivatives trading activity in the US on Nymex, ESMA has not observed any market development since the publication of the preliminary data report: trading activity in TTF derivatives on Nymex appears extremely limited compared to the trading activity taking place on EU venues (charts 23 and 24).

Chart 23
Total volume (in MWh) of TTF futures traded on ICE, EEX and Nymex



Note: Daily total volume, in million of MWh, for TTF natural gas futures traded on ICE Endex, EEX and NYMEX, all maturities combined.
Sources: Refinitiv EIKON, ESMA.

Chart 24
Share of TTF future volume on ICE Endex, EEX and Nymex



Note: Daily total volume, in % of total volume of MWh, for TTF natural gas futures traded on ICE Endex, EEX and NYMEX, all maturities combined.
Sources: Refinitiv EIKON, ESMA.

58. Regarding a possible migration of TTF derivatives trading activity to the UK platform ICE Futures Europe, two elements should be duly considered for this assessment. First, there was not sufficient time between the date on which TTF derivatives became available on ICE Futures Europe (20 February 2023), and the publication of this report to collect and analyse trading activity data on this venue.

59. Second, it is ESMA's understanding that market participants would manifest their interest in the new possibility offered by ICE to trade TTF derivatives on its UK platform only when they consider that the occurrence of a market correction event is imminent or at least becomes more likely. Given the price levels prevailing at the time of writing, the likelihood of the two conditions underpinning a market correction being triggered in the near future appears limited.

60. Notwithstanding the above, ESMA flags that the ICE offering of TTF derivatives on its UK platform is a direct consequence of the establishment of the Regulation. This market development highlights (1) market participants' anticipations that the activation of the MCM would impede their capacity to appropriately manage their risks; and (2) the existence of routes to avoid the MCM, which calls into question the effectiveness of the measure.

3.3.3 Execution: EU regulated markets versus EU organised trading facilities

61. The MCM applies to gas derivative contracts traded on a regulated market. Notwithstanding the possibility for trading activity to take place OTC outside the MCM, as mentioned above, gas derivatives traded on other types of EU venues, namely multilateral trading facilities (MTF) and organised trading platforms (OTF), also would not be affected by the MCM. Thus, market participants could be incentivised to redirect their trading activity towards MTFs and OTFs.
62. TTF derivatives are currently not available for trading on EU MTFs (according to FITRS data, no trading activity on TTF derivatives was reported by MTFs) and ESMA is not aware of any market development in this respect. As concluded in the preliminary report, due to the administrative burden, the costs involved and the time constraints, setting up an MTF specifically for the purpose of offering gas derivatives that would not be bound by the MCM remains rather theoretical.
63. The outlook, however, is different in the case of OTFs, where important developments have materialised since the publication of ESMA's preliminary report. ESMA analysed the following two publications by EEX: [EEX Q&As](#) on the implementation of the Market Correction Mechanism dated 3 February 2023 and [EEX Customer Information](#) dated 21 February 2023.
64. This first communication provides that TTF derivatives are listed at the EEX OTF which are contractually identical to the contracts available on the EEX Regulated Market (they were already available before the MCM) and that in the future, the full set of gas derivatives available on the regulated market would be made available for trading on the OTF as well. The communication explicitly states that *"The EEX OTF allows Market Participants and Clearing Members to manage existing regulated market positions unrestricted from MCM events."* Finally, EEX mentions the development of arrangements to facilitate the netting of OTF and regulated markets positions, which would make it easier for market participants to offset positions taken on the regulated market with positions taken on the OTF.
65. The second communication provides that all EEX OTF natural gas derivatives with delivery periods as of 1 April 2023 that comprise mandatory physical delivery will be changed to EEX OTF natural gas derivatives with optional physical settlement. Following this change, natural gas derivatives traded on the EEX OTF, while remaining outside the scope of the MCM, will fall under the MiFID II definition of financial instruments and therefore be subject to the relevant financial regulations. Indeed, in accordance with the definition of financial instruments

provided in MiFID II concerning wholesale energy derivatives traded on an OTF, only those that can be physically settled meet the definition of a financial instrument (while those that must be physically settled benefit from the C(6) carve-out).

66. The development of EEX gas derivatives being offered on its OTF is understood to be a direct consequence of the MCM. The observation made with respect to the possible migration of trading activity to third-country venues is also valid here: market participants are expected to manifest their interest in the new possibility offered by EEX to trade gas derivatives on its OTF only when they consider that the occurrence of a market correction event becomes imminent or at least more likely than under current market conditions, which is not the case at the time of writing.
67. Nevertheless, a possible migration of gas derivatives trading activity from regulated market to OTF raises concerns in terms of liquidity and transparency: it would lead to splitting liquidity between various execution venues, which in turn could increase trading costs. In addition, in the case of gas derivative contracts traded on OTFs that must be physically settled (C(6) carve-out instruments), the trading activity would not be reported and published under MiFIR (transaction reporting, pre- and post-trade transparency, reporting to ESMA FITRS) nor under EMIR, limiting regulators' capacity to appropriately monitor this market. In addition, MiFID II position limits do not apply to C6 carve-out contracts and neither does MiFID II position reporting.

3.3.4 Execution: maturities in scope and out of scope

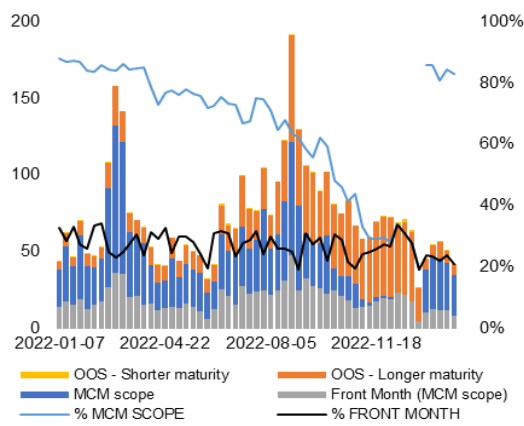
68. The MCM applies to TTF derivatives that are "due to expire in the period from the expiry date of the front-month TTF derivative to the expiry date of the front-year TTF derivative" (Article 4(5) of the MCM Regulation).
69. The terms "front-month" and "front-year" are defined in Article 2(4) and (5) of the Regulation as follows:
- (4) 'front-month TTF derivative' means a TTF derivative whose expiration date is the nearest among the derivatives with a one-month maturity traded on a given regulated market;
 - (5) 'front-year TTF derivative' means a TTF derivative whose expiration date is the nearest among the derivatives with twelve months maturity traded on a given regulated market;

