



ANNUAL REPORT 2013



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EXECUTIVE SUMMARY

2013 was, again, a demanding year for European economies and, in particular, for energy markets. In spite of timid signs of recovery in the second half of the year, the long recession that has hit Europe since 2008 has not subsided yet. In fact, it continued to have inevitable repercussions on energy markets, with a contraction of consumption, favoured among others by oil prices at still high levels, and a reduction of prices. The share of non-schedulable renewable energy sources (hereafter "non-schedulable renewables") in electricity generation continued to grow, albeit at a slower pace. Indeed, security problems arising in the national electricity sectors and the persistent financial crisis led many countries to progressively reconsider their renewable-energy support schemes.

Moreover, the year 2013 confirmed a progressive convergence of European gas prices towards the levels of the Dutch hub TTF, which is increasingly qualifying as the European benchmark hub, with a role comparable to the one of the North-American Henry Hub.

The energy markets managed by GME obviously reflected the impacts of these systemic phenomena. In the electricity sector, the collapse of final consumption recorded by Terna (317 TWh, -3%), which went back below its 2003 levels, and the further growth of non-schedulable renewables (41 TWh, +21%) further drove the volumes traded on the different markets downwards, albeit to a different extent. Intra-Day Markets

(MI) showed major reductions; the growth of volumes recorded in the past three years ground to a halt (23 TWh, -7%) owing to the contraction of the more liquid session of the MI1. Likewise, volumes on the forward market (MTE) dropped to 41 TWh (-25%), reversing their fast growth in the past two years as a consequence of a drop of volumes directly traded on the market (8 TWh, -74%), only partially offset by the further growth of OTC clearing (33 TWh, +35%). Only the Day-Ahead Market (MGP) was in clear countertrend: its volumes reached an all-time peak of 207 TWh (+16%), interrupting their multiannual bearish trend, although scheduled purchases on the day-ahead market decreased to 289 TWh (-2.9%). However, the consequent all-time peak of liquidity (71.6%) was strongly concentrated in the first half of the year; in the second half, liquidity went back to its historical values, as confirmed in the first quarter of 2014.

Nevertheless, the negative sign induced by the crisis in 2013 had much more weight on price levels, which had a value of 62.99 €/MWh (-16.6%), exceeding only the prices of 2005.

This figure appears to be even more significant when considering the first quarter of 2014, with a price of 52.39 €/MWh (all-time minimum), and the yearly base-load product 2015, which fell to as little as 51.8 €/MWh. These thresholds are such as to narrow the spread vs. Germany and to

halve the one vs. France, at least in the next one year and a half. Nonetheless, these reductions do not reflect only the overcapacity that has been afflicting the electricity market with growing intensity for many years, or the reduction (albeit considerable) in the costs of gas indicated by traditional long-term formulas. A key factor in pushing prices downwards – and paradoxically making their new level less unsustainable – is the fact that the spot power price is less and less linked to traditional long-term gas formulas and more and more pegged to the low and volatile spot prices expressed at the PSV and on the PB-GAS.

This factor, along with the persistent growth of non-schedulable renewables and with the now structural contraction of consumption, has enhanced the changes induced in the past few years not only in the levels, but also and above all in the structure of prices. Indeed, unlike in the past decade, spot prices now have the following features: i) a very high volatility (at least in southern zones with a higher penetration of non-schedulable renewables); ii) an increasingly narrow and often negative gap between day-time and night-time prices; and iii) frequent zeroing of zonal prices and, at times, also of national ones.

No less significant were the changes in the gas sector, whose consumption collapsed to its minimum since 2006 (729 TWh, -7%), strongly affected by the economic crisis and by the displacement of thermal generation by non-schedulable renewables. In this scenario, the PB-GAS confirmed the good signals provided in 2012, thanks to a good performance of volumes traded (41 TWh, +17%), sustained by the growth both in the component regulated by SRG (35 TWh, +5%) and in the voluntary market one (6 TWh), which more than tripled vs. 2012. The platform also confirmed the reliability of its price signals, whose reduction to 27.86 €/MWh (-3%) proved their alignment with the PSV and strengthened their convergence onto the values of the main European marketplaces. The first quarter of 2014 appeared to intensify the bearish dynamics of the gas price as against both the

previous quarter (-10%) and the corresponding period of 2013 (-5%). Finally, also environmental markets showed a high and rising liquidity, with a growth of trades both on the MCV (7.57 MWh, +99%) and on the MTEE (2.8 TWh, +11%) and a market share in total trades mounting to 20% and 52%, respectively.

In this setting, also trades on the GO market recorded growing volumes (1.3 TWh, +183%), though remaining much lower than bilateral ones (41 TWh).

Numerous developments occurred in the electricity market at international level: GME continued to ensure the operation of market coupling on the Italian-Slovenian border and to be directly involved in the Price Coupling of Regions (PCR), a project at an advanced stage of development aimed at applying an EU-wide price coupling mechanism. Additionally, as part of regional initiatives, GME confirmed its participation in both: i) the Italian Borders Working Table project, which is intended to define the necessary processes of coordination of pre- and post-coupling on Italian borders for the day-ahead market coupling; and, with the support of Europex (the Association of European Energy Exchanges of which GME has taken over the chair since January 2014), ii) the project for the design and implementation of an intra-day coupling market through which Transmission System Operators may allocate cross-border interconnection capacity in an implicit way, in line with the European Target Model.

In the gas sector, it is worth mentioning the kick-off of the locational segment of the PB-GAS, which is targeted to make a larger number of flexible balancing resources available to SRG, to advance their availability to the day ahead of delivery and thus to provide the market with a reliable price signal on the day ahead of delivery. With a view to proactively responding to the new challenges posed by the Regulation on wholesale market integrity and transparency (REMIT) and by its growing multi-commodity activity, GME intensified its efforts to develop procedures and tools for monitoring its markets. Noteworthy were also GME's activities of coordination and

active participation in the relevant international and national fora (e.g. AEEGSI – ACER). GME's priority commitment in 2013, which will continue in the near future, was to ensure the constant improvement of its services to the market and to market participants, enhancing

the efficiency of its operations, minimising trading costs as required by the current economic scenario, and responding to the increasing challenges arising from the process of European integration and the expanding scope of its responsibilities.

The Chairman and
Chief Executive Officer



Massimo Ricci

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1. GOVERNANCE AND MARKETS

1.1 Profile of GME

"Gestore dei Mercati Energetici S.p.A." (GME) is a "società per azioni", which was established in 2001 as part of the process of liberalisation of the energy sector, initiated by the so-called "Bersani's Decree"¹.

GME – together with "Acquirente Unico S.p.A." (AU)² and "Ricerca sul Sistema Energetico" RSE S.p.A. (RSE)³ – is fully controlled by "Gestore dei Servizi Energetici - GSE S.p.A." (GSE)⁴, whose shares are in turn wholly owned by the Italian Ministry of Economy and Finance.

GME carries out its activities under the guidance of the Italian Ministry of Economic Development and in accordance with the provisions issued by "Autorità per l'energia elettrica, il gas e il sistema idrico" (AEEGSI, the Italian electricity, gas and water system regulator).

Under the applicable legislation and regulations, GME has progressively broadened the scope of its activities from the organisation of electricity markets to environmental, gas and fuel markets.

A multi-commodity company

In particular, in the electricity sector (Figure 1.1.1), GME manages: the Spot Electricity Market (MPE), consisting of the Day-Ahead Market (MGP) and of the Intra-Day Market (MI); the Forward Electricity Market (MTE); and the OTC Registration Platform (PCE) for registering forward contracts of sale/purchase of electricity concluded off the bidding system. GME is also in charge of the operation of the Ancillary Services Market (MSD), whose economic management falls under the responsibility of "Terna S.p.A.".

Likewise, in the gas sector, GME runs: the Natural-Gas Market (MGAS), consisting of the Day-Ahead Gas Market (MGP-GAS), of the Intra-Day Gas Market (MI-GAS) and of the Forward Gas Market (MT-GAS); the platform for fulfilling the obligation to bid gas produced nationally, imported and virtually stored as per the Ministerial Decree of 18 March 2010 (P-GAS); and, on behalf of "Snam Rete Gas S.p.A." (SRG S.p.A.), the natural-gas balancing platform (PB-GAS).

Moreover, GME organises and manages Environmental Markets, i.e. venues where participants trade Green Certificates (GCs), Energy Efficiency Certificates (TEE) and Guarantees of Origin (GOs, certifying electricity generation from renewables), as well as the related platforms for the registration of bilateral transactions.

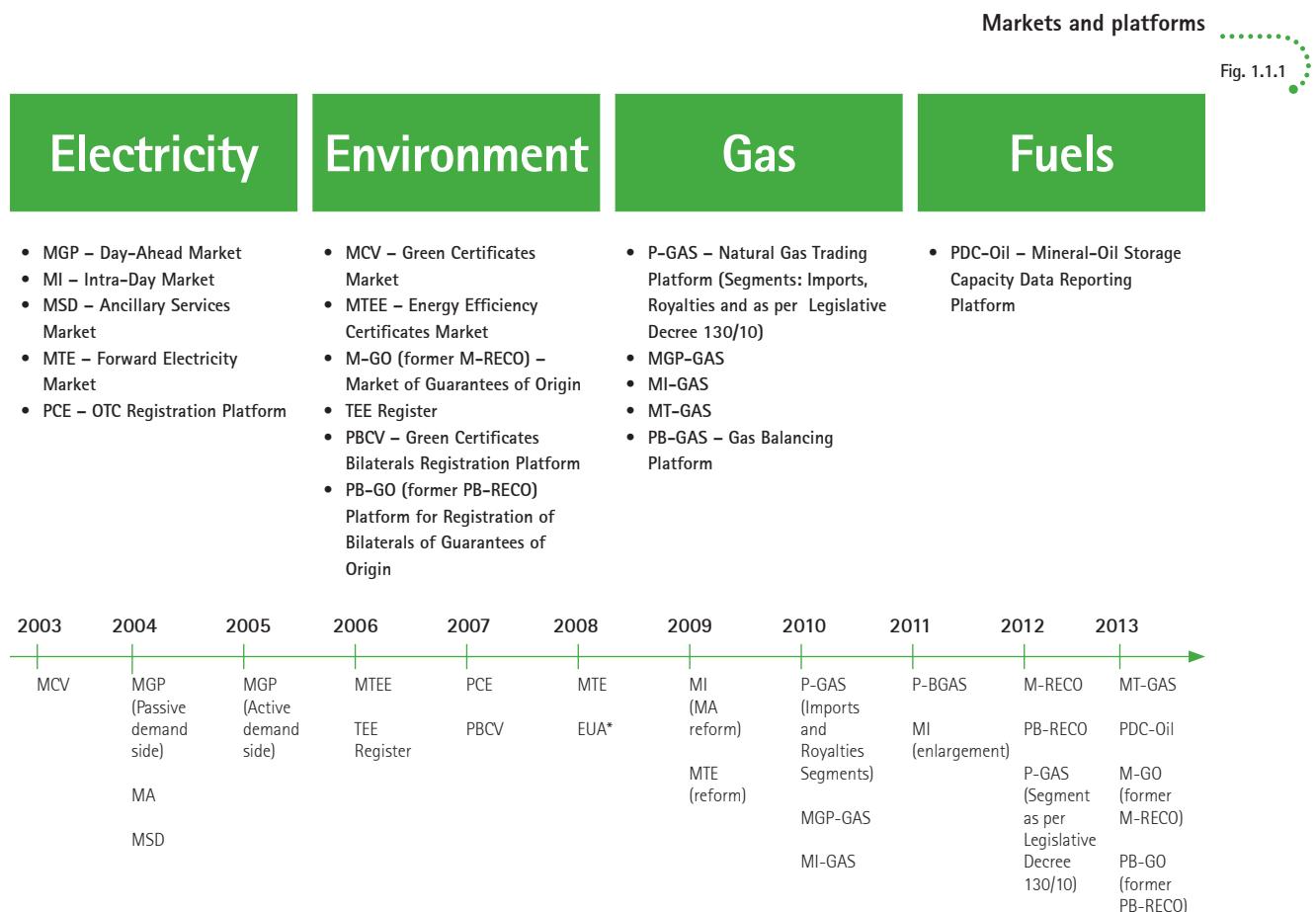
Finally, GME is also vested with the task of collecting data on mineral-oil storage capacities, in view of the future take-off of the oil logistics market platform and of the wholesale market of liquid oil products for the transport sector that GME is called to manage under Legislative Decree 249/2012. With a view to gathering capacity data, GME organises and manages the mineral-oil capacity data reporting platform (PDC-oil), where data about logistic capacities are stored through a standard data reporting template approved with the Ministry of Economic Development Director-General's Decree no. 17371 of 30 May 2013. Table 1.1.1 summarises the features of the above markets.

¹ Under article 5 of Legislative Decree 79/99, the so-called "Bersani's Decree".

² The company is in charge of guaranteeing electricity supply to the customers of the standard-offer market. As a result of the evolution of energy markets, AU widened its activities to the benefit of final customers and markets, by setting up a "Sportello per il Consumatore di Energia" (energy consumers' help desk) and a "Sistema Informativo Integrato" (integrated information system). The legislation on emergency oil stocks assigned further responsibilities to AU.

³ The company conducts research activities in the energy sector, with particular regard to national strategic projects of public interest funded through the "Fondo per la Ricerca di Sistema" (system research fund).

⁴ The company (former "Gestore della Rete di Trasmissione Nazionale S.p.A.") promotes sustainable development by: verifying the technical-engineering features of and qualifying renewable-energy and high-efficiency cogeneration plants; and granting incentives for electricity generated and injected into the grid by the above plants. Since 2011, GSE has been called to adopt measures to increase competitiveness on the natural-gas market.



The markets that GME manages have a physical nature: all the products traded thereon, whether spot or forward, involve the obligation of physical delivery and access to trading is restricted to parties having the capability of delivering such products. Furthermore, GME acts as central counterparty (CCP) on all of its markets, except on the MSD (where the CCP is Terna S.p.A.), the PB-Gas (where the CCP is SRG S.p.A.), the P-GAS and the MTEE, where the counterparties are directly matched at the end of transactions, and on the platforms for registration of OTC transactions of Green Certificates (PBCV), Guarantees of Origin (PB-GO) and Energy Efficiency Certificates (TEE Register).

A single central counterparty for physical markets

Within GME's governance framework:

- GME lays down the rules of operation of the Electricity Market (ME), the Green Certificates Market (MCV), the Natural-Gas Market (MGAS) and the P-GAS bilaterals platform and submits them to the Ministry of Economic Development for approval; the Ministry approves the rules after hearing the opinion of AEEGSI;
- GME lays down the rules of operation of the Energy Efficiency Certificates Market (MTEE)⁵, the rules of the platform for registering bilateral transactions of Energy Efficiency Certificates (TEE Register), as well as the rules of operation of the OTC Registration Platform (PCE) and of the Natural-Gas Balancing Platform (PB-GAS), and submits them to AEEGSI for approval;
- GME lays down the rules of operation of the regulated market and of the platform for registering bilateral trades of Guarantees of Origin (GOs) and submits them to AEEGSI for verification in compliance with AEEGSI's Decision ARG/ELT 104/11.

The rules of operation of the Mineral-Oil Storage Capacity Data Reporting Platform (PDC-oil) are instead laid down and approved by GME itself.

GME constantly monitors trading on its markets through dedicated offices. This monitoring activity integrates the one that GME carries out on electricity markets in support of AEEGSI, in accordance with specific decisions adopted by AEEGSI itself. GME is also engaged in the implementation of the new market surveillance tasks introduced by Regulation (EU) No 1227/2011 on wholesale energy market integrity and transparency (REMIT, see para. 4).

The governing body of GME is the Board of Directors, consisting of three members who are appointed for a three-year term by a resolution of the shareholder's meeting. The management of operations is solely vested in the Board of Directors. The Directors in office carry out the operations needed to achieve GME's aims.

One member of GME's Board of Directors acts as both *Chairperson* and *Chief Executive Officer*:

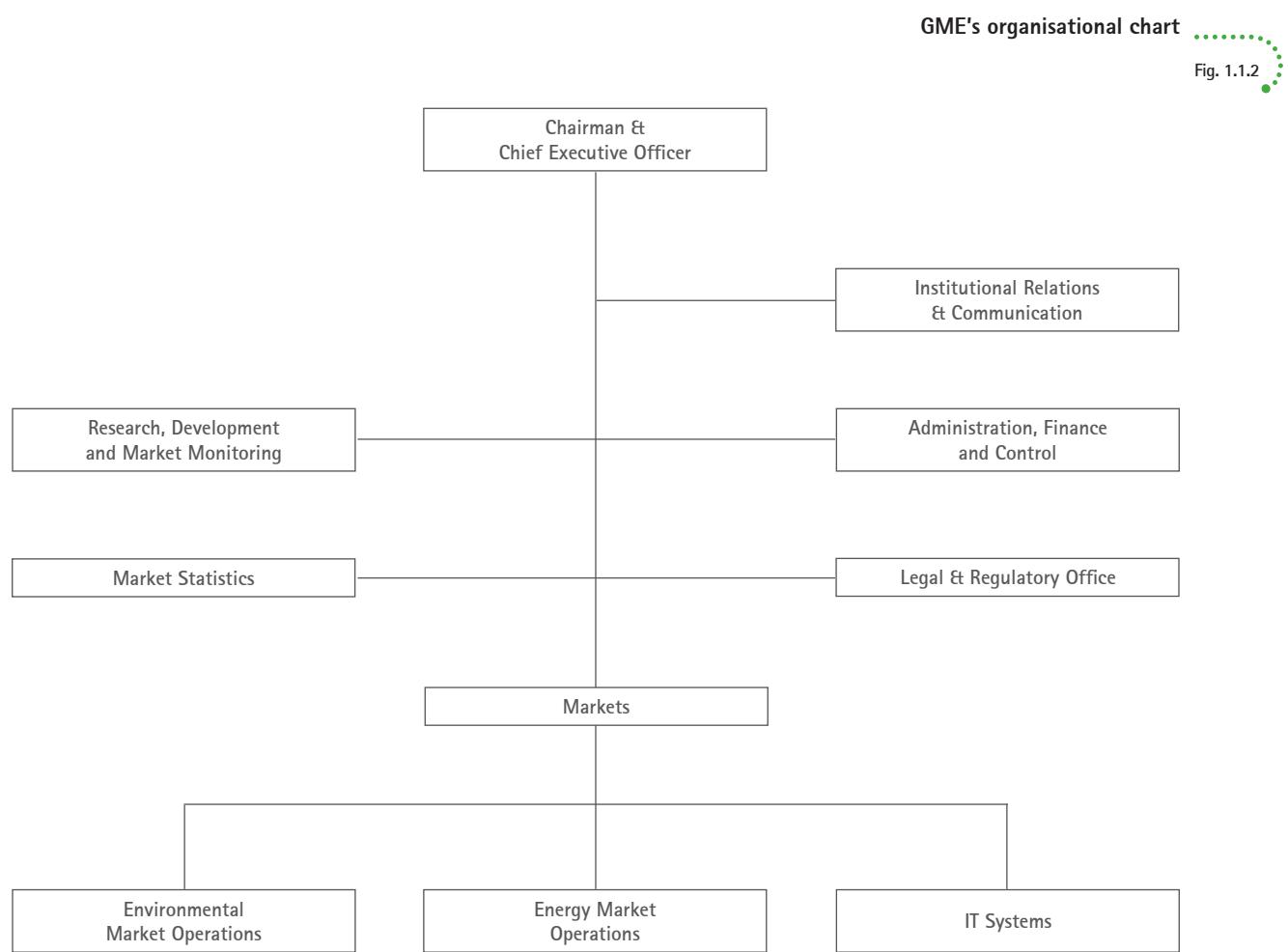
- under the by-laws, he/she legally represents and signs on behalf of the company and chairs the shareholder's meeting;
- he/she convenes and chairs the Board of Directors and oversees the implementation of the Board's resolutions;
- under a Board's resolution, he/she is vested with all the powers of management of the affairs of the company, except those otherwise specified by the applicable laws, the by-laws or reserved to the Board of Directors;
- he/she reports to the Board of Directors and to the Board of Auditors, at least every three months, on the management of the company's affairs and on their predictable evolution, as well as on the company's most significant operations.

⁵ Established under article 10 of the Ministerial Decrees of 20 July 2004.

GME's bodies also include:

- the Board of Auditors;
- the Supervisory Body.

As of 31 December 2013, the company had 101 personnel members (of whom 2 seconded), belonging to nine units (Figure 1.1.2).



Market rules

Table 1.1.1

	ELECTRICITY MARKET				PB-GAS	
	MTE	MPE	PCE	MGAS	G-1	G+1
Participation	Voluntary Compulsory on the MSD	Voluntary on the MGP and MI	Voluntary	Voluntary	Voluntary	Compulsory
Requirements for participation in the markets and trading*	Requirement to hold one energy account in order to deliver the net position	Requirement to hold one offer point in order to enter orders	Participation restricted to dispatching users and their authorised agents	Requirement to be a PSV user in order to deliver the net position	Users of the natural-gas transmission and balancing service	Users of storage services, except transmission companies and users of the strategic storage service only
Product traded	Yearly, quarterly, monthly (with base-load and peak-load profiles)	Opening hours MGP, MI1, MI2: 1-24 MI3: 13-24 MI4: 19-24	OTC contracts	MGP-GAS, MI-GAS: daily MT-GAS: BoM, monthly, quarterly, half-yearly, yearly (both thermal and calendar year)	Daily	Daily
Trading mechanism	Continuous trading	Auction	OTC trading	Continuous trading	Auction	Auction
Price rule	Pay as bid Pay as bid on the MSD	Zonal marginal price on the MGP and MI N/A		Pay as bid	Zonal marginal price	Marginal price
Guarantees	Bank guarantee and/or cash deposit	Bank guarantee. Cash deposit only if necessary and urgent	Bank guarantee and/or cash deposit	As determined by Snam Rete Gas	As determined by Snam Rete Gas	
Central Counterparty	GME Terna on the MSD	GME on the MGP and MI GME (only for CCTs)	GME	Snam Rete Gas	Snam Rete Gas	
Payments	M+2	M+2	M+1 for trades M+3 for closing non-delivered positions	Time limit determined by Snam Rete Gas	Time limit determined by Snam Rete Gas	

* In addition to the admission requirements specified in the rules and regulations governing the individual markets, parties wishing to participate in the markets/platforms should have adequate professional qualifications and be proficient in the use of ICT systems and related security systems or rely on ICT-proficient employees or assistants

P-GAS					
Imports	Virtual Storage	Royalties	MCV	MTEE	MGO
Compulsory (supply side)	Compulsory (supply side)	Compulsory (supply side)	Voluntary	Voluntary	Voluntary
Users of the PSV having the obligation to bid quotas of imported gas	Users of the PSV participating in the virtual storage service	Users of the PSV having the obligation to bid royalties	GSE, national and foreign producers, wholesale customers, importers, associations as per art. 2.23, first sentence, of Law no. 481 of 14 Nov. 1995, obliged participants as per art. 11, Legislative Decree no. 79 of 16 Mar. 1999	Requirement to hold one account with the TEE Register in order to trade on the MTEE	Requirement to hold one account with the GO Registry in order to trade on the MGO
Monthly, yearly (thermal year)	Monthly, half-yearly	Monthly	Certificate pertaining to yearly, quarterly periods	Certificate by type of project (1 TOE)	Certificate by type of source (1 MWh)
Continuous trading	Continuous trading	Auction	Continuous trading	Continuous trading	Continuous trading
Pay as bid	Pay as bid	Marginal price	Pay as bid	Pay as bid	Pay as bid
As determined by each selling participant	As determined by each selling participant	As determined by each selling participant	Cash deposit totally covering purchases	Cash deposit	Cash deposit totally covering purchases
N/A Invoicing and payments between participants	N/A Invoicing and payments between participants	N/A Invoicing and payments between participants	GME	N/A Invoicing and payments between participants	GME
Time limit determined by each selling participant	Time limit determined by each selling participant	Time limit determined by each selling participant	D+3	D+3	D+3

Fees

Table 1.1.2

Market	Reference legislation/regulations	Access fee (on a one-time basis)	Yearly fixed fee
Electricity Market	Integrated Text of the Electricity Market Rules	€ 7,500	€ 10,000
PCE	Rules governing the OTC Registration Platform	€ 1,000	€ 0
Natural-Gas Market	Natural-Gas Market Rules	€ 0	€ 0
PB-GAS	Regulations of the Gas Balancing Platform	€ 0	€ 0
P-GAS	Regulations of the P-GAS Platform	€ 0	€ 0
Green Certificates (GCs)	Integrated Text of the Electricity Market Rules Rules governing the Green Certificates Bilaterals Registration Platform		
Guarantees of Origin (GOs)	Rules governing the operation of the regulated market and of the platform for registration of bilaterals of guarantees of origin	€ 0	€ 0
Energy Efficiency Certificates (TEE)	Rules of operation of the Energy Efficiency Certificates Market Rules for registering bilateral transactions of Energy Efficiency Certificates		

Variable fee

Fee per MWh traded:

- MPE
 - no fee for the first 0.02 TWh of electricity traded monthly;
 - fee of 0.04 €/MWh for volumes of electricity traded monthly exceeding the threshold of 0,02 TWh up to a maximum of 1 TWh;
 - fee of 0.03 €/MWh for volumes of electricity traded monthly exceeding the threshold of 1 TWh up to a maximum of 10 TWh;
 - fee of 0.02 €/MWh for volumes of electricity traded monthly exceeding 10 TWh.
 - MTE
 - 0.01 € per MWh traded.
 - CDE
 - 0.045 € per MWh traded.
-

Fee per MWh registered: 0.008 €/MWh.

If the PCE participant is at the same time an electricity market participant, no access fee and no yearly fixed fee are to be paid to GME.

- Fee per MWh traded: 0.01 €/MWh;
- Fee for activation of the error procedure: € 500.00 per request;
- Contribution to resources to be used for default management: 0.0025 €/MWh.

If the MGAS participant is at the same time an electricity market participant, no access fee is to be paid to GME

Fee per GJ traded: 0.003 €/GJ.

*If the PB-GAS participant is at the same time an MGAS participant, no access fee and no yearly fixed fee are to be paid to GME.
If the PB-GAS participant is at the same time an electricity market participant, no access fee is to be paid to GME.*

Trading fee:

- 0.0025 €/GJ on the Imports and Royalties Segments;
- 0.009 €/MWh on the Segment as per Legislative Decree 130/10.

Clearing fee: € 0

Fee per certificate traded (each of 1 MWh):

- € 0.06 per certificate for the first 2,500 certificates traded;
- € 0.03 per certificate above 2,500 certificates traded.

The structure and extent of the above fees is applied to the total certificates traded both in the sessions of the regulated market and through the Green Certificates Bilaterals Registration Platform (PBCV).

Fee per GO traded/registered on the market and/or OTC: € 0.005

Fee per certificate traded: € 0.2

In compliance with AEEGSI's Decision 617/2013/R/efr, the amount of the fee per certificate traded for the year 2014 is equal to € 0.1.

2. NEW MARKETS

2.1 The new MGAS

GME organises and manages the Italian natural-gas market (MGAS) under article 30 of Law no. 99 of 23 July 2009 and article 32, para. 2, of Legislative Decree no. 93 of 1 June 2011. The MGAS is an integrated trading system, consisting of the Spot Gas Market (MP-GAS) and of the Forward Gas Market (MT-GAS), where GME acts as CCP to the trades.

In a trading system including both the spot market and the forward market, the participant may benefit from a single guarantee system, which covers both spot and forward trades.

The MGAS is a physical continuous-trading market, where participants buy and sell contracts covering gas volumes. At the end of the corresponding trading period, GME – as qualified participant in the "Punto di Scambio Virtuale" (PSV, virtual trading point) – registers these contracts at the PSV on behalf of the same participants⁶.

The MP-GAS consists of:

- the Day-Ahead Gas Market (MGP-GAS), where gas buy and sell orders, in respect of the calendar gas-day following the one on which the trading session ends, are matched;
- the Intra-Day Gas Market (MI-GAS), where gas buy and sell orders, in respect of the gas-day corresponding to the one on which the session ends, are matched.

The following types of contracts may be traded on the MT-GAS:

- solar year contract: calendar year (from January to December);
- thermal year contract: gas year (from October to September of the following year);
- half-yearly contracts: the winter half-year (from October to March of the following year) and the summer half-year (from April to September of the same year);
- quarterly contracts: the first, second, third and fourth quarter of each calendar year;
- monthly contracts: each calendar month;
- BoM (Balance of Month) contracts: the gas-days elapsing from the second day after the one on which trading occurs to the last calendar day of the month in which trading occurs.

In particular, the following contracts are listed at the same time: one BoM contract, three monthly contracts, four quarterly contracts, two half-yearly contracts, one solar year contract and one thermal year contract.

GME organises one order book for each type of forward contract, which is settled under the cascading mechanism. Under this mechanism, the contractual positions of each participant on each type of forward contract are replaced, at the end of the corresponding trading period, by equivalent contractual positions of shorter maturity; in particular:

- the position held on a solar year contract will be replaced with equivalent positions on monthly and quarterly contracts;
- the position held on a thermal year contract will be replaced with equivalent positions on monthly, quarterly and half-yearly contracts;

⁶ GME carries out this activity in compliance with AEEGSI's Decision 525/2012/R/gas.

- the position held on a half-yearly contract will be replaced with equivalent positions on monthly and quarterly contracts;
- the position held on a quarterly contract will be replaced with equivalent positions on monthly contracts;
- the position held on a monthly contract will be replaced with equivalent positions on the corresponding days of the BoM.

The daily contracts resulting from the application of the cascading mechanism are transferred to and consequently traded on the spot gas market, in accordance with the procedures specified in the currently applicable Natural-Gas Market Rules. At the end of the related trading period on the spot market, GME determines – for each participant – the net delivery position at the PSV (organised and managed by Snam Rete Gas) in respect of the gas-day being traded.

For each applicable period, the net delivery position of each participant is given by the algebraic sum of purchase and sale transactions pertaining to the same applicable period; these transactions are conventionally identified with negative and positive values, respectively.

In practice:

- if the net position is above zero, GME will register, at the PSV, a sale transaction on the account that the participant holds with the PSV;
- if the net position is below zero, GME will register, at the PSV, a purchase transaction on the account that the participant holds with the PSV.

2.2 The PB-GAS G-1 Segment

In accordance with the EU's Third Energy Package⁷, AEEGSI established the merit-order balancing platform (PB-GAS⁸). The PB-GAS, organised and managed by GME on behalf of Snam Rete Gas, has the purpose of providing: i) the balance responsible entity with a market-based instrument to procure the storage resources needed to offset the system imbalance; and ii) market participants with a further trading venue to balance their positions.

AEEGSI's subsequent regulatory provisions outlined the evolutionary path of the balancing platform, by including additional flexible gas resources into the above market; these resources, just as the storage ones, contribute to physically balancing the network.

Today, the PB-GAS is organised into the following segments:

- G-1 Segment, where balancing users that have acquired the status of PB-GAS participants enter buy and sell orders of the flexible resources that Snam Rete Gas has admitted to trading⁹. On this segment, Snam Rete Gas may – as balance responsible entity – procure the flexible resources needed to cover the expected system imbalance, by entering a single buy order or a single sell order into each session. To enable the operation of the G-1 Segment, the offer points corresponding to the various flexible resources are grouped by type; where necessary, Snam Rete Gas may define limits to the utilisation of the flexible resources admitted to trading on this segment;

⁷ Reference is made in particular to Regulation (EC) No 715/2009.

⁸ With its Decision ARG/gas 45/11, as subsequently amended and supplemented.

⁹ In compliance with AEEGSI's Decisions ARG/gas 45/11, 446/2013/R/GAS, 520/2013/R/GAS and 552/2013/R/GAS.

- G+1 Segment, where authorised users¹⁰ (users of storage services, except transmission companies and users of the strategic storage service only) that have acquired the status of PB-GAS participants daily enter buy and sell orders of the storage resources that they hold. Likewise, Snam Rete Gas – as balance responsible entity on the G+1 Segment – enters a buy or sell order for a volume of gas corresponding to the overall system imbalance.

The types of flexible resources admitted to trading on the G-1 Segment are as follows:

- Import, in respect of flexibility resources offered at the Entry Points interconnected with foreign countries;
- Edison Stoccaggio, in respect of flexibility resources offered at the storage hub of "Edison Stoccaggio S.p.A.";
- LNG, in respect of flexibility resources offered at the Entry Points interconnected with regasification terminals;
- Capacity not utilised by the transmission company at Stogit, in respect of flexibility resources offered for withdrawal and injection at the storage hub of "Stoccaggi Gas Italia S.p.A.";
- PSV with delivery on the gas-days following gas-day G, in respect of flexibility resources offered at the PSV;
- PSV (linepack space) with delivery on gas-day G+1, in respect of flexibility resources offered at the PSV.

The selection of orders accepted on both segments of the PB-GAS is based on the auction mechanism.

In accordance with AEEGSI's Decision 446/2013/R/GAS of 10 October 2013, the PB-GAS balancing sessions will be integrated into the natural-gas market organised and managed by GME.

2.3 The GO Market

With regard to systems for trading Guarantees of Origin (GOs), a revised procedure for qualifying renewable-energy (RES-E) plants in view of issuing and managing GOs was approved in 2012¹¹. GSE had revised the procedure so that the GO might become the only certificate giving proof of the share of electricity generated from renewables at national level. Consequently, since 2013, GSE has issued GOs (in lieu of renewable-energy certificates of origin - RECOs) to certify the share of electricity produced from renewables.

Indeed, since 1 January 2013, two types of certificates have qualified electricity as "renewable" at national and international level:

- the GO;
- the GO with the RECS attribute (only for parties registered with RECS International).

¹⁰ As per article 1, para. 1 k) of AEEGSI's Decision ARG/gas 45/11.

¹¹ In compliance with the provisions of the Ministerial Decree of 6 July 2012, adopted by the Minister of Economic Development.

At national level, GSE issues GOs to plants that have been qualified to obtain GOs ("IGO" qualification); the GO certifies the generation of electricity from renewable sources.

GSE issues GOs (and subsequently cancels them) only in electronic form, based on the electricity injected into the grid, in accordance with Directive 2009/28/EC (each GO is worth 1 MWh).

A producer may apply for the IGO qualification of a RES-E plant, provided that such plant does not benefit from alternative support systems (e.g. simplified purchase & resale arrangements - "ritiro dedicato" -, net metering, all-inclusive feed-in tariffs). For plants that already benefit from other support systems, GSE issues the related GOs to itself and then (in accordance with the current regulations) awards them to interested parties under auction procedures.

Based on the electricity generated by IGO-qualified plants, GOs may be:

- awarded to the market via auctions held by GSE;
- issued every month to IGO-qualified plants based on the meter readings provided by the relevant grid operators.

Market participants may add the RECS (Renewable Energy Certificate System) attribute to the GO, if they are registered with RECS International and have given proof thereof to GSE via the GO portal.

At EU level, with the approval of the new EECS Electricity Domain Protocol for Italy (6 June 2013), GSE joined the international system of transfer of GOs of the Association of Issuing Bodies (AIB). Since 13 December 2013, the RECS-GO management system, connected to the international hub of the AIB, has made it possible to import and export the GOs issued by the countries currently connected to the hub.

Hence, GOs may be traded: i) at EU level, via connection to the hub, the international platform for trading all types of European Energy Certificate System (EECS) certificates issued by the competent bodies in the respective countries belonging to the AIB; and ii) at national level, via GME's P-GO platform, consisting of the regulated market (M-GO) and of the platform for registering bilateral transactions (PB-GO).

To complete the picture, it is worth mentioning that foreign GOs imported to Italy via the hub may be used and then cancelled in Italy only if they have been issued by the parties designated by the foreign countries included in a list that is held by GSE¹².

¹² <http://www.gse.it/it/salastampa/news/Pages/garanzia-di-origine-recs-conessione-a-piattaforma-di-scambio-internazionale.aspx>.

2.4 The fuel markets

To foster competition in the oil sector and widen opportunities for buying and selling logistic services and oil products, Legislative Decree 249/2012¹³ charged GME with the task of developing and managing an oil logistics market platform¹⁴ and a wholesale market of liquid oil products for the transport sector¹⁵.

On 9 August 2013, in compliance with the applicable legislation, the Ministry of Economic Development adopted Director-General's Decrees no. 16618 (creation of the oil logistics platform) and no. 16617 (creation of the fuel platform), setting forth the general principles to be followed by GME in putting forward proposals about the organisation and operation of the related markets.

With a view to enabling the obliged parties¹⁶ to fulfil their obligation to report data about their available capacities, GME set up a Mineral-oil Storage Capacity Data Reporting Platform (PDC-oil), through which it collects and processes the identification data of obliged parties, as well as data and information about their available logistic capacities.

The Ministry of Economic Development launched a consultation (based on appropriate questionnaires) among interested parties to gather comments about issues arising in the oil logistics market and in the wholesale market of oil products for transport and to make the market platforms as responsive as possible to the actual needs of their participants.

Based on the Ministry of Economic Development's implementing decrees no. 16618 and no. 16617 of 9 August 2013 and taking into account the results of the consultation launched by the same Ministry and ended on 30 September 2013, GME provided the reference institutions with a first assumption about the possible models of operation and organisation of the market (including both the logistics platform and the wholesale market of oil products for transport).

