GME
Gestore
Mercati
Energetici

ANNUAL REPORT 2024

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EXECUTIVE SUMMARY

The energy context and GME's markets

Two years after the onset of the Russia-Ukraine conflict, Europe's geopolitical landscape, especially in the energy sector, remained deeply shaken. The 2024 situation showed energy systems characterised by a still weak demand and strongly interdependent cross-commodity price dynamics.

In this context, the integrated European energy market continued demonstrating significant resilience and adaptability in response to contingent situations, allowing the various power and gas markets to perform their functions effectively, ensuring – and measuring through prices – the balance between supply and demand.

In Italy, in 2024, the markets managed by GME recorded a new significant increase in liquidity, further strengthening the representativeness of the price indices calculated by GME itself: the PUN Index GME for electricity and the IG Index GME for gas.

In the electricity sector, volumes traded directly on GME's exchange reached historical highs as a result of the increase recorded in the Day-Ahead Market (MGP) (226.8 TWh) and the Intraday Market (MI) (35.4 TWh), the latter being linked to the start of coupling with the rest of Europe in auction trading and the sharp rise in continuous trading volumes (MI-XBID). An especially encouraging signal for the energy transition came from the new growth in sales of electricity produced by renewable plants, reaching their highest level ever in the MGP, mainly due to an increased hydropower availability. Consequently, the PUN Index GME fell to its lowest level in the past four years, consistent with trends observed across Europe. As to the gas sector, the year 2024 marked the definitive transition of the markets managed by GME to a condition of structural maturity, reinforcing their role and representativeness, and making them crucial in the national system - both for providing reliable price signals and for supporting Snam and market participants in their balancing activities. These markets also experienced a strong and positive evolution in liquidity, which, at the peak of a multi-year trend, led to a record-high growth in traded volumes, number of active market participants, and registered transactions.

The increased volumes and competitiveness in gas markets helped establish the IG Index GME, the market-based index introduced by GME in 2023, as a recognised gas price benchmark for Italy. This result is further supported by the analysis of its dynamics, which proved to be fully aligned with the trends of other major European price benchmarks.

Additional and substantial benefits from increased gas market liquidity were observed in the gas system balancing mechanism. The rising volumes in GME's markets provided market participants with a broader pool to procure resources for managing their balancing and commercial activities, while also facilitating Snam's operations. As a result, the system in 2024 was on average mildly unbalanced, and Snam's market interventions were limited in both frequency and volume, benefiting imbalance prices, which were increasingly determined solely by the matching of orders between market participants.

GME and the future of energy markets

During 2024, at national level, GME was particularly engaged in carrying out regulatory and IT activities aimed at implementing the new design of the Italian electricity market in line with *Testo Integrato del Dispacciamento Elettrico* (Integrated Text of Electricity Dispatching Rules – TIDE). As a result of these activities, starting from 1 January 2025, several changes were introduced, including: the adoption of a 15-minute imbalance settlement period, the organisation of the energy markets and of the nomination platform with the separation between schedules and commercial position for the individual units, and, finally, the option to use block products in the MGP and MI-A as new flexibility instruments made available to market participants for managing their market bids/offers. At the same time, always within the electricity market, GME completed the activities needed to replace the National Single Price (PUN) in the MGP and thus value demand bids at zonal prices. Consequently, starting from 1 January 2025, with the replacement of the PUN and in compliance with Decree 151/2024 of the Ministry of Environment and Energy Security (MASE) and Resolution 304/2024/R/EEL of the Regulatory Authority for Energy, Networks and Environment (ARERA), GME updated the calculation method for the PUN Index GME, which however has continued to serve as a reference index for the Italian electricity market, as well as for the other purposes referred to in the Integrated Text of the Electricity Market Rules (ME Rules) and in the Rules Governing the Forward Account Registration Platform (PCE Rules).

At European level, in 2024, GME worked jointly with the other Nominated Electricity Market Operators (NEMOs) to ensure the go-live of pan-European implicit auctions (IDAs). The latter were introduced into the intraday electricity market on 13 June 2024, to implement the Capacity Allocation and Congestion Management (CACM) Regulation and Decision 01/2019 of the Agency for the Cooperation of Energy Regulators (ACER). The objective was to ensure an efficient allocation of interconnection capacities and related energy flows at EU level, contributing to the further strengthening of the integration process among EU markets.

Finally, GME was also actively involved, within its scope of responsibilities, in the process of energy transition towards power systems increasingly characterised by the progressive and growing use of renewable sources, distributed generation, and smart grids, completing the design of the Local Flexibility Market (MLF) with the go-live of the MLP-Flex spot market, alongside the already active MLT-Flex forward market. During 2025, GME will be particularly engaged in the implementation and development of the regulated market for long-term trading of renewable energy (PPA Market), whose regulatory framework was recently finalised through Legislative Decree no. 208 of 31 December 2024, converted into Law no. 20 of 28 February 2025.

As indicated above, the European energy sector, with all its complexities, is entering a new, challenging phase. These challenges cannot overlook the experience that GME, in carrying out its role as the designated operator of energy markets in Italy, in coordination with European Transmission System Operators (TSOs) and NEMOs, makes available to national and international institutions, pursuing, with seriousness and vision, the shared goal of a synergistic integration of energy markets.

The Chairman
Prof. Angelo Spena

The Chief Executive Officer
Prof. Pietro Maria Putti

Table of Contents

INDEX OF FIGURES

1. THE COMPANY

2. GME'S MARKETS

2.1 Electricity markets

2.2 Gas Markets

2.3 Environmental markets

INDEX OF TABLES

2 GME'S MARKETS

2.1 Electricity markets

2.2 Gas markets

2.3 Environmental markets

Appendix 3 - Statistical Data

01

The company

PROFILE

Gestore dei Mercati Energetici S.p.A. (GME) is the joint-stock company established in 2000 as part of the liberalisation process of the energy sector, wholly owned by *Gestore dei Servizi Energetici S.p.A.* (GSE), whose shares are entirely held by the Ministry of Economy and Finance (MEF). GME is a multi-commodity company operating under the guidelines of the Ministry of Environment and Energy Security (MASE) and according to the regulatory provisions issued by the Regulatory Authority for Energy, Networks and Environment (ARERA).

MARKETS

GME organises and manages electricity and gas markets - characterised by the obligation of physical delivery of the commodity - as well as environmental and fuel markets. In particular:

- In the ***electricity sector:*** *i)* the Spot Electricity Market (MPE), which includes the Day-Ahead Market (MGP), the Intraday Market (MI), and the Daily Products Market (MPEG); *ii)* the Forward Electricity Market (MTE); *iii)* the Forward Account Registration Platform (PCE), for registering forward contracts for purchase/sale of electricity concluded off the market system; *iv)* the Bulletin Board of long-term contracts for purchase/sale of electricity from renewable sources (PPA Bulletin Board), consisting of three sections (Notice Section, Contract Registration Section, and Energy Release Section); and *v)* the Local Flexibility Market (MLF)[1], through which the Distribution Network Operators (DSOs) participating in it can procure local ancillary flexibility services, as part of the pilot projects established pursuant to ARERA's Resolution 352/2021/R/EEL of 3 August 2021. Within the MPE, GME manages the Ancillary Services Market (MSD), whose purpose is the procurement of resources for the dispatching service and whose economic management is the responsibility of Terna S.p.A. (hereafter: Terna);
- In the ***gas sector:*** *i)* the Spot Gas Market (MP-GAS), divided into the Day-Ahead Market (MGP-GAS), the Intraday Market (MI-GAS), which in turn are organised into continuous-trading and auction-trading segments (AGS), the Locational Products Market (MPL), and the Regulated Market for the Trading of Gas Stored (MGS); and *ii)* the Forward Gas Market (MT-GAS). GME also manages the Platform for the fulfilment of obligations pursuant to article 11 of Law 40/07 (P-GAS), as well as the Platform for the Allocation of Regasification Capacity (PAR);
- In the ***environmental sector:*** *i)* the Energy Efficiency Certificates Market (MTEE); *ii)* the Market of Guarantees of Origin (GOs), certifying the production of electricity from renewable sources (M-GO); and *iii)* the Market for Certificates of Release to Consumption of Biofuels (MCIC). GME also manages the Platforms for the registration of bilateral transactions of Energy Efficiency Certificates (TEE) and Guarantees of Origin (GOs), i.e. the TEE Register and the PB-GO; and, beginning in 2024, pursuant to Ministerial Decree 224/2023, the GO Bulletin Board allowing participants to publish ads and/or express interest in entering into long-term GO contracts;
- In the ***fuel sector;*** *i)* the Mineral-Oil Storage and Transit Capacity Data Reporting Platform (PDC-OIL), and *ii)* the Trading Platform for Mineral-Oil Logistics Services (P-LOGISTICS).

1 For more details, please refer to the NEW INITIATIVES paragraph in this Report

GME acts as a central counterparty in its markets and on its platforms, except in the MSD (where the central counterparty is Terna), on the PPA Bulletin Board, the P-GAS, the PAR, the Platforms for registering bilateral contracts in respect of GOs and Energy Efficiency Certificates (TEE), the GO Bulletin Board, and the P-LOGISTICS.

GME'S MARKET PARTICIPANTS, VOLUMES AND PRICE INDICES

In 2024, participation in GME's markets showed again a significant increase, in terms of both registered participants and volumes traded, strengthening the representativeness of the price indices calculated by GME in the power and gas sectors (PUN Index GME and IG Index GME). In particular:

- **the number of participants registered in GME's markets increased again**, rising overall to almost 3,200 (+165) with increases in all the different sectors. There was a further growth in the number of multi-commodity participants, i.e. those registered in multiple sectors of activity of GME: 112 participants simultaneously active in the three power-gas-environment sectors and 103 participants in the power and gas sectors (**Fig. 1.1, Fig. 1.2**);
- **the volumes traded on GME's markets[2] reached a historical high** of 455 TWh (+50.5 TWh), at the peak of a multi-year trend driven not only by the progressively and significantly increasing liquidity recorded in the gas sector, but also, in 2024, by a renewed increase in power trading. More specifically: *i)* **in the electricity markets, volumes returned to their highest levels since 2013** (263 TWh, +23.3 TWh), due to both an increase in trading on GME's exchange, in the MGP (226.6 TWh, +16.9 TWh), and an increase in trading recorded in the MI (35.4 TWh, +6.3 TWh and a new all-time high), sustained mainly by trading in the XBID system (11.5 TWh, +4.7 TWh); *ii)* **in the gas markets, trades reached an all-time high** (180.2 TWh, +25.4 TWh), driven by the continuous-trading MGP-GAS (111.2 TWh, +32.4 TWh), the growth of which consolidated the role of GME's markets in the mechanism for balancing the positions of participants in the gas system; *iii)* in the environmental markets, exchange trading showed a slight recovery in both the MTEE and the MGO (overall 11.8 TWh, +1.7 TWh), bringing its levels back to the values of 2021 (**Fig. 1.3**);
- **the increased liquidity of GME's markets enhanced the representativeness of the price indices calculated by GME**, particularly in the relatively young gas sector. In the electricity sector, alongside the PUN Index GME, whose calculation methods were updated by GME as of 1 January 2025[3], the **IG Index GME therefore confirmed to be a reliable price reference for gas traded in Italy.** This index, calculated by GME as of 19 July 2023 on the basis of trades carried out in the MGP-GAS, responds to the requirement of providing market participants with a useful tool for interpreting and assessing the price dynamics observed in the spot gas markets, acting as a reference both for hedging and/or supply contracts, and for use by institutional entities in their activities[4].

2 Reference is made to the volumes traded: in the power sector, in the MGP-Exchange, MI (auction + XBID), and MPEG; in the gas sector, in the MGP-GAS (auction + continuous trading), MI-GAS (auction + continuous trading), MGS, and MPL; in the environmental sector, in the MTEE, MGO, and MCIC.

3 For more details, please refer to the NEW INITIATIVES described in this section.

4 For more details on the IG Index GME dynamics, please refer to Chapter 2.2.

Fig. 1.1 | Volumes and participants by market/platform in 2024

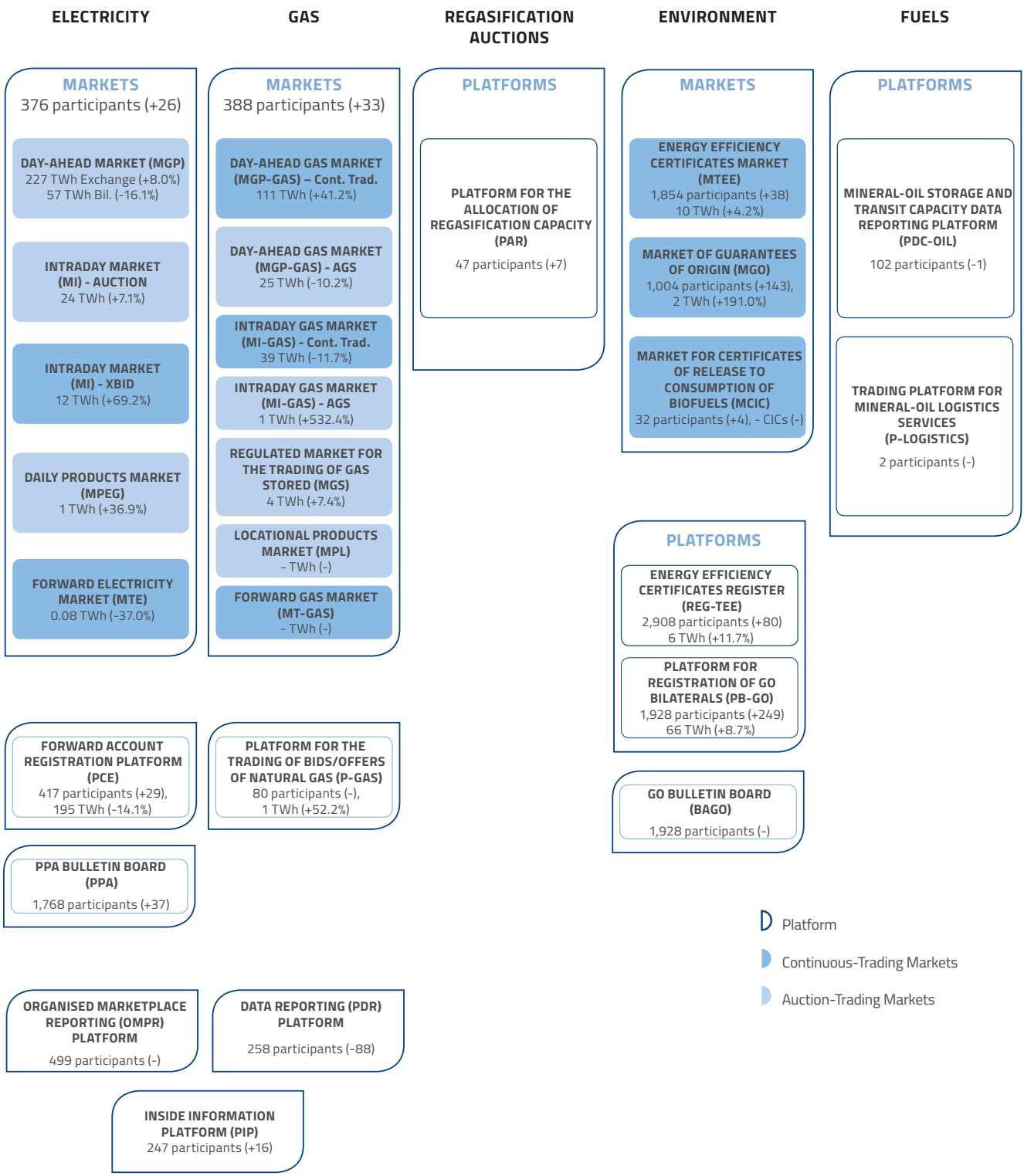


Fig. 1.2 | **GME's market participants**

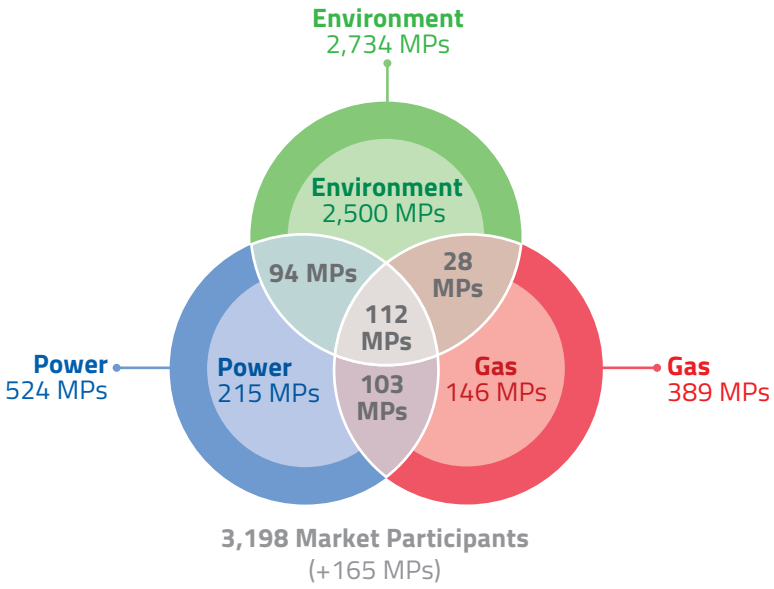
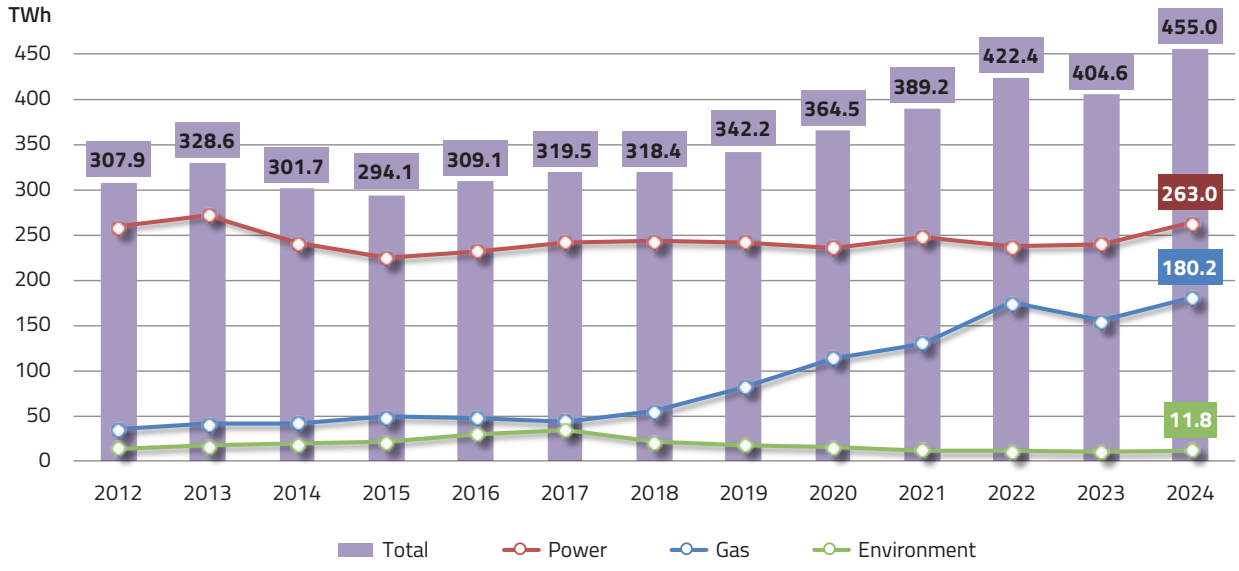


Fig. 1.3 | **Trend of volumes by sector**



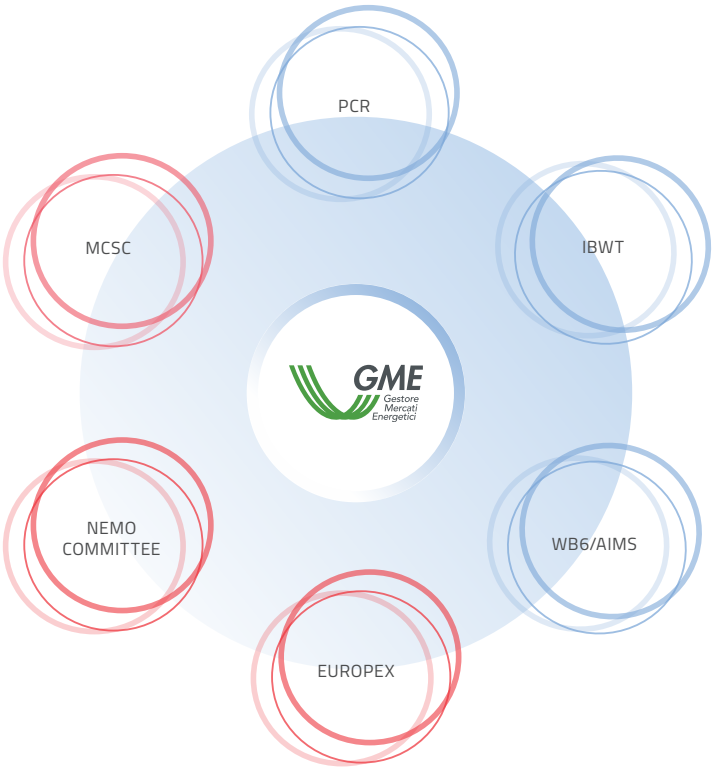
INTERNATIONAL ACTIVITIES

GME is a member of Europex, the Association of European Energy Exchanges, and, as a NEMO[5], it cooperates, with the other designated European exchanges and TSOs[6] in the day-ahead and intraday electricity market coordination and integration projects (NEMO Committee, MCSC)[7] for an efficient management of market coupling processes and the full implementation of Commission Regulation (EU) 2015/1222 (CACM Regulation).

GME also participates, together with ARERA, Terna, and the Ministry of Environment and Energy Security (MASE), in the Western Balkans 6 (WB6) project[8], aimed at promoting the start of regional coupling in the Balkan area, and the related integration with the EU SDAC and SIDC, based on the experience gained in the organisation and management of national markets and the integrated European electricity market.

In particular, in 2024, in coordination with the European NEMOs and TSOs, GME contributed to the finalisation of the contractual amendments required for the launch of the pan-European Intraday Auctions (IDAs) provided for by the CACM for the joint and coordinated allocation of transmission capacity in the intraday timeframe. These amendments, approved by ARERA with Resolution 212/2024/R/EEL, ensured the go-live of IDAs on 13 June 2024 on the Italian borders with France, Austria, Slovenia, and Greece, replacing CRIDAs, the regional complementary auctions, which were previously active only on the borders with Slovenia and Greece.

Fig. 1.4 | International projects



5 NEMO is the Nominated Electricity Market Operator, as defined in article 4 of Commission Regulation (EU) 2015/1222 (hereafter: CACM Regulation), a role that in Italy was assigned to GME by the Ministry of Economic Development (now Ministry of Environment and Energy Security).