70. The terms “maturity” and “expiry” refer to different contract characteristics: the maturity of a gas derivative contract corresponds to the duration of the gas delivery period (e.g. a “monthly” contract has a delivery period of one month). The expiry is the date on which the contract expires, i.e. the last date on which the contract can be traded on the venue. This date falls shortly before the beginning of the delivery period. Maturities and expiries are defined in the venues’ contract specifications.
71. The Regulation specifies the contracts in scope by reference to the expiry date of the contract, which shall fall between the expiry date of the current front-month and the expiry date of the current front-year. The front-month contract changes every month, while the front-year contract remains the same throughout the full calendar year.
72. In practice, this translates into a decreasing number of contracts being in scope of the MCM as the calendar year progresses. For example, as of the entry into force of the Regulation (15 February 2023), 10 monthly contracts are under MCM scope (March 23 to Dec 23 maturities) while in November 2023, the only monthly contract under MCM scope will be the front-month contract (Dec 2023 maturity).
73. This characteristic is illustrated in the charts 25 and 26 below: the percentage of trading activity under the MCM scope gradually decreases from around 80% at the beginning of the calendar year to around 20% towards the end of the calendar year. The impact of the MCM would therefore by construction tend to decrease over the course of the year.
74. To monitor whether market participants are adjusting their trading activity towards contracts with maturities not covered by the MCM, ESMA measured trading activity under three buckets: “out-of-scope (OOS) shorter maturities” are contracts with expiry dates before the expiry date of the front-month; “MCM scope” are contracts with expiry dates between the expiry of the front-month and the expiry of the front-year; “out-of-scope (OOS) longer maturities” are contracts with expiry dates after the expiry date of the front-year.
75. As of the date of writing, the percentage of trading activity covered by the MCM scope in early 2023 is similar to the one observed in 2022⁷. Therefore, there is no evidence of an arbitrage between maturities covered and maturities not covered by the MCM at this stage. Feedback from stakeholders in this respect indicated that if any maturity arbitrage would exist, this would likely materialise

⁷ This corresponds to a simulation of the contracts that would have been in the scope of the MCM if it had applied in 2022.

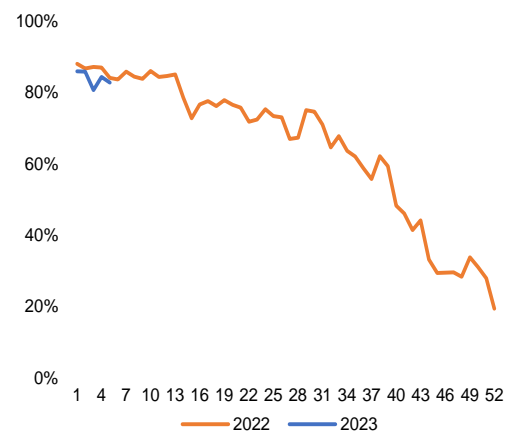
rather from the derivatives markets (all maturities) towards the spot market, rather than between certain maturities within the derivatives market.

Chart 25
Volumes of natural gas derivatives traded on regulated markets by MCM scope in terms of expiry date



Note: Weekly EUR bn volumes of notional trading on regulated markets for derivatives on natural gas maturity bucket. Options excluded. Front month includes monthly futures and forwards expiring in the same month as the trade. Rest of MCM scope includes all non front month contracts that expire before the expiry of the Front Year contract. Out of scope instruments are either instruments expiring before the expiry of the Front Month contract (shorter expiry) or any contract expiring after the expiry of the Front Year contract (longer expiry)
 Sources: FITRS, ESMA.

Chart 26
Volumes executed under MCM scope in terms of expiry date by week of the year



Note: Volume of notional trading on regulated markets for derivatives on natural gas under MCM scope, comparison by year. Futures and forwards only. X axis represents the week of the year.
 Sources: FITRS, ESMA.

3.4 Gas derivatives linked to other VTPs

3.4.1 Background and mandate

76. In accordance with Article 1 of the Regulation, the MCM applies to orders placed for trading TTF derivatives and derivatives linked to other VTPs. While the application of the MCM to TTF derivatives applied from 15 February 2023, the application to other gas hubs follows a different procedure.

77. On the basis of ACER and ESMA's effects assessments, the Commission shall, by means of an implementing act, define the technical details of the application of the MCM to derivatives linked to other VTPs by 31 March 2023. If the application of the MCM to derivatives linked to other VTPs leads to significant negative effects on financial or gas markets pursuant to the criteria set out in Article 9(2), the Commission shall, exceptionally, exclude certain derivatives from the scope of application of the MCM.

78. In the effects assessment, ESMA should therefore take into account the criteria listed in Article 9(2) of the Regulation in particular (i) the availability of information

on the prices of derivatives linked to other VTPs; and (ii) the liquidity of the derivatives linked to other VTPs.

79. In addition, according to Article 8(2) of the Regulation, the effects assessment should verify whether the limitation of the MCM to TTF derivatives led to arbitrage by market participants between corrected (TTF derivatives) and non-corrected (gas derivatives linked to other VTPs) with negative impact on financial or energy markets, and to the detriment of consumers.

3.4.2 Overview of gas derivatives linked to other VTPs.

80. On EU regulated markets, gas derivatives are currently available for trading on 11 EU hubs (incl. TTF) and on the UK NBP, on 5 EU regulated markets. Three hubs are only available on EEX (ETF, ZTP, CZ VTP); one hub is only available on HUDEX (MGP); the remaining hubs are available on 2 or 3 regulated markets.
81. While gas derivatives on the UK hub (NBP) are available for trading on two EU regulated markets (EEX and Nasdaq), those derivatives fall outside the scope of the Regulation in accordance with the definition of 'derivative linked to other VTP' provided in Article 2(2) of the Regulation, which only refers to transactions in gas "in a virtual trading point in the Union".
82. The two regulated markets which are not offering TTF derivatives offer gas derivatives in respect of one hub each: OMIP, a Portuguese regulated market, is only offering gas derivatives on the Spanish hub (PVB) while HUDEX, a Hungarian regulated market, is only offering gas derivatives on the Hungarian hub (MGP).
83. In addition, gas derivatives linked to other VTPs are available for trading on OTFs. As already explained in Section 3.3.3, physically settled gas derivatives traded on OTF are not financial instruments, trading activity on those instruments is not subject to regulatory reporting to ESMA and therefore their liquidity cannot be assessed in this report.

