



ANNUAL REPORT 2019





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EXECUTIVE SUMMARY

In 2019 the energy markets show a strong and generalised bearish price trend, after the increases recorded over the previous two years.

The significant decrease in European oil and gas prices favours large reductions in electricity prices, also limiting the bullish impact induced by the further strong increase in costs related to the levels of climate-changing gas emissions.

On the Italian electricity market, the volumes and liquidity of the MGP remain at very high values, while the National Single Price (PUN) drops to levels close to 52 €/MWh, following a trend in line with the contraction in gas costs and with the main European prices, in relation to which a "structural" spread of around 12 €/MWh persists. A similar trend can be found in the zones of Italy, where there is an annulment of the differential between North-South along with an increase in hours with prices at 0 €/MWh in Sicily. In terms of generation sources, the aforementioned reduction in gas costs favours a strengthening of the market share of combined-cycle power plants, with a further coal displacement, characterised by higher emission costs and sales dropping to historical minimum levels.

In the electricity sector, GME confirmed its commitment and collaboration with the other electricity exchanges, with the national Transmission System Operators (TSO) and with the institutes in pursuing a growing interconnection of the national electricity market with the European markets on the day-ahead and intraday segments. In 2019, GME's activities in this area focused *i)* on the preparation of changes to the current market design, aimed at guaranteeing the entry of the Italian intraday market into the SIDC¹ project, *ii)* on the launch of the coupling between Italy and Switzerland in the intraday market in April and, in December, of exchanges with Montenegro, *iii)* on the extension of the coupling day-ahead on the Italy-Greece border, with operations scheduled to start in the fourth quarter of 2020.

As for the gas markets - which experienced the introduction, starting from 1 January 2020, of a new segment (AGS) to allow Snam Rete Gas S.p.A. the supply of the resources necessary for the operation of the gas system - the most relevant figure for 2019 is represented by the further sharp increase in volumes traded in the spot market, driven by the growth of the MGP-GAS and MI-GAS trading at a historic high. Prices recorded on these markets stood at around 16 €/MWh, reaching minimum values in August and reflecting the strongly bearish trends observed at the PSV (16.3 €/MWh) and on the other main European hubs (TTF: 13.6 €/MWh) from which the Italian reference remains separate for around 2.7 €/MWh.

During 2019, the MGP and MI electricity markets and the gas spot market were also affected by the introduction of the integrated guarantee management mechanism (netting), a tool through which GME intended to encourage the containment of costs incurred by participants in terms of financial guarantees required, as well as simplifying and optimising the operational and management processes related to participation in these markets.

¹ SIDC is the project for the implementation of a continuous trading intraday market in line with the Target Model established by the CACM and launched in central and northern European countries and in Spain in July 2018.

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01

The Company

COMPANY PROFILE. Gestore dei Mercati Energetici S.p.A. (GME) is a joint-stock company established in 2000 as part of the process of liberalisation of the energy sector and it is fully owned by Gestore dei Servizi Energetici S.p.A. (GSE), whose shares are held by the Ministry of Economy and Finance (MEF). GME is a multi-commodity company operating in compliance with the guidelines of the Ministry of Economic Development (MiSE) and the regulatory provisions defined by the Regulatory Authority for Energy, Networks and the Environment (ARERA).

MARKETS. GME organises and manages the electricity and gas markets - characterised by the obligation of **physical delivery of the commodity** - as well as the environmental and fuel markets. Specifically, GME manages:

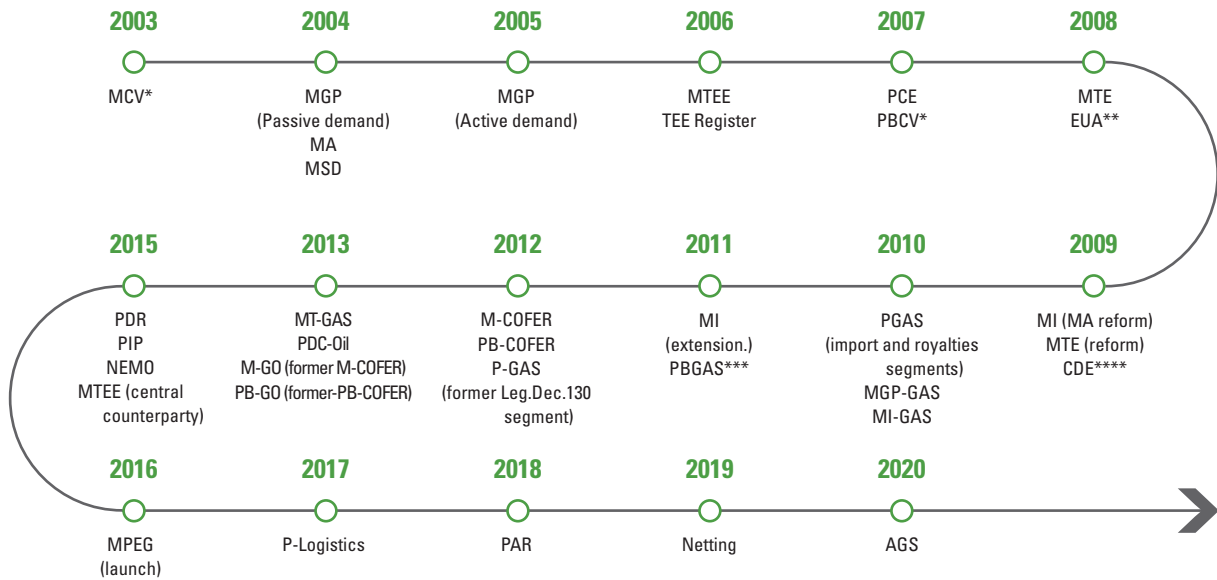
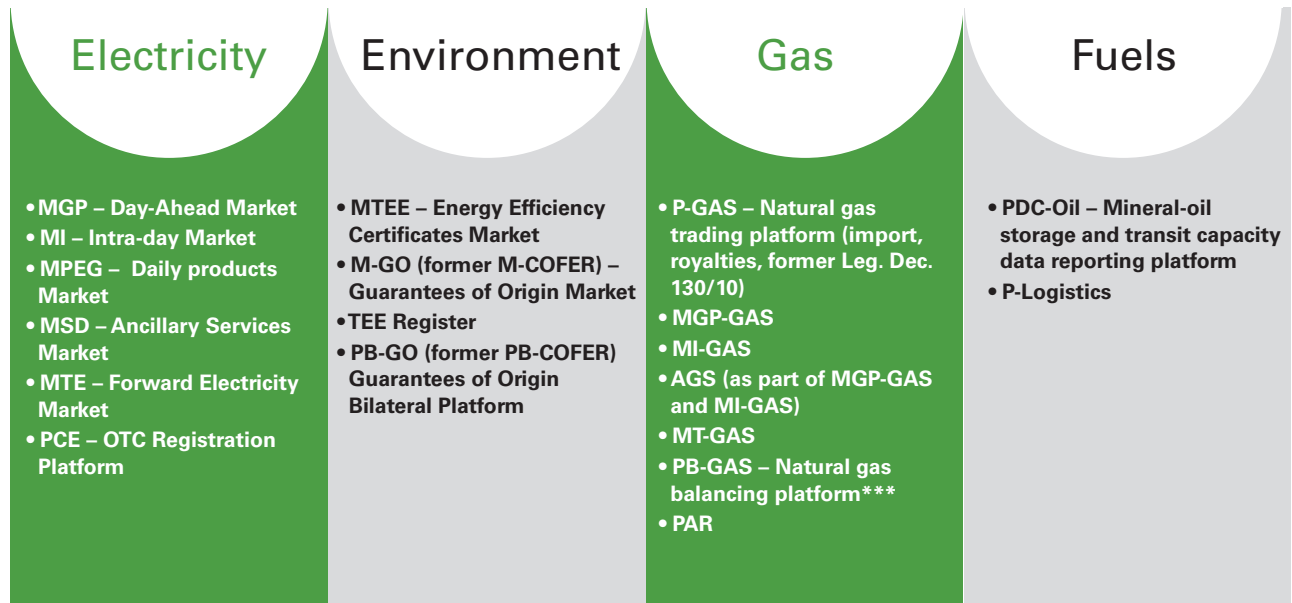
- In the **electricity sector**, *i)* the Spot Electricity Market (MPE), - which in turn is divided into the Day-Ahead Market (MGP), the Intra-Day Market (MI) and the Daily Products Market (MPEG) -, *ii)* the Forward Electricity Market (MTE), *iii)* the OTC Registration Platform (PCE) for the registration of forward electricity purchase/sale contracts concluded off the market system. In the MPE sector, GME also manages the operation of the Ancillary Services Market (MSD), whose economic management is under the responsibility of Terna S.p.A.
- In the **gas sector**, *i)* the Spot Gas Market (MP-GAS), in turn organised in the Day-Ahead Market (MGP-GAS), the Intra-Day Market (MI-GAS), the Locational Products Market (MPL) and in the Regulated Market for the trading of gas stored (MGS) and *ii)* the Forward Gas Market (MT-GAS). Still in the gas sector, GME also manages the operations of the gas platform, pursuant to Legislative Decree of 18 March 2010 (P-GAS), for the fulfilment of sales obligations relating to domestic production, virtual import and storage, as well as the Platform for the Allocation of Regasification Capacity (PAR) within which the procedures for allocating the regasification capacity at terminals managed by the companies that have requested to use the services provided by GME are carried out;
- In the **environmental sector**, the Energy Efficiency Certificates Market (MTEE) and the Guarantees of Origin Market certifying the production of energy from renewable sources (MGO), as well as the related registration of bilateral trading (TEE Register and PB-GO);
- In the **fuel sector**, *i)* the Mineral-oil storage and transit capacity data reporting platform (PDC-OIL), *ii)* the Mineral Oil Logistics Platform (P-LOGISTICS).

GME operates as a central counterparty on its markets, except for the MSD (where the central counterparty is Terna S.p.A.), P-Gas, PAR and of the Registration Platform for Bilateral Contracts of GOs and TEEs.

In 2019, the participation of participants in GME's markets/platforms increased further, as proven by the increase in both registered participants (2,533 units, +265), and in volumes traded¹, particularly significant especially in the gas sector (Fig. 1.1. Fig. 1.2. Fig. 1.3).

¹ The only exception is the market and the TEE register. For details, see section 2 and Table 1 in the Appendix.

Fig. 1.1 - GME's markets and platforms



* Trading closed in 2016.

** Trading closed in 2014.

*** Platform closed in 2017 and at the same time replaced by the MPL and MGS markets, which became part of the MGAS.

**** Platform closed starting from 1 January 2020.

Fig. 1.2 - Volumes and participants registered by market/platform in 2019

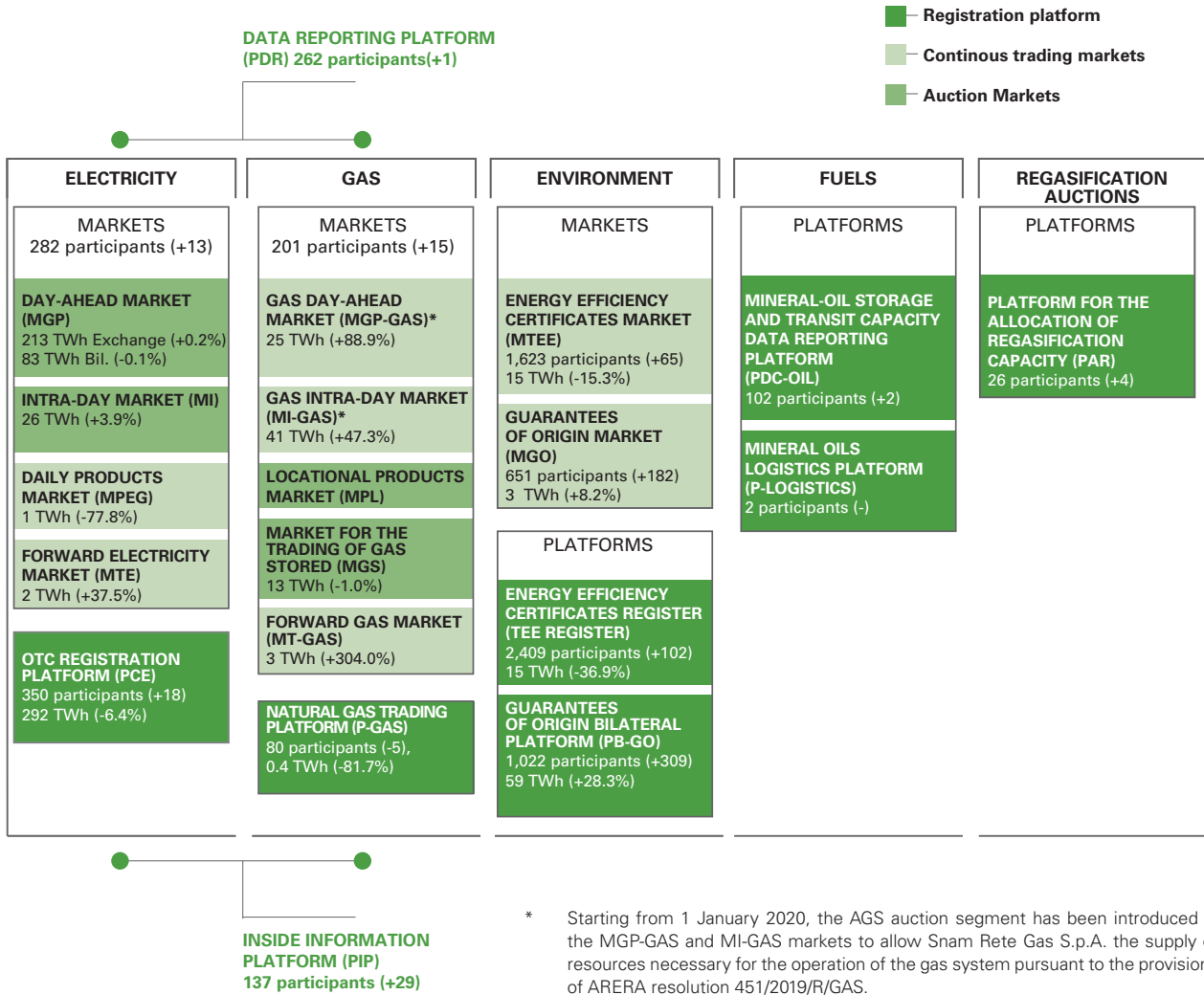
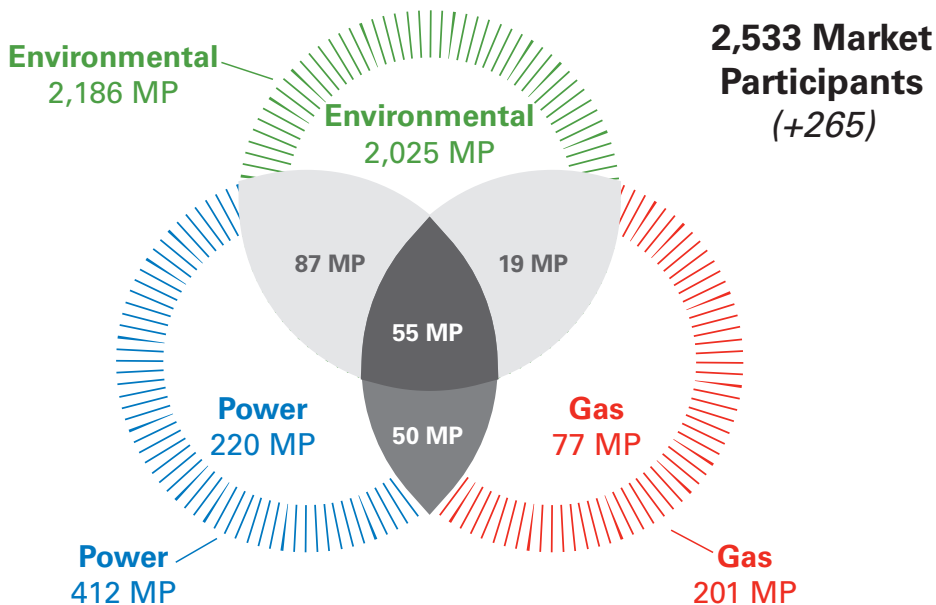


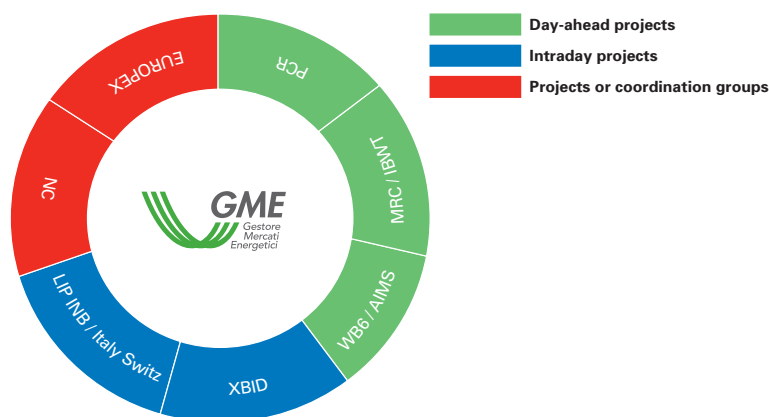
Fig. 1.3 - Participants registered in the GME's markets



INTERNATIONAL ACTIVITIES. GME is a member of Europex, the association of European energy exchanges, and cooperates with the other designated European exchanges, as NEMO², and the European network operators (so-called TSO³) in the coordination and integration projects of the day-ahead and intra-day electricity markets (NEMO Cooperation, SDAC, SIDC)⁴ for efficient management of market coupling processes and full implementation of European Regulation no. 2015/1222 (CACM). Within these projects, during 2019 the activities concerned:

- ▶ **within the NEMO Cooperation,** *i)* the stipulation of the contract regulating the governance structure and the coordination between NEMOs⁵, *ii)* the transmission to ACER and to the national authorities of the proposal to revise the methodologies regarding the day-ahead and intraday coupling algorithms and the proposed update of the list of products admitted to trading in the intraday area, approved by ACER in January 2020, *iii)* the publication of the first "CACM Annual Report", referring to 2018 and relating to the functioning of the European coupling operating processes on the day-ahead and intraday markets, *iv)* the further enhancement of the communication and dissemination tools intended for the reference stakeholders;
- ▶ **within SDAC and SIDC,** *i)* the stipulation of the contract between NEMOs for the joint execution of the Market Coupling Operator (MCO) functions on the day-ahead time horizon⁶ and of the contracts between NEMOs and TSOs for the operational cooperation aimed at the joint management of the market coupling on both day-ahead and intraday time horizons⁷; *ii)* the progressive extension of the coupling projects, including especially the SIDC⁸, which Italy is expected to join in 2021.

Finally, GME participates – together with ARERA, Terna and MiSE – in the **WB6 (Western Balcan 6) project**⁹ aimed at promoting the launch of a regional coupling in the Balkan area based on the experience gained in Italy in the organisation and in the management of national markets and of the European integrated electricity market.



² NEMO shall mean "Nominated Electricity Market Operator", as defined in article 4 of European Regulation no. 2015/1222 (hereinafter: CACM), a role assigned to GME for Italy by the Ministry for Economic Development.

³ Transmission System Operator.

⁴ SDAC and SIDC are the operation coordination projects for the full implementation of the Single Day Ahead Coupling and the Single Intra Day Coupling in Europe.

⁵ In particular to the All NEMO Cooperation Agreement (ANCA).

⁶ In particular to the All NEMO Day Ahead Operational Agreement (ANDOA).

⁷ In particular the Day Ahead Operational Agreement (DAOA), and the Intra Day Operational Agreement (IDOA).

⁸ SIDC is the project for the implementation of a continuous trading intraday market in line with the Target Model established by the CACM and launched in central and northern European countries and in Spain in July 2018.

⁹ WB6 is a cooperation project between national Regulators, Network Operators and Market Operators from Albania, Bosnia and Herzegovina, Macedonia, Montenegro and Serbia for the creation of a regional electricity market in the Balkan region, to be eventually integrated with the European Union energy market. The WB6 Program coordinates a series of sub-projects aimed at promoting the development and integration of electricity markets in WB6 countries (with the exception of Kosovo) both locally and regionally. This project is supported by the European Union and by the Energy Community.

NEW INITIATIVES. In 2019, in coordination with the competent institutions and in agreement with the parties directly involved, GME launched/completed projects in the various sectors of interest, thus strengthening its role alongside the participants. In this context, the initiatives – listed below – are mostly aimed at achieving a growing European integration of the electricity markets, improving liquidity and supply opportunities in the gas markets, as well as simplifying processes connected to the management of the guarantees necessary to operate on the markets managed by GME. In particular:

▸ in the electricity sector:

- the launch of the **market coupling between Italy and Switzerland** in April 2019, with the coordination of sessions 2 and 6 of the intraday market (MI) with the corresponding sessions of the Swiss intraday market, aimed at making the allocation mechanism of the interconnection capacity on the Swiss border more efficient through the use of implicit auctions;
- starting from December 2019, the start of the interconnection and exchanges with Montenegro¹⁰;
- on the day-ahead horizon, the start of the extension of the **market coupling on the Italy-Greece border**, with operations scheduled to start in the fourth quarter of 2020;
- the setting up of changes to the current intraday market design, aimed at ensuring the **integration of the Italian intraday market into the SIDC project**, expected in 2021;
- the definition of the market model of the **platform for the long-term trading of renewable energy** (PPA), an instrument capable of contributing to the progressive elimination of the direct incentive mechanisms of renewable energy sources;
- the setting up, in coordination with Terna, of the technical-operational changes functional to the process of integration of the European balancing market segment into national dispatching, through the adhesion of Italy to the European T.E.R.R.E.¹¹.

▸ in the gas sector:

- starting from 1 January 2020, the **introduction of the weekend product** on the MGP-GAS to enrich the supply of products available for trading on the spot gas markets and provide participants with an additional flexible instrument allowing to anticipate, in the previous working days, the trading referred to the gas days included in the weekend (i.e., Saturday and Sunday). Starting from 1 February 2020, the trading of this new product has also been extended to market making;
- starting from 1 January 2020 and on an experimental basis, the launch of the **new segment for the supply of system gas (AGS sector)** within the MP-GAS, to allow Snam Rete Gas S.p.A. the supply of the resources necessary for the operation of the gas system, in accordance with the provisions of ARERA with resolution 451/2019/R/GAS. In particular, ARERA has provided that the supply of the aforementioned resources shall take place through specific auctions carried out, respectively, on gas days G-1 and G for products with delivery on each gas day G;

¹⁰ For further information, see chapter 2.2 of this Report.

¹¹ Trans-European Replacement Reserves Exchange.

- ▶ in the environmental sector, the implementation of all the technical and regulatory activities designed to ensure, in 2020, the **launch of the new regulated market MCIC** for the trading of certificates of release to consumption of biofuels, assigned to GME pursuant to Ministerial Decree of 2 March 2018 of the MISE;
- ▶ to ensure efficiency and simplification of the operational and management processes, the **introduction of the netting mechanism** for the integrated management of guarantees on the MGP electricity markets and on the MI and on the spot gas market (MP-GAS), also aimed at encouraging the reduction of costs incurred by participants for the provision of financial guarantees required for participation in the aforementioned markets.