Thus, in the first months of 2014, GME interacted with the reference institutions and associations, in order to proceed with all the activities needed to design and set up the oil logistics market and the wholesale market of liquid oil products for transport. In May 2014, GME opened a consultation among interested parties about the design of the above markets.

¹³ Legislative Decree no. 249 of 31 December 2012 transposed Council Directive 2009/119/EC of 14 September 2009, imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products. The decree is aimed at strengthening the national legislation on emergency oil stocks and at promoting an adequate level of competition in the oil sector, by widening opportunities for buying and selling logistic services and oil products.

¹⁴ Article 21, para.1, Legislative Decree 249/2012.

¹⁵ Article 22, para. 1, Legislative Decree 249/2012.

¹⁶ Under article 21, para. 2 of Legislative Decree 249/2012, any party holding mineral-oil storage capacity in Italy (even if not utilised), in depots with a capacity of over 3,000 m³, is required to yearly report his/her/its available capacity to GME, by using the data reporting template approved with the Ministry of Economic Development Director-General's Decree 17371/2013 of 30 May 2013.

3. INTERNATIONAL ACTIVITIES

In the course of 2013, GME confirmed its international commitment as an active player in the process of integration of wholesale electricity markets within the EU, by taking action on four main fronts:

- in the first place, GME confirmed the operation of **Market Coupling on the Italian-Slovenian border**, which began on 1 January 2011 and saw the volumes intermediated under the implicit auction mechanism growing year after year;
- in the second place, GME was strongly committed to the **Price Coupling of Regions (PCR)** project, together with the main European exchanges (Epex, Omel, NordPool Spot-NPS, APX and Belpex). The project, which took off three years ago, is geared to apply a price coupling mechanism within the EU. In 2013, the exchange of the Czech Republic (OTE) joined the project and the project partners completed the technical and contractual activities underlying the development of the IT and algorithmic architectures needed to manage the European coupling and to provide support for the expected kick-off of coupling in the North West Europe (NWE) region in February 2014 and the coupling-synchronised management of the market in the South West Europe (SWE) region. The next step (scheduled by the end of 2014) will be the further implementation of the PCR in the Central East Europe (CEE) and Central South Europe (CSE) regions, so as to ensure a European-wide coupling of regions;
- the above two projects fall under the umbrella of a third project in which GME takes part: the **Italian Borders Working Table (IBWT)**, a common project conducted by the Power Exchanges (PXs) and the Transmission System Operators (TSOs) of the countries that share an electricity border with Italy (Austria, Slovenia, Switzerland, France and Greece). The project was launched in the CSE region to define and share operational processes of pre- and post-coupling, in view of implementing a regional coupling mechanism integrated with the other European regional coupling mechanisms. Indeed, the project will be operationally based on the algorithm and interface software systems provided by the PCR and it will incorporate the existing market coupling with Slovenia. To date, the first (study and design) stage has been successfully completed and the national regulatory authorities (NRAs) have given their approval; the implementation stage has been started and is expected to be completed by December 2014;
- the last front is the European project for the design and implementation of internationally coordinated **intra-day markets**, enabling TSOs to implicitly allocate cross-border interconnection capacity in line with the market model (Target Model) outlined in ACER's Framework Guidelines on Capacity Allocation and Congestion Management and ENTSO-E's Network Code on Capacity Allocation and Congestion Management. The partners of this project (called Cross-Border Intraday) are GME, EPEX Spot, OMIE, NordPool, APX-Endex, Belpex and OTE. In 2013, the project made significant progress along its main lines of development: on one hand, the assessment of bids submitted as part of a European tender for selecting the supplier in charge of developing the management software and the market algorithm (SOB/CMM); on the other hand, all of the above PXs were involved in the

negotiations of the PX-PX Cooperation Agreement (PCA), the framework-agreement that will cover the governance of the project and the rights and obligations of each party from the standpoint of the use of the common management software and of the sharing of the related procurement costs.

In the course of 2013, the Czech exchange OTE quit the project.

GME is also engaged in creation of the European single market by taking part in different initiatives adopted by ACER, spanning from the PXs roundtables for REMIT implementation to the Working group on Market Surveillance.

Since January 2014, GME has also taken over the chair of EUROPEX, the association of European energy exchanges, of which it is a founding member. After contributing (through debates in various European fora) to developing the market coupling project for the creation of the European single market, EUROPEX set new targets for the next few years: integration into the market of renewables; mechanisms of support to renewables; and security of the power system.

4. MONITORING

GME monitors transactions on its trading and registration platforms through a dedicated structure. By so doing, GME provides support to the national reference institutions in complying with their obligations under specific national regulations¹⁷ or ad-hoc agreements. The growth of activities on its traditional markets (MGP, MI, MTEE, MCV) has significantly amplified GME's monitoring tasks, which have added to the ones stemming from Regulation (EU) No 1227/2011 on wholesale energy market integrity and transparency (REMIT Regulation). The results of this activity are summarised in Table 1.4.1 below.

The regulatory setting for these activities is undergoing a profound evolution, as shown by the publication (in the course of the year) of ACER's Recommendations to the European Commission about market participants' obligations to report transactions to ACER itself and the third edition of ACER's Guidance on the application of REMIT (with criteria to interpret market abuse cases) and, above all, by the expected publication of the Implementing Acts (IAs), where the Commission should give detailed guidelines on: i) list of contracts, including buy and sell orders, to be reported; ii) uniform rules on data reporting; iii) timescales and ways in which such data are to be reported in compliance with REMIT.

All this will involve, by agreement with AEEGSI, a significant evolution and development of monitoring measures on all the markets managed by GME, with the creation of new ad-hoc monitoring instruments, the design and implementation of new and more advanced procedures, to be used in accordance with REMIT and, more generally, for monitoring environmental markets. This activity was also strengthened by GME's participation in international working groups (within both ACER and EUROPEX) aimed at identifying and sharing good practices in wholesale market monitoring.

Measures taken as a result of the monitoring activity

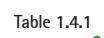


Table 1.4.1

Year	Market	Measure	No.	Market participants involved
2013	MCV	Report to AEEGSI	5	12
2013	MTEE	Report to AEEGSI	7	9
2014	MCV	Prec cautionary suspension + 1-month suspension	1	1
TOTAL	-	-	13	22

17 Among them, activities giving support to AEEGSI's in monitoring:

a) electricity markets under AEEGSI's Decision ARG/elt 115/08 ("TIMM");
 b) gas markets under AEEGSI's Decisions ARG/gas 45/11, ARG/gas 20/11, ARG/gas 95/11 and 67/2012/R/gas;
 c) energy efficiency certificates markets under AEEGSI's Decision 53/2013/R/efr.

In this regard, it is worth mentioning GME's management of the External Data Platform (PDE), through which market participants fulfil their obligation to report OTC electricity contracts to AEEGSI under article 8 of the "TIMM".

5. RESULTS

5.1 Volumes and market participants

In 2013, the positive evolution of participation in the markets, in terms of number of (registered and active) participants and volumes traded, strengthened the multi-commodity identity of GME, which is increasingly becoming a single interface on national regulated energy markets. In all the sectors of interest, the historically larger markets confirmed their viability, with the intensification of the multiannual liquidity growth trend in the case of the PB-GAS and the MCV and the interruption of the contraction stage of volumes traded on the exchange in the case of the Day-Ahead Electricity Market. Conversely, trades on forward markets decreased or had difficulties in taking off: on the gas market, the MT-GAS became operational in September; on the more mature electricity market, the MTE interrupted its 2011-2012 expansive dynamics, while registrations on the PCE increased.

In the electricity sector, the rise in the number of Ipx participants as of 31 December (223, +23) was accompanied by an increase in the number of active participants; this fact strengthened the continuous

trend recorded in the past five years on spot markets, where companies with bids/offers climbed to 281 (+18), of which 159 on the MGP (+10) (Table 1.5.1).

From the viewpoint of volumes, the drop in national consumption¹⁸ had a strong impact on the sector. The volumes of forward trades (367 TWh, +1%) was higher (312 TWh, -3%)¹⁹ than the one of spot trades for the second year in a row, while the MGP showed a further reduction to 289 TWh (-3%). However, the most interesting indications emerge

from the separate analysis of the two components, the "exchange volumes" and the "OTC volumes", which experienced a deeply diverging trend. Indeed, exchange-traded volumes had a definite recovery, mounting to 207 TWh (roughly +28 TWh), going back to their 2009 levels and reversing their bearish trend from 2010 to 2012, whilst the OTC volumes fell to an all-time low of 82 TWh (roughly -38 TWh). The wide gap between the two values dominantly reflects the change in the selling strategies adopted by non-institutional participants. By raising the prices offered for nominated electricity on the PCE and lowering those for orders of equal volume entered into the exchange (more competitive and more frequently accepted), these participants "moved" part of the sales resulting from bilateral schedules onto the exchange. This behaviour favoured, on one hand, the boom of scheduled deviations in injection accounts (115 TWh, +56%)²⁰ and, on the other hand, the jump of liquidity of institutional and market participants²¹ to all-time highs of 45% and 72%, respectively; liquidity, in particular, was partially eroded by the reduction of Acquirente Unico's trades on the MGP (27 TWh, -13 TWh) (Table 1.5.1, Table 1.5.2 and Fig. 1.5.1).

*Reversal of trends
on spot electricity
markets;
recovery of trades on
the MGP...*

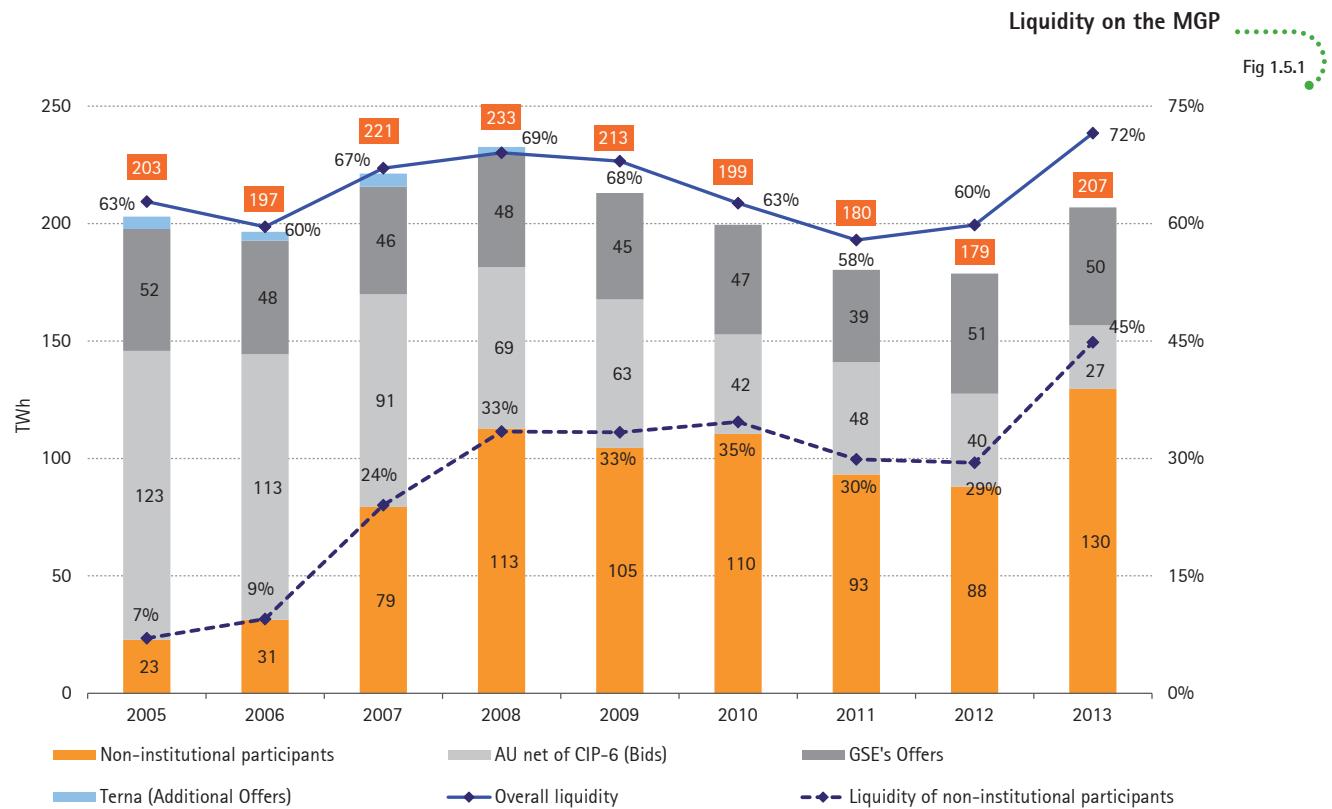
¹⁸ The electricity demand reported by Terna in its provisional data on the operation of the national power system amounted to 317 TWh (-3.4%), the lowest value since 2002.

¹⁹ Forward trades were calculated by summing registrations onto the PCE (net of the MTE and of the MTE clearing) to the overall volumes recorded on the MTE. In contrast, spot trades refer to the sum of the volumes observed on the MGP and MI.

²⁰ See in this regard para. 2.2.4, Section 2.

²¹ Liquidity is calculated as the ratio of volumes traded on the exchange to total volumes, i.e. including bilateral schedules accepted as a result of the MGP.

It is worth pointing out that the progressive return of producers to their old selling behaviour (as early as in the second half of 2013) has mitigated the scale of this phenomenon over time so that, in the initial part of 2014, liquidity has repositioned itself onto the levels of 2010.



On the other hand, while the number of active participants went up (122, +8), trades on the Intra-Day Market (MI, the other spot electricity market run by GME), which had displayed a constant upward trend since its take-off, experienced a halt and the yearly electricity traded thereon in 2013 was equal to 23 TWh (-7%). However, this value, accounting for approximately 8% of the overall electricity traded on the MGP (including OTC transactions), hides opposite trends on the individual markets, with the progressive shift of trades towards the real time. This point is substantiated by the drop of trades (13 TWh, -20%) on the MI1 – the intra-day market with traditionally higher volumes – and by the swift growth of the MI4 – the last market to be executed – which doubled its volumes (2.5 TWh) in one year (Table 1.5.2). Also in 2014 (the analysis is confined to its first quarter), the overall volumes traded on the MI diminished further, while their distribution among the sessions remained practically stable.

As to forward transactions, the year 2013 saw a moderate increase in both active participants and volumes traded (367 TWh, +1%), driven in both cases by the dynamics of the PCE²² (participants with schedules:

Forward electricity trades continued to grow

125, +5; volumes registered: 325 TWh, +6%) and limited in part by the contraction of trades on the MTE (participants with matchings: 22, -3; volumes matched: 41 TWh, -25%). The PCE data generally confirm: i) the growing need of participants to rely on instruments to hedge the risk of uncertainty of the economic situation and of volatility of spot prices due to the dissemination of electricity generation from renewables; and ii) a stronger trading activity, quantitatively testified by the progressive ascent of the churn ratio (1.88, +5%). In this context, the MTE was in countertrend, as it dropped to 41 TWh (-25%); this drop was only partially offset by the growth of volumes traded bilaterally and registered onto the MTE for clearing (33 TWh, +35%). Indeed, this significant drop concerns the volumes traded on GME's order books, which were concentrated in the first part of the year and which sharply decreased (8 TWh, -74%) as an effect, among others, of the loss of liquidity of the yearly base-load product (Table 1.5.1, Table 1.5.2).

The PB-GAS – the platform that GME developed to respond to the balancing requirements of Snam Rete Gas – proved to play a dominant and central role on gas markets. The platform strengthened the good

Consolidation of the role of the PB-GAS on gas markets

signals that it had launched in 2012 in terms of both registered and active participants (74 and 73, respectively) and overall volumes traded (41 TWh, +17%, i.e. about 6% of what is delivered by Snam). This performance was favoured by two factors: i) the need of participants to minimise the imbalance risk, by using the PB-GAS as a spot gas trading venue; and ii) the presence of Snam, which daily sells or buys the surplus volume or the deficit volume recorded in the system on the previous gas-day. Having said this, it is worth stressing that the highest increases were observed in the volumes matched independently of balancing requirements, rather than in the volumes offered by the balance responsible entity (35 TWh, +5%); indeed, the former volumes had a hike, tripling in a single year (about 6 TWh, i.e. 15% of the total) and emphasising a compulsory but not passive participation in the market. Furthermore, at the end of 2013, the PB-GAS G-1 Segment became operational. This segment is an actual locational "day-ahead market", not yet liquid, where different flexible resources (including LNG and Edison stoccaggio) voluntarily respond to the (possible) orders of Snam.

On the other gas markets/platforms, while the number of registered participants was not very different from the one of the PB-GAS (M-GAS: 66; P-GAS: 77), the levels of both active participants and liquidity remained definitely low. The volumes matched on the M-GAS were practically equal to zero. On the P-GAS – which was created to enable participants to fulfil their obligations to bid imported gas quotas (Imports Segment) and royalties owed to the State for the exploitation of national gas fields (Royalties Segment) – small movements were only noted on the Royalties Segment (0.6 TWh); additionally, the volumes traded on this segment were lower than in previous years owing to the less competitive auction starting price offered by producers²³ (Table 1.5.1, Table 1.5.2).

22 The figure does not include the volumes resulting from matchings made on the MTE or from registrations made for OTC clearing.

23 The auction starting price offered by participants was fixed and linked to the QE index until September 2013 and to P_{for} since October 2013, both published by AEEGSI.

The expansion of environmental markets continued vigorously in 2013 in terms of both active participants and volumes traded. Participants in the MCV and MTEE climbed to 303 and 328 (vs. 852 and 588 registered participants), respectively, with a growth rate much higher than the average one in the previous four-year period (MCV: 29% vs. 14%; MTEE: 24% vs. 15%). Also the Market of Guarantees of Origin (MGO) had a good start. In September 2013, this market replaced the one of Renewable-Energy Certificates of Origin (RECOs) established in 2012. Even more significant was the increase in volumes, especially on the MCV, where the energy traded (7.6 TWh) doubled with respect to 2012 (in spite of the reduction of the quota of renewable electricity to be injected into the grid by producers and importers of electricity generated from conventional sources²⁴), with a dynamics in line with the higher number of active participants and with the increase of tradable products (in 2013, also quarterly products were made available on the market). The growth rate observed on the market was, among others, higher than the one of bilateral transactions (37 TWh, +31%), thus causing liquidity to reach an all-time peak of 17%.

Growth of liquidity of environmental markets

Trades of Energy Efficiency Certificates (TEE – white certificates) had a similar but definitely more moderate trend in 2013: the volumes traded amounted to some 3 million toe on the market (+11%) and to slightly more than 5 million toe on the bilaterals platform (+7%), with a consequent slight increase in liquidity (34%, +1 p.p.). Finally, in its few months of operation, the MGO saw its matched volumes almost triple as against those matched in 2012 on the M-RECO (1.3 TWh), showing however a much sharper increase on the bilaterals platform (41.3 TWh vs. 1.8 TWh in 2012), where the near totality of trades were concentrated (Table 1.5.1, Table 1.5.2).

²⁴ Legislative Decree no. 28 of 3 March 2011, implementing Directive 2009/28/EC on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, provides that the percentage of renewable electricity that producers and importers of electricity from conventional sources are required to inject into the grid (art. 11, paras. 1 and 2, Legislative Decree no. 79 of 16 March 1999), equal to 7.55 in 2012, shall linearly decrease from 2003 onwards and reach zero in 2015.


Participants in GME's markets

Table 1.5.1

Market Participants no.*	2009	2010	2011	2012	2013
Electricity Markets					
IPEX					
- participants	172	207	192	200	223
- with bids/offers					
<i>MGP</i>	115	131	137	149	159
<i>MI</i>	53	69	91	114	122
<i>MTE</i>	16	15	20	25	22
PCE					
- participants	167	205	208	259	287
- with schedules	88	95	103	120	125
<hr/>					
Gas Markets					
MGAS					
- participants		20	33	42	66
- with bids/offers					
<i>MGP</i>		3	17	15	10
<i>MI</i>		-	7	5	4
<i>MT-GAS</i>					-
PB-GAS					
- participants			60	65	74
- with bids/offers					
<i>G+1</i>			59	74	73
<i>G-1</i>					8
P-GAS					
- participants		53	61	72	77
- with bids/offers					
<i>Imports Segm.</i>		21	17	18	19
<i>Segm. as per Legislative Decree 130/10</i>				13	4
<i>Royalties Segm.</i>		25	25	26	12
<hr/>					
Environmental Markets					
MCV					
- participants	497	620	675	745	852
- with matchings	157	173	207	235	303
MTEE					
- participants	268	334	379	447	588
- with matchings	172	209	235	264	328
M-GO					
- participants				180	262
- with matchings				28	62

* Number of participants calculated at 31 Dec. of each year

Volumes traded on GME's markets

Table 1.5.2

TWh	2009	2010	2011	2012	2013	Var. 13/12
Electricity Markets						
MGP	313.43	318.56	311.49	298.67	289.15	-3%
Exchange	213.03	199.45	180.35	178.66	206.90	16%
OTC	100.39	119.11	131.15	120.00	82.25	-31%
MI/MA	11.93	14.61	21.87	25.13	23.34	-7%
MI1	1.68	9.47	14.47	15.99	12.80	-20%
MI2	0.95	5.15	5.38	6.21	6.07	-2%
MI3			1.22	1.72	2.00	16%
MI4			0.80	1.21	2.47	104%
MA	9.30					
MTE	0.12	6.29	33.44	54.96	41.10	-25%
Exchange	0.12	6.29	31.67	30.36	8.00	-74%
OTC clearing	-	-	1.77	24.60	33.10	35%
OTC Registration Platform						
Registrations*	176.35	236.48	290.82	307.61	325.50	6%
Gas Markets						
M-GAS	-	0.16	0.17	0.02	-90%	
MGP	-	0.15	0.14	0.01	-90%	
MI	-	0.01	0.04	0.00	-89%	
MTGAS			-	-	-	
PB-GAS		1.71	34.93	40.88	17%	
G+1		1.71	34.93	40.83	17%	
G-1			0.05	-	-	
P-GAS	2.14	2.91	2.87	0.62	-	
Imports Segm.	-	-	-	-	-	
Segm. as per Legislative Decree 130/10			-	-	-	
Royalties Segm.	2.14	2.91	2.87	0.62	-	
Environmental Markets						
GCs	23.40	25.37	31.09	32.33	44.81	39%
Exchange	1.84	2.58	4.13	3.81	7.57	99%
OTC	21.56	22.79	26.97	28.52	37.25	31%
TEE (million toe)	2.34	3.09	4.10	7.62	8.23	8%
Exchange	0.97	0.98	1.28	2.53	2.81	11%
OTC	1.36	2.11	2.82	5.08	5.42	7%
GOs	0.00	0.00	0.00	2.22	42.63	1818%
Exchange				0.47	1.34	183%
OTC				1.75	41.29	2260%

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

5.2 Results of operations

In 2013, central-counterparty revenue/cost items (CCP revenues/costs)²⁵ decreased by nearly € 1.2 billion (-5.0% on the previous year). This result was due, above all, to the reduction of revenues from sales on the Electricity Market, practically related to the contraction of the "Prezzo Unico Nazionale" (PUN, national single price) during the financial year (-16.6%). By contrast, revenues from trades on the Environmental Markets increased, mainly as a result of the higher volumes of green certificates traded on the regulated market during the year and of their higher average trading price.

GME's performance, income and equity (2012-2013)

Table 1.5.3

Data in € million	CCP revenues/ costs	Marginal revenues	EBITDA	EBIT	Net Income	Total Assets (a)	Shareholder's equity
2012	23,126.771	36.526	17.937	11.060	8.600	87.195	23.799
2013	21,972.613	37.273	18.765	13.730	9.578	86.938	24.777

Note: (a) Total assets are net of receivables for CCP items related to sales on the energy markets from participants and GSE, CCT on OTC trades and financial income associated with market coupling on the Italian-Slovenian border. Total assets do not include unavailable deposits made by participants.

Marginal revenues²⁶ in financial year 2013 were up by € 0.7 million on the previous year (+2.0%). This growth may be ascribed to the following factors:

- increase in revenues for services provided on the Spot Electricity Market²⁷ and on the Forward Electricity Market (+ € 1.0 million, +4.8%). This growth is due, above all, to the higher reliance on scheduled deviations²⁸ by participants that had concluded bilateral contracts, especially holders of electricity injection accounts on the PCE, who/which repurchased on the power exchange part of the electricity sold over the counter;
- decrease in revenues for services provided on the PCE (- € 2.4 million), induced above all by the reduction of the unit fee for the MWh registered on the PCE, which passed from 0.012 €/MWh to 0.008 €/MWh as of 1st January 2013, in compliance with AEEGSI's Decision 558/2012/R/eel. This effect was only in part offset by the growth of the registered volumes;
- increase in revenues for services rendered on the environmental markets and bilaterals platforms (+ € 1.4 million), thanks to the growth of volumes traded on the various platforms and, namely, on the Green Certificates Market (MCV) and on the Green Certificates Bilaterals Platform (PBCV);
- decrease in revenues for services provided to Terna (- € 0.1 million) in connection with the assignment of rights of use of transmission capacity and the collection of orders on the MSD, under the relevant agreement between GME and Terna;

25 Central-counterparty revenue/cost items are the revenue items that exactly correspond to the cost items to which they refer.

26 Marginal revenues are the revenue items, which enable GME to cover operating expenses and get a return on the invested capital.

27 For quantifying and invoicing revenues for services rendered on the MGP, consideration is given to the volumes traded, gross of scheduled deviations as per article 43, para. 43.1 of the Integrated Text of the Electricity Market Rules and of cases of default as per article 89, para. 89.5 b) thereof.

28 On the PCE, the algebraic sum between the net position of the account and of the registered schedules gives the net balance of the account. If the balance is zero, the market participant's physical scheduling has been adequate; therefore, no scheduled deviation will arise. Conversely, if the physical balance is different from zero, the market participant has a scheduled deviation and this deviation will represent a purchase or sale on the MGP.

- increase in other marginal revenues (+ € 0.8 million) chiefly connected with: i) revenues from the PCR project, especially those related to the entry of the Czech exchange OTE in the project in the first months of 2013, and from the consequent reallocation of historical costs incurred by the participating power exchanges (+ € 0.1 million); ii) increase in revenues (+ € 0.5 million) from higher fees associated with the renewal (after an appropriate tender) of the agreement between GME and the bank in charge of its treasury services in 2012; and iii) release to the income statement of provisions for liabilities and charges, set aside in previous financial years to cover a labour dispute (+ € 0.1 million).

GME's marginal costs (2012–2013)

Table 1.5.4

Data in € million	Raw materials and services	Leases and rentals	Personnel	Amortisation, depreciation, write-downs and provisions	Sundry operating expenses	Total
2012	7.384	1.486	9.150	6.877	0.568	25.465
2013	7.364	1.628	9.179	5.035	0.337	23.543

Marginal costs, including amortisation, depreciation, write-downs and provisions, totalled € 23.5 million, down by over € 1.9 million on the previous financial year. The decrease is mainly due to:

- increase in the costs of leases and rentals (slightly above € 0.1 million, +9.6%) resulting from the combined effect of: i) reduction of sublease rentals for GME's Milan office, which was closed on 1st January 2013; and ii) signature in 2013 of a sublease agreement for the new headquarters of Viale Maresciallo Pilsudski;
- decrease of depreciation, amortisation, write-downs and provisions (€ 1.8 million, -26.8%) owing, above all, to lower provisions to be set aside in connection with the effects of AEEGSI's Decision 532/2013/R/eel; the decrease was in turn due, above all, to lower revenues on the PCE during the year;
- decrease of sundry operating expenses (€ 0.2 million, -40.7%) due, above all, to the reduction of bad debts and of ordinary contingent losses recorded in financial year 2013.

GME's key ratios (2012–2013)

Table 1.5.5

EBITDA/ Revenues ratio (%)	EBIT/ Revenues ratio (%)	ROI (a)	ROE (b)
2012	49.1	30.3	12.7
2013	50.3	36.8	15.8

Notes: (a) ROI is calculated as the ratio of EBIT to total assets;

(b) ROE is calculated as the ratio of net income to shareholder's equity.

EBITDA were equal to € 18.8 million, up by € 0.8 million (+4.6%) on the previous year.

EBIT exceeded € 13.7 million, up by € 2.7 million (+24.1%).

The net income was equal to € 9.6 million, up by about € 1.0 million (+11.4%) on the previous year.

The following table shows the average number of personnel members during the year, divided by labour contract category, the actual headcount as of 31st December 2013 and the dynamics of seconded personnel; all the figures are compared to the ones of 2012.

GME's personnel members

Table 1.5.6

Category	Personnel members		Personnel members	
	average in 2013	at 31st Dec. 2013	average in 2012	at 31st Dec. 2012
High- and middle-level managers	9.00	9	9.00	9
Low-level managers	29.60	30	29.50	30
Office personnel	58.80	62	54.40	56
Total	97.40	101	92.90	95
<i>of whom seconded</i>	2.5	2	2.6	3
Total net of seconded personnel	94.9	99	90.3	92



SECTION 2

MARKET EVOLUTION

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1. INTERNATIONAL MARKETS

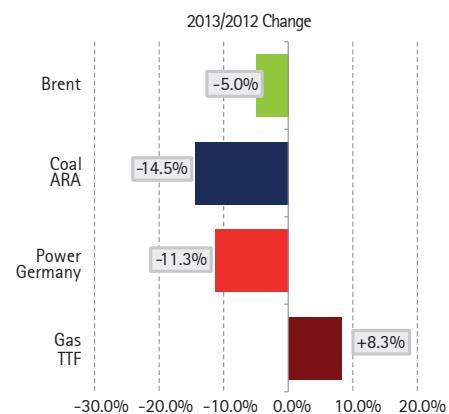
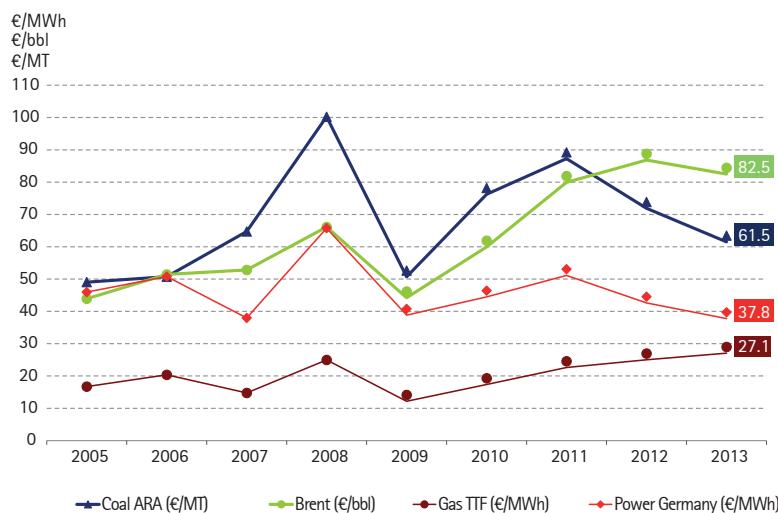
In 2013, the dynamics of energy markets expressed, once again, the extreme weakness of the European economy, evidenced by the persistent recessionary stage in Mediterranean countries and by the considerable

*Consolidation
of energy
market
dynamics in
a weak-economy
scenario*

slow-down of growth prospects in the French-German area. Together with the crisis of demand and the consequent non-recovery of productive activities, two other scenario elements had an impact on the trends of traditional energy commodities: i) the exponential growth of generation from renewables at continental level in the past four years; and, indirectly, ii) the availability of the US shale gas, made possible by the development of unconventional extracting technologies. In this scenario, while the Brent practically remained at its usually high levels, coal continued to decline and natural gas had a bullish dynamics, the latter within an actually single European commodity market due to the progressive alignment of the main continental reference prices¹. Finally, electricity prices confirmed their bearish propensity, showing a consolidation of the market "regionalisation" phenomenon, driven by structural differences in the national generating mixes that coupling mechanisms only contributed to hold down (Fig. 2.1.1).

Prices (in €) of the main energy commodities

Fig. 2.1.1



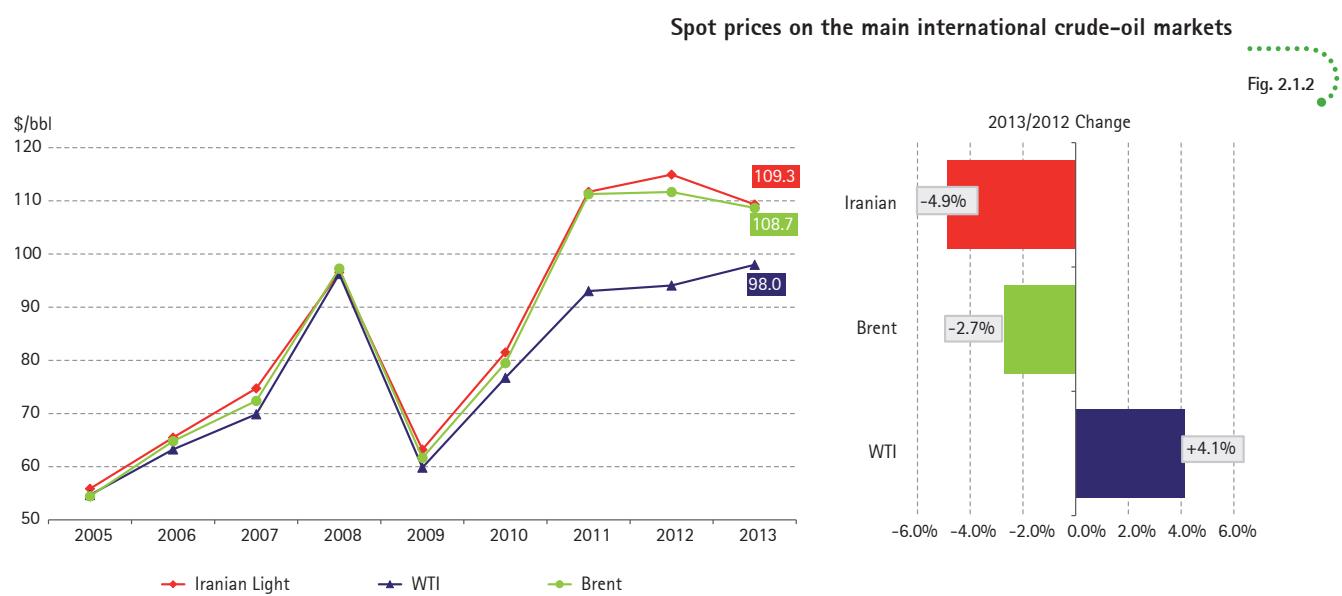
¹ The scenario remained unchanged, considering the value of prices expressed in €. The slight recovery in the purchasing power of the continental currency vs. the dollar – witnessed by a \$/€ exchange rate mounting to 1.33 (+3%) – did not significantly alter the variations of commodities, intensifying decreases of moderate extent.

In 2013, the Brent confirmed the stability and low volatility observed in the previous two-year period. Indeed, its price was, again, close to 110 \$/bbl owing to a minimum downward trend (-3%), and below the most markedly bearish expectations expressed by markets in 2012. Its daily profile was far from "brisk" and well epitomised by the drop of volatility to an all-time low (1.0%)². This fact reflects a pattern over the months with a yearly peak in February, when the price climbed to its highest value since April 2012 (120.1 \$/bbl), and a subsequent quarter with strong tendential reductions, offset only in part by the recovery recorded between June and July. At international level, similar dynamics were noted for the Iranian prices, usually aligned with the European ones. In countertrend, the US WTI rose to a historical peak (98.0 \$/bbl, +4.1%), bringing back its spread with the European oil to its minimum value in the last three years.

As to oil products, the trend of the European spot gasoil price was in line with the one of the reference commodity (919.0 \$/MT, -3.3%), whilst fuel oil had a sharp drop (613.1 \$/MT, -8.7%) owing, above all, to a more pronounced downward trend in the final months of the year.

Prospectively, the downward expectations of markets, which were not met in 2013, will be projected onto 2014, when the price of the European crude is predicted to reach around 105 \$/bbl and the one of gasoil 894 \$/MT. It is worth stressing that, also in this case, the trend of fuel oil (slight recovery) is opposite to the one of the original commodity (Fig. 2.1.2, Fig. 2.1.3).