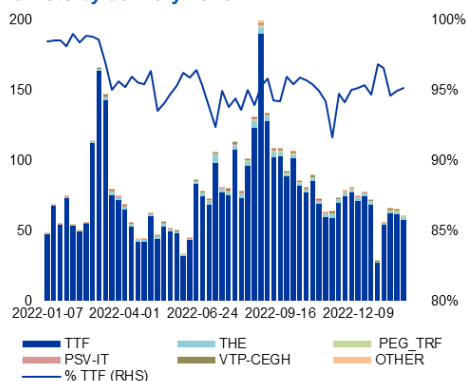
Hub	Market Area (country)	No. of EU venues offering gas derivatives	EEX (DE)	ICE ENDEX (NL)	OMIP (PT)	Nasdaq (NO)	Hudex (HU)
THE	DE	3	TRUE	TRUE	FALSE	TRUE	FALSE
PEG	FR	3	TRUE	TRUE	FALSE	TRUE	FALSE
PSV	IT	2	TRUE	TRUE	FALSE	FALSE	FALSE
TTF	NL	3	TRUE	TRUE	FALSE	TRUE	FALSE
NBP	UK	2	TRUE	FALSE	FALSE	TRUE	FALSE
ZEE	BE	2	TRUE	FALSE	FALSE	TRUE	FALSE
PVB	ES	2	TRUE	FALSE	TRUE	FALSE	FALSE
CEGH VTP	AT	2	TRUE	TRUE	FALSE	FALSE	FALSE
ETF	DK	1	TRUE	FALSE	FALSE	FALSE	FALSE
ZTP	BE	1	TRUE	FALSE	FALSE	FALSE	FALSE
CZ VTP	CZ	1	TRUE	FALSE	FALSE	FALSE	FALSE
MGP	HU	1	FALSE	FALSE	FALSE	FALSE	TRUE

Table 1: Gas derivatives available in EU regulated markets

3.4.3 Liquidity of gas derivatives linked to other VTPs

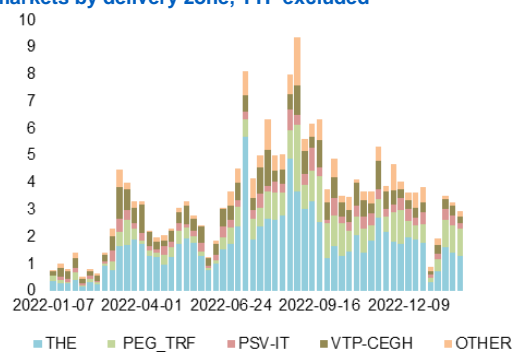
84. In 2022, TTF derivatives represented 98.8% of the total number of trades and 95.3% of the total traded volumes of all gas derivatives. When TTF is excluded, the most liquid gas derivatives are the German gas hub (THE) followed by the Austrian (CEGH), the French (PEG) and the Italian (PSV) hubs. Collectively those four hubs represented around 90% of the volumes of non-TTF gas derivatives. There is a significant liquidity gap between TTF derivatives and the second most liquid gas contract (THE) with an average daily number of transactions of ~22,500 for TTF versus 134 for THE. The remaining seven gas hubs (Spanish PVB, Belgian ZTP and ZEE, Czech VTP, UK NBP, Danish ETF and Hungarian MGP) had less than 5 transactions per day on average.

Chart 27
Volumes of natural gas derivatives traded on regulated markets by delivery zone



Note: Weekly EUR bn volumes of notional trading on regulated markets for derivatives on natural gas by underlying / delivery zone. All type of derivatives and maturities included. % TTF (RHS) represents the percentage to the total of TTF contracts in terms of volume. Sources: FITRS, ESMA.

Chart 28
Volumes of natural gas derivatives traded on regulated markets by delivery zone, TTF excluded



Note: Weekly EUR bn volumes of notional trading on regulated markets for derivatives on natural gas by underlying / delivery zone, TTF excluded. All type of derivatives and maturities included. Sources: FITRS, ESMA.

Arbitrage between TTF derivatives and gas derivatives linked to other VTPs

85. On the basis of the data presented above, it cannot be concluded that the initial limitation of the Regulation to TTF derivatives led to arbitrage by market participants between corrected and non-corrected derivatives. However, given the very short period of time between the application of the MCM and the last date of the observation period, such conclusion should be interpreted with caution.
86. In ESMA's view, a potential arbitrage between TTF derivatives and non-TTF derivatives appears unlikely in view of the other arbitrage possibilities which derive from the application of the MCM as further elaborated in this report, namely the migration to OTC (Section 3.3.1.), the potential migration to third-country venues (Section 3.3.2) and the potential migration to OTFs (Section 3.3.3). This view was generally confirmed by market intelligence shared by stakeholders.
87. Nevertheless, it is unlikely that any arbitrage between TTF derivatives and non-TTF derivatives, should it manifest itself in the future, would entail a significant negative impact on energy derivative markets: in such an event, gas derivatives would continue to be traded on EU regulated markets in a transparent manner with the proper risk mitigation ensured by CCP clearing and continue to be subject to regulatory reporting and trade transparency. In that sense, the arbitrage between TTF derivatives and non-TTF derivatives would constitute a far less pronounced disruption of financial markets if compared to the three other arbitrage possibilities listed above.
88. While the extension of the MCM to gas derivatives linked to other VTPs may not significantly disrupt financial markets, two other concerns are worth highlighting. First, in terms of benefits, given the high concentration of volumes on TTF derivatives, bringing the residual trading activity existing on other VTPs under the scope of the MCM would only marginally contribute to the objective that the MCM seeks to achieve. If anything, such extension may even constitute another argument for market participants to avoid the MCM via the other identified arbitrage possibilities (OTC, third-country venues, OTFs).
89. Second, extending the MCM to other hubs would result in additional costs and risks for market participants. Indeed, two additional venues (OMIP and Keler, who are not offering TTF derivatives) and their respective CCPs (OMIClear and Keler CCP) would be required to comply with the MCM. These aspects are further explored in Section 4.1.5.

4 Impact of the MCM on clearing

90. TTF-derivatives and derivatives linked to other VTPs are centrally cleared through central counterparties (CCPs). The activation of the MCM would cap the price of transactions executed on the exchange, thereby impacting the price discovery function of the exchange. The absence of reliable market prices directly impacts the risk management framework of CCPs, as such prices are essential input for the calculation of margins, default management processes of the CCPs, and the determination of the settlement price for the physical delivery of the underlying asset.
91. The activation of the MCM (and potentially the anticipation of its activation) would therefore have an impact on relevant CCPs, and on the broader clearing ecosystem, notably through potential additional margin calls and resulting liquidity needs for the clearing members and clients.

4.1 Impact on CCP risk management

92. This section covers a set of indicators to capture the potential impact of the MCM on the CCPs' capacity to conduct their risk management activities, in particular, to calculate their exposures and to manage potential clearing member defaults.
93. In order to obtain the relevant data, ESMA has made voluntary data requests directly to the relevant Tier 2 CCP as well as to the National Competent Authorities (NCAs) for relevant EU CCPs that covered the following elements: natural gas derivative contracts cleared, open positions & volumes, margins linked to energy products and TTF contracts, back-testing and top exposures.
94. The data requested covered the period running from 30 January to 3 February and a sample period running from 2 January to 6 January in order for ESMA to be able to compare and analyse the data collected. Following the application of the MCM Regulation on 15 February 2023, ESMA will request that the data template be filled on a weekly basis. The reporting frequency may be increased should the settlement price of front-month TTF derivatives move closer to the dynamic bidding limits.