6 Transmission System Operators.

7 SDAC and SIDC are the operational coordination projects for the full implementation of the European Single Day-Ahead Coupling (SDAC) and Single Intraday Coupling (SIDC), integrated within the so-called Market Coupling Steering Committee (MCSC).

8 WB6 is a cooperation project between National Regulators, Transmission System Operators, and Market Operators from Albania, Bosnia-Herzegovina, Macedonia, Montenegro, and Serbia for the creation of a regional electricity market in the Balkan region, to be integrated with the EU energy market. The WB6 initiative coordinates a series of sub-projects to promote the development and integration of electricity markets in WB6 countries (with the exception of Kosovo) at both local and regional levels. The initiative is supported by the European Union itself and by the Energy Community.

NEW INITIATIVES

In coordination with the relevant institutions and in agreement with parties directly involved, in 2024 GME launched and/or completed projects in the various sectors of interest, confirming its function in support of national and EU policies aimed at market integration and energy transition. The following initiatives undertaken by GME in the electricity, gas, and environment sectors are part of this context.

- Electricity sector:
  - **completion of regulatory and IT activities aimed at guaranteeing the implementation of the new design of the Italian electricity market in line with TIDE**; after these activities, under ARERA's Resolution 304/2024/R/EEL, as subsequently amended and supplemented, the following changes were introduced as of 1 January 2025: *i)* the 15-minute imbalance settlement period, *ii)* the organisation of the energy markets and of the nomination platform with the separation between schedules and commercial position for the individual units, and *iii)* the block products of profile type in the MGP and MI-A. The Integrated Text of the Electricity Market Rules (ME Rules) and the Rules Governing the Forward Account Registration Platform (PCE Rules), updated as a result of these changes, were approved by MASE and ARERA with Ministerial Decree 450/2024 and Resolution 552/2024/R/EEL, respectively;
  - **updating the methods for calculating the PUN Index GME**, in order to complete the activities required to guarantee in the MGP, as of 1 January 2025, the replacement of the national single price and the pricing of demand bids at zonal prices. With the replacement of the national single price in compliance with MASE Decree 151/2024 and ARERA's Resolution 304/2024/R/EEL, this index has nevertheless maintained its role as a reference index for the Italian electricity market, as well as for the additional purposes referred to in the ME Rules (reference price of forward contracts listed in the MTE and MPEG) and in the PCE Rules (reference price for valuing fees for assignment of rights of use of transmission capacity - CCTs - and imbalances with respect to schedules on the PCE);
  - **go-live of pan-European Implicit Intraday Auctions (IDAs)**, introduced into the intraday electricity market on 13 June 2024 to replace the previous Complementary Regional Intraday Auctions (CRIDAs), pursuant to the provisions of the CACM Regulation and of ACER Decision 01/2019. More specifically, within the Italian market, three IDAs are held: two after the MGP on the day ahead of the delivery day (at 15:00 and 22:00, respectively), and one on the delivery day itself (at 10:00);
  - **completion of the MLF design**, which took place on 19 March 2024 with the operational start of the local spot flexibility market (MLP-Flex), which complemented the forward flexibility market (MLT-Flex), in operation since 2023;
  - **definition of an initial proposal for a Regulation of the Time Shifting Contract Market (MTS)** on 12 November 2024, with Consultation Document no. 2/2024, drafted on the basis of current requirements and constraints defined by Terna, pursuant to article 18 of Legislative Decree 210/2021, as part of the rules governing the mechanism for forward procurement of new electricity storage capacity (MACSE). In particular, in order to encourage the use of electricity produced from renewable sources, this mechanism envisages that the electricity storage capacity procured by Terna, in accordance with the procedures set forth by MACSE, be made available through a centralised platform, organised and managed by GME in accordance with the criteria and conditions of organisation and operation defined by ARERA in its Resolution 247/2023/R/EEL. The go-live of the MTS is expected to take place close to the entry into operation of new-generation or repowered plants, to be built or upgraded as a result of the MACSE auctions organised by Terna.

- In the gas sector:
  - **elimination of bids/offers without a price limit** within the MGAS, carried out to minimise the impact of market participants' errors on the price setting mechanism and, therefore, to safeguard the proper functioning of the market. This change was approved by Ministerial Decree no. 450 of 20 December 2024;
  - **introduction into the PAR of the new FSRU Italia segment dedicated to the Ravenna terminal**, aimed at satisfying the request of the company Snam FSRU Italia S.r.l. to make use of the services offered by the platform organised by GME to manage the allocation of regasification capacity at the above terminal through market mechanisms.
- In the environmental sector:
  - **the operational start of the GO Bulletin Board**, which was introduced following a dedicated consultation process in accordance with article 5, paragraph 5.3 of Ministerial Decree 224/2023. The purpose of this Bulletin Board is to allow participants interested in entering into long-term GO contracts to publish their own sale and/or purchase ads or to express non-binding interest in ads published by other participants, and then to possibly conclude such contracts off the Bulletin Board;
  - **introduction of new types of Certificates of Release to Consumption of Biofuels (CICs)**, in accordance with the provisions of Ministerial Decree 107/2023, by which MASE, in addition to confirming the use of CICs for the purpose of fulfilling the yearly biofuel release obligations, introduced a new structure and classification of the same obligations, with the consequent introduction of new types of CICs to supplement existing ones.

MONITORING AND REMIT SERVICES

GME oversees the regular conduct of trading and transactions in its markets by means of monitoring activities that safeguard their integrity, in coordination with the main reference institutions in this area (in particular, ACER[9] and ARERA) and in accordance with current European and national legislation and regulations (REMIT[10], TIMM,[11] and TIMMIG[12]).
Furthermore, in this context, GME, as an Organised Marketplace (OMP), a Registered Reporting Mechanism (RRM)[13], and an Inside Information Platform (IIP), supports market participants in fulfilling their obligations in terms of data reporting and inside information disclosure under REMIT by providing them with platforms set up for this purpose (REMIT Platforms).
In 2024, Regulation (EU) no. 2024/1106 of the European Parliament and of the Council (REMIT II), published on 17 April, amended and supplemented REMIT and Regulation no. 2019/942, introducing some substantial changes to the European legislation on market monitoring, the effects of which have had an impact on the activities carried out in this area by GME. In particular:

- **in the area of monitoring**, article 15 of REMIT was amended, extending the obligations of GME, as a Person Professionally Arranging Transactions (PPAT), to enforce market participants' compliance with article 4 (obligation to disclose inside information), and expanding the scope of said Regulation, which

9 European Agency for the Cooperation of Energy Regulators.

10 Regulation no. 1227/2011, as updated by Regulation no. 2024/1106.

11 *Testo integrato del monitoraggio del mercato all'ingrosso dell'energia elettrica e del mercato per il servizio di dispacciamento* (ARERA's Resolution ARG/elt 115/08, as subsequently amended and supplemented).

12 *Testo integrato del monitoraggio del mercato all'ingrosso del gas naturale* (Annex A to ARERA's Resolution 631/2018/R/gas).

13 A Registered Reporting Mechanism is an entity registered with ACER to carry out reporting activities on behalf of market participants subject to REMIT obligations.

was previously limited to article 3 (prohibition of insider trading) and article 5 (prohibition of market manipulation);

- **in the area of data reporting**, article 8 of REMIT was supplemented (article 8.1a) by imposing on all OMPs the obligation of transmitting to ACER the orders and transactions submitted/executed in the markets managed by them and falling within the scope of REMIT (REMIT markets). Pursuant to this obligation that GME introduced into the ME Rules, MGAS Rules, and P-GAS Regulations, GME itself launched a specific platform (OMPR), operational from 1 October 2024 and separate from the one used to date for the reporting service (PDR). At the same time, the scope of the services offered through the PDR platform was redefined, leaving only the External Data Upload service in place, which is guaranteed to all participants registered in the REMIT markets upon a specific request;
- **In the area of disclosure of inside information**, article 4a of REMIT II introduced new obligations that will entail significant regulatory and technological changes to the PIP platform, as well as the launch of new activities and new processes to monitor it, aimed at ensuring, above all, compliance with the performance requirements imposed by ACER (99.5% of hours "in service") and the execution of quality controls on the information communicated by participants through the implementation of validation rules preventing the publication of clearly incorrect data.

The activity on REMIT platforms proved to be substantial also in 2024, especially in the area of data reporting, where the introduction of the aforementioned art. 8.1a) generated a physiological increase in the number of parties fulfilling their obligations through GME, since it involves all the participants in the REMIT markets that GME operates.

In figures, in the data reporting sector, the number of registered participants amounted to 499 on the OMPR platform and 258 on the PDR platform, for a yearly total of approximately 158 million records transmitted to ACER; on the PIP platform, with 247 registered participants, the yearly total of messages published reached almost 47,000 units.

02

GME's markets

2.1 ELECTRICITY MARKETS

2.1.1. Day-Ahead Market (MGP)

VOLUMES AND LIQUIDITY. Despite a weak demand for energy in the power system (Terna: 312.4 TWh, +2.2%), the liquidity of the MGP rose to an all-time high in 2024 (79.9%, +4.4 p.p.), due to the strong growth in volumes traded directly on GME's exchange (226.8 TWh, +16.9 TWh), which were only below those in 2008, and the concomitant reduction in over-the-counter movements registered on the PCE and nominated in the MGP (57.1 TWh, -10.93 TWh).
The regulatory changes introduced into the retail energy market in connection with the end of *servizio di maggior tutela* (standard offer market) led to a significant change in the structure of volumes on the exchange, in which the quantities traded by non-institutional participants prevailed and gradually increased, reaching a new all-time high (188 TWh, +21 TWh, i.e. 66% of the total), while trading by *Acquirente Unico* (AU) decreased (12 TWh, -6 TWh). GSE's sales, on the other hand, remained stable, close to the average values recorded over the last four years (26 TWh) (**Table 2.1.1, Table 2.1.2, and Fig. 2.1.1**).

SOURCES. Significant developments were also observed in the distribution of national sales by source, the overall level of which was only higher than the value recorded in 2023 (226.6 TWh, +2.0 p.p.), because of low purchases and net imports from abroad close to historical highs. In this context, the figure that emerged most strongly was the increase in volumes and weight of renewable sources (around 109 TWh, +15.3 TWh, equal to 48.1% of national sales), an extremely interesting signal in view of the progressive transition towards non-polluting systems promoted by national energy and environmental policies. This growth was mainly attributable to hydro generation units (55.0 TWh, +12.9 TWh, an all-time high) and supported by solar/photovoltaic plants (24.5 TWh, +3.2 TWh). At the same time, sales by conventional thermal plants declined to 114.1 TWh (-12.6 TWh). This decline was mainly due to coal-fired plants (3.7 TWh, -8.8 TWh) and to the fact that they were less needed (unlike in 2022 and 2023, when their generation schedules were maximised to mitigate the instability in gas supplies caused by the war in Ukraine). Combined Cycle Gas Turbine (CCGT) plants experienced a less intense decrease (93.8 TWh, -3.0 TWh), which nevertheless continued to be the technology most frequently at the margin (CCGT ITM - Price-Setting Technology Index: 61.4%, +1.2 p.p.) (**Table 2.1.3, Fig. 2.1.2 to Fig. 2.1.4**).

PRICES. In 2024, the PUN Index GME fell to its lowest level in the past four years (108.52 €/MWh, -18.72 €/MWh), also showing a decrease in its volatility (8.3%, -0.6 p.p.). The decline was in line with what was observed in other European electricity markets and equally distributed among the various groups of hours, as can be seen from the further reduction in the peakload/baseload ratio (1.08 and historical minimum) and the growth in the frequency of sessions characterised by daytime prices lower than nighttime prices (43.7% vs 38.6% in 2023). The Italian electricity price followed closely the dynamics recorded for gas: the trend of the two commodities was, in fact, almost aligned throughout the year, with the drop being concentrated above all in the first five months of the year (-51 €/MWh on average), when the PUN Index GME ranged between 87 €/MWh in April and 99 €/MWh in January, to then rise steadily above 100 €/MWh from June, with maximum monthly prices in August (128 €/MWh) and in the last two months of the year (131/135 €/MWh).
In the light of what has just been described, the Clean Spark Spread (CSS) remained within the physiological ranges observed before the war in Ukraine (15 €/MWh) and was substantially unchanged compared to the previous year, albeit showing a greater volatility from one month to the other (min: 5 €/MWh in April; max: 26 €/MWh in August).

These considerations also apply on a local basis, with zonal prices standing at 107 €/MWh in the northern zone (-20 €/MWh), at 109/110 €/MWh in the other peninsular areas (-19/-16 €/MWh), at 112 €/MWh in Sicily (-14 €/MWh) and, finally, at 106 €/MWh in Sardinia (-17 €/MWh), where the number of hours with hourly prices of 0 €/MWh increased (263, compared to 167 in 2023). Moreover, for the first time since 2020, the price spread between northern and southern zones reversed once again (-1.7 €/MWh, it was +12 €/MWh in 2022 and +3 €/MWh in 2023); these zones were also less frequently aligned on an hourly basis (81%, -3 p.p.). This spread was more intense in the July-August period (-8.72 €/MWh on average), corresponding to a high hydropower availability in the northern zone (+42% compared to the previous year and +84% compared to 2022) and to a lower available capacity on the NORD-CNOR transit (-8 p.p./-5 p.p. compared to the previous three-year period) (**Fig. 2.1.5 to Fig. 2.1.10, Table 2.1.4**).

PRICE SPREADS AND TRADES WITH FOREIGN COUNTRIES. In 2024, the spread between the Italian price in the northern zone (107 €/MWh, -20 €/MWh) and the prices on the main European exchanges remained practically stable (northern zone - Germany: 29 €/MWh vs 33 €/MWh in 2023) or widened (northern zone - France: about 49 €/MWh vs about 30 €/MWh in 2023) due to structural differences between the national generating mixes (**see Box on Energy Markets in Europe**). These dynamics are also confirmed by an analysis of the hourly microstructure of the market, showing a reduction in the frequency with which the northern price was aligned with or lower than the foreign price: the drop appeared to be significant in comparison with the French price (northern zone ≤ France: 315 hours, 4% of the total, -13 p.p.) and less intense in comparison with the German price (1,151 hours, or 13% of the total vs 16% last year). However, in 2024, in the period of 962 hours during which the northern price was strictly lower than the German price, the spread between the two prices rose to 25 €/MWh compared to 9 €/MWh in 2023 (859 hours).
The widening of price spreads favoured an increase in imports to a new all-time high (57.4 TWh, +1.5 TWh), with a coverage of purchases in the MGP quite similar to the one of the previous year (20%). The increase was driven by flows from the northern border (51.1 TWh, +1.6 TWh), while there was a slight decline in the flows from other zones (6.3 TWh, -0.1 TWh) (**Fig. 2.1.11**).
With reference to the management of flows from coupling along the northern Italian border, there was also an increase in the frequency of activation of the generalised constraint, i.e., the mechanism through which Terna, in its capacity as National Transmission System Operator and for the purposes of system security, has the right to impose a limitation on the overall import capacity available along the following borders: northern Italy-France, northern Italy-Austria, and northern Italy-Slovenia. More specifically, this mechanism was activated by Terna in 21% of the hours (vs 17% last year and 6% in 2022), generating a limitation on imports in 7% of the cases (vs 8% in 2023), counterflows in 12% (vs 6% last year) - mainly towards Austria and Slovenia characterised by prices that are often higher than those in France[14] - and causing no impact in the remaining 2% of the hours (vs 3% in 2023)[15]. Finally, although this phenomenon was mainly concentrated on holidays (2024: 1,107 hours, 2023: 1,090 hours), it showed a more significant increase on working days (2024: 777 hours, 2023: 425 hours) (**Fig. 2.1.12**).

14 In counterflow situations, energy, without ever entering Italy, is channelled by the algorithm from the coupled zone with the lower price to the one with the higher price.

15 To satisfy the grid constraint imposed by Terna, the relevant algorithm might generate export flows from the fictitious zone COUP (suitable for managing the generalised constraint) to one of the coupled borders, even in the presence of a price in such zone that is lower than the Italian one.

Table 2.1.1 | Trend of volumes in the MGP

TWh	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2024/2023 change
Terna's demand	**316.9**	**314.3**	**320.5**	**321.4**	**319.6**	**301.2**	**319.9**	**315.0**	**305.6**	**312.3**	**2.2%**
Demand	**305.3**	**301.5**	**297.4**	**301.6**	**302.3**	**287.2**	**298.6**	**296.1**	**288.2**	**295.5**	**2.2%**
rejected	*18.2*	*11.8*	*5.2*	*6.0*	*6.5*	*7.1*	*8.2*	*6.9*	*10.3*	*11.5*	*11.9%*
Purchases	**287.1**	**289.7**	**292.2**	**295.6**	**295.8**	**280.2**	**290.4**	**289.2**	**278.0**	**283.9**	**1.9%**
% of Terna's demand	90.6%	92.2%	91.2%	92.0%	92.6%	93.0%	90.8%	91.8%	91.0%	90.9%	-0.3%
Supply	**500.2**	**502.4**	**489.9**	**507.5**	**503.6**	**496.7**	**472.4**	**455.5**	**485.5**	**518.5**	**6.5%**
Sales	**287.1**	**289.7**	**292.2**	**295.6**	**295.8**	**280.2**	**290.4**	**289.2**	**278.0**	**283.9**	**1.9%**
at a price <= 0	190.5	172.2	162.6	165.6	166.2	168.8	166.2	156.5	164.3	169.6	2.9%

Fig. 2.1.1 | Liquidity of the MGP

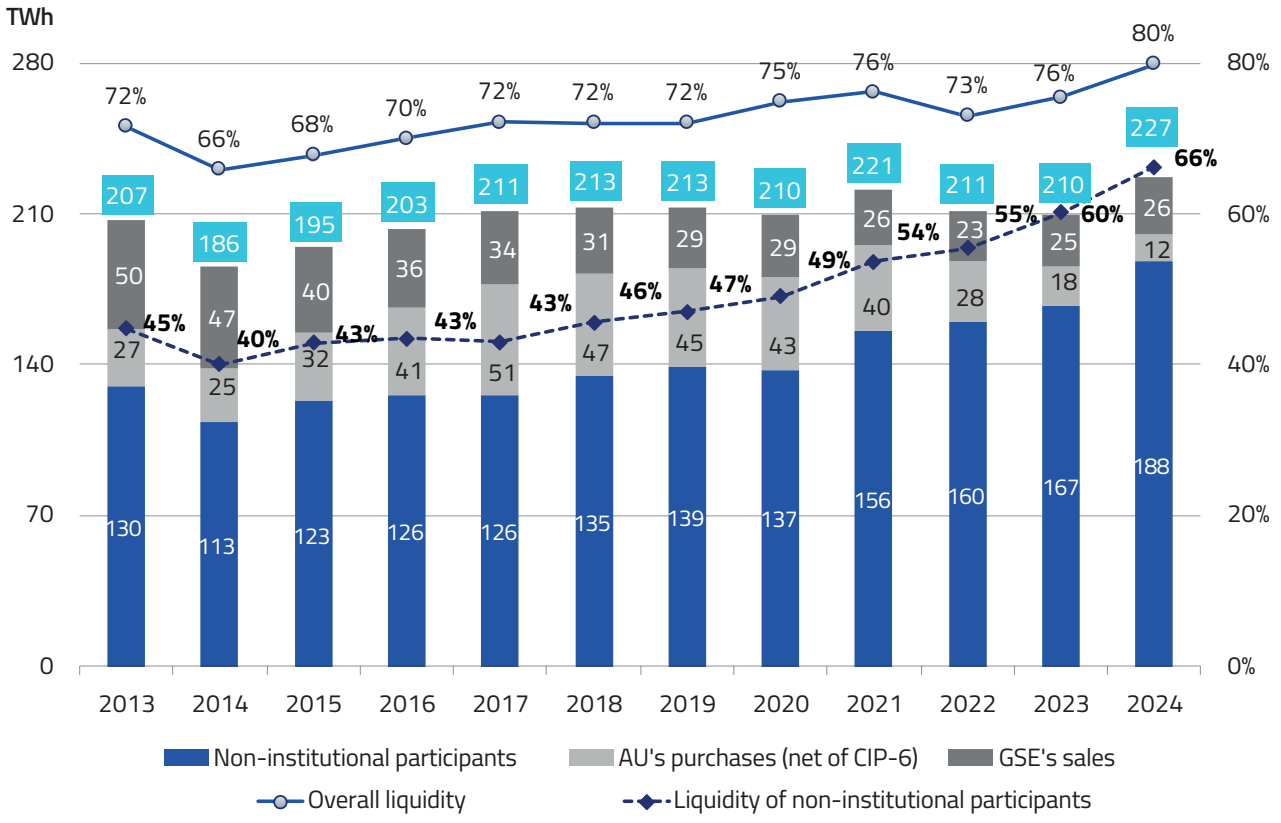


Table 2.1.2 | Zonal volumes in the MGP (TWh). Year 2024

Zone	Purchases		Sales		Supply		Demand		Rejected bids/offers	
North	156.64	(+1.3%)	119.83	(+7.0%)	236.03	(+9.2%)	158.63	(+1.5%)	116.21	(+11.6%)
Centre-North	23.90	(+0.4%)	14.85	(-0.5%)	18.45	(+3.9%)	24.55	(+1.0%)	3.60	(+27.4%)
Centre-South	49.92	(+2.4%)	27.28	(+7.9%)	75.79	(+14.0%)	50.74	(+3.3%)	48.51	(+17.7%)
South	17.79	(+0.6%)	27.69	(-11.0%)	57.53	(-3.0%)	18.25	(+2.2%)	29.85	(+5.9%)
Calabria	5.53	(+2.6%)	12.29	(-6.9%)	27.58	(+1.8%)	5.66	(+4.5%)	15.29	(+10.1%)
Sicily	16.57	(+0.2%)	12.74	(-12.4%)	29.49	(+3.8%)	16.84	(+0.5%)	16.75	(+20.7%)
Sardinia	8.19	(+0.4%)	11.89	(+2.0%)	15.51	(+4.0%)	8.48	(+2.1%)	3.62	(+11.0%)
Foreign countries	5.37	(+40.5%)	57.36	(+2.5%)	58.09	(+2.4%)	12.31	(+12.0%)	0.73	(-1.9%)
Italy	**283.93**	**(+1.9%)**	**283.93**	**(+1.9%)**	**518.49**	**(+6.5%)**	**295.46**	**(+2.2%)**	**234.56**	**(+12.7%)**