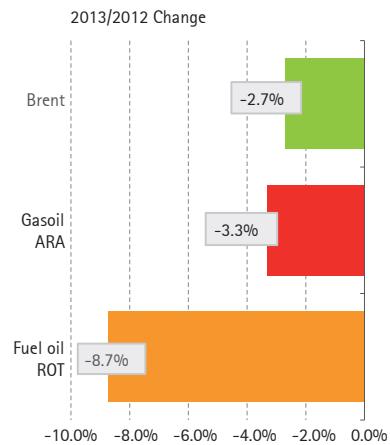
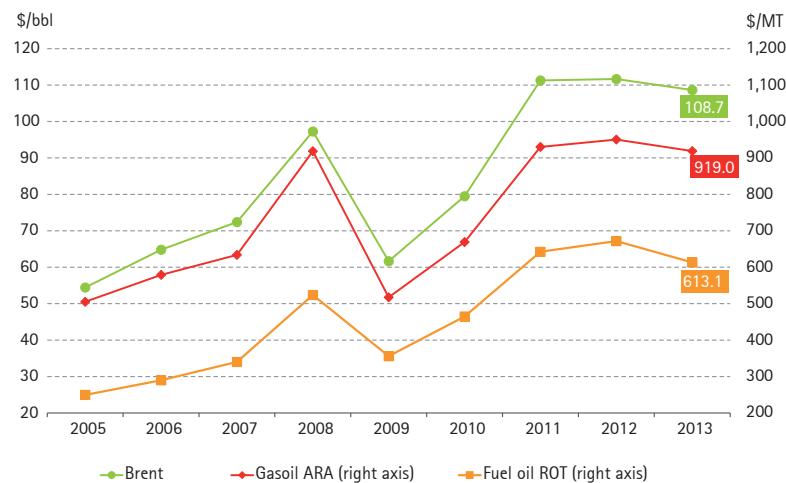
Crude oil still at all-time levels



2 In 2009, volatility was still equal to 2.7% and then gradually declined to a minimum level in 2013.

Spot prices of the Brent and of the main oil products

Fig. 2.1.3



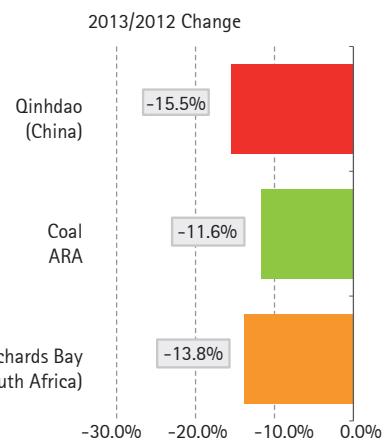
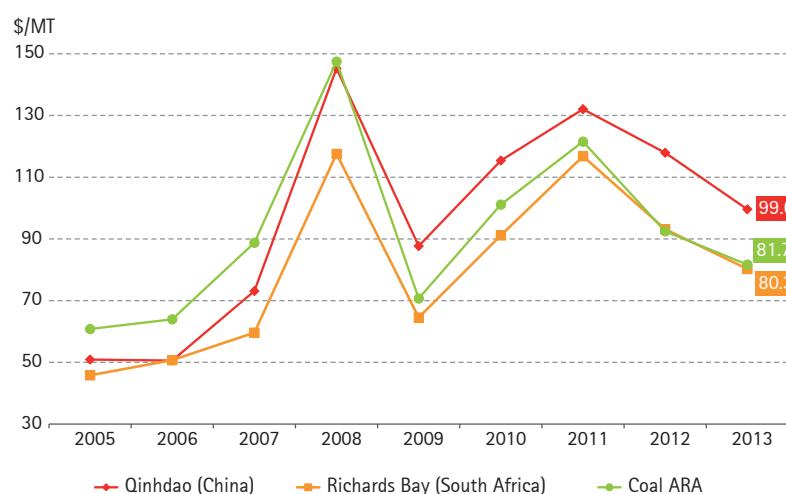
On the other hand, on coal marketplaces, prices continued their downward trend, collapsing to their minimum level in the last four years both in Europe and in China and South Africa. In Europe, prices were equal to

*Collapse of coal,
never so low since 2009*

81.7 \$/MT (-11.8%), with a sharp decrease, which is even more significant considering the definitely bullish prospects expressed by market participants in 2012. The decrease, which mainly originated from the massive and unexpected supply of gas recorded on international markets, driven especially by the US shale gas, involved all the months of the year (-11%/-20%) and was less intense only in the final quarter (-2%/-6%). Prospectively, the trend in the past two years is in line with market expectations, with a moderate increase which would keep prices anyway below the levels observed from 2010 to 2012 (Fig. 2.1.4).

Spot prices on the main coal markets

Fig. 2.1.4



In 2013, the natural-gas market in Europe had two distinctive features, resulting from dynamics that became settled over time: i) the consolidated alignment of prices recorded on the most important marketplaces, favouring in practice a single continental market; and ii) the strengthening of the multiannual bullish dynamics under which, in 2013, the spot gas price hit an all-time peak of 27 €/MWh, proving to be less volatile and less and less dependent on the trend of crude oil³.

Actually, in general countertrend with respect to other fuels and in analogy with what was instead observed at the US Henry Hub⁴, gas prices were up by 4-9%, especially in the first half of the year, when the change vs. the corresponding period of 2012 was equal to 15-19%. Only the Italian PSV deviated from this generalised trend, since the national price, with a weaker demand especially by the thermal generation sector, shrank to around 28 €/MWh (-2.6%), completing its convergence onto the rest of Europe. This process occurred, in particular, in the first half the year, when prices beyond Italian borders increased (as previously noted), whereas the Italian gas had a tendential contraction of 8%⁵, lying in some cases even below the North-European one. It is also worth pointing out that a similar pattern was observed at the CEGH, the only central-European trading point where the March hike was more moderate, confirming the growing integration between the dynamics of Italian prices and Austrian ones⁶, with an average spread of below 1 €/MWh. Moreover, the absence of the March peak in Italy and Austria limited the level of price volatility (1.3% and 1.2%, respectively), halving it vs. the values of the other hubs, which anyway had a further slight decline (2.0%/2.5%)⁷ (Fig. 2.1.5).

It should be noted that the sustained growth of gas prices did not come as a surprise to market participants, in that forward markets had largely predicted since 2012 that the then ongoing positive trend would continue. Nevertheless, this trend comes to a halt in the expectations for 2014, which are practically flat or even diminishing towards the values of 2013. In this sense, the spot data for the start of 2014 encourage these prospects, though not supporting them in absolute values, since they point to a generalised sharp decrease of all prices, which are usually aligned⁸.

Rising of the European gas price and zeroing of local price spreads ...

³ The monthly correlation between the prices of the TTF and the 9-month moving average of the Brent, converted into €, progressively narrowed in the past four years from 82% to 19% between 2010 and 2013.

⁴ The price at the US Henry Hub remained at levels definitely below European ones (around 9.5 €/MWh), though exhibiting a sharp reversal of its bearish trend, giving rise to a tendential growth of about 30%.

⁵ The value dropped to 3%, excluding the month of February 2012 when the price had an exceptional peak related to particularly adverse weather conditions.

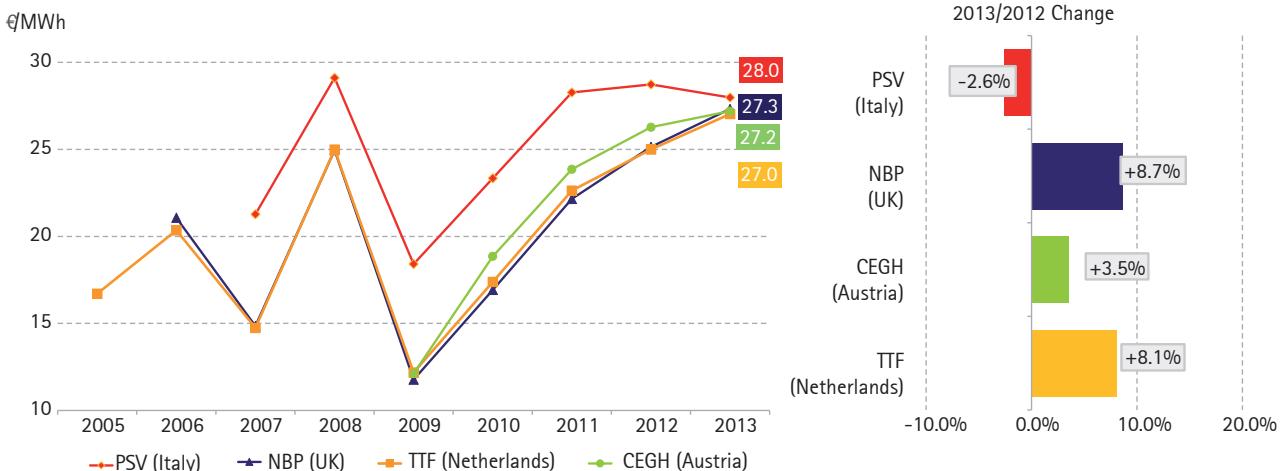
⁶ The Italian daily price was generally above the one of the CEGH, with limited reversals on isolated days of January and March.

⁷ In general, between 2010 and 2013, volatility progressively declined on all hubs; for instance, at the TTF, it passed from 3.8% to 2%.

⁸ In the January-March quarter of 2014, the price at the TTF was 24.3 €/MWh on average vs. 27.7 €/MWh in December 2013 and 28.2 €/MWh in the same quarter of 2013.

Spot prices on the main gas markets

Fig. 2.1.5



As to the volumes traded on gas markets, the growth trend that had begun in 2012 slowed down in 2013. On the main continental hubs, the contraction concerned above all the NBP (-14%), whose changes had a heavy

...while the growth of liquidity slowed down

impact on the value of overall volumes traded (85% of which accounted for trades at the British trading point). With regard to the hubs with the historically lowest volumes, moderate increases were recorded in Belgium (+4%) and at the Italian PSV; at the latter trading point - thanks in part to the contraction of national gas demand - trades took a small leap forward (+2%), after practically tripling in the previous three-year period. The reductions observed at the CEGH were much stronger: its values dropped to their minimum level since 2011 owing to a 25% decrease. Moreover, the analysis of the churn ratio⁹ does not suggest significant movements: its low values generally substantiate the idea of still immature markets and with ample growth prospects. In particular, in 2013, the churn ratio fell close to its minimum level in the past seven years in Belgium (4.1), whereas in Italy¹⁰ (2.6 vs. 2.5) and Austria (3.7 vs. 3.5) it was slightly above the levels of 2012, in line with its slow and multiannual growth dynamics. On regulated markets, liquidity continued to have a positive pattern, although the size of trades was still negligible with respect to the volumes negotiated on the main central-northern continental exchanges. In this section (for the time being residual in the market), volumes rose to an all-time high (81 TWh, +19%), especially as a result of the increase of trades on the Italian PB-GAS (roughly +6 TWh¹¹), accompanied by an increase that was equally distributed in absolute value among the other continental exchanges (approximately +7 TWh) (Table 2.1.1).

9 The churn ratio is the ratio of total volumes commercially traded to actual physical nominations by market participants.

10 At the PSV, too, though reaching an all-time peak of 2.6, the churn ratio did not lie much above its value in 2012 (2.5), proving to be the lowest in Europe.

11 For details, see para. 5.1, Section 1.

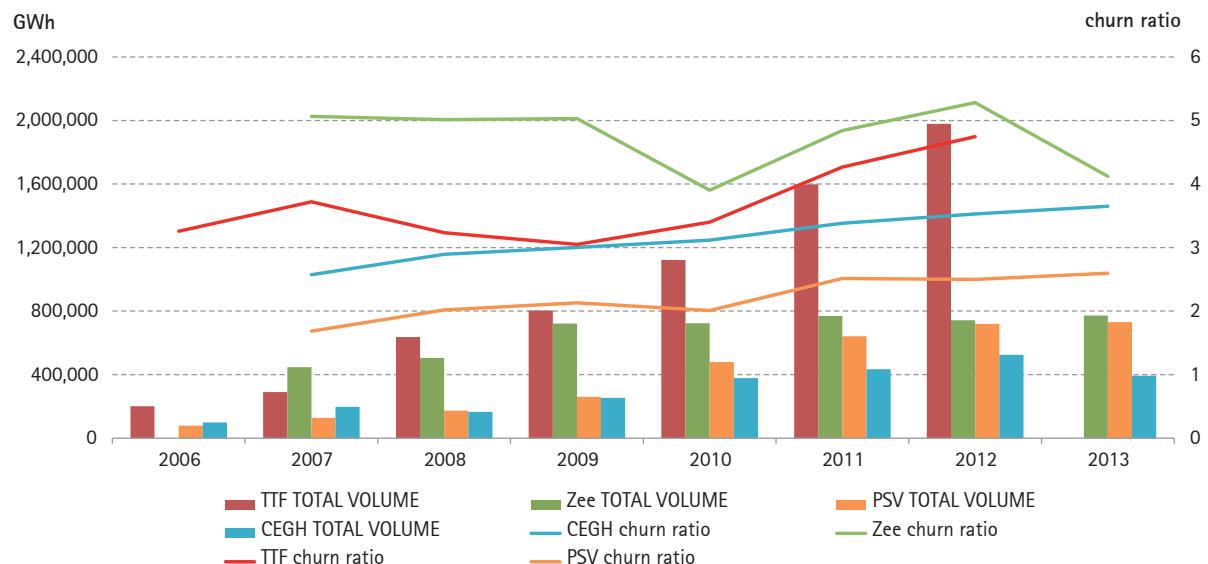
Volumes traded on gas markets (GWh)

Table 2.1.1

Country	Type	Platform	2009	2010	2011	2012	2013	13/12 Change
UK	Hub	NBP	-	-	-	12,353,458	10,646,731	-14%
Belgium	Hub	Zee	721,205	724,010	769,797	742,462	771,502	+4%
Netherlands	Hub	TTF	803,530	1,122,114	1,597,906	1,979,126	n.d.	-
Germany	Exchange	EEX	0	0	8,353	11,619	13,427	+16%
France	Exchange	Powernext	2,262	8,362	16,217	19,757	22,246	+13%
Austria	Hub	CEGH	253,340	378,660	435,010	525,100	393,030	-25%
	Exchange		8	778	1,526	2,005	4,790	+139%
Italy	Hub	PSV	260,588	479,146	641,135	719,206	730,891	+2%
	Exchange	PB-GAS	-	-	1,712	34,925	40,833	+17%
Total	Hub	-	2,038,663	2,703,930	3,443,849	16,319,351	12,542,154	-23%
	Exchange	-	2,269	9,140	27,808	68,306	81,296	+19%

Volumes on the main gas hubs

Fig. 2.1.6



With an unexpectedly protracted economic crisis, what was observed in 2013 on the main spot and forward power exchanges appears to corroborate some trends that had in part emerged in the previous year and, in particular, a stronger process of market regionalisation, due to structural differences in national generating mixes (intensified by the different weight of renewables therein), a process that was limited only in part by the numerous experiences of market coupling on the continent.

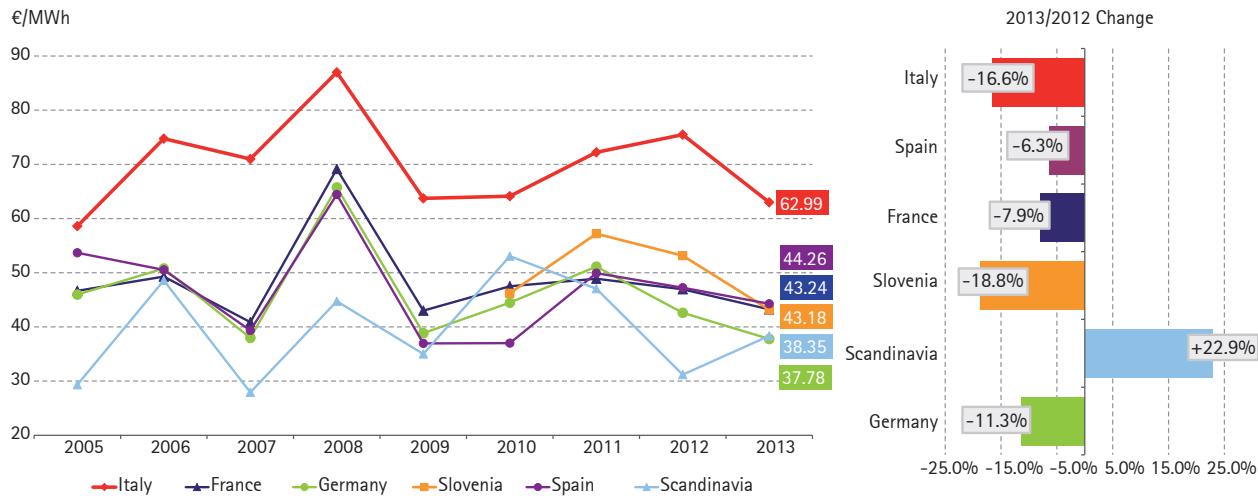
Fall of spot electricity prices,
more intense spreads in central Europe...

Actually, European prices ranged from 38 €/MWh to 44 €/MWh, displaying a common and renewed decline, apparently reflecting also the contraction in the reference fuels (-6/-13%), typically represented by coal in Europe. However, within a dynamics indicating a good degree of interaction between spot exchanges, the spread between France (43.24 €/MWh) and Germany (37.78 €/MWh) confirmed to be no longer negligible. Indeed, while the spread between the two countries was practically nil until 2011, it widened to 5 €/MWh in 2013 (+1 €/MWh on 2012), reflecting less frequent but more intense seasonal

misalignment phenomena¹². In Italy (the market historically and structurally "isolated" from the rest of Europe owing to a technological mix based on a more expensive fuel, like gas), the price decreased to its lowest level since 2006 (62.99 €/MWh, -16.6%) after three years of gradual ascent. In effect, while the contraction was in part justified by a further fall of electricity demand and by the growing availability of renewable electricity, a crucial factor was the impact of the progressive replacement of traditional oil-indexed gas formulas (gas is the main fuel of the national generating mix) with the lower spot prices; this impact was even more significant considering its progressively higher weight in the variable generating cost¹³. Therefore, more generally, the trend and levels of electricity prices inferred a narrower spread between Italy and the rest of Europe (roughly 19 €/MWh, about -11 €/MWh)¹⁴, which was still subject to wide seasonal fluctuations¹⁵, validating also the lower volatility of our price (7.7% vs. 16.5% of France and 19.6% of Germany) and its lower peak-load/off-peak modulation (1.19 vs. 1.38 of France and 1.40 of Germany) (Fig. 2.1.7 and Table 2.1.2).

Spot prices on the main European power exchanges

Fig. 2.1.7



¹² The inflexibility of the French generating mix, mostly consisting of nuclear plants, is the most frequent cause of misalignment between the two markets. In the autumn/winter period, the high rate of outages of French nuclear plants, accompanied by a higher demand than in other parts of the year favours the setting of prices much higher than in Germany, which has a much more balanced generating mix (renewables, nuclear, coal/brown coal). In 2013, both the frequency of hours in which the hourly prices of France and Germany were the same (43% vs. 13% in 2012 and 16% in 2011), and the average spread between the two countries in the October–March half-year (about 11.1 €/MWh vs. about 7.7 €/MWh in 2012) went up.

¹³ The large supply of gas on markets in the past few years, induced by both reduced consumption and the new abundance of US shale gas, created more liquidity on spot markets and widened the traditional spread between the price of gas expressed by take-or-pay import contracts and the spot gas price. In the past four years, this opened the way to a number of renegotiations of take-or-pay contracts, which were focused both on the reference levels of the so-called "formulas" and on the indices and forms of indexing, chiefly with a view to narrowing the gap between the same formulas and the spot gas price. For details, see para. 2.1, Section 2.

¹⁴ The figure was calculated by referring to the French price.

¹⁵ Always with reference to the French price, the spread was lower in winter and then sharply rose in the other periods of the year. In the autumn-winter half-year of 2013, the spread was around 13 €/MWh (about 22 €/MWh in 2012) and mounted to about 26 €/MWh in the remaining part of the year (about 35 €/MWh in 2012).

	Price volatility and ratios by groups of hours					
	Italy	France	Germany	Slovenia	Spain	Scandinavia
Peak-load/off-peak working day	1.19 (-3.3%)	1.38 (-1.7%)	1.40 (2.9%)	1.42 (-2.1%)	1.24 (4.5%)	1.13 (-8.9%)
Holiday/off-peak working day	0.98 (-2.2%)	0.79 (-6.2%)	0.78 (-4.9%)	0.89 (2.0%)	0.94 (-0.2%)	0.97 (-0.2%)
Volatility	7.7% (-1.1 p.p.)	16.5% (+3.0 p.p.)	19.6% (+4.4 p.p.)	16.0% (-1.8 p.p.)	40.7% (+25.5 p.p.)	6.3% (-3.2 p.p.)

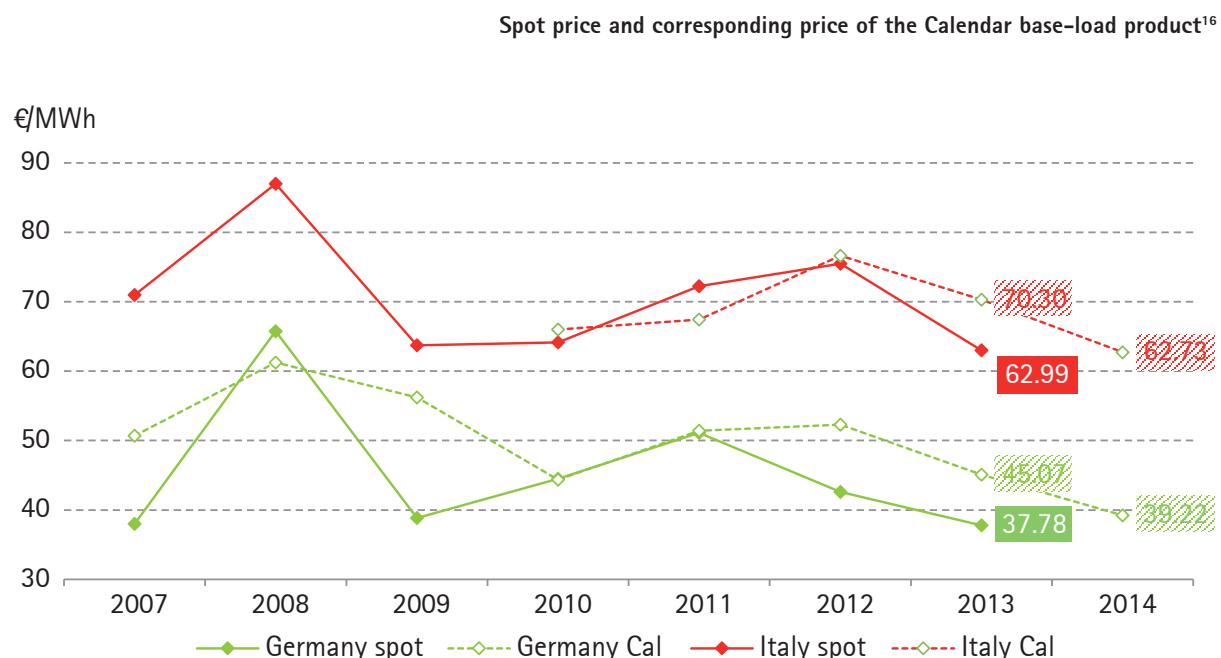
(Trend changes between parentheses)

Table 2.1.2

As a whole, the combined effect of persistent economic recession and deployment of renewable generation contributes to making the reference framework of price determinants increasingly unstable and contingent, significantly complicating the possibility of having adequate signals about the evolution of forward prices.

As in 2012, futures prices in 2013 were well far from heralding the sustained reductions observed on spot markets in 2013, under a trend that governed both liquid markets, such as the German one, and those with lower volumes of trades. In particular, market participants' expectations for 2013 overestimated the actual spot price by about 7/8 €/MWh, reiterating on the German market the error already made in 2012. As it often happens in these situations of deep uncertainty, forward positions on exchanges proved to be fairly conservative and to have a tendency, for the next year, to replicate the infra-annual levels and trends of the trading period. This explains the stability of products pertaining to 2014 vs. final spot prices in 2013, well epitomised by the value of the Calendar 2014 products (Fig. 2.1.8).

...steady forward prices in 2014...



16. The graph shows the settlement price of the Calendar 2014 product on its last day of trading. For the sake of simplicity, reference is only made to Italian and German prices, without however altering the above-described dynamics.

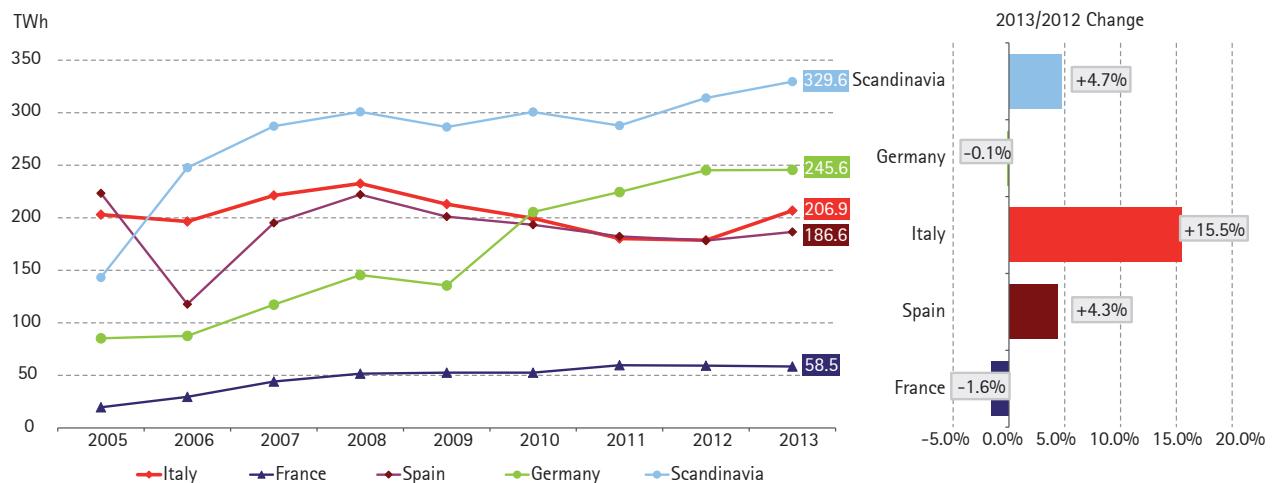
In a weak and uncertain economic scenario, the volumes of trades on spot and forward markets were generally stable and, just as prices, with typically local differences. Among spot markets, the traditionally larger exchanges, NordPoolSpot (Scandinavian area) and Eplex (France and Germany), kept their liquidity at high levels: the former rising to nearly 330 TWh, a new all-time peak favoured by a tendential increase of around 5%, while the latter lay slightly above 304 TWh¹⁷, after three years of continuous increases. In the Mediterranean area, Spain slightly rose

...generally moderate recovery of volumes, but new take-off for Germany

(roughly 187 TWh, about +4%); however, its trades were at their lowest levels in the past seven years. In contrast, Italy sharply reversed its trend owing to a change in the commercial selling strategies of market participants, confronted with a demand at its historically minimum levels. The transfer of the traditionally OTC-traded energy to the exchange by these market participants pushed the volume of transactions to about 207 TWh (about +16%), the highest value since 2009¹⁸ (Fig. 2.1.9).

Volumes traded on the main spot exchanges

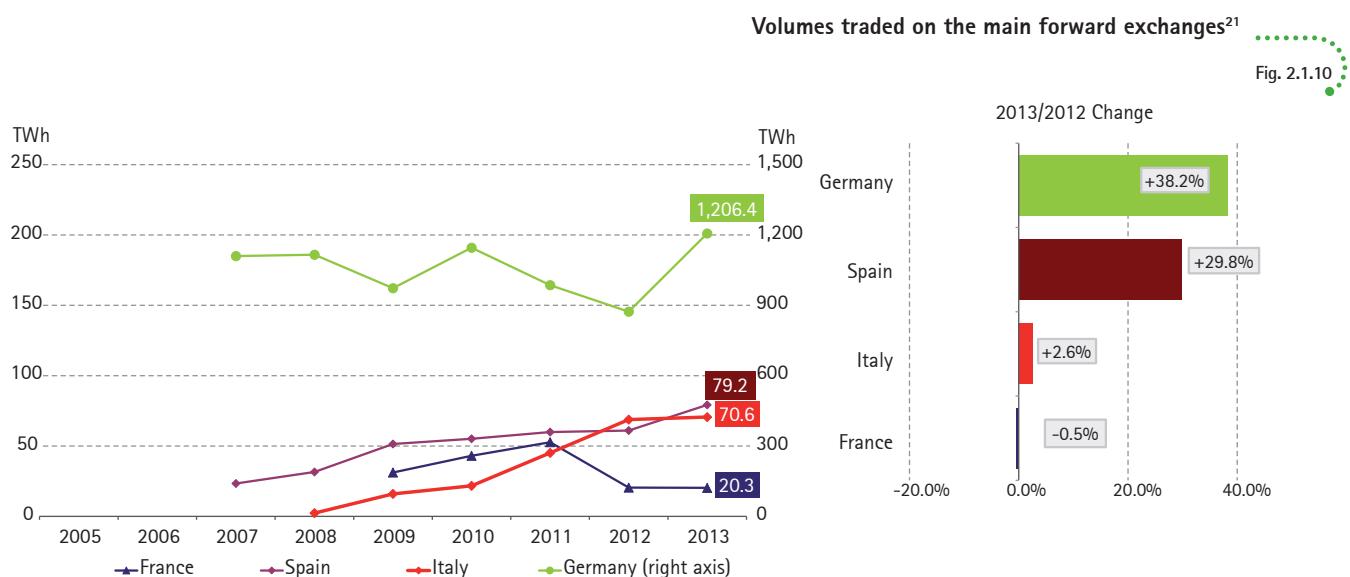
Fig. 2.1.9



17 The figure of Eplex considers the volumes traded within the French-German area. The volume of Germany is definitely higher (245.6 TWh) than the French one (58.5 TWh), in a year in which both were practically at the same levels as in 2012.

18 For details, see para. 5.1, Section 1.

On the other hand, the recovery of trading on forward markets appeared to be driven by Germany. Thanks to the higher liquidity of all products traded, especially of the Calendar one, Germany reversed its two-year (2011-2012) bearish trend, favouring futures sales for 1,206 TWh (+38.2%). As usual, smaller exchanges were at long distance from the above ones, with an overall and growing volume of 169 TWh. This volume was sustained, above all, by the expansion of the Spanish exchange, which hit a new record of 79.2 TWh (approximately +30%), due to the joint effect of an increase in the number of matchings in the order book and of a growth of OTC clearing to hedge the counterparty risk. Conversely, futures volumes for Italy and France stood steady at their 2012 levels (about 70.6 TWh and 20 TWh, respectively). It is interesting to note that the disaggregation of the Italian volume into its three components infers a different distribution of forward-traded energy, pointing to a sharp drop of volumes matched in GME's order book (8 TWh, -22.4 TWh) and to the concurrent strengthening of both the utilisation of the OTC clearing service provided by GME and EEX¹⁹ (34.2 TWh, +9.6 TWh) and the trades of futures listed by Borsa Italiana (28.4 TWh, +14.6 TWh)²⁰ (Fig. 2.1.10).



¹⁹ Since October 2013, the German exchange EEX has launched an OTC clearing service for bilateral contracts pertaining to the Italian electricity market. From October to December 2013, the volume of energy recorded at EEX amounted to 1.1 TWh.

²⁰ For details, see para. 5.1, Section 1, and para. 2.4, Section 2.

²¹ Note the correction of the 2012 figures for Germany vs. the overestimated ones shown in the Annual Report 2012.

2. ELECTRICITY MARKETS

2.1 The Day-Ahead Market (MGP)

In 2013, the Italian spot electricity market appeared to strengthen some of the trends observed in the past few years. However, these trends were paralleled by elements of strong discontinuity, which seem to have caused structural changes in the traditional relations between market variables. Among the trends confirmed: the further contraction of purchases²² on the day-ahead market to their historical minima, in response to the effects that a protracted recessionary stage induced in terms of reduction of physical electricity consumption and, consequently, of commercial volumes traded on the MGP. The impact of the crisis also translated into a reduction of overall supply, induced by the progressive exit of the thermal generating mix from the market; the latter saw its market share further narrow, compressed by the contraction of demand and by a further growth of generation from renewables.

In addition to these practically inertial dynamics of volumes, with a harshening of the overcapacity afflicting the Italian power system for many years, deep changes emerged in terms of price trends. The PUN interrupted its multiannual bullish trend going back to its 2006 minima, showing an evolution similar to the one of many European power exchanges, which have continued their degrowth path since 2012²³.

In this European setting of declining spot prices, the sharp drop of the Italian price appeared to reflect only in part the opposite movements of demand and supply of renewables, incorporating structural changes into the relationship between variable costs and wholesale electricity prices. The change did not concern only the reductions of the reference commodities for Italian electricity generation, but also and above all the greater alignment of the gas raw material costs with the prices of the European hubs. This was the natural consequence of the advance of the process of renegotiation of long-term supply contracts, more and more frequently indexed on spot gas prices, in lieu of traditional formulas based on the more expensive oil products, or anyway with revised reference prices making them closer to the ones on spot markets. Hence, the linkage between spot prices of gas and electricity (the latter responding more and more rapidly and directly to movements of the former) appeared to be closer than in the past.

Major changes also emerged in the hourly and zonal dynamics of prices, with a reduction of the PUN in all the hours but more intense in peak-load ones (peak-load PUN at an all-time low). This relatively faster descent of peak-load prices, dominantly favoured by photovoltaic generation, accelerated the convergence of prices in the different groups of hours, with day-time prices lower than night-time ones in an increasing number of hours. The deployment of renewables appeared to have a major impact also on zonal phenomena, contributing to widening the gap between prices in northern zones and those in southern zones, where hourly prices were, among others, more and more frequently equal to or close to zero.

²² Unless otherwise specified, the variables pertaining to the MGP volumes (whether purchases, sales or orders) in the following paragraph (2.1) refer to both exchange volumes and to those resulting from bilateral contracts.

²³ In particular, although the PUN had much higher levels than those of other European partners, it showed a more considerable reduction, which contributed to narrowing the spread between the Italian spot price and the prices of foreign exchanges. For details, see Chapter 1, Section 2.

In 2013, the PUN dropped to its minimum levels since 2006, interrupting its bullish stage since 2010 and showing a second year-on-year contraction, in terms of intensity, since the take-off of the market (62.99 €/MWh, -16.6%). The reversal of the protracted bullish trend of the PUN is justified in part by the intensification of phenomena that had already clearly emerged in the past few years and in part by the appearance of new elements that played a key role in driving down price levels. Based on the current evolution of spot and forward markets, the bearish trend of prices caused by these factors will not stop in the next two years. Indeed, in the first quarter of 2014, the PUN had an 18% downward trend, while forward markets expressed strongly bearish prospects, expecting the PUN in 2015 to lie close to its minimum levels since the take-off of the market (about 53/54 €/MWh)²⁴.

Interruption of the bullish trend of the PUN, dropping to its minimum levels since 2005

Among the factors representing an element of continuity with respect to the previous year was the further contraction of purchases (289 TWh, -2.9%), prolonging the duration of the downward trend started in 2010 and falling to their lowest levels since the take-off of the market. The shrinking volumes of the MGP were substantiated by the change in electricity demand recorded by Terna, showing a decrease of physical consumption similar to the one of demand on the Day-Ahead Market (317 TWh, -3.4%). The homogeneous decline of purchases on the spot market and of demand kept the ratio of commercial volumes to physical volumes stable (91.2%), thus reflecting the consolidation of the effects that the dissemination of non-schedulable renewables induced (increase of self-consumption not passing through the day-ahead market). Therefore, the descent of volumes traded on the MGP is not ascribable to the fact that the spot market is less representative than the trend of actual withdrawals, but is closely related to the weakness of the Italian economy (GDP: -1.8%). This fact is corroborated by the change observed in electricity demand after removing calendar and temperature effects (-3%)²⁵. The impact that the protracted economic crisis seems to have had on the contraction of demand appeared both directly, with a 4.7% decrease of industrial consumption, and indirectly, as shown by the reduction of electricity intensity; this reduction, justified in part by a higher energy efficiency, expresses a further decrease of energy-intensive productive activities in the industrial sector, which was particularly hit by the adverse economic cycle (Table 2.2.2)²⁶.

The causes of the drop: crisis of demand...

Over and above the decline of demand, inertial dynamics also included the further growth of sales from wind and solar sources, mounting to 14 TWh (+37%) and 27 TWh (+15%), respectively; these sales jointly covered about 14% of demand on the MGP²⁷.

The sharp increase of sales from hydro sources, at their maximum levels since the take-off of the market (45.3 TWh, +29.1%)²⁸, was among the factors depressing prices and consolidating these trends. This change is, among others, consistent with the data provided by Terna

... supply of renewables

²⁴ The downward trend of the PUN (-18%) refers to the first quarter of 2014, whilst the data pertaining to the forward price of the yearly base-load product 2015 pertain to the last price recorded on the MTE as of 31 March 2014.

²⁵ Source: Terna

²⁶ For details, see GME's Newsletter of January 2014.

²⁷ This went to the detriment, above all, of combined cycles, whose market share fell to 32% (-6 p.p.), since the reduction of their sales was definitely faster than the one of the overall volumes traded.

²⁸ Sales from hydro sources had a depressive effect on prices because, as is known, run-of-river and modulation hydro plants have almost nil variable costs.