4.1.1 Market liquidity and availability of prices

95. When the price cap of the MCM is reached, CCPs may no longer be able to use the exchange price to reflect the market-implied value of the impacted TTF contracts for margin calculations and the management of a clearing member's

default. CCPs will have to find alternative price sources, in line with regulatory requirements, for example, on OTC markets or other alternative sources. The use of alternative prices could potentially challenge a CCP's proper estimation of its exposures and generally its ability to manage risks.

96. Indicators for monitoring the capacity of CCPs to accurately calculate their exposures relate to market liquidity and availability of prices, which can be measured by analysing the development of exchange volumes in TTF contracts, average bid-ask spreads, and the ratio of OTC versus exchange trading activity and open interest.
97. Since the start of 2023, no noticeable changes have occurred in indicators of market liquidity and availability of prices. As outlined in Section 3, the volumes and open interest of on-exchange transactions have been relatively stable (3.2), the bid-ask prices have not substantially changed (3.4), and no significant changes have been observed in the percentage of OTC trading to on-venue trading (3.1). This indicates that the capacity of CCPs to calculate their exposures for TTF contracts potentially subject to the MCM was not negatively impacted during the observation period.

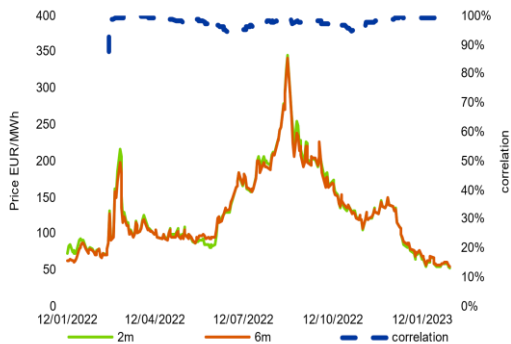
4.1.2 Margin off-sets, correlations and dependencies

98. CCPs are allowed under EMIR to offer portfolio margining offsets where price dependencies across maturities and related products are significant, reliable, resilient under stress conditions, and subject to an economic rationale. However, the potential activation of the MCM may break these dependencies and require CCPs to review such offsets. The reduction or withdrawal of the provided offsets would increase the amount of required collateral from clearing members and clients, especially for those that have positions/hedges across different maturities or energy contracts.
99. To monitor a potential increase in margin requirements due to reduced margin off-sets and correlations, ESMA uses indicators on correlations and parameter changes. A reduction of observed correlations between different TTF maturities may result in the CCP applying higher margins to intermonth spread positions. A reduction in correlations between the most liquid TTF contracts and other products (e.g. power, oil, etc.) may indicate that CCPs will increase their margins due to lower offsets. Similarly, higher charges for intermonth positions and/or lower off-sets parameters calculated by CCPs may indicate that CCPs are considering that there are higher de-correlation risks for spread positions in TTF and related contracts. Caution in applying these indicators is warranted, as

decorrelation effects linked to the MCM Regulation may be difficult to distinguish from other market developments that may have a similar effect.

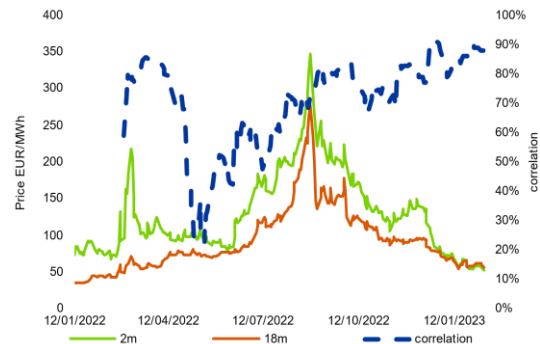
100. Recent data shows that correlations increased among price returns of different maturities of TTF contracts. The below chart (left) shows that correlations are relatively stable for the 2-6 months contracts, whereas the other chart (right) shows an increase of correlations for the 2-18 months TTF contracts.

Chart 29
TTF Correlation 2m-6m



Note: Correlation of 1-day price returns over 30-day rolling window
Sources: Refinitiv Eikon, ESMA

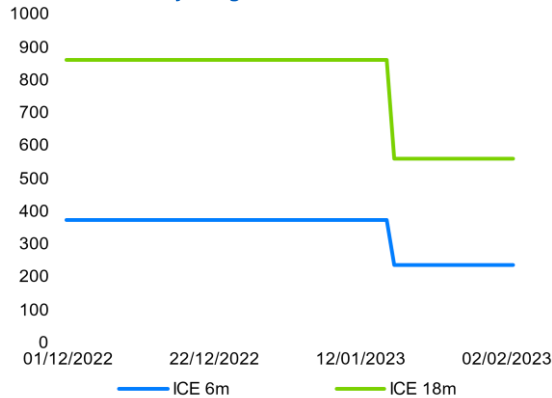
Chart 30
TTF Correlation 2m – 18m



Note: Correlation of 1-day price returns over 30-day rolling window
Sources: Refinitiv Eikon, ESMA

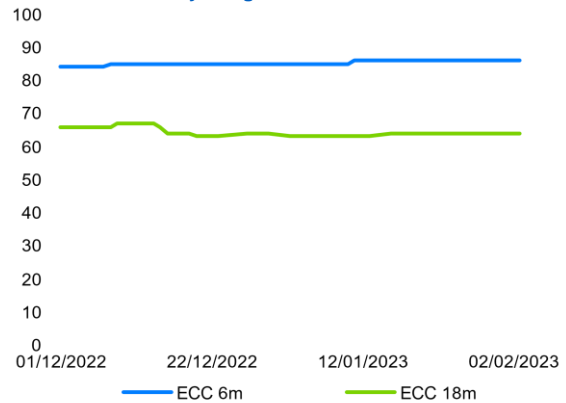
101. ESMA has not identified any significant changes to the margin rates applied to calendar spread positions between different TTF maturities that can be attributed to the MCM. Some changes observed seem to be driven by the need to adjust margin rates to the prevailing level of prices.

Chart 31
ICE – Inter maturity margin rate TTF



Note: 1m-6m and 1m-18m in EUR/MWd
Sources: ICE Website

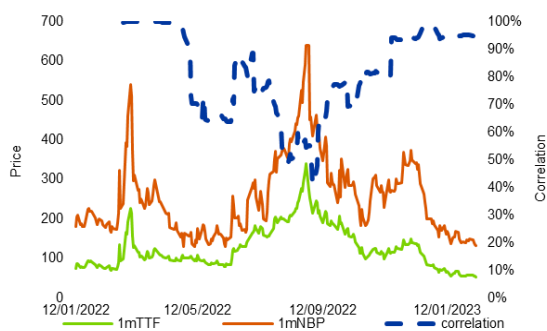
Chart 32
ECC – Inter maturity margin rate TTF



Note: 1m-6m and 1m-18m in %
Sources: ECC Website

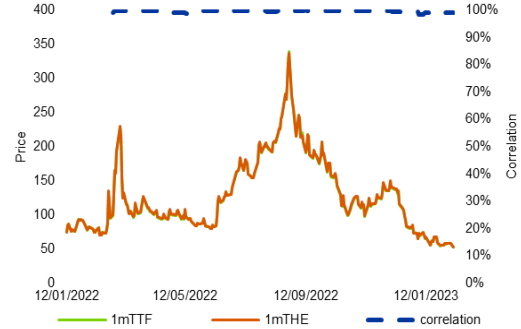
102. The same analysis has been performed between the TTF contracts and other key gas contracts that could provide for margin off-sets with similar conclusions.