MONITORING AND REMIT SERVICES. GME supervises the regular performance of trading and transactions in the markets under its management through a monitoring activity to protect their integrity, in coordination with the main reference institutions on the matter (in particular, ACER¹² and ARERA) pursuant to of current European and national regulations (REMIT¹³, TIMM¹⁴ and TIMMIG¹⁵ Regulations).

Moreover, GME supports participants in fulfilling their data reporting obligations to ACER and for the publication of inside information – envisaged by the REMIT Regulation – through "ad hoc" platforms (PDR platform and PIP platform) which account, respectively, for 250 and 120 registered participants, for an annual total number of approximately 245,000 transactions transmitted to ACER (PDR) and 20,500 recorded messages (PIP).

¹² European Agency for the Cooperation of Energy Regulators.

¹³ European regulation no. 1227/2011.

¹⁴ Integrated text of the monitoring of the wholesale electricity market and of the market for the dispatching service, pursuant to resolution ARG/elt 115/08, as subsequently integrated and amended.

¹⁵ Integrated text of the monitoring of the wholesale natural-gas market, pursuant to resolution 631/2018/R/gas.

02

Markets trend

2.1. ELECTRICITY MARKETS IN EUROPE

FUELS. In 2019, the European prices of the main fuels reverse the upward trend recorded over the previous two years. In particular *i)* oil falls to 64.62 \$/bbl (-9% compared to 2018), a value however above the lows of the three-year period 2015-2017 following a similar trend recorded for fuel oil and diesel (respectively 336.02\$/MT, -16% and 578.16\$/MT, -8%); *ii)* coal recorded more intense drops (61.88 \$/MT, -33%) and, after reaching the maximum level in 2013 since 2018, it drops to values just slightly higher than the lows recorded over the two-year period 2015-2016, in a European context experiencing a progressive de-carbonisation of thermoelectric production (phase-out); *iii)* gas drastically reverses the trend recorded over the previous two-year period, falling to the Italian PSV at 16.28 €/MWh (-34% compared to 2018, with a monthly low in August of 11.57 €/MWh) and to the Dutch TTF at 13.58 €/MWh (historical minimum level, -41%), with a spread between the two references rising to the maximum levels since 2013 (2.70 €/MWh, +1.05 €/MWh compared to 2018). However, costs of emission rights keep on recording the intense dynamics started in the summer of 2017, reaching an all-time high of almost 25€/ton (+56.4% compared to 2018) (Fig. 2.1.1, Fig. 2.1.2).

PRICES IN THE ELECTRICITY DAY-AHEAD MARKET. The fuel trend has an impact on the European electricity market, characterised by sharply decreasing prices everywhere and divided into two macro-regions. This configuration represents the new element of 2019: the different intensity of the drops recorded on a local basis promotes a clearer separation between the northern and Mediterranean area, thus eliminating the intermediate continental zone that had characterised the structure of European prices in the past four years. Indeed, more marked decreases are recorded in France (39.45 €/MWh, -21%) which, due to lower tensions on the nuclear power plant, is in line with the Scandinavian Area and Germany (38/39 €/MWh), bringing the differential with the latter to one of the lowest levels ever, while significantly more contained dynamics push Slovenia (48.75 €/MWh, -5%) to converge on the levels observed in Italy and Spain (48/52 €/MWh). Within this scenario, the integration of the markets through coupling has however facilitated the alignment of European prices¹⁶ in an increasing number of hours (102 hours, +24 compared to 2018), more evident at the end of the year and more distributed over the day compared to previous years when it was concentrated mainly in the hours of low morning load. In terms of 2020 forecasts, the futures markets show slightly higher prices¹⁷ compared to the corresponding 2019 spot values on all European markets, with more intense increases recorded in Germany and France and a reduction in the spread between France with Italy (Fig. 2.1.3, Fig. 2.1.4).

PRICES AND VOLUMES ON THE ITALIAN BORDER. On the northern Italian border, the price in the Northern area, amounting to 51.25 €/MWh, was *i)* lower or equal to the French one in a reduced number of cases (19% of hours, -4 p.p., of which about a third in November) and separated from it by a spread rising to the maximum values of the last four years (11.8 €/MWh, +1.3 €/MWh); *ii)* less than or equal to the Slovenian reference in an increasing number of hours (56% of the hours, +26 p.p), which exceeds 90% between July and October, for an annual spread that drops to one of the lowest levels ever (2.5 €/MWh, -7.1 €/MWh). In this context, the implicit auction allocations on the northern border amount to about half of the total available capacity, confirming the value of the previous year, with the remaining share mainly represented by Switzerland, not integrated in the day-ahead framework in the

¹⁶ Alignment shall mean the situation characterised by a simultaneous differential between countries lower than 1 €/MWh. The borders considered for processing are: North-France, France-Germany, Germany-Scandinavian area.

¹⁷ Reference is made to the settlement price of the Calendar product on its last trading day.

coupling mechanisms. In particular, in 2019 the market coupling allocates on the northern border an average hourly capacity of 2,827 MWh as import (-71 MWh compared to 2018) and 1,227 MWh as export (+130 MWh), with variations that, in light of the dynamics of prices shown above, appear predominantly concentrated on the Slovenian border (-54 MWh and +99 MWh). Finally, the share of total capacity allocated through imports via market coupling on the French and Austrian borders was stable at around 90%.

Fig. 2.1.1 - Prices of the main European fuels. Annual average

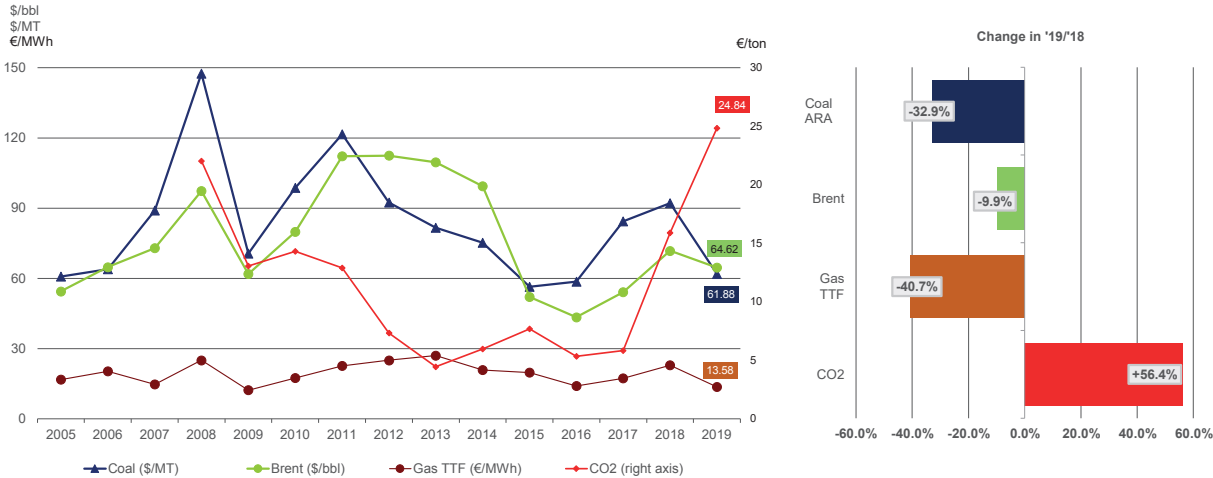


Fig. 2.1.2 - Prices on the main European gas hubs. Annual average

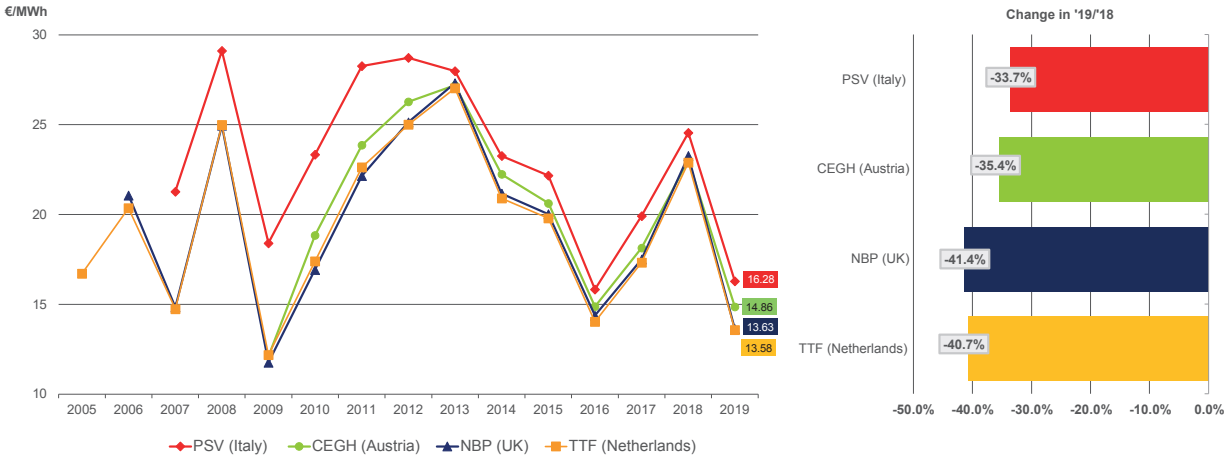


Fig. 2.1.3 - Day-ahead prices on the main European electricity exchanges. Annual average

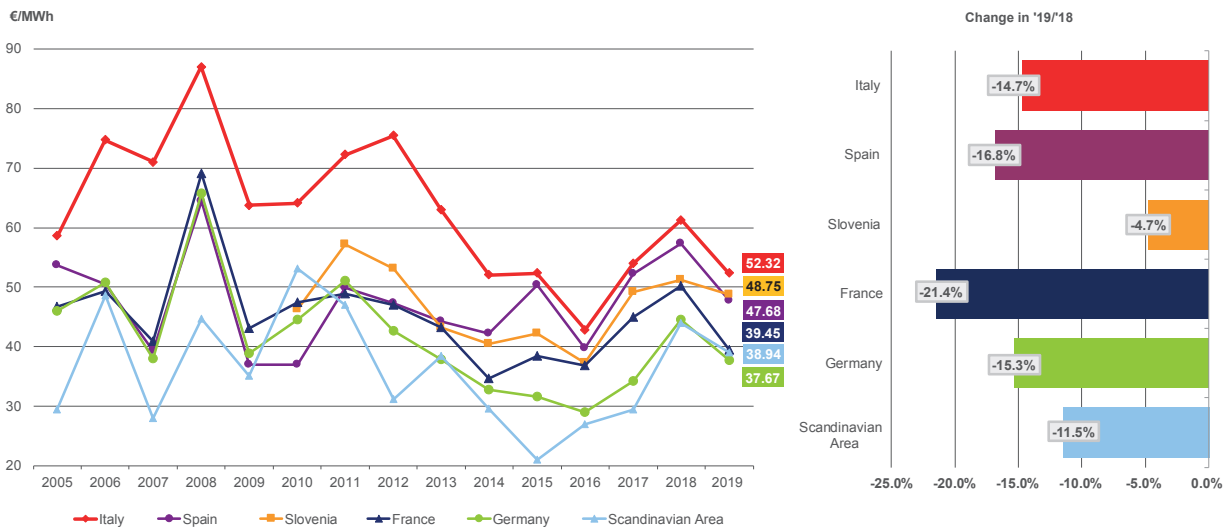
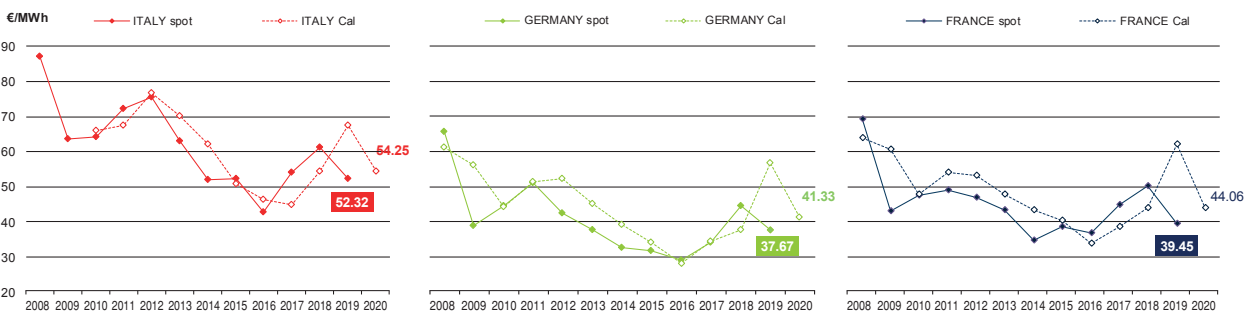


Fig. 2.1.4 - Day-ahead prices and corresponding calendar baseload prices



2.2. ELECTRICITY MARKETS IN ITALY

2.2.1. Day-Ahead Market (MGP)

VOLUMES AND LIQUIDITY. In 2019 very high levels were confirmed for volumes and liquidity on the MGP. The total amount of electricity exchanged on the MGP on the stock exchange and through bilateral trading, amounting to 295.8 TWh (+0.1% compared to 2018), marks the maximum level recorded since 2013 for the third consecutive year, with increases concentrated in January and in the summer (in July the highest monthly level of the last nine years). Demand on the market are once again on the rise (302.3 TWh, +0.2%), in particular those with a price indication (22.7 TWh, +21.9%), driven largely by exports, at their second highest value ever (6.8 TWh, +82.6%). Opposite dynamics for imports, down to one of the lowest levels ever (45.1 TWh, -6.1%). Liquidity, on the other hand, remains substantially unchanged at historical highs (72%, +0.1 p.p.), corresponding to an increase in volumes traded on the stock exchange (213.3 TWh, +0.2%, the highest level since 2009), supported by the exchanges of non-institutional national participants and, on the purchase side, also by exports. Conversely, over-the-counter exchanges recorded on the PCE and nominated on the MGP (82.6 TWh, -0.1%) only exceed the historical minimum level of 2017 (Tab. 2.2.1, Fig. 2.2.1, Fig. 2.2.2).

NATIONAL SINGLE PRICE (PUN) AND FUNDAMENTALS. The PUN drops to 52.32 €/MWh (-9 €/MWh, -14.7%), according to a trend that *i*) links it to the prices of the main European electricity exchanges, *ii*) mainly reflects the reduction in the gas raw material (16.28 €/MWh, -8.28 €/MWh), whose bearish impact on combined cycle generation is greater than the increase induced by the recovery of CO₂¹⁸; *iii*) is particularly relevant between June and December, when the price on the MGP decreases by an average of 18 €/MWh (in September -25 €/MWh). In light of this, an annual recovery of the clean spark spread¹⁹ is recorded, concentrated between January and October, when the significant downward effects linked to the sharp drop in PSV appear to be mitigated by a decrease in imports (until August), by a reduction of the sales of hydroelectric plants (in April and May) and renewables (especially June and October), as well as by the lower competitiveness of coal. In general, the reduction in the PUN appears to be rather homogeneous around 9 €/MWh in all groups of hours, with a peak/off peak working ratio basically unchanged at the historical minimum level (1.17, +0.01) which *i*) is once again among the lowest in Europe, *ii*) is instead very high in November and December at very low minimum prices (in two hours amounting to 1 €/MWh). The dynamics for volatility are the same, which is also stable on an annual basis (9.1%, +0.5 p.p.) and lower than the rest of Europe, but gradually recovering by the end of the year and amounting to 16.9% in December (Fig. 2.2.3, Fig. 2.2.4, Fig. 2.2.5, Fig. 2.2.7, Fig. 2.2.8).

ZONE DYNAMICS. A dropping trend for all sales prices, ranging between 51/52 €/MWh on the peninsula and in Sardinia (-8/-9 €/MWh) and slightly below 63 €/MWh in Sicily (-7 €/MWh), by virtue dynamics again concentrated in the second half of the year and homogeneous in the groups of hours (with consequent stability in absolute terms of the peak/off peak working ratio). In conjunction with a decrease in purchases recorded in the North (-1.5%), the prices in the North and South maintain a differential which, although confirmed as positive as in the previous decade, almost reaches zero for the first time (0.36 €/MWh, -0.98 €/MWh), due to the substantial stability of their alignment frequency (67% of the hours, -1 p.p.) and an increase in the hours when the North is lower than the South (18% of hours, +6 p.p.), concentrated in spring-summer, the period in which the hydroelectric supply reaches the highest levels. In terms of volatility, on the other hand, there is a clear increase in levels in Sardinia (12.5%, +2 p.p.), in the South (16.3%, +5.1 p.p.) and in Sicily (24.3%, +7.4 p.p., all-time high), zones characterised by a high share of renewable, yet inconstant, supply. Its large fluctuations are concentrated in spring and in the final two months of the year, in which the large availability of RES generation favours a net increase in hours and sessions characterised by 0 €/MWh zonal prices (Fig. 2.2.6, Fig. 2.2.7, Fig. 2.2.8, Tab. 2.2.2, Tab. 2.2.3).

SOURCES AND GENERATION MIX. The increase in purchases and the sharp reduction in imports pushed domestic sales to their highest levels since 2013 (250.7 TWh, +1.3% compared to 2018). This increase is supported by combined cycle plants, whose volumes and market share have reached the highest levels since 2012 (124.7 TWh, +12.2%; 50.5%, +4.9 p.p.), and from wind plants, to the new historical maximum level of 18.8 TWh (+15.1%). The increase in the combined cycle is recorded on the peninsula (in the North it exceeds 53% of total sales, +5 p.p.) and has affected the whole year (with the exception of the last two months), while the one concerning wind power is distributed in all zones and concentrated between January-May and in the last two months of the year. As for other sources, *i*) coal

¹⁸ In particular, as regards the combined cycle electricity production, the drop in PSV favours a reduction in costs of around 16 €/MWh, for an increase induced by the estimated CO₂ component lower than 4 €/MWh.

¹⁹ Reference is made to the differential between the PUN and the price of the gas raw material including emission costs.

sales and share fall to all-time lows²⁰ (10.6TWh, -42%; 5%, -4 p.p.), according to a trend observed in all months of the year, displaced by the greater competitiveness of gas, *ii*) the volumes of hydroelectric plants also fall (47.4 TWh, -4.1%), while however confirming their very high levels, *iii*) solar energy falls to the lowest levels of the last eight years (average 23.1 TWh per hour, -4.2%) (Tab. 2.2.4).

MARKET CONCENTRATION. In a context of structured competitiveness, there is a further slight drop to the historical lows of the market share of the first operators (CR3 and CR5) and of sales guaranteed in the absence of competition (IOR). More specifically, the price and volume dynamics recorded in 2019 show significant effects in particular on the marginal technology index of the combined cycle (ITM Ccgt), which rises to the highest values of the last five years (51.7%, +2.3 p.p.), and on the competitiveness values recorded by the indices in the Central-Southern area, the most impacted by the reduction in coal volumes (Fig. 2.2.9, Tab. 2.2.5).

CHANGES TO THE STRUCTURE OF THE MARKET ZONES. Starting from 1 January 2019, the enforcement of the changes to the structure of the market zones approved by ARERA with Resolution 386/2018/R/EEL of 12 July 2018, establishing the elimination of the limited production centres of Monfalcone, Foggia, Brindisi and Priolo and the inclusion of their own plants in the geographical areas under their responsibility. As of 28 December 2019, exchanges have also started, through explicit capacity allocation, on the new interconnection between Italy and Montenegro.

Tab. 2.2.1 - Volume trend in the MGP

TWh	2012	2013	2014	2015	2016	2017	2018	2019	Change '19/'18
Request of Terna	328.2	318.5	310.5	316.9	314.3	320.5	321.4	319.6	-0.6%
Demand	330.5	329.8	318.2	305.3	301.5	297.4	301.6	302.3	0.2%
with indication of the price	34.8	46.5	44.8	36.8	33.0	20.1	18.6	22.7	21.9%
<i>rejected</i>	<i>31.8</i>	<i>40.6</i>	<i>36.0</i>	<i>18.1</i>	<i>11.7</i>	<i>5.2</i>	<i>6.0</i>	<i>6.4</i>	<i>7.5%</i>
Purchases	298.7	289.2	282.0	287.1	289.7	292.2	295.6	295.8	0.1%
% upon request of Terna	91.0%	90.8%	90.8%	90.6%	92.2%	91.2%	92.0%	92.6%	0.7%
Supply	555.4	532.1	511.7	500.2	502.4	489.9	507.5	503.6	-0.8%
Sales	298.7	289.2	282.0	287.1	289.7	292.2	295.6	295.8	0.1%
at zero price	201.8	214.7	212.7	190.5	172.2	162.6	165.6	166.2	0.4%

²⁰ Reference is made to coal plants and oil-coal multi-fuels.