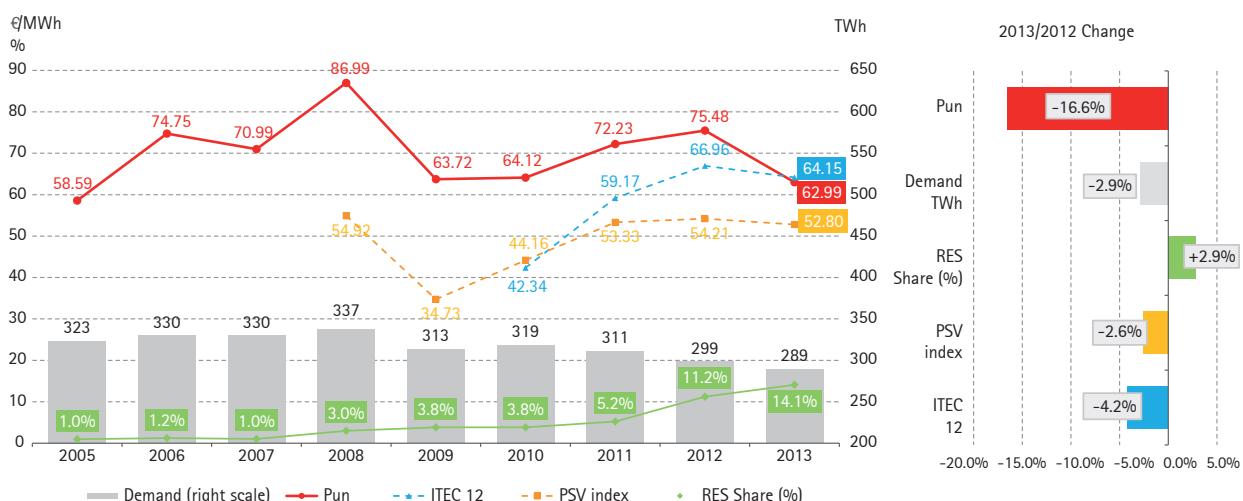
about the monthly hydro energy capability factor²⁹, which was above 1 in all the months of the year and, in the March-July period, close to its absolute maximum levels in the past 60 years³⁰.

In addition to movements in demand and supply of renewables, a crucial factor in the above reduction of the PUN was its increasingly frequent pegging to the lower spot gas prices³¹, in place of traditional gas formulas linked to oil products. As is known, this is the result of a renegotiating stage of long-term supply contracts, in which reference is increasingly made to prices recorded at the hubs (hub index formulas), thus favouring a significant depreciation of the cost incurred by gas-fired generation for procurement of the raw material. In particular, this renegotiating stage (started about three years ago) had an acceleration in 2013, continued in 2014 and is likely to go on also in 2015. A rough indication of the extent of the reduction in the cost of the gas raw material is given by the deviation between the Itec-12® index provided by Ref and the PSV index³². In spite of the contraction of both indices (more intense for Itec-12, i.e. -4.2% vs. -2.6%), the PSV index in 2013 was anyway about 11 €/MWh lower than Itec-12³³ (Fig. 2.2.1, Table 2.2.1).

*... convergence of the
gas raw material cost
at the PSV*

Trend of the PUN and of its determinants³⁴

Fig. 2.2.1



29 The energy capability of all hydro plants in a given period is the maximum amount of electricity that all the inflows observed in the same period could generate under the most favourable conditions. Given this definition, the monthly hydro energy capability factor published by Terna is the ratio of the energy capability in the month considered to the average value of the energy capability in the same month calculated over multiple years. Therefore, a factor above 1 indicates that the value of hydro energy capability in a given year-month is above the average of the hydro energy capability recorded in the same month and calculated over multiple years.

30 In this regard, see "Rapporto Mensile" of 31 Dec. 2013 published by Terna.

31 As is known, gas is the reference fuel for the Italian generating mix. Although the market share of combined-cycle plants declined in the past three years, sales of this technology were higher (32%) than those of other technologies, being at the margin in the majority of hours (60.8%) and thus preserving the role of gas as chief fuel in the national power system.

32 The PSV index is calculated as the ratio of the yearly price recorded at the PSV to the efficiency of a typical combined-cycle plant, assumed to be equal to 53%. Itec-12®, provided by Ref, is an index of the average generating cost of the Italian mix of thermal plants, taking into account the cost of procurement of both gas and coal, in the respective proportions. For our purposes, this indicator is a useful tool of comparison with the PSV index; indeed, for estimating the component pertaining to the cost of gas-fired generation, it dominantly uses the nine-month moving average of the Brent and, only to a residual extent, the trend of spot prices observed at the TTF.

33 This deviation is however overestimated because the renegotiation process is anyway incomplete and, because, unlike the PSV index, Itec-12 also considers transmission and logistics costs, which may be estimated at about 2/3 €/MWh.

34 The data about the share of renewables refer to wind and solar sources.

Sales by source and technology

Table 2.2.1

TWh	2009	2010	2011	2012	2013	2013/2012 Change
Conventional sources	200.0	204.6	197.9	175.1	147.9	-15.3%
Combined cycle	128.6	149.6	138.5	113.8	92.5	-18.6%
Coal	23.0	24.4	29.3	32.3	26.2	-18.5%
Other	48.4	30.6	30.1	29.0	29.3	+1.2%
Renewable sources	57.7	59.5	59.5	74.1	91.4	+23.7%
Hydro	40.6	42.2	37.9	35.2	45.3	+29.1%
Hydro run-of-river	24.1	24.6	23.4	22.3	27.0	+21.4%
Hydro modulation	16.5	17.6	14.5	12.9	18.3	+42.4%
Geothermal	5.1	5.1	5.4	5.3	5.3	+0.9%
Wind	6.1	5.6	7.2	10.3	14.1	+36.9%
Solar and other	6.0	6.6	9.1	23.3	26.7	+15.0%
Pumped storage	5.4	5.8	4.1	3.0	3.3	+13.0%
TOTAL	263.1	269.8	261.6	252.1	242.7	-3.5%
Additional Offers/VENF*	-	-	-	0.0	-	-
Foreign countries	50.3	48.8	49.9	46.5	46.5	+0.1%
TOTAL SALES	313.4	318.6	311.5	298.7	289.2	-2.9%

*VENF = Value of energy not supplied

Although the lower cost for procuring gas has contributed to driving wholesale electricity prices downwards, obviously to the benefit of consumers, this change in the structure of supply contracts makes it extremely difficult to estimate changes of margins on the variable costs associated with thermal generation. However, signs of crisis of thermal generation also emerge from the trend of some macro-quantities of the market: overall supply on the MGP suspended its multiannual expansion (532 TWh, -3.9% on 2012), with a drop exceeding in absolute terms the one of purchases (-23 TWh vs. -9.5 TWh). This change reflects the loss of competitiveness of part of thermal generation, which was already out of merit order in many hours of 2012 and which, as a consequence, directly reduced the volumes offered on the market in 2013, in response to strongly bearish price expectations (CCGT plant supply: -14 TWh; oil-fired plant supply: -11 TWh; gas-turbine plant supply: -5 TWh)³⁵. Thus, the contraction of supply on the MGP is to be interpreted as the sign of an increasingly harsh crisis of the thermal generation sector. The impact of the crisis on the electricity market is also substantiated by the growing elasticity of the demand curve: in this adverse economic cycle, this curve appears to express the consumers' willingness to undertake more prudent price strategies than in the past. In this connection, it is worth mentioning the amount of volumes offered for sale with a specified price, which recorded both an all-time peak (46.5 TWh) and an all-time yearly increase (+33.7%) in 2013 (Table 2.2.2).

Supply from thermal plants declining and less and less competitive ...

³⁵ Based on provisional data provided by Terna, the capacity of thermal plants dropped to about 77 GW (about -3 %), thus interrupting the multiannual expansion of installed thermal capacity.

Trend of volumes on the MGP

Table 2.2.2

TWh	2009	2010	2011	2012	2013	2013/2012 Change
Terna's requirements	320.3	330.5	334.6	328.2	317.1	-3.4%
Demand with specified price	339.2	345.1	338.2	330.5	329.8	+0.1%
Purchases % of Terna's requirements	313.4	318.6	311.5	298.7	289.2	-2.9%
Supply	499.2	509.5	538.1	555.4	532.1	-3.9%
Sales at zero price	313.4	318.6	311.5	298.7	289.2	-2.9%
	225.8	218.4	210.0	201.8	214.7	+6.7%

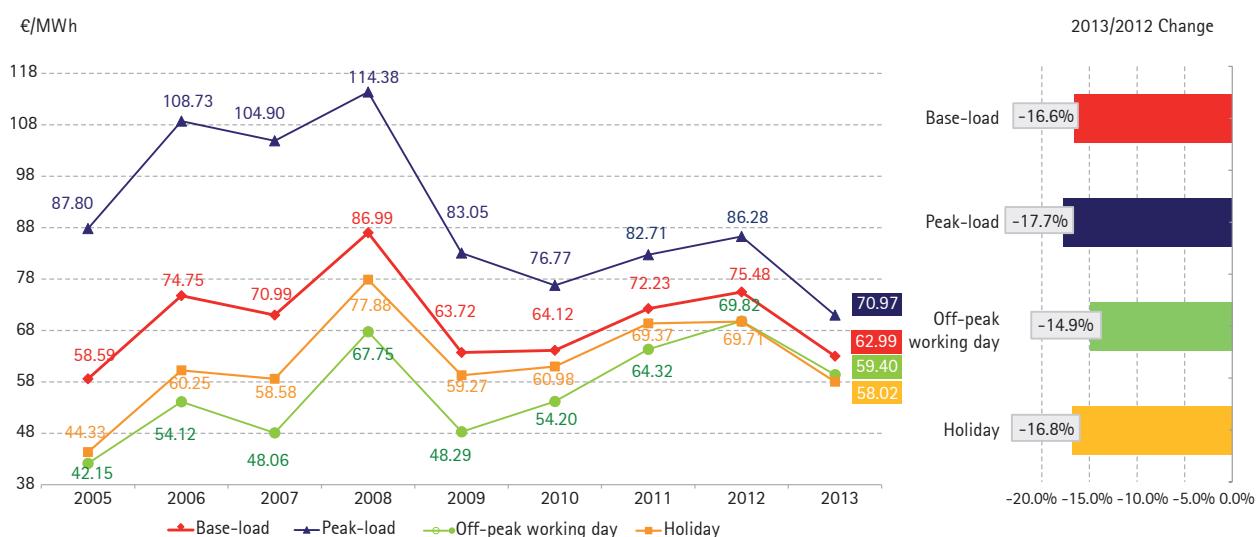
The analysis of prices by groups of hours shows that the drop in prices occurred above all in peak-load hours and that, in this time band, the PUN fell to its historical minimum (70.97 €/MWh, -17.7% on

Ratio of day-time to night-time prices at its historical minimum levels

2012). Less significant was the reduction of the PUN in off-peak hours (59.40 €/MWh, -14.9%), but its level was anyway among the highest since the take-off of the market and, for the first time, slightly above the one recorded on holidays (58.02 €/MWh, -16.8%). These changes caused the ratio of the peak-load PUN to the off-peak PUN to reach a minimum of 1.19 (as against 1.24 in 2012), confirming the continuous process of convergence between day-time and night-time prices, which started in 2009 in connection with the gradual deployment of new renewable capacity, especially solar. In effect, in these years, the downward movement of prices caused by the supply of renewables was concentrated in the central hours of the day with higher insolation, favouring (with increasing frequency) the setting of day-time prices even lower than night-time ones, with numerous cases of zeroing of zonal prices and, in few cases, also of national ones³⁶ (Fig. 2.2.2).

Yearly average PUN by groups of hours

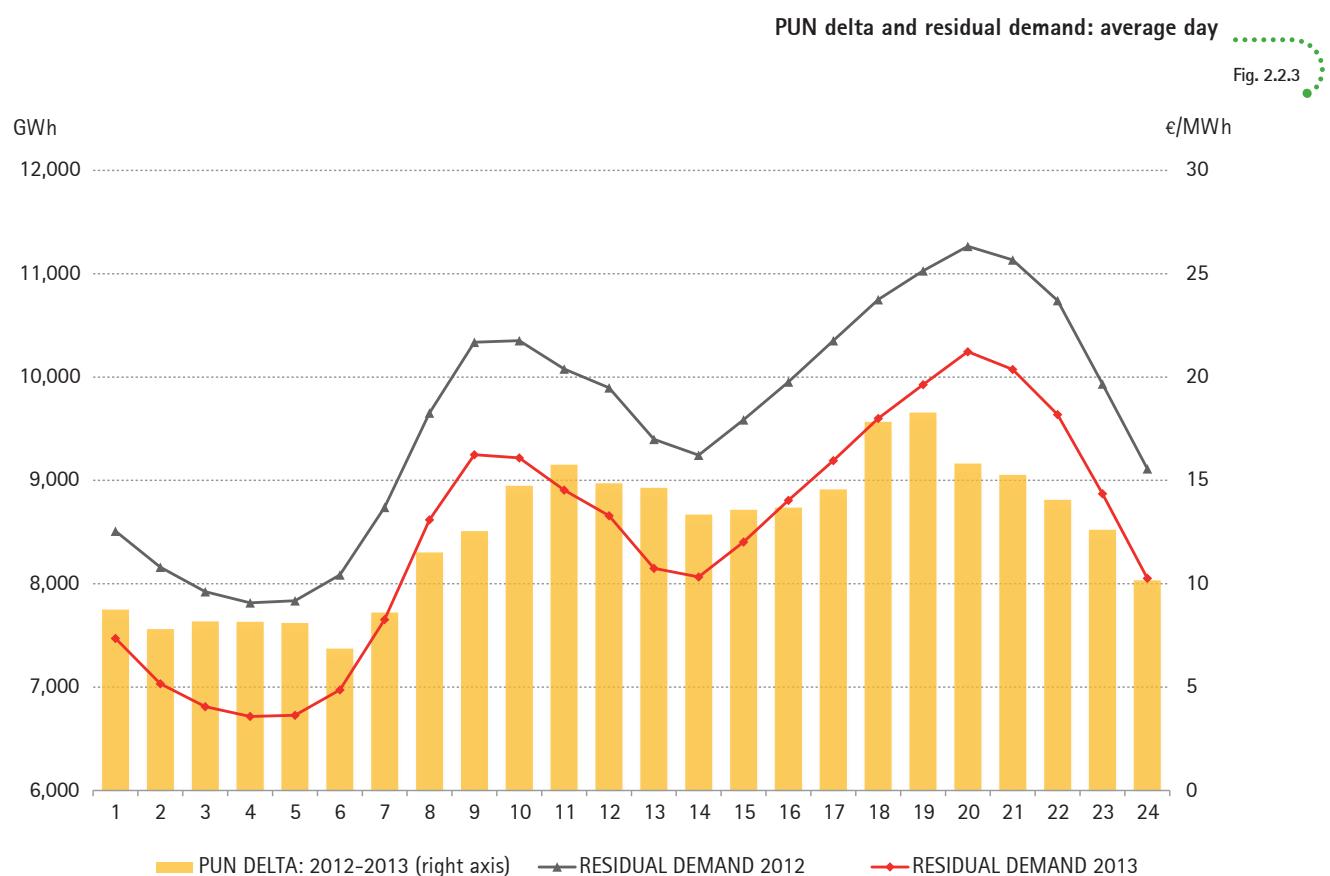
Fig. 2.2.2



36 In particular, in 2013, the average PUN in day-time hours (9-20) proved to be lower than the PUN in night-time hours on 86 days vs. 76 in 2012 and reached definitely more sustained values considering the selling prices of zones with a high installed capacity from renewables. For further details, also about cases of zeroing of prices, see Table 2.2.4.

Although the flattening of the hourly profile of prices evidences a two-speed price decrease in the groups of peak-load/off-peak hours, the contraction of the PUN practically covers all the hours. In particular, the hourly average comparison between the trend of the PUN in 2012 and 2013 infers that, in the early morning, when the decrease of the price was less marked, the PUN had anyway a contraction of about 8 €/MWh. This value doubled in the evening hours 18-21, a time band in which, until 2012, participants appeared to be more capable of exercising market power, keeping prices high to recover part of the margins on the costs lost in day-time hours. This homogeneous decline in prices was consistent with the trend of the quantities identified as the key drivers of the drop of the PUN, while residual demand³⁷ in each hour slipped downwards, as an effect of the opposite movements of purchases and sales of renewables (Fig. 2.2.3).

Prices had a flatter hourly profile but a generalised decline



³⁷ Residual demand was calculated as the difference between purchases and sales of renewables (wind, solar and hydro sources). Moreover, for the sake of simplicity, the graph shows the differential between the PUN in 2012 and the one in 2013; this quantity is always positive, demonstrating that the PUN of 2013 was always lower than the PUN of 2012.

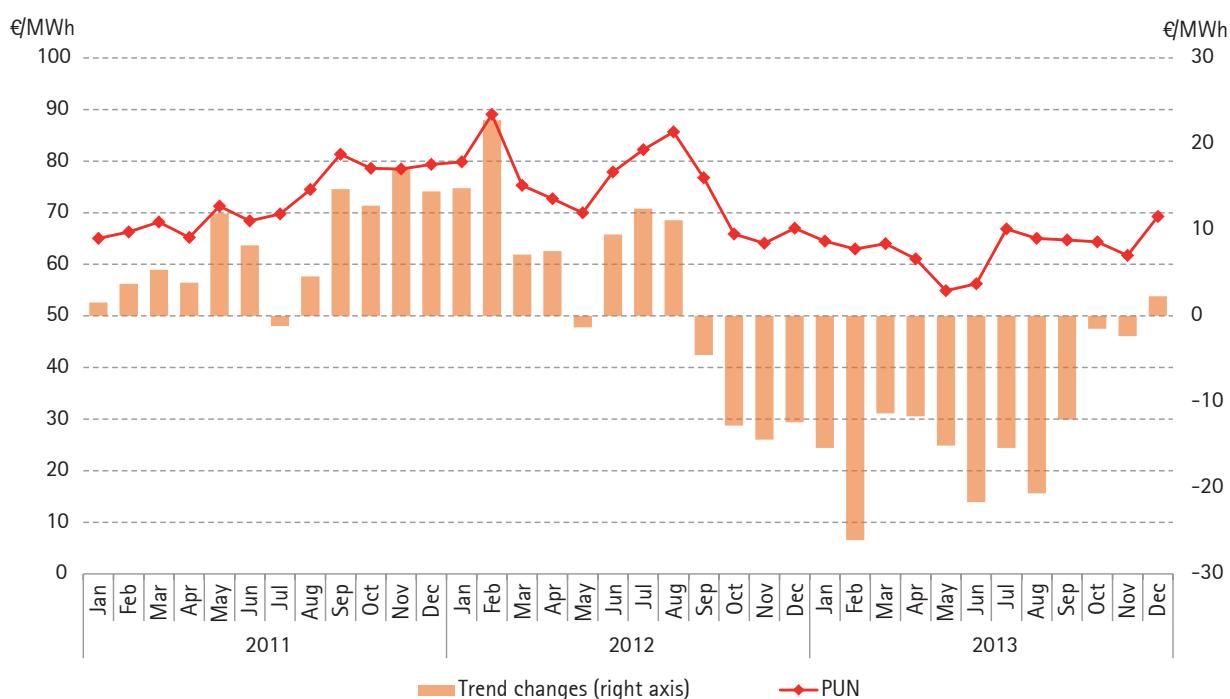
The monthly pattern of electricity prices evidences that, in 2013, their yearly contraction was significant in almost all the months of the year. An exception was the last quarter, when, already in 2012, the PUN had

*Less marked seasonal effect
on prices and volumes*

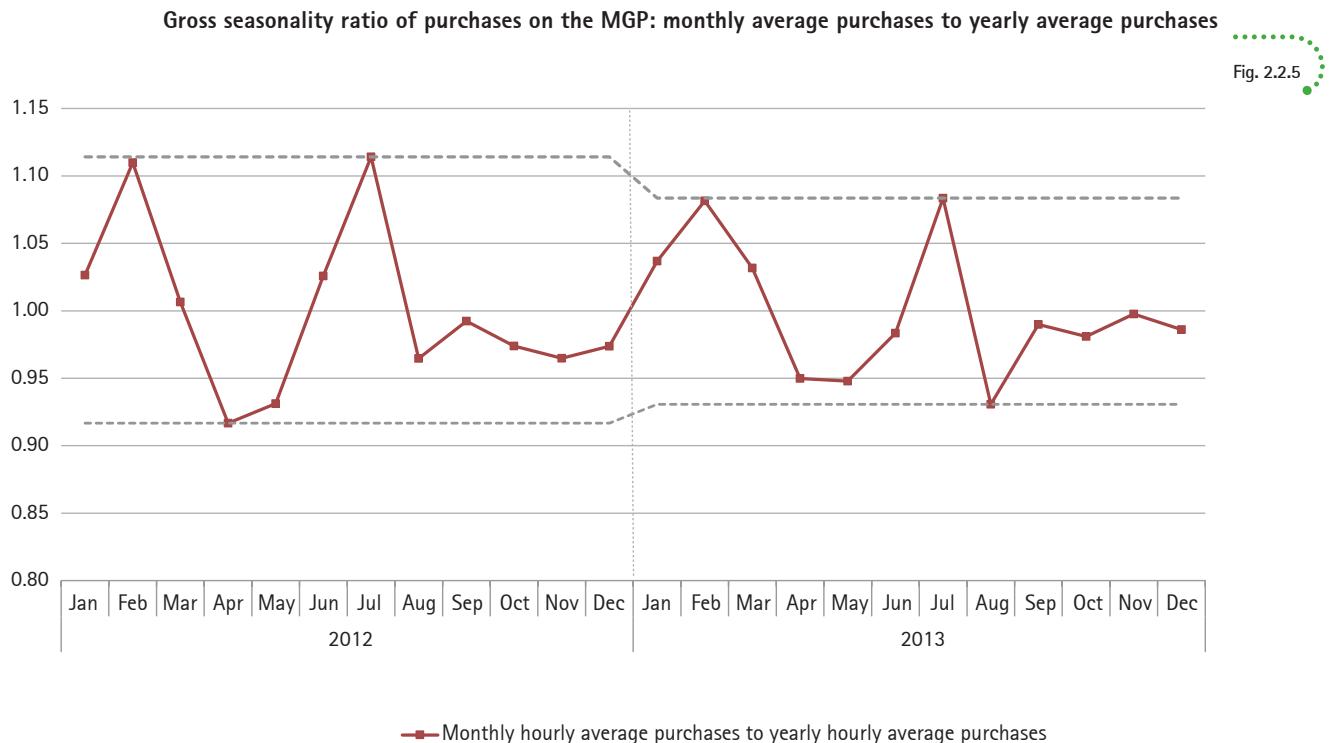
a sharp decrease in both contingent and tendential terms. Always with regard to the monthly profile of the PUN, seasonal effects on the dynamics of prices and volumes were less marked. This trend, already emerged in the past few years, was fairly significant in 2013. Except in May and June, the monthly PUN ranged from as little as 10 €/MWh to 60/70 €/MWh (Fig. 2.2.4). The small monthly fluctuation of prices indicates that: i) the raw material cost had no tendential or seasonal pattern; and ii) demand had a less pronounced seasonality; unlike prices, the latter variable is directly affected by calendar and temperature effects. In this regard, it is worth emphasising the volatility of purchases, expressed by a coefficient of variation decreasing to levels similar to those prior to 2012 (4.7% in 2013, -1.2 p.p.)³⁸, as well as a ratio of monthly hourly average purchases to yearly hourly average purchases that was less variable and converging towards 1 (Fig. 2.2.5). Another element (common in this case to the entire two-year period), which did not depend on the seasonality of demand but which worked towards the progressive alignment of monthly prices, was the modulation of cross-border interconnection capacity managed by Terna. In effect, the reduction of the imported NTC, planned by the Italian TSO in low-load months, favours an appreciation of prices on the MGP in periods where these prices would be much lower than the yearly average.

Monthly trend of the PUN

Fig. 2.2.4



³⁸ The coefficient of variation (expressed as the ratio of standard to average deviation) has been used as an indicator of the monthly volatility of purchases, in place of the mere standard deviation, in order to better compare the dynamics of volumes in 2012 and 2013, years when the yearly average level of purchases on the market was significantly different. .



In 2013, zonal prices – in analogy with the evolution of the PUN – declined considerably: 57/62 €/MWh in mainland Italy and Sardegna and 92 €/MWh in Sicilia. In detail, reductions in continental zones were in the range of -17/-19%, reaching -25% in Sardegna, which definitely converged onto the lowest levels of the peninsula. Much lower was the reduction of Sicilia (-3.4%). These changes in selling prices, just as what was observed at system level, express the reduction of the costs of gas-fired generation, a diffuse contraction of demand, as well as a new growth of the supply of renewables; the latter, albeit with definitely different intensities, concerned a large number of zones. As noted in the course of 2012, these non-homogeneous zonal growth rates of generation from renewables was crucial in intensifying some differences between the macro-zones of the market, since they not only favoured a further widening of the spread between southern and northern prices, but also induced misalignments in their volatility and hourly profile (Fig. 2.2.6).

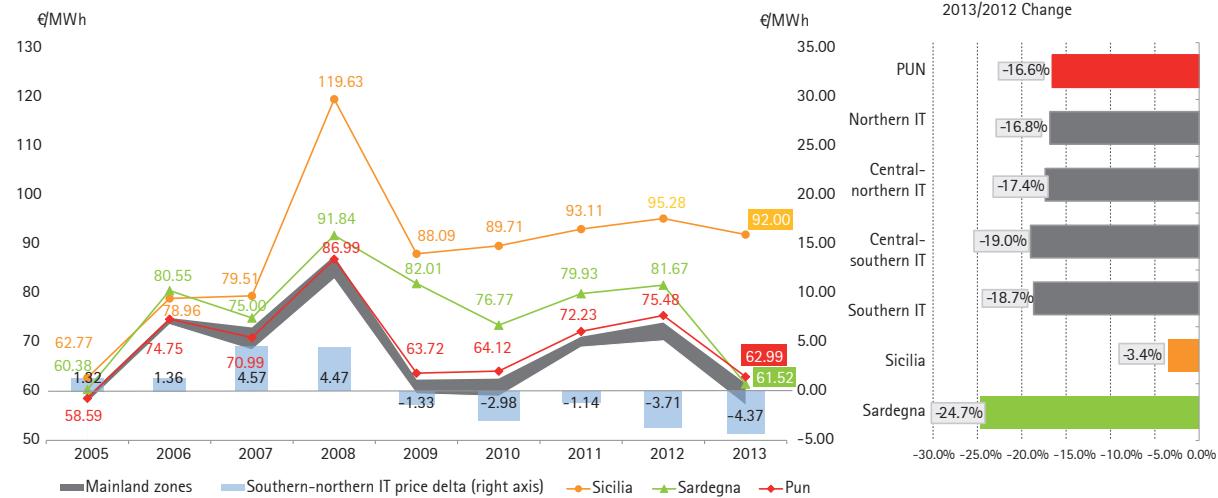
Declining prices in all the zones and increasing differences between continental zones

In particular, a relatively faster expansion of the supply of renewables in southern Italy, thanks above all to climate factors, contributed to widening the price delta between continental zones, with a spread between southern Italy and northern Italy that was close in absolute terms to its maximum levels of 2007, when however it had a reverse sign (southern-northern Italy spread: -4.4 €/MWh, +18% on a year-on-year basis). In effect, the descent of the less expensive southern Italy – the only geographical zone with positive net exports (sales 47.5 TWh; purchases 25.7 TWh) – exceeded the one of northern Italy, which just as in 2012 recorded the highest price of the peninsula (61.58 €/MWh), by about 2 percentage points. Considering these yearly average values and the extent of the spread of hourly zonal prices, the impact of generation from renewables emerges even more vigorously. Indeed, the gap between northern and southern Italy was equal to or even above 10 €/MWh in the warmer hours of the day (10-16), when wind and solar supply in southern zones covered about 70% of local demand, as against 14% in northern Italy (Fig. 2.2.6, Table 2.2.3).

Wider spread between southern Italy and northern Italy

Yearly average zonal prices on the MGP

Fig. 2.2.6



Zonal volumes on the MGP – 2013

Table 2.2.3

TWh	Purchases	Sales	Supply	Demand	Rejected bids/offers
Northern IT	156.5 (-0.9%)	118.2 (-1.7%)	239.8 (-5.3%)	160.2 (+0.7%)	121.6 (-8.6%)
Central-northern IT	28.5 (-9.5%)	18.4 (-11.3%)	33.4 (-15.6%)	30.0 (-5.7%)	14.9 (-20.4%)
Central-southern IT	44.3 (-6.8%)	30.3 (-3.8%)	77.6 (+0.1%)	45.2 (-5.2%)	47.3 (+2.8%)
Southern IT	25.7 (+3.0%)	47.5 (+0.6%)	82.5 (-1.1%)	26.2 (+4.6%)	35.0 (-3.3%)
Sicilia	19.3 (-3.1%)	18.1 (-4.4%)	33.0 (+3.4%)	19.6 (-1.7%)	14.9 (+15.0%)
Sardegna	10.9 (-13.9%)	10.2 (-20.4%)	15.9 (-14.0%)	11.0 (-13.4%)	5.8 (+0.1%)
Foreign countries	3.8 (+17.6%)	46.5 (+0.1%)	49.9 (+0.5%)	37.6 (+13.1%)	3.5 (+5.6%)
Italy	289.2 (-2.9%)	289.2 (-2.9%)	532.1 (-3.9%)	329.8 (+0.1%)	243.0 (-5.1%)

(/ Changes vs. previous year between parentheses)

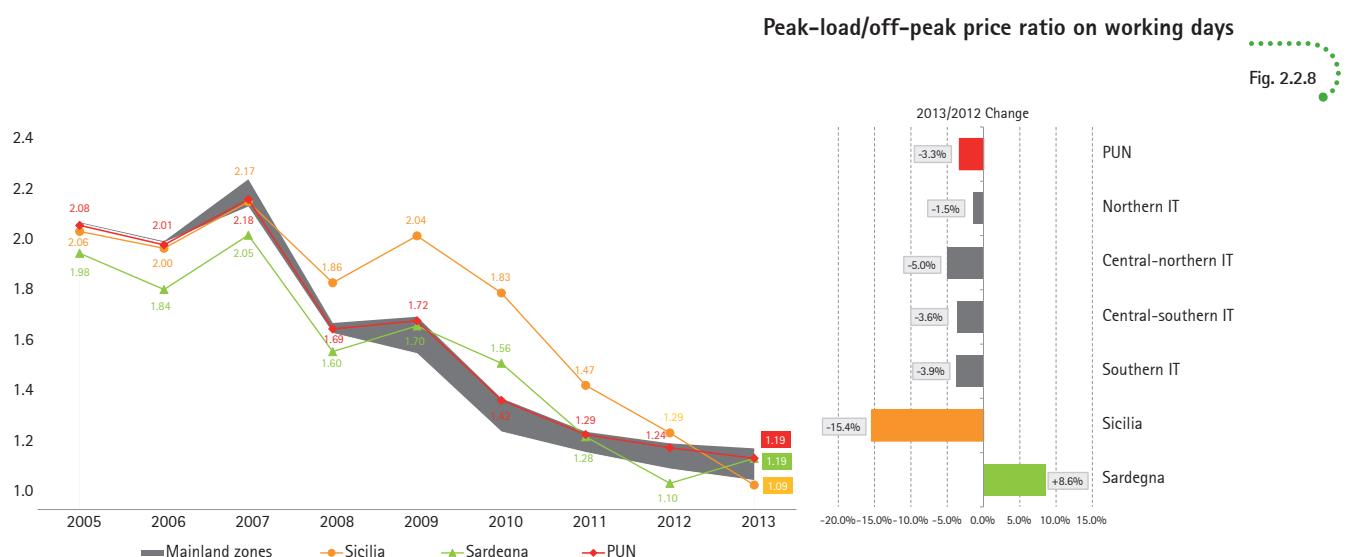
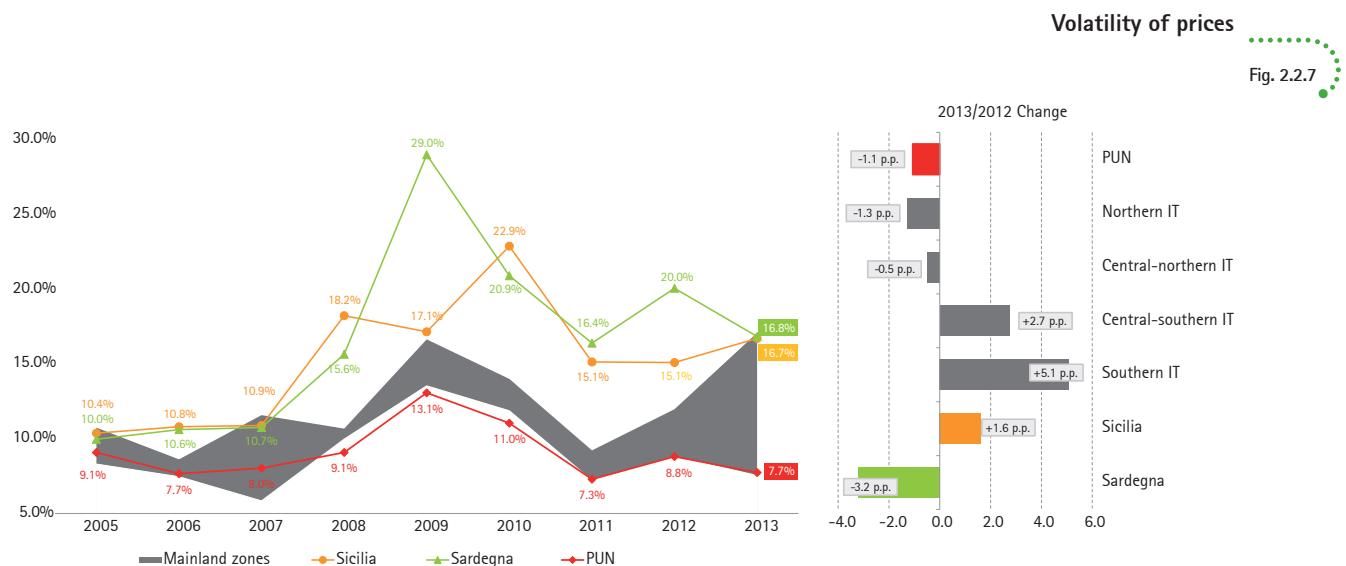
Significant discrepancies between zones are identified in terms of volatility of zonal prices. While the volatility of the PUN reached 7.7%, with a slight decrease on a year-on-year basis (-1.1 p.p.), but sufficient

More pronounced local dynamics in terms of volatility, hourly profile and minimum levels of prices

to bring it near its all-time lows, geographical zones displayed extremely heterogeneous values and trends. The volatility of prices showed a sharply increasing trend when passing from northern Italy to southern zones: 7.5% in northern Italy (-1.3 p.p.)³⁹ and approximately 17% on islands and southern Italy (the latter recovering by about 5.1 p.p.). Also in this case, the phenomenon is likely to reflect the effects that renewables in southern Italy caused on the variability of supply (by its nature, generation from renewables is more subject to sudden variations than fossil-fired generation), transferring this variability also to prices. Effects arising from the change of the Italian generating mix also appear from the ratio of peak-load to off-peak prices, which decreased in southern zones and were closer to one, owing to the intense bearish impact that photovoltaic generation had on day-time prices (Fig. 2.2.7, Fig. 2.2.8).

³⁹ The volatility of prices, as it is fair to expect, is similar to the one of the PUN owing to the higher weight that this zone has, in terms of requirements, than the other zones.

It is this bearish impact of generation from renewables that favoured the zeroing of hourly prices with growing frequency. This phenomenon was much more intense in 2013 than in the past, dominantly affecting southern Italy and Sicilia but also, in a couple of cases, all zones simultaneously, when the PUN, for the first time since the creation of the MGP, was equal to 0 €/MWh (Fig. 2.2.7, Fig. 2.2.8, Table 2.2.4).



..... Zero prices and day-time/night-time price reversals on the MGP

Table 2.2.4

Year	Zero prices (€/MWh)	Pun	Northern IT	Central-northern IT	Central-southern IT	Southern IT	Sardegna	Sicilia
2012	No. of hours with zero prices	0	0	0	0	8	69	34
	No. of sessions with at least one hour with zero prices	0	0	0	0	3	16	13
	No. of days of day-time/night-time price reversals	76	75	76	77	128	133	29
2013	No. of hours with zero prices	2	4	20	48	89	48	91
	No. of sessions with at least one hour with zero prices	1	2	9	15	24	15	28
	No. of days of day-time/night-time price reversals	86	74	106	106	141	115	113

As regards the dynamics of prices on islands, the year 2013 also saw the final alignment of Sardegna with the lowest values expressed by mainland Italy. Indeed, the island appeared to have solved the issue of

*The specificities
of dynamics on islands*

sporadic critical hours associated with scarcity of supply and limited transit capacity, during which, at least until some years ago, almost all the spread between the yearly price and the PUN was concentrated. Conversely, the situation of Sicilia remained unchanged, with a slight reduction (-3.4%) of its price (92 €/MWh), placing it farther from the rest of the system (PUN delta around 29 €/MWh). This decrease mostly occurred in peak-load hours when, under the drive of the supply of renewables, its price dropped to about 98 €/MWh (-11.7% on 2012), while it remained steady on a monthly basis in October, the only period in which the island had a fairly significant tendential hike (102 €/MWh, +6%) as a consequence of the prolonged inhibition of interconnection capacity with the continent. In addition to these extraordinary circumstances, just as in previous years, the price delta of Sicilia was connected with structural phenomena and fairly diffuse over time. Indeed, the island became separated from the continent in 85% of the hours, with an average spread in these cases of 35.4 €/MWh, hitting 80.1 €/MWh in the hours when the unavailability of interconnection capacity with the continent was accompanied by scarcity of supply (2% of the hours) (Table 2.2.5).