Chart 33
ICE – TTF-NBP Front month Correlation



Note: Correlation of 1-day price returns over 30-day rolling window
Sources: Refinitiv Eikon, ESMA

Chart 34
ECC – TTF – THE Front month Correlation



Note: Correlation of 1-day price returns over 30-day rolling window
Sources: Refinitiv Eikon, ESMA

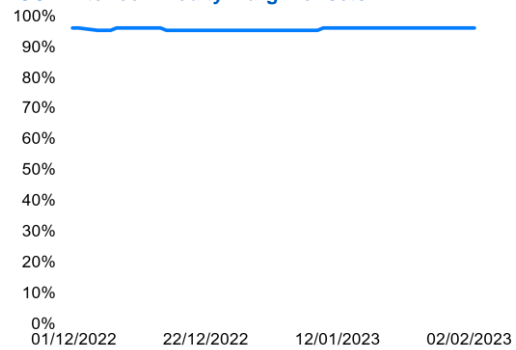
103. Finally, no changes were noted to key inter-commodity margin off-sets linked to the implementation of the MCM.

Chart 35
ICE – Inter commodity margin offsets TTF – UK NBP



Note: ICE Inter-commodity margin offsets between TTF-1 month and UK NBP-1 month Gas contracts
 Sources: ICE Website

Chart 36
ECC – Inter commodity margin offsets TTF - THE



Note: ECC Inter-commodity margin offsets between TTF-1 month and THE-1 month Gas contracts
 Sources: ECC Website

104. To conclude, no significant changes have been observed in margin offsets and correlations that can be contributed to the MCM Regulation during the observation period.

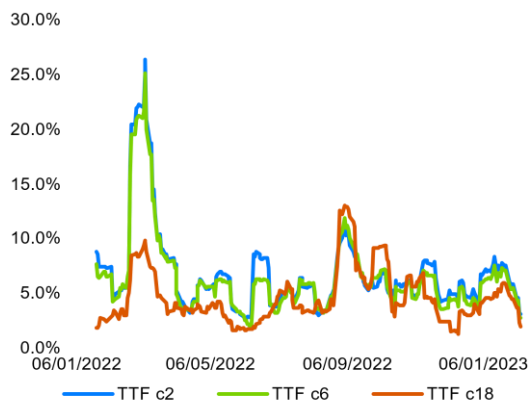
4.1.3 Price volatility

105. The MCM may result in increases of price volatility of the near-term TTF contracts ahead of the activation of the price cap, as well as for longer maturities, potentially leading to whipsaw moves if the cap is activated and then suspended due to financial stability concerns. The CCP may have to increase margin requirements and/or use hypothetical stress scenarios that could model such behaviour.

106. To monitor whether the MCM may impact margin requirements through an increase in price volatility, ESMA monitored the price volatility of TTF contracts inside and outside the scope of the MCM, as well as outright initial margin parameters in MWh and percentages. However, an increase in volatility linked to the MCM Regulation may be difficult to distinguish from other market developments that could have similar effects.

107. During the period observed, the volatility of TTF prices, as measured by the standard deviation of relative % returns, was decreasing across all maturities, both within and outside the scope of the MCM.

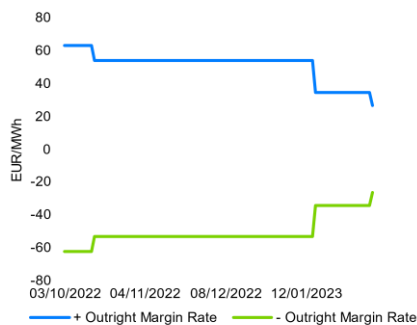
Chart 37
TTF Price Volatility Continuation month 2, 6, 18



Note: Standard deviation of 1-day price returns over a 10-day rolling period
Sources: Refinitiv Eikon, ESMA

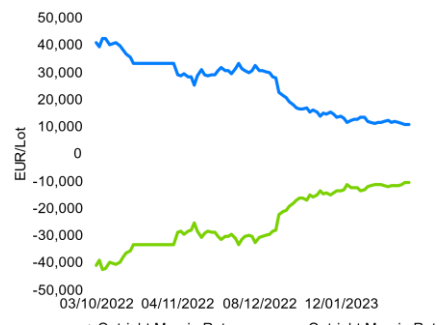
108. Moreover, ESMA has observed a decrease in absolute margin rates applied to TTF contracts by the two most active CCPs in clearing TTF contracts, which are ICEU and ECC. These changes are linked to the lower prices and volatility of the contracts. The margin rates determine the margin that is required for outright positions in TTF contracts.

Chart 38
ICE – TTF Outright Margin Rate



Note: Scanning Range 6m in EUR/MWh
Sources: ICE Website

Chart 39
ECC – TTF Outright Margin Rate



Note: Scanning range 6m in EUR per Lot
Sources: ECC Website

109. To conclude, during the period observed, the price and volatility of contracts were decreasing, leading to a reduction of the relevant margin parameters, and a reduction of margins on outright positions.

4.1.4 Changes to CCP risk models

110. The MCM and the activation of the price cap may require changes to the CCPs' risk management models, which require time to implement. Any significant changes to risk models or parameters require comprehensive and conservative implementation, as prescribed by EMIR, including reviews by different layers of the governance structure, an independent validation, as well as a validation by ESMA and the relevant NCA.
111. Moreover, even if the relevant price levels for the application of the MCM have not been reached, a CCP may still need to incorporate changes to the relevant risk models in anticipation of potential risks. If CCPs would increase margin to reflect these additional risks subject to increased price levels, this could further add to liquidity pressures that would anyway be triggered by the higher price levels.
112. Further complications could arise for exchange-traded options contracts based upon TTF contracts. TTF option products are key supporting products for market participants to hedge their exposures. The triggering of the MCM may impact both the underlying value and implied volatility of the option, which are key variables for the accurate valuation of these contracts and to perform daily settlements.
113. ESMA will be monitoring the performance of risk models through the relevant back-testing results, any increase in breaches may indicate a lower performance of the model that could potentially be linked to the implementation of the MCM. As shown in subsections 4.1.1 and 4.1.2, there has not been any noticeable effect in the relevant underlying variables that determine the risk profile of TTF contracts. Moreover, the back-testing results from the observation period have not shown any general increase in breaches during the recent period.
114. Finally, where the relevant CCPs intend to adopt any significant changes to their risk models and parameters, these will have to apply to the competent authority and ESMA for validation of that change under Article 49 of EMIR. ESMA will then be able to assess whether that significant change could be linked to the MCM Regulation.
115. Until now, ESMA has not received requests for validation of risk model changes under Article 49 of EMIR linked to the TTF contracts that are currently subject to the MCM Regulation.

