Autorità per l'energia elettrica e il gas

ANNUAL REPORT TO THE EUROPEAN COMMISSION ON REGULATORY ACTIVITIES AND THE STATE OF SERVICES IN THE ELECTRICITY AND GAS SECTORS

---

31 July 2009

CONTENTS

1 FOREWORD 3
2 SUMMARY/ EVOLUTION OVER THE LAST YEAR 4
3 ELECTRICITY MARKET REGULATION AND PERFORMANCE 14
3.1 Regulatory issues 14
3.1.1 Allocation of interconnection capacity and mechanisms for congestion management 14
3.1.2 Regulation for transmission companies and distributors 16
3.1.3 Unbundling regulation 26
3.2 Competition 26
3.2.1 Wholesale electricity market description 26
3.2.2 Retail electricity market description 38
3.2.3 Measures to combat the abuse of a dominant position 43
4 NATURAL GAS MARKET REGULATION AND PERFORMANCE 45
4.1.1 Allocation of interconnection capacity and mechanisms for congestion management 45
4.1.2 Regulation of transmission and distribution companies 48
4.1.3 Unbundling regulation 61
4.2 Competition 63
4.2.1 Wholesale gas market description 63
4.2.2 Retail gas market description 67
4.2.3 Measures to combat the abuse of a dominant position 75
5 SECURITY OF SUPPLIES 77
5.1 Electricity 77
5.2 Gas 88
6 PUBLIC SERVICE AND CONSUMER PROTECTION OBLIGATIONS 98

1 FOREWORD

In this report, the Italian Regulatory Authority for Electricity and Gas provides the Commission with an account on the current state of the Italian electricity and gas markets in compliance with the provisions of articles 3, 4, 23(1) and 23(8) of Directive 2003/54/EC for the electricity sector and articles 3, 5 and 25(1) of Directive 2003/55/EC.

The report structure follows the guidelines issued by the European Commission's Directorate-General for Energy and Transport. After a short description of the institutional role of the Authority and of recent normative developments in the energy market, it analyses the principal elements of structural evolution in the two markets, electricity and gas, relative to regulatory activities and the current state of competition. It also provides an update on security of supplies and on public service obligations.

2 SUMMARY/ MAIN DEVELOPMENTS OVER THE LAST YEAR

Developments in the Electricity Market

In the course of 2008, significant progress was made in the electricity wholesale market with the promotion of conditions favouring more competition and transparency of trading. The current system consists of a spot regulated market (MPE) managed by the Italian Electricity Market Operator (GME), and a number of forward markets allowing participants more flexible management of their energy portfolios. The organisation of forward markets is currently under regulatory review intended to favour their development.

In 2008 the liquidity of trading increased and there appeared encouraging signs in terms of market concentration.

Electricity demand in the Day-Ahead Market (MGP) was equal to 337 TWh, up 1.8% over the previous year. Trading in the Power Exchange amounted to 232,6 TWh, up 4.8% over 2007, consolidating the upward trend in average market liquidity, from 59.6% in 2006, 67.1% in 2007 and 69.0% in 2008. The average purchase price in the Power Exchange (PUN) was equal to 86.99 €/MWh, up 16 €/MWh (+22.5%) over the previous year. A particularly significant event was the peak in October when the average purchase price reached its record high of 99.07 €/MWh (+41.8% compared to October 2007) due to fuel costs. The fall in the prices of oil and the exacerbation of the international economic crisis contributed to a sizeable reduction of the PUN in November and December 2008.

The HHI concentration index, calculated at the level of zones in relation to the actual sales of energy and to both accepted and unaccepted sale offers, evidences an improvement in competitive structure on the supply side. More specifically, the periods during which satisfactory concentration levels were recorded (HHI < 1.800) have increased even further in the Northern macro-zone and progress was observed also in the Southern macro-zone. Obstacles to the attainment of fully competitive structures persist in the zones of Sicilia and Sardegna, where the HHI index never reaches values below the threshold of 1800. The marginal market participant index was significantly lower than that of 2007, indicating a tendency towards the improvement of competition.