() change from previous year

Table 2.1.3 | Zonal sales by source and technology (average MWh). Year 2024

	North		Centre-North		Centre-South		South		Calabria		Sicily		Sardinia		*Sistema Italia*	
	MWh	*Change*	MWh	*Change*	MWh	*Change*	MWh	*Change*	MWh	*Change*	MWh	*Change*	MWh	*Change*	MWh	*Change*
Conventional sources	**6,693**	***-12.5%***	**642**	***-0.7%***	**1,611**	***+16.3%***	**1,445**	***-18.0%***	**982**	***-9.7%***	**693**	***-31.3%***	**918**	***+0.4%***	**12,984**	***- 10.2%***
Gas	5,818	*-10.8%*	586	*+0.5%*	1,333	*+78.8%*	1,210	*+8.9%*	858	*-14.4%*	623	*-26.6%*	470	*+6.0%*	10,898	*- 3.2%*
Coal	0	*-100.0%*	-	-	42	*-89.6%*	-	*-100.0%*	-	-	-	-	377	*-6.1%*	418	*- 70.5%*
Other	875	*-3.4%*	56	*-11.6%*	236	*-1.1%*	235	*-9.0%*	124	*+45.7%*	70	*-56.0%*	71	*+2.7%*	1,668	*- 6.3%*
Renewable sources	**6,562**	***+33.9%***	**1,048**	***-0.4%***	**1,458**	***-0.3%***	**1,707**	***-4.1%***	**416**	***+0.5%***	**756**	***+17.7%***	**433**	***+5.5%***	**12,381**	***+16.1%***
Hydro	4,722	*+46.8%*	210	*+2.9%*	563	*-9.1%*	431	*-0.6%*	110	-	156	*+6.1%*	67	*-10.1%*	6,259	*+30.3%*
Geothermal	-	-	599	*-2.0%*	-	-	0	-	0	*-100.0%*	-	-	-	-	599	*- 2.0%*
Wind	28	*+15.8%*	24	*-11.8%*	471	*-3.9%*	986	*-7.8%*	238	*-2.3%*	417	*+12.2%*	209	*-7.5%*	2,374	*- 3.2%*
Solar and other	1,812	*+9.1%*	215	*+2.5%*	424	*+20.0%*	290	*+4.8%*	68	*+6.4%*	182	*+48.0%*	157	*+42.7%*	3,148	*+12.6%*
Pumped storage	**386**	***+91.4%***	**-**	**-**	**37**	***+24.6%***	**0.06**	**-**	**-**	**-**	**1**	***-67.7%***	**3**	***+23.8%***	**428**	***+79.5%***
Total	**13,641**	***+7.0%***	**1,690**	***-0.5%***	**3,106**	***+7.9%***	**3,152**	***-11.0%***	**1,399**	***-6.9%***	**1,451**	***-12.4%***	**1,354**	***+2.0%***	**25,793**	***+1.7%***