4.1.5 Changes to default management

116. Although the trades executed as part of a default management process organised by a CCP benefit from an exemption from the MCM under Article 12(4)(c) of the MCM Regulation, it is unclear to what extent this exemption applies to the counterparties (e.g. clearing members or clients) that participate to the default management process. Market participants that provide bids for the defaulters' portfolio may subsequently need to reduce their exposures in a gradual manner in the market. If this proves to be impossible, the potential exposures will increase for these market participants, which would be reflected in higher prices for the auctioned portfolio or a failed auction process.
117. If the MCM is activated, the CCP's management of a default situation could face challenges in trying to return to a balanced book and effectively discharge all obligations. The MCM could cause a change in the fundamentals of the cleared products and the liquidation of a defaulter's portfolio, including adaptations in operational and legal arrangements.
118. ESMA is monitoring whether CCPs are making significant changes to their default management processes in light of the implementation of the MCM Regulation or of the price approaching the dynamic bidding limit.
119. Until now, the CCPs that clear TTF contracts have not provided information that significant changes to their default management procedures may be required because of the MCM Regulation. However, some CCPs have outlined that a level of non-quantifiable risk linked to the default management process remains due to difficulties mentioned above.

4.1.6 Potential additional impact of MCM extension to other EU VTPs

120. The Regulation outlines that the MCM will be extended to other cleared Virtual Trading Points (VTPs) in the EU as from 1 April 2023.
121. According to the information retrieved from the relevant CCPs, two additional CCPs (OMIClear and Keler CCP) which do not clear TTF contracts would be required to comply with the MCM Regulation. Only one CCP actually has open positions in these contracts. Nonetheless, ESMA has requested from these CCPs the same data as for CCPs that clear TTF products and will set-up a similar continuous monitoring of the relevant indicators.

122. Currently, and based on the data retrieved, the same conclusions can be drawn as for the TTF contracts. No impact from the MCM has yet been noted, as:
- Prices on other VTPs remain strongly correlated to the TTF price (see sub-section 4.1.2);
 - No reduction in the liquidity of the relevant contracts has yet been observed (see sub section 3.4.2.). It should be noted that the open interest and liquidity in these contracts are considerably lower than for TTF contracts; and
 - Lower prices and reduced volatility in other EU VTPs have also been observed.
123. In addition, these smaller CCPs will have to evaluate the impacts of the MCM Regulation. This may be challenging as this may require complex changes to their risk management to be designed, approved and implemented under very constrained timelines with limited staff and resources.

4.2 Impact on the clearing ecosystem

124. This section provides an overview of the relevant aspects of the MCM that may impact the clearing ecosystem and particularly the levels of margins charged to clearing member and clients. For each aspect, the document explains (1) the relevant interactions with the clearing ecosystem, (2) the relevant indicators reviewed by ESMA, and (3) the developments noted until the 1st week of February following the entry into force of the Regulation.

4.2.1 Impact on margin requirements for TTF contracts at the relevant CCPs

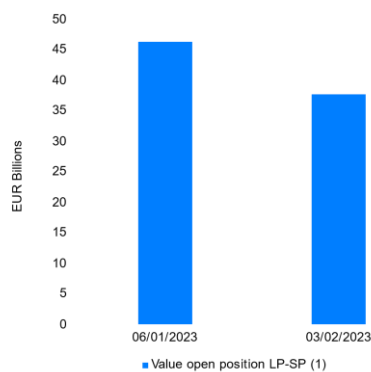
125. The activation of the MCM could increase the size of margin requirements. Parameters used by CCPs as input for margin calculations may be impacted by the need to use alternative price sources. Reduced market liquidity and a reduced potential for portfolio margin off-sets could further contribute to increased collateral needs at the level of CCPs.
126. ESMA has set-up monitoring to assess the impact of the MCM on the relevant CCPs and the clearing ecosystem but has encountered significant challenges when conducting this task.

127. ESMA will monitor on a regular basis any changes in key risk parameters, for example the margin rate on outright positions for TTF positions, intermonth charges and inter commodities off-sets with the most important related products (see paragraph 4.1). Changes in margin parameters may result in higher margins on TTF contracts cleared at CCPs.
128. ESMA will also evaluate the margins collected from clearing members by the relevant CCPs. Changes in the collected margins at CCP level can provide an indicator on the impact of the application of the MCM. However, changes in collected margins do not provide information on underlying sources of margin increase. Particularly, higher/lower valued positions generally result in higher/lower margins, but these changes might not be related to application of the MCM.
129. ESMA will receive part of this information on EU CCPs thanks to the voluntary data contributions from NCAs, including on critical aspects of CCP risk management such as TTF-related margin off-sets, daily calculations of relevant margin parameters, back-testing results and concentration of risk exposures, which is not available under EMIR reporting. The ad-hoc data contributions are therefore neither automatized, nor standardised, which requires substantial work both from the perspective of the CCPs, as well as for the relevant authorities and ESMA.
130. It should be also highlighted that even where ESMA receives data, it may not always be sufficiently granular. Generally, CCP margins are calculated on a portfolio level, where the overall risk exposure is in most cases measured across all cleared (energy) products. The positions in TTF contracts that are potentially impacted by the MCM Regulation are only a (limited) part of the cleared portfolio that could be offset against countervailing positions in other products and maturities. Some CCPs have the technical possibilities to separately report the margins linked to TTF contracts. Due to technical constraints, one EU-CCP, where significant positions are held in these products, was not able to calculate separately the levels of margins linked to TTF-contracts.
131. The overall change in collected CCP margins should be evaluated alongside the outcomes of the analysis performed on margin parameters and the size and value of clearing positions.
132. As outlined in Section 4.1, the margin rate per MWh has decreased substantially between 1st week of January and 1st week of February in line with the reduction of the TTF prices and lower volatility.

133. In addition, no major changes have been noted in margin model calibration or add-ons that are linked to the implementation of the MCM Regulation. As such, the current changes in initial margin do not appear to be linked to the MCM.

134. The net positions held at CCPs in TTF contracts across all maturities in terms of notional value have decreased because of lower prices, whilst the open interest in cleared positions in MWh have remained stable or have marginally increased.