In 2008, income from congestion charges in the national transmission network received at the MGP increased significantly to 156 million euro compared to 121 million euro in the previous year (by 29%). On the other hand, extension to the Swiss border of the terms for cross-border congestion charging already adopted on the other borders, zeroed out income from congestion charges in foreign zones, since this charge is paid in advance at the time of the explicit auction.

The maximum installed net capacity on 31 December 2008 was equal to 98.625 MW, more than half of which held by the first three market operators: Enel (44%), Edison group (8.6%) and Edipower (8.2%). However, the HHI index for installed net capacity shows a reduction in the degree of market concentration from 2,126 in 2007 to 1,921 in 2008.

In 2008 the net balance of cross-border power exchanges was down from the previous year. More specifically, power demand was 339.5 TWh very close to that of 2007, net national production was 307 TWh (increasing by 1.9%), while net trade equalled nearly 40

TWh, down 13.5% from 2007. The analysis of flows on each border shows an increase of imports from Slovenia and Greece, respectively, 46% and 2.9%) and a fall in imports from France (-14.9%) and Switzerland (-16.2%). There was a strong increase in exports mainly attributable to Greece (+55.3%) and Switzerland (+516.5%).

The rules established for cross border exchanges in 2008 and confirmed for 2009 foresee joint allocation of interconnection capacity on all borders (French, Greek, Austrian, Slovenian and Swiss) by explicit auctions organised on an annual, monthly and daily basis. The rules for access to interconnections – *Access rules to France-Italy, Switzerland-Italy, Austria-Italy, Slovenia-Italy, Greece-Italy interconnections* – were developed by Terna jointly with the other grid operators and approved by the Authority.

In 2008, about 299 TWh were sold on the retail market to a total of some 36 million customers. In the retail market, three corporate groups attained a market share greater than 5% in 2008: Enel (47.2%), Edison (6.0%) and A2A (5.6%).

According to Terna, sales to customers benefiting from protected tariffs[1] amounted to nearly 90 TWh in 2008, reaching a total of more than 32 million customers, down 19% from 2007. Domestic customers, which make up 83% of the protected-tariff market in numerical terms (nearly 27 million), accounted for 67% of the volumes purchased (nearly 60 TWh).

In 2008 some 192,000 customers,(estimated on the basis of days of use criterion) were covered by safeguard provisions[2] amounting to a total consumption of about 13 TWh. About three quarters of this was for industrial/commercial uses (other than public lighting and uses subject to special tariffs) with a prevalence of medium-voltage connections.

Sales on the liberalised market in 2008, calculated from Terna statistics net of sales under the safeguard-provision amounted to 195 TWh, a 10% increase on 2007. A breakdown by type of customer shows that 96% of these volumes concerned other uses, that is uses other than domestic and public lighting, corresponding to 65% of the nearly 2 million customers on the liberalised market.

In the retail electricity market, the Authority has on the one hand refined the regulatory instruments previously adopted to foster its development and, on the other, developed stepwise changes to the regulatory framework with the objective of securing a more rapid transition towards the new competitive market. Thus, measures were introduced designed to: expose final consumers more directly to price signals so as to obtain a more coherent effect on consumption; facilitate and standardise information flows between the former supplier, the distributor and the new user of the dispatch service required to enable switching; specify the terms for suspension of supply in case of end consumers' default in payments or non-compliance of the sales company. As regards the safeguard service, the Authority intervened both to verify compliance of providers of the service with the

[1] Protected-tariffs are provided to domestic customers and small businesses connected to the low-voltage grid which have never entered into a sales contract in the liberalised market. The service is provided by sales companies and by distributors with less than 100,000 customers connected to their system, based on the prices and commercial quality conditions set by the Authority.

[2] The safeguard service is reserved for customers that are not entitled to protected-tariff conditions and that are, even only temporarily, without a power purchase contract in the liberalised market. As from 1 May 2008, the service is provided by sales companies selected on the basis of competitive bids.

standards and to improve the tendering process for the period 2009-2010. In addition, a number of resolutions were issued aiming at improving data collection and analysis in the retail electricity market, so as to have a greater number of elements on which to base appraisal of the real impact of competition in retail sales.