Fig. 2.1.2 | Supply in the MGP

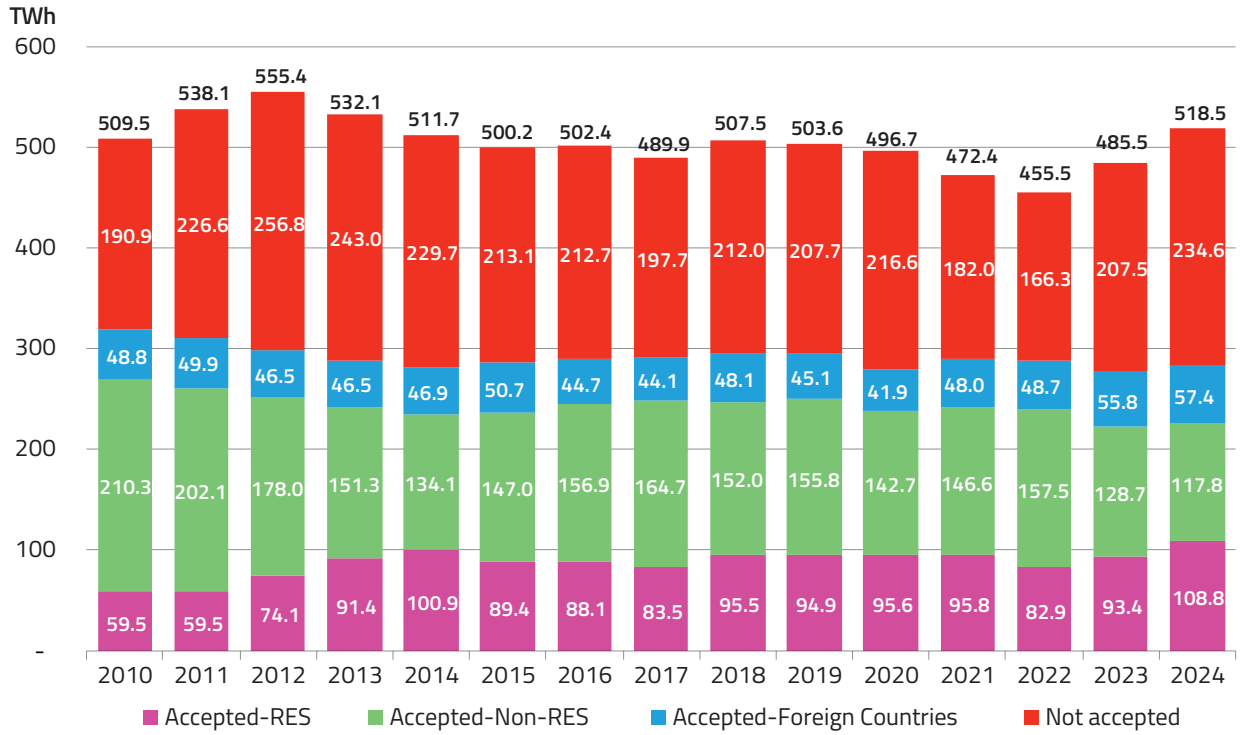


Fig. 2.1.3 | Distribution of sales. Monthly trend, 2023-2024

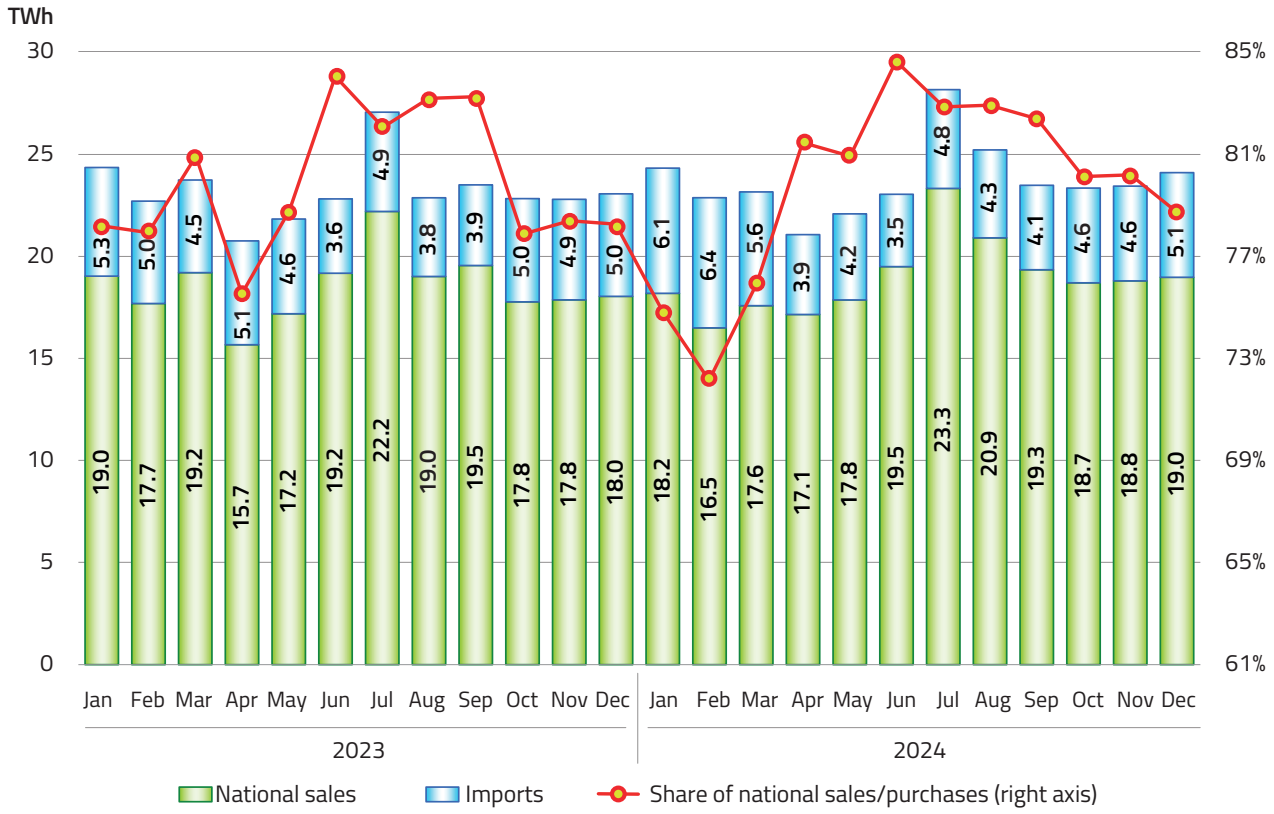


Fig. 2.1.4 | Competitiveness indicators

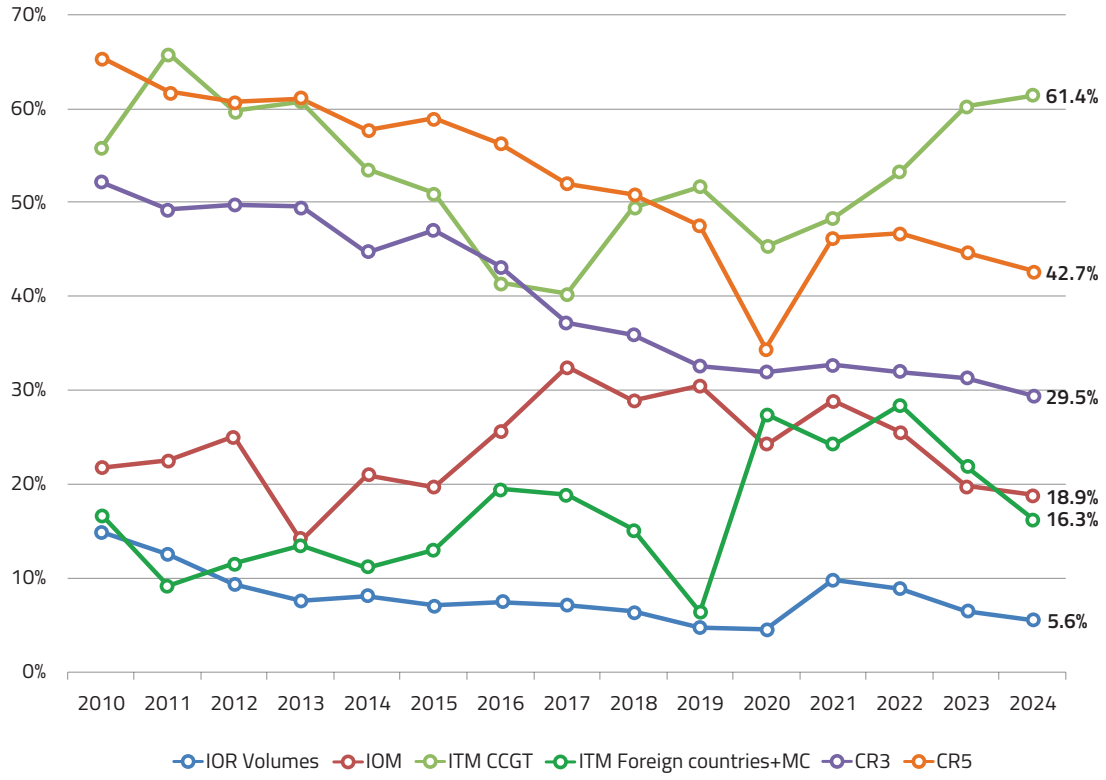


Fig. 2.1.5 | Trend of the PUN Index GME and of its determinants

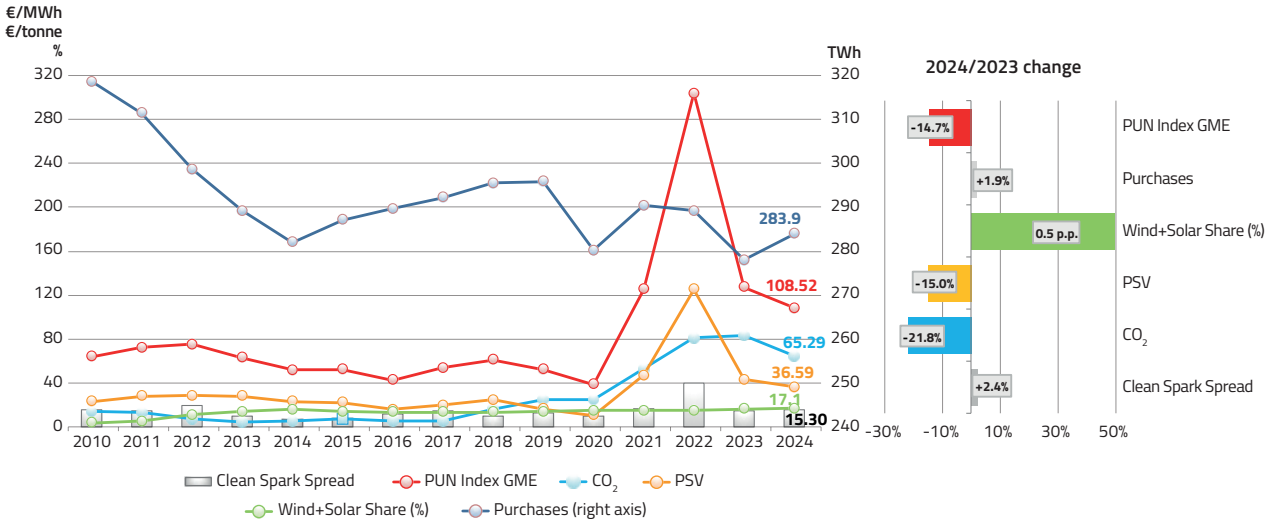


Fig. 2.1.6 | PUN Index GME by groups of hours. Yearly average

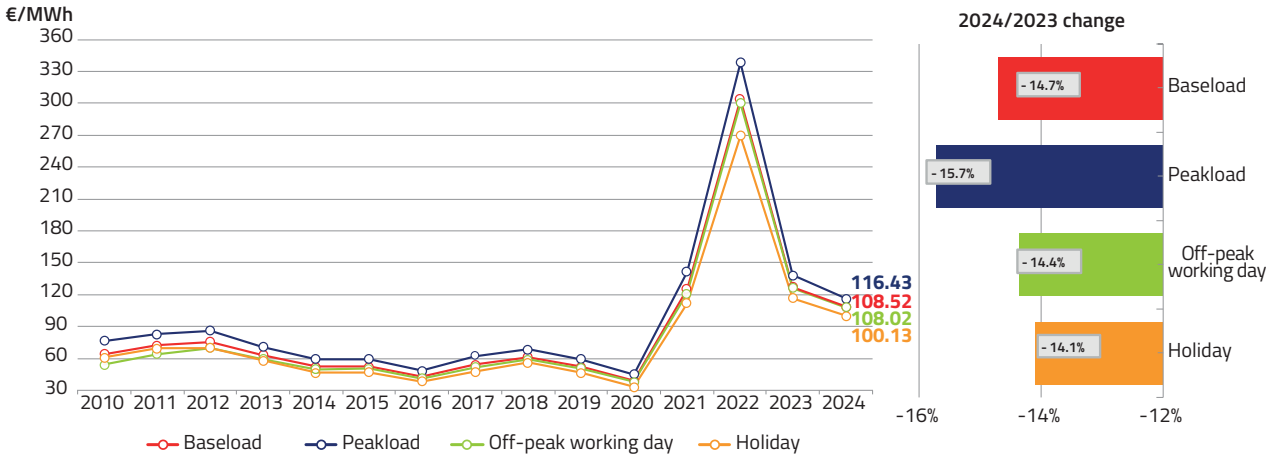


Fig. 2.1.7 | Zonal prices in the MGP. Yearly average

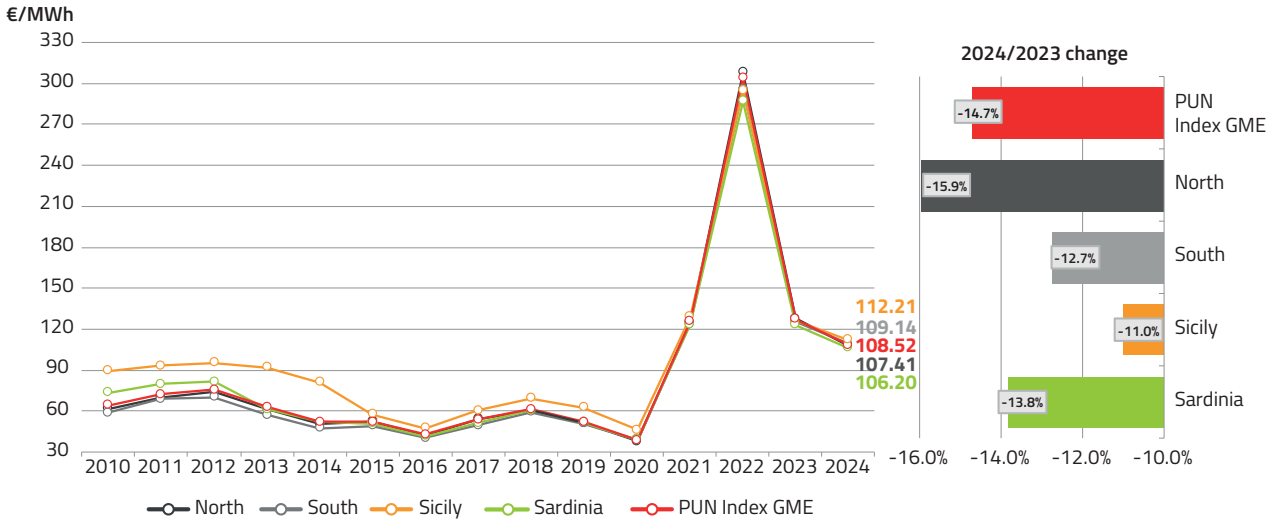


Fig. 2.1.8 | Zonal prices. Monthly trend, 2023-2024

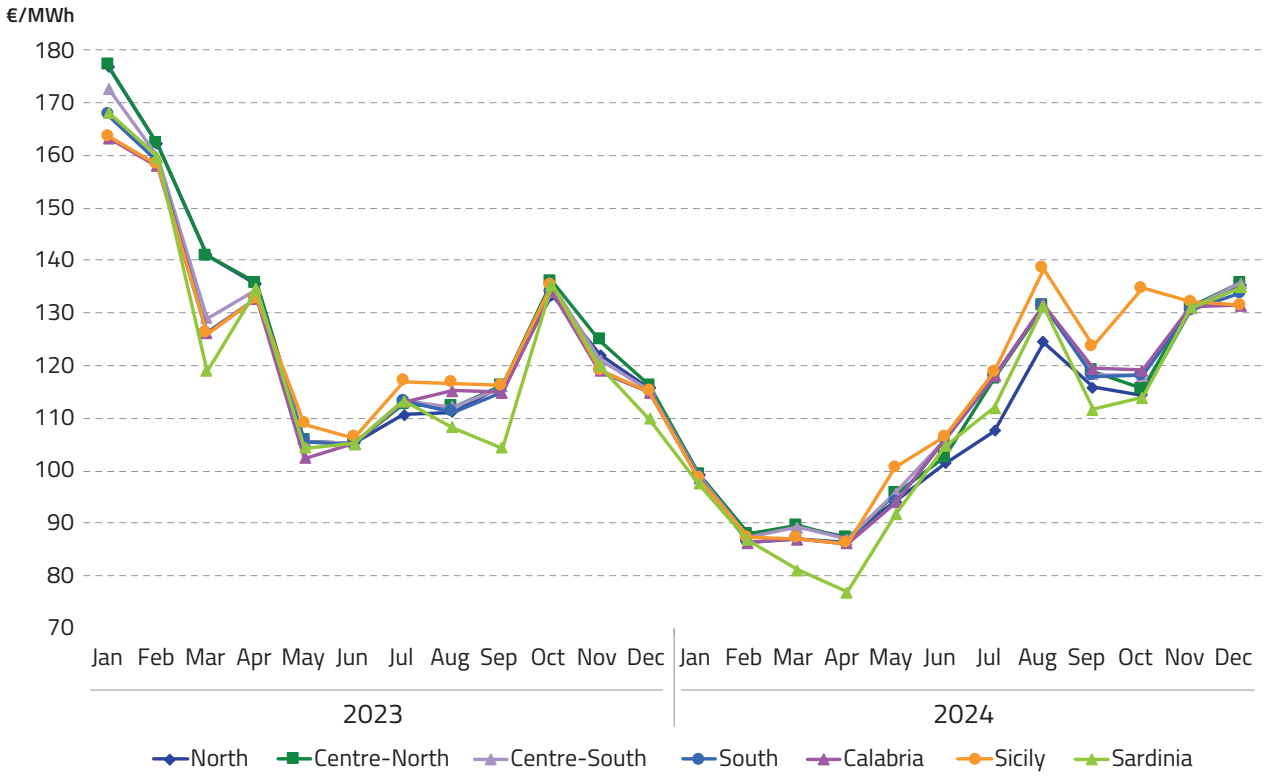


Fig. 2.1.9 | Price volatility

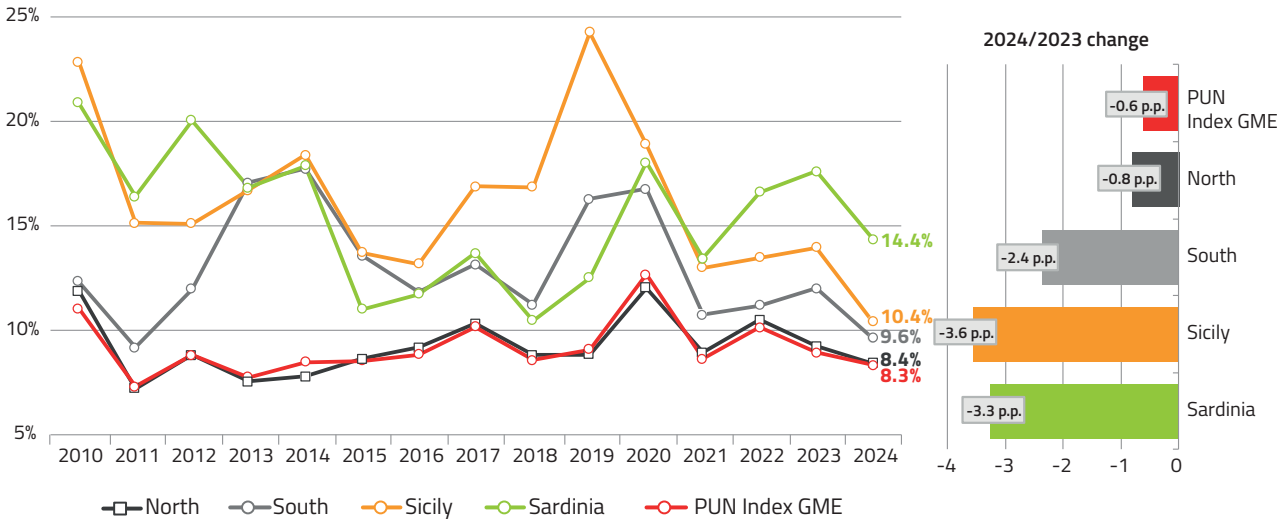


Fig. 2.1.10 | Frequency of zonal alignment. Monthly trend, 2023-2024

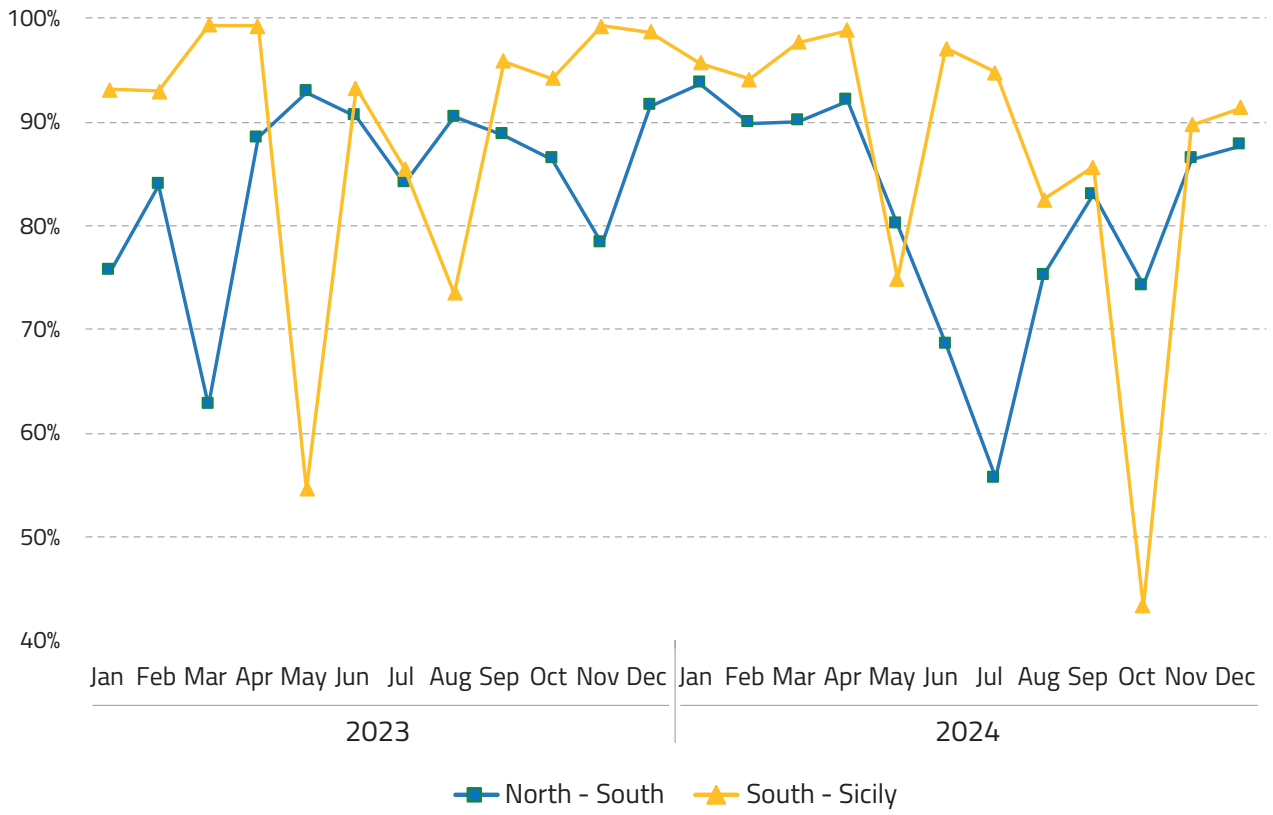


Table 2.1.4 | Zero prices and day-time/night-time price reversal in the MGP. Year 2024

	PUN Index GME		North		Centre-North		Centre-South		South		Calabria		Sardinia		Sicily	
No. of hours with zero price	**-**	*(0)*	**-**	*(0)*	**1**	*(0)*	**2**	*(2)*	**8**	*(3)*	**8**	*(4)*	**263**	*(167)*	**12**	*(5)*
No. of sessions with at least one hourly price equal to zero	**-**	*(0)*	**-**	*(0)*	**1**	*(0)*	**2**	*(1)*	**4**	*(2)*	**4**	*(3)*	**55**	*(24)*	**6**	*(4)*
No. of sessions with day-time<night-time prices	**160**	*(141)*	**136**	*(128)*	**151**	*(135)*	**167**	*(150)*	**174**	*(166)*	**179**	*(175)*	**201**	*(171)*	**187**	*(184)*
% of sessions with day-time<night-time prices	**43.7%**	*(38.6%)*	**37.2%**	*(35.1%)*	**41.3%**	*(37.0%)*	**45.6%**	*(41.1%)*	**47.5%**	*(45.5%)*	**48.9%**	*(47.9%)*	**54.9%**	*(46.8%)*	**51.1%**	*(50.4%)*
Average difference in sessions with day-time<night-time prices €/MWh	**-13.03**	*(-15.69)*	**-12.05**	*(-15.59)*	**-14.71**	*(-15.61)*	**-15.62**	*(-17.82)*	**-16.39**	*(-18.28)*	**-16.17**	*(-18.84)*	**-24.05**	*(-21.19)*	**-17.67**	*(-18.67)*

() values in the previous year

Fig. 2.1.11 | Electricity prices in Europe. Year 2024

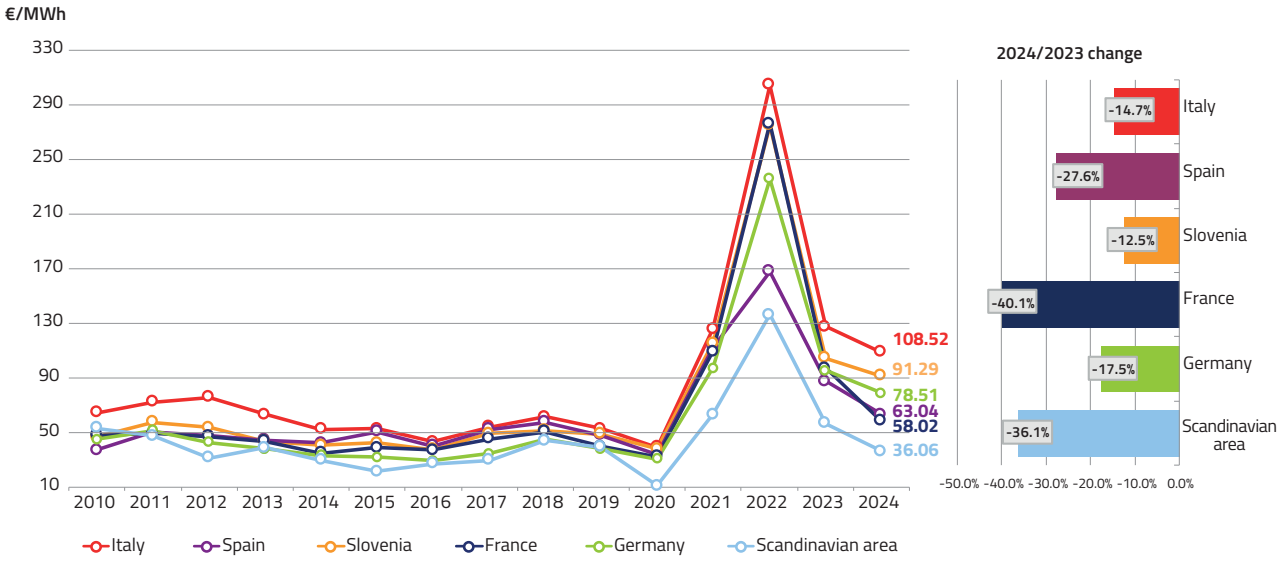
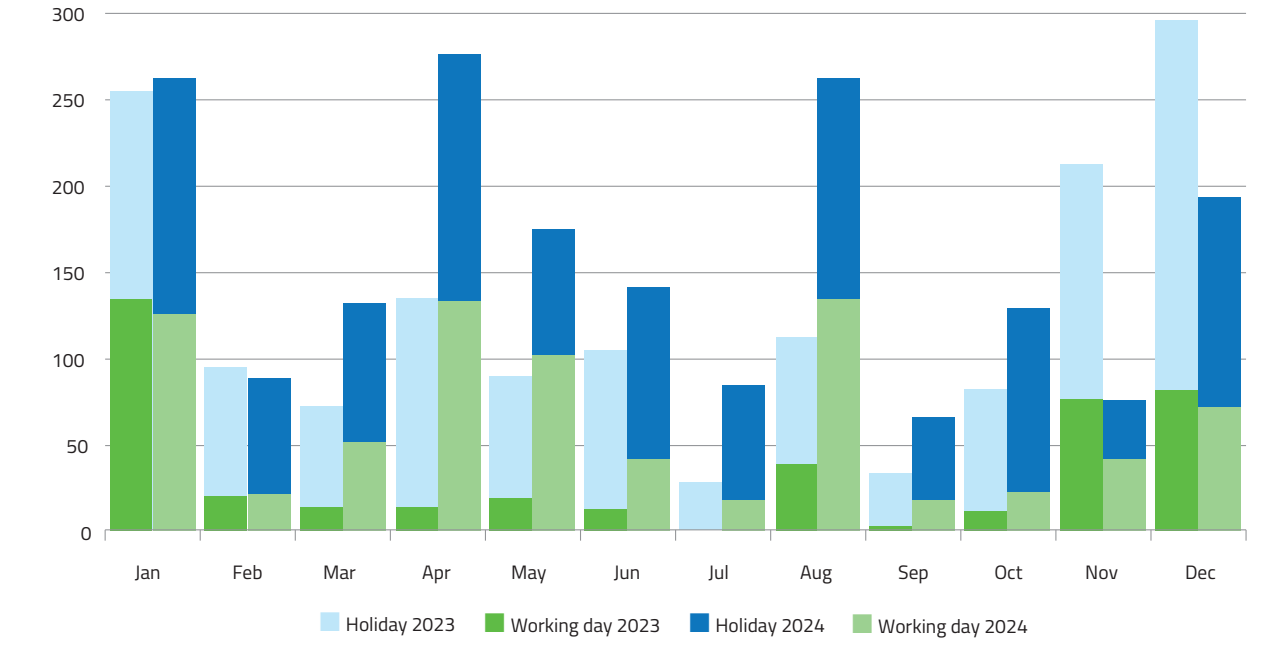


Fig. 2.1.12 | Distribution of hours of activation of the generalised constraint. Year 2024

	Without counterflows	With counterflows	Without impacts	Total
Number of hours	**621**	**1,080**	**183**	**1,884**
	(-87)	(+550)	(-94)	1,515
Share of total	**7%**	**12%**	**2%**	**21%**
	(-1 p.p.)	(+6 p.p.)	(-1 p.p.)	(+4 p.p.)



() change from previous year

2.1.2. Intraday Market (MI)

VOLUMES AND PRICES. In 2024, the MI was characterised by significant changes, as a result of which the auction markets that were previously active in Italy in the intraday timeframe (so-called MI-A or CRIDAs) were merged, starting in June, into the new Intraday Auctions (IDAs), harmonised at European level and aimed at further strengthening the integration of electricity markets within the EU.
In this context, overall volumes traded in GME's markets reached an all-time high (35.4 TWh, +6.3 TWh), due mainly to the greater liquidity of the XBID, measured both in terms of volumes traded, at an all-time high (11.5 TWh, +4.7 TWh), and in terms of matched orders (5.8 million, +2.3 million). Volumes in the auction sessions also increased (23.9 TWh, +1.6 TWh), particularly in the MI-A1 (15.1 TWh, +0.7 TWh), still accounting for the largest market share (around 43% of the total).
An analysis of trades during the year showed an increasing reliance on the XBID by renewable plants, which were counterparties in 67% of the volumes matched on the buy side and 69% on the sell side (+11/+3 p.p.). At the same time, market participants largely employed the bidding tools made available for continuous trading, such as portfolio orders (around 14% for buy orders and 11% for sell orders) and basket orders (28% of the total). A greater distribution of transactions among the three trading phases was also observed, as proven by the growth in the share of trades in phase 1 (19%, +7 p.p.) and in the twelve hours prior to delivery (26%, +8 p.p.). There was also a progressive increase in the weight of trading between national zones (51%, +16 p.p.) and within the same national zone (14%, +4 p.p.), to the detriment of trading with foreign counterparties (35%, -20 p.p.).
As to the auction markets, the increase in selling trades was particularly significant in the southern and northern zones; buying trades were concentrated in the northern zone.
The price dynamics followed what was observed in the MGP, with prices that, although progressively rising over the year, nevertheless fell compared to 2023. Average prices stood at 108/113 €/MWh (-18/-16 €/MWh) in the auctions and 109 €/MWh (-19 €/MWh) in the XBID, with values practically in line with the reference prices in the MGP. Lastly, intra-session volatility in the XBID remained high, with negative hourly lows concentrated particularly in March and May in Sardinia, the southern zone, and Sicily (**from Fig. 2.1.13 to Fig. 2.1.16, Table 2.1.5**).

Fig. 2.1.13 | **Volumes traded in the MI**

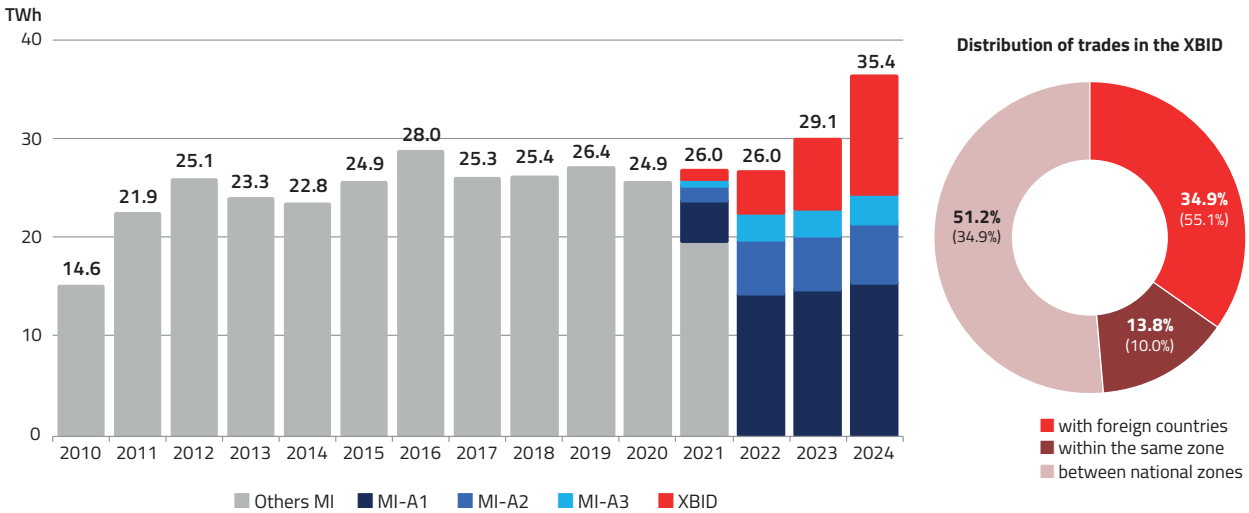


Fig. 2.1.14 | **Volumes traded in the MI. Monthly trend, 2023-2024**

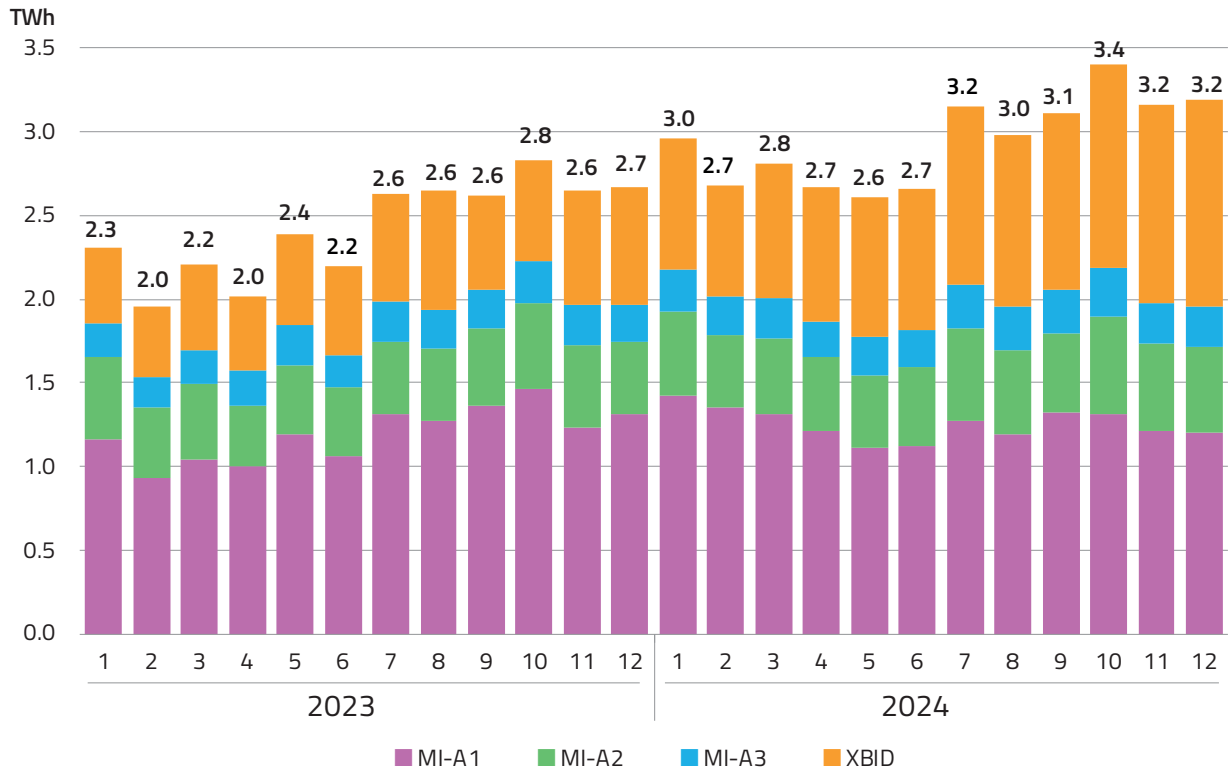


Fig. 2.1.15 | **Prices in the MI. Yearly trend**

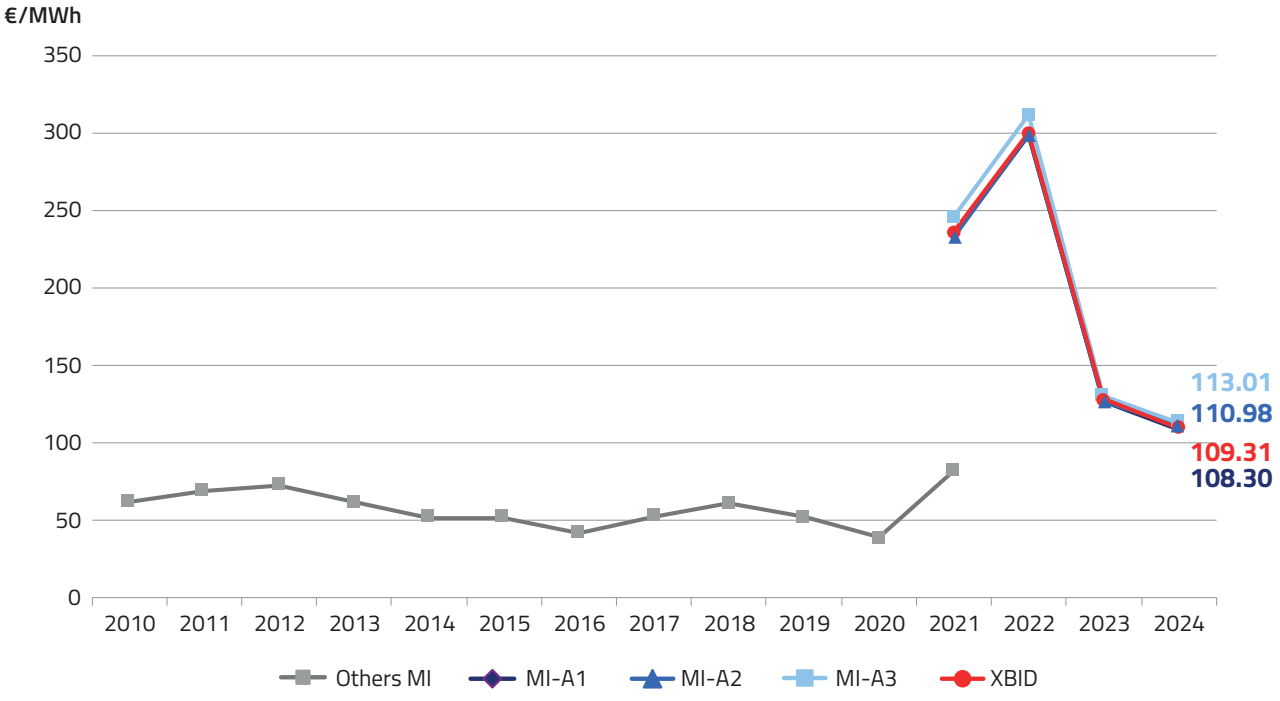


Fig. 2.1.16 | Prices in the MI. Monthly trend, 2023-2024

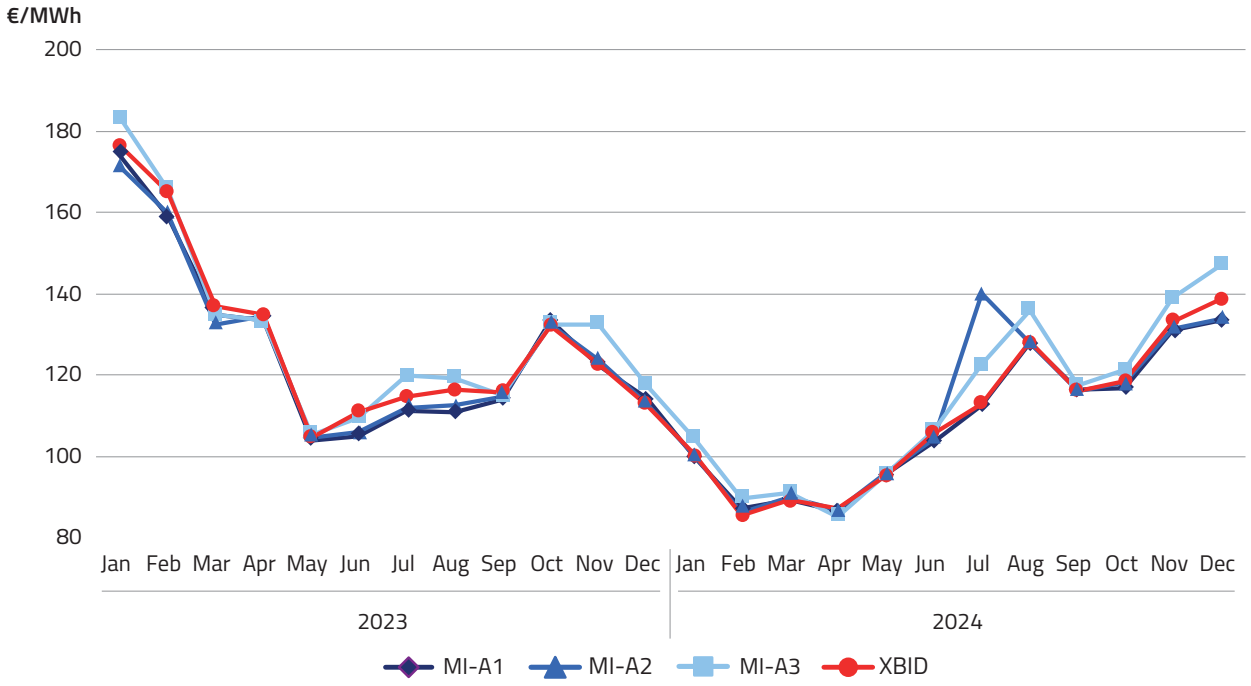


Table 2.1.5 | Zonal purchases and sales in the MI. Year 2024

PURCHASES	AUCTION				CONTINUOUS TRADING	INTRADAY MARKET	
	MI-A1 (1-24 h)	MI-A2 (1-24 h)	MI-A3 (13-24 h)	TOTAL	XBID (1-24H)	TOTAL	
	MWh	MWh	MWh	MWh	MWh	MWh	% change
North	7,205,577	2,210,845	1,247,692	**10,664,113**	**3,099,378**	**13,763,491**	*20.0%*
Centre-North	980,116	449,327	178,053	**1,607,495**	**586,629**	**2,194,124**	*16.1%*
Centre-South	2,091,594	1,069,342	496,821	**3,657,757**	**1,106,915**	**4,764,671**	*16.1%*
South	2,037,762	897,958	465,659	**3,401,378**	**1,392,524**	**4,793,902**	*17.8%*
Calabria	319,378	140,488	77,401	**537,267**	**228,566**	**765,834**	*17.6%*
Sicily	1,162,205	394,110	208,662	**1,764,977**	**549,741**	**2,314,718**	*23.1%*
Sardinia	336,208	200,315	120,338	**656,861**	**199,695**	**856,555**	*3.4%*
Foreign countries	923,149	499,345	185,049	**1,607,544**	**4,343,388**	**5,950,931**	*38.3%*
Total	**15,055,988**	**5,861,729**	**2,979,675**	**23,897,392**	**11,506,835**	**35,404,227**	***21.3%***