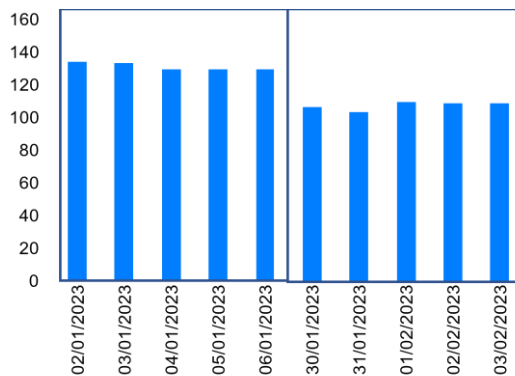
Chart 40
Value of open positions in TTF contract



Note: Long Positions - Short Positions
Sources: CCP Reports

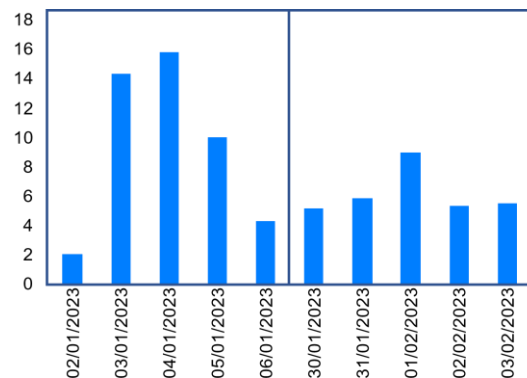
135. The initial and variation margins for all energy products (e.g. includes all EU and non-EU gas, powers and oil products) have decreased substantially in 2023. CCPs that are able to separately identify the margins linked to TTF contracts have also reported a significant decrease in the TTF linked margins in line with the observed margin rates decrease.

Chart 41
Initial Margin Energy Contract



Note: Initial Margins (Energy Contracts) in Bn EUR
Sources: CCP Reports

Chart 42
Variation margin Energy Contract



Note: Variation Margins (Energy Contracts) in Bn EUR
Sources: CCP Reports

136. ESMA expects that the impact of the MCM on TTF margins would only become relevant in case of higher prices close to the dynamic bidding limit but, in any case, it will be challenging to provide exact estimates of the MCM impact because of the data limitation outlined above.

4.2.2 Impact on margin requirements for TTF contracts for clients

137. Any potential increase in margin requirements faced by the clearing members is expected to be passed on in turn to their clients. Clearing members and clients may be exposed to increased liquidity pressures in a situation of already highly stressed markets. Moreover, uncertainties resulting from a potential activation of the MCM could discourage market participants from holding positions in TTF contracts and thus challenge the effectiveness of their hedges.

138. Changes in CCP risk parameters may also result in additional margin requirements towards clients of clearing members. However, some clearing members apply proprietary margin algorithms or specific margin multipliers to cover the exposure resulting from intraday margin calls. Next to the margin levels, the risk appetite of clearing members may also impact the ability of their clients to execute TTF contracts on exchanges, which can go as far as clearing members restricting the provision of client clearing services in the relevant products.

139. In addition, there are data gaps linked to the lack third-country reporting under EMIR. The view on client positions is therefore incomplete and EMIR generated data can be subject to data uncertainties.
140. Finally, it should be highlighted that ESMA has little information on client clearing. Clearing members will charge the margin towards their clients based upon the CCP margin algorithm or apply proprietary models or simple add-ons, on which ESMA (and often NCAs) have no available data. Consequently, due to the lack of information an accurate assessment of margin impact on client level cannot be provided.
141. Nonetheless, ESMA will include TTF prices, margin parameters and the OTC share of TTF positions in EMIR data in ESMA's monitoring of the MCM Regulation. In view of these elements, ESMA did not notice any impact of the MCM Regulation on client margining, except for the elements mention in sub-section 4.2.3.

4.2.3 Other impact: Default management towards clients

142. The ability of a clearing member to handle a default event towards a client is crucial in order to limit potential losses and corresponding exposures from such an event.
143. The clearing member is expected to be the first line of defence in case of a client default, as it has to close out the client's position. This could be hampered due to the dynamic bidding limit. The MCM does not include an exemption for the default management of a client that holds a portfolio in TTF contracts. OTC alternatives could be available to close out the client's portfolio but this may result in important basis risk exposures until the expiry of the relevant contracts.
144. The main indicator for additional exposures linked to default management of client positions would be higher margin multipliers applied by clearing member or restriction in the trading of exchange-traded TTF contracts. ESMA does not have any data on the margin applied by clearing members. Potentially, this effect could result in an increase of the OTC share or the usage of alternative platforms (see Section 3.3.1).

5 Assessment of the need to review certain elements of the MCM

145. According to Article 8(4) of the Regulation, ESMA shall assess whether the following needs to be reviewed:

- (a) the elements taken into account for the reference price;
- (b) the conditions on the basis of which a market correction event occurs (set in Article 4(1) of the Regulation);
- (c) the dynamic bidding limit.

Reference price

146. The reference price is defined in Article 2(6) of the Regulation as an average price between three international LNG price assessments, the settlement price of the front-month gas derivative contract on the UK market area traded on ICE Futures Europe, and the LNG price assessment produced by ACER under Article 18 of Regulation (EU) 2022/2576.

147. The ACER effects assessment report analyses the need to review the elements taken into account for the reference price (section 4.1 of ACER effects assessment report).

Conditions for the market correction event to occur

148. According to Article 4(1) of the Regulation, a market correction event occurs when the front-month TTF derivative settlement price, as published by ICE Endex B.V.

- a) exceeds EUR 180/MWh for three working days; and
- b) is EUR 35 higher than the reference price during the period referred to in point (a).

149. The technical details of the application of the MCM have been defined with the objective of limiting episodes of excessively high gas prices in the Union which do not reflect world market prices without undermining security of supply.

150. As highlighted in this report, episodes of excessively high prices have not occurred since the entry into force of the Regulation. Against this backdrop, there is a limited basis for ESMA to provide an assessment of whether the technical details underpinning the MCM have achieved the objective of limiting such episodes of high volatility or whether such technical details should be reviewed.
151. ESMA understands that the thresholds set in the Regulation for the triggering of a market correction event and referred to in (a) and (b) result from a political decision made by the EU Council in December 2022 and considers that providing advice on whether such decision should be amended exceeds its role as a technical body, and is currently difficult due to limited data available.

Dynamic bidding limit

152. According to Article 4(5) of the Regulation, as from the day after the publication of a market correction notice by ACER, market operators shall not accept and TTF derivatives market participants shall not submit orders for TTF derivatives that are due to expire in the period from the expiry date of the front-month TTF derivative to the expiry date of the front-year TTF derivative with prices of EUR 35 above the reference price published by ACER on the previous day ('dynamic bidding limit'). If the reference price is below EUR 145/MWh, the dynamic bidding limit shall remain at the sum of EUR 145 and EUR 35.
153. The dynamic bidding limit appears to be a reasonable mechanism when seeking to ensure that the MCM does not negatively impact security of supply in case of increase of LNG world market prices. For the reason set out above, ESMA would however also abstain from providing advice on whether the level of the dynamic bidding limit should be amended.

6 Conclusion

154. This report assessed the effects of the MCM on gas trading, including prices, trading activity, liquidity and execution, based on recent market developments. It follows up on ESMA's preliminary data report published on 23 January by covering a longer time horizon since the adoption of the MCM Regulation and more granular market indicators. The report notably analyses whether following the adoption of the Regulation adaptations of market participants could be observed, notably by shifting trading from on-venue to OTC, from EU venues to non-EU venues, from regulated markets to OTFs, as well as to other maturities not subject to the Regulation or to contracts based on other VTPs. The report also includes a more detailed analysis of the impact of the MCM

on the CCPs' capacity to conduct their risk management activities, in particular to calculate their exposures and to manage potential clearing member defaults.