The complaints, petitions and notifications examined by the Authority - from both individual customers and consumer associations - increased 79%. In the period between 1 April 2008 and 31 March 2009, out of the 8,691 communications sent to the Authority, 6,323 (73% of total) were referred to the electricity sector. The number of complaints in the electricity sector alone increased by 103% from the previous year. Complaints accounted for 92% of the communications received, enquiries for 5% and notifications for the remaining 3%.

A little over 50% of all complaints in the electricity sector, was directed against suppliers operating exclusively in the liberalised market. This is a typical situation in the early phases of market opening and has been observed in other countries opening their retail market to competition. Complaints addressed the following main aspects: invoicing (36,4%); significance and application of contractual clauses in both the liberalised market and the protected-tariff service (18.9%); market-related issues (17.2%); connections (8.2%); quality of supply, voltage and outages (5%); suspension of service (4.2%); tariffs (2.1%); bills and their transparency (2%); power meters (1.9%); commercial quality (0.7%); metering (0.4%).

As regards network tariffs, the average national tariff covering transmission, distribution and measurement increased by 1.7% in 2009 compared to 2008, from 2.152 €c/kWh to 2.188 €c/kWh. Increases were largely due to the high inflation rate (+2.4%), recorded in the months preceding the annual update, and used in the formula applied to update operating costs in the price-cap methodology. The increase in tariffs further reflects the rise in gross and net invested capital, resulting from the investments made by suppliers and the effect of the revaluation of such investments.

Given the exceptional gravity of the economic recession, the Authority has introduced an optional transmission revenue guarantee mechanism to be accessed no later than 31 July 2009 and designed to limit the risk related to possible fluctuations of power demand which in extreme cases may jeopardize the national transmission grid investment plan.

Since 2005, power transmission and nationwide dispatch have been operated by Terna which owns over 97% of the high voltage grid. The model adopted for the Italian electricity system corresponds to ownership unbundling. As of 31 December 2008 29,99% of Terna's shares were owned by the reference shareholder *Cassa depositi e prestiti* (Loan and Deposit Fund); Enel and the asset manager Pictet Asset Management held 5.1% each of the capital, while the remaining 60% was allotted between institutional and retail suppliers.

The process of strong generation capacity expansion started in 2004-05 continued in 2008. Net installed power at the end of 2008 amounted to 99.4 GW compared to a summer and winter peak demand of, respectively, 55.3 and 52.2 GW with a theoretical reserve margin

of 45%, which however does not take into account plants under maintenance and/or rehabilitation or of the decrease in peak demand from the previous year, caused by the serious economic downturn, particularly at winter peak (- 8.2%).

As a whole, net capacity increased by 6.2% over the previous year, by far the strongest increase in the last five years. As in previous years, capacity growth came mostly from thermoelectric plants (more than 75%) followed by wind plants (17%) and, thirdly, photovoltaic plants (4.4%) whose overall power capacity is expected to overtake that of geothermal plants in the course of 2009. The generation structure was however dominated by thermoelectric and hydroelectric plants, with 74% and 21% of the total, respectively, whereas wind power plants accounted for only 3.7% of installed power. With the continuous expansion of generating capacity over the last few years, power availability at the peak has noticeably increased, reaching 63.2 GW in 2008 compared to 60.4 GW in 2007.

The electricity balance significantly improved in 2008 for two basic reasons: reduction in demand by 0.7% with respect to 2007 and the strong increase in hydroelectric generation potential. As regards renewable sources the leap forward in wind power generation (+59.5%) also deserves mention even outperforming geothermal generation (6.4 vs. 5.2 TWh). The upswing in renewable energy generation, unburdened by fuel costs, contributed to limit recourse to thermal generation – which was down 2.1%.

The strong recovery of hydroelectric generation (+18.3%) after several years of decline due to poor rainfall, has significantly changed the conditions for international energy trade, resulting in a significant cut back in imports (-12%) and an even more significant increase in exports (+30%) in comparison with the previous year. The more favourable electricity import to export ratio was in any case favoured by the reduced electricity demand.