..... Significant variables in the evolution of the price in Sicilia

Table 2.2.5

Hours in which Sicilia was separated in the import direction	Capacity of the ROSN-SICI transit	Rejected supply			Total
		High	Low		
		Frequency (%)	Pun Delta (€/MWh)		
Inhibited	Frequency (%)	1%	2%	3%	65.3
	Pun Delta (€/MWh)	45.2	80.1		
	Frequency (%)	52%	30%		
Available	Pun Delta (€/MWh)	26.2	48.4	34.2	34.2
	Frequency (%)	54%	32%		
	Pun Delta (€/MWh)	26.7	50.4		
Any	Frequency (%)	54%	32%	85%	35.4
	Pun Delta (€/MWh)	26.7	50.4		
	Frequency (%)	54%	32%		
Hours in which Sicilia was not separated or separated in the export direction	Any	14%	1%	15%	-8.5
		Pun Delta (€/MWh)	-9.2		
		Frequency (%)	14%		
Total	Total	68%	32%	100%	29.0
		Pun Delta (€/MWh)	19.3		

The contraction of electricity consumption, together with a stronger supply from sources at nil variable cost, favoured a slight reduction of market concentration and power, expressed by an improvement in the competitiveness indicators considered. Among them, the share of non-contestable sales (IORq), confirming a trend observed since the take-off of the market, updated its all-time low by falling to 7.5% (-1.8 p.p. on 2012, -23.5 p.p. on 2005). However, while IORq in northern Italy had almost nil values, it passed in Sicilia from 20.6% in 2012 to 11.2% in 2013 as an effect of generalised reductions in all the groups of hours. Also the competition at the margin improved, as shown by the value of the Marginal Market Participant Index (IOM) of the main price maker, Enel, which collapsed to 14% (-11.1 p.p.) owing to sharp reductions all over the country and to the corresponding growth of E.On, which set the price on a share of volumes practically equivalent to the one of the former monopolist (13%, +3 p.p.). Conversely, the Marginal Technology Index (ITM) of the combined cycle lay at its usual maximum levels (60.8%, +1.1 p.p.). The frequent presence of this technology at the margin in the past two years is likely to be the result that the expanding supply of renewables has generated in terms of rightward shift of the aggregate market supply curve, by first pushing combined cycles to the margin and heralding their progressive exit from the market, as demonstrated by their shrinking market share (32%, -6 p.p.). Also the CR3 (49.6%, -0.2 p.p.) as well as the Herfindahl-Hirschmann Index of sales (HHI) recorded limited reductions. In particular, the latter index lay below the first competitiveness threshold only in northern Italy, remaining always at higher values in the other zones, where only central-northern Italy and Sicilia showed noteworthy decreases (about 400 and 90 points, respectively) (Table 2.2.6).

*Market concentration:
fall of non-contestable
sales
and higher competition
at the margin*

Concentration indicators – 2013

Table 2.2.6

	Total	Northern IT	Central-northern IT	Central-southern IT	Southern IT	Sicilia	Sardegna
HHI Orders	1.918 (2.003) ▼	4.035 (4.112) ▼	5.192 (5.480) ▼	2.254 (2.502) ▼	3.052 (3.383) ▼	3.643 (3.327) ▲	
HHI Sales	1.285 (1.234) ▲	2.810 (3.209) ▼	3.452 (3.343) ▲	2.050 (2.054) ▼	3.205 (3.297) ▼	4.141 (3.674) ▲	
CR3	49.6% (49.8%) ▼	48.9% (46.0%) ▲	78.8% (83.3%) ▼	75.8% (77.4%) ▼	68.1% (63.8%) ▲	84.7% (87.0%) ▼	95.9% (98.6%) ▼
CR5	61.1% (60.7%) ▲	64.4% (64.2%) ▲	89.6% (92.5%) ▼	83.4% (86.5%) ▼	82.1% (79.2%) ▲	93.9% (95.1%) ▼	98.0% (99.7%) ▼
IOR Volumes	7.5% (9.3%) ▼	0.6% (0.3%) ▲	25.1% (20.8%) ▲	22.6% (30.0%) ▼	4.1% (6.1%) ▼	11.2% (20.6%) ▼	21.3% (19.9%) ▲
IOM 1st Participant	14.0% (25.1%) ▼	6.6% (19.8%) ▼	10.5% (21.0%) ▼	14.9% (22.5%) ▼	16.6% (25.9%) ▼	72.2% (81.6%) ▼	18.2% (26.3%) ▼
ITM Ccgf	60.8% (59.7%) ▲	61.9% (61.3%) ▲	58.5% (59.1%) ▼	60.0% (59.6%) ▲	58.9% (56.6%) ▲	82.6% (79.7%) ▲	56.0% (52.2%) ▲

() Values of the previous year between parentheses

At its third year of full operation, market coupling on the day-ahead electricity markets of Italy and Slovenia proved to be successful in terms of both good performance and materialisation of commercial opportunities connected with its efficient operation.

*Market coupling
with Slovenia*

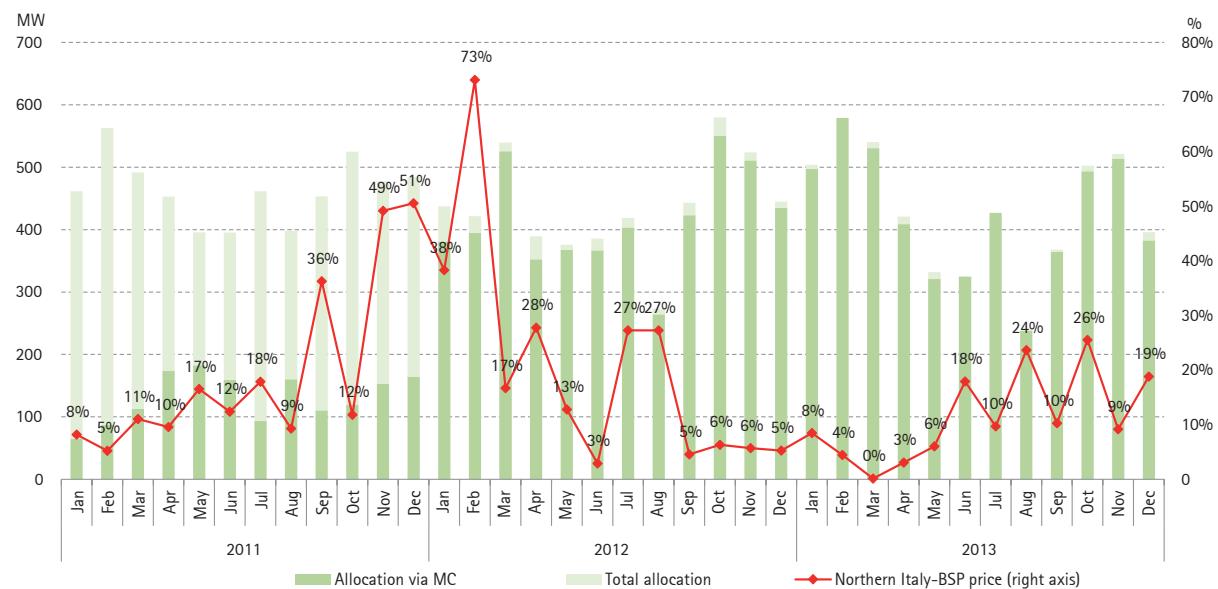
Though not having substantial impacts on the results of prices and volumes on the Italian market (due to the limited scale of the Italian-Slovenian interconnection), its results not only demonstrated the successful implementation of the project but were also encouraging in view of the future extension of the same mechanism of allocation of interconnection capacity to the entire Italian northern border⁴⁰. Among the success factors related to the guarantee of an adequate allocation of energy flowing across the border, it is worth mentioning, in the first place, the sharp

40 For details, see Chapter 3, Section 1.

increase in the average capacity allocated under implicit auctions, which rose from 132 MW in 2011 to 423 MW in 2013 (from 28% to 98% of the total allocated⁴¹). In the second place, the take-off of market coupling gave a sharp acceleration to the growth of liquidity on the Slovenian exchange, whose total volume traded in 2013 hit 5.8 TWh (vs. slightly above 1.5 TWh in 2011), establishing a virtuous process that attracted, among others, new local demand (2.1 TWh)⁴². Finally, as regards prices, even if the coupling did not zero the structural spread between the prices of the two neighbouring exchanges, it generally promoted their convergence in a no longer negligible number of hours (12% in 2013), thus creating favourable trading opportunities even when their spread was hardly predictable⁴³ (Fig. 2.2.9).

Capacity allocation on the Italian-Slovenian border and share of hours with zero spread

Fig. 2.2.9



2.2 The Intra-Day Electricity Market (MI)

In 2013, too, the four sessions of the MI confirmed their traditional linkage to the prices of the MGP, albeit with a more marked volatility. At the same time, liquidity continued to grow in the sessions close to the time of delivery, albeit with a sharp contraction of trades in the traditionally more liquid session of the MI1, with obvious improvements also in the competitiveness of the supply structure.

41 The switching from periodical explicit auctions to the daily implicit auction, as the dominant mechanism of purchase/sale of available import capacity between the two borders, is likely to be related to the massive utilisation of Use it Or Sell it (UIOSI) clauses. Under these clauses, market participants may resell the import capacity purchased on a forward basis through yearly and monthly auctions to the TSO and repurchase it on the spot market by entering sell orders into the Slovenian day-ahead market.

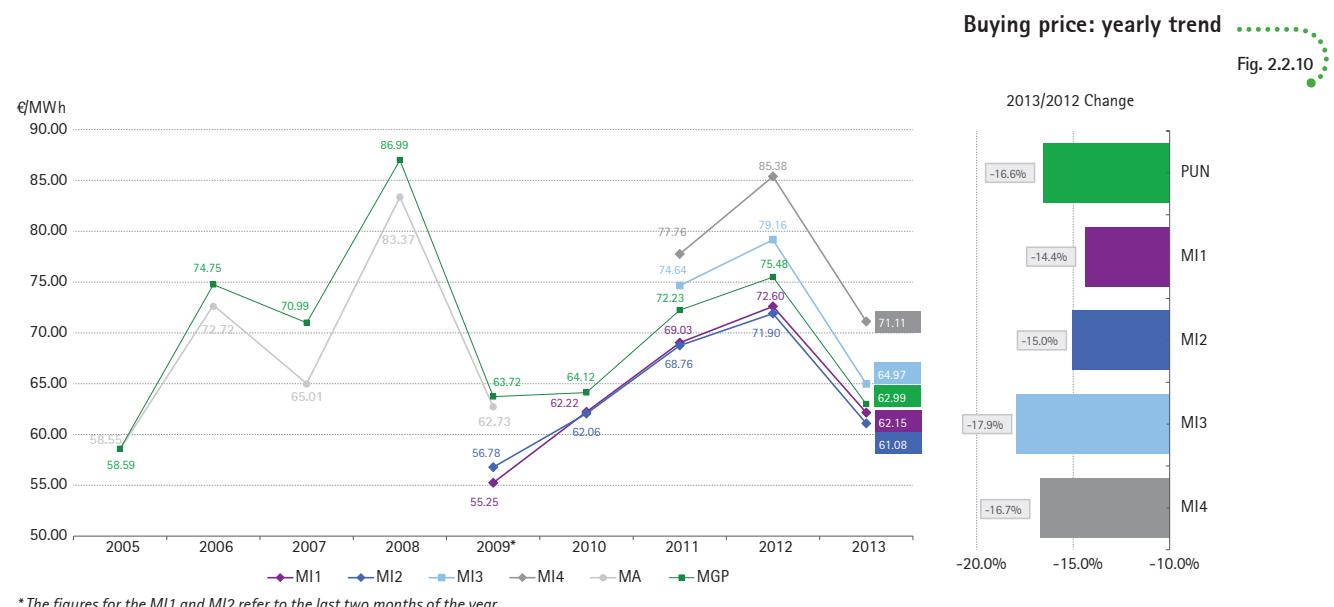
42 The figure was obtained as the difference between the total volume traded on the Slovenian exchange BSP (4.4 TWh) and the import volume allocated under market coupling (3.7 TWh).

43 A first approximation is the number of hours in which the spread between the two prices was 0 €/MWh. This phenomenon gradually grew until 2012 (20.5% of the hours). In 2013, albeit with a slight reduction, the frequency of zeroing of the spread was anyway at fairly high levels (12% of the hours). This opportunity was not always supported by the explicit auction mechanism, as demonstrated by the number of hours, still in 2013, in which the flows induced by this mechanism had an anti-economic direction (30 hours).

Also in 2013, the dynamics of prices on the Intra-Day Electricity Market was correlated with the one of the buying price on the MGP (PUN), just as the dynamics of the price of the Adjustment Market in the past (Fig. 2.2.10). In particular, the growth of buying prices on the Intra-Day Market, especially in the first years of its operation, slowed down (-14%/-18%) to an all-time low in 2013. The average price in the four sessions ranged from 61.08 €/MWh on the MI2 to 71.11 €/MWh on the MI4. It is worth pointing out that the highest prices of the MI3 and MI4 refer to a small number of hours of the day (the last 12 on the former and the last 8 on the latter), in which the contribution of thermal sources on the MGP was higher and thus with higher prices (Fig. 2.2.10).

Buying prices at their all-time lows and volatility generally shrinking

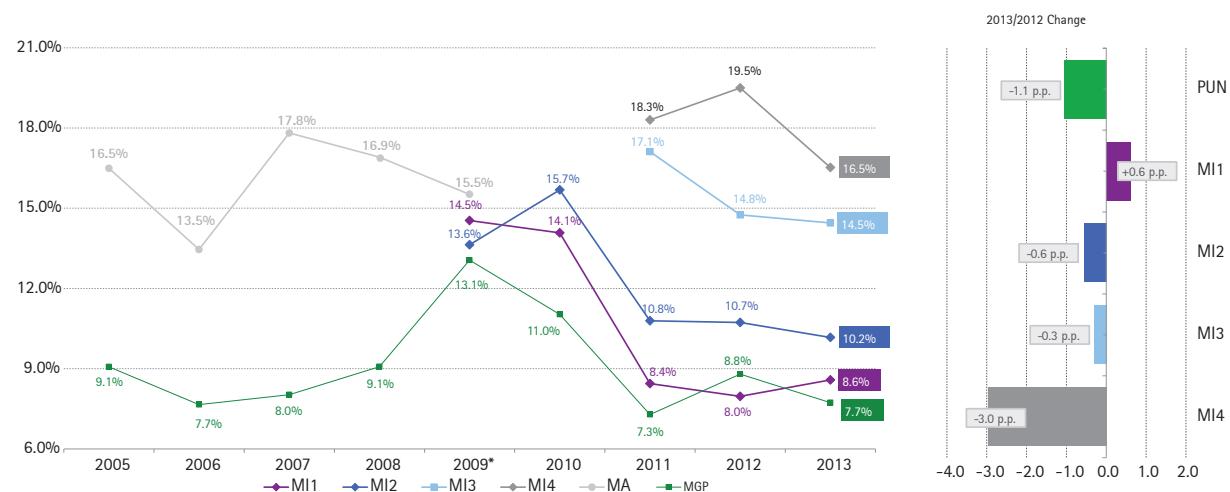
Furthermore, as in previous years, prices in the four sessions of the intra-day market were constantly below the PUN calculated in the same hours; in 2013, the phenomenon was increasingly evident in the sessions closer to the time of physical energy delivery (-1% for the price of the MI1 and -6% for the one of the MI4). This finding is consistent with the general downward propensity expected on a long market.



The volatility of prices on the MI exhibits a practically similar pattern. In 2013, it went down in all the sessions, except in the MI1 (+0.6 p.p.), lying always above the one of the PUN (Fig. 2.2.11), even when, for the MI3 and MI4, it was recalculated in the same hours.

Volatility of the buying price: yearly trend

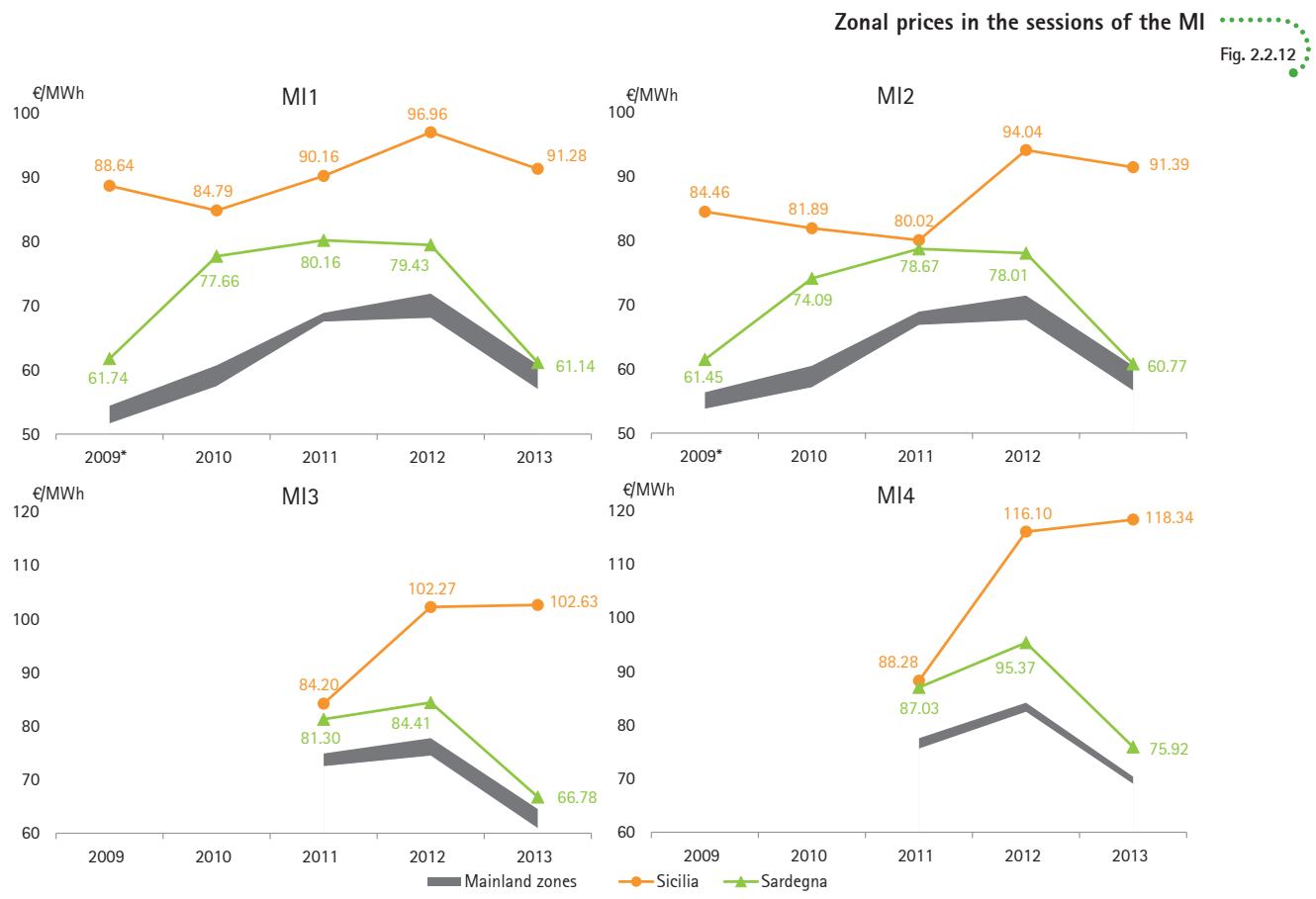
Fig. 2.2.11



The above analysis has been conducted on the basis of a concise indicator of the national average value of the MI prices, which is comparable with the MGP PUN. Nonetheless, the result does not change the

Zonal prices: Sardegna narrowed its gap with respect to continental zones, while Sicilia widened it

zonal prices of the four sessions of the MI; also in 2013, they confirmed to be clearly correlated with the dynamics and levels of the corresponding MGP zonal prices. This is particularly evident on islands. On one hand, in a context of diffuse and sharp decrease in prices (contractions of more than 20% in all the four sessions), Sardegna considerably narrowed (or zeroed, as in the case of the MI1 and MI2) its gap with respect to the prices of continental zones – historically converging onto a fairly narrow band – benefiting (as in the MGP) from the entry into operation of the new SAPEI cable link between Sardegna and central-southern Italy. Sicilia experienced an opposite pattern in 2013, since it further widened its price spread with respect to the other zones, confirming the diverging trend that has been prevailing on the MGP for many years (Fig. 2.2.12).



In 2013, volumes dropped to 23.3 million MWh (-7.1%, a level that is however only lower than the all-time high of 2012) after three years (2010–2012) of constant growth, at the end of which they even doubled those traded on average on the previous Adjustment Market (Fig. 2.2.13).

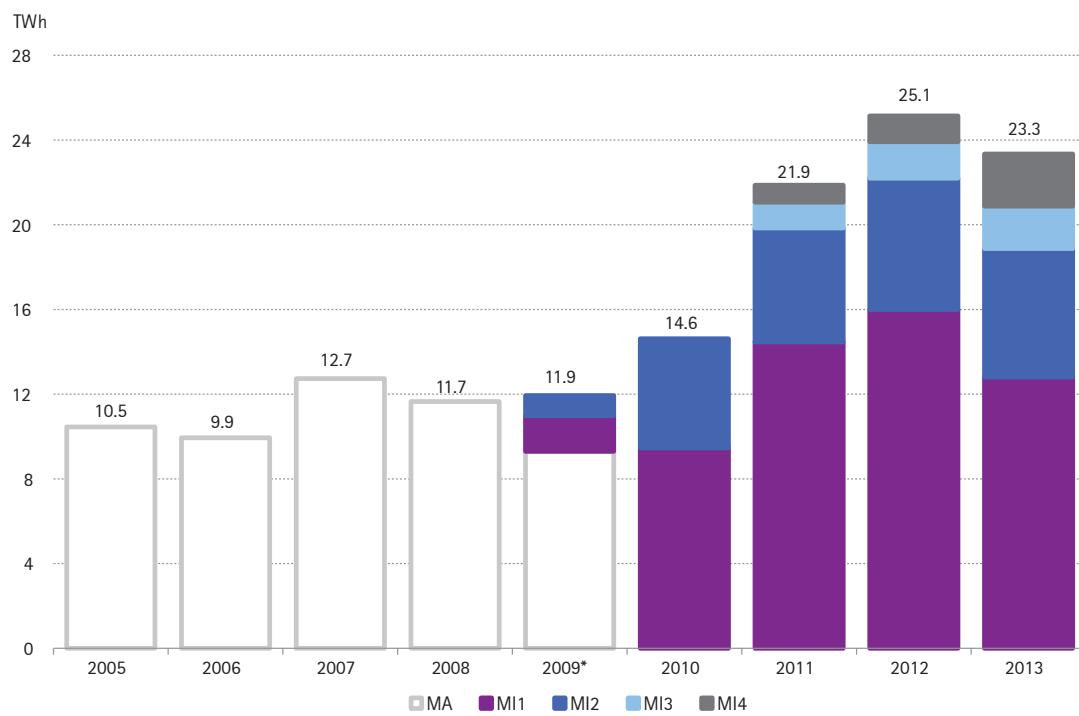
The reduction of volumes mostly involved the MI1, where trades (12.8 million MWh) were down by 19.7%; the reduction on the MI2 (6.1 million MWh) was more moderate (-1.9%). In contrast, the MI4 had a strong growth (2.5 million MWh, +104.3%), doubling its volumes as compared to 2012 and exceeding for the first time those on the MI3, which anyway rose to 2.0 million MWh (+16.6%).

Decline of volumes,
concentrated on the MI1 ...

Therefore, even if the MI1 demonstrated to be the most important of the four market sessions, it lost over 12 percentage points on the total hourly average trades (42.3%); the MI2 was in slight decline (20.0%, -1.2 p.p.). Conversely, both the MI4 – accounting in 2013 for nearly one fourth of the total hourly average volumes (vs. slightly above 12% in 2012) – and the MI3 rose to 13.2% (Fig. 2.2.13).

Volumes traded

Fig. 2.2.13



*The figures for the MI1 and MI2 refer to the last two months of the year

At zonal level, the contraction of trades only involved northern Italy, on both the supply side (-29.3%) and the demand side (-25.9%), and central-northern Italy, only on the demand side (-18.4%). Therefore,

...and in northern Italy

the weight of the northern zone - around 61% on the supply side and 57% on the demand one in the previous two years and anyway historically above 50% on both sides - diminished considerably, reaching 46% in terms of both sold and bought energy.

Among the other zones, the ones that stood out were: i) southern Italy on the supply side, as its weight progressively grew over time hitting 23% in 2013 (from a little above 10% in 2010); and neighbouring countries' zones on both sides (from 0.2% in 2010 to 4.9% in 2013 on the supply side and from 1.6% to 5.8% on the demand one) (Table 2.2.7).

Zonal volumes

Table 2.2.7

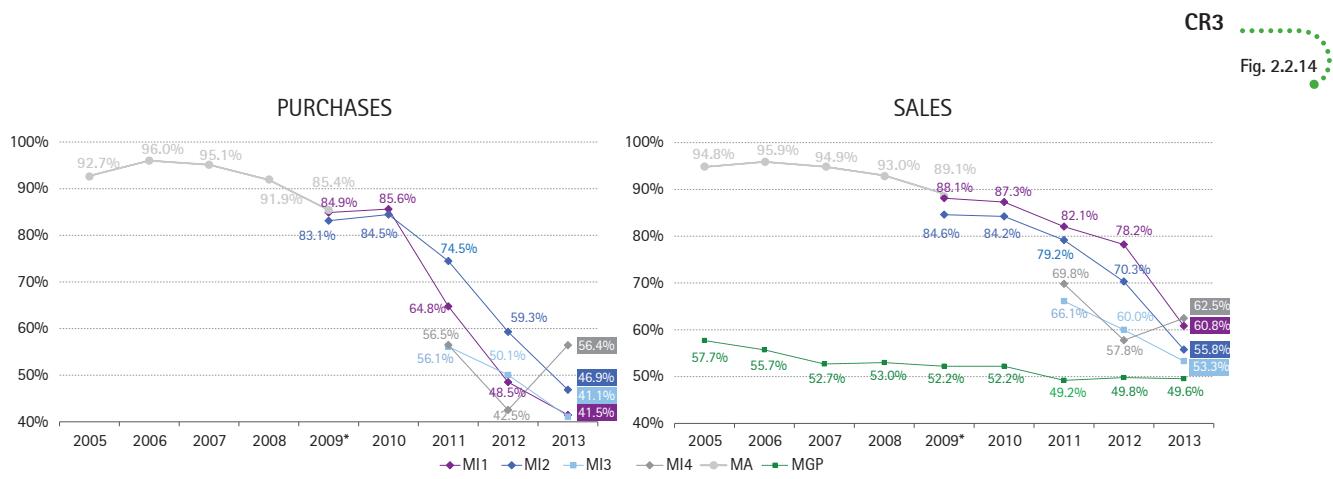
MWh	2009		2010		2011		2012		2013	
	Sales	Purchases	Sales	Purchases	Sales	Purchases	Sales	Purchases	Sales	Purchases
Northern IT	6.7	6.4	8.4	7.5	13.2	12.4	15.4	14.4	10.9 (-29.3%)	10.7 (-25.9%)
Central-northern IT	1.0	0.9	1.1	1.0	1.3	1.3	0.7	1.6	0.9 (+20.2%)	1.3 (-18.4%)
Central-southern IT	1.9	1.2	1.6	1.5	1.8	2.1	2.6	2.6	3.1 (+21.5%)	3.0 (+13.6%)
Southern IT	1.0	2.1	1.5	2.8	3.0	3.9	3.9	3.7	5.3 (+35.5%)	4.6 (+25.1%)
Sicilia	0.8	0.7	1.4	1.0	1.8	1.0	1.5	1.3	1.6 (+5.9%)	1.4 (+7.4%)
Sardegna	0.6	0.5	0.6	0.7	0.5	0.6	0.3	0.5	0.4 (+28.6%)	0.9 (+77.2%)
Italy	11.9	11.8	14.6	14.4	21.7	21.2	24.4	24.3	22.2 (-9.1%)	22.0 (-9.3%)
Foreign countries	0.0	0.2	0.0	0.2	0.2	0.6	0.7	0.9	1.2 (+62.6%)	1.3 (+54.1%)
Total	11.9	11.9	14.6	14.6	21.9	21.9	25.1	25.1	23.3 (-7.1%)	23.3 (-7.1%)

) Changes vs. previous year between parentheses

All the sessions of the market continued to improve their competitiveness in 2013. The only exception was the MI4, where the share of the top three participants (CR3) grew on both the supply side and demand side due, in particular, to the intensified activity of one participant that almost tripled its market share in one year.

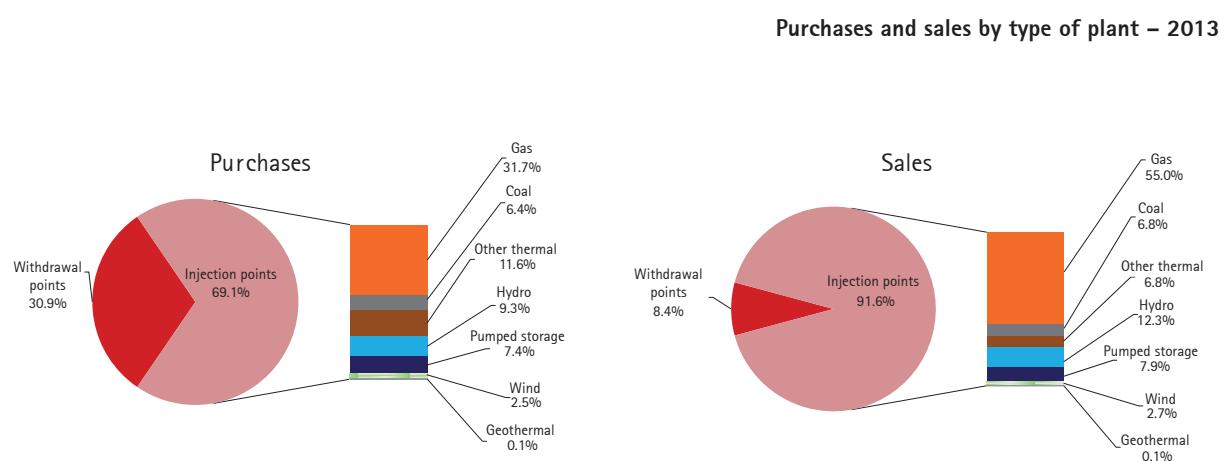
Thus, the comparison with the concentration of sales on the MGP, almost stable in the last three years, shows a progressive convergence, except – as noted – on the MI4 (Fig. 2.2.14).

Generally improved competitiveness, except on the MI4



Also in 2013, holders of injection points were the dominant participants in the four sessions of the MI with a view to revising their generation schedules after the MGP. However, purchases by holders of withdrawal points (wholesalers), equal to 6.8 million MWh, accounted for 30.9% of total purchases (+2.6 p.p.), although they were down by 0.6% on 2012 (Fig. 2.2.15 and Fig. 2.2.17). Conversely, as regards sales in 2013, even if holders of injection points (producers and importers) largely dominated the market with 91.6% of total sales, sales by wholesalers rose to 1.9 million MWh (+154.3%) (Fig. 2.2.15 and Fig. 2.2.16).

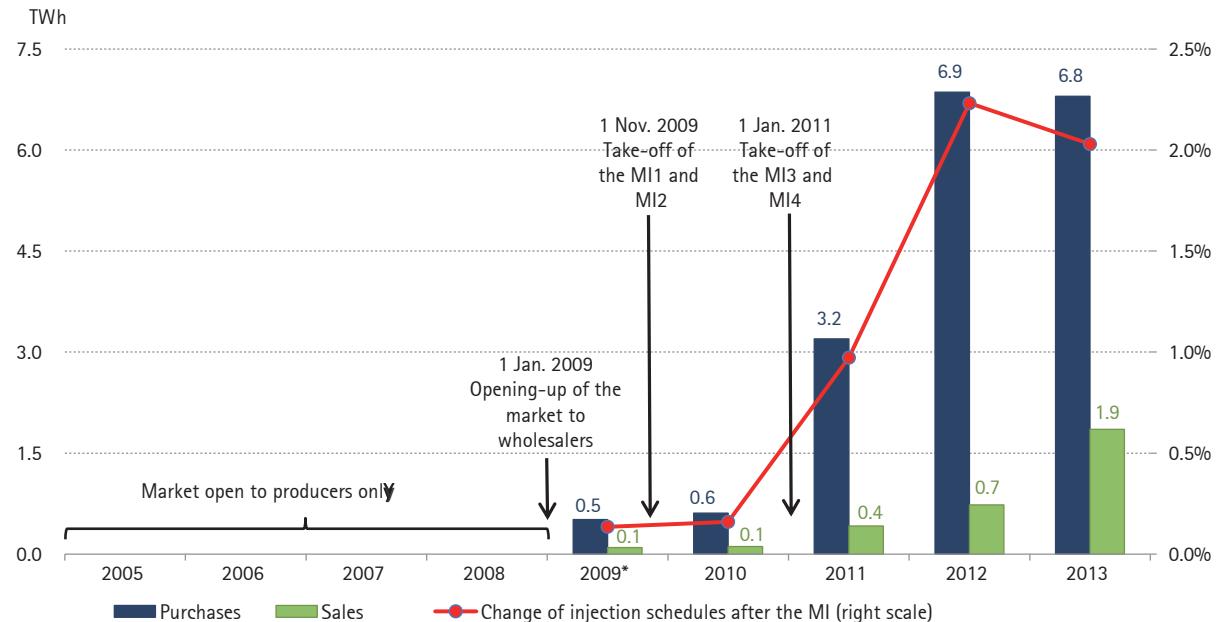
Increased generation after the MI also in 2013



The trades of participants in the four sessions of the MI induced a 2.0% increase in the injection schedules after the MGP, due to the higher activity of wholesalers after the take-off of the last two sessions of the MI (MI3 and MI4) in 2011 (Fig. 2.2.16).

Sales and purchases by wholesalers and change of injection schedules after the MI

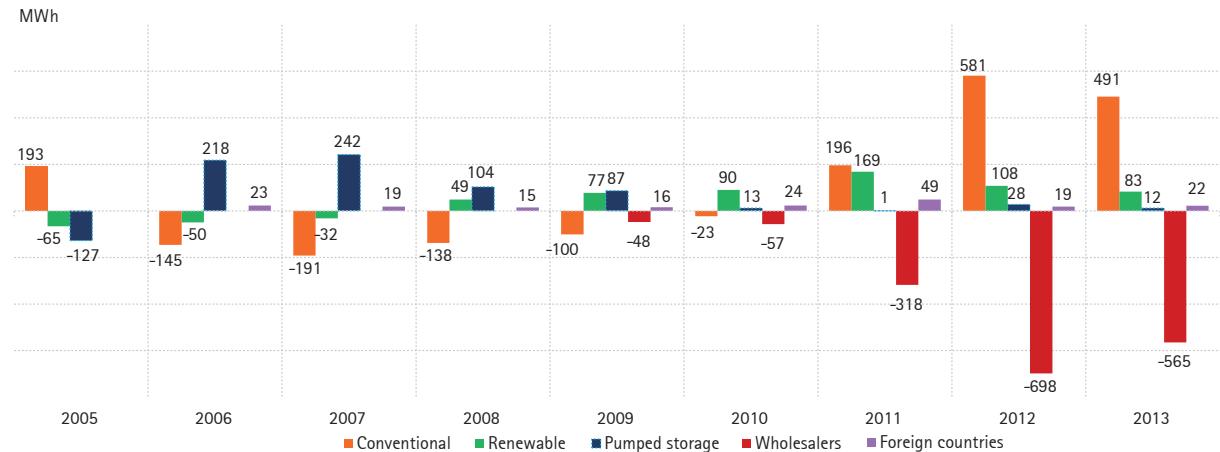
Fig. 2.2.16



In 2013, as in the two previous years, electricity trades on the MI gave rise, above all, to an increase of sales by conventional thermal plants (+491 MWh on average per hour); the increase of sales by renewable and pumped-storage plants was smaller (+83 MWh and +12 MWh on average, respectively) (Fig. 2.2.17).