SALES	AUCTION				CONTINUOUS TRADING	INTRADAY MARKET	
	MI-A1 (1-24 H)	MI-A2 (1-24 H)	MI-A3 (13-24 h)	TOTAL	XBID (1-24H)	TOTAL	
	MWh	MWh	MWh	MWh	MWh	MWh	% change
North	7,702,915	2,566,601	1,235,371	**11,504,887**	**3,565,999**	**15,070,886**	*18.6%*
Centre-North	896,399	262,530	127,760	**1,286,690**	**569,966**	**1,856,656**	*24.0%*
Centre-South	2,082,402	943,035	431,731	**3,457,168**	**1,459,051**	**4,916,219**	*26.8%*
South	1,960,151	919,407	450,616	**3,330,174**	**1,332,826**	**4,663,000**	*31.8%*
Calabria	579,280	176,910	85,461	**841,652**	**257,471**	**1,099,122**	*10.6%*
Sicily	1,087,444	366,195	200,211	**1,653,849**	**509,713**	**2,163,562**	*0.4%*
Sardinia	244,831	148,596	91,255	**484,682**	**196,722**	**681,404**	*8.4%*
Foreign countries	502,565	478,451	357,272	**1,338,289**	**3,615,088**	**4,953,377**	*30.4%*
Total	**15,055,988**	**5,861,729**	**2,979,675**	**23,897,392**	**11,506,837**	**35,404,227**	***21.3%***

2.1.3. Other electricity markets

MPEG. Movements on the "unit price differential" product rose to their highest level since 2020 in terms of volumes (0.75 TWh compared to 0.55 TWh in 2023), along with an increase in matched orders (509 against 299). Unlike in previous years, a significant number of trades involving peakload products was observed. These trades were concentrated in the central months of the year, whereas they had been absent or nearly absent since 2020. Conversely, average prices fell sharply from their historical highs in 2023, reaching 0.91 €/MWh for the baseload profile (-0.34 €/MWh) and 0.80 €/MWh for the peakload profile (-0.60 €/MWh) (**Fig. 2.1.17**).

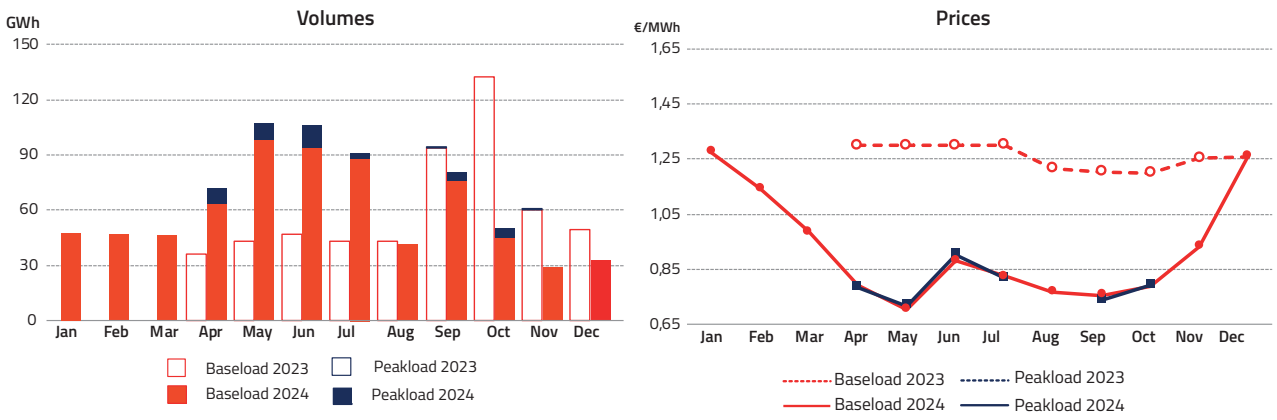
PCE. In 2024, a general reduction in volume indicators related to the PCE was observed. In fact, transactions registered on the Forward Electricity Account Registration Platform (PCE) with delivery/withdrawal in 2024 declined further (194.6 TWh, -15.3%), mainly as a result of the drop in transactions deriving from bilateral contracts (-15.4%). The same applies to the net position determined by total transactions, which fell down to its lowest level since 2009 (124.1 TWh, -8.6%), and to the turnover[16] (1.57, -0.12). A bearish trend was also observed for the schedules registered on injection accounts (57.1 TWh, -16.3%) and on withdrawal accounts (90.1 TWh, -7.3%), and for related imbalances with respect to schedules (66.9 TWh, -0.7%, and 34.0 TWh, -11.8%, respectively) (**Fig. 2.1.18, Fig. 2.1.19, and Table 2.1.6**).

MTE. In 2024, only 19 transactions for clearing purposes were recorded in the MTE (-5 on 2023) for a total of 85 GWh (**Table 2.1.7**).

Fig. 2.1.17 | **Prices and volumes traded in the MPEG by type**

	Trades	Traded products	Price			Volumes	
			Average	Minimum	Maximum		
Type	*No.*	*No.*	*€/MWh*	*€/MWh*	*€/MWh*	*MWh*	*MWh/d*
Baseload	438 (297)	185/364 (128/362)	0.91 (1.25)	0.70 (1.20)	1.60 (1.50)	709,488 (548,400)	3,835 (4,284)
Peakload	71 (2)	46/260 (2/259)	0.80 (1.40)	0.65 (1.20)	0.95 (1,60)	42,600 (840)	926 (420)
Total	**509** (299)					**752,088** (549,240)	

() change from previous year



16 Ratio of registered transactions to net position.

Fig. 2.1.18 | Registered transactions, net position and turnover

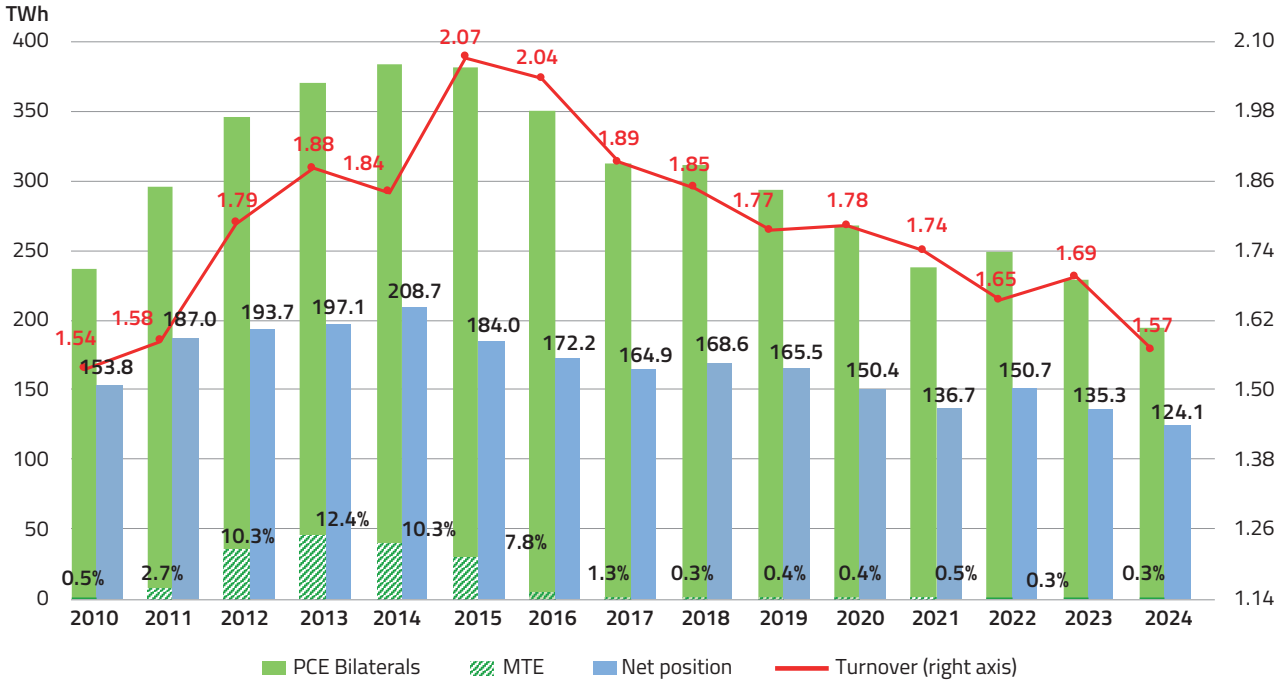


Table 2.1.6 | Profile of registered transactions and schedules

TRANSACTIONS REGISTERED

Profile	MWh	Change	Structure
Baseload	30,487,878	*18.1%*	*15.7%*
Off-Peak	93,007	*140.8%*	*0.0%*
Peak	66,532	*135.9%*	*0.0%*
Week-end	-	-	*0.0%*
Total Standard	**30,647,418**	**18.4%**	***15.7%***
Total Non-standard	**163,176,757**	**-19.8%**	***83.8%***
PCE bilaterals	**193,824,174**	***-15.4%***	***99.6%***
MTE	**73,682**	***-13.4%***	***0.0%***
MPEG	**752,088**	***36.6%***	***0.4%***
CDE	**-**	**-**	***0.0%***
Total	**194,649,944**	**-15.3%**	**100.0%**
Net position	**124,054,606**	**-8.6%**	

SCHEDULES

	Injection			Withdrawal		
	MWh	Change	Structure	MWh	Change	Structure
Demanded	67,353,862	*-17.9%*	*100.0%*	90,101,841	*-7.3%*	*100.0%*
Registered	**57,128,021**	***-16.3%***	***84.8%***	**90,094,533**	***-7.3%***	***100.0%***
Rejected	10,225,841	*-25.6%*	*15.2%*	7,309	*-39.7%*	*0.0%*
Imbalance with respect to schedules	**66,926,585**	***-0.7%***		**33,960,073**	***-11.8%***	
Balance of schedules	**-**	**-**		**32,966,512**	***13.9%***	

Fig. 2.1.19 | Registered physical schedules and imbalances with respect to schedules

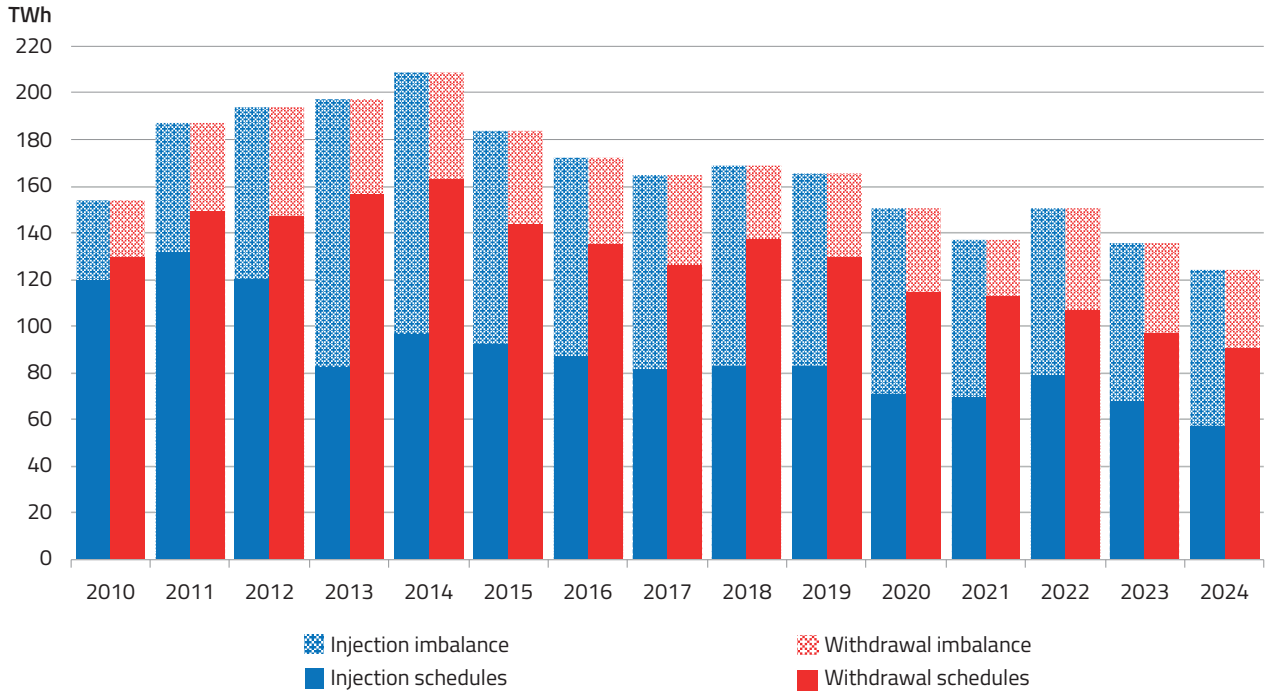


Table 2.1.7 | MTE: volumes traded by year of trading

	2023			2024			Δ% 2024/2023		
	MARKET	OTC	TOTAL	MARKET	OTC	TOTAL	MARKET	OTC	TOTAL
Number of matched orders									
Total	**8**	**16**	**24**	**0**	**19**	**19**	**-8**	**3**	**-5**
Baseload	8	15	23	0	19	19	-8	4	-4
Peakload	0	1	1	0	0	0	0	-1	-1
Volumes (MWh)									
Total	**26,970**	**107,525**	**134,495**	**0**	**84,671**	**84,671**	**-26,970**	**-22,854**	**-49,824**
Baseload	26,970	101,237	128,207	0	84,671	84,671	-26,970	-16,566	-43,536
Peakload	0	6,288	6,288	0	0	0	0	-6,288	-6,288

2.2 GAS MARKETS

2.2.1. Spot Gas Market (MP-Gas)

VOLUMES AND LIQUIDITY. Volumes in the MP-Gas and their share of the total consumed in the system rose to all-time highs of 180 TWh (+16.1% and +2.7% compared to the previous record) and 28% (with two monthly peaks above 35%), respectively. The driving force was the MGP-Gas (111.1 TWh, +40.8%), which also reached its all-time high, according to a trend that extended to all months of the year and such as to offset the reduction induced in the MI-Gas (39.2 TWh, -11.9%) by the drop in the movements of the Balance Responsible Party/BRP (6.3 TWh, -28.2%) and in trades between other market participants (32.9 TWh, -7.9%). In addition to the increase in volumes, the greater liquidity of the markets was also demonstrated by the increase in the number of market participants trading on both sides of the market, the increase in the number of transactions (452 in 2024, +40%), and the significant growth in trading in terms of market participants (36, +5) and volumes (51.9 TWh, +29.2%). There was also a marked improvement in the indicators related to the order books, which proved to be deeper and less steep on both sides of the market, around a competitive price range, and characterised by a lower competitive bid-ask spread.
With reference to the auction markets included in the MP-Gas, in the two AGS segments, trades decreased to 25.3 TWh in the day-ahead timeframe (-10.5%), 20.7 TWh of which related to Snam's movements on the buy side, and to 1.0 TWh in the intraday timeframe (vs 0.2 TWh in 2023). In contrast, volumes recorded in the MGS increased again (3.5 TWh, +7.1%), with an observed increase in the volumes traded by Snam for balancing purposes, particularly on the buy side (1.3 TWh as against 0.9 TWh in 2023), while trades between third-party market participants remained practically stable (1.5 TWh) (**Fig. 2.2.1**).

PRICES. The maturity reached by the MP-Gas ensured a marked and stronger representativeness of prices expressed by GME's markets, supporting the reliability of the IG Index GME, launched by GME in 2023 and equal to 36.4 €/MWh in 2024. The index moved in full harmony with the main European prices, following dynamics common to them also in terms of month-on-month trends (TTF: 34.3 €/MWh, CEGH: 35.9 €/MWh). The analysis of trades in the MGP-Gas, the market on which the index is set, showed a clear and progressive growth between 2023 and 2024 of the average matched orders observed in the sessions in the "IG Index GME band"[17] (from 39 to 63), at rates higher than in the rest of the market (61% vs 36%); this proves, on the one hand, the appreciation of market participants for the market-based index and, on the other hand, the boosting effect generated by the index itself on market liquidity. On average, in 2024, prices on GME's markets were practically in line with the value of the IG Index GME, decreasing in both level and volatility, as did imbalance prices (purchase: 36.9 €/MWh, -15.2%; sale: 36.2 €/MWh; -13.4%), showing a growing progression during the year leading them to reach their yearly maximum in December (**Fig. 2.2.2 and Fig. 2.2.3**).

MOVEMENTS BY THE BRP. The greater liquidity recorded in the gas markets generated additional and important benefits in terms of functioning of the system balancing mechanism. Indeed, the growth in volumes guaranteed market participants a larger pool for procuring the resources required to manage their commercial positions and facilitated the operations of the BRP. The interventions of the BRP in the market actually decreased in terms of both frequency and volumes, confirming their prevalence in purchases (93 sessions, -17% vs 20 in sales), also determining a decrease in the frequency with which the BRP set the imbalance prices and its impact on the prices of the session and on the order book (**Table 2.2.1**).

17 The IG Index GME is the reference index of the Italian Gas Market, calculated by GME for each gas-day as the arithmetic mean of the prices of trades concluded in the 17:15-17:30 hourly band (including extremes) in the continuous-trading MGP-GAS and on Day-Ahead and WE products.

2.2.2. Other gas markets

MT-GAS. In 2024, there were no trades in the forward MT-Gas.

P-GAS. In the Royalties segment, 1.0 TWh were traded at an average price of 45.04 €/MWh. No trading, however, took place in the Imports segment.

PAR. On the Platform for the Allocation of Regasification Capacity, a total of 20 slots were allocated (vs 42 in 2023), all concentrated in the segments dedicated to GNL Italia and FSRU Italia, for 1.7 million m^3 of liquefied gas (compared to 5.5 million m^3 of liquefied gas last year), at an average price of 2.02 €/m^3 of liquefied gas.