The restructuring and re-powering of the generating plants continued throughout 2008, particularly with the construction of gas-powered combined-cycle plants and wind power plants. The new thermoelectric capacity installed since 2002 amounts to more than 17 GW; in addition another 6.5 GW are planned for commissioning by 2012, while applications for authorisations correspond to a capacity of 22 GW. The outlook for wind capacity growth is even more dynamic. As of 31 December 2008, around 950 applications for connection to the transmission grid remained outstanding, corresponding to an overall capacity of more than 50 GW, or 50% of existing generating plants nationwide.

Forecasts for new installed capacity show a marked imbalance between southern and northern Italy. The South and Islands are expected to host 47% of the new thermoelectric capacity and 97% of wind power and photovoltaic capacity installed since 2002, overall 62% of the new capacity. The North, on the other hand is expected to host 43% of thermoelectric capacity and less than 1% of wind and photovoltaic capacity, in all 30% of the new capacity in total. Such disparity may aggravate existing transmission problems unless the power grid is suitably upgraded in critical nodes in useful time.

Most of the criticalities witnessed in previous years have in fact persisted; despite some improvements, the situation has frequently worsened as a result of insufficient capacity of transmission lines and/or unsuitable transformer capacity in VHV and HV stations. Risks of overloading are exacerbated by the energy market. The separation of the Day-Ahead Market (MGP) into zones following inter-zone congestions caused by grid limitations results on the one hand in reduced efficiency due to the use of less competitive generating plants to the detriment of more cost-effective plants and, on the other, in the determination

of congestion surcharges payable by suppliers and indirectly by end-users. Some 70% of dispatching surcharges originated in the Islands, Central and Southern Italy and Calabria, which as a whole account for only 21% of electricity demand in Italy.

In the course of 2008, new infrastructures were commissioned which are very significant for the national transmission grid. Among these is the completion and entry into service of the Mendrisio – Cagno merchant line between Italy and Switzerland. Several other grid development projects contemplated in the previous Terna Plans are now being implemented, many of which are planned to be commissioned in the course of 2009 and in the years thereafter.

However, many of the 100 plus interventions that are critical for the operation of the national transmission grid are now at a standstill waiting for the necessary authorisations or in any case slowed down by lengthy bureaucratic procedures at the national and local levels. Excluding grid-connections, the average time elapsing between the date of application for authorisation and actual commissioning can be estimated at nearly 6 years. This is only an average calculated over all projects with waiting time as low as two years to more demanding local projects which can remain blocked for even longer than 10 years. Most of the latter projects are critical for the efficient operation of the electricity grid, such as the 380 kV Sorgente – Rizziconi line designed to increase transmission capacity between the Continent and Sicilia, allowing reduction in price differentials.

Developments in the gas market

Based on the preliminary calculations on the data collected in the annual survey which the Authority conducts on the state of electricity and gas markets, in 2008, there were 78 gas suppliers in the wholesale market. This number has almost doubled since the complete opening of the gas market in 2003. The overall volume traded by wholesalers grew 8.2% with respect to 2007, but this was the result of a 23.3% increase in sales on the wholesale market and a 9.0% fall in direct sales to final consumers. This ongoing trend over the last few years seems to indicate increasing specialisation in the wholesale market accompanied by growing liquidity. Overall gas volumes sold by Eni fell by nearly 6 percentage points, those of other large suppliers were down 3.2%, while those of small suppliers grew 15.2% and of medium-sized supplier even more, by 17.1%. In 2008, 34 companies (up from 27 in 2007) declared sales volumes on the wholesale market greater than 300 M(m^3). These companies accounted for 96.2% of total sales in this market which continues to be highly concentrated even though decreasingly so; more specifically, the share of the first 3 companies Eni, Enel Trade and Edison decreased to 50.2% (compared to 59.8% last year); that of the first 5 companies, which in addition includes Plurigas and Gaz de France fell to 59% (from 67.8% in 2007).