Fig. 2.2.1 - MGP liquidity

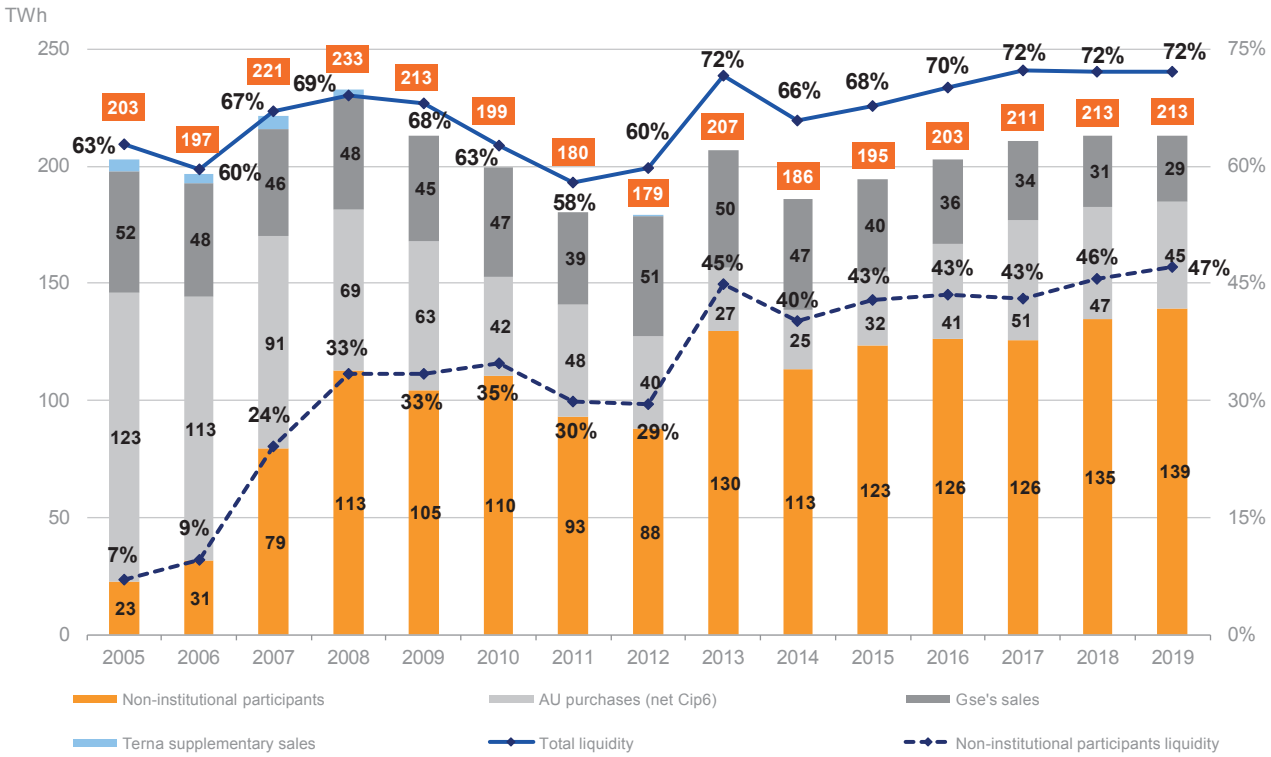


Fig. 2.2.2 - Supply in the MGP

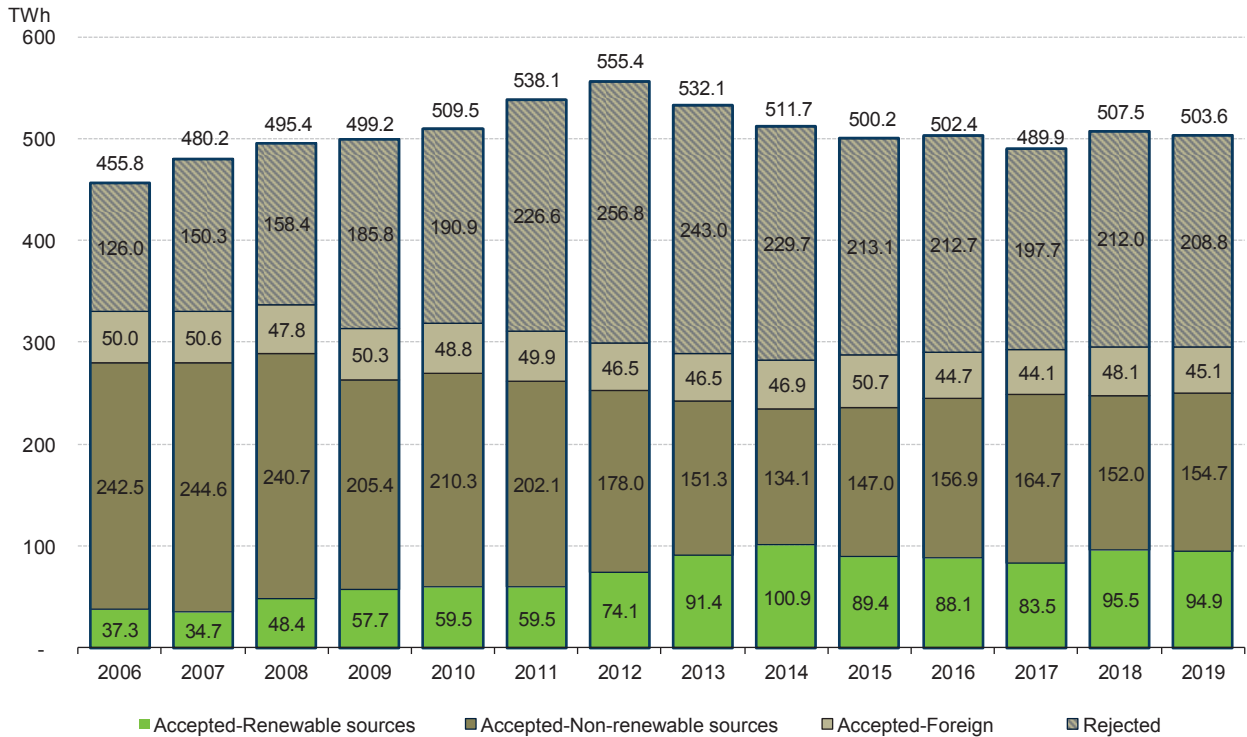


Fig. 2.2.3 - PUN trend and its determinants²¹

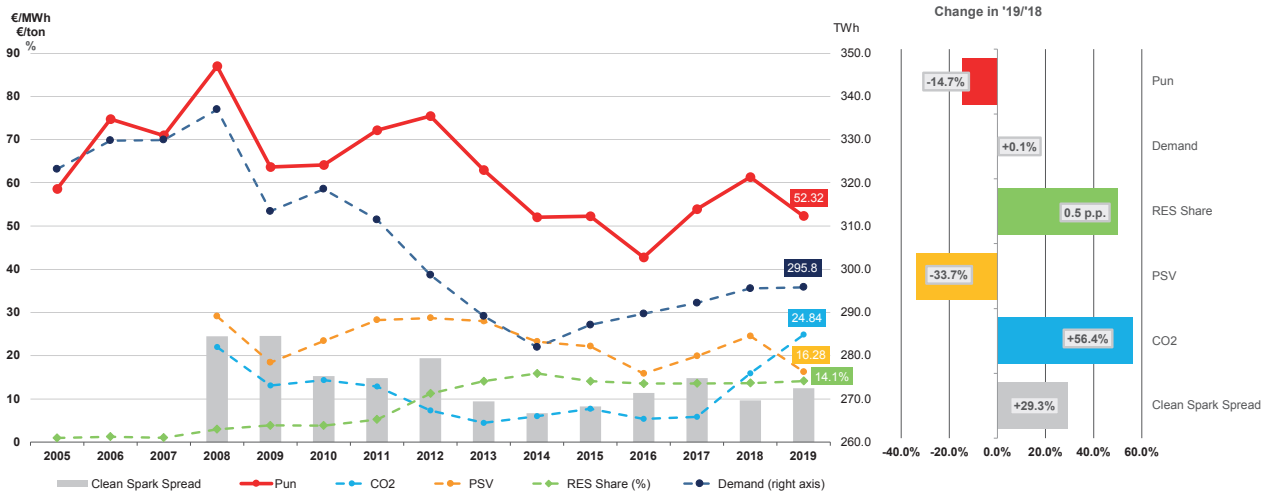
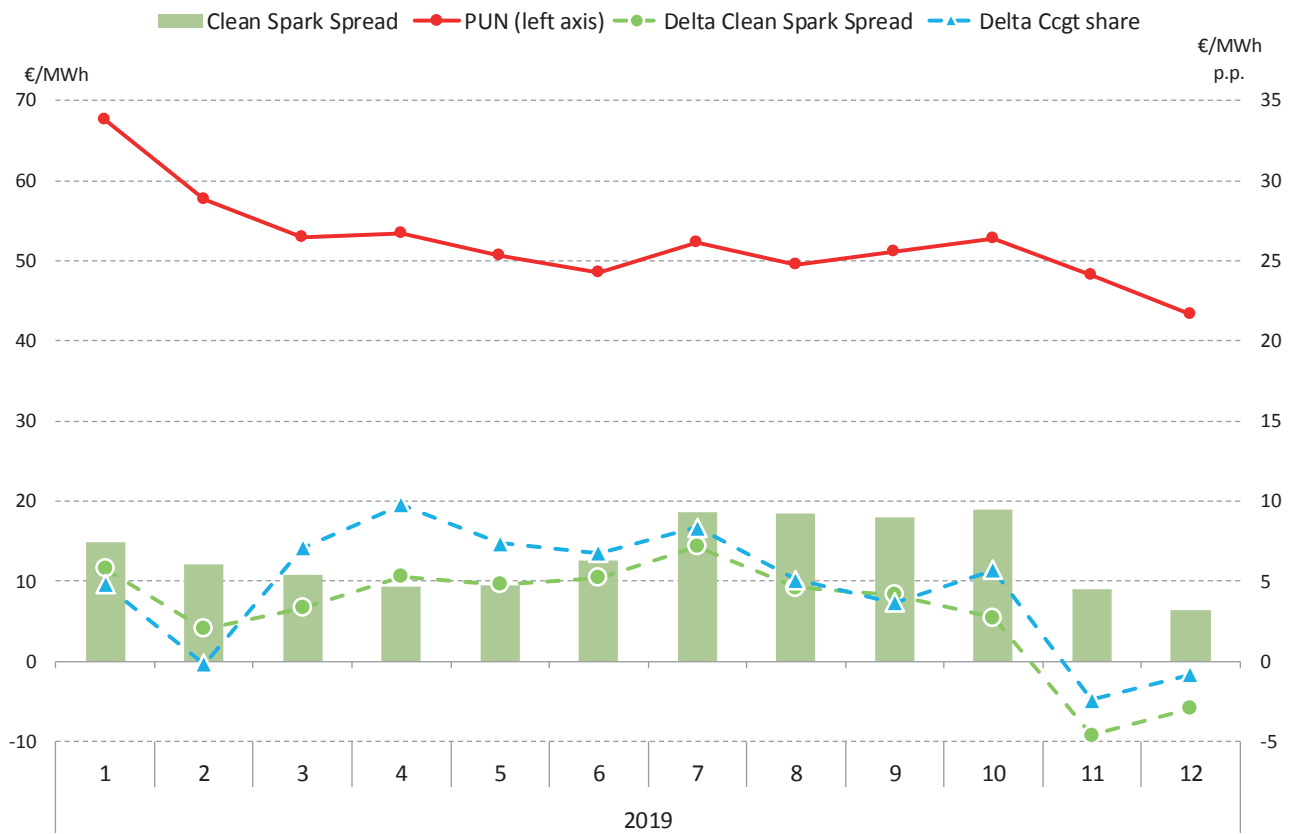


Fig. 2.2.4 - PUN and clean spark spread – monthly trend



²¹ The figure relating to the RES share refers to wind and solar sources.

Fig. 2.2.5 - PUN by groups of hours. Annual average

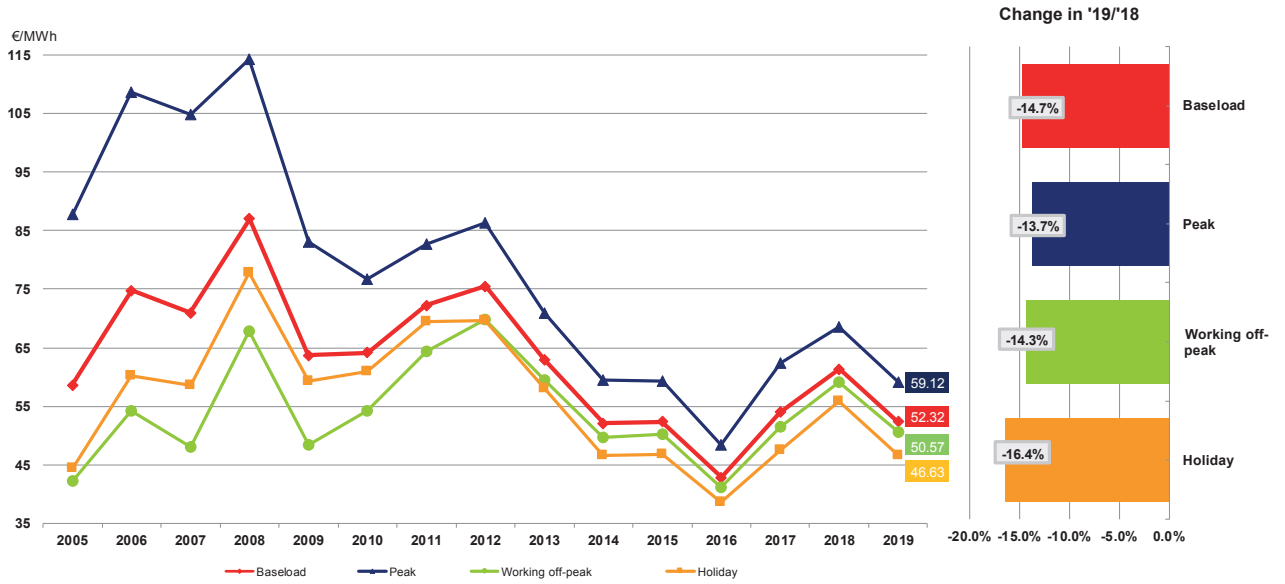


Fig. 2.2.6 - Average annual zonal prices in the MGP

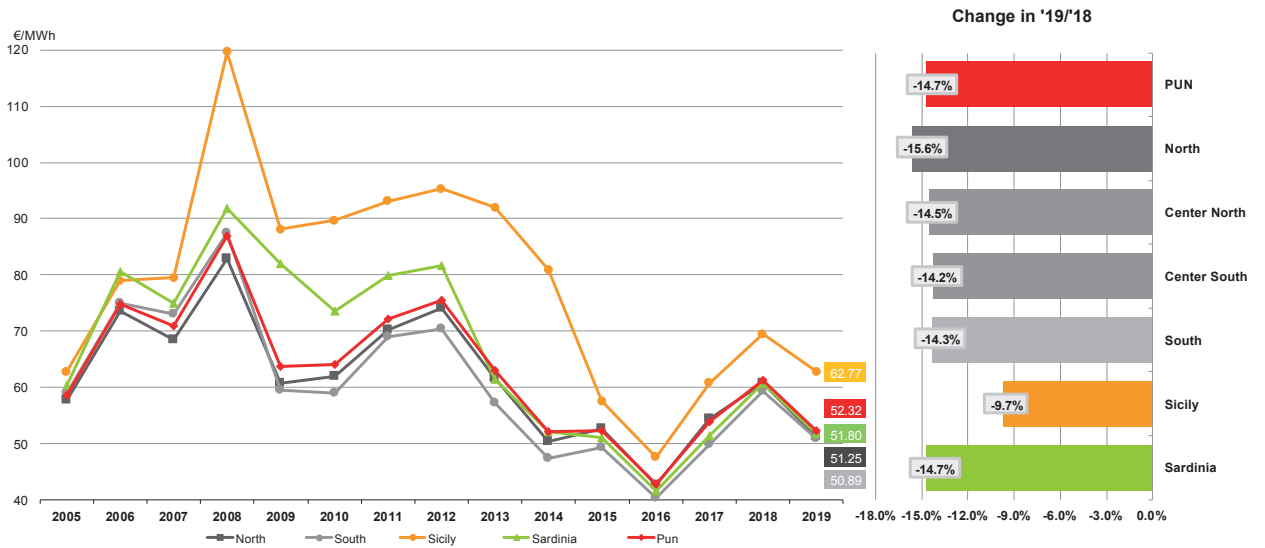


Fig. 2.2.7 - Price volatility

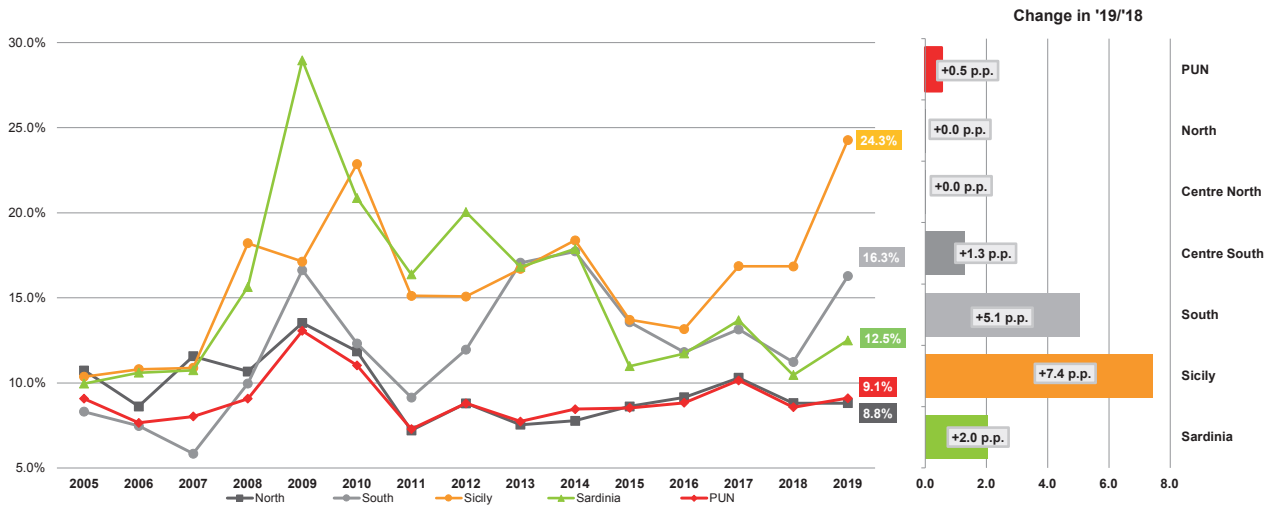
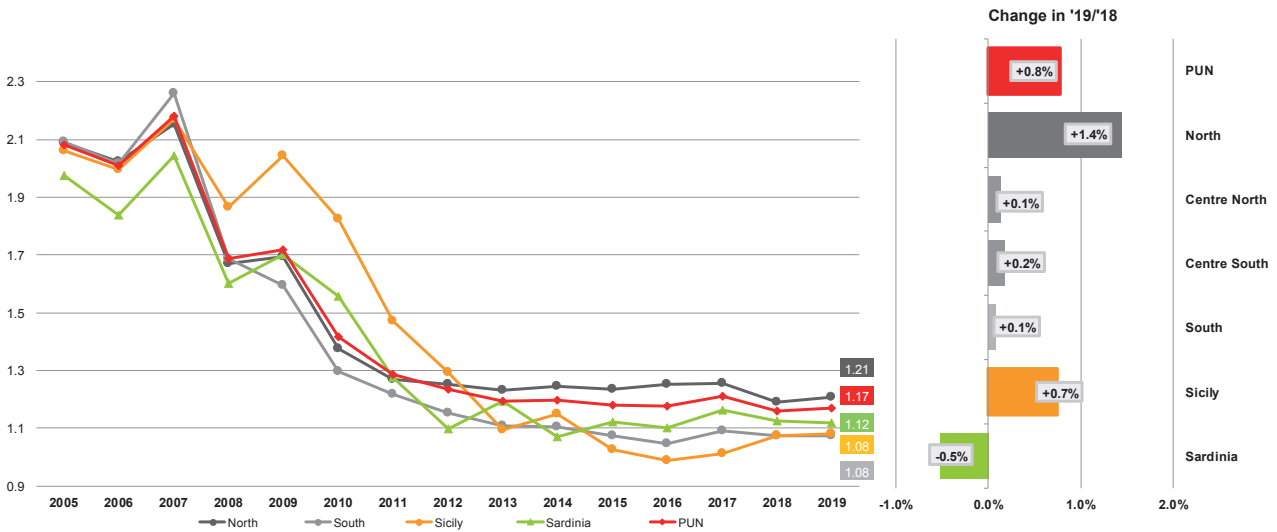


Fig. 2.2.8 - Peak/off peak price ratio on working days



Tab. 2.2.2 - Zero prices and day/night price reversals in the MGP. Year 2019

	PUN	North	Centre/ North	Centre/South	South	Sardinia	Sicily
N° hours with price equal to zero	- (0)	- (0)	- (3)	1 (3)	21 (3)	42 (3)	59 (14)
N° sessions with at least a hourly price equal to zero	- (0)	- (0)	- (1)	1 (1)	6 (1)	8 (1)	15 (3)
N° sessions with day-time prices < night-time prices	79 (62)	56 (53)	83 (60)	113 (83)	146 (110)	122 (86)	165 (158)
% sessions with day-time prices < night-time prices	21.6% (17.0%)	15.3% (14.5%)	22.7% (16.4%)	31.0% (22.7%)	40.0% (30.1%)	33.4% (23.6%)	45.2% (43.3%)
Average difference in sessions with day-time prices < night-time prices €/MWh	-4.76 (-6.79)	-3.92 (-5.85)	-5.22 (-7.23)	-6.40 (-7.42)	-7.71 (-8.23)	-7.01 (-7.61)	-9.07 (-8.96)

(l) The values of the previous year are shown in bracket

Tab. 2.2.3 - Zonal volumes in the MGP (TWh). Year 2019

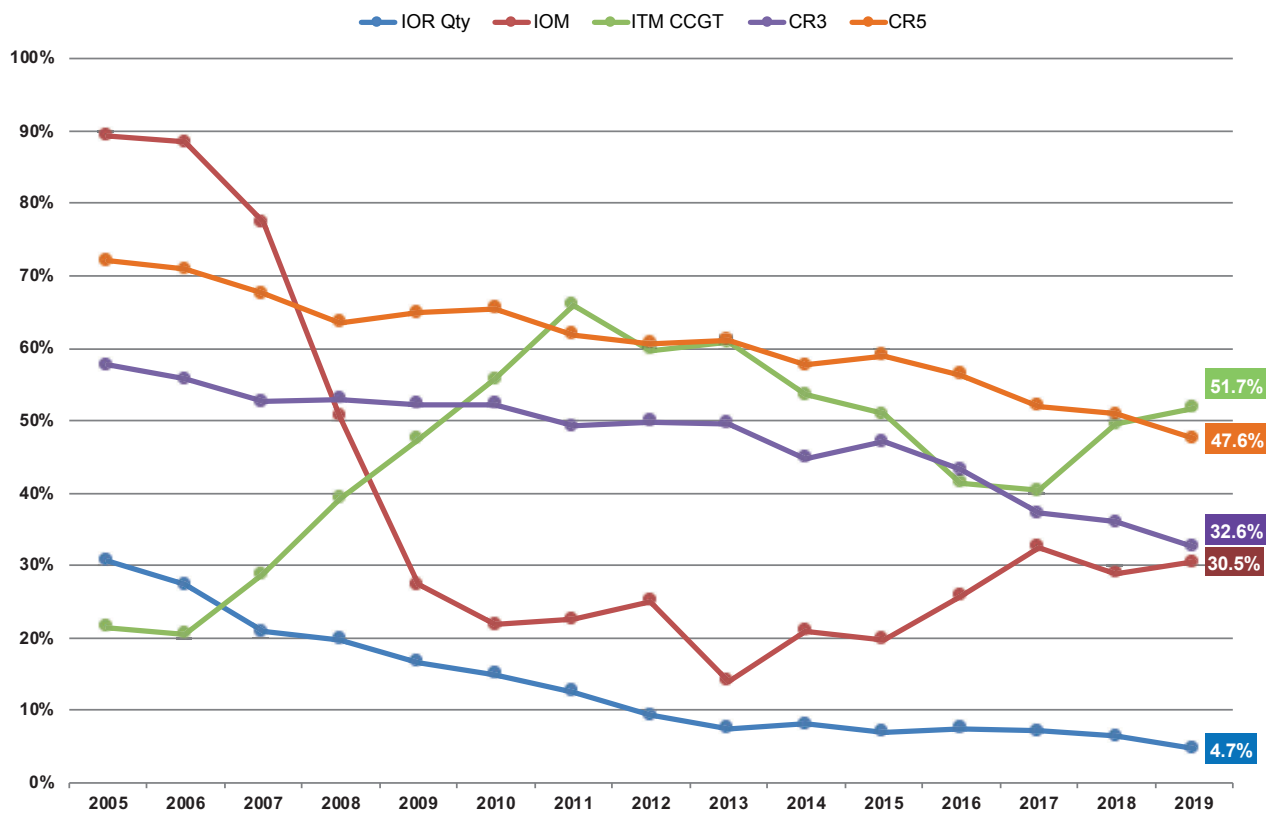
Zone	Purchases		Sales		Supply		Demand		Rejected offers	
North	162.06	(-1.5%)	131.31	(+1.8%)	236.61	(-2.0%)	163.11	(-1.3%)	105.30	(-6.4%)
Centre/North	30.95	(-0.4%)	19.46	(+4.9%)	27.17	(-2.1%)	31.77	(+0.2%)	7.70	(-16.2%)
Centre/South	45.74	(-0.4%)	27.53	(-4.2%)	57.72	(+12.8%)	45.87	(-0.5%)	30.19	(+34.6%)
South	24.02	(+1.6%)	49.54	(+1.9%)	85.25	(-0.8%)	24.17	(+1.7%)	35.71	(-4.3%)
Sicily	17.34	(-1.9%)	11.47	(-0.4%)	32.43	(-4.7%)	17.37	(-2.0%)	20.97	(-6.9%)
Sardinia	8.91	(-0.7%)	11.39	(+2.3%)	18.36	(+0.6%)	8.99	(-0.4%)	6.97	(-2.1%)
Foreign	6.81	(+82.6%)	45.12	(-6.1%)	46.03	(-6.0%)	10.99	(+38.6%)	0.91	(-0.7%)
Italy	295.83	(+0.1%)	295.83	(+0.1%)	503.57	(-0.8%)	302.29	(+0.2%)	207.74	(-2.0%)