Fig. 2.2.1 | **Trend of trades**

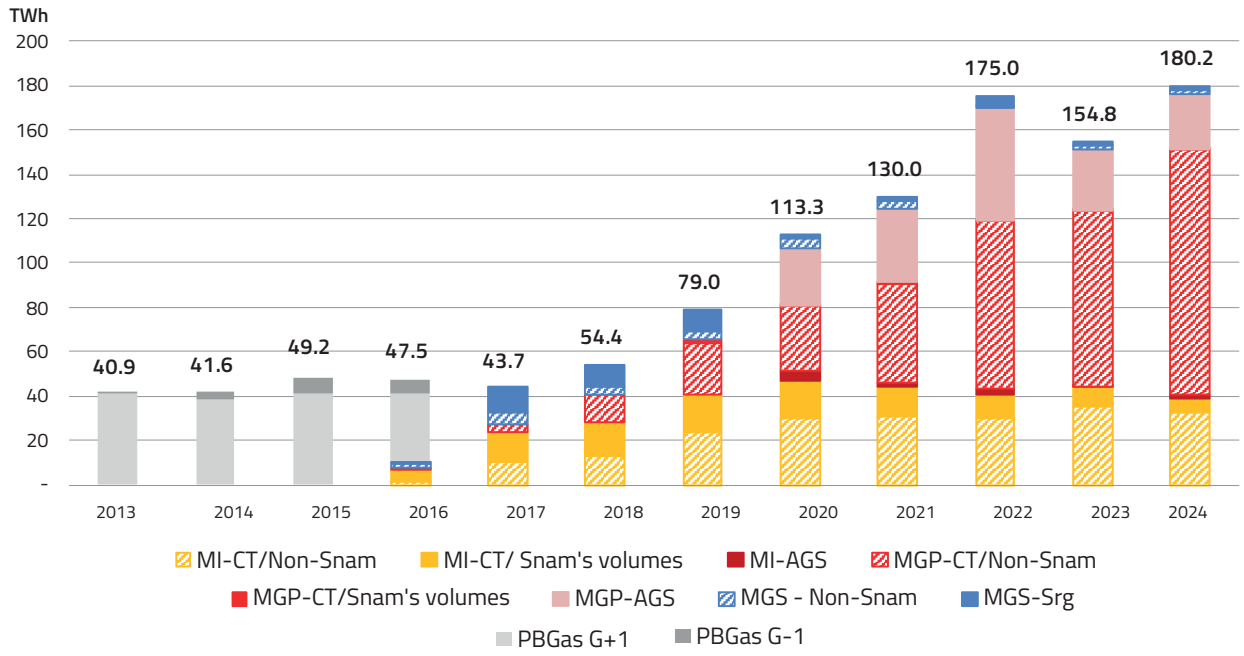
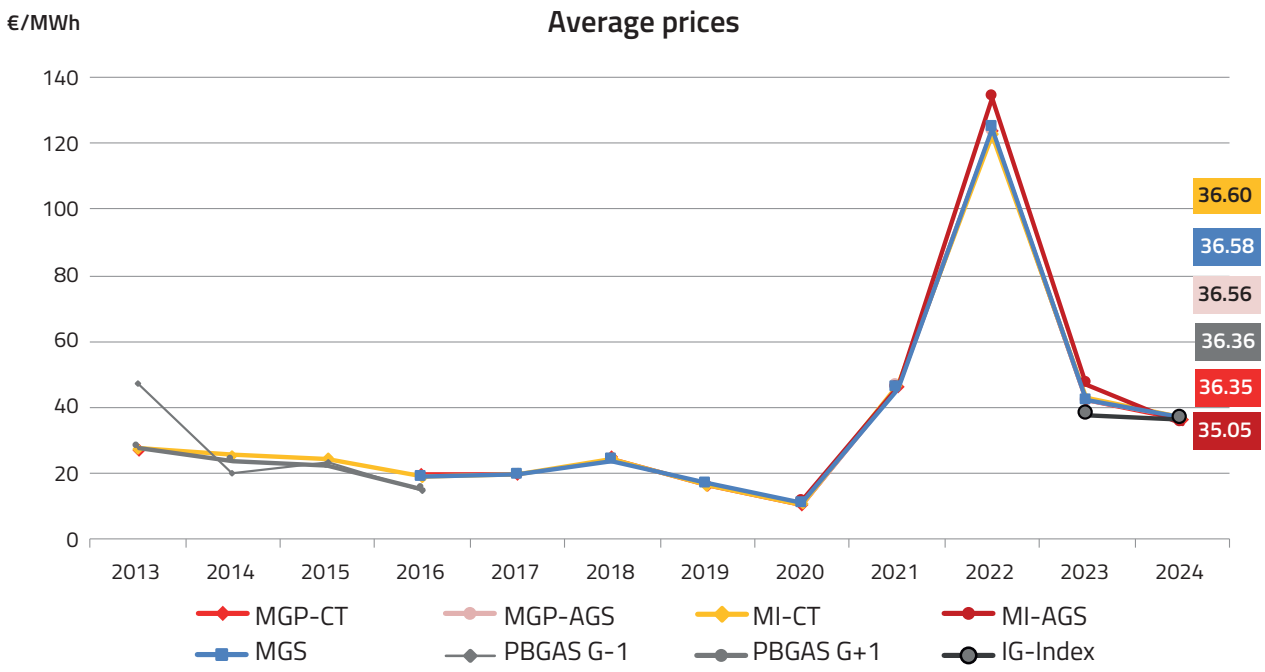
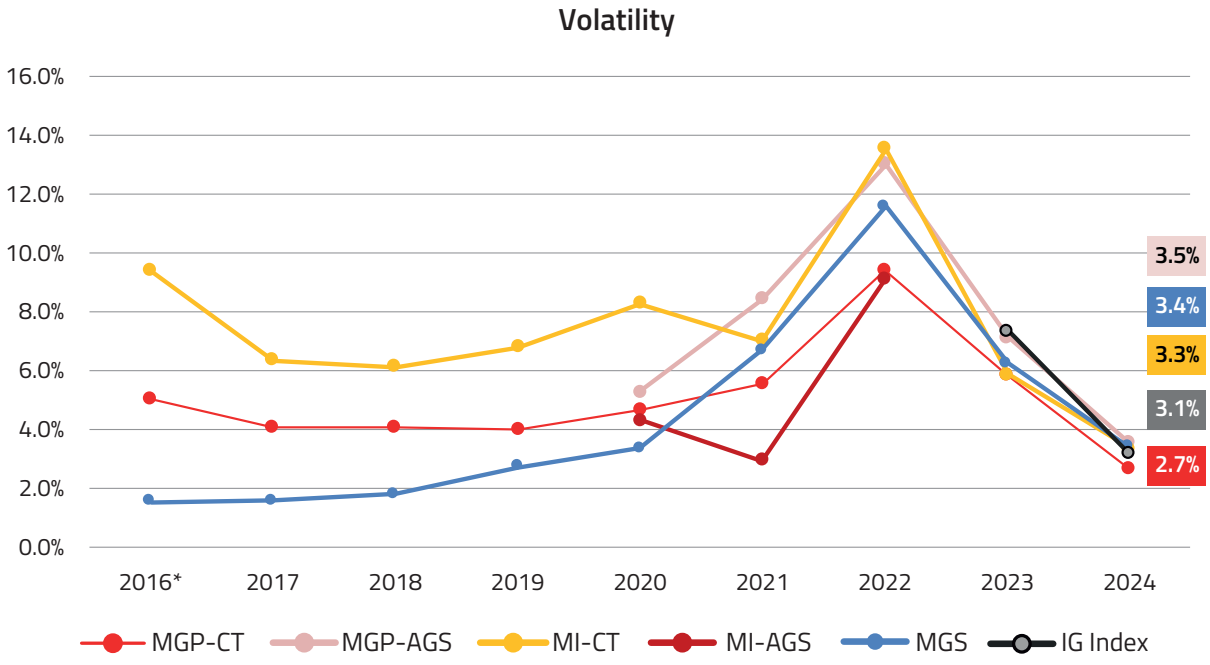


Fig. 2.2.2 | Average prices and volatility in the MP-Gas





*October-December period

Fig. 2.2.3 | Matched orders on products underlying the IG Index GME. Average no.

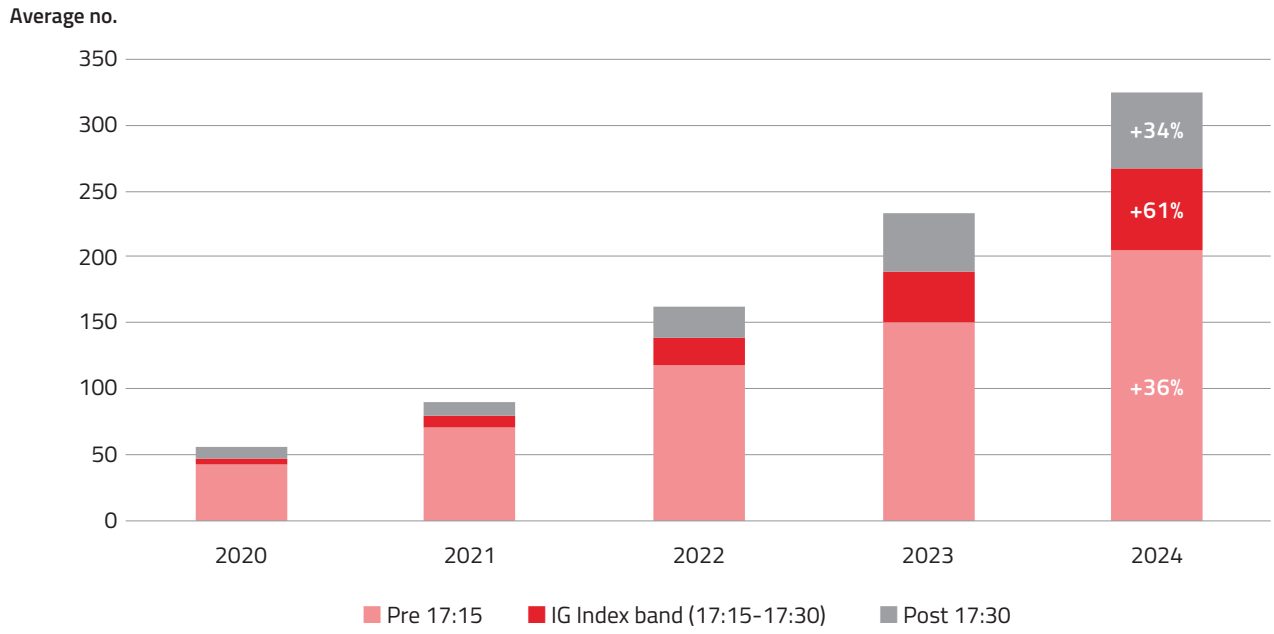


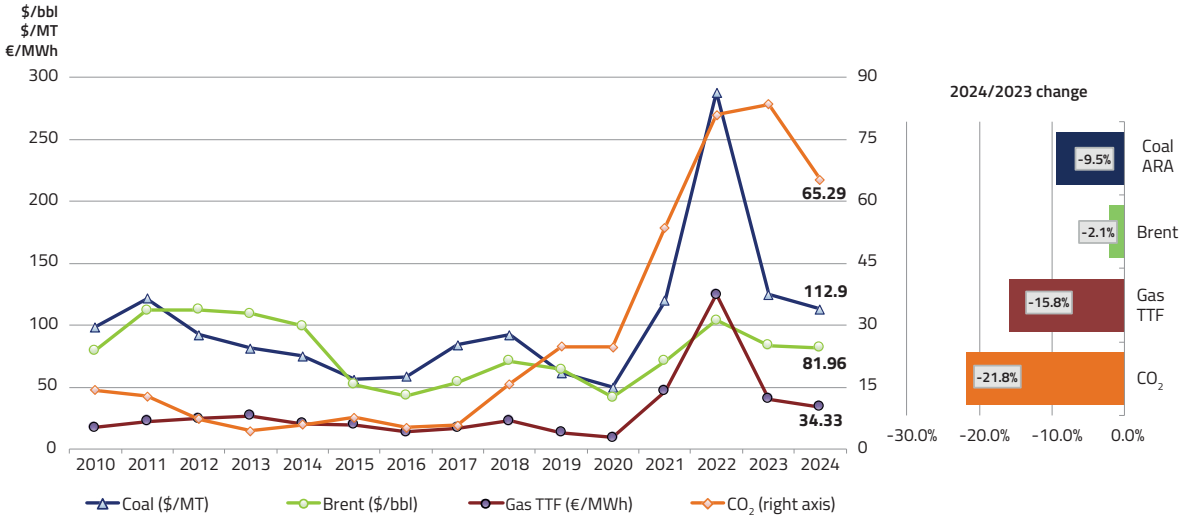
Table 2.2.1 | Movements by Snam in the MI-Gas. Year 2024

Year	Purchase				Sale			
	No. of days BRP	Average volume of session	Min volume of session	Max volume of session	No. of days BRP	Average volume of session	Min volume of session	Max volume of session
		(MWh)	*(MWh)*	*(MWh)*		*(MWh)*	*(MWh)*	*(MWh)*
2020	120	102,591	1,200	283,248	57	80,392	24	259,224
2021	114	82,186	24	220,584	54	68,780	24	179,976
2022	64	54,260	24	200,472	97	68,213	24	280,320
2023	112	63,180	264	238,776	40	40,869	24	217,704
2024	93	61,504	72	191,784	20	27,944	120	83,472

BOX – ENERGY MARKETS IN EUROPE

PRICES OF ENERGY COMMODITIES. In a still uncertain international scenario, commodity prices remained high, although all experienced their second consecutive decline. The prices of crude oil and oil products fell to 81.96 $/bbl for the Brent (-2%), to 537.67 $/MT for fuel-oil (-1%), and to 732.05 $/MT for gas-oil, with gas-oil showing a sharper decrease (-10%). Monthly dynamics generally showed higher prices in the first half of the year, followed by a drop to minimum levels in September, and subsequently exhibiting a moderate variability. The dynamics of coal were different: its price, equal to 112.90 $/MT (-9%) on average, remained low in the first two months of the year (falling below 96 $/MT in February), peaked in September (exceeding 124 $/MT), and then declined towards the end of the year.

Fig. Box 1 | **Prices of the main European energy commodities**



GAS PRICES. In 2024, European gas systems practically consolidated the trends that had emerged after the onset of the Russian-Ukrainian conflict, reflecting a general weakness in demand and an increasingly strong link between price dynamics and LNG dynamics, with LNG now accounting for about 30% of the gas imported into the Old Continent. Gas consumption in Italy and central-northern Europe (NWE) stood at low levels in terms of both consolidated yearly figures (Italy: 630 TWh, NWE: 1,625 TWh) and trends over the months, frequently reaching its lowest levels in the past five years; a slight recovery was observed only in the final part of the year. An analysis of the raw material procurement methods highlighted the role of LNG – in both Italy and Europe – as a primary source for replacing Russian pipeline supplies (which, however, rose again in Italy in 2024). Nevertheless, LNG volumes and their share in imports declined in Italy and Europe with respect to last year, particularly from the end of the first quarter of the year and especially from the US and Asia. In a context of weak demand, this trend led to lower injection flows into storage systems in the six-month summer period, the effects of which became evident at the start of the new gas year, accelerating the depletion of European storage levels. This phenomenon occurred in parallel with the slow but gradual recovery of European gas prices observed since the end of February. Indeed, prices – despite a yearly value that remained lower than in 2023 (TTF: 34.3 €/MWh, CEGH: 35.9 €/MWh; IG Index GME: 36.4 €/MWh), increased month-on-month throughout most of 2024, reaching their highest values in the last two months; in this period, the rise of prices to their yearly peaks (45/48 €/MWh) contributed to narrowing the spread with Asian LNG prices, while LNG flows resumed growth and nearly returned to the high values recorded at the beginning of 2024.

ELECTRICITY PRICES. The reduction in fuel costs contributed to the fall in European electricity prices, though they remained above the levels observed until 2020. The Italian PUN Index GME, still heavily dependent on gas-fired generation, stayed above 100 €/MWh (109 €/MWh, -15%), while prices on the rest of the continental European exchanges decreased to 58/82 €/MWh (-18/-40%). Among the latter exchanges, the Germany-France spread stood out, reaching an all-time high of approximately +20 €/MWh. This development, rarely seen in the past, resulted from the different evolution of the generating mixes in the two countries: nuclear and hydropower generation grew again in France, whereas coal- and brown-coal-fired generation progressively decreased in Germany, which had already been impacted by the phase-out of nuclear power in 2023. This phenomenon was also confirmed on an hourly basis by the sharp drop in the frequency with which the German price proved to be lower than the French one (42% of hours, -30 p.p.).

2.3 ENVIRONMENTAL MARKETS

2.3.1. Energy Efficiency Certificates Market (MTEE)

VOLUMES AND LIQUIDITY. The overall number of certificates issued, net of those withdrawn, from the start of the scheme to the end of 2024, reached approximately 73.6 million toe, with an increase of about 2.2 million toe compared to 31 December 2023. The number of certificates available at the end of the year, gross of those registered on GSE's account, amounted to 3.3 million toe, up by about 61 thousand toe with respect to the end of 2023. In this context, the trading of TEE in 2024 marked the second slight increase in a row, rising to 1.83 million toe (+4.2%) in the regulated market (MTEE), and 1.18 million toe (+11.7%) on the bilateral platform, with a market liquidity of 61% (-1 p.p.). The monthly analysis of trading in the market shows a fairly consistent growth in percentage terms during the year, with increases in the first part of the year due to 2023 obligations similar to those recorded in the following period (**Table 2.3.1, Fig. 2.3.1, Fig. 2.3.2**).

PRICES. In 2024, the average price recorded in the MTEE fell to 248.51 €/toe (-1.3%), averaging 251 €/MWh in the first five months of the year relating to the 2023 obligation year and 247 €/MWh thereafter. The average price recorded on the bilateral platform grew, instead, to 228.80 €/toe (+2.0%), fluctuating between 247 €/MWh in May and 151 €/MWh in April. The spread between the two prices narrowed to 19.71 €/toe, though remaining at around 3 €/toe only for the bilateral transactions registered at a price higher than 1 €/toe, equal to 93% of the total (91% in 2023) (**Fig. 2.3.3 to Fig. 2.3.5**).

2.3.2. Market of Guarantees of Origin (MGO)

VOLUMES AND LIQUIDITY. In 2024, there was a general increase across all trading modes. Registrations on the bilateral platform (PBGO) still prevailed, amounting to 66.5 TWh (+9%), while trades in the MGO grew to 2.0 TWh (+191%), and allocations by auction increased to 21.4 TWh (+185%). The analysis of the structure of cumulative trades until the end of 2024 by type of plant and by production period showed, with reference to the production year 2023, higher shares of the Hydro type in the MGO (34.8%) and on the PBGO (49.5%), and of the Solar type in GSE's allocation auctions (41.8%). With reference to the year of production 2024, on the other hand, each of the Hydro, Solar, and Bio types had a share of around 30% in the MGO, while on the PBGO the Hydro and Wind types had the largest share with 45.5% and 41.0% of the total, respectively. As to GSE's auctions, the Solar type was the most liquid with 48.3% (**Fig. 2.3.6, Fig. 2.3.7, and Fig. 2.3.8**).

PRICES. In 2024, the average price of GOs, regardless of the type and period of production, fell sharply in the MGO (0.77 €/MWh, -5.33 €/MWh) and GSE's auctions (0.42 €/MWh, -5.24 €/MWh), while it rose on the PBGO to 2.82 €/MWh (+0.70 €/MWh). As a result of these changes, the spread between the market price and that of bilaterals reversed its sign in 2024, standing at -2.05 €/MWh (vs +3.98 €/MWh in 2023), a value that rises to -2.21 €/MWh considering only bilateral transactions registered with a strictly positive price (about 95% of the total traded on the PBGO). As to the individual types of GOs traded, regardless of the period of production, in the MGO, the various categories showed prices ranging from 0.30 €/MWh for the Gas Transport Not Exportable type, which is the least expensive even on the PBGO (0.13 €/MWh), to 1.17 €/MWh for the Wind type. In contrast, on the PBGO, the Bio and Other types had the highest prices, equal to 4.04 €/MWh and 4.59 €/MWh, respectively. Finally, in GSE's auctions, the Gas Transport Not

Exportable category recorded the highest price at 0.80 €/MWh. The monthly analysis showed a downward trend in the MGO, with higher prices in the first quarter and lower prices in the final months of the year, when the GOs with production year 2023 hit historical lows (**Fig. 2.3.9**).

Table 2.3.1 | Energy Efficiency Certificates (TEE) needed to fulfil the obligation

Year of obligation	Actual obligations Total distributors (Mtoe/yr)	Actual obligations Electricitity distributors (Mtoe/yr)	Actual obligations Gas distributors (Mtoe/yr)	Cumulative total for fulfilment of the obligation (Mtoe)	Certificates issued since the start of the scheme (Mtoe)	Issued certificates-obligations delta (Mtoe)	Certificates issued January-May** (Mtoe)	Certificates available upon expiry (net of GSE account) (Mtoe)
2005	0.16	0.10	0.06	0.16	-			
2006	0.31	0.19	0.12	0.47	-			
2007	0.64	0.39	0.25	1.11	1.79	0.68	0.52	1.31
2008	2.20	1.20	1.00	3.31	3.73	0.42	1.14	2.62
2009	3.20	1.80	1.40	6.51	6.63	0.12	1.42	3.45
2010	4.30	2.40	1.90	10.81	9.64	-1.17	1.64	4.05
2011	5.30	3.10	2.20	16.11	14.74	-1.37	3.32	5.62
2012	6.00	3.50	2.50	22.11	20.69	-1.42	3.46	6.00
2013	5.51	3.03	2.48	27.62	28.17	0.55	4.19	7.75
2014	6.75	3.71	3.04	34.37	34.65	0.28	2.38	7.66
2015	7.75	4.26	3.49	42.12	40.04	-2.08	2.32	7.14
2016	9.51	5.23	4.28	51.63	47.57	-4.06	3.61	8.27
2017	5.34	2.39	2.95	56.97	53.62	-3.35	2.62	5.47
2018	5.57	2.49	3.08	62.54	58.72	-3.82	2.23	4.45
2019	6.20	2.77	3.43	68.74	63.83	-4.91	1.38	4.49
2020	2.84	1.27	1.57	71.58	66.07	-6.37	1.31	2.56
2021	1.00	0.45	0.55	72.58	67.83	-4.75	1.17	1.98
2022	1.68	0.75	0.93	74.26	70.23	-4.03	1.22	2.11
2023	2.35	1.05	1.30	76.61	72.69	-3.92	1.01	1.96
2024	**2.42**	**1.08**	**1.34**	**79.03**	**74.14***	**-4.89**	**0.25***	**2.29***

* *The figure has been calculated on the basis of an estimation of the number of available certificates published by GSE in its* Rapporto annuale Certificati Bianchi 2024.
** *Number of certificates issued in the period from January to May of each year of obligation.*