155. Based on the market indicators assessed, the results of the analysis confirm the findings of the preliminary data report that to date no measurable impact of the MCM can be identified. The MCM does not appear to have so far had any significant effect on the prices, trading activity, liquidity and execution of gas trading. In a similar fashion and based on the available information, the analysis performed did not result at this stage in the identification of noticeable changes in CCP risk management or in margin requirements that could be attributed to the MCM.

156. The recent announcements by ICE Endex and EEX to offer respectively the trading of TTF contracts in the UK and on an EU OTF, both of which are outside the scope of the Regulation, confirm that market participants are preparing for a scenario where the MCM could be activated in the future. It is too early to assess whether the recent announcements will result in the migration of liquidity in the short-term and ESMA considers that these measures mainly serve as safeguards in case of an activation of the MCM or when its activation becomes more imminent. It appears likely that market participants would adapt their behaviour and start moving their activity to these execution venues or OTC, in an environment where the activation of the MCM would be a less remote prospect. Once liquidity starts moving, and acknowledging the high costs for the first market participants moving liquidity, it is likely that more market participants would follow suit.

157. Liquidity has the tendency of being sticky. Hence, absent any other major developments, it is possible that potential shifts to alternative execution venues outside the scope of the Regulation or to OTC trading could remain in place even after the market correction mechanism has ceased to apply. Such developments would be undesirable from a regulatory perspective as they could result in reduced access to regulatory data hindering financial regulators to monitor market developments and, where necessary, step in. It would also not support the objective of further developing and deepening European capital markets.

158. Therefore, as already highlighted in the preliminary data report, the absence of a significant impact of the MCM on the trading and clearing environment at this stage should not be understood as the MCM not having any impact. It is entirely possible that some of the potential effects will only unfold once the activation of the MCM is a less remote prospect. The closer the settlement price and the spread to the reference get to the thresholds triggering

the application of the MCM, the more likely it appears that potential effects materialise. While this behaviour would appear rational on an individual basis, it could trigger significant and abrupt changes of the broader market environment, which could possibly impact the orderly functioning of markets, and ultimately financial stability.

159. In light of the extension of the MCM to derivatives linked to other VTPs foreseen in the Regulation, the report also provides an overview of those contracts and their liquidity. The trading activity in gas derivatives is highly concentrated in TTF derivatives, (95% of EU gas derivative volume) with some, albeit limited, liquidity in the German gas hub (THE) followed by the Austrian (CEGH), the French (PEG) and the Italian (PSV) hubs, which collectively represent around 90% of the volumes of non-TTF gas derivatives. The trading activity in the remaining gas derivatives linked to other VTPs is marginal.
160. Based on these findings. ESMA is not convinced of the need, and added value, of extending the MCM to other VTPs, in particular those with very marginal trading activity. Such an extension would not appear to prevent the circumvention of the MCM due to other more likely options for market participants to circumvent and it would be associated with detrimental effects in term of transparency, market monitoring, risks and costs as described in this report. In addition, the extension of the MCM would impact smaller CCPs, which may be challenging as this may require complex changes to their risk management to be designed, approved and implemented under very constrained timelines with limited staff and resources.
161. Finally, the report provides some reflections on the need to review the definition of a market correction event and the dynamic bidding limit. Episodes of excessively high prices have however not occurred since the entry into force of the Regulation. Against this backdrop, there is a limited basis for ESMA to provide an assessment of whether the technical details underpinning the MCM have achieved the objective of limiting such episodes of high volatility or whether such technical details should be reviewed. ESMA understands that the thresholds set in the Regulation for the triggering of a market correction event result from a political decision made by the Council of the EU in December 2022 and considers that providing advice on whether such decision should be amended exceeds its role as a technical body.
162. ESMA will continue monitoring developments in the trading and clearing of EU gas derivatives and stands ready to provide further technical advice to on

these topics upon request, including where the activation of the MCM is imminent and in case of the activation of the MCM.

7 Annexes

7.1 Description of the data sources

Name of the dataset	Nature of the dataset	Overview of the dataset	Cut-off date ⁸
FITRS	Regulatory	Aggregated data on daily volumes and number of trades reported to ESMA system (Financial Instruments Transparency System (FITRS)) for the purpose of the MiFID transparency calculations.	5 February 2023 ⁹
EMIR	Regulatory	Transaction and position data on derivatives reported to trade repositories under the EMIR Regulation.	10 February 2023
MiFID position reports	Public	Aggregated open positions in certain commodity derivatives as required under Article 58(1)(a) of MiFID II	27 January/ 10 February 2023 ¹⁰
Eikon	Commercial	Volumes and open interest at individual contract level	14 February 2023

7.2 Data availability per source

	FITRS	EMIR	MiFID position reports	Eikon
Execution				
EU venues	YES	YES	YES	YES
Third-country venues	NO	YES	NO	YES
OTC	NO ¹¹	YES	NO	NO
Counterparty location				
At least one counterparty is EU	YES	YES	YES	YES

⁸ This means that transactions executed after the cut-off date are not taken into account in this report. The cut-off date is different from one data source to the other because of the lag between execution and reporting

⁹ FITRS data is reported to ESMA with a lag of one week. Data was extracted on 14 February hence the last full observable week ended on 5 February 2023.

¹⁰ In case of the ICE Endex the cut-off date is 27 January 2023 due to the delay in publishing the weekly reports in the aftermath of the cyberattack on a third-party software vendor. In case of the EEX the cut-off date is 10 February 2023.

¹¹ No OTC volumes on gas derivatives were reported to FITRS. This is expected to reflect ESMA Opinion on OTC derivatives "traded on a trading venue" (ToTV) see ESMA70-156-117.

	FITRS	EMIR	MiFID position reports	Eikon
Both counterparties are non-EU	YES	NO	YES	YES
Granularity				
Counterparty level	NO	YES	NO	NO
Transaction level	NO	YES	NO	NO
Hedging / Non-Hedging	NO	YES	YES	NO
Metrics available				
Number of transactions	YES	YES	NO	NO
Traded volumes	YES (EUR) ¹²	YES (EUR)	NO	YES (lots, MWh)
Open interest	NO	YES (EUR)	YES (lots, MWh)	YES (lots, MWh)

¹² The metric "Traded volumes in EUR" represents the value in EUR of a transaction. For example, for a transaction of 1 lot in TTF monthly futures (1 lot of a monthly future = 720MWh) executed at a price of 70EUR/MWh, the traded volume in EUR is equal to 50,400EUR (720MWh * 70EUR/MWh). Traded volumes in EUR are therefore sensitive to the variation of price.