Direct imports account for 60% of wholesaler's gas procurements. Some 23% of the gas procured on the wholesale market is purchased from other traders (at the border or at the city gate), almost 10% is purchased at the PSV (Virtual Balancing Point) and 7% is produced domestically. Domestic production is virtually all under the control of the Eni group, except for a small contribution from Edison and minor volumes from other small producers. A significant part (almost 20%) of imports of medium sized importers is purchased from Eni outside the border. Imports are the main source of procurement particularly for large companies, while purchases on the wholesale market and at the PSV

increase in importance with decreasing company size. Purchases at the PSV, typically in small sized lots, are concentrated with very small wholesalers who accounted for 36% of these sales.

Adding together the gas volumes purchased by wholesale companies from Eni both within and beyond the national borders, indicates that significant fractions of the gas available to these companies can be credited to the incumbent. For the Enel group, it amounts to 15%, for Edison it is a much sturdier 38.6%. A little over one third of the gas available to large and medium sized groups originates from Eni, while smaller groups are less dependent on ENI but in any case for over 15% of their resources.

In 2008, transactions at the PSV reached 14.9 G(m^3), increasing by 54% over the level of 2007 and reaching almost one fifth of overall national consumption. Of these, nearly 1.1 G(m^3) were volumes purchased by Eni and transferred by *gas release* transactions pursuant to measures adopted by the Italian Antitrust Authority. As from 2004, and especially over the last three thermal years, the PSV grew very significantly in importance both in terms of volumes exchanged and number of transactions. This was facilitated by measures adopted by the Ministry for Economic Development (MSE) and by the Authority which introduced a number of regulatory changes intended to increase liquidity, with a view to promoting the creation of a regulated gas capacity market.

In order to contribute to the creation of a truly regulated gas wholesale market (a gas exchange), the Authority has for some time started a consultative process aiming at the definition of a market based balancing system and at the solution of critical issues related to the measurement and assignment of withdrawals. In any case, there remains one critical issue which cannot be solved through regulatory means - namely the absence of an independent dispatcher, that is a third-party entity (such as Terna in electricity) providing the necessary services with impartiality. A final aspect that deserves mention regards the failure to legally extend the antitrust ceilings due to end in 2010. Hopefully, alternative solutions will be found to overcome the elusion of the ceilings observed so far and to enable other operators, already present in large numbers but still largely dependent on ENI's gas imports, to compete effectively on the market.

Consumption of natural gas in 2008 remained stagnant for yet another year: the MSE puts the figure for gross domestic consumption (inclusive of losses of about 1.5 G(m^3)) at 84.88 G(m^3), compared to 84.90 G(m^3) in 2007. Based on the preliminary results of the annual survey conducted by the Authority on the evolution of the gas sector, sales to the retail market in 2008 were equal to 69.9 G(m^3). Adding 13.45 G(m^3) of self-consumption (gas directly consumed in generating plants of manufacturing companies), then the overall volume of gas consumed in Italy comes to 83.38 G(m^3), almost identical to the value of 83.39 G(m^3) indicated by the MSE. The sector breakdown of final consumption was 41% in power generation, 36% in the domestic sector, 21% in industry and of 2% in other sectors (agriculture, road transport and non-energy uses).

The level of market concentration (inclusive of self-consumption) has diminished in comparison with the previous year: the share of the first three groups fell to 63.4% from 66.5% in 2007. Moreover, as in the previous year, the market share of Eni sales has fallen further (37.5% against 42.7% in 2007) in favour of Enel (15.4% against 13.8% in 2007) and Edison (10.5% against 10.1% in 2007). On top of this, the number of market participants

with a share above 5% increased by one new entrant, the A2A group originated from the merger of the two pre-existing groups (Aem Milano and ASM Brescia). Excluding self-consumption, the number of groups with sales exceeding 5% of the total is down to 3 (Eni, Enel and E.On with an overall share of 62.3%). As might be expected, concentration levels have increased in electricity generators because of the large gas volumes required to fuel their power plants and not resold to the retail market, while there is no significant change in concentration for sales to the other consumption sectors.