Fig. 2.3.1 | Available TEE and obligations

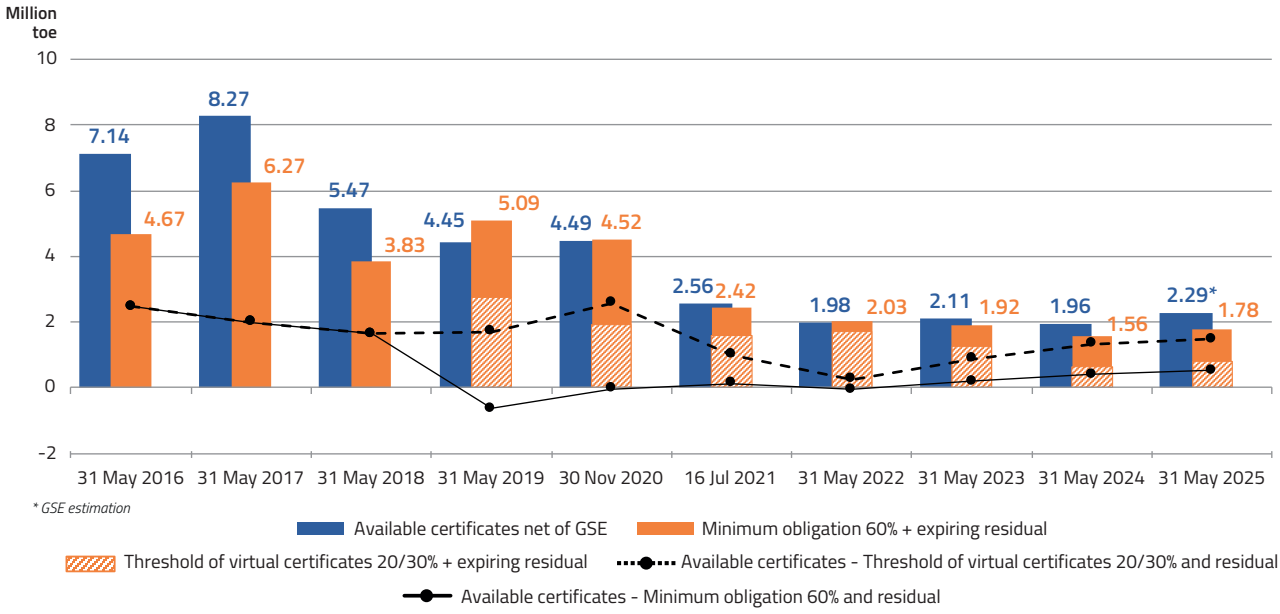


Fig. 2.3.2 | Volumes of TEE traded

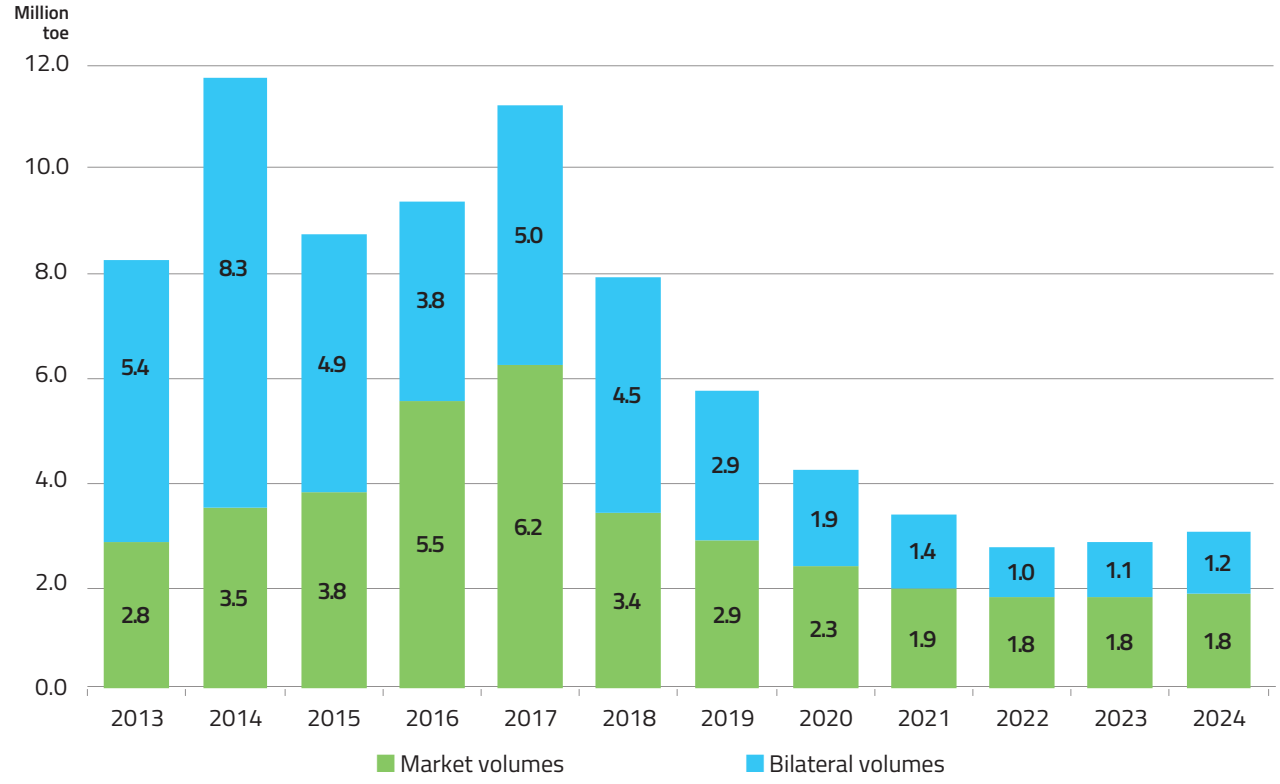


Fig. 2.3.3 | Prices of TEE. Yearly average

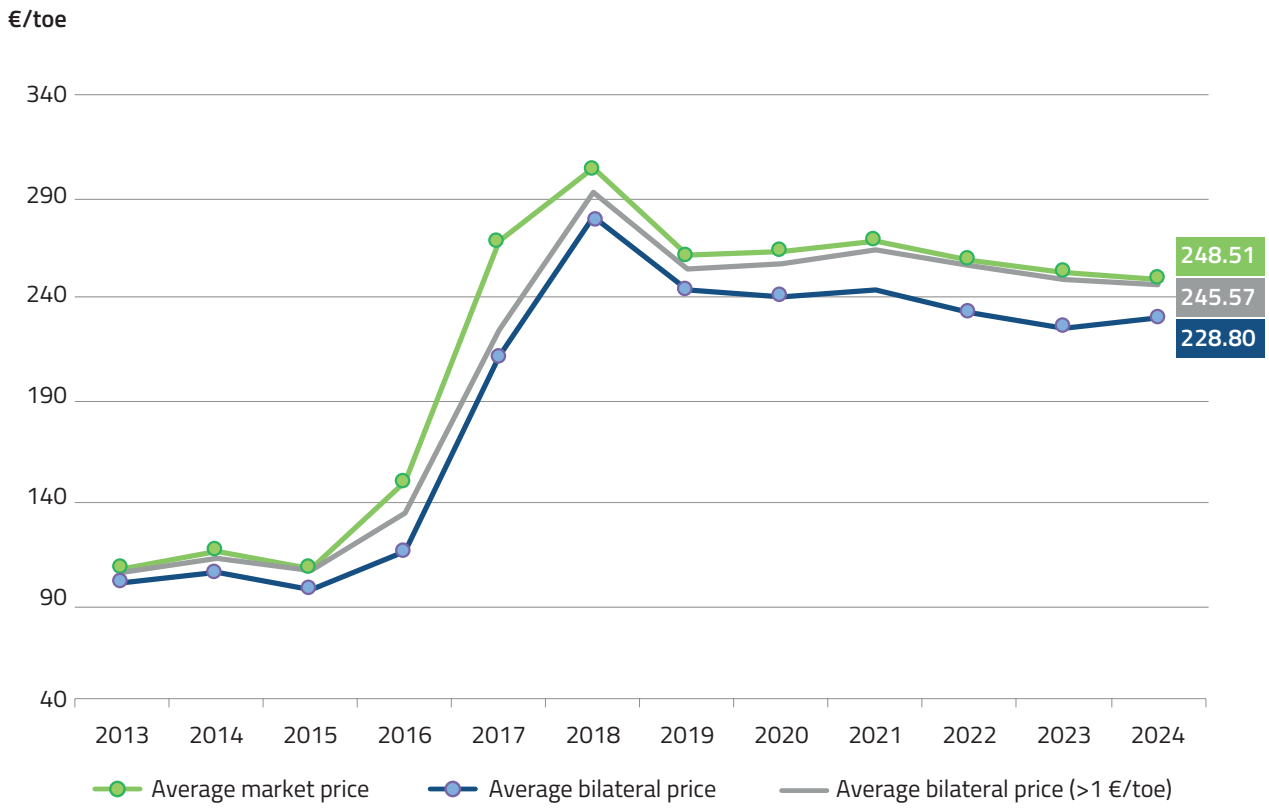


Fig. 2.3.4 | Trend of MTEE session prices. Year 2024

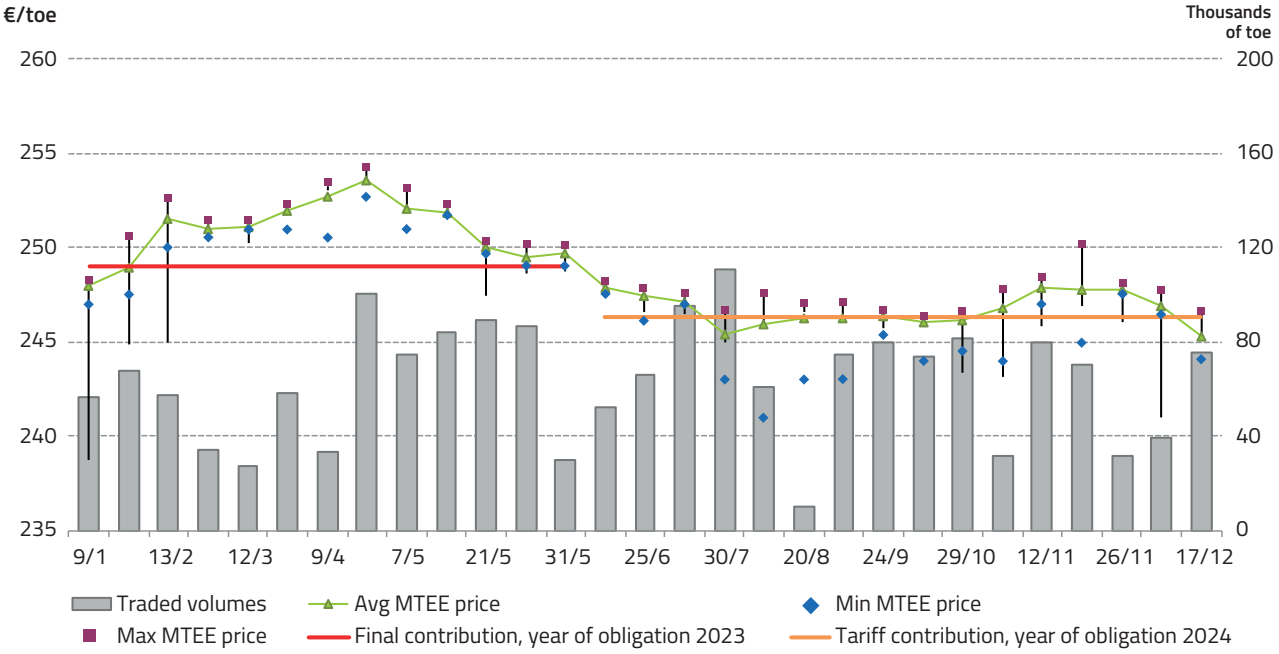
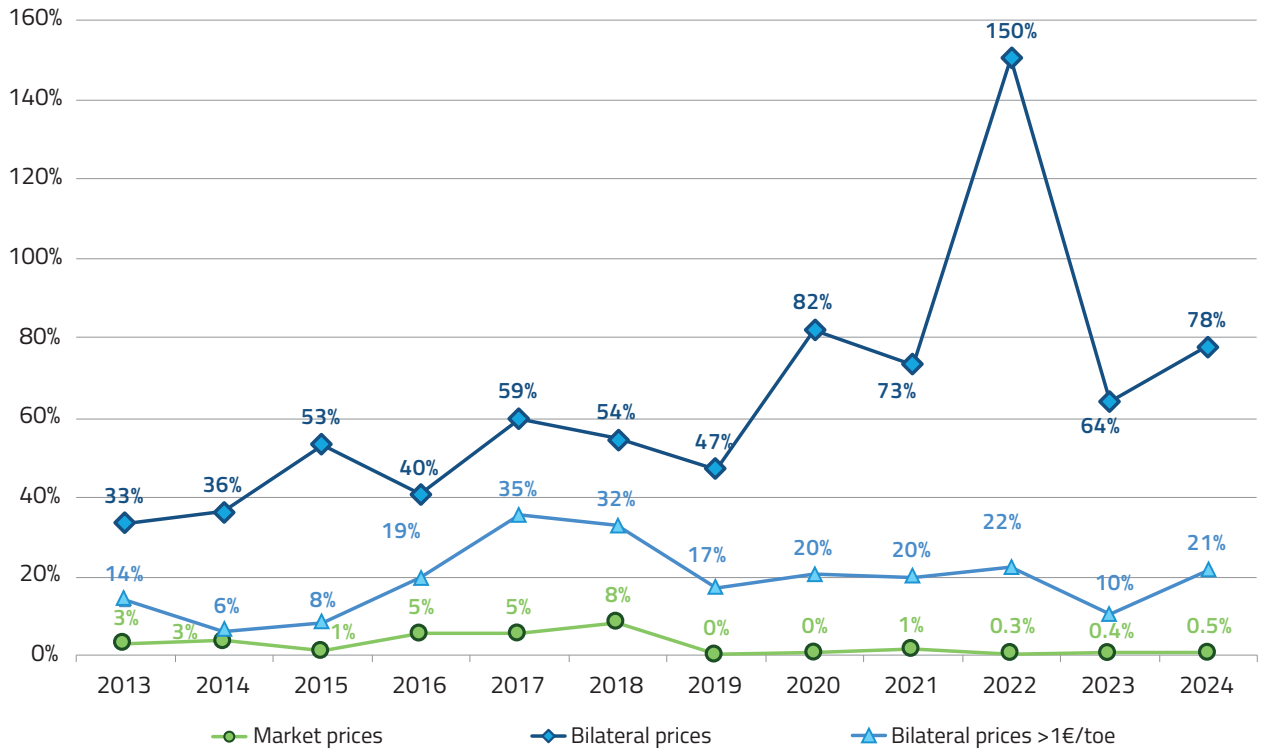


Fig. 2.3.5 | Volatility of TEE prices



** The data of bilateral prices has been available since 1 April 2008, when AEEG resolution no. 345/07 introduced the obligation to report the price of bilateral transactions through the TEE Register, managed by GME*

Fig. 2.3.6 | Volumes of Guarantees of Origin (GOs) traded

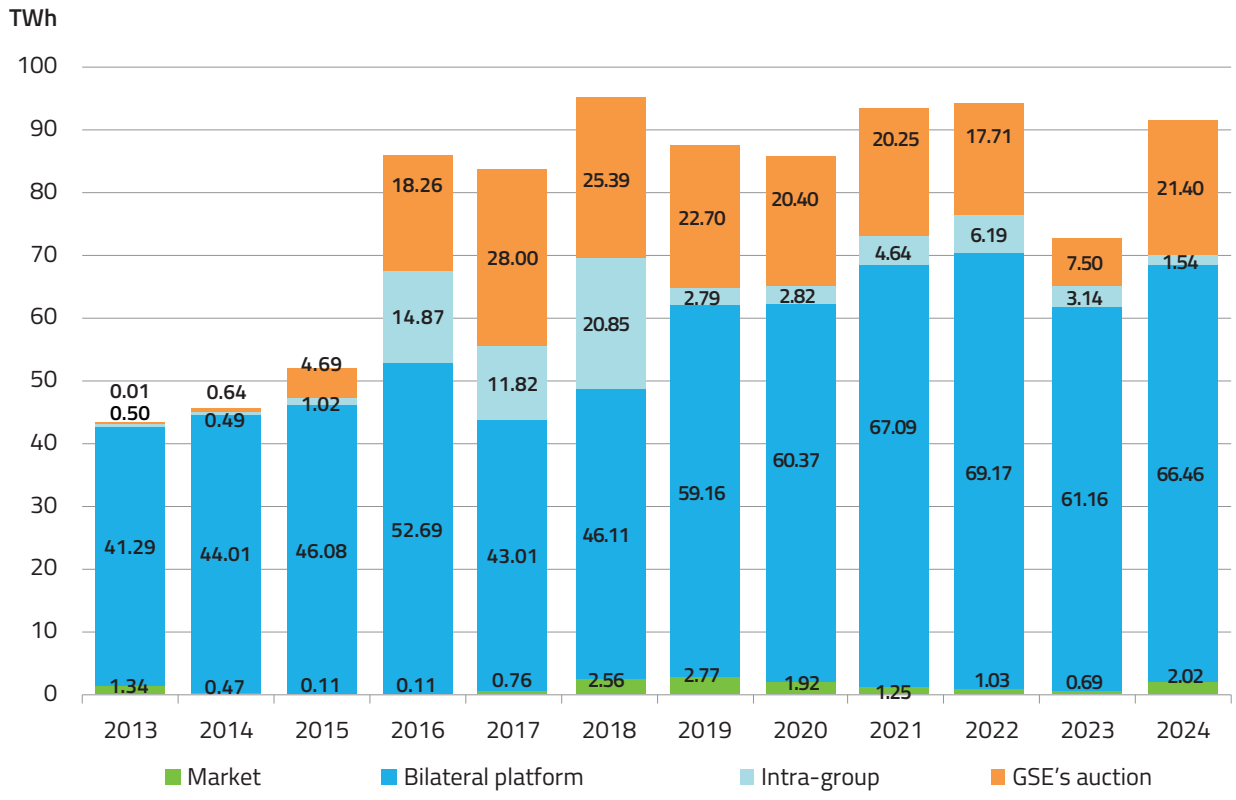
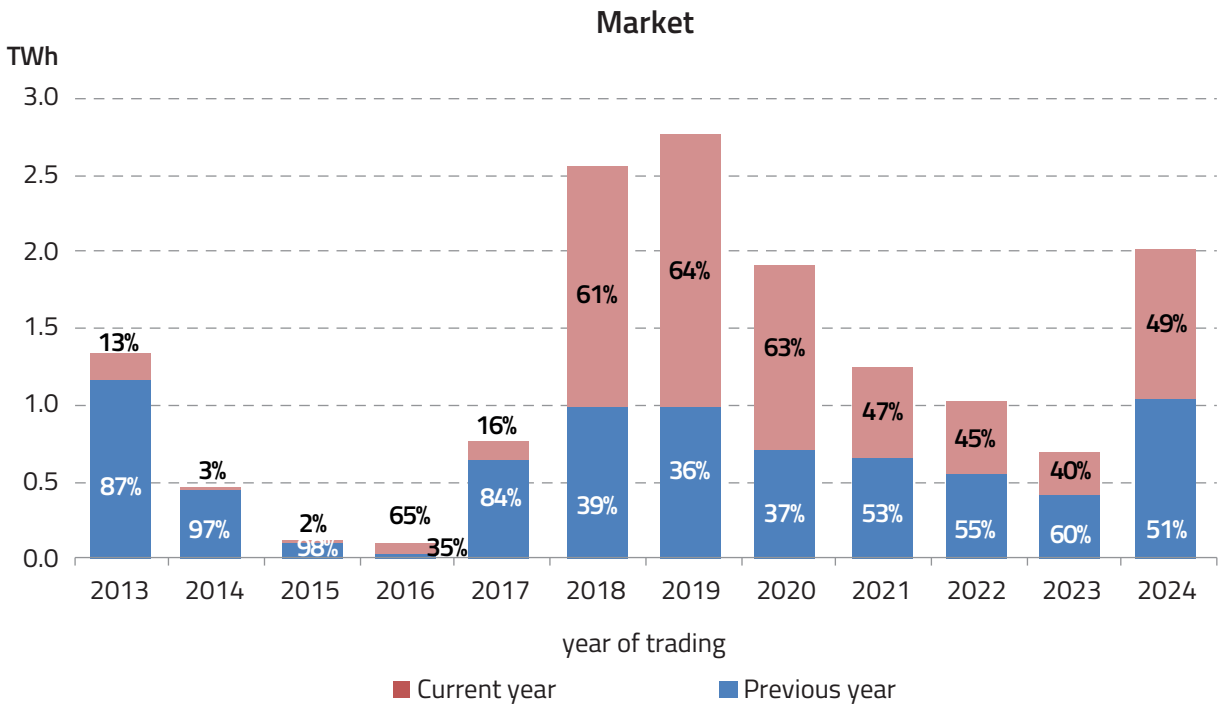