(l) The values of the previous year are shown in bracket

Tab. 2.2.4 - Zonal sales by source and technology (average MWh). Year 2019

	North		Centre/North		Centre/South		South		Sicily		Sardinia		Italian System	
	MWh	Change	MWh	Change	MWh	Change	MWh	Change	MWh	Change	MWh	Change	MWh	Change
Traditional sources	9,355	+5.4%	955	+25.1%	1,978	-6.3%	3,608	-1.6%	725	-1.1%	925	-0.7%	17,545	+2.7%
Gas	8,022	+12.3%	878	+24.2%	1,245	+41.1%	3,127	+6.1%	677	-1.3%	491	-2.1%	14,440	+12.2%
Coal	343	-47.2%	-	-	503	-49.7%	-	-	-	-	365	+3.1%	1,211	-39.5%
Other	990	-8.4%	77	+36.7%	230	+0.1%	481	-33.0%	48	+1.7%	69	-9.5%	1,893	-14.2%
Renewable sources	5,434	-3.5%	1,267	-6.5%	1,130	+1.5%	2,047	+8.7%	585	+0.5%	375	+10.7%	10,838	-0.6%
Hydraulic	3,883	-3.3%	337	-18.3%	463	-11.4%	521	+7.7%	141	+4.1%	65	-9.6%	5,410	-4.1%
Geothermal	-	-	653	+0.0%	-	-	0	-	-	-	-	-	653	+0.0%
Wind	10	+154.8%	29	+51.2%	373	+30.3%	1,167	+12.9%	335	+1.0%	228	+22.2%	2,142	+15.1%
Solar and others	1,541	-4.4%	248	-8.5%	294	-3.6%	359	-1.8%	109	-5.3%	81	+2.2%	2,633	-4.2%
Pumping	201	-6.5%	-	-	35	-370%	-	-	0	-100.0%	1	+165.8%	237	-12.6%
Total	14,990	+1.8%	2,222	+4.9%	3,143	-4.2%	5,655	+1.9%	1,309	-0.4%	1,300	+2.3%	28,620	+1.3%

Fig. 2.2.9 - Competitiveness indicators



Tab. 2.2.5 - Concentration indexes in the MGP. Year 2019

Indicator	Total	North	Centre North	Centre South	South	Sicily	Sardinia
HHI Offers		1,487 (1,553) ▼	3,252 (3,147) ▲	3,380 (4,183) ▼	1,807 (1,849) ▼	3,586 (3,266) ▲	3,062 (3,280) ▼
HHI Sales		950 (977) ▼	3,178 (2,875) ▲	1,573 (2,680) ▼	1,197 (1,291) ▼	1,724 (1,576) ▲	3,302 (3,538) ▼
CR3	32.6% (36.0%) ▼	37.3% (39.6%) ▼	80.5% (76.5%) ▲	46.1% (64.3%) ▼	41.3% (47.2%) ▼	55.8% (51.4%) ▲	81.5% (85.8%) ▼
CR5	47.6% (50.9%) ▼	57.5% (58.9%) ▼	89.0% (88.1%) ▲	64.6% (77.0%) ▼	55.6% (57.1%) ▼	73.4% (69.3%) ▲	90.9% (90.8%) ▲
IOR Quantity	4.7% (6.4%) ▼	0.4% (0.2%) ▲	33.7% (26.4%) ▲	10.2% (30.0%) ▼	0.9% (1.4%) ▼	2.0% (1.1%) ▲	11.7% (11.3%) ▲
IOM 1° Part	30.5% (29.0%) ▲	29.1% (26.1%) ▲	32.7% (29.7%) ▲	34.7% (32.4%) ▲	29.2% (31.1%) ▼	37.7% (39.6%) ▼	31.0% (31.5%) ▼
ITM Ccgt	51.7% (49.4%) ▲	51.1% (48.6%) ▲	52.2% (49.0%) ▲	47.6% (47.5%) ▲	52.2% (49.9%) ▲	68.4% (64.6%) ▲	50.3% (46.7%) ▲

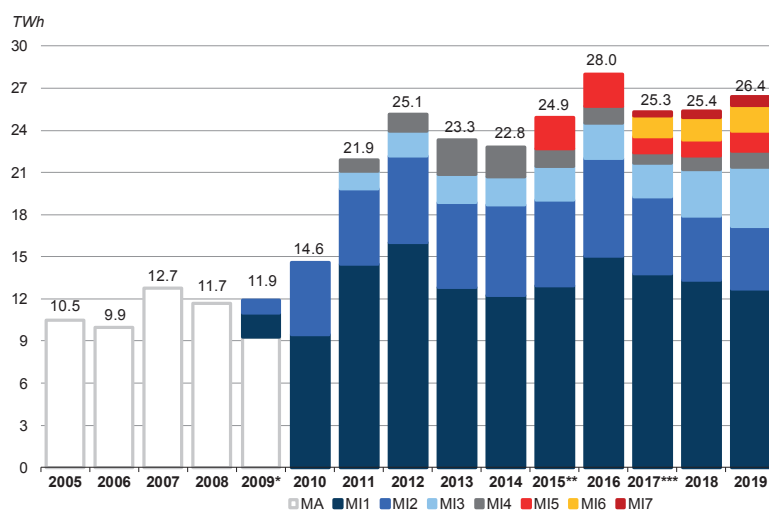
() The values of the previous year are shown in bracket

2.2.2. Intra-Day Market (MI)

VOLUMES AND PRICES. Further signs of growth in the MI, whose volumes rise to 26.4 TWh (second highest value ever, +1 TWh, + 4%). The increase is concentrated in the sessions between MI3 and MI7, whose relevance rises to 35%, eroding liquidity to MI1 and MI2, both decreasing on an annual basis, confirming a growing inclination by participants to trade near real time. In this context, the prices in the MI continue to reflect the trend detected in the MGP, both in terms of levels and dynamics (52/58 €/MWh, -12/-14%), also maintaining in 2019 a higher volatility than the market day-ahead and progressively increasing in all sessions as real time approaches (Fig. 2.2.10, Fig. 2.2.11, Fig. 2.2.12, Fig. 2.2.14).

METHODS OF USE AND SOURCES. As noted in previous years, the use of the MI triggers an increase in the schedules of the units registered following the MGP of 5.1 TWh, amounting to 1.7% (it was 4.2 TWh in 2018), driven by wholesalers in withdrawal (+4.4 TWh) and by thermoelectric plants in injection (+3.3 TWh). The schedule of renewable energy plants also grew (+0.3 TWh), which instead reversed the trend observed in the previous four years. On the other hand, minimal reductions for net imports are recorded, whose schedule following the MI is only slightly modified by higher export volumes (+122 GWh), mainly allocated through coupling on the Swiss border²² (+102.7 GWh). In terms of prices and differentials between adjoining areas, the trends recorded in 2019 are also confirmed *i)* by the "last-first spread"²³ indicator which, in a context characterised by a general drop in prices, does not show significant changes compared to last year, marking a differential of over 3 €/MWh in 60% of the hours and on average equal to 10 €/MWh; *ii)* by the zonal configurations following the MGP, which remain unchanged following the MI on average in 91% of the hours²⁴, a percentage that is higher, and slightly growing, in the transits of the central and southern zones, and lower for the SICI-ROSN transit (82%, +1 p.p.), the most congested after the MGP (40% of hours, +3 p.p.) (Fig. 2.2.13, Fig. 2.2.15, Fig. 2.2.16, Tab. 2.2.6).

Fig. 2.2.10 - Volumes traded in the MI



* The data relating to MI1 and MI2 refer to the last two months of the year

** Launch of the new MI5 market starting from February

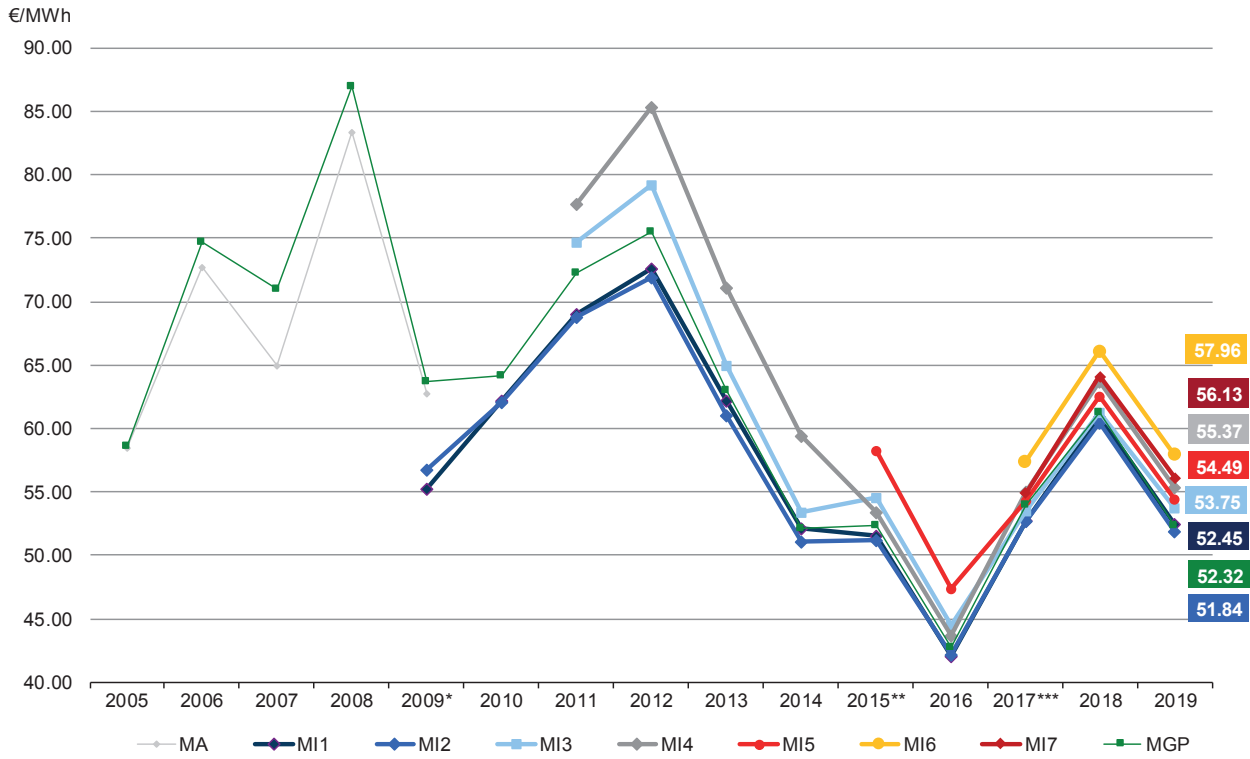
*** Launch of the new MI6 and MI7 markets starting from February

²² Market coupling with Switzerland began in the MI2 and MI6 markets starting on the delivery day 18 April 2019.

²³ The differential recorded, in each hour, between the prices of the first and last MI session.

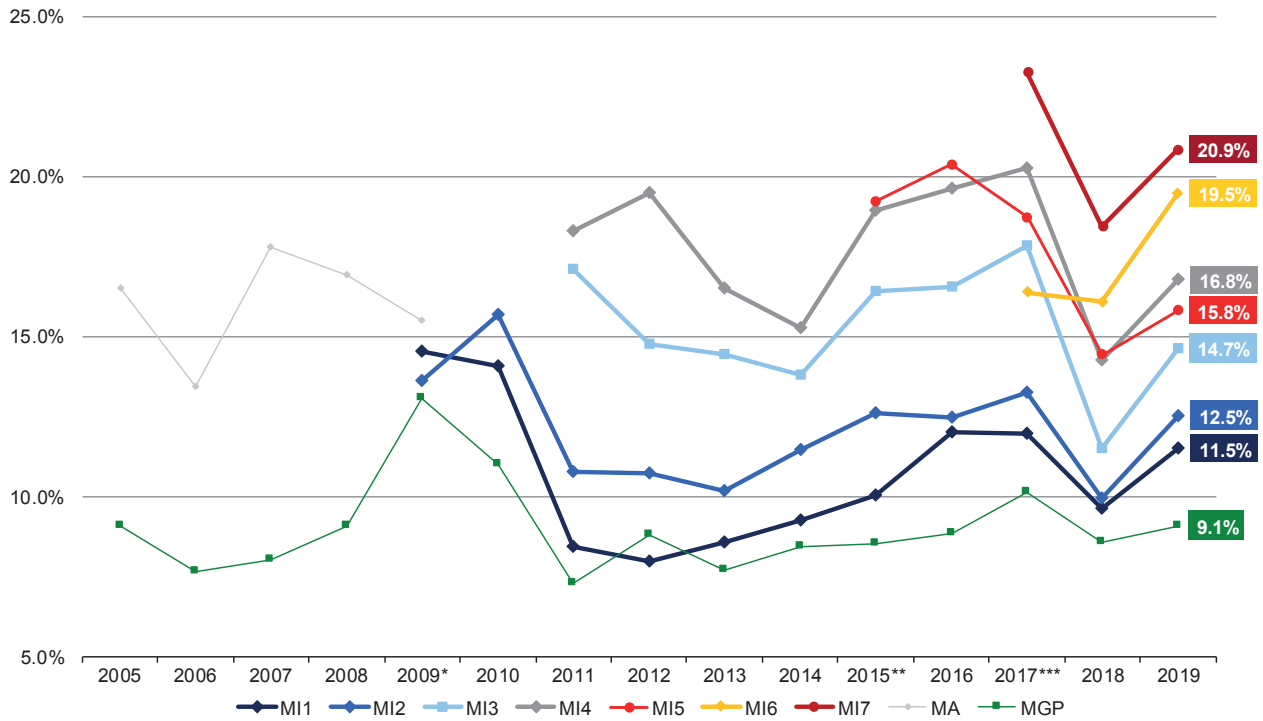
²⁴ The union/separation analysis was carried out on the pair of areas joined by a transit.

Fig. 2.2.11 - MI price: annual trend



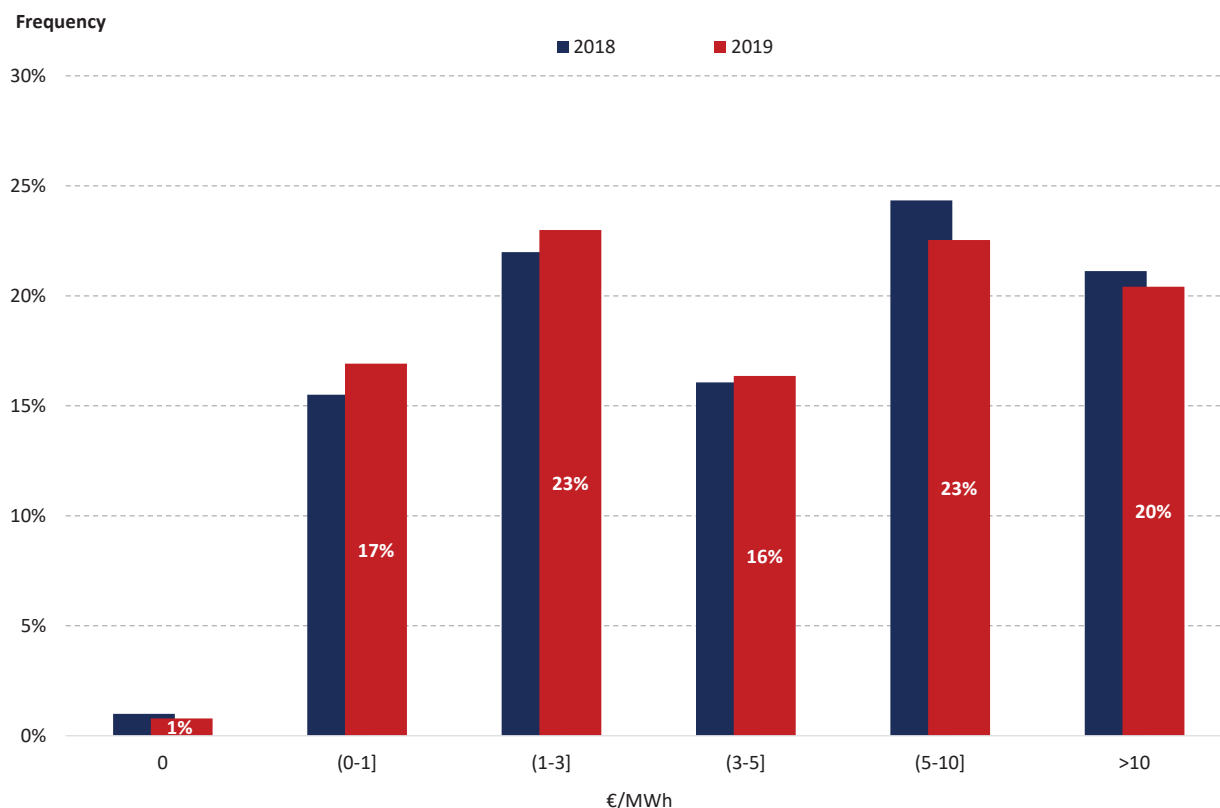
* The data relating to MI1 and MI2 refer to the last two months of the year
 ** Launch of the new MI5 market starting from February
 *** Launch of the new MI6 and MI7 markets starting from February

Fig. 2.2.12 - MI price volatility: annual trend



* The data relating to MI1 and MI2 refer to the last two months of the year
 ** Launch of the new MI5 market starting from February
 *** Launch of the new MI6 and MI7 markets starting from February

Fig. 2.2.13 - Last-first spread distribution. Year 2019



Tab. 2.2.6 - Zonal setting changes. Year 2019

CONTIGUOUS ZONES	Delta price on MGP=0				Delta price on MGP≠0				Grand total
	Set-up changes				Set-up changes				
	0	1	>1	Total	0	1	>1	Total	
NORD-CNOR	87% (89%)	1% (1%)	1% (1%)	89% (91%)	4% (3%)	4% (4%)	2% (1%)	11% (9%)	100%
CNOR-CSUD	78% (81%)	1% (1%)	1% (1%)	81% (83%)	7% (6%)	9% (9%)	3% (2%)	19% (17%)	100%
CSUD-SARD	97% (97%)	0% (0%)	0% (0%)	97% (98%)	1% (1%)	1% (1%)	0% (0%)	3% (2%)	100%
CSUD-SUD	91% (87%)	0% (0%)	1% (1%)	92% (88%)	5% (4%)	3% (6%)	1% (2%)	8% (12%)	100%
SICI-ROSN	55% (59%)	2% (3%)	3% (2%)	60% (63%)	27% (22%)	9% (11%)	4% (4%)	40% (37%)	100%
Total	82% (83%)	1% (1%)	1% (1%)	84% (85%)	9% (7%)	5% (6%)	2% (2%)	16% (15%)	100%