Around 1.2% of all final customers changed supplier in 2008, corresponding to 34.1% in terms of gas volumes. Switching rates increase strongly with the size of customers, which explains the apparently much greater rate of switching in volume terms. Large gas consumers are generally energy intensive industries which are continually looking for opportunities to reduce their energy costs and are purposely organised to make informed choices. In the retail market, after almost 7 years of full market opening, sales under protected tariffs remain stable at around 28% of the total. The 72% of total volumes purchased on the liberalised market appear less of a success if viewed from the perspective of number of customers. In this case the shares are reversed with only 7% of all customers served by the liberalised market and 93% still under the protective measures provided for by the Authority. In other words, the liberalised market is still a prerogative of large customers and has not yet involved the mass market; the percentage of domestic customers in the liberalised market is down to little over 4%).

As in 2007, the data for 2008 confirm the tendency for smaller suppliers to specialise increasingly in the protected market with diminishing overall sales. In fact, the smallest companies sell most of their gas to domestic customers, small business and services; as much as 56%, in the case of the smallest of the categories surveyed. The smaller the company, the more likely it is that its market will coincide with what used to be its "historic" catchment area prior to liberalisation. The share of gas sold by the larger groups to households, small business concerns and services are similar; on the other hand, significant differences emerge in the sales to electricity plants, reflecting the different corporate structure of the groups. Thus, although Enel has no self-consumption, it sells significant quantities of gas to electricity generation companies within the group (around 57% of total sales). On the other hand, Edison sells as much as 63% of its gas to electricity generators (a large part of which belong to its group) and manufacturing companies with self-consumption, leaving a smaller fraction of its gas for sales to customers other than large industrial consumers.

Over the last year, the average price of gas (weighted with the quantities sold), net of taxes, quoted by sales companies and wholesalers operating on the retail market was equal to 39.24 €c/m^3. The same price in 2007 was equal to 32.29 €c/m^3. As a whole, therefore, the price of gas in Italy increased by 21.5%; a high yet not unexpected value given the oil price rally of 33.8% in the same period and considering that the price of gas is linked to that of oil. Customers in the protected market paid on average 47.46 €c/m^3 for gas while 36.01 €c/m^3 was the average price paid by customers in the liberalised market. The price increase from 2007 was however very different in the two markets; compared to a 10% average increase in the price of gas sold in the protected market, the gas sold in the liberalised market exhibited a much higher increase of 28%. The difference is to some extent attributable to regulatory protection but also to the very different average size of customers.

Assessment of complaints, petitions and notifications from individual consumers and consumer associations increased 79% in 2008, substantiating the trend observed in previous years. In the period between 1 April 2008 and 31 March 2009, the number of communications regarding the gas sector, a total of 2,368, amounted to 27% of all communications sent to the Authority, representing an increase of 55% over the previous year; of these, 94% relate to complaints, 4% to enquiries and the remaining 2% to notifications. Communications related to the gas sector are significantly less numerous (nearly one third) than those related to the electricity sector, as a result of the lower number of customers involved and of the lower degree of development of the market. Probably, the lower number of complaints – especially as regards supplier switching and the application of the Commercial Code of Conduct - is also due to the lower propensity for supplier switching and the limited availability of market offers.

In this situation, the Authority is in any case continued in its intent to ensure increasingly equitable conditions for all competing suppliers: meaning increased availability of information and easier terms for supplier switching, network service costs and accessibility. Equally in view of better transparency designed to protect consumers, the Authority has steadily continued its activity in the field of metering. For gas meters, in particular, the Authority's regulatory activity has been made more stringent by enforcement of immediate replacements of old and malfunctioning metres free of charge, identification of missing consumption profiles and gradual, full modernisation of installations with innovative electronic meters.