Balance of sales/purchases by type of plant. Hourly average

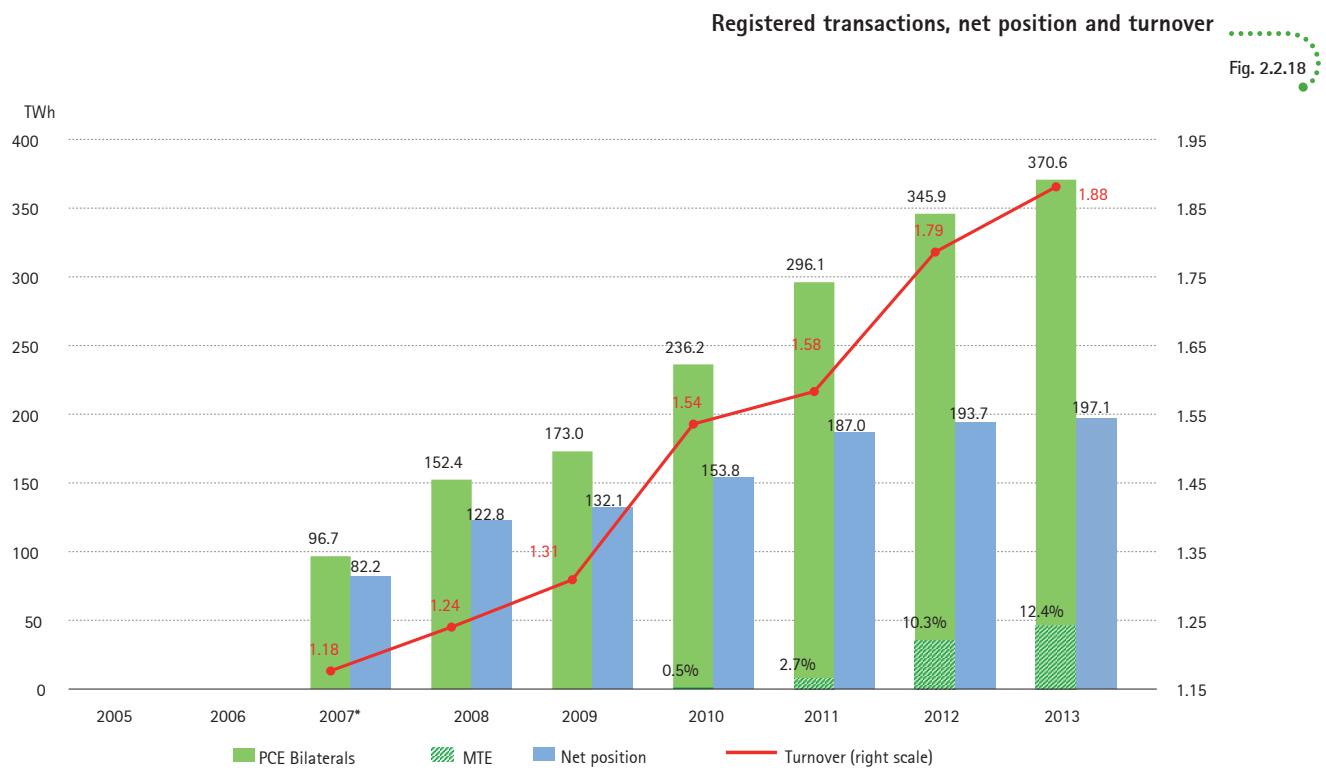
Fig. 2.2.17



2.3 The OTC Registration Platform (PCE)

On the OTC Registration Platform (PCE), the transactions registered with delivery/withdrawal in 2013 totalled 370.6 million MWh, up by 7.4% from the previous year. Although with declining growth rates in the past few years (+36.5% in 2010, +25.3% in 2011 and +16.5% in 2012), the transactions registered onto the PCE rose constantly and, every year since the take-off of the PCE in 2007, they had a new historical record (Fig. 2.2.18).

Volumes had a new record, albeit with declining growth rates



*Figures from May 2007 on

In 2013, transactions resulting from contracts concluded on the Forward Electricity Market (MTE) had a new historical peak of 45.9 million MWh (+29.0% on the previous year), equal to 12.4% of the total registered transactions (10.3% in 2012). In 2013, as in the two previous years, no transaction resulting from the platform for delivery of electricity derivatives (CDE) was recorded. The remaining 87.6% of the registered transactions originated from contracts made off the regulated market (OTC contracts), equal to 324.7 million MWh (+4.9% on 2012). Among them, non-standard contracts (213.5 million MWh) were, again, the ones most frequently used by participants (57.6% of the total) and showed a brisker dynamics (+7.6%) in 2013. Among standard contracts, almost stable (+0.1%), base-load ones were up by 5.5%. Also the net position of electricity accounts, given by the set of the registered transactions, prolonged its long positive trend, hitting a new all-time peak of 197.1 million MWh (+2.0% on 2012). Hence, the turnover, i.e. the ratio of the registered transactions to the net position, mounted to 1.88, i.e. an all-time peak (Fig. 2.2.18).

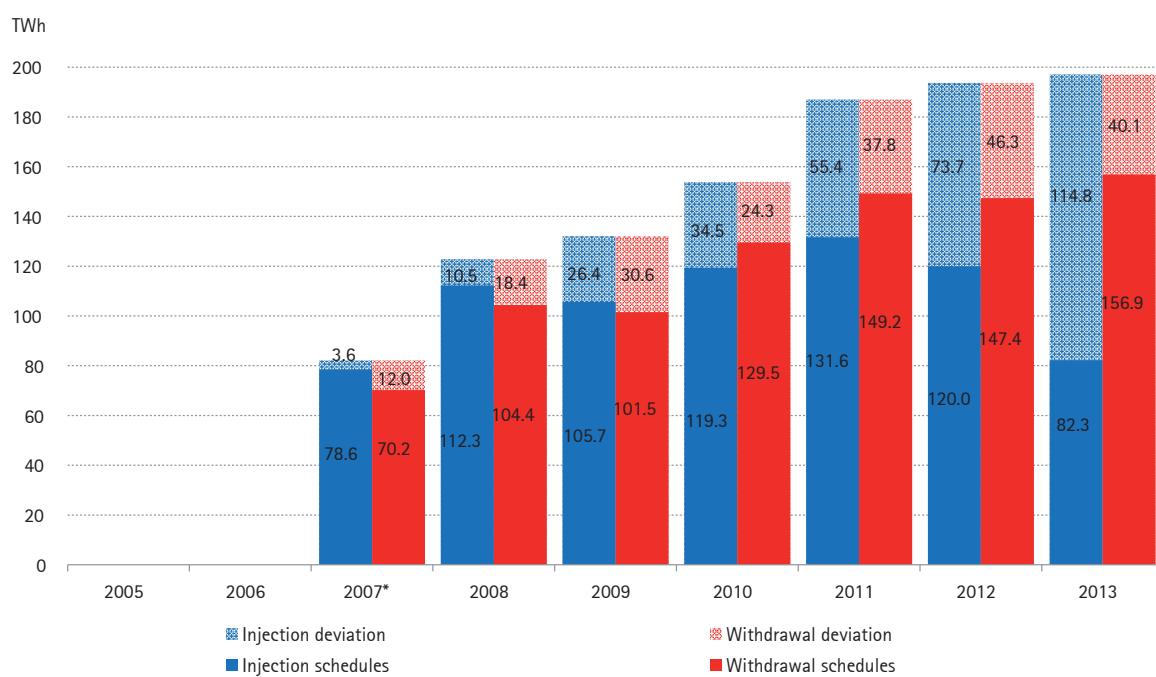
The physical schedules registered in the injection accounts, with a second substantial decrease from their peak in 2011, amounted to 82.3 million MWh in 2013 (-31.3% on 2012).

Relentless growth of deviations on the injection side

On the contrary, the schedules registered in the withdrawal accounts grew again, after a slight contraction in 2012, hitting a historical peak of 156.9 million MWh (+6.8%).

Registered physical schedules and scheduled deviations

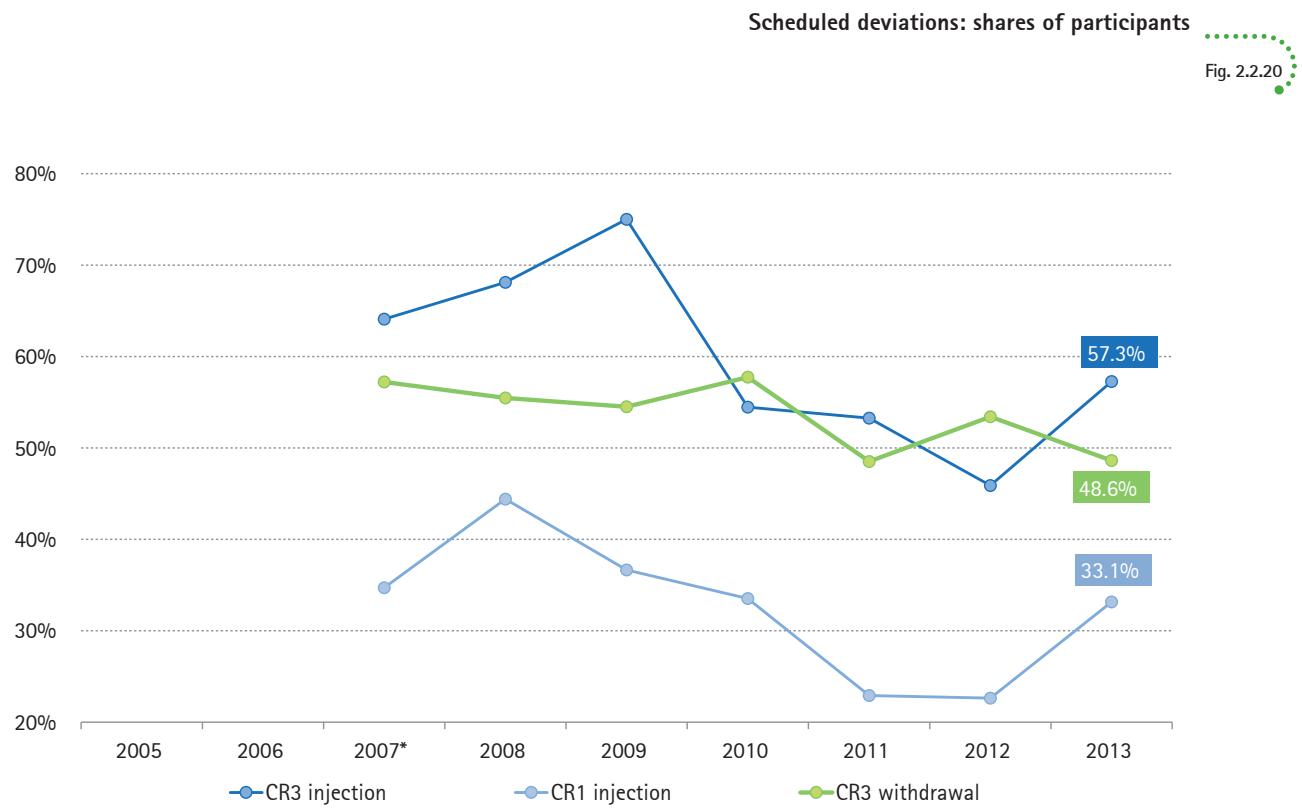
Fig. 2.2.19



* Figures from May 2007 on

The opposite dynamics of the net position (upward) and of the schedules registered in the injection accounts (downward) is due to the higher utilisation of scheduled deviations by participants holding these accounts. In 2013, scheduled deviations hit a further record of 114.8 million MWh (+56.2%), driving liquidity on the MGP upwards. This important flexibility instrument enables operators of thermal power plants: i) to efficiently respond to the overcapacity crisis that has been afflicting the system for many years; and ii) to optimise the scheduling of their generating mix in the short term, taking into account bilateral commitments made in the medium-long term (Fig. 2.2.19).

On the contrary, deviations on the withdrawal side were down by 13.1% (40.1 million MWh), further enlarging the balance between injection and withdrawal schedules, offset by sales in the regulated market. Moreover, the higher utilisation of scheduled deviations is to be attributed above all to the first participant, as shown by the increase of as many as 10.5 p.p. in its share of total deviations in 2013 (Fig. 2.2.20).



2.4 The Forward Electricity Market (MTE)

In 2013, the Italian forward market interrupted its growth in the last four years, with overall volumes of 540 TWh, i.e. a year-on-year contraction of nearly 50 TWh. In spite of this sharp decrease in forward-traded electricity, the ratio of this electricity to the physical underlying was largely above one (1.70 vs. 1.79 in 2012). This performance corroborates the trend that started in 2010 and that is bringing the Italian electricity market, at least in part, closer to central-European ones, where churn ratios are fairly high and the procurement strategies of participants are more long-term oriented. In terms of levels, the reduction involved especially OTC trades (approximately -40 TWh) which, however, continued to represent the dominant share of forward-traded electricity (93% of overall volumes). Nevertheless, also the contraction of electricity directly traded on regulated markets was significant (7.8 TWh in absolute terms but equivalent to -18% in relative terms) (Table 2.2.8).

Yearly forward-traded volumes by year of trading

Table 2.2.8

TWh	2009	2010	2011	2012	2013
Physical market (Terna)	320.3	330.5	334.6	328.2	317.1
Spot market (IPEX)*	225.0	214.1	202.2	203.8	230.2
Forward market	265.9	401.7	545.1	588.8	540.6
IDEX	15.8	15.4	11.7	13.8	28.4
MTE/exchange	0.1	6.3	31.7	30.4	8.0
MTE/OTC clearing	-	-	1.8	24.6	33.1
EEX/OTC clearing	-	-	-	-	1.1
OTC**	250.0	380.0	500.0	520.0	470.0

Source: processing of data from GME, Borsa Italiana and European brokers

(* including volumes traded on the MGP, net of bilaterals, and on the MI

(**) estimate based on data from the main European brokers

In this setting, also the Forward Electricity Market seemingly contributed to this bearish trend. Indeed, the electricity traded on the platform decreased to 41.1 TWh, i.e. nearly -14 TWh on a year-on-year basis.

This decrease, which incorporates the one of exchange-traded volumes (8 TWh, -22 TWh), was only in part mitigated by the further growth of electricity coming from OTC trades registered for clearing (33.1 TWh, +8.5 TWh), accounting for as much as 81% of the total. In spite of expanding OTC volumes, this contraction of exchange trades appears to reflect, at least in part, the displacement induced by the sharp growth of IDEX volumes to about 28 TWh (roughly +15 TWh).

Bearish signs emerge from the trend of contracts and of the number of matchings on the MTE, without taking into account registrations for clearing purposes: the former fell from 8,882 MW in 2012 to 2,171 in 2013, whereas the latter dropped to 342 vs. 953 in the previous year (Fig. 2.2.21, Table 2.2.9).

With respect to this downward trend of market volumes, signs of a possible reversal come from the data about the first quarter of 2014. In effect, although volumes traded were lower than those in the corresponding period of 2013 (17 TWh, -44%), they grew as compared to the last half-year of 2013, thanks to the concurrent recovery of volumes traded on order books (3.1 TWh, +14%) and of OTC clearing (14 TWh, the last registration of 2013 leads back to June); this recovery was mostly concentrated on the yearly base-load product (87% of total trades), rising again after a halt in 2013.

Another novel element emerging in the first quarter of 2014 is the decrease of market concentration, both on the demand side, where the shares of the first participant fell from 83% to 49%, and on the supply side, where they dropped from 80% to 56%⁴⁴.

As concerns the distribution of trades per product in 2013, market participants displayed a growing appreciation for peak-load products, whose matchings rose for the first time to levels higher than those of base-load products (206 vs. 136). Also the dynamics of the number of contracts concluded suggests a recovery of peak-load products. These products, albeit with values much below⁴⁵ base-load ones, recovered ground (1,492 MW, +428 MW), while the latter collapsed (4,604 MW, -7,029 MW).

As to the types of products traded by delivery duration, it is worth stressing the transfer of liquidity towards yearly products (90% of the total), i.e. a step back with respect to 2012, when products with a

MTE liquidity:
exchange-traded
volumes went down, OTC
registrations went up...

...with signs of
reversal
coming from the
first quarter of 2014

Recovery of peak-load
products
vs. base-load ones

44 The data refer to July–December 2013 and January–March 2014, respectively.

45 This is due to the fact that OTC transactions only covered base-load products.

shorter delivery, namely the monthly products with delivery in M+1, had experienced a hike of transactions (Fig. 2.2.21, Table 2.2.9, Table 2.2.10).

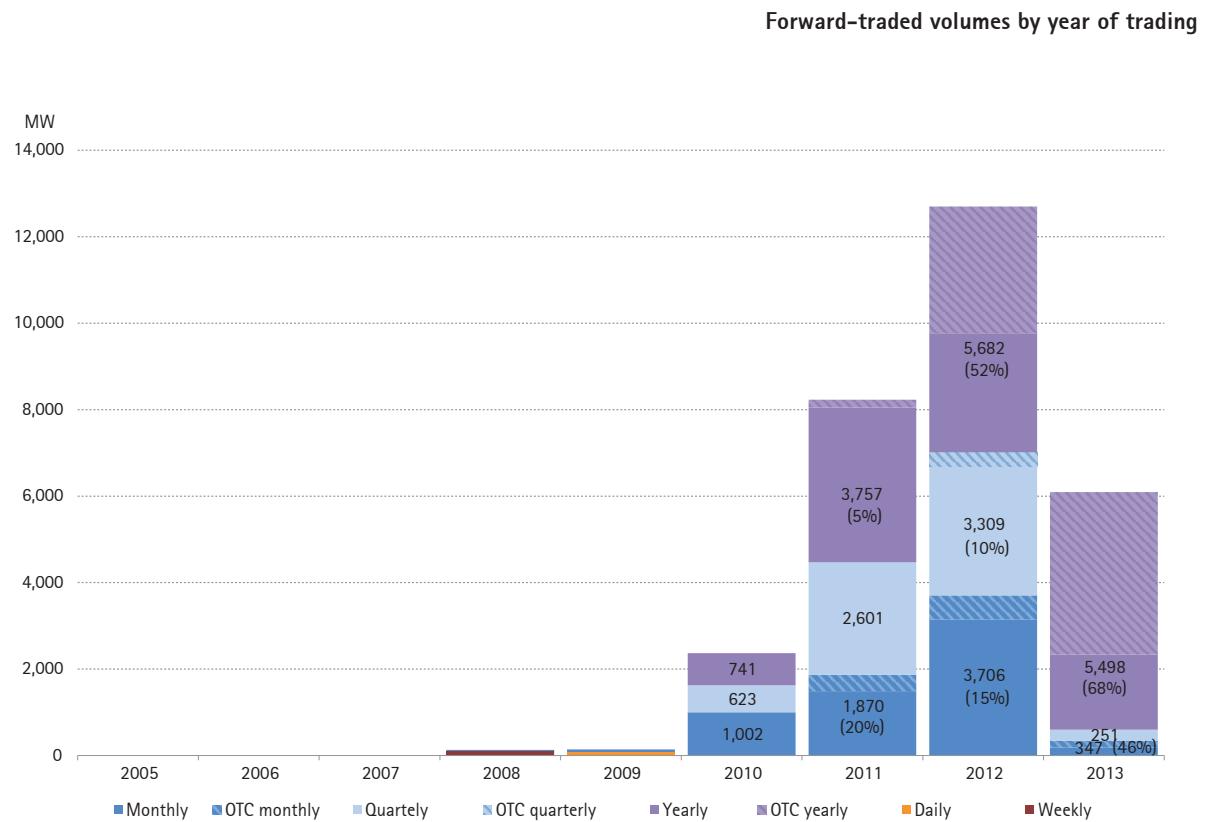


Table 2.2.9

Forward-traded volumes by year of trading⁴⁶

	2010	2011	2012	2013	Δ % 2013/2012
Contracts (MW)					
Total	2,366	8,228	12,697	6,096	-52%
Base-load	1,146	6,018	11,633	4,604	-60%
Peak-load	1,220	2,210	1,064	1,492	40%
Volumes (TWh)					
Total	6.3	33.4	55.0	41.1	-25%
Base-load	5.0	29.8	52.3	36.7	-30%
Peak-load	1.3	3.7	2.7	4.4	63%
Number of matchings					
Total	360	665	953	342	-64%
Base-load	177	478	884	136	-85%
Peak-load	183	187	69	206	199%
Share of OTC volumes					
Total	-	5.3%	44.8%	80.5%	+ 35.8 p.p.
Base-load	-	5.9%	44.7%	90.1%	+ 45.4 p.p.
Peak-load	-	0.7%	45.6%	-	-

46 See note 45.

Liquidity of trades on the MTE by duration and time ahead of delivery

Table 2.2.10

Year 2013	Monthly				Quarterly					Yearly	
	M + 3	M + 2	M + 1	Total	Q + 4	Q + 3	Q + 2	Q + 1	Total	Y + 1	Total
Contracts (MW)	0.2%	2.1%	3.4%	5.7%	0.1%	0.7%	2.0%	1.3%	4.1%	90.2%	100.0%
Volumes (TWh)	0.0%	0.2%	0.3%	0.6%	0.0%	0.2%	0.5%	0.3%	1.0%	98.4%	100.0%
No. of matchings	-	1.8%	9.4%	11.1%	0.3%	2.6%	7.3%	4.7%	14.9%	74.0%	100.0%
Share of OTC volumes	100.0%	76.9%	27.5%	49.7%	-	-	-	-	-	81.6%	80.5%

Year 2012	Monthly				Quarterly					Yearly	
	M + 3	M + 2	M + 1	Total	Q + 4	Q + 3	Q + 2	Q + 1	Total	Y + 1	Total
Contracts (MW)	5.4%	5.4%	18.4%	29.2%	2.9%	3.5%	8.4%	11.2%	26.1%	44.8%	100.0%
Volumes (TWh)	0.9%	0.9%	3.0%	4.8%	1.5%	1.7%	4.3%	5.7%	13.2%	82.0%	100.0%
No. of matchings	6.5%	5.9%	18.9%	31.3%	5.0%	6.7%	11.6%	14.1%	37.5%	31.3%	100.0%
Share of OTC volumes	0.7%	0.7%	23.3%	14.7%	-	2.0%	5.6%	18.0%	9.9%	52.1%	44.8%

The analysis of MTE prices in 2013 infers various difficulties connected with the poor liquidity of the market in terms of both number of matchings and time interval between them. However, the two yearly products

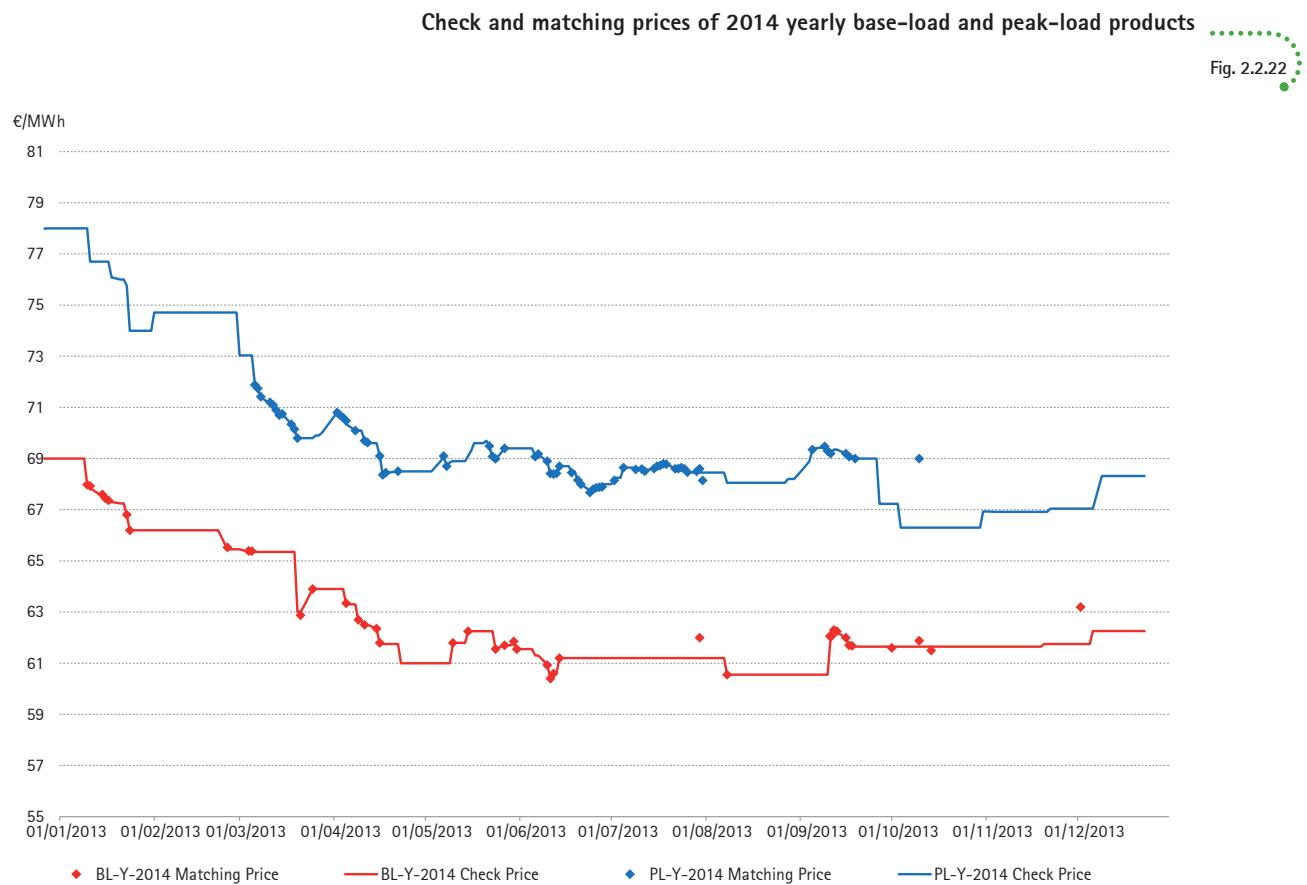
Forward prices aligned on regulated markets

with delivery in 2014, accounting for 74% of matchings, indicate that the MTE provides signals that are consistent with those of the electricity derivatives segment managed by Borsa Italiana (IDEX). The average absolute deviation between prices on the two markets was indeed equal to 0.14 €/MWh for yearly base-load contracts and even to 0.05 €/MWh for peak-load products, a value which has been however calculated on a very low number of sessions⁴⁷.

Bearish dynamics of futures prices

In the first four months of the trading year, MTE prices had a definitely declining trend (those of yearly base-load and peak-load products were down by over 10 €/MWh). These reductions are to be viewed in a context where, on the MGP, the PUN of the first quarter had a particularly pronounced downward trend, favouring bearish expectations and validating the assumption of a structural and long-lasting decrease of electricity prices in the coming months and years. Conversely, futures prices have become stable since the start of summer; the last matching price of the base-load contract in December was equal to roughly 63 €/MWh, i.e. a value about 10 €/MWh higher than the progressive PUN observed on the MGP in the first quarter of 2014. This fact implies that market participants may have underestimated the ongoing bearish trend of wholesale electricity prices (Fig. 2.2.22).

47 This is due, among others, to the fact that Borsa Italiana has listed peak-load products only since the second half of 2013.

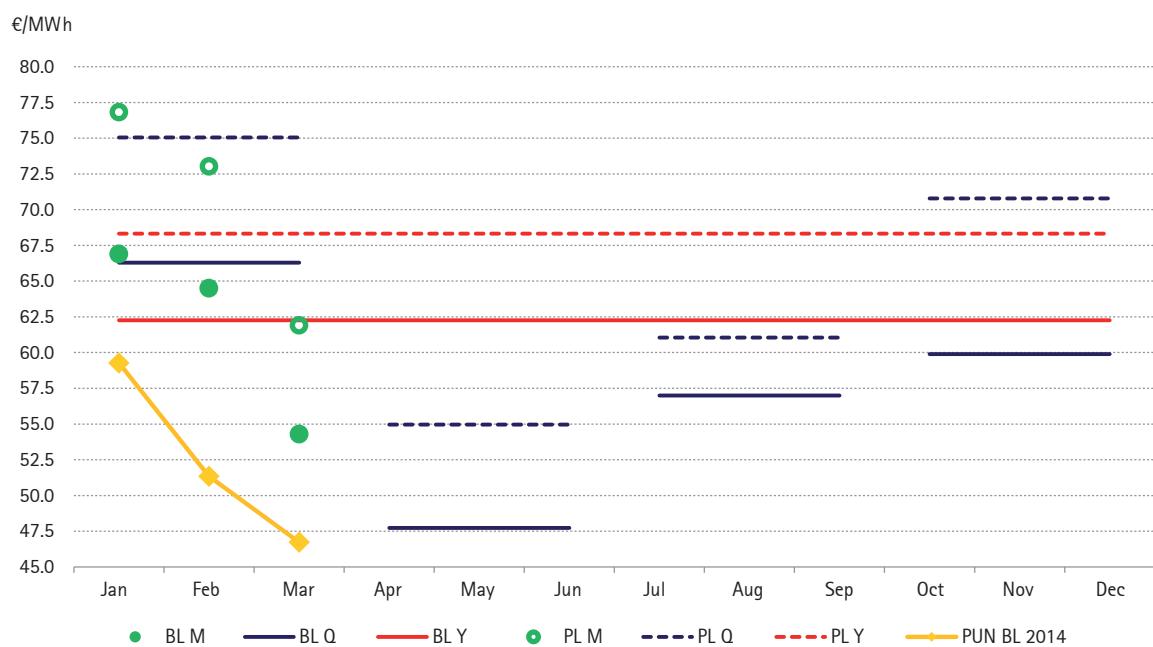


In more detail, the MTE forward curve for 2014 shows that, considering the last check price available for each product in the period from the end of December 2013 to 31 March 2014, market participants generally revised their expectations downwards. This is likely to reflect a sharp contraction of the PUN in the first quarter of 2014, which was not fully predicted by market participants. Indeed, the last available prices of monthly base-load products in January, February and March were all definitely above the ex-post value of the respective monthly PUN actually recorded after the MGP. This means that market participants revised their expectations downwards, as indicated by the forward curves of quarterly products still being traded: the second-quarter base-load product was expected to have values similar to those of the spot electricity prices recorded in March (about 46/47 €/MWh) and the two second- and third-quarter peak-load products lay at levels even below those of the last price of the calendar 2014 product on 23 December 2013 (Fig. 2.2.23).

*In 2014,
lower forward curves
for products still being
traded*

Forward curves expressed by the MTE for 2014: last available prices from December 2013 to 31 March 2014

Fig. 2.2.23



3. GAS MARKETS

3.1 The Gas Balancing Platform (PB-GAS)

The evolution of the Italian gas market in 2013 and, namely, the drop in prices at the PSV and on the PB-GAS closely reflect the effect of the two main drivers of the market: i) the non-convergence towards European spot prices, whose further generalised increase completed the closing of the spread started last year (see, in this connection, Chapter 1, Section 2); and ii) the persistent crisis of demand, driven by the more general crisis of consumption and by the displacement of thermal consumption by the new renewables. In particular, the total volumes transmitted in the "Sistema Italia" in 2013 amounted to 731 TWh⁴⁸, down by 2%, i.e. back to the levels of 2006 and with a decrease of thermal consumption alone of 16%, the highest in the past seven years.

In 2013, the PB-GAS price⁴⁹ amounted to 27.86 €/MWh, with a decrease of the same intensity as in 2012 (-2%). This trend completed the process of alignment with the prices expressed by the main continental gas hubs. This process began last year under the effect of the resolution of contractual congestions promoted by the Third Package: the spread between Italy and Europe - which has always been close to 5 €/MWh since 2009 - is now steadily below 1.5 €/MWh.

PB-GAS price:
similar to the
PSV one

As it happened in 2012, the dynamics of the price on the PB-GAS was, again, in line with the one at the PSV, whose yearly average price was 27.98 €/MWh (-3%). In effect, the correlation between the two prices proved to be very robust and on the rise (89% vs. 68% in 2012), as demonstrated both by the monthly trend - always homogeneous in direction and intensity - and by the daily trend; the latter, in spite of often diverging variations, exhibited average spreads (in absolute values) of below 0.52 €/MWh (Fig. 2.3.1).

Nonetheless, it is worth pointing out that the year-on-year reduction - whether on the PB-GAS or at the PSV - was only concentrated in the first quarter, when both shrank by about 15%, after the peaks recorded in February 2012 (-12% PB-Gas / -16% PSV). By contrast, if the first quarter is disregarded, the two prices (aligned on 28.2 €/MWh) are slightly above those of 2012 (both equal to 27.7 €/MWh) and practically unaffected by seasonality (excluding, in particular, the month of December during which the price at the PSV exceeded 30 €/MWh).

The analogy between the balancing price and the price at the PSV also appears in terms of volatility: indeed, the price at the Italian hub had a relatively low yearly average variability (1.39%), close to the one of the PSV (1.31%) and both equal to about half of the corresponding values of 2012 (Table 2.3.2).

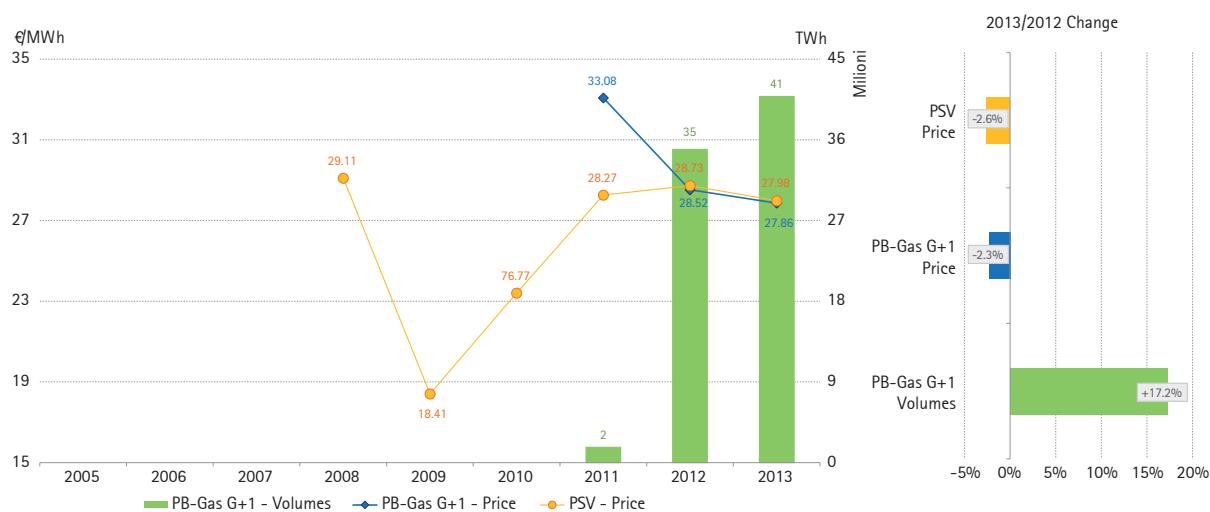
Comparing the two series of prices evidences that, contrary to what happened last year, their levels and variability did not appear to absorb the possible effects of the variability of sign in the activity of SRG, as in both cases they stood around the same value. Indeed, the average price in the sittings where SRG was on the demand side was above the one of the hours in which SRG was on the supply side only by 0.76 €/MWh (as against 1.15 €/MWh in 2012) and the difference in volatility was only equal to 0.28 p.p. (as against 1.34 p.p. in 2012) (Table 2.3.1 and Table 2.3.2).

⁴⁸ Injection flows net of the delta between storage in injection mode and in withdrawal mode.

⁴⁹ Unless otherwise better specified, the "PB-GAS price" is the price defined in art. 7, para. 4 of AEEGSI's Decision ARG/gas 45/11 of 14 April 2011 (as subsequently amended and supplemented), i.e. the economic result of market sessions taking place on the gas-day "G" (G+1 Segment of the PB-GAS).

Trend of the price and volumes on the PB-GAS

Fig. 2.3.1



Average price level (€/MWh)

Table 2.3.1

Year	Snam side: Demand		Snam side: Supply		Both sides		
	PB-Gas	PSV	PB-Gas	PSV	PB-Gas	PSV	PB-Gas**
2012	29.29	29.18	28.14	28.48	28.52	28.76	28.61
2013	28.28	28.23	27.52	27.67	27.86	27.98	27.93

** Average PB-GAS price calculated on the gas-days on which the price at the PSV was available

Average PB-GAS price and volumes offered by SRG

Fig. 2.3.2

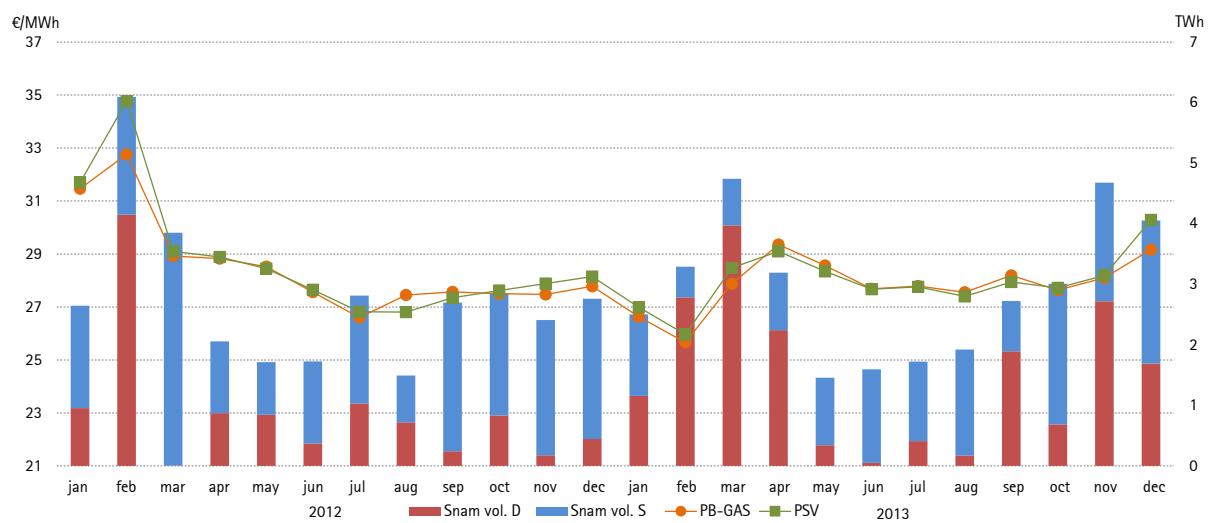
Average volatility of the PB-GAS price⁵⁰

Table 2.3.2

Year	Snam side: Demand		Snam side: Supply		Both sides		
	PB-Gas	PSV	PB-Gas	PSV	PB-Gas	PSV	PB-Gas**
2012	1.34%	3.48%	2.31%	0.97%	2.18%	2.53%	2.45%
2013	1.24%	1.33%	1.23%	0.95%	1.39%	1.31%	1.49%

** Volatility of the PB-GAS price calculated on the gas-days on which the price at the PSV was available

50 Unless otherwise specified, the price volatility was calculated on all the useful sessions of the PB-GAS G+1 Segment.

Among the most interesting elements of 2013 is certainly the pattern of volumes traded on the PB-GAS, which totalled 41 TWh, up by as much as 6 TWh (+17%).