() Values of the previous year

Fig. 2.2.14 - Relevance of intra-day markets

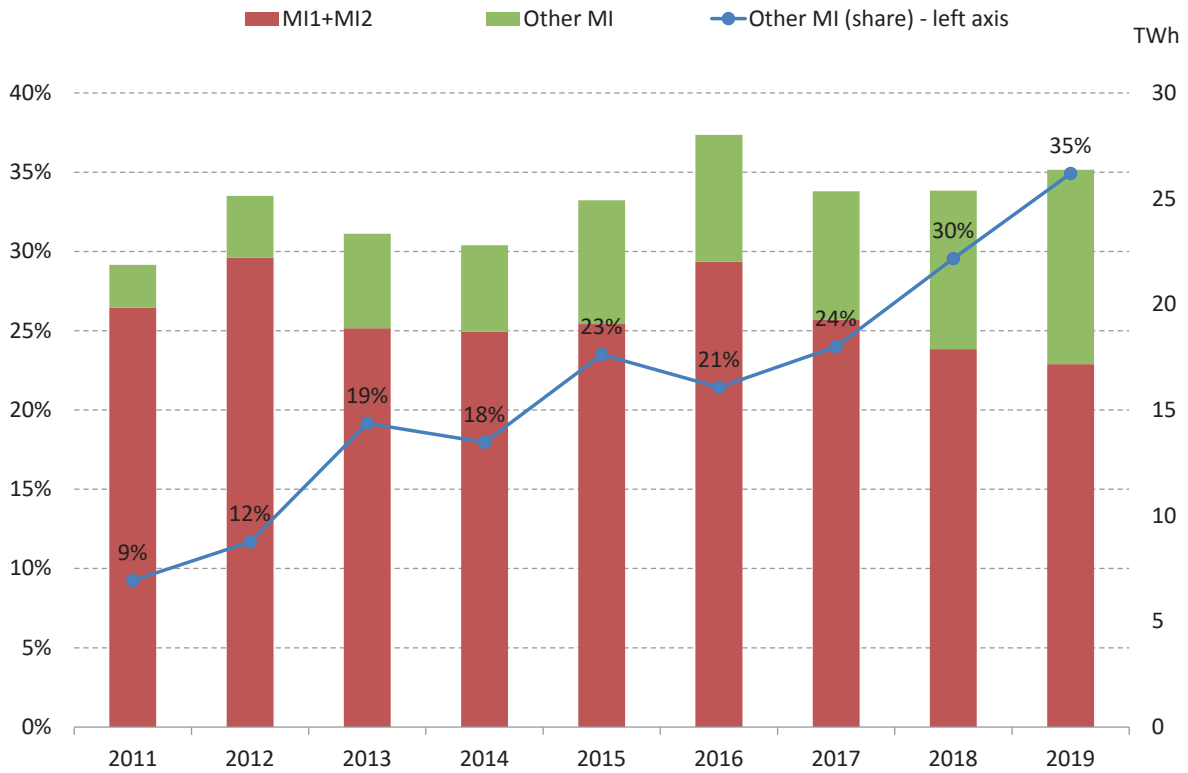


Fig. 2.2.15 - Sales/purchases balance by type of plant. TWh

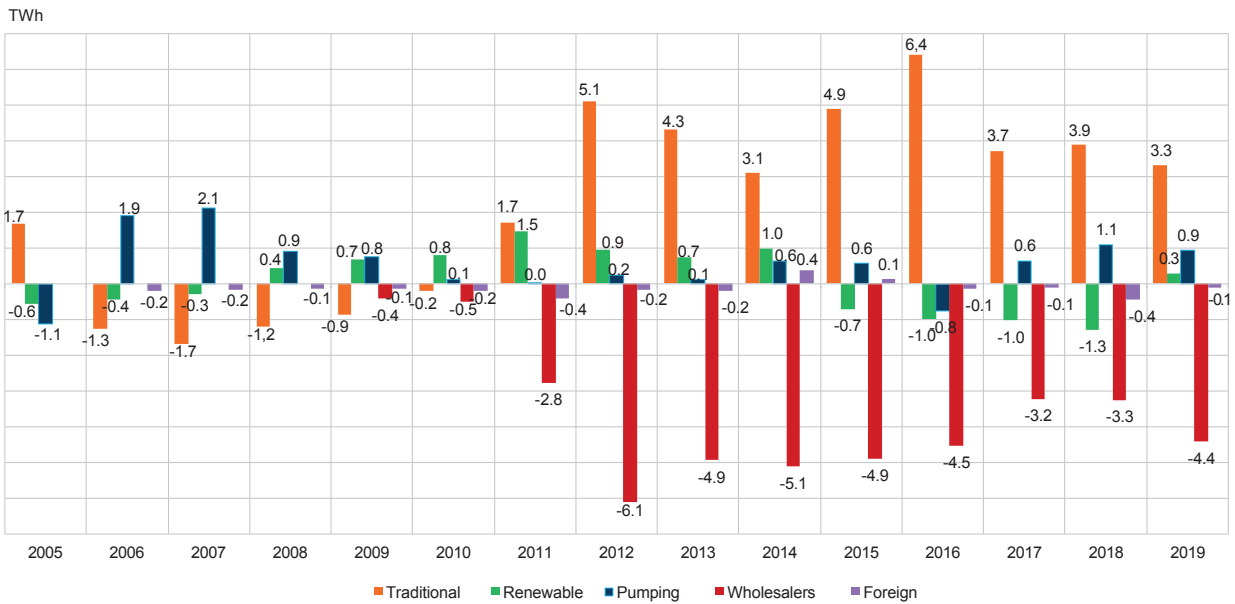
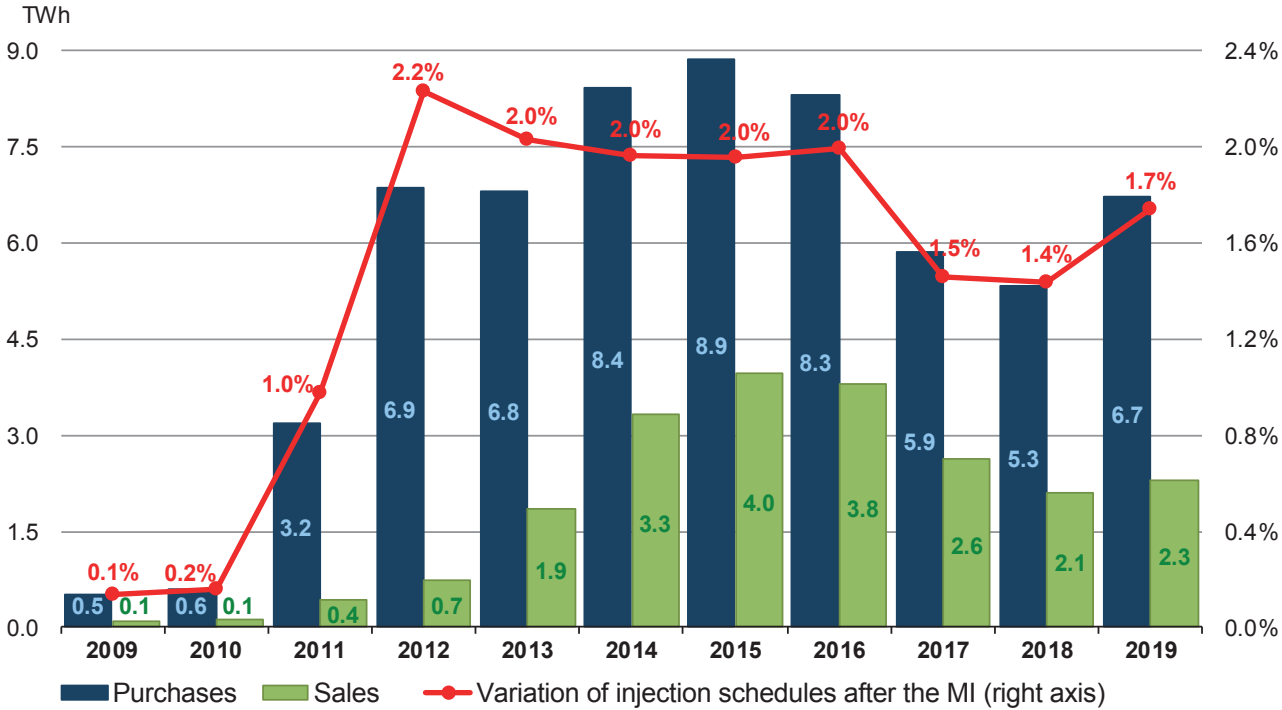


Fig. 2.2.16 - Sales and purchases of wholesalers and variation of the injection schedules following the MI



2.2.3. Other electricity markets

MPEG. In the third year of full activity of the Daily Products Market (MPEG), a drop in both trading and volumes on the "unit price differential" product was recorded (respectively 1,049, -56% and 0.7 TWh, -78%), still traded mainly with a baseload profile (90%, +13 p.p.). The average price of daily products decreased to 0.10 €/MWh (-0.08 €/MWh) on the baseload type, with a rather harmonised trend over the months, while being more volatile on the peakload profile, in particular between January and May, when it reached the highest levels that pushed the annual value to 0.52 €/MWh (+0.21 €/MWh) (Fig. 2.2.17).

PCE. Further decrease in transactions recorded in OTC Registration Platform (PCE) which, with reference to delivery/withdrawal in 2019, have fallen to the lowest levels since 2011 (293.8 TWh, -1.8%), due to the fourth consecutive drop, mainly caused by the decrease in non-standard bilateral contracts (-7.8%), however still the most used by participants (70.4% of the total). The net position determined by the complex of transactions recorded also dropped (165.5 TWh, -1.8%), for a turnover²⁵ of 1.77 (-0.08). As regards the execution of the PCE positions in the MGP, the schedules recorded in the injection accounts remain substantially unchanged, equal to 82.6 TWh (-0.1%), while the related imbalance reaches the minimum level of the last seven years, equal to 83.0 TWh (-3.5%). The schedules recorded in the withdrawal accounts also fell, reaching 129.4 TWh (-5.5%), with a sharp increase, instead, in the imbalance schedule linked to them, which stood at 36.2 TWh (+13,7%) (Fig. 2.2.18, Tab. 2.2.7, Fig. 2.2.19).

MTE. Matchings (176, +46), contracts (596 MW, +391 MW) and volumes exchanged in the MTE (1.6 TWh, +0.4 TWh) slightly recovered. The most traded products remain those characterised by baseload profile and annual expiry (baseload 2020, 21% of the total). In particular, the control price of the calendar 2020 product shows a volatile dynamic up to October, standing on average around 60 €/MWh, and falling back in the last two months, in line with the trend of the spot price, until closing at 54.25 €/MWh (Tab. 2.2.8).

²⁵ It refers to the ratio between the recorded transactions and the net position.

Fig. 2.2.17 - MPEG prices and volumes traded by type

Type	Trading		Price			Volumes	
	N°	Traded products	Average	Minimum	Maximum	MWh	MWh/g
Baseload	959 <i>(1,864)</i>	359/365 <i>(347/365)</i>	0.10 <i>(0.18)</i>	0.07 <i>(0.04)</i>	1.00 <i>(0.50)</i>	692,074 <i>(2,915,431)</i>	1,928 <i>(8,402)</i>
Peakload	90 <i>(509)</i>	89/261 <i>(214/261)</i>	0.52 <i>(0.31)</i>	0.07 <i>(0.10)</i>	5.00 <i>(2.20)</i>	9,180 <i>(249,396)</i>	103 <i>(1,165)</i>
Total	1,049 <i>(2,373)</i>					701,254 <i>(3,164,827)</i>	

() The values of the previous year are shown in bracket

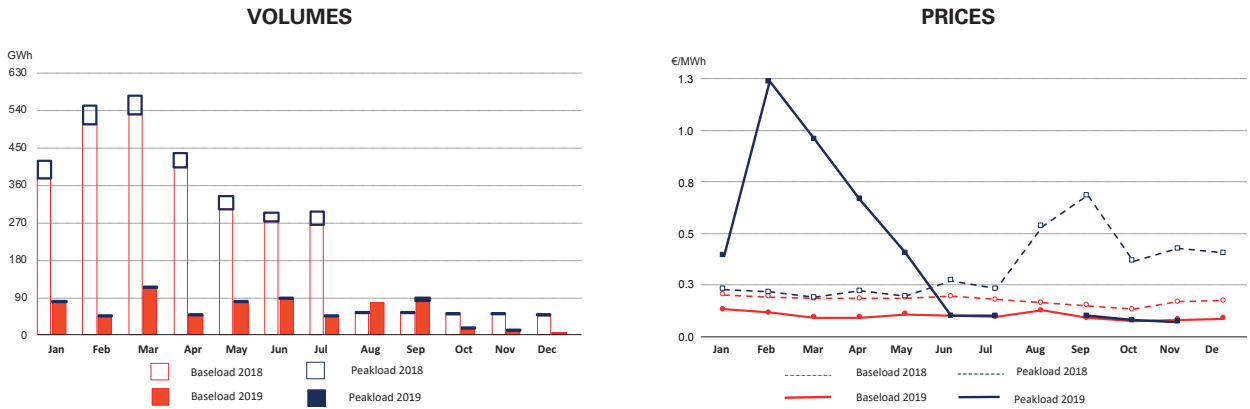
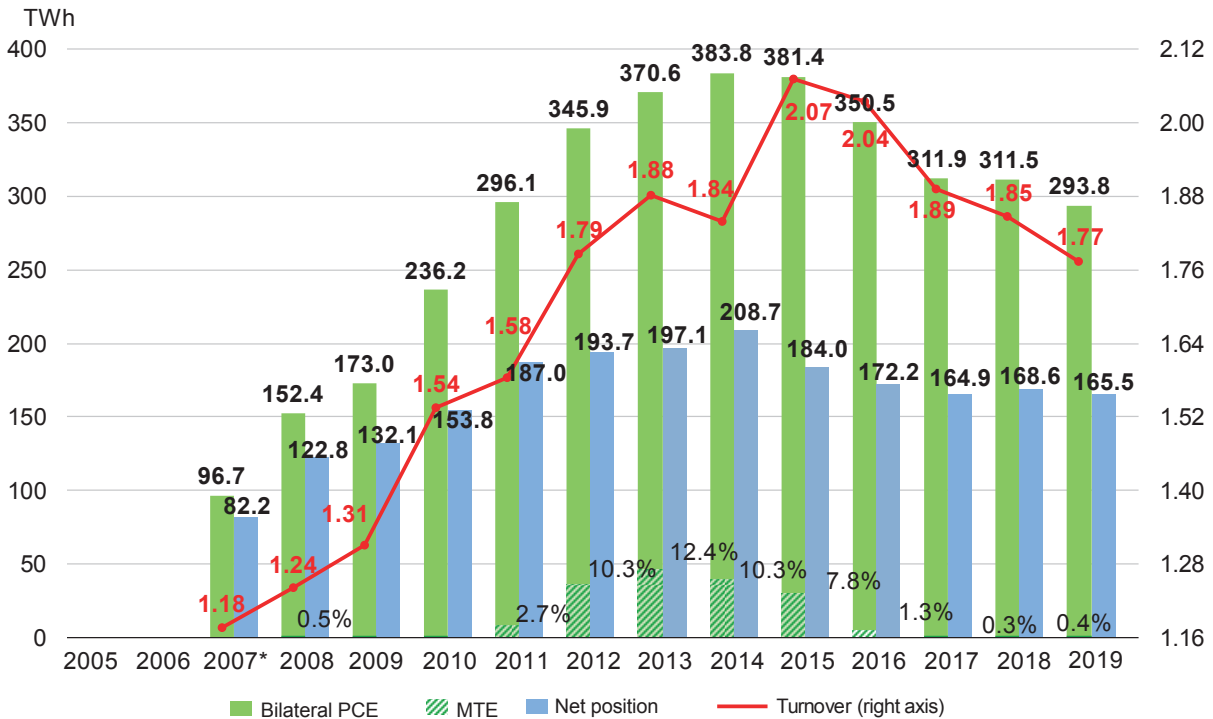


Fig. 2.2.18 - Registered transactions, net position and turnover

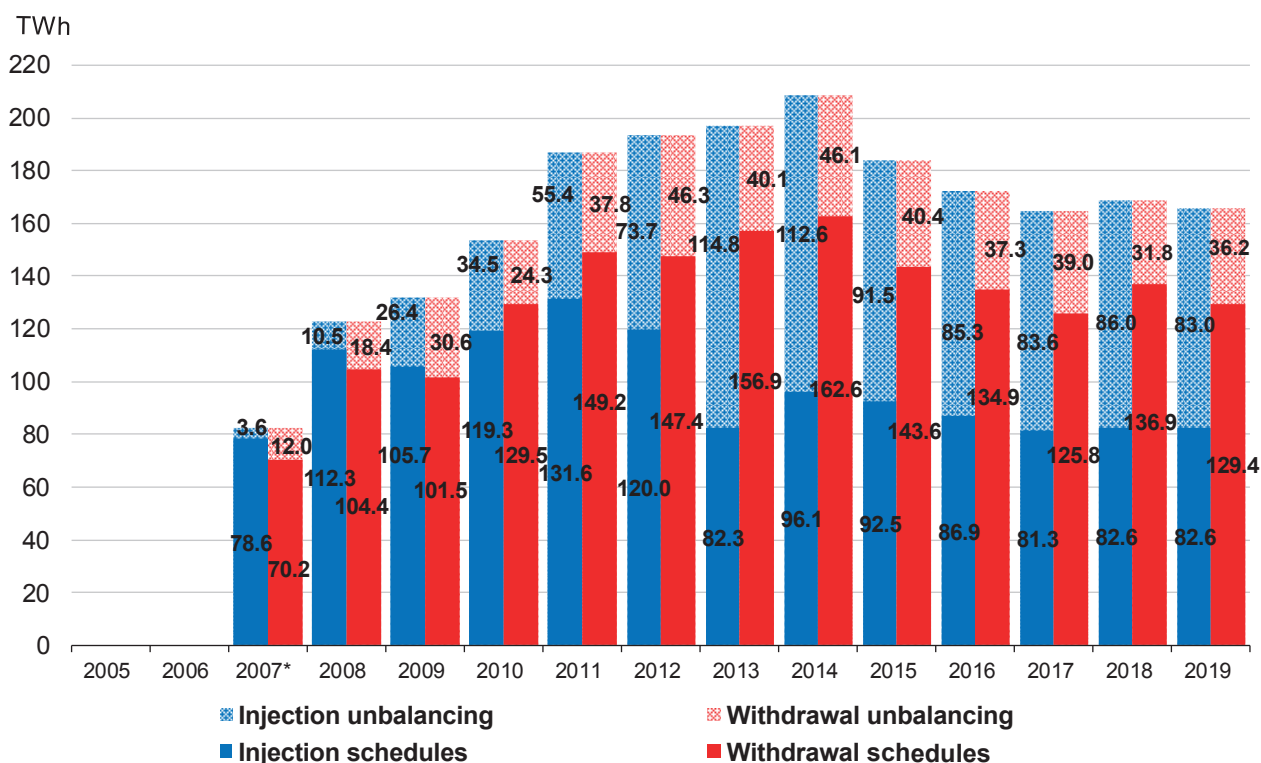


* Data starting from May 2007

Tab. 2.2.7 - Profile of registered transactions and schedules

REGISTERED TRANSACTIONS				SCHEDULES						
Profile	MWh	Change	Structure	Injection			Withdrawal			
				MWh	Change	Structure	MWh	Change	Structure	
Baseload	82,280,909	3.3%	28.0%							
Off Peak	974,293	4.1%	0.3%							
Peak	1,769,156	-14.9%	0.6%							
Week-end	1,200	78.3%	0.0%							
Standard Total	85,025,558	2.9%	28.9%							
Non-standard Total	206,892,365	-7.8%	70.4%							
Bilateral PCE	291,917,923	-5.0%	99.4%							
MTE	1,160,580	-4.2%	0.4%							
MPEG	701,254	-77.8%	0.2%							
CDE	-	-	0.0%							
Total	293,779,757	-5.7%	100.0%							
Net position	165,540,713	-1.8%								
				Requested	116,569,646	4.8%	100.0%	129,503,388	-6.3%	100.0%
				<i>of which with indication of price</i>	<i>59,069,682</i>	<i>5.1%</i>	<i>50.7%</i>	<i>31,395</i>	<i>164.4%</i>	<i>0.0%</i>
				Registered	82,564,481	-0.1%	70.8%	129,368,459	-5.5%	99.9%
				<i>of which with indication of price</i>	<i>25,092,648</i>	<i>-9.1%</i>	<i>21.5%</i>	<i>31,091</i>	<i>161.9%</i>	<i>0.0%</i>
				Rejected	34,005,165	18.7%	29.2%	134,928	-89.9%	0.1%
				<i>of which with indication of price</i>	<i>33,977,034</i>	<i>18.7%</i>	<i>29.1%</i>	<i>303</i>	<i>46,155.6%</i>	<i>0.0%</i>
				Schedules unbalancing	82,977,232	-3.5%		36,172,254	13.9%	
				Schedules balance	229	-		46,804,208	-13.7%	

Fig. 2.2.19 - Registered physical schedules and unbalance schedules



* Data starting from May 2007

Tab. 2.2.8 - MTE: volumes traded by trading year

	2011	2012	2013	2014	2015	2016	2017	2018	2019	Δ% 2019/2018
Contracts (MW)										
Total	8,228	12,697	6,096	4,550	1,004	411	518	391	596	52%
Baseload	6,018	11,633	4,604	4,410	899	323	449	357	561	57%
Peakload	2,210	1,064	1,492	140	105	88	69	34	35	3%
Volumes (TWh)										
Total	33.4	55.0	41.1	32.3	5.1	1.1	1.4	1.2	1.6	38%
Baseload	29.8	52.3	36.7	32.2	5.0	1.0	1.3	1.2	1.6	39%
Peakload	3.7	2.7	4.4	0.1	0.1	0.1	0.0	0.0	0.0	6%
Number of matchings										
Total	665	953	342	500	252	85	139	130	176	35%
Baseload	478	884	136	488	239	73	123	119	165	39%
Peakload	187	69	206	12	13	12	16	11	11	0%
OTC volumes share										
Total	5%	45%	81%	43%	0%	0%	0%	0%	0%	+0 p.p.
Baseload	6%	45%	90%	43%	0%	0%	0%	0%	0%	+0 p.p.
Peakload	1%	46%	0%	29%	0%	0%	0%	0%	0%	+0 p.p.

2.3. GAS MARKET IN ITALY

2.3.1. The context

SYSTEM DYNAMICS AND HUB PRICES. In 2019, natural gas consumption in Italy began to grow again, reaching 781 TWh (+2.3% compared to 2018), driven by the thermoelectric sector, at its maximum level of the last eight years (272 TWh, +10% compared to 2018) also thanks to a drop in electricity imports (-6%); this trend is only partially hindered by the reductions recorded in the civil and industrial sectors (335 TWh, -2% and 148 TWh, -2% respectively). The increase in demand was mainly absorbed *i)* by the increase to an all-time high of gas imports via regasification terminals (148 TWh, +61%), whose share of the total amount supplied rose to 16% (+6% and all-time-high record), in a context characterised by a substantially long global LNG market, in the presence of strong Asian supply and stable demand, with import costs dropping and more competitive compared to the corresponding prices of gas supplied through pipeline; *ii)* an increase to the highest values of the last seven years in the balance between injections and distributions in the storage systems (15 TWh, +10 TWh), confirmed as an important flexibility tool for adjusting consumption and balancing the network. As far as prices are concerned, the PSV price, like Brent and the main European and international gas references²⁶, reverses the upward trend recorded over the previous two years and drops to 16.28 €/MWh, just above the historical minimum level of 2016, falling by more than 8 €/MWh from the very high level of 2018. The bearish trend culminates in August 2019, when prices stood at the historical minimum levels (11.57 €/MWh), reducing beyond 18 €/MWh over twelve months (in September 2018 prices were just under 30 €/MWh). Similar trends recorded for other European prices: the reference to the TTF drops to its lowest level (13.58 €/MWh, -9 €/MWh), standing below the PSV during the year, with consequent widening of the spread with the Italian price at 2.70 €/MWh, the highest since 2013 (Fig. 2.3.1, Fig. 2.3.2, Fig. 2.3.4).

2.3.2. Spot Gas Market (MP-GAS)

VOLUMES. In 2019, the role of the spot gas market (MP-GAS) consolidated in a scenario that has as its background the balancing system started in October 2016 (in the third year of full operation). Trading in the MP-GAS, at the second important increase, rose to a record value of 79.0 TWh (+45%), fuelled by the remarkable performance of the two title markets, both at historic highs, in turn supported by the growing benefits of the Liquidity Providing mechanism introduced in 2018. This increase pushes the share of the total consumption to over 10% (+3.0% compared to 2018), with monthly peaks of 15-16% in July and August (Fig. 2.3.3).

► **Day-Ahead Gas Market (MGP-GAS).** The volumes in the MGP-GAS rise to 24.6 TWh (+88.9%), mainly traded in the day-ahead market (78% of the MGP-GAS) and represent over 30% of the total spot trades (+7 p.p. on annual basis). This growth, observed over the course of 2019, accelerated in the second half of the year, in which the highest monthly values ever were achieved. The activity started by Snam as TSO on an experimental basis in the MGP-GAS, starting from July and pursuant to the ARERA Resolution 57/2019/R/GAS, contributed to the increase, although not in such a crucial way as to explain the strongly bullish trend, which concerned volumes for 2.1 TWh (approximately 8% of the total traded).

²⁶ Reference is specifically made to the spot price of the Henry Hub (-19%) and the Asian LNG (-43%).

- **Intra-Day Gas Market (MI-GAS).** An enhanced upward trend in MI-GAS is also reported, rising to 41.1 TWh (+47%) on its fifth consecutive increase, confirming this segment as the most liquid in the MP-GAS sector (50% of the total spot trading). The increase was mainly supported by trading concluded between third party participants - other than the Person responsible for the Balancing (RdB) - which amount to the historical maximum level of 24.1 TWh (+80% compared 2018), exceeding for the first time the Snam operations for the purposes of balancing (17 TWh), which is in on the rise albeit to a reduced extent.
- **Market for the trading of gas stored (MGS).** The amounts traded in the MGS (13.4 TWh, -1%) are still decreasing and bucking the trend, the weight of which consequently decreases in terms of share on the total amount exchanged (17% of the total, -8 p.p.). The contraction is concentrated on the trading of third party participants, both in terms of purchase (-33%) and sale (-14%), thus neutralizing the increase in Snam's operations, both on the purchase side (6.8 TWh, +84%) and on the sales side (4.8 TWh, +36%), in particular for purposes different from balancing. Finally, in the MPL, also in 2019, no session was activated by Snam.

■ **PRICES.** Prices in the spot markets, after the peak recorded in 2018, drop to historic lows everywhere, reaching just above 16 €/MWh in the MGP-GAS and MI-GAS and close to 17 €/MWh in the MGS. The price trend confirms the close correlation between the prices of the two title markets and the PSV one (16.28 €/MWh). The differential²⁷ between the System Average Price (SAP)²⁸ and the PSV is stable on an annual basis at 0.2 €/MWh, with volatility for both references growing but on levels that are still contained (respectively 1.87% and 1.70%). The aforementioned dynamics are also reflected in an infra-annual analysis: the SAP and the PSV, which in January stood at around 24 €/MWh, in the first eight months of the year fell by over 12 €/MWh, reaching the lowest values ever in August (11-12 €/MWh), and closing 2019 at around 15 €/MWh in December. Different is the trend in the MGS price, confirming a different reactivity to exogenous phenomena, as a nature of this market, reaching levels lower than the two title markets in the months of January and February and higher between June and October, the period of injection into storage sites. In this last phase, the differential between the MGS and the other prices exceeds 4 €/MWh, a gap that has never been so high since the start of the new balancing system. The contained response of MGS prices to the signals of the system also explains their lower level of volatility compared to other markets (0.96%) (Tab. 2.3.1, Fig. 2.3.4).