As regards infrastructures, it is worth drawing attention to the fact that, in general, tariff systems governed by independent Authorities are proving to be an indispensable anti-cyclical instrument favouring investments and, consequently, contributing to overcome the crisis and re-launch the economy, based on their characteristics of transparency and predictability which reduce the risk for financers and shareholders alike. For the Italian infrastructural system, in particular, the Authority has long adopted regulatory measures based on incentives, in the contention that safer and more efficient network services are of primary interest for both households and businesses. Ever since 2005, the Authority has granted extra returns (for periods of up to 15-16 years) for all investments intended to increase gas supply and diversify sources. Similarly, for new investment in transport, storage and regasification, a pre-tax return averaging more than 10% in real terms has been guaranteed (9.7% for transport, 10.6% for regasification plants and 11.1% for storage).

Security of supply issues were of less concern considering that, for the third consecutive year, natural gas consumption in 2008 remained practically unchanged at around 85.0 G(m^3), which even represents a decline from the 2005 level of 86.3 G(m^3). After the strong increase in natural gas consumption in early 2008, caused by the relatively rigid climatic conditions, the increase in price and the recession over the rest of the year reduced consumption both in relative and absolute terms, resulting in no appreciable change as opposed to the previous year. The fall in consumption was particularly strong from

November given the negative impact of the economic crisis in the industrial sector, continuing into the early months of 2009, despite the unusually cold winter.

The current economic crisis is such that no easy forecasts of a recovery in consumption levels can be made. Most of the recent analyses agree on a probable 8 to 9% fall in 2009 compared to 2008, corresponding to a demand of around 78 G(m^3), assuming an average winter. The target of 100 G(m^3) which, based on forecasts made during the previous years, was expected to be attained around 2010, will hardly be achieved before 2012 - 13. Moreover, there appears to be a clear tendency to exercise greater caution in forecasting demand growth, in the light of the current crisis and, even more so, given the European obligations on efficiency and energy saving, the development of renewable sources in electricity generation and the reduction of greenhouse gas emissions by 2020.

The long term declining trend in natural gas production, both onshore and offshore, continued in 2008 when it was down to 9.2 G(m^3), compared to 9.7 in 2007 and 11.0 in 2006. Classical indicators of exploration and production activity continued their historic decline, despite the strong growth of prices of oil and gas beginning in 2007 and continuing into the summer of 2008. With the oil price slump in the second half of 2008, the cost-effectiveness of upstream investments has decreased even further. At the end of 2008, documented reserves amounted to as little as 99 G(m^3) and the reserves-to-production ratio, which remained stable at 13 to 14 years in the previous decade, is now down to less than 11 years.

Despite virtually unchanged demand gas imports increased by nearly 3 G(m^3) in 2008, as a result of the drawdown on stored gas amassed over the previous years in preparation for the winter of 2006 - 07. Procurement from abroad is quite diversified in comparison with the majority of the EU Member States. In 2008, imported gas quantities originated from nine countries with a concentration index (HHI) of 2.500. However, 66% of imports came from two non-EU countries (Algeria and Russia). The degree of diversification should improve appreciably as early as in 2010 with new gas supplies from Qatar made possible by the entry into operation of the LNG terminal off the coast of the Rovigo in the Adriatic Sea. In a longer term perspective after 2012, further progress is foreseen with gas supplies from the Middle East and the countries of the Caucasus.

The expansion of capacity implemented since 2007 in the TAG and TTPC pipelines carrying gas supplies from Russia and Algeria, respectively, and the commissioning of the Rovigo regasification plant will result in an average continuous import capacity of nearly 350 M(m^3)/day in the gas year 2009 - 10, as compared with 285 in 2006 – 07. In addition, the new pipelines and regasification plants that are planned to enter into operation in the coming years should allow an annual import capacity surplus over demand under highest security conditions from 11 G(m^3) in 2008 to values of around 20 – 25 G(m^3) over the next 5 to 7 years. For the sake of comparison, in 2005 there was a capacity deficit of 3 G(m^3) and in 2006 a surplus of as little as 2 G(m^3) in highest security conditions. Despite the apparent surplus import capacity foreseen over the next few years, there continues to be great concern over the long time required from design phase to construction and commissioning of importation facilities, chiefly regasification plants, and storage units. By way of example, the Rovigo regasification plant designed in 1999 required at least seven years before the necessary authorisations could be obtained; the last one, Integrated Environmental Authorisation was issued in January 2009, only six months prior to entry into operation. Equally for storage, the lengthy red-tape and local vetoes risk creating

serious problems for winter natural gas stocks, irrespective of the development of importation capacity. Of the 14 plants identified over the last 7 years, only the Cotignola – San Potito plant received the necessary authorisations and is ready for development, which in any case will require at least 3 to 4 years. The majority of other projects are meeting opposition from local communities.