A substantial part of this increase was obviously due to the trend of transactions connected with system balancing, equal to 35 TWh (+2 TWh, +5%), i.e. 85% of total volumes. Even if these volumes were equally distributed between purchases and sales by SRG, the system was much more frequently long than short (201 sessions vs. 164, on a total of 365 sittings), confirming what happened last year (244 and 122, respectively, on a total of 366 sittings).

*PB-GAS platform:
towards greater
liquidity*

Nonetheless, the highest contribution to the growth of liquidity came from voluntary trades between the parties (from 1.8 to 5.9 TWh), which currently account for 15% of overall liquidity. If this change is correctly measured with reference to the April-December period, it means a 3 TWh increase on 2012 (Fig. 2.3.3)⁵¹.

The growing size of complementary trades also corresponds to an intensification of their frequency, which was equal to 81% on the total market sittings in 2013 (vs. 69% in 2012 on a total of 366) and equally distributed with respect to the side of the market where the balance responsible entity was active (Table 2.3.3).

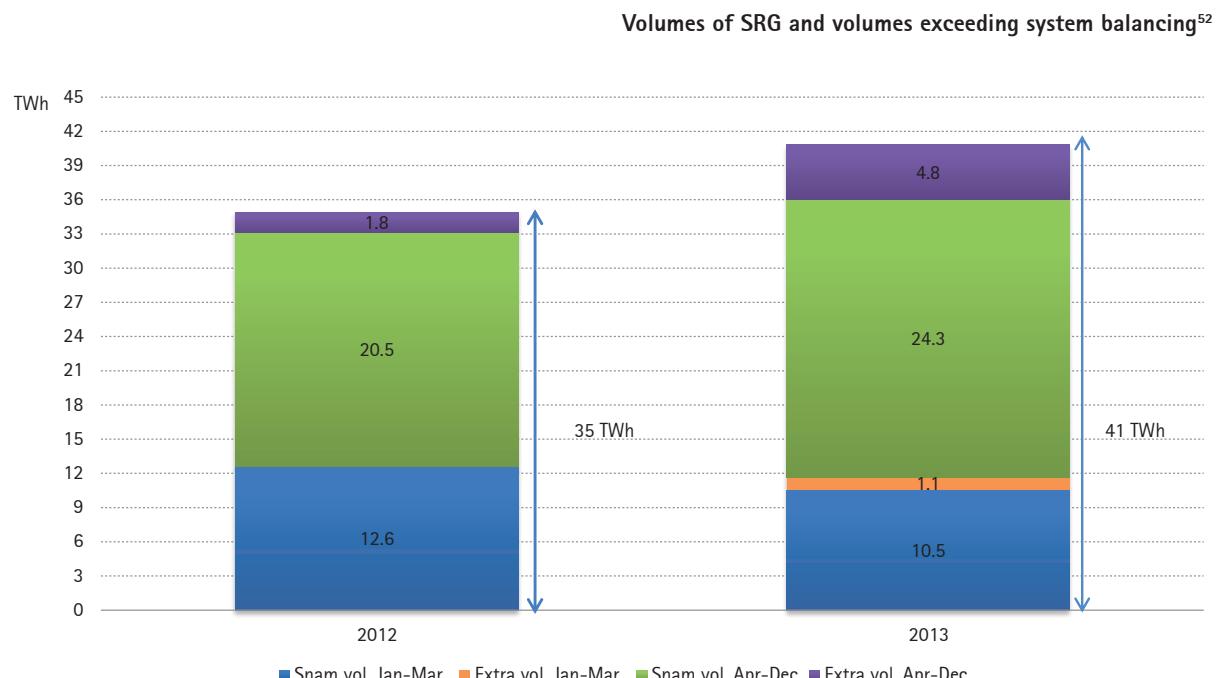


Table 2.3.3

Frequency of sittings with trades exceeding balancing

Year	Snam side	Extra Volumes (TWh)	Freq. of sittings	Freq. on total
2012	A	1	47%	69%
	V	0.8	53%	
2013	A	2.4	47%	81%
	V	3.5	53%	

⁵¹ In April 2012, the gas balancing market became fully operational, thus permitting, in particular, transactions not dedicated to system balancing: in April-December 2013, the size of these trades was 4.8 TWh; therefore, period of analysis remaining equal, it was about three times higher than the one in 2012.

⁵² See previous note.

This fact – reflecting the frequent tendency of participants to offer flat curves at the margin – significantly contributes both to the already mentioned property of prices – in terms of stability, low volatility and alignment with the PSV – and to their low correlation with changes of sign in the behaviour of SRG⁵³. By contrast, these results, together with the alignment of prices of the Italian trading point with those of continental hubs, might suggest a growing use of the platform by its participants for commercial opportunities.

In 2013, the gas balancing platform had 70 active participants⁵⁴, 70 users authorised for the storage service in respect of which/whom at least one order was accepted in one of the 365 market sittings, out of a total of 74 participants that entered at least one order in one of the market sittings. The market setting in which these participants moved was, as in 2012, fairly competitive, with a slightly lower average concentration index (HHI: 2,615)⁵⁵.

PB-GAS participants

A more thorough analysis of active participants infers that the average number of participants per session grew on both sides of the market where the balance responsible entity was active. This growth was paralleled, among others, by a more intense relationship between active participants and size of additional volumes with respect to balancing. In particular, this relationship was stronger in the sessions where the system was short (80% correlation +2 p.p. on 2012).

The presence of participants on both sides of the market was homogeneous, except in a few cases. From the standpoint of the volumes of the top ten participants (in terms of volumes traded), a similar symmetry is observed in the respective market shares (Table 2.3.4). These shares, calculated on the overall volumes traded, were obviously small⁵⁶ (in the range of 10%).

Top 10 participants active on the PB-GAS, market shares by side and frequency of acceptance

Table 2.3.4

Participants	Long system		Short system		Both signs			Acceptance frequency		
	A	V	A	V	A	V	Tot	A	V	Tot
SNAM RETE GAS	0%	83%	88%	0%	44%	41%	85%	100%	100%	100%
DUFENERGY TRADING SA	9%	1%	1%	9%	5%	5%	10%	30%	25%	53%
EDISON S.P.A.	6%	0%	0%	11%	3%	5%	9%	11%	11%	23%
SHELL ITALIA S.P.A.	7%	1%	0%	7%	3%	4%	7%	27%	49%	76%
ENI S.P.A.	1%	6%	1%	7%	1%	7%	7%	2%	22%	23%
GDF SUEZ ENERGIA ITALIA S.p.A.	5%	1%	0%	7%	3%	4%	7%	25%	35%	61%
CONSORZIO TOSCANA ENERGIA S.P.A.	5%	1%	0%	5%	3%	3%	5%	27%	11%	33%
GRUPPO OPENLOGS S.R.L.	4%	1%	1%	4%	3%	3%	5%	32%	35%	64%
E.ON GLOBAL COMMODITIES SE	6%	0%	0%	3%	3%	2%	4%	33%	26%	59%
GUNVOR INTERNATIONAL B.V., AMSTERDAM, GENEVA BRANCH	5%	0%	0%	3%	3%	2%	4%	18%	17%	35%
WORLDENERGY S.A.	2%	1%	0%	4%	1%	2%	4%	20%	43%	58%
Other	28%	22%	53%	9%	28%	22%	53%	n.d.	n.d.	n.d.
Volumes (GWh)	20,266		20,567		40,833			-	-	-
TOTAL	50%		50%		100%			-	-	-

53 The correlation between the price and the "Snam volumes" – without distinguishing between the sides of the market where Snam was active – calculated on the entire year was equal to 7%, down by 27 p.p. on 2012. The correlation between the price and the total volumes (9%) was down by 23 p.p. Equally negligible values have been obtained by removing the values considered as outliers from the set of observations. Weaker but equally negligible was the relation between the clearing price and the overall system imbalance, a variable that includes the sign of the activity of the balance responsible entity (-38%, stable with respect to 2012).

54 "Active" participant means a participant that has traded volumes in at least one of the market sessions; indeed, the mere entry of orders is not significant, since participation in the market is compulsory.

55 Herfindahl-Hirschman Index determined on the total volumes traded, based on the shares of participants that were active on the side of the market opposite to the one on which Snam was active.

56 These small shares are to be ascribed to the physiological dominance of the system operator Snam, prevailing (market share above 50%) in most of the sessions (291 out of 365, equal to about 80% of the total).

Furthermore, EDISON and DUFENERGY were the major counterparties of Snam on both sides of the market where, in particular, the second participant had one of the highest frequencies of acceptance. ENI stood out not only for a higher amount of sales, but also for the management (on the same side) of the highest volumes unrelated to balancing (outperforming SHELL ITALIA, in the second position, by about 1 TWh).

Different orders of magnitude and players emerge from the impact of participants' orders on volumes exceeding balancing, with reference to the same side as the one on which SRG was active (Table 2.3.5).

Market share of participants exceeding balancing

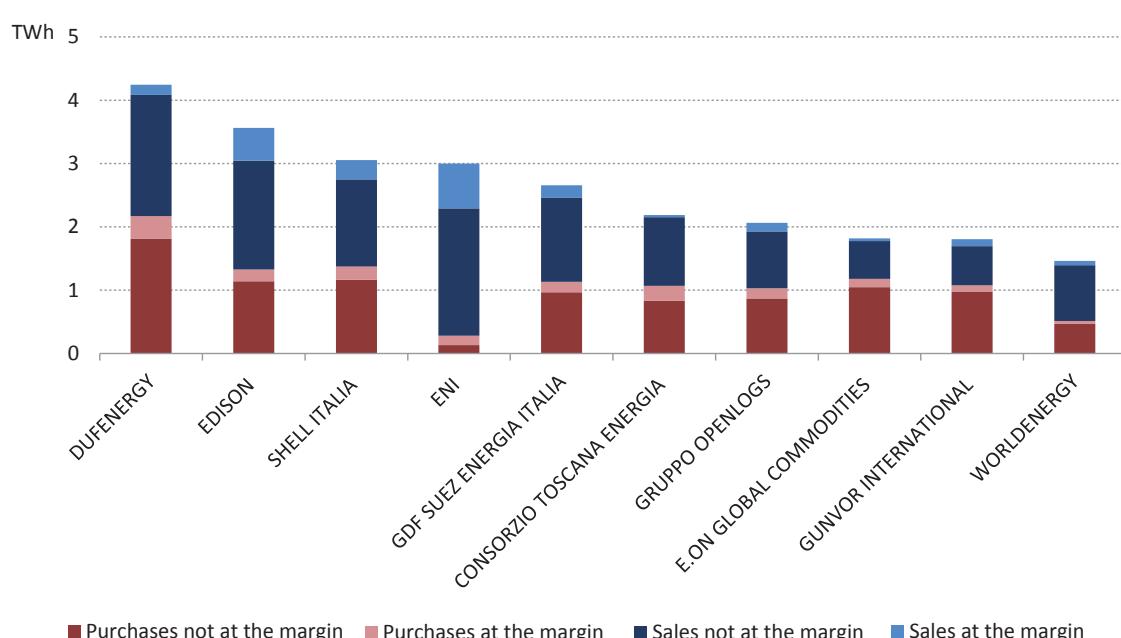
Table 2.3.5

Participants	Market Side		Total
	Supply	Demand	
ENI S.P.A.	36%	5%	23%
SHELL ITALIA S.P.A.	7%	2%	5%
SPIGAS SRL	6%	5%	5%
DUFENERGY TRADING SA	6%	10%	8%
GDF SUEZ ENERGIA ITALIA S.p.A.	5%	3%	4%
GRUPPO OPENLOGS S.R.L.	3%	8%	5%
WORLDERGY S.A.	3%	2%	3%
ARGOS ENERGIA SRL	3%	-	2%
CONSORZIO TOSCANA ENERGIA S.P.A.	3%	2%	3%
ENEI TRADE S.P.A.	3%	-	2%
ITALTRADING S.P.A.	-	7%	3%
STATOIL ASA	0%	6%	2%
HB TRADING S.P.A.	2%	5%	3%
VITOL S.A.	-	3%	1%
CENTREX ITALIA S.p.A.	2%	3%	2%

The positions in Table 2.3.4 are slightly reversed when considering participants that, in the course of the year, proved to be price makers with the highest share of volumes (in the total volumes traded) or with the highest frequency (Table 2.3.6, Table 2.3.7). Among the top 10 in terms of volumes, GDF was the one at the margin with the highest frequency (50%), with an overall volume offered at the clearing price in the reference sessions of roughly 370 GWh, and holding a minimum share at the margin (1%) in the yearly total volumes traded, just as the other participants analysed (Table 2.3.6).

Total volumes of top 10 participants by "type of order" and marginality

Fig. 2.3.4



Top 10 participants by volumes offered at the margin

Table 2.3.6

Participants	Volumes at the margin (GWh)	% margin on volumes accepted	% margin on total
ENI S.P.A.	853.83	28%	2%
EDISON S.P.A.	705.07	20%	2%
DUFENERGY TRADING SA	521.4	12%	1%
SHELL ITALIA S.P.A.	516.02	17%	1%
GDF SUEZ ENERGIA ITALIA S.p.A.	368.94	14%	1%
GRUPPO OPENLOGS S.R.L.	296.23	14%	1%
VITOL S.A.	265.15	31%	1%
CONSORZIO TOSCANA ENERGIA S.P.A.	264.64	12%	1%
A2A TRADING S.r.l.	256.63	27%	1%

Frequency of presence at the margin for the top 10 participants

Table 2.3.7

Participants	Both sides	Long system		Short system	
		Participant's role		Participant's role	
		Extra	Counterparty	Extra	Counterparty
DUFENERGY TRADING SA	20%	25%	18%	42%	16%
EDISON S.P.A.	33%	-	33%	20%	34%
SHELL ITALIA S.P.A.	34%	30%	39%	29%	32%
ENI S.P.A.	36%	35%	60%	100%	32%
GDF SUEZ ENERGIA ITALIA S.p.A.	50%	58%	51%	63%	47%
CONSORZIO TOSCANA ENERGIA S.P.A.	42%	17%	50%	50%	27%
GRUPPO OPENLOGS S.R.L.	40%	41%	42%	45%	37%
E.ON GLOBAL COMMODITIES SE	46%	44%	59%	67%	26%
GUNVOR INTERNATIONAL B.V., AMSTERDAM, GENEVA BRANCH	39%	38%	44%	20%	37%
WORLDENERGY S.A.	44%	48%	60%	50%	32%

At the end of 2013, in compliance with various provisions issued on natural-gas balancing, GME set up the G-1 Segment of the PB-GAS. This segment was conceived to enable participants to change their "positions" – in terms of nominations of the volumes of gas to be transmitted – in advance (on day G-1), avoiding to become unbalanced on an *ex-post* basis. Since its take-off, this segment has recorded a poor activity.

*Take-off of the G-1 Segment:
balancing continued on
the "day after"*

Under the new market design, SRG enters a buy or sell order depending on whether, based on the estimated system status (SPS, estimated system deviation) available within 19:00 of gas-day G-1, positive gas requirements or surpluses are identified⁵⁷.

From 14 November 2013 (when the market went into operation) to date, only five sessions have ended with trades (on the dates from 28 November to 9 December), practically because in all other cases SRG entered no buy or sell orders⁵⁸. In particular, in the sessions of 28 and 29 November, as the overall volume offered for sale was not sufficient to cover SRG's requirements completely (8.4 GWh vs. 287.4 GWh and 9.6 GWh vs. 62.3 GWh, respectively), the market closed at a regulated price, equal to the value of the cap specified in the reference legislation (82.80 €/MWh and 42.70 €/MWh, respectively)⁵⁹. Subsequently, in the sittings of 2 and 5 December, the increase in the sell orders entered by participants and the concurrent decrease of demand by SRG favoured the closing of the market at a clearing price; however, this price was higher than

57 Under art. 7 bis of AEEGSI's Decision ARG/gas 45/11 (as subsequently amended and supplemented), the balance responsible entity determines gas requirements and surpluses.

58 Indeed, under the provisional organisation of the market, no trades between participants are allowed.

59 Under AEEGSI's Decision ARG/gas 45/11 (as subsequently amended and supplemented), where the sell orders are not sufficient to cover the buy orders entered by the balance responsible entity, the price of the session shall be set at the price offered for purchase by the same entity. AEEGSI set this value to 23 €/GJ (82.80 €/MWh) and then modified it with its Decision 552/2013/R/GAS of 28 November 2013; point 3) of this Decision establishes that, on a provisional basis, the price offered for purchase by SRG shall be equal to the latest available price, converted into €/GJ, related to the ICE Endex TTF Day Ahead Index end-of-working-date, increased by 4 €/GJ (14.4 €/MWh). Based on this decision, the regulated cap price of the session of 29 November was equal to 42.70 €/MWh.

the one expressed by other trading venues for the same gas-days (PSV: 33.20 €/MWh and 31.55 €/MWh). Finally, in the session of 9 December, the renewed growth of buy orders entered by the balance responsible entity (117.8 GWh), not adequately covered by the volumes of sell orders entered by participants (9.4 GWh), brought prices again to the maximum level indicated in the applicable legislation (in this case, 42.5 €/MWh). Since 9 December, no results have been recorded on this segment and the activities of entry of orders thereon by participants have only been sporadic.

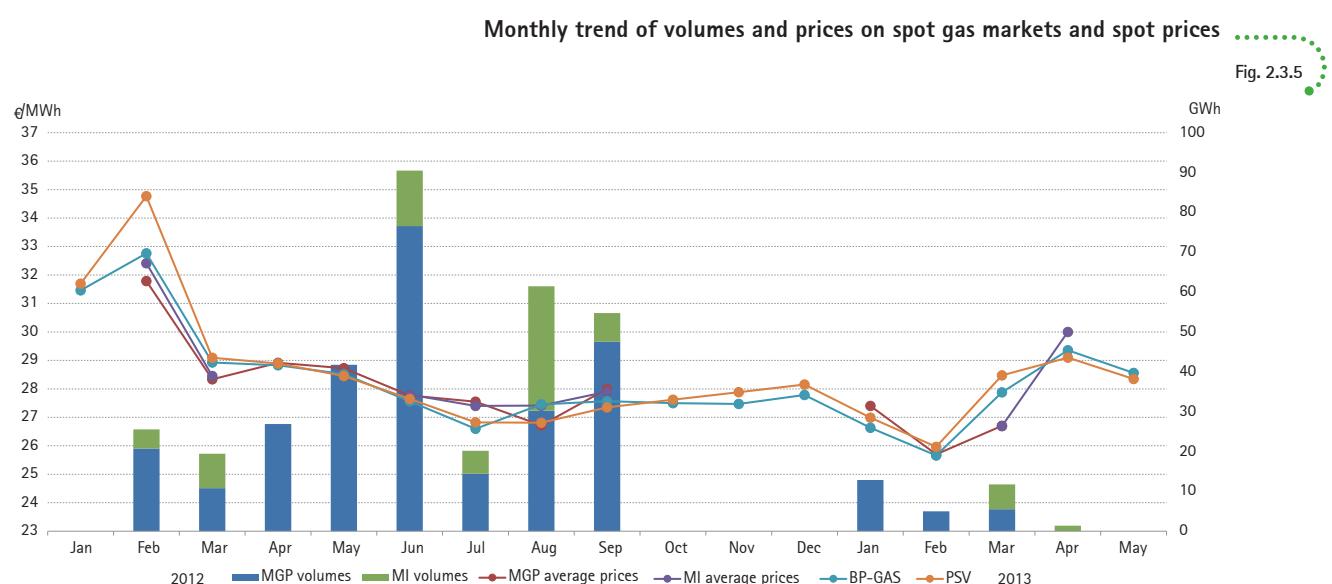
3.2 Other gas markets

With the advent of the new Forward Gas Market (MT-GAS)⁶⁰, trades on the M-GAS were definitely low also in 2013.

The continuous-trading day-ahead gas market (MGP-GAS) only recorded four matchings, one in each of the four *significant* sittings, with a sharp decrease vs. the previous year (42 out of a total of 42), and overall volumes traded (13 GWh) accounting for a little less than 10% of those in 2012.

Likewise, the Intra-Day Gas Market (MI-GAS) showed a collapse in the number of matchings (4 vs. 15 in 2012, always equal to the total sittings with activities), mostly concentrated in the first week of March, and at the same time in the related volumes; the latter were equal to about 4 GWh, vs. 36 GWh traded in 2012, among others in different periods of the year (between the third and fourth quarter).

The comparison between the M-GAS markets, the PB-GAS and the PSV evidences that, in the sittings with trades on the two spot markets (MGP-GAS and MI-GAS), the matching prices (25.7 €/MWh to 30 €/MWh) were practically in line with those of the two other spot gas trading venues, similarly to 2012. Indeed, in 2013, the average spread between the M-GAS, PB-GAS and PSV prices fluctuated in absolute value between 0.15 €/MWh and 0.54 €/MWh, while it was in the 0.13-0.62 €/MWh range in the previous year (Fig. 2.3.5). Finally, the Forward Gas Market (MT-GAS), which kicked off in early September 2013, did not record results or entry of orders.



⁶⁰ The initial market design originates from the provisions of Legislative Decree no. 79 of 16 March 1999.

As it happened in 2012, the "Imports Segment" and the "Segment as per Legislative Decree 130/10" did not provide signals of liquidity in 2013. In effect, none of the market sittings of the Imports Segment recorded results; activities took place only on 12 days, when "obliged" participants⁶¹ bid the specified quotas of gas, imported in thermal year 2012/2013, in respect of thermal year 2013/2014. The highest frequency of participation was observed in October, during which 9 GWh were sold, equal to 34% of the overall volumes proposed.

P-GAS: no signal of liquidity from the Imports Segment and the Segment as per Legislative Decree 130/10; the activity on the Royalties Segment stopped

On the Segment as per Legislative Decree 130/10, the only activities observed were the orders entered to fulfil obligations associated with virtual storage within thermal year 2013/2014 in respect of the previous thermal year.

Therefore, the only trades recorded on the P-GAS were those on its Royalties Segment, on which participants are required to bid the specified royalties related to production from national gas fields for the October–March period in respect of the previous thermal year.

On the other hand, the size of these trades in 2013 (all at the beginning of January) was very low as compared to the one of last year and equal to slightly more than 620 GWh (about 3 TWh in 2012). Additionally, these volumes (all pertaining to the *March 2013* product) were priced on average at 27.25 €/MWh, with an auction starting price⁶² for purchase of roughly 34 €/MWh, i.e. definitely below the levels expected for the PSV price for the same month (spread in the range of 8 €/MWh).

⁶¹ In accordance with the provisions and guidelines expressed in Law 40/2007 and in the Ministerial Decree of 23 Feb. 2012.

⁶² The Ministry of Economic Development periodically notifies the starting auction price. In particular, on the segment under review, buy orders are not accepted if they are lower than the arithmetic average of the QE index in the 4 quarters of the year (solar year) in respect of which royalties are owed (i.e. the solar year preceding the one of the first trading month of the thermal year considered).

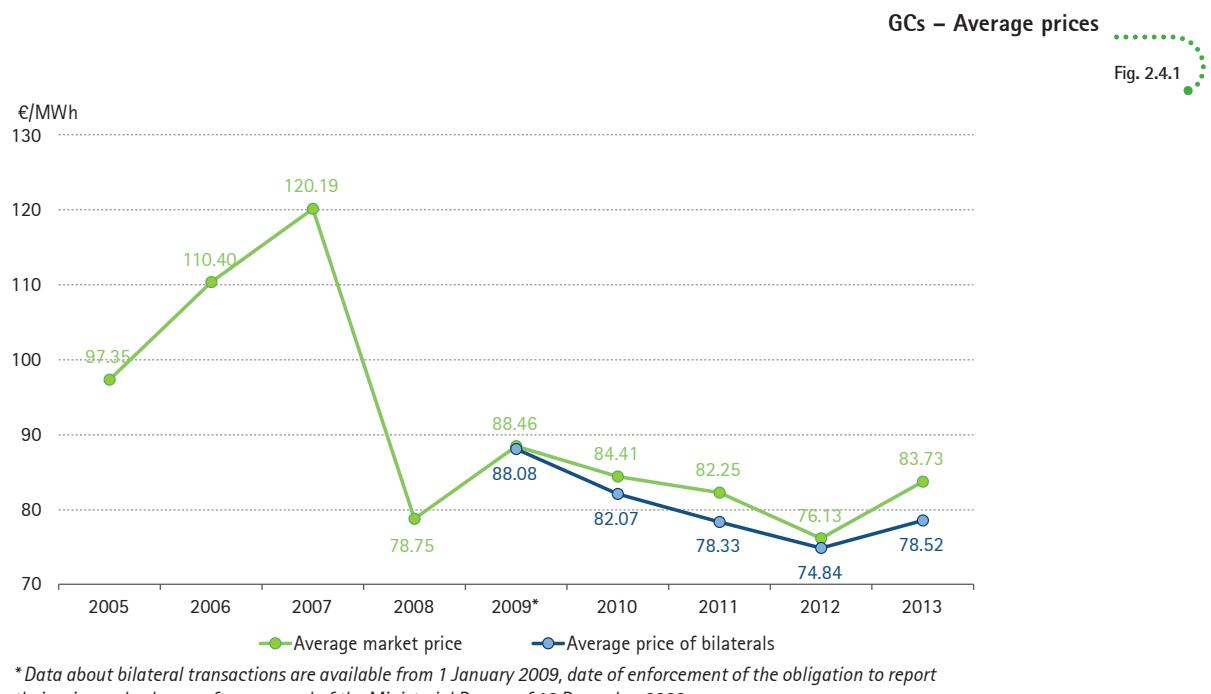
4. ENVIRONMENTAL MARKETS

4.1 Green Certificates (GCs): Market and Bilaterals Platform

In the 48 sessions of the Green Certificates Market (MCV) in 2013, the average weighted price of certificates traded, regardless of their type and reference period, was 83.73 €/MWh up by 7.60 €/MWh on the previous year (+10.0%). Therefore, the year 2013 put an end to the bearish trend observed in the previous three years that led to the historical low of 2012 (76.13 €/MWh).

The Green Certificates Bilaterals Platform (PBCV) experienced a similar dynamics, with a slightly more moderate increase of its average price (+3.68 €/MWh, +4.9%), which was equal to 78.52 €/MWh in 2013 and lower than the one of the regulated market. In this regard, it should be emphasised that about 4% of transactions registered onto the platform had a zero price; if these transactions were disregarded, the average price of bilaterals would be 81.65 €/MWh (Fig. 2.4.1).

*Recovery of average prices
and reduction of volatility*



The analysis of certificates traded in 2013 by type and reference period highlights that, in the regulated market (MCV), the lowest prices (below 80 €/MWh) were those of the GCs and the GCs _TRL with reference year 2010, whose trading period ended in March 2013. Conversely, the highest prices were those pertaining to the four quarters of 2013, which ranged from 84.80 €/MWh for the *fourth quarter* to 86.83 €/MWh for the *first quarter* and largely exceeded those pertaining to the years 2012 and 2011.

On the PBCV, too, prices were higher for the quarterly certificates of 2013 – all above 82 €/MWh and with a maximum of 84.41 €/MWh for the GCs of the *fourth quarter of 2013* – and lower for the other GCs, with a minimum of 42.80 €/MWh for the GCs *2010_TRL* (Fig. 2.4.2).

GCs – Prices by type and reference period – 2013

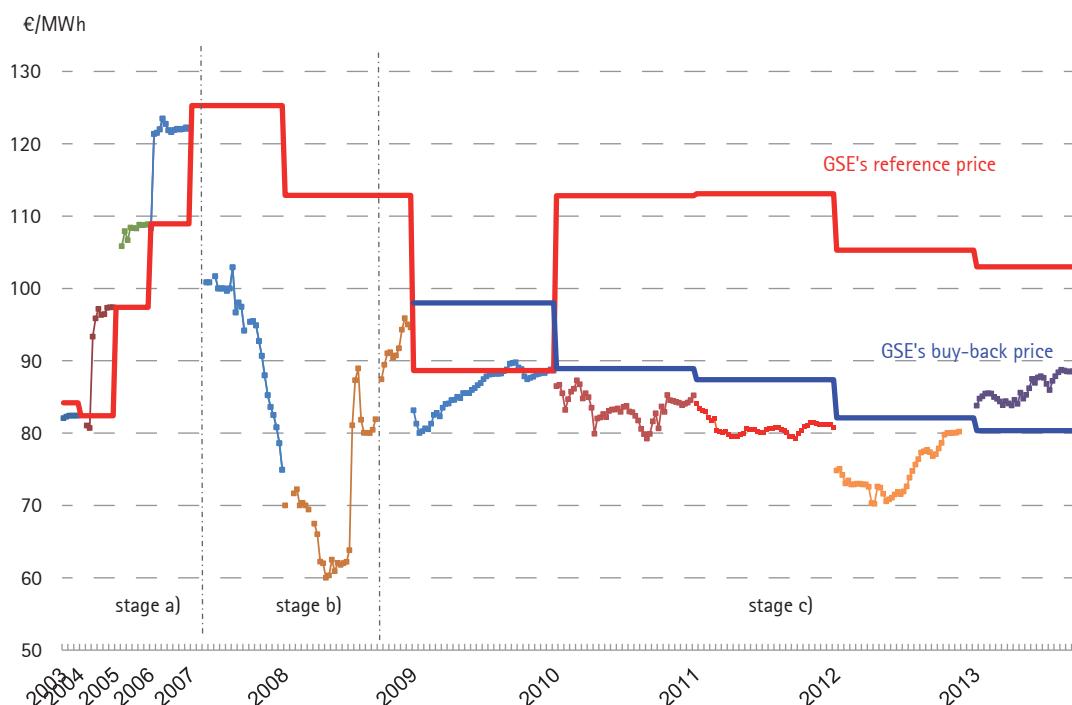
Fig.2.4.2



The prices of all the GCs recorded in the market sessions of 2013, except those with reference year 2010 and expiring in March of the same year, were above the buy-back price, which was 80.34 €/MWh⁶³ in 2013 (Fig. 2.4.3), contrary to what happened in previous years. This fact is likely to be consequent upon the introduction, for the first time, of a programme of quarterly buy-backs of GCs, making it possible to sell them to GSE in advance, with effects on prices.

GCs – Trend of market prices vs. buy-back price

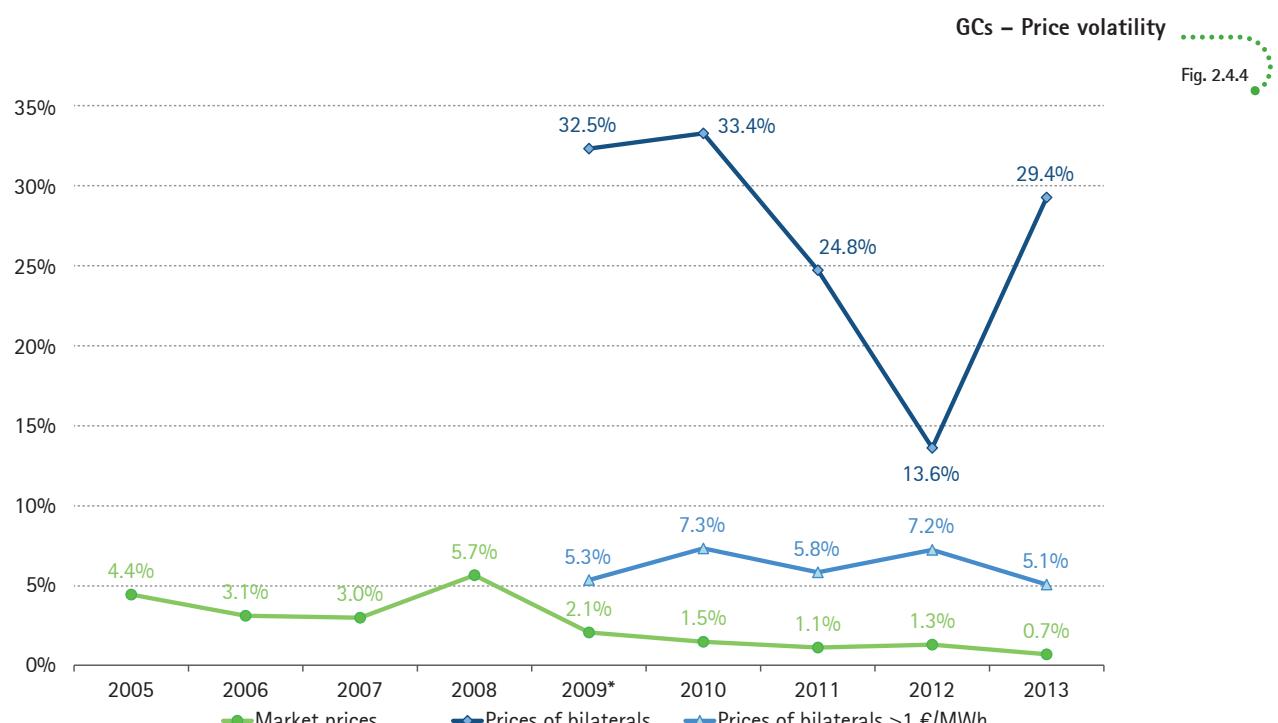
Fig.2.4.3



⁶³ Since 2009, under the Decree of 18 December 2008, GSE has acted as last-resort buyer, completely absorbing the excess of supply and ensuring a perfect balancing of the market. Then, Legislative Decree no. 28 of 3 March 2011 provided that the buy-back price of surplus GCs in respect of generation in the years 2011–2015 should be equal to 78% of the reference price of GSE's GCs. The latter is equal to the difference between 180 € and the average buying price of electricity in the year preceding the buy-back year, as calculated by AEEGSI. In 2013, the reference price for the Green Certificates Market for the year 2013 was equal to 103.00 €/MWh; hence, the GC buy-back price was 80.34 €/MWh.

With rare exceptions, the MCV recorded a constant reduction of price volatility, which had an all-time low of 0.7% in 2013.

On the contrary, the price volatility of the PBCV, affected by the above-mentioned transactions registered at zero price, had a contrasting time series with levels much higher than those on the regulated market and, above all, with a blatant growth in 2013 (+15.8 p.p.). If transactions registered at a price below 1 €/MWh are disregarded, the volatility time series takes on a more regular trend, though remaining still above the one of the regulated market by a few percentage points (Fig. 2.4.4).



* Data about bilateral transactions are available from 1 January 2009, date of enforcement of the obligation to report their price and volumes after approval of the Ministerial Decree of 18 December 2008.

In 2013, the volumes negotiated on the MCV (after a slight decline in 2012) had an all-time peak of 7.6 million MWh, i.e. they were almost twice the ones in the previous year (+98.8%). Also the volumes traded on the PBCV hit an absolute record of 37.2 million MWh in 2013, up by 30.6% vs. their already high level in 2012 (Fig. 2.4.5).

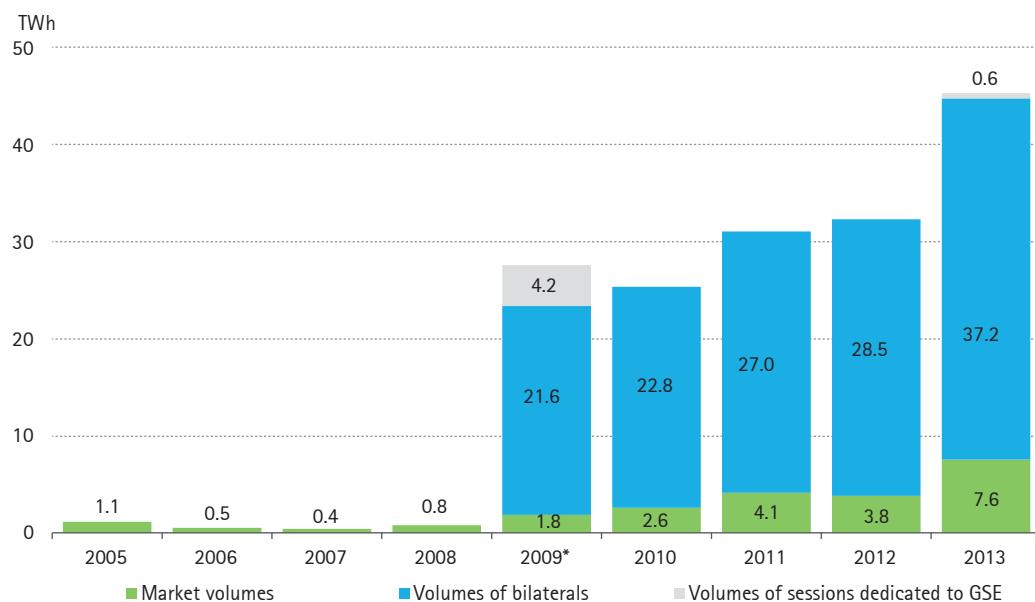
The PBCV has always been popular among producers and importers of electricity from conventional sources that are subject to the green quota obligation and need to procure considerable amounts of GCs with the lowest possible number of transactions. In spite of this, the liquidity of the regulated market (MCV) grew over the years until hitting a historical peak of 16.9% in 2013, up by 5.1 percentage points on the previous year.