■ **SNAM OPERATIONS.** The activity carried out as RdB and to supply the volumes of gas necessary to ensure operation of the system (TSO), in compliance with the provisions of the current regulation, entails a substantial participation of Snam in the MP-GAS, confirmed by the high percentage of volumes traded both in the title markets and in the MGS. Over the years, however, this share has shown a gradual decrease: in the two continuous trading markets, the amounts purchased and sold by Snam in 2019 represent 13% of the total, reducing around 5 p.p. on an annual basis mainly due to the growth in trade between third party participants, while its share on the MGS remains stable (45%, -1 p.p.), mainly concentrated on the purposes of Neutrality and other. The analysis of the operations carried out as RdB in the MI-GAS shows, in line with the operations of the previous year, a greater intervention by Snam, both in terms of volumes and frequency, in the presence of a short system. In such

²⁷ The differential is calculated only on the days when prices are available at the PSV.

²⁸ SAP is the average of the prices recorded in the MGP-GAS and in the MI-GAS weighted for the related matchings.

situations, Snam's purchases totalled 11.5 TWh (68% of the total amount traded), mainly along with a system imbalance included in the classes [31,400-60,000 MWh] for 4.3 TWh and [60,000-100,000 MWh] for 3.5 TWh. Less intense and less frequent interventions by the RdB in long system conditions, when Snam's sales totalled 5.3 TWh (31% of its total trade), also concentrated in the intermediate imbalance classes. Lastly, volumes traded by the RdB are not consistent with the sign of the imbalance, a circumstance which occurred in both short and long system conditions (in two and three cases respectively, for a total of 0.15 TWh) (Tab. 2.3.3).

MARKET CONCENTRATION. The growth in exchanges between participants other than Snam, also favoured by the Liquidity Providing mechanism in the MGP-GAS, has led to a significant improvement in competition on the title markets, especially on the purchasing side. In 2019, in fact, the market shares of the first participants (CR5) decreased in purchase to 41% (-12 p.p.), with a trend confirmed also excluding Snam's shares, and on the sale side to 39% (-5 p.p.). Opposite dynamics recorded in the MGS, in which, on the other hand, the reduced participation of extra-Snam participants favoured a decrease in the degree of competitiveness, both on the purchase and sale side (Tab. 2.3.2).

2.3.3. Other gas markets

MT-GAS. In 2019, the Forward Gas Market (MT-GAS) confirmed its growing trend already seen the previous year, both in terms of matching, with 726 registered trades, and volumes, for a total of 3.2 TWh (0.79 TWh in 2018), both at historic highs. The most traded products are the monthly ones, for a share equal to 76% of the total of the contracts traded and 69% of the volumes exchanged (Tab. 2.3.4).

P-GAS. In the P-GAS Royalties sector, 444,292 MWh were exchanged, all in the January sessions and referring to the March 2019 product, at an average price of 22.41 €/MWh, higher than the spot price at the PSV relating to the same time horizon (18.46 €/MWh). Still no exchanges, however, in the other sectors in which there are only orders submitted periodically and mainly determined by the obligation to bid.

PAR. Launched in April 2018, the PAR is the platform in which the procedures for allocating the regasification capacity are carried out at the terminals managed by the companies GNL Adriatico S.r.l., OLT Offshore Toscana S.p.A. and GNL Italia S.p.A. that have requested to use the services provided by GME. In the first year of full operation, a total of 80 slots were assigned on the platform referring to the product *Capacity no longer available in auction*, which amounted to 8.1 million liquefied m³ (1.4 million liquefied m³ in 2018), to an average price of around 5.5 €/liquefied m³. The most active auctions are those relating to the OLT Offshore Toscana S.p.A. and GNL Italia terminals, respectively with 4.5 and 3.6 million liquefied m³ allocated.

Fig. 2.3.1 - Natural gas consumption trend

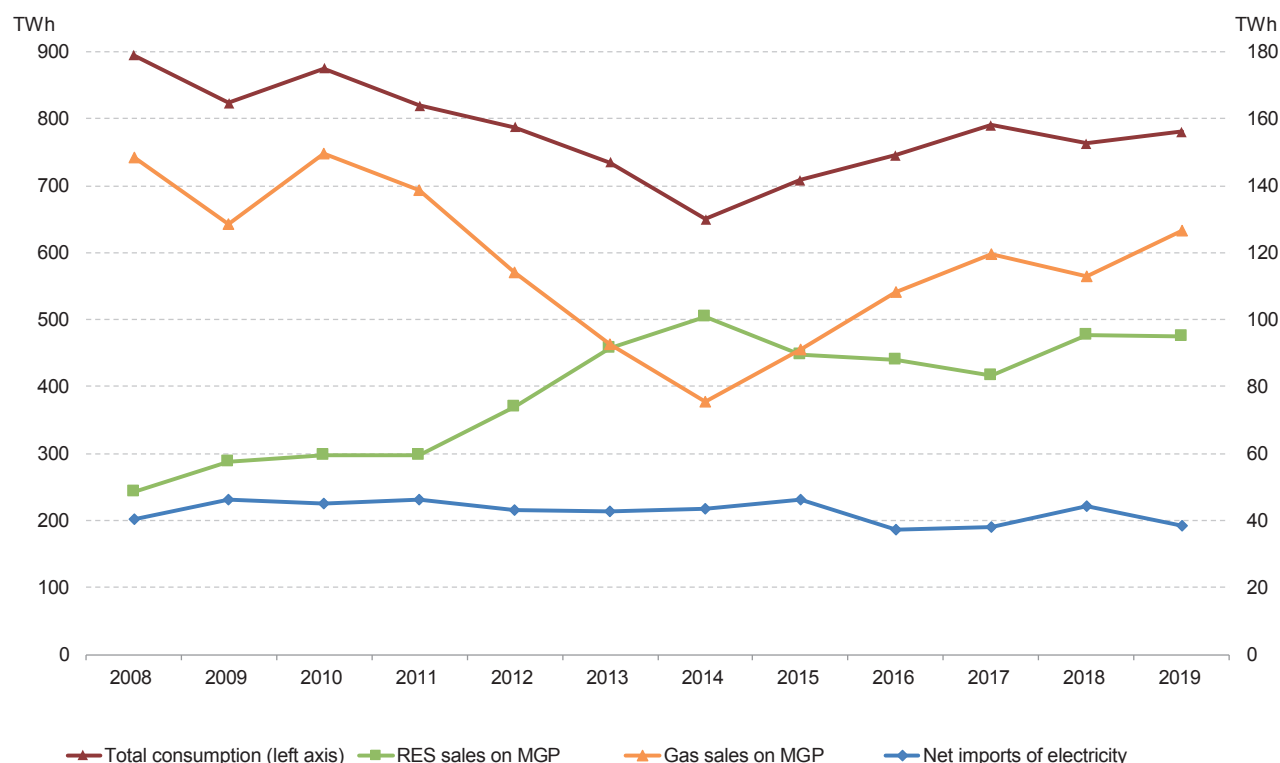


Fig. 2.3.2 - Gas import trend

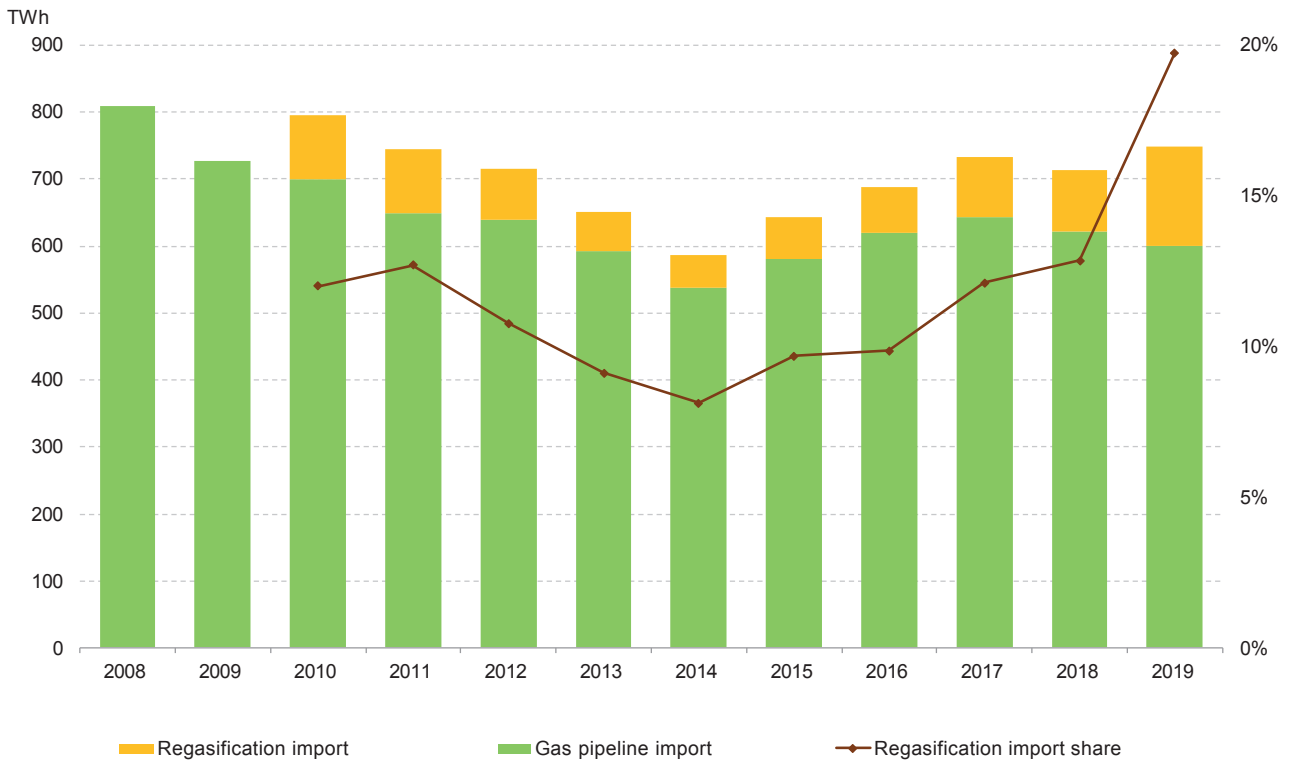


Fig. 2.3.3 - Trading trend

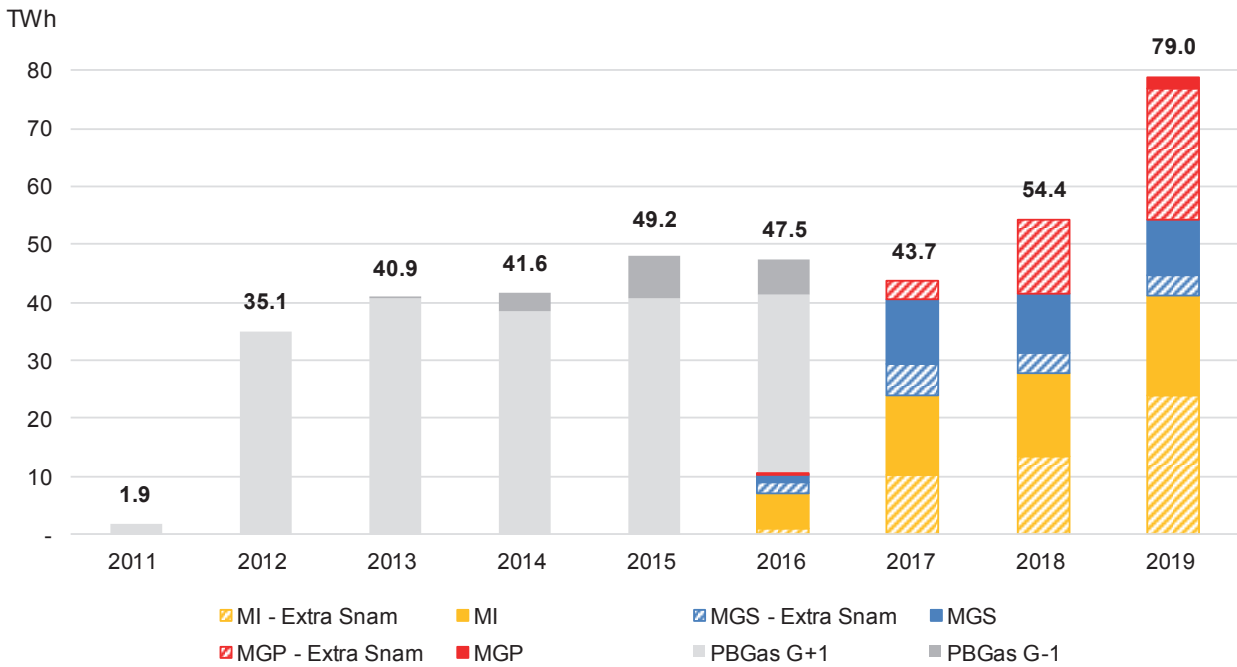
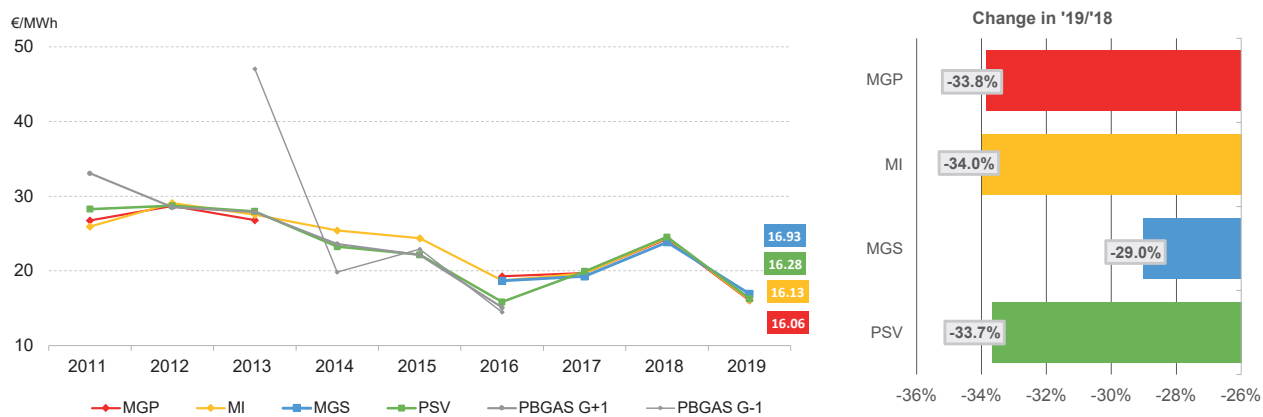


Fig. 2.3.4 - Price trend



Tab. 2.3.1 - Average price and volatility

Year	Average price*, €/MWh				Volatility			
	Markets Title (SAP)	MGS	PSV	TTF	Markets Title (SAP)	MGS	PSV	TTF
2016 (oct-dec)	19.45	18.71	19.17	17.27	3.12%	0.53%	1.03%	0.99%
2017 (oct-dec)	22.40	20.78	22.70	19.29	2.93%	0.55%	4.29%	0.64%
2017	19.96	19.30	19.95	17.38	1.66%	0.52%	1.74%	0.72%
2018	25.02	24.01	24.74	23.07	1.46%	0.56%	1.35%	1.33%
2019	16.45	16.97	16.28	13.58	1.87%	0.96%	1.70%	1.92%

* The average price and volatility are calculated considering the session date and only the gas days on which the listing on the PSV is available

Tab. 2.3.2 - Market shares. Year 2019

Indicators	Markets Title				MGS			
	Purchases		Sales		Purchases		Sales	
CR3	31.1%	(43.3%)	26.3%	(28.2%)	58.9%	(51.6%)	58.7%	(56.9%)
CR5	41.1%	(52.9%)	38.6%	(43.5%)	66.3%	(61.3%)	66.7%	(65.0%)
without Rdb	28.1%	(29.2%)	35.3%	(39.8%)	37.2%	(33.5%)	34.6%	(21.4%)

() The values of the previous year are shown in bracket

Tab. 2.3.3 - Snam operations in the MI-Gas. Year 2019

Unbalancing classes. MWh	Short System (negative residual unbalancing)							
	Unbalancing. MWh		Purchases. MWh			Sales. MWh		
	Average	N° cases	Average	% on unbal	N° matching	Average	% on unbal	N° matching
(0-15,000]	7,270	1,091	19,892	201%	27	50,208	5,205%	1
(15,000-31,400]	23,102	1,054	22,488	93%	83			
(31,400-60,000]	43,126	1,086	29,971	67%	145	24,336	70%	1
(60,000-100,000]	77,030	443	32,847	43%	108			
(100,000-200,000]	127,311	159	33,094	26%	35			
>200,000	220,470	1						
Total	34,873	3,834	28,782	53%	398	37,272	207%	2

Unbalancing classes. MWh	Long System (positive residual unbalancing)							
	Unbalancing. MWh		Purchases. MWh			Sales. MWh		
	Average	N° cases	Average	% on unbal	N° matching	Average	% on unbal	N° matching
(0-15,000]	7,725	965	28,260	532%	2	10,344	113%	8
(15,000-31,400]	22,786	994	19,992	74%	1	9,532	40%	6
(31,400-60,000]	43,759	1,008				18,226	37%	61
(60,000-100,000]	77,864	611				28,324	36%	85
(100,000-200,000]	133,855	502				26,510	19%	59
>200,000	245,178	86				21,442	9%	5
Total	50,424	4,166	25,504	204%	3	23,797	28%	224

Tab. 2.3.4 - Trading structure in the MT-GAS. Year 2019

Products	Matching		Volumes					
	N°	MW	%	MWh	%			
BoM	70	(77)	13,632	(10,872)	14.5%	201,768	(162,672)	6.3%
Monthly	542	(142)	71,832	(18,024)	76.3%	2,191,200	(550,968)	68.6%
Quarterly	114	(10)	8,712	(648)	9.3%	799,080	(58,968)	25.0%
Half-yearly		(2)		(96)	0.0%		(17,472)	0.0%
Yearly		-		-	-		-	-
Total	726	(231)	94,176	(29,640)	100.0%	3,192,048	(790,080)	100.0%

() The values of the previous year are shown in bracket

2.4. ENVIRONMENTAL MARKETS

2.4.1. Energy Efficiency Certificates Market (TEE)

THE CONTEXT. In 2019, the energy saving obligations of distributors rose to 6.20 million toe (compared to 5.57 million toe in 2018), leading to a cumulative amount of the certificates necessary for compliance purposes – calculated from the beginning of mechanism to the end of the year of obligation being analysed – at 68.74 million toe. In the current regulatory framework, which in the last two years has been characterised by a series of interventions by the competent institutions aimed at promoting the supply of new energy savings as well as ensuring market stability, the ability to issue new efficiency certificates has continued to record a gradual slowdown which is reflected in the widening of the gap between supply and demand. According to the estimate published by GSE²⁹, the volume of certificates that will be available at the end of the year of obligation 2019 (31 May 2020) amounts to around 4.1 million toe (-21% compared to the previous year), not sufficient to ensure the fulfilment of the minimum obligation envisaged for the current year of obligation (Tab. 2.4.1, Fig. 2.4.1).

VOLUMES AND LIQUIDITY. Within this context, overall exchanges of energy efficiency certificates, at the second major drop on an annual basis, have reached their lowest levels since 2012. The decrease was more consistent for bilateral contracts, which fell to 2.9 million toe (-37%), the lowest value in the last eight years and on a level equal to that recorded on the regulated market (MTEE), where, due to a less intense drop (-15%), liquidity rises close to 50% (+7 p.p. compared to the previous year). The intra-annual analysis of volumes shows a greater concentration of trading near the annual expiry of the obligations, a particularly evident trend especially in the context of the trading carried out on the bilateral platform, where around 30% of the total amount exchanged in 2019 was recorded in May (Fig. 2.4.2).

PRICES. The bullish effect induced in recent years by the scarcity of supply was mitigated by the aforementioned regulatory interventions in 2019, aimed at stabilising the whole TEE mechanism and containing price volatility. The definition of a maximum value of recognition of the unit tariff contribution to cover the costs incurred by the obliged parties, amounting to 250 €/toe, as a tool for containing prices, as well as the possibility for GSE to release to the obliged parties – who request it and which meet the conditions identified by the reference legislation³⁰ – virtual certificates for the achievement of the minimum annual obligation, have fuelled a general decrease in the prices of efficiency certificates. Therefore, these prices reverse the intense growing trend recorded in recent years, falling in 2019 on the MTEE to an average level of 260 €/toe similar to that recorded in 2017 (-14% from the historical maximum level of the previous year), in line with the maximum purchase cost of the so-called "Virtual certificates" required by law. This decrease is concentrated in the first part of the year, when compared to the first half of 2018, a decrease of 23% is recorded: the intra-annual analysis highlights, in fact, as market prices were stable at around 260 €/toe over the course of 2019, with slight fluctuations in June and November and with a substantial cancellation of their variability, confirmed by a spread between the minimum and maximum price on the lowest values ever and by a volatility index close to zero.

The average price recorded on the bilateral platform also fell (243 €/toe, -13%), the differential

²⁹ GSE, Rapporto Annuale Certificati Bianchi 2019, p. 49.

³⁰ Upon request of the obligated party, owning at least 30% of the certificates necessary to achieve its minimum obligation (60% of the obligation of year "n") on its ownership account, GSE shall issue certificates not deriving from the completion of energy efficiency projects (so-called "virtual certificates") to a unit value equal to the difference between 260 €/toe and the value of the definitive unit contribution relating to the year of obligation. Such difference cannot exceed 15€/toe.

of which with the corresponding market level is below 18 €/toe. This gap drops to about 7 €/toe, taking as reference only the bilateral transactions recorded at a price above 1 €/toe, confirmed in 2019 on a share equal to 96% of the total, among the highest ever. Finally, a higher volatility is recorded on the bilateral platform which, although decreasing compared to the previous year, is equal to 17% excluding the registrations made at 0 €/toe (Fig. 2.4.3, Fig. 2.4.4, Fig. 2.4.5).

MARKET CONCENTRATION. The picture of the regulated market in terms of concentration reflects the structure at the basis of the incentive mechanism, confirming a low competitiveness on the purchase side, mainly populated by the obliged parties, and a higher competitiveness on the sales side, characterised by a higher participation. In 2019, along with the substantial contraction in trade, there was a slight worsening of the competitiveness rates on the purchase side (+5 p.p.), which instead stood at levels in line with the average of previous years on the sales side (Fig. 2.4.6).