Fig. 2.3.7 | **Distribution of volumes traded by year of production**



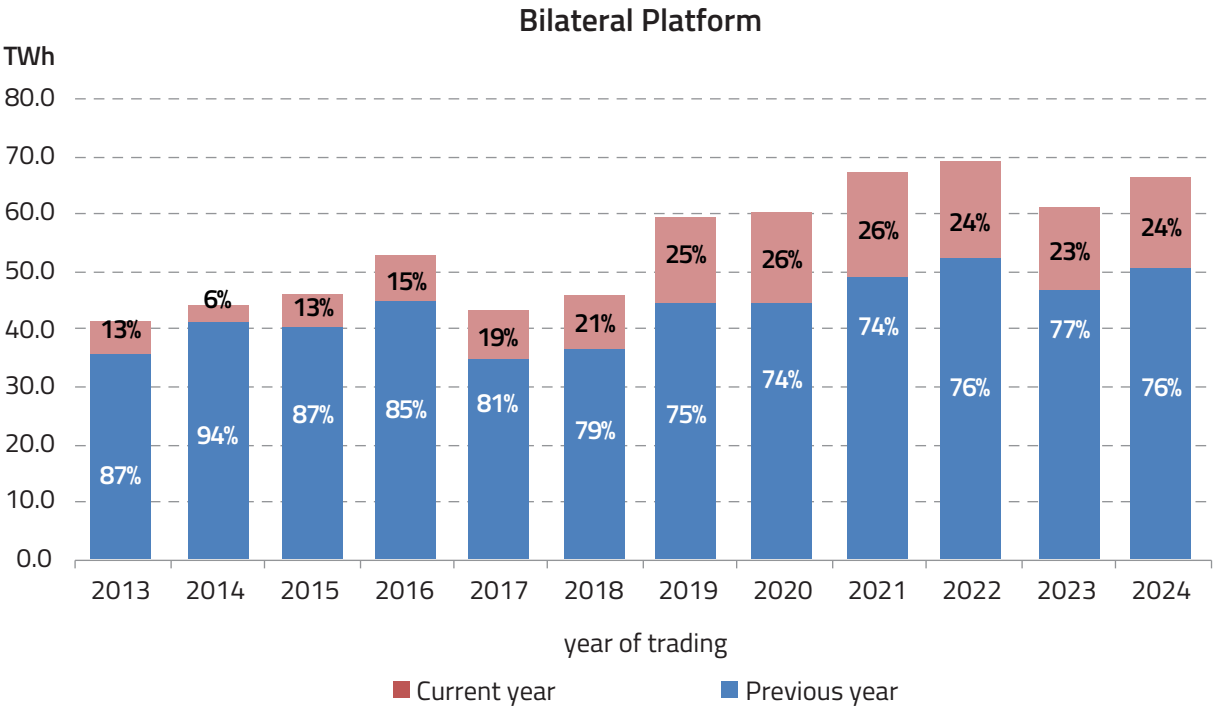
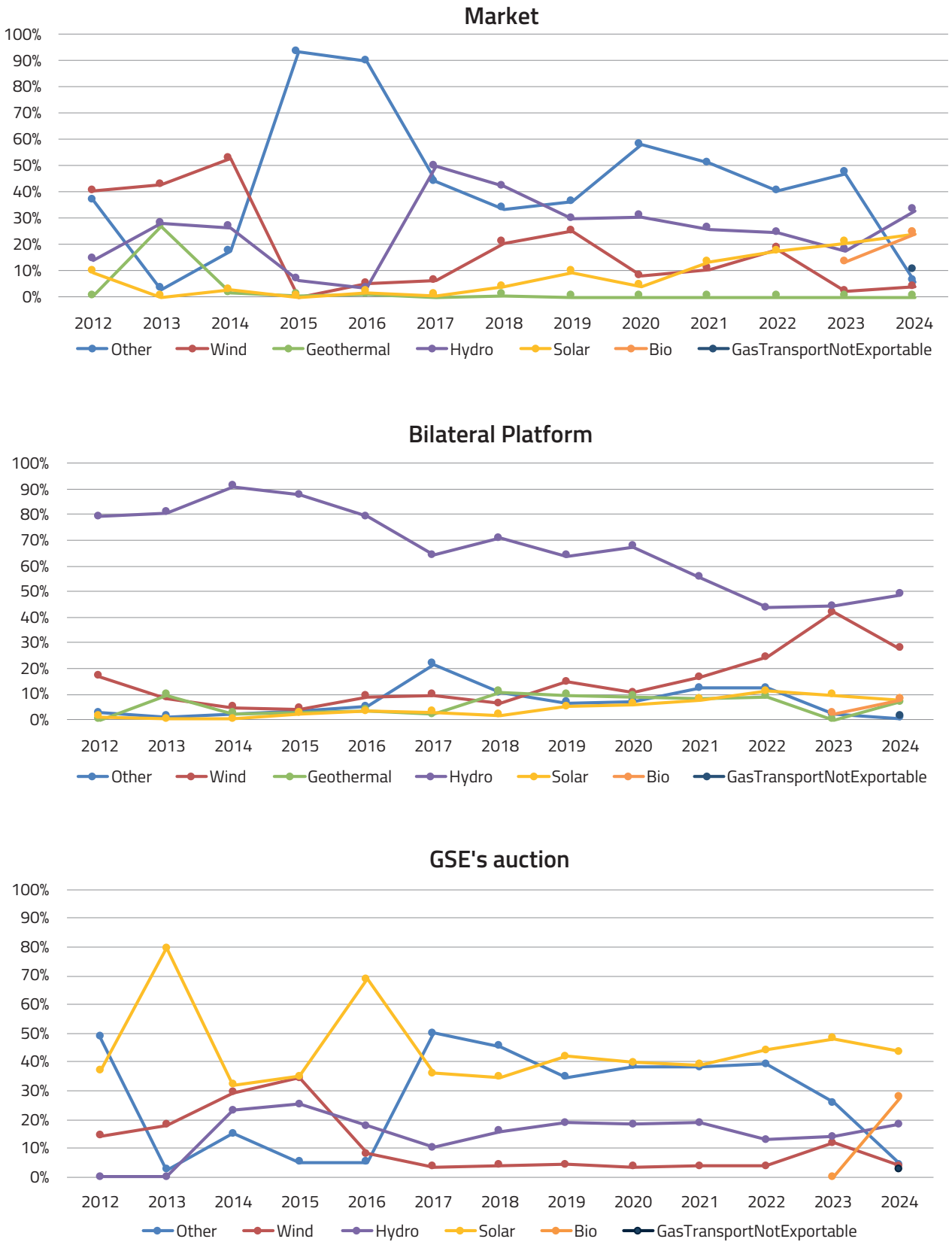
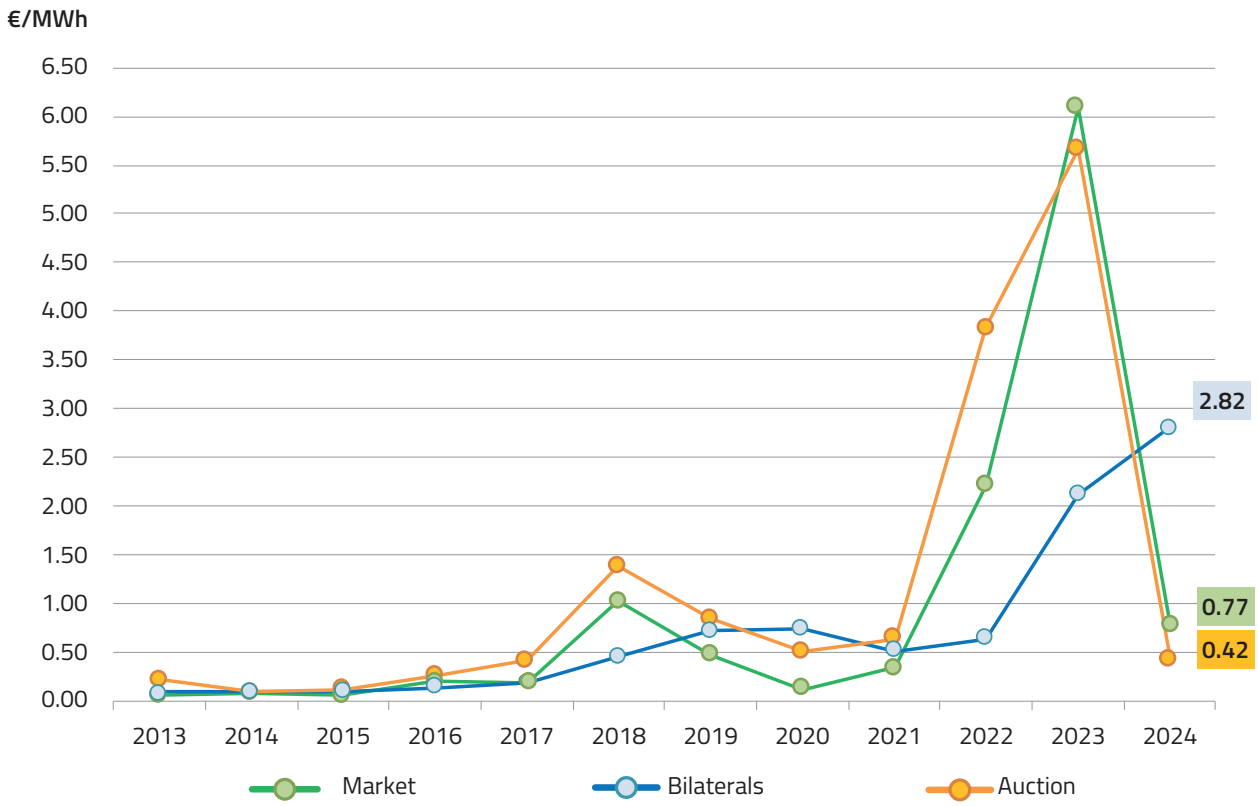


Fig. 2.3.8 | Distribution of volumes traded. Year of production[18]



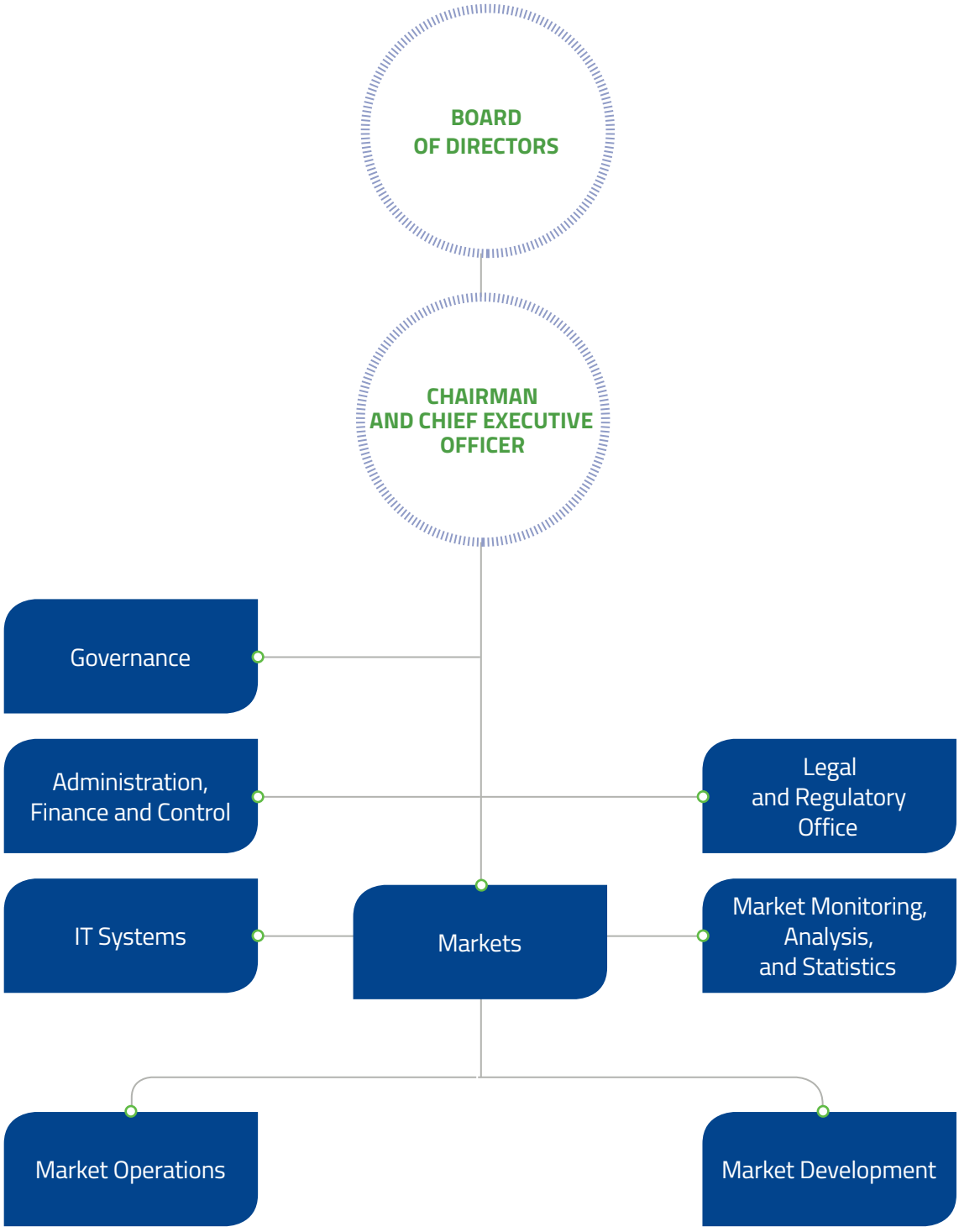
18 Figures calculated as of 31 Dec. 2024.

Fig. 2.3.9 | **Prices of GOs. Yearly average**



Appendix 1

GME's Organisational Chart


BOARD
OF DIRECTORS
CHAIRMAN
AND CHIEF EXECUTIVE
OFFICER
Governance
Administration,
Finance and Control
Legal
and Regulatory
Office
IT Systems
Markets
Market Monitoring,
Analysis,
and Statistics
Market Operations
Market Development

Appendix 2

Market Rules

Market Rules

ELECTRICITY

	ELECTRICITY MARKET		PCE	PPA	FLEXIBILITY MARKET
	MPE	MTE			MLT-FLEX
Participation	Voluntary in MGP, MI, and MPEG Mandatory in MSD	Voluntary	Voluntary	Voluntary	Voluntary
Requirements for admission to the markets and participation in trades (*)	Ownership of an offer point is needed to operate	Ownership of an electricity account is needed to operate	Only dispatching users and their delegated agents are admitted	Enabled users	Enabled users
Product traded	Hours MGP: 1-24 MI-A1: 1-24 MI-A2: 1-24 MI-A3: 13-24 XBID: 1-24 MPEG Daily (with baseload and peakload profile)	Yearly, Quarterly, Monthly (with baseload and peakload profile)	OTC contracts	Long-term contracts of purchase/sale of electricity from renewable sources	Yearly, Quarterly, Monthly, and Daily in respect of local ancillary flexibility services
Trading mechanism	Auction in MGP, MI and MSD Continuous trading in XBID and MPEG	Continuous trading	Bilateral trading	Auction (Energy Release)	Auction
Price rule	Marginal zonal price in MGP and MI Pay-as-bid in XBID, MPEG and MSD	Pay-as-bid	N/A	N/A	Pay-as-bid
Guarantees	Bank guarantee and/or cash deposit		Bank guarantee. Cash deposit only if necessary and urgent	N/A	No guarantee
Central counterparty	GME in MGP, MI and MPEG Terna in MSD	GME	GME (only for CCTs)	N/A	GME
Payments	W+1 (from 1 December 2016) for MGP and MI M+2 for MPEG	M+2	W+1 (from 1 December 2016)	N/A	M+1 for energy to be moved M for the amount of capacity actually made available

(*) Market participation requirements are laid down in the rules and regulations of the individual markets.

GAS

	GAS MARKET				PGAS			PAR
	MGP-GAS MI-GAS	MGS	MPL	MT-GAS	Imports	Virtual storage	Royalties	
Participation	Voluntary	Voluntary	Voluntary	Voluntary	Mandatory (supply side)	Mandatory (supply side)	Mandatory (supply side)	Voluntary
Requirements for admission to the markets and participation in trades (*)	Need to be a PSV user to operate	Need to be a PSV and storage service user to operate	Need to be a PSV user and authorised to bid at the offer points of the transmission network to operate	Need to be a PSV user to operate	PSV users subject to the obligation to bid for imported quotas	PSV users participating in the virtual storage service	PSV users subject to the obligation to bid for royalties	Users enabled at the regasification terminal
Product traded	Daily	Daily	Daily	BoM, Monthly, Quarterly, Half-yearly, and Yearly (both thermal and calendar)	Monthy, Yearly (thermal)	Monthly, Half-yearly	Monthly	Yearly and multi-year capacity; Capacity during the thermal year; Residual capacity of the thermal year; Regasification capacity no longer available for the auction
Trading mechanism	Continuous trading/Auction (AGS)	Auction	Auction	Continuous trading	Continuous trading	Continuous trading	Auction	Auction/FCFS
Price rule	Pay-as-bid/ Marginal price (AGS)	Marginal price	Marginal price	Pay-as-bid	Pay-as-bid	Pay-as-bid	Marginal price	Pay-as-bid/ Marginal price
Guarantees	Bank guarantee and/or cash deposit	Bank guarantee and/or cash deposit	Bank guarantee and/or cash deposit	Bank guarantee and/or cash deposit	Defined by each selling participant	Defined by each selling participant	Defined by each selling participant	NA
Central counterparty	GME	GME (from 1 April 2017)	GME (from 1 April 2017)	GME	N/A Invoicing and payments between participants	N/A Invoicing and payments between participants	N/A Invoicing and payments between participants	Regasification terminal
Payments	W+1 for transactions (from 1 September 2016), M+3 for closing non-delivered positions	W+1 for transactions, M+3 for closing non-delivered positions	W+1 for transactions, M+3 for closing non-delivered positions	W+1 for transactions (from 1 September 2016), M+3 for closing non-delivered positions	Deadline defined by each selling participant	Deadline defined by each selling participant	Deadline defined by each selling participant	Regasification terminal

(*) Market participation requirements are laid down in the rules and regulations of the individual markets.

ENVIRONMENT

	MTEE	MGO	MCIC	BAGO
Participation	Voluntary	Voluntary	Voluntary	Voluntary
Requirements for admission to the markets and participation in trades (*)	Ownership of an account in the TEE Register is needed for trading in the MTEE	Ownership of an account in the GO Register is needed for trading in the MGO	Ownership of an account in the CIC Register is needed	Enabled users
Product traded	Single order book for unified type (1 toe)	Certificate by type of source (1 MWh)	Certificate by type of source (1 CIC)	
Trading mechanism	Continuous trading	Continuous trading	Continuous trading	Bilateral trading
Price rule	Pay-as-bid	Pay-as-bid	Pay-as-bid	N/A
Guarantees	Cash deposit for total coverage of purchases	Cash deposit for total coverage of purchases	Cash deposit for total coverage of purchases	
Central counterparty	GME	GME	GME	
Payments	D+3	D+3	D+3	

(*) Market participation requirements are laid down in the rules and regulations of the individual markets.

Appendix 3

Statistical Data

Table 1 | Volumes traded

TWh	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	CHANGE
ELECTRICITY MARKETS													
MGP	**289.15**	**281.98**	**287.13**	**289.70**	**292.20**	**295.56**	**295.83**	**280.18**	**290.40**	**289.17**	**277.97**	**283.93**	**+2.1%**
Exchange	206.90	185.85	194.59	202.82	210.92	212.93	213.26	209.83	221.28	210.91	209.91	226.80	+8.0%
Bilaterals	82.25	96.13	92.54	86.88	81.28	82.63	82.56	70.35	69.12	78.27	68.05	57.13	-16.1%
MI	**23.34**	**22.79**	**24.92**	**28.01**	**25.35**	**25.38**	**26.37**	**24.91**	**26.04**	**25.97**	**29.11**	**35.40**	**+21.6%**
MI-A1									4.01	13.92	14.36	15.06	+4.8%
MI-A2									1.47	5.42	5.30	5.86	+10.5%
MI-A3									0.67	2.58	2.65	2.98	+12.4%
XBID									0.73	4.04	6.80	11.51	+69.2%
MI1	12.80	12.23	12.91	15.04	13.81	13.35	12.73	11.39	9.19				
MI2	6.07	6.47	6.15	6.97	5.45	4.53	4.44	4.58	3.10				
MI3	2.00	2.01	2.39	2.50	2.38	3.34	4.19	3.65	2.72				
MI4	2.47	2.09	1.22	1.20	0.78	0.93	1.20	1.34	1.07				
MI5			2.24	2.31	1.12	1.15	1.40	1.31	1.10				
MI6					1.47	1.59	1.82	1.96	1.47				
MI7					0.34	0.48	0.61	0.68	0.49				
MTE	**41.10**	**32.27**	**5.09**	**1.07**	**1.36**	**1.19**	**1.64**	**0.77**	**0.02**	**0.01**	**0.13**	**0.08**	**-37.0%**
Exchange	8.00	18.40	5.09	1.07	1.36	1.19	1.64	0.77	0.02	0.01	0.03		-100.0%
OTC clearing	33.10	13.87	-	-	-	-	-	-	-	-	0.11	0.08	-21.3%
MPEG				**0.00**	**3.93**	**3.16**	**0.70**	**0.72**	**0.29**	**0.15**	**0.55**	**0.75**	**+36.9%**
PCE *	**325.50**	**345.72**	**354.47**	**342.14**	**302.83**	**311.57**	**291.74**	**265.14**	**232.22**	**249.72**	**227.39**	**195.32**	**-14.1%**
GAS MARKETS													
MGAS	**0.02**	**0.10**	**1.01**	**10.69**	**43.92**	**55.16**	**82.17**	**113.79**	**129.99**	**175.01**	**154.75**	**180.18**	**+16.4%**
MGP-CT	0.01	0.00	0.00	0.33	3.28	13.01	24.56	30.08	45.40	75.64	78.74	111.15	+41.2%
MGP-AGS								25.72	33.79	51.11	28.19	25.31	-10.2%
MI-CT	0.00	0.10	1.01	7.09	23.83	27.86	41.05	46.70	44.09	40.53	44.39	39.20	-11.7%
MI-AGS								4.36	1.61	2.60	0.16	1.01	+532.4%
MGS				3.27	16.63	13.50	13.37	6.45	5.08	5.13	3.27	3.52	+7.4%
MPL				-	-	-	-	-	-	-			
MTGAS	-	-	-	-	0.19	0.79	3.19	0.48	0.02	-			
PB-GAS	**40.88**	**41.52**	**48.19**	**36.79**									
G+1 Segment	40.83	38.58	40.86	30.57									
G-1 Segment	0.05	2.94	7.33	6.22									
P-GAS	**0.62**	**-**	**-**	**-**	**1.95**	**2.43**	**0.44**	**-**	**2.22**	**2.03**	**0.63**	**0.96**	**52.2%**
Imports Segment	-	-	-	-	-	-							
Segment as per Leg. Decree 130/10	-	-	-	-	-	-							
Royalties Segment	0.62	-	-	-	1.95	2.43	0.44	-	2.22	2.03	0.63	0.96	52.2%
ENVIRONMENTAL MARKETS													
Green Certificates	**44.81**	**43.05**	**36.78**	**9.23**									
Exchange	7.57	8.20	6.95	1.26									
Bilaterals	37.25	34.85	29.84	7.98									
Energy Efficiency Certificates	**44.04**	**62.88**	**46.67**	**50.15**	**60.04**	**42.30**	**30.60**	**22.48**	**17.87**	**14.52**	**15.05**	**16.10**	**+7.0%**
Exchange	15.06	18.66	20.21	29.64	33.26	18.03	15.27	12.55	10.32	9.36	9.40	9.79	+4.2%
Bilaterals	28.98	44.22	26.45	20.52	26.78	24.27	15.33	9.93	7.55	5.16	5.65	6.31	+11.7%
GOs	**42.63**	**44.48**	**46.18**	**52.80**	**43.77**	**48.67**	**61.93**	**62.29**	**68.35**	**70.21**	**61.86**	**68.48**	**+10.7%**
Exchange	1.34	0.47	0.11	0.11	0.76	2.56	2.77	1.92	1.25	1.03	0.69	2.02	+191.0%
Bilaterals	41.29	44.01	46.08	52.69	43.01	46.11	59.16	60.37	67.09	69.17	61.16	66.46	+8.7%
MCIC**								421	-	-			-

* *Contracts registered on the PCE by year of trading, net of contracts pertaining to the MTE (including OTC clearing) and to the CDE*
** *The data is expressed in terms of number of CICs.*

Table 2 | Participants

No. of participants*	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2024/2023 CHANGE
ELECTRICITY MARKETS														
IPEX	200	223	254	264	245	258	269	282	280	278	313	350	**376**	+26
PCE	259	287	317	321	321	331	332	350	345	352	371	388	**417**	+29
GAS MARKETS														
MGAS	42	66	71	88	158	179	186	201	207	227	305	355	**388**	+33
PB-GAS	65	74	86	96	107									
P-GAS	72	77	78	80	86	85	85	80	80	81	81	80	**80**	0
ENVIRONMENTAL MARKETS														
MCV **	745	852	901	908	911									
PBCV **	1,177	1,381	1,466	1,509	1,509									
MTEE	447	588	838	1,055	1,281	1,499	1,558	1,623	1,673	1,730	1,764	1,816	**1,854**	+38
TEE Register	635	866	1,196	1,469	1,775	2,155	2,307	2,409	2,529	2,643	2,714	2,828	**2,908**	+80
MGO	180	262	291	299	325	396	469	651	709	739	781	861	**1,004**	+143
PBGO	219	324	359	374	405	509	713	1,022	1,225	1,400	1,511	1,679	**1,928**	+249
MCIC									19	26	28	28	**32**	+4

* *The number of participants is the one calculated as of 31 December of each year.*
** *The number of participants for the year 2016 is the one calculated as of 30 June.*

ANNUAL REPORT 2024

Gestore dei Mercati Energetici S.p.A.
Viale Maresciallo Pilsudski, 122/124
00197 Rome - Italy
Tel +39 06 8012 1
E-mail info@mercatoelettrico.org
www.mercatoelettrico.org