Volumes traded
at all-time peaks

Moreover, during the year, GME organised two market sessions dedicated to GSE, to the benefit of parties having to fulfil the obligation referred to in art. 20, para. 5 of the Ministerial Decree of 6 July 2012; during these sessions, 555,000 GCs with reference year 2012 were awarded at a price equal to the buy-back one (80.34 €/MWh).

GCs – Volumes traded

Fig. 2.4.5

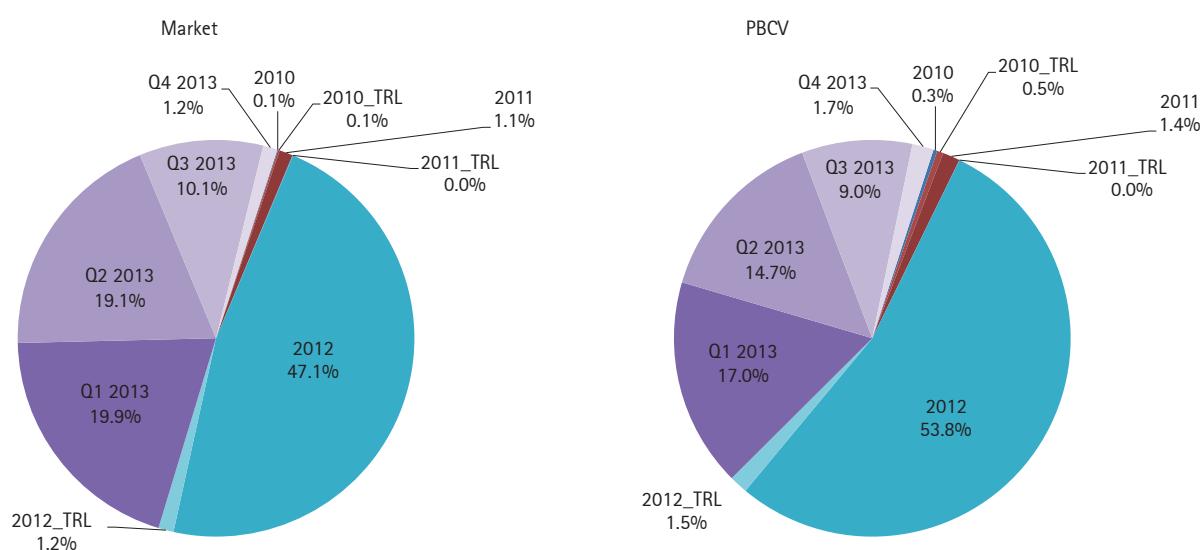


* Data about bilateral transactions are available from 1 January 2009, date of enforcement of the obligation to report their price and volumes after approval of the Ministerial Decree of 18 December 2008.

The GCs mostly traded on the regulated market were those with reference year 2012, with a volume of 3.6 million MWh (47.1% of the total traded), and those pertaining to the four quarters of 2013, with an overall number of GCs traded equal to 3.8 million MWh (50.3%). Also on the PBCV, the mostly traded type was the one with reference year 2012, with 20.0 million MWh (53.8% of the total bilaterals) traded, followed by the quarterly 2013, whose trades amounted to 15.8 million MWh (42.5%) (Fig. 2.4.6).

GCs – Volumes traded by type and reference period – 2013

Fig 2.4.6



As is known, the regulated market (MCV) has a lower concentration on the supply side, with a plurality of producers from renewables, than on the demand side, represented above all by the leading producers of electricity from conventional sources that are subject to the green quota obligation. In 2013, the percentage share of the top three participants (CR3) on the demand side was 39.3%, practically in line with the previous year. In contrast, the same concentration indicator (CR3) on the supply side had a value of 21.1%, down by over 3 percentage points on 2012. The different degree of concentration is even more evident when considering the share of the top ten participants (CR10): 68.9% on the demand side and 44.2% on the supply side (Fig. 2.4.7).

Competitiveness slightly improved but was always higher on the supply side

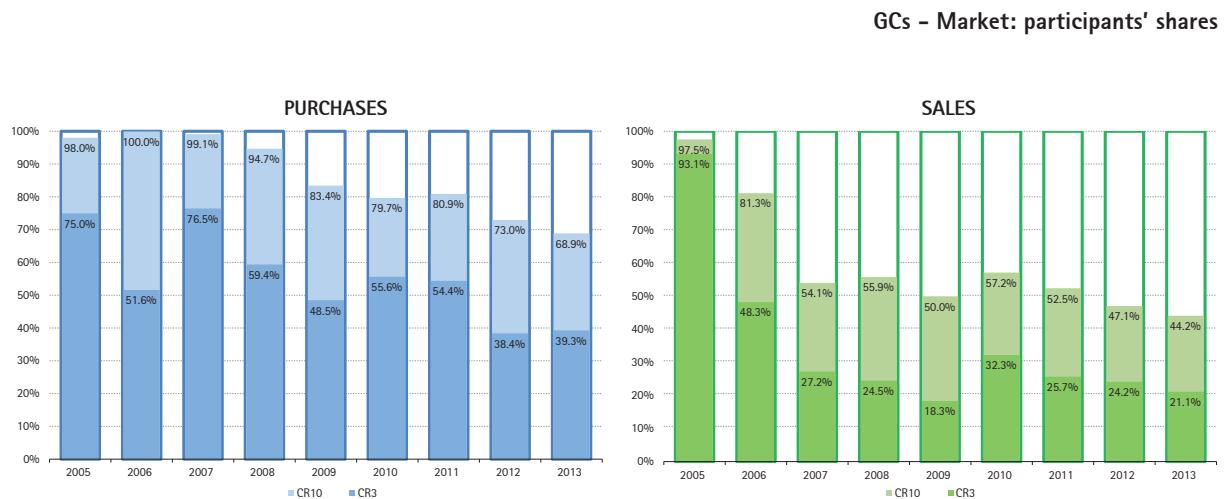


Fig. 2.4.7

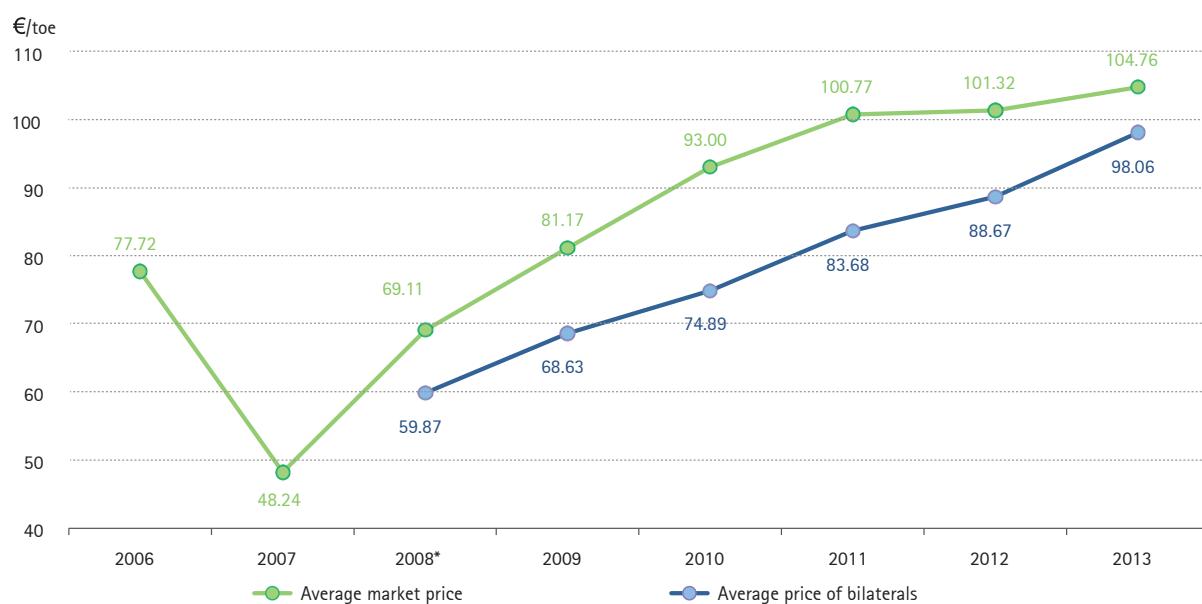
4.2 Energy Efficiency Certificates (TEE): regulated market and bilateral transactions

In 2013, the weighted average price on the Energy Efficiency Certificates Market (MTEE) was 104.76 €/toe, up by 3.45 €/toe on the previous year, marking a new all-time peak for the sixth year in a row. The time series clearly displays its growing trend in the past few years, when prices climbed from 48.24 €/toe in 2007 to 100.77 €/toe in 2011 and, after a year of stability, its recovery in 2013. The average prices of bilaterals, too, had a constant growth from 2009 to 2013, with an average of 98.06 €/toe in 2013 (+9.39 €/toe; +10.6% on 2012). OTC prices have historically been lower than those on the regulated market, owing to the presence of transactions registered at zero price (4.5% of the total volumes traded bilaterally in 2013), but their spread gradually narrowed in the past three years (Fig. 2.4.8).

Prices grew to all-time peaks

TEE – Average prices

Fig. 2.4.8



The analysis by type of TEE indicates that, on the regulated market, average prices ranged from 99.58 €/toe for Type V to 109.38 €/toe for Type II HEC (High-Efficiency Cogeneration), both traded for the first time in 2013. As in previous years, the prices of the historical types I, II and III were practically aligned.

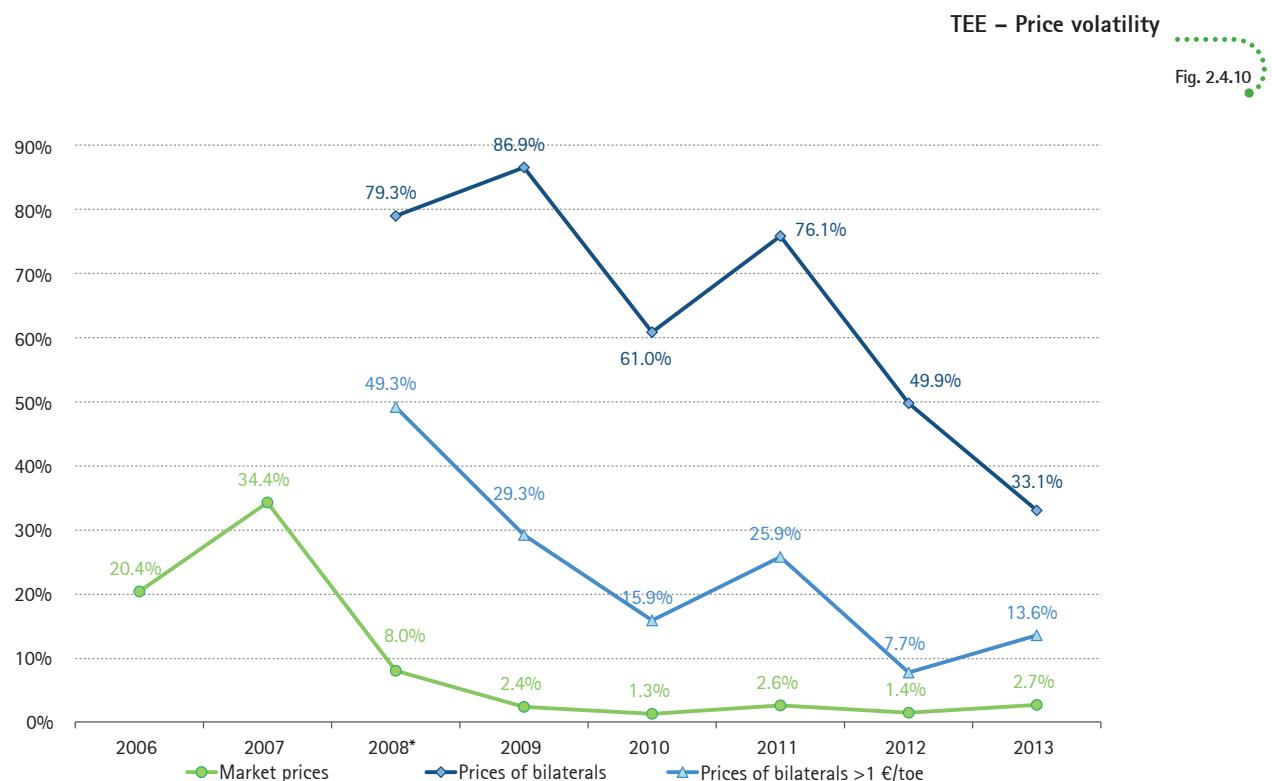
Bilateral transactions, instead, had much lower weighted average prices for certificates of Type I, equal to 89.41 €/toe, than those for the other types, all exceeding 100 €/toe, with a peak of 105.55 €/toe for certificates of Type V. Moreover, bilateral prices of certificates of Type I were also much lower than those on the regulated market (-15.51 €/toe) owing to the higher concentration of transactions registered at zero price (3.1% of the total trades on the bilaterals platform) (Fig. 2.4.9). The average price of bilaterals, excluding zero-priced transactions, was 105.53 €/MWh.

TEE – Prices by type – 2013

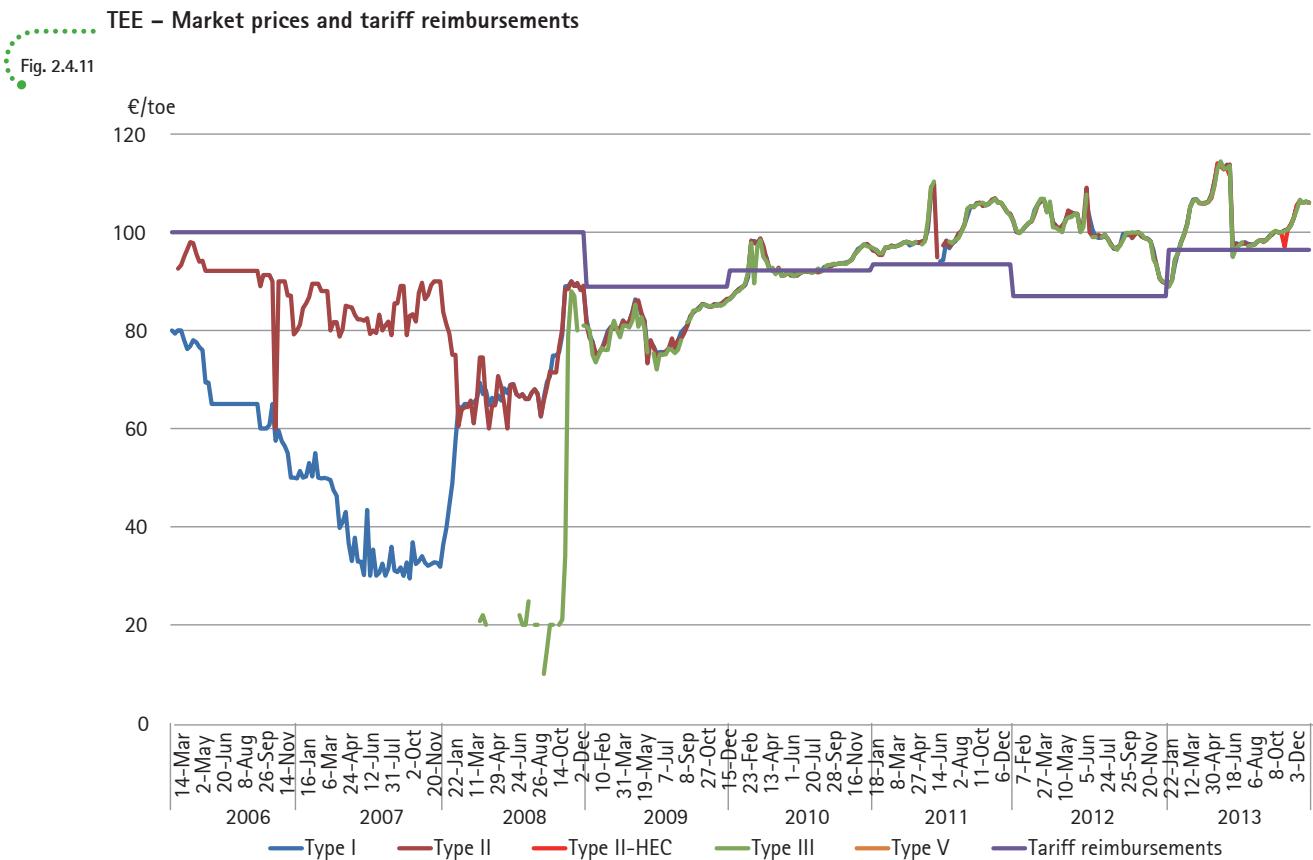
Fig. 2.4.9



Since 2009, the volatility of prices on the regulated market stood at very moderate levels (below 3%) and recorded its highest value (2.7%) in 2013, affected by the introduction of the two new types of certificates. Much higher and more variable than on the regulated market (but with a downward trend over the years) was the volatility of bilateral prices; as shown by the time series, this volatility is significantly affected, at least in its levels, by zero-priced registrations (Fig. 2.4.10).



It should be pointed out that the level of prices is driven by the tariff reimbursement that is granted, for each TEE cancelled, for partially covering the costs incurred by distributors that have fulfilled the obligation. This reimbursement, which is set by AEEGSI, was equal to 86.98 €/toe for 2012, while the preliminary unit tariff contribution for the obligation year 2013 (as per AEEGSI's Decision 13/2014) was equal to 96.43 €/toe. In 2013, the level of prices proved to be higher than the value of the related reimbursement owing to excess demand by the obliged parties with respect to supply, represented by the number of TEE issued, which was always below the cumulative saving target (Fig. 2.4.11).



This situation of scarcity of certificates is well depicted in the following table (Table 2.4.1), which exhibits the trend of volumes expressed in Tonnes of Oil Equivalent saved by participants and indicated in the cumulative number of TEE issued, compared with the TEE required to fulfil the obligations.

TEE – Certificates needed for compliance. Cumulative values

Table 2.4.1

Obligation year	Actual obligations of electricity distributors	Actual obligations of gas distributors	Total cumulative certificates needed for compliance	Certificates issued since the start of the scheme
	(Mtoe/yr)	(Mtoe/yr)	(Mtoe/yr)	(Mtoe)
2005	0.10	0.06	0.16	-
2006	0.19	0.12	0.47	-
2007	0.39	0.25	1.11	1.26
2008	1.20	1.00	3.31	2.60
2009	1.80	1.40	6.51	5.23
2010	2.40	1.90	10.81	8.02
2011	3.10	2.20	16.11	11.44
2012	3.50	2.50	22.11	17.23
2013	3.03	2.48	27.62	23.99

In 2013, the TEE traded both on the regulated market and on an OTC basis confirmed their growing trend, both hitting new all-time peaks. The volumes of TEE traded on the market, growing by 11.0% on the previous year, reached 2.8 million toe, whereas OTC-traded ones were equal to 5.4 million toe, with an increase of 6.7% (the lowest in the past few years). The dominance of bilateral trades, whose percentage in the total trades in 2013 fell to 65.8% (-0.9 p.p. on 2012), is likely to be due to the fact that large distributors that are subject to the obligation need to procure considerable amounts of certificates with the lowest possible number of transactions; indeed, the supply side on the regulated market is rather fragmented, since it mostly consists of ESCOs, each with a limited number of certificates (Fig. 2.4.12).

Volumes continued to have a positive trend, trades at record levels

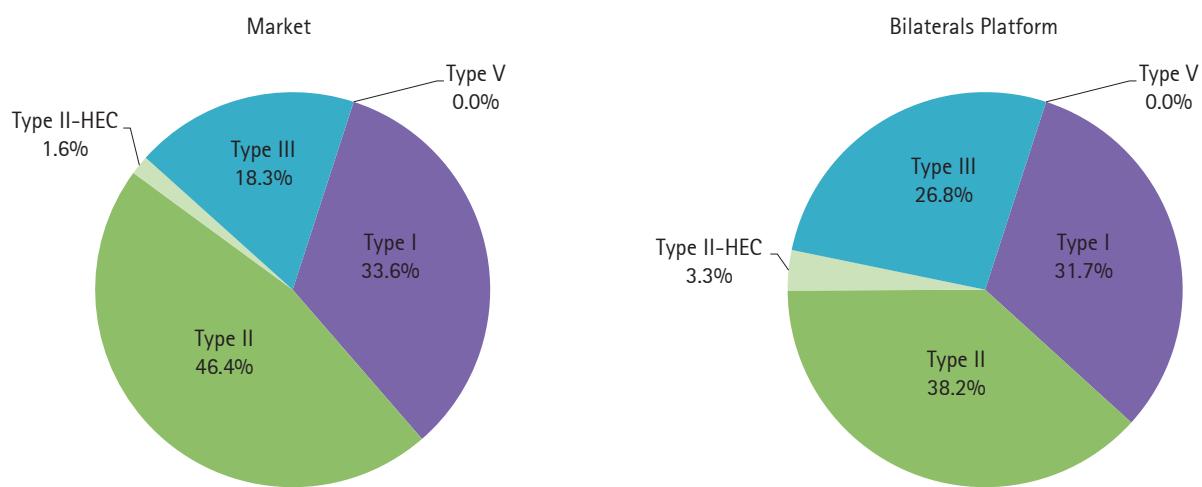


*The prices of bilaterals are available from 1 April 2008, date of enforcement of the obligation to report their price through the TEE Register managed by GME. The obligation was introduced by AEEGSI's Decision 345/07.

As to the different types, the TEE mostly traded were those of Type II both on the regulated market with 1.3 million toe (46.4% of the total) and on an OTC basis, equal to 2.1 million toe (38.2% of the total). Certificates of Type II HEC and of Type V were traded for the first time in 2013 (223,000 toe and only 346 toe, respectively) (Fig. 2.4.13).

TEE – Structure of volumes traded – 2013

Fig. 2.4.13



In 2013, the degree of market concentration on the demand side showed a reduction (-4.6 p.p.) of the share held by the top three participants (CR3) to 57.2%; however, this improvement was not observed in

*Stable competitiveness
on the demand side,
improvement
on the supply side*

the share of the top ten participants (CR10), which rose to 79.2% (as against 77.9% in 2012). This finding confirms the structural limits of demand, represented by a narrow number of participants, mostly electricity and gas distributors with more than 50,000 users connected to their grids, and the need for such parties to buy a higher number of certificates on the market in order to offset their deficit of certificates owing to the gradual exhaustion of the lifecycle of the projects that they have already implemented.

By contrast, on the supply side, the concentration indicators CR3 and CR10, historically lower than on the demand side, experienced a new drop to 13.0% and 35.2%, respectively, both at historical minima. Therefore, the supply side consists of a considerable number of participants (mostly ESCOs but also non-obliged distributors) that have implemented energy-saving projects, in respect of which they have gained TEE that they can sell on the market (Fig. 2.4.14).

TEE – Market: participants' shares

Fig. 2.4.14



4.3 Guarantees of Origin (GOs): Market, Bilaterals Platform and GSE's auctions

2013 was the year of transition from Certificates of Origin for plants fuelled with renewable energy sources (RECOs), established under the Decree of the Ministry of Economic Development of 31 July 2009, to Guarantees of Origin (GOs) in compliance with art. 31, para. 1 of the Ministerial Decree of 6 July 2012.

After the Ministry of Economic Development approved the procedure for qualifying plants fuelled with renewable sources in view of issuing and managing Guarantees of Origin (Technical Procedure) – that GSE had updated in accordance with article 31, para. 1 of the Interministerial Decree of 6 July 2012 –, GSE started issuing GOs in 2013, in place of RECOs, to certify the share of electricity produced from renewables under article 15 of Directive 2009/28/EC.

This is the reason why the RECO Market (M-RECO) ceased its activity at the end of March 2013, i.e. on the last useful date for compliance with the 2012 obligation. In September of the same year, the GO Market (M-GO) took off. Given the strong analogy between the two markets, their results have been analysed jointly.

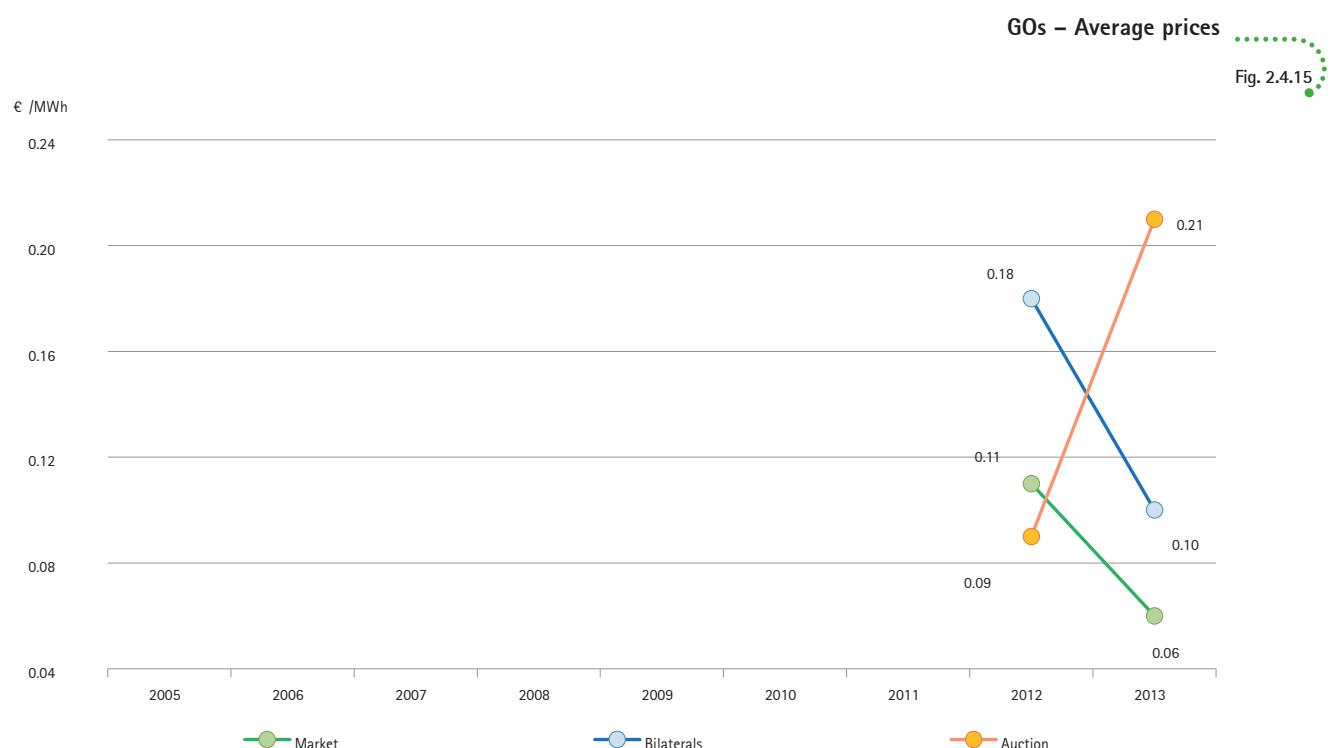
In 2013, the weighted average price on the M-GO, whatever the type of certificate, was equal to 0.06 €/MWh vs. 0.11 €/MWh on 2012. The GO Bilaterals Platform (PB-GO) experienced the same dynamics but higher levels: prices thereon diminished from 0.18 €/MWh in 2012 to 0.10 €/MWh in 2013.

In countertrend, the prices of GOs awarded in GSE's auctions were up by 0.12 €/MWh (+133.3%) and equal to 0.21 €/MWh (Fig. 2.4.15).

In general, the evolution of prices on the market may have been associated with an excess supply of GOs by the increasingly numerous renewable-energy operators holding them, vs. the demand of operators that decided to characterise their commercial offerings and thus complied with the 2013 obligation.

With regard to the trend of auctions, instead, the difference lies above all in the fact that GSE set the auction starting price at a level higher than the one on the regulated market.

*Prices declined
on the regulated market
and on the bilaterals
platform*

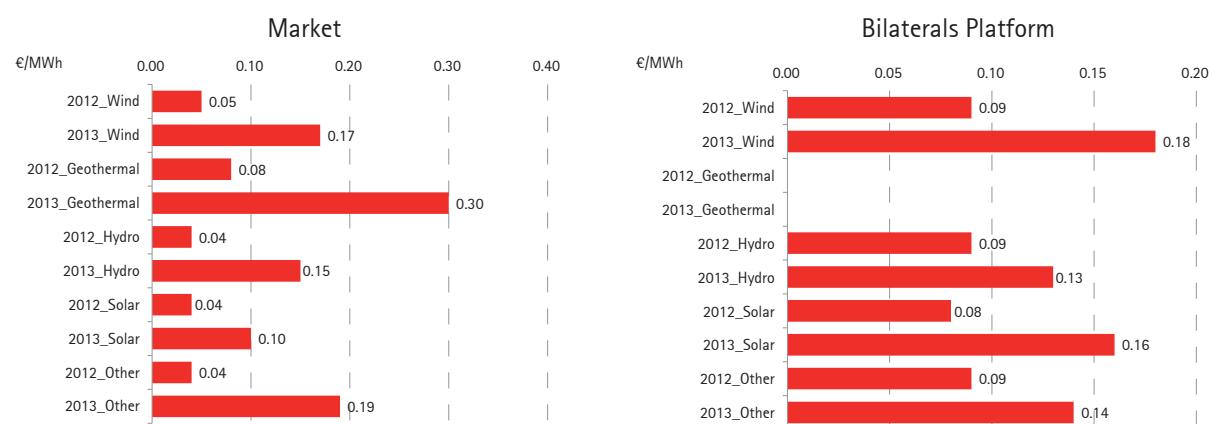


The analysis by type exhibits lower prices for certificates in respect of generation year 2012, all traded in the previous M-RECO and lying below 0.08 €/MWh. Conversely, the prices of certificates in respect of generation year 2013, traded on the new M-GO, were all above 0.10 €/MWh, with a peak for the GO 2013_Geothermal, equal to 0.30 €/MWh.

The PB-GO, too, displayed lower prices for certificates pertaining to generation in 2012, ranging from 0.08 to 0.09 €/MWh, and higher prices for generation in 2013, with a peak of 0.18 €/MWh for the GO 2013_Wind (Fig. 2.4.16).

GOs – Prices by type and year of generation – 2013

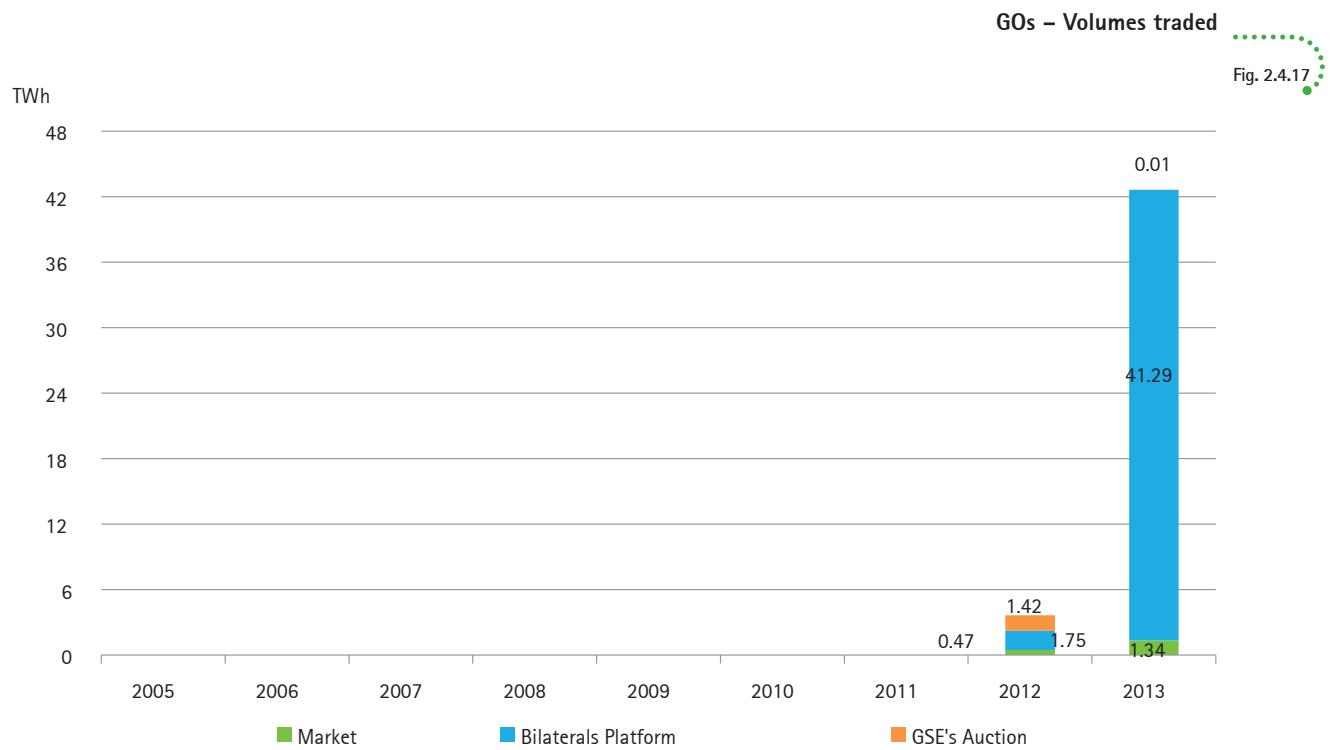
Fig. 2.4.16



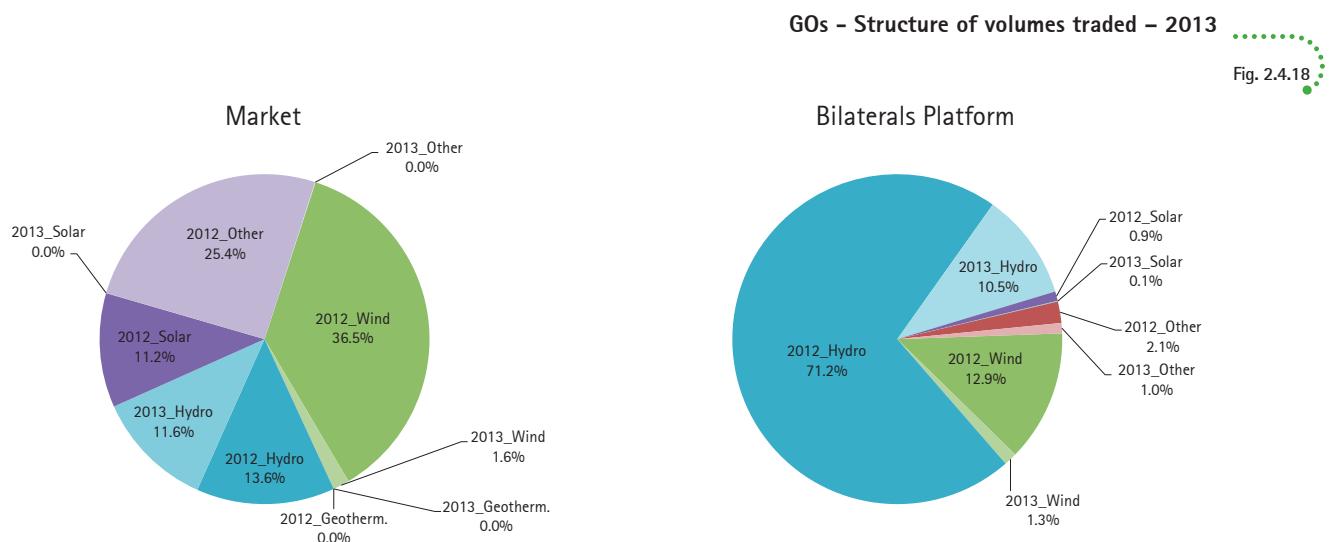
In 2013, in the four sessions of the M-RECO and in the four sessions of the M-GO, the certificates traded totalled 1.3 million MWh, up by 183.2% on 2012. It should be stressed that all the data of 2012 refer to the trading period going from July (when the RECO market and platform took off) to December. Conversely, the PB-GO experienced an exponential growth of trades from 1.75 million MWh in 2012 to 41.3 million MWh in 2013 (excluding intra-Group trades), making the liquidity of the regulated market poorly significant.

Volumes sharply expanding

In countertrend, the volumes awarded in auctions (7,000 MWh) recorded a sharp drop on a year-on-year basis in 2013 (-99.5%) (Fig. 2.4.17), probably owing to the high auction price with respect to market prices. The new GO market and platform displayed a lower activity by participants. In effect, about 87% of the overall volumes traded in 2013 refer to the first three months of the year, when the RECO Market and Bilaterals Platform were still active. This is chiefly due to the concentration of trades near the date of 31 March, within which the parties concerned are required to surrender their certificates to GSE for cancellation.



The type of certificate mostly traded on the regulated market was *2012_Wind*, with 489,000 MWh (36.5% of the total), followed by *2012_Other* with a share of over 25%. In contrast, on the Bilaterals Platform, trades were concentrated on the type *2012_Hydro* with 29.4 million MWh, i.e. 71.2% of the total (Fig. 2.4.18).



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