2.4.2. Guarantees of Origin Market (GO)

VOLUMES AND LIQUIDITY. In an evolving incentive system, the Guarantee of Origin mechanism shows a bullish trend in terms of volumes, and therefore of participation, and a bearish one in terms of prices. On the Guarantees of Origin market (MGO), volumes traded exceed their historic maximum level for the third consecutive year, with 2.8 TWh (+8%), with the market liquidity remaining contained, against a more intense growth of exchanges on the bilateral platform (59.2 TWh, +28%), also at record levels. In 2019, the structure of exchanges by year of production confirms a majority share of volumes relating to the current production year (64%) on the MGO, distributed over the entire trading period. Like the previous years, this phenomenon does not involve the bilateral platform (PBGO), where participants continue to concentrate trade in the months close to the expiry of the trading period (January-March) on products referring to the year of previous production. A standstill scenario only for auction allocations, dropping to 22.7 TWh (-11%), with a share of the total amount traded down to 27% (-8 p.p. compared to 2018), to the benefit of the PBGO (70% of the total amount traded, +8 p.p.). The composition of the exchanges by type of renewable source for the titles referring to the year of production 2019 shows a more uniform distribution on the MGO compared to last year, with the share of the three main categories (Hydroelectric, Wind and Other) around 30% (in 2018, the hydroelectric type alone was 45%). In the PBGO, the certificates referring to hydroelectric production are once again the most liquid (59%), although decreasing (-8 p.p.), for a remarkable increase in the Wind energy category (25%, +11 p.p.). Finally, in GSE allocation auctions, the Solar type returns to be the most relevant (43%, +13 p.p.) mainly at the expense of Other (38%, -14 p.p.) (Fig. 2.4.7, Fig. 2.4.8, Fig. 2.4.11).

PRICES. In 2019 the average prices of MGO and the GSE auctions reverse the trend of the previous years and mark an important drop on an annual basis, reaching, however, the second highest value ever (MGO: 0.47 €/MWh, -54%; GSE auction: 0.84 €/MWh, -39%). On the other hand, the growth of bilateral prices continues to rise to an all-time high of 0.71 €/MWh (0.80 €/MWh without transactions at a price of 0 €/MWh), reversing the sign of the differential for the first time with the market price. On a monthly basis, the prices of the PBGO are, with a few exceptions, always above the corresponding market values - whose minimum is recorded in December (0.19 €/MWh) - exceeding in June also the allocation price reported by

the GSE auction (0.91 €/MWh compared to 0.61 €/MWh). The analysis by year of production³¹ highlights *i)* significant changes in the dynamics especially in the PBGO, where there is a substantial sterilisation of the increases recorded in the calendar year; *ii)* similar dynamics for the different sources and for the three platforms, with prices everywhere falling compared to those of the previous production period (Fig. 2.4.9, Fig. 2.4.10).

Tab. 2.4.1 - Certificates needed to comply with the obligation

Year of obligation	Actual obligations Total Distributors	Actual obligations Electricity Distributors	Actual obligations Gas Distributors	Cumulative total for fulfillment (Mtep)	Certificates issued from the launch of the mechanism	Delta Certificates issued-Obligation	Certificates issued January-May**	Available Certificates at the end of the Year
	(Mtep/a)	(Mtep/a)	(Mtep/a)		(Mtep)	(Mtep)	(Mtep)	(Mtep)
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	6.26
2013	5.51	3.03	2.48	27.62	28.17	0.55	4.19	8.21
2014	6.75	3.71	3.04	34.37	34.65	0.28	2.38	8.20
2015	7.75	4.26	3.49	42.12	40.04	-2.08	2.32	7.76
2016	9.51	5.23	4.28	51.63	47.57	-4.06	3.61	8.97
2017	5.34	2.39	2.95	56.97	53.62	-3.35	2.62	6.22
2018	5.57	2.49	3.08	62.54	58.72	-3.82	2.23	5.20
2019	6.20	2.77	3.43	68.74	62.25*	-6.49	1.54*	4.11*
2020	7.09	3.17	3.92	75.83				

* The data is calculated on the basis of the estimate of the number of available certificates published by the GSE in the Rapporto Annuale Certificati Bianchi 2019. The number of certificates issued as at 31 December 2019 is equal to 60.72 million toe.

** Number of certificates issued between January and May of each year of obligation.

³¹ Year of production shall mean the period from April to the following March. For the 2019 year of production data are calculated until 31 December 2019.

Fig. 2.4.1 - Available certificates and obligations

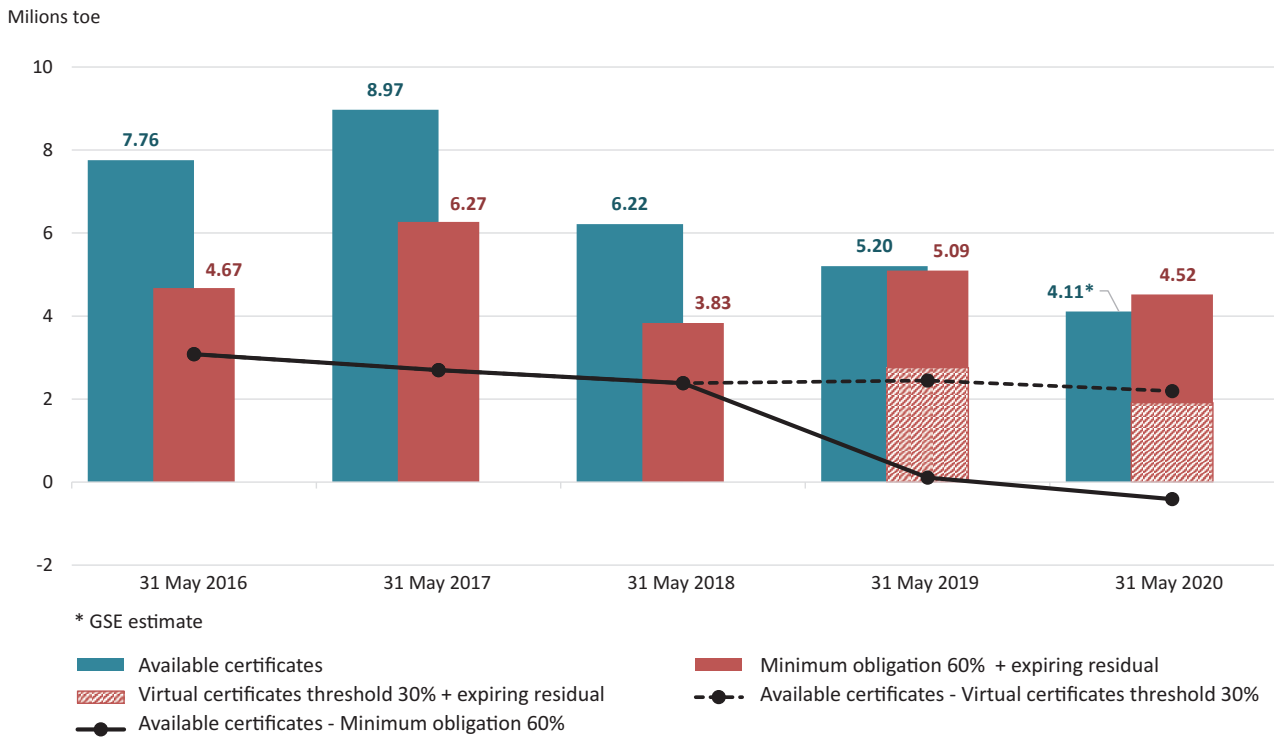
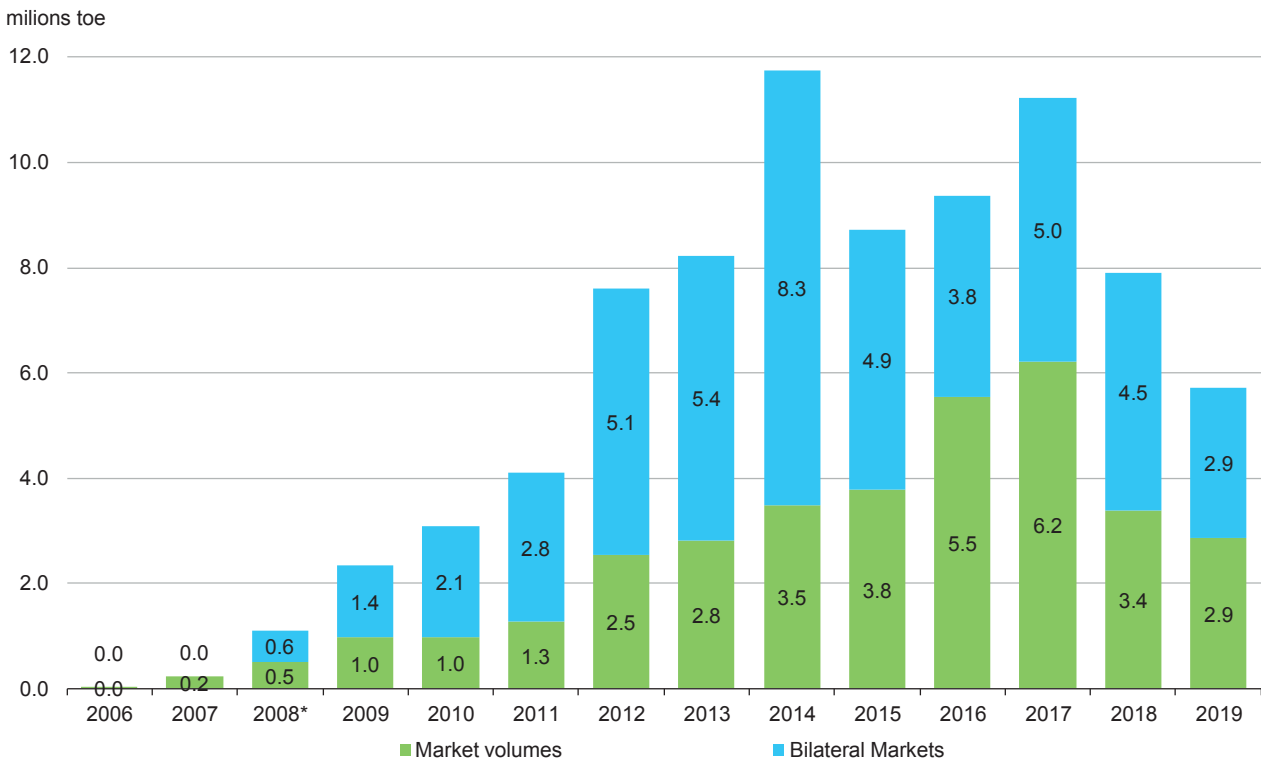
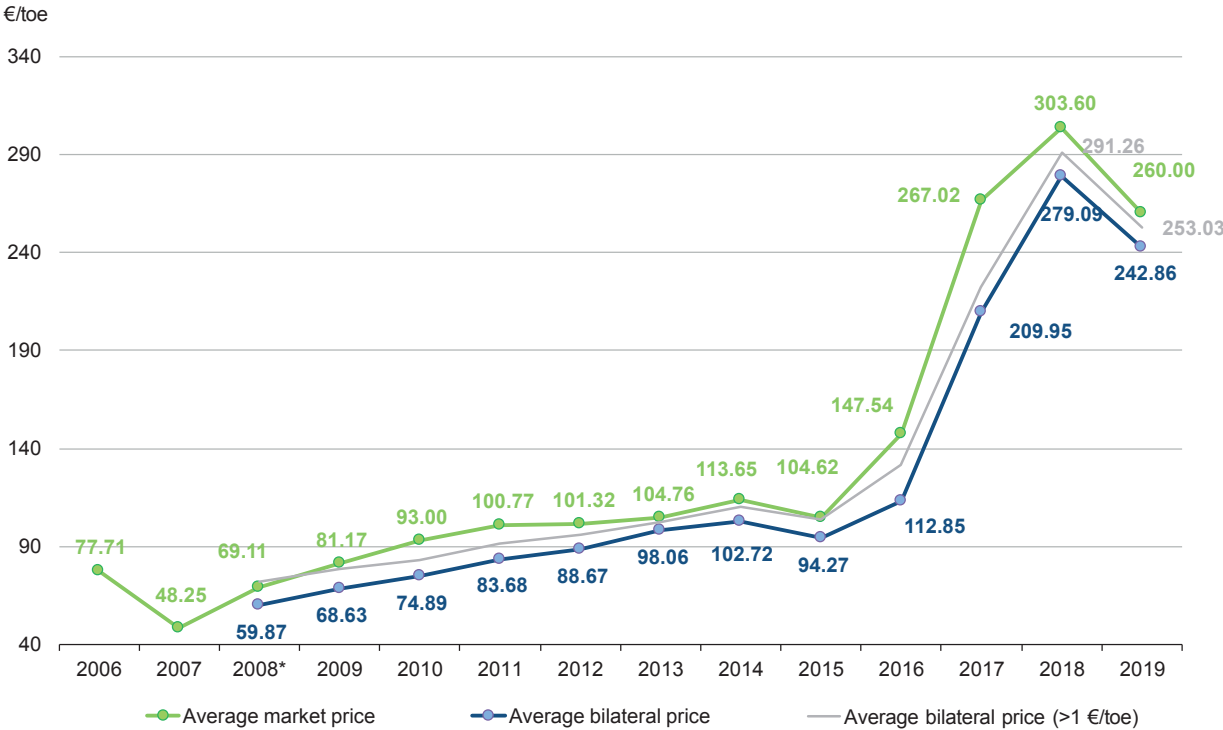


Fig. 2.4.2 - Volumes traded - TEE



* The data on bilateral prices are available starting from 1 April 2008, when the obligation to communicate the price of bilateral transactions came into force through the TEE Register managed by GME, introduced by ARERA Resolution no. 345/07.

Fig. 2.4.3 - TEE prices. Annual average



*The data on bilateral prices are available starting from 1 April 2008, when the obligation to communicate the price of bilateral transactions came into force through the TEE Register managed by GME, introduced by ARERA Resolution no. 345/07.

Fig. 2.4.4 - MTEE price session trend. Year 2019

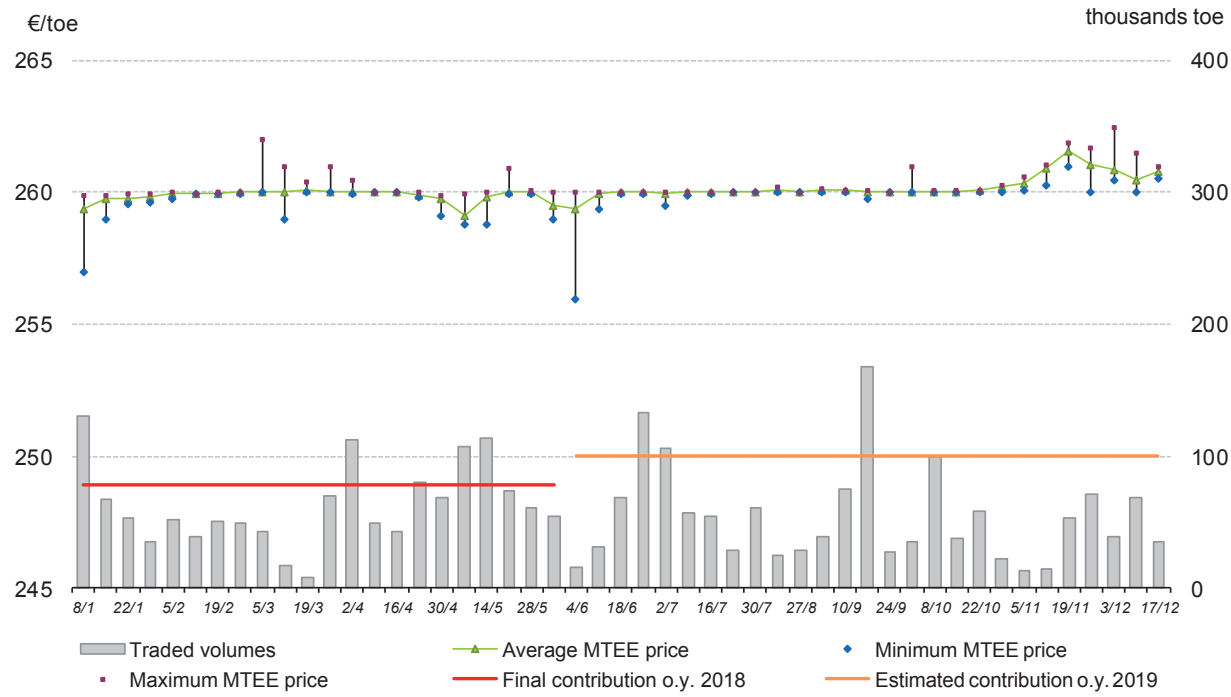
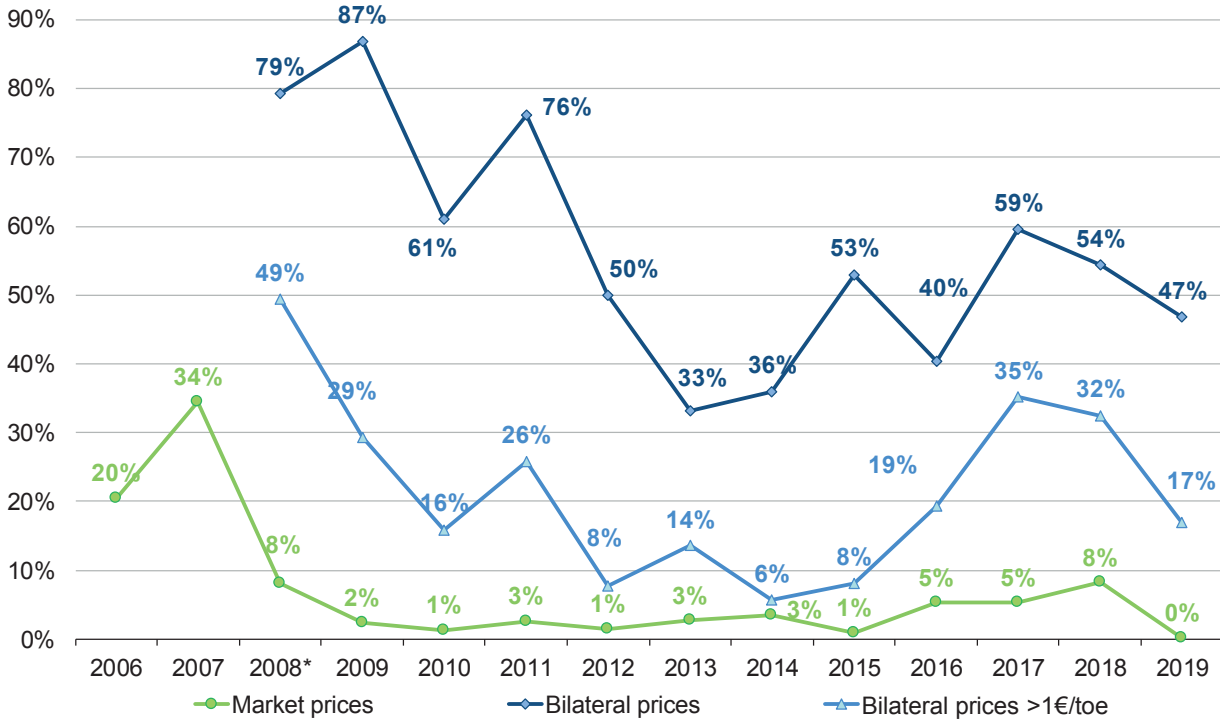


Fig. 2.4.5 - Price volatility - TEE



* The data on bilateral prices are available starting from 1 April 2008, when the obligation to communicate the price of bilateral transactions came into force through the TEE Register managed by GME, introduced by ARERA Resolution no. 345/07.

Fig. 2.4.6 - Market concentration



Fig. 2.4.7 - GO - Volumes traded

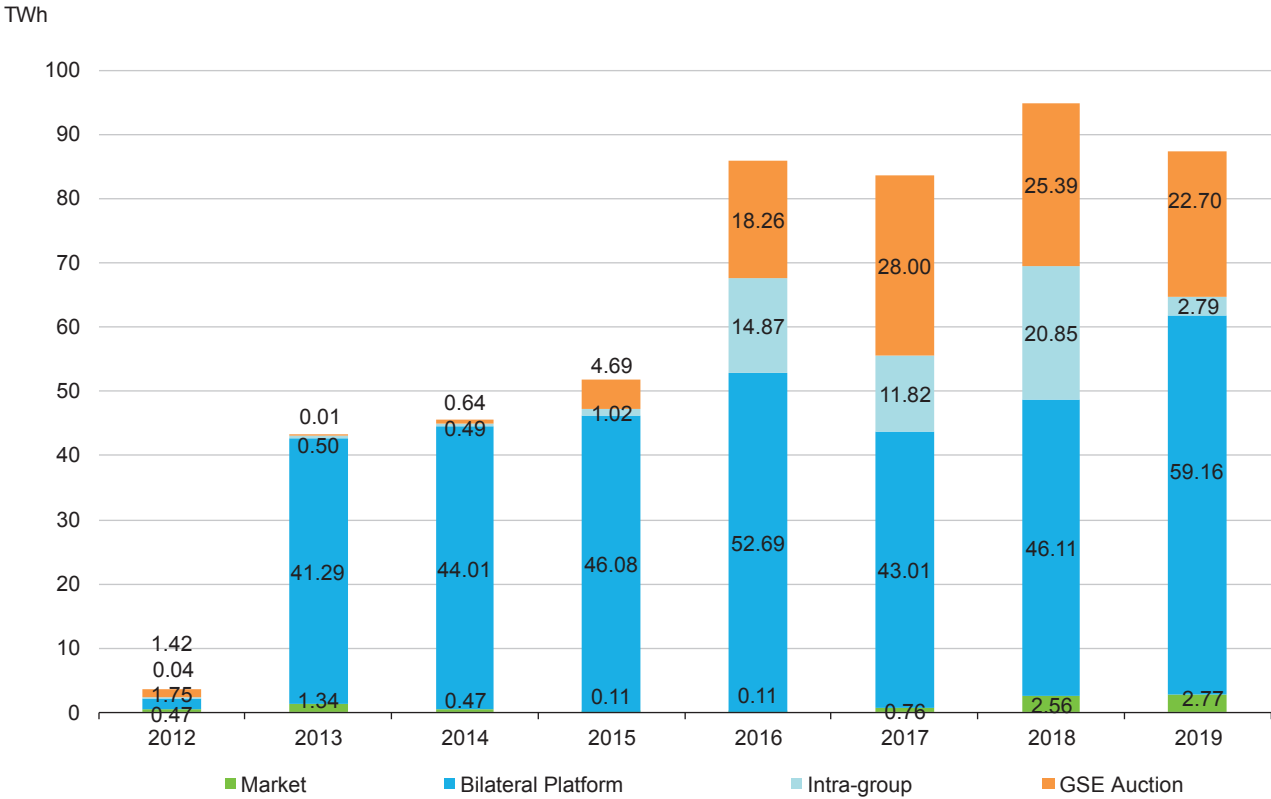


Fig. 2.4.8 - Structure of volumes traded by year of production

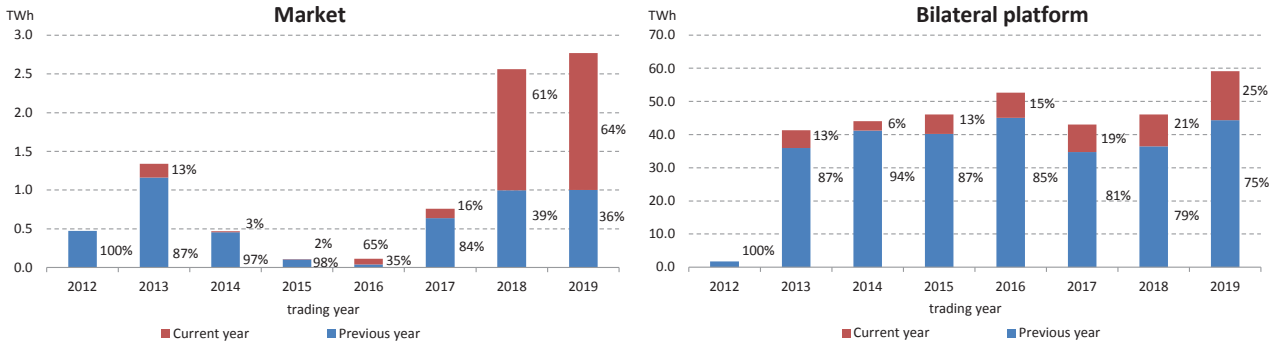


Fig. 2.4.9 - GO prices. Annual average

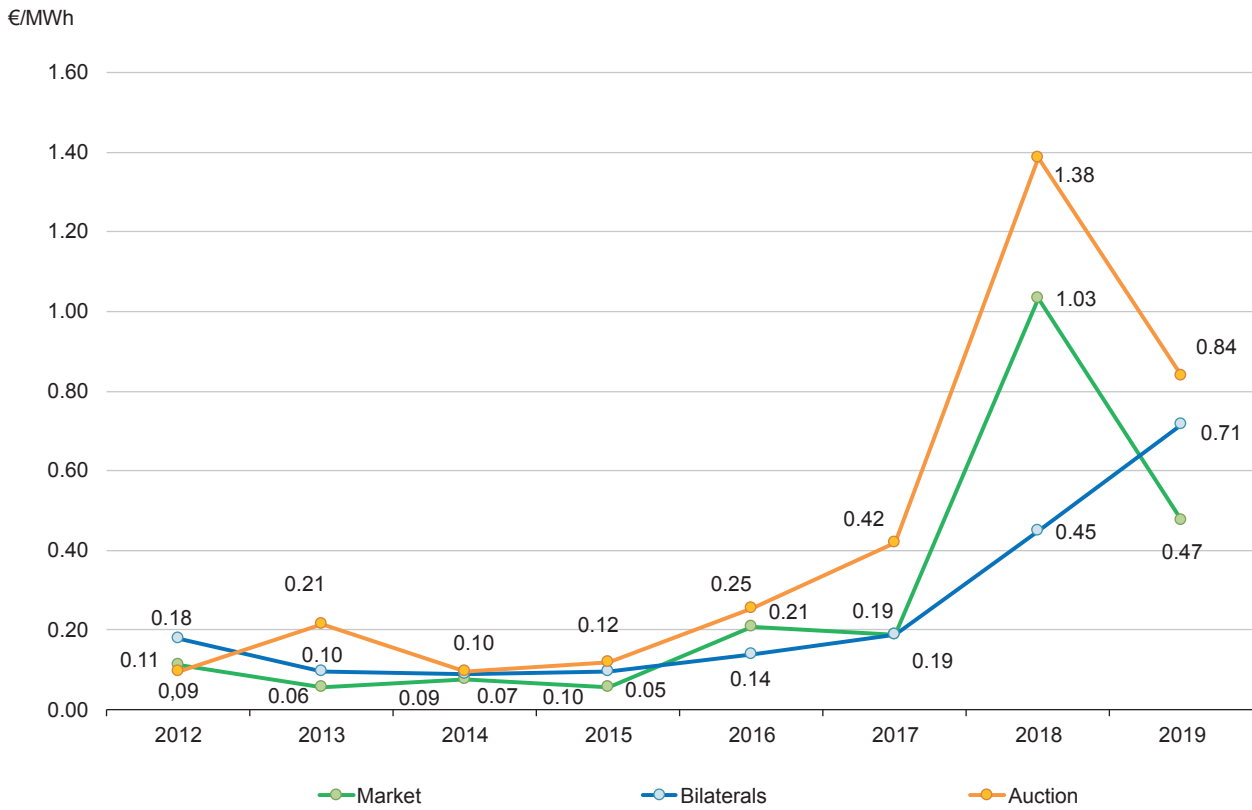
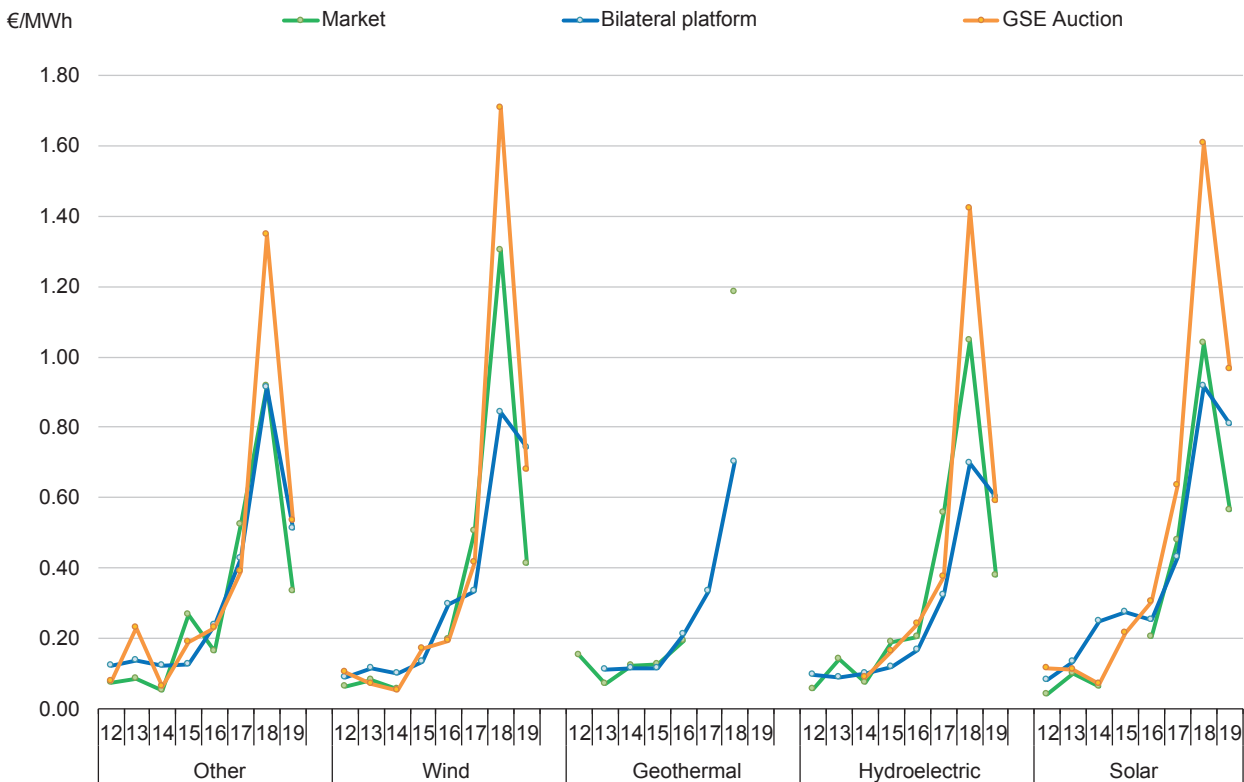
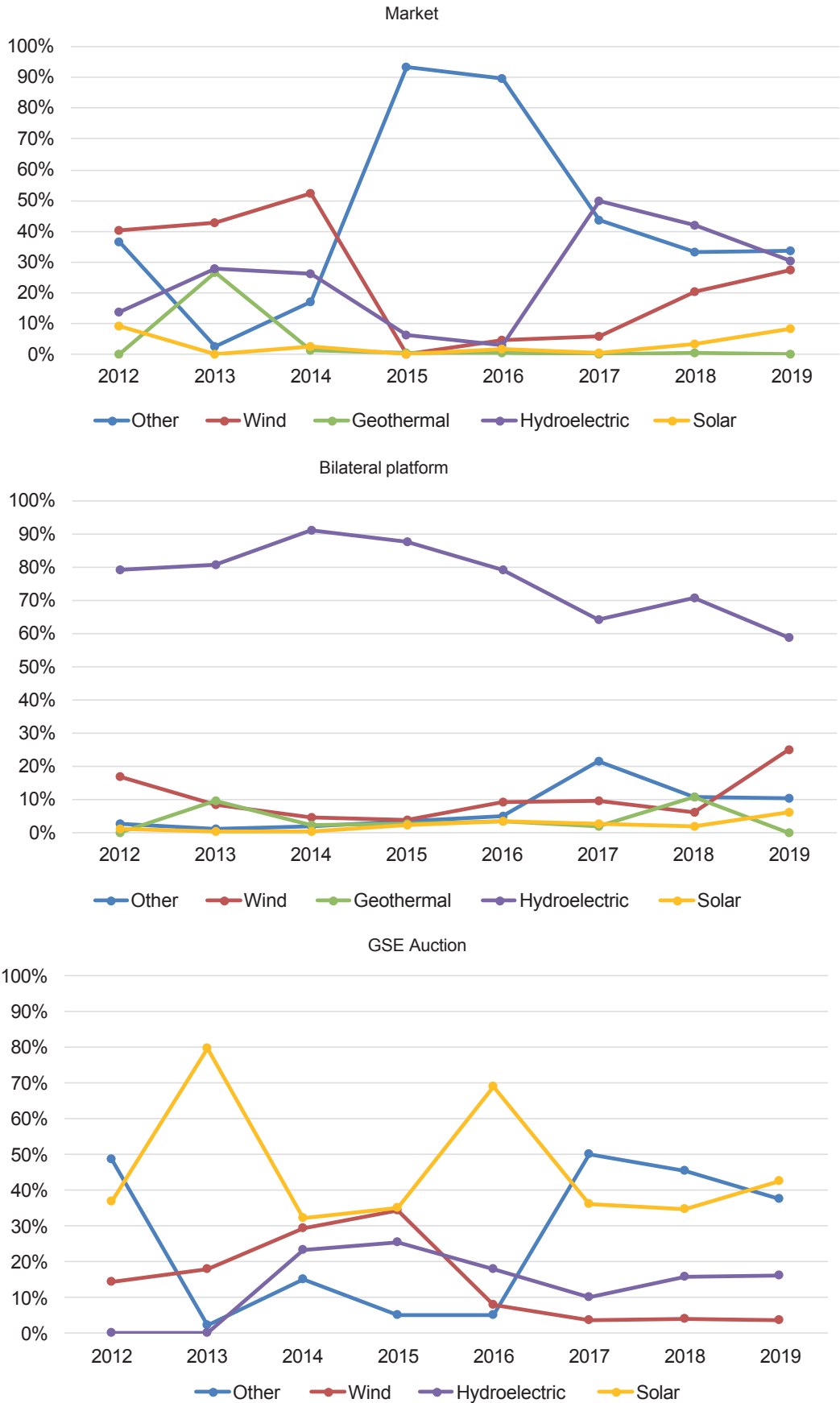


Fig. 2.4.10 - GO prices by type and year of production³²



³² The data relating to the year of production 2019 are calculated as of 31 December 2019.

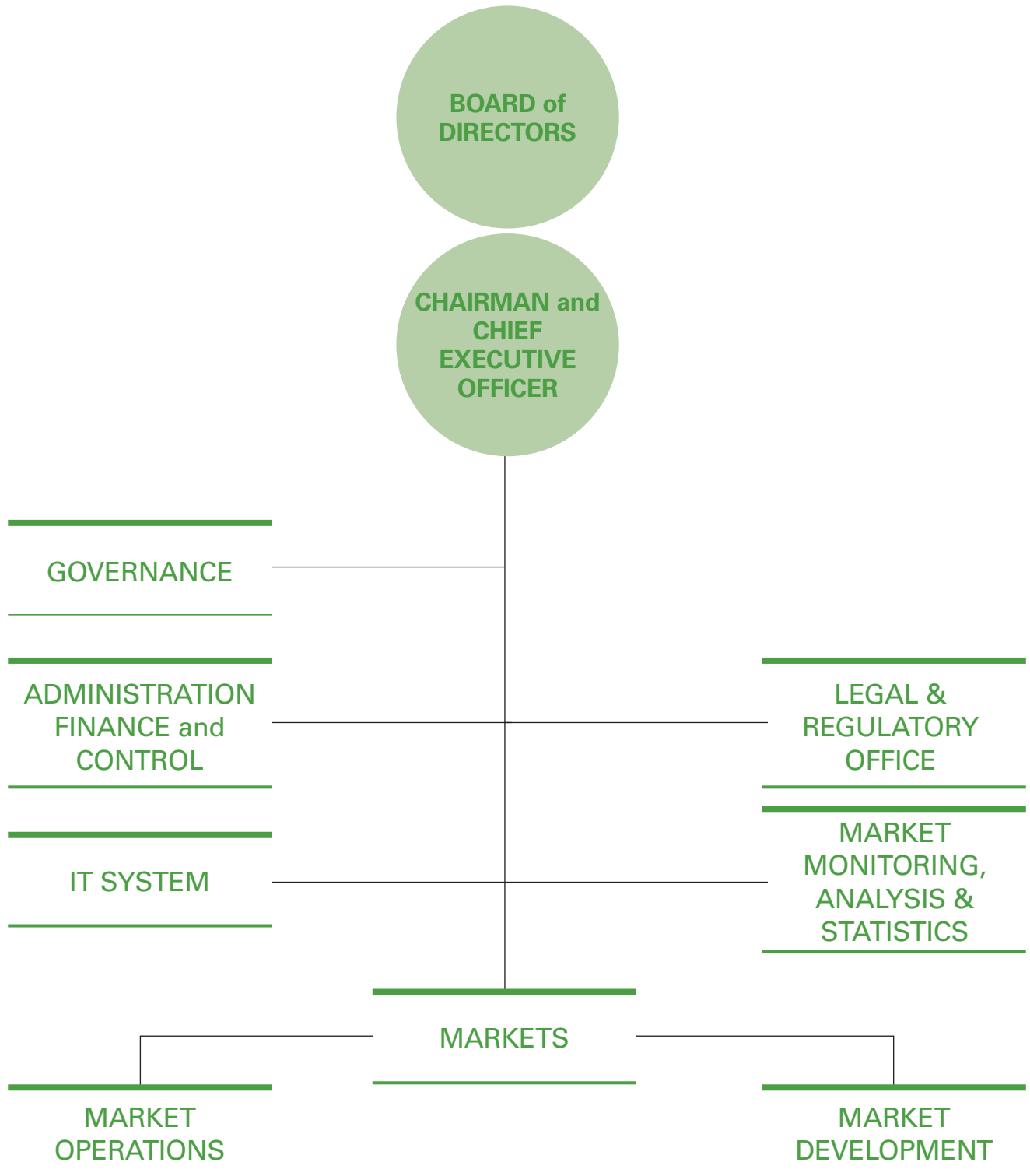
Fig. 2.4.11 - Structure of volumes traded. Year of production 2019³³



³³ The data are calculated as of 31 December 2019.

Appendix 1

GME
organisational
structure



Appendix 2

Markets rules

Markets rules

	ELECTRICITY MARKET				GAS MARKET		
	MPE	MTE	PCE	MGP-GAS MI-GAS	MGS	MPL	MT-GAS
Participation	Voluntary on MGP, MI and MPEG Mandatory on MSD	Voluntary	Voluntary	Voluntary	Voluntary	Voluntary	Voluntary
Requirements for admission to markets and participation in trading*	Ownership of an energy account to deliver a net position required	Ownership of an energy account to deliver a net position required	Only dispatching users and persons authorised by them are admitted	Need to be a PSV user to operate	Need to be a PSV and storage services user to operate	Need to be a PSV user and to be entitled to submit offers at point of offers of the transport network to operate	Need to be a PSV user to operate
Traded product	Hours MGP, MI1: 1 am - 00 am MI2: 1 am - 00 am MI3: 4 am - 00 am MI4: 8 am - 00 am MI5: 12 pm - 00 am MI6: 4 pm - 00 am MI7: 8 pm - 00 am MPEG Daily (with baseload and peakload profile)	Annual, Quarterly, Monthly (with baseload and peakload profile)	OTC contracts	Daily	Daily	Daily	BoM, Monthly, Quarterly, Half-yearly, Annual (both thermal and calendar)
Trading method	Auction; continuous trading (MPEG)	Continuous trading	Bilateral trading	Continuous trading/ Auction (AGS)	Auction	Auction	Continuous trading
Price rule	Marginal zonal price on MGP and MI Pay as bid on MSD	Pay as bid	N/A	Pay as bid/ Marginal price (AGS)	Marginal price	Marginal price	Pay as bid
Guarantees	Bank guarantee and/or cash deposit		Bank guarantee. Cash deposit only in cases of necessity and urgency	Bank guarantee and/or cash deposit	Bank guarantee and/or cash deposit	Bank guarantee and/or cash deposit	Bank guarantee and/or cash deposit
Central counterparty	GME on MGP, MI and MPEG Terna on MSD	GME	GME (only for CCT)	GME	GME (from 1° April 2017)	GME (from 1° April 2017)	GME
Payments	W+1 (from 1° December 2016) for MGP and MI M+2 for MPEG	M+2	W+1 (from 1° December 2016)	W+1 for transactions (from 1° September 2016) M+3 for the closure of non-delivered positions	W+1 for transactions M+ for the closure of non-delivered positions	W+1 for transactions M+ for the closure of non-delivered positions	W+1 for transactions (from 1° September 2016) M+3 for the closure of non-delivered positions

* The requirements for participation in the markets are indicated in the rules and regulations of each market.

PGAS			MTEE	MGO
Import	Virtual storage	Royalties		
Mandatory (sales side)	Mandatory (sales side)	Mandatory (sales side)	Voluntary	Voluntary
PSV users subject to the obligation to bid for import shares	PSV users participating in the virtual storage service	PSV users subject to the obligation to bid by royalties	Need to register an account in the TEE Register for trading on the MTEE	Need to register an account in the GOs Register for trading on the MGO
Monthly, Annual	Monthly, Half-yearly	Monthly	Single order book for unified type (1 TOE)	Certificate by type of source (1MWh)
Continuous trading	Continuous trading	Auction	Continuous trading	Continuous trading
Pay as bid	Pay as bid	Marginal price	Pay as bid	Pay as bid
Defined by each selling participant	Defined by each selling participant	Defined by each selling participant	Cash deposit to cover total purchases	Cash deposit to cover total purchases
N/A Invoicing and payments between participants	N/A Invoicing and payments between participants	N/A Invoicing and payments between participants	GME	GME
Deadline defined by each selling participant	Deadline defined by each selling participant	Deadline defined by each selling participant	D+3	D+3

Appendix 3

Statistical data

Tab. 1 - Traded volumes

TWh	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Change 19/18
ELECTRICITY MARKETS											
MGP	318.56	311.49	298.67	289.15	281.98	287.13	289.70	292.20	295.56	295.83	+0.1%
Exchange	199.45	180.35	178.66	206.90	185.85	194.59	202.82	210.92	212.93	213.26	+0.2%
Bilaterals	119.11	131.15	120.00	82.25	96.13	92.54	86.88	81.28	82.63	82.56	-0.1%
MI/MA	14.61	21.87	25.13	23.34	22.79	24.92	28.01	25.35	25.38	26.37	+3.9%
MI1	9.47	14.47	15.99	12.80	12.23	12.91	15.04	13.81	13.35	12.73	-4.7%
MI2	5.15	5.38	6.21	6.07	6.47	6.15	6.97	5.45	4.53	4.44	-2.1%
MI3		1.22	1.72	2.00	2.01	2.39	2.50	2.38	3.34	4.19	+25.5%
MI4		0.80	1.21	2.47	2.09	1.22	1.20	0.78	0.93	1.20	+28.9%
MI5						2.24	2.31	1.12	1.15	1.40	+21.3%
MI6								1.47	1.59	1.82	+14.0%
MI7								0.34	0.48	0.61	+27.1%
MA											
MTE	6.29	33.44	54.96	41.10	32.27	5.09	1.07	1.36	1.19	1.64	+37.5%
Exchange	6.29	31.67	30.36	8.00	18.40	5.09	1.07	1.36	1.19	1.64	+37.5%
OTC clearing	-	1.77	24.60	33.10	13.87	-	-	-	-	-	
MPEG							0.00	3.93	3.16	0.70	-77.8%
PCE*	236.48	290.82	307.61	325.50	345.72	354.47	342.14	302.83	311.57	291.74	-6.4%
GAS MARKETS											
MGAS	0.00	0.16	0.17	0.02	0.10	1.01	10.69	43.92	55.16	82.17	+49.0%
MGP	0.00	0.15	0.14	0.01	0.00	0.00	0.33	3.28	13.01	24.56	+88.9%
MI	-	0.01	0.04	0.00	0.10	1.01	7.09	23.83	27.86	41.05	+47.3%
MTGAS				-	-	-	-	0.19	0.79	3.19	+304.0%
MGS							3.27	16.63	13.50	13.37	-1.0%
MPL							-	-	-	-	
PB-GAS		1.71	34.93	40.88	41.52	48.19	36.79				
Segment G+1		1.71	34.93	40.83	38.58	40.86	30.57				
Segment G-1				0.05	2.94	7.33	6.22				
P-GAS	2.14	2.91	2.87	0.62	-	-	-	1.95	2.43	0.44	-81.7%
Import	0.00	-	-	-	-	-	-	-	-	-	
Former Legislative Decree 130/10				-	-	-	-	-	-	-	
Royalties	2.14	2.91	2.87	0.62	-	-	-	1.95	2.43	0.44	-81.7%
ENVIRONMENTAL MARKETS											
CV	25.37	31.09	32.33	44.81	43.05	36.78	9.23				
Exchange	2.58	4.13	3.81	7.57	8.20	6.95	1.26				
Bilaterals	22.79	26.97	28.52	37.25	34.85	29.84	7.98				
TEE	16.51	21.91	40.73	44.04	62.88	46.67	50.15	60.04	42.30	30.60	-27.7%
Exchange	5.24	6.83	13.56	15.06	18.66	20.21	29.64	33.26	18.03	15.27	-15.3%
Bilaterals	11.27	15.08	27.17	28.98	44.22	26.45	20.52	26.78	24.27	15.33	-36.9%
GO			2.22	42.63	44.48	46.18	52.80	43.77	48.67	61.93	+27.2%
Exchange			0.47	1.34	0.47	0.11	0.11	0.76	2.56	2.77	+8.2%
Bilaterals			1.75	41.29	44.01	46.08	52.69	43.01	46.11	59.16	+28.3%

* Contracts registered in the PCE by trading year, net of the contracts related to the MTE (including OTC clearing) and to the CDE

Tab. 2 – Registered participants

Registered participants no.*	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Change 19/18
ELECTRICITY MARKETS											
IPEX	207	192	200	223	254	264	245	258	269	282	+13
PCE	205	208	259	287	317	321	321	331	332	350	+18
GAS MARKETS											
MGAS	20	33	42	66	71	88	158	179	186	201	+15
PB-GAS		60	65	74	86	96	107				
P-GAS	53	61	72	77	78	80	86	85	85	80	-5
ENVIRONMENTAL MARKETS											
MCV**	620	675	745	852	901	908	911				
PBCV**	969	1,082	1,177	1,381	1,466	1,509	1,509				
MTEE	334	379	447	588	838	1,055	1,281	1,499	1,558	1,623	+65
TEE Register	421	513	635	866	1,196	1,469	1,775	2,155	2,307	2,409	+102
MGO			180	262	291	299	325	396	469	651	+182
PBGO			219	324	359	374	405	509	713	1,022	+309

* The number of registered participants refers to the figure calculated as at 31/12 of each year.

** The number of registered participants for the year 2016 refers to the figure calculated as at 30/06.

ANNUAL REPORT 2019

ΑΝΝΟΥΑΤ ΚΕΦΑΛΑΙΟ 2019



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