Public service issues and consumer protection

In 2008, major regulatory changes in consumer protection and public service obligations consisted in the implementation of full market opening and the introduction of new discount schemes for vulnerable customers.

In view of the implementation of full market opening, the main regulatory thrust of the Authority in 2008 was directed towards effectively enabling end-customers to make informed choices between a variety of commercial offers and reducing information asymmetries due to the complexity and specificity of the services provided. Over and above reforms in the existing regulation (transparency directives, commercial Codes of Conduct and supplier switching procedures), the Authority gave special attention to the development of information tools designed to support customer choice, more specifically: a "Consumer's Window", a call-centre run by the Single Buyer, for handling such issues as liberalisation, regulation and complaints; and an "Offer Finder", an online interactive search tool for comparing the various commercial offers available in the electricity market.

As regards discounted tariffs, in 2008 the Authority issued the rules for a new tariff scheme for vulnerable customers of the electricity sector which provides for a 20% discount on the average electricity expenditure of low-income households, large families and families with patients using a life-saving medical device. Also, legislative decree of 29 November 2008, known as "anti-crisis Decree", entrusted the Authority with monitoring functions on the internal market and on end-user gas and electricity prices; moreover, it extended the provisions on special tariff schemes for vulnerable customers from electricity to the natural gas market. On this basis, also in 2008, preparatory activities were launched for developing a tariff scheme intended for vulnerable customers, which envisages a 15% discount on the average household gas expenditure.

The regulation of end user prices for the protected market (domestic and small business) remained unchanged from 2007. One and a half year's after full market opening, the vast majority of domestic customers, in both the gas and the electricity sectors, have stayed with the protected market but signs of switching to the liberalised market are increasingly visible. On the other hand, non-household consumers continue to move from the protected to the liberalised market as in previous years. There are no detectable signs of switching back from the liberalised to the protected market in either the electricity or gas sector and in any consumer category; this would seem to imply that Italy's end-user price regulation, designed to protect consumers in the transition to the liberalised market, has no distorting effects on competition.

3 ELECTRICITY MARKET REGULATION AND PERFORMANCE

3.1 Regulatory issues

3.1.1 Allocation of interconnection capacity and mechanisms for congestion management

In 2008, there was a significant reduction in net imports (to 40.5 TWh) following the reduction of import flows and the concurrent increase of export flows which were particularly high in the June-October months.

Interconnection capacity allocation procedures to be applied in 2008 were defined by the Authority with resolution no. 329/07 of December 18 2007 in compliance with the criteria provided for by the decree of the Ministry for Economic Development of 18 December 2007. With resolution ARG/elt 182/08 of December 12 2008, the Authority further defined the rules for interconnection capacity allocation to be applied in 2009 in compliance with the criteria provided for by the decree of the Ministry for Economic Development of December 11 2008.

The procedures for 2009, similar to those of the previous year, prescribe the joint allocation of interconnection capacity on the French, Greek, Austrian, Slovenian and Swiss borders by means of explicit auctions organised on an annual, monthly and daily basis. The access rules to the interconnectors – *Access rules to France-Italy, Switzerland-Italy, Austria-Italy, Slovenia-Italy, Greece-Italy interconnections* – were defined jointly by Terna with the other grid operators and duly approved by the Authority and are intended to favour the integration of national markets.

Auctions are used to allocate Transmission Capacity Rights (TCR) for importing or exporting electricity in a quantities defined by the TCRs acquired. TCRs may be freely transferred between users of the dispatching service.

Beginning with January 2009, new rules apply to the TCRs acquired at annual or monthly auctions which remain unused. In particular, according to the "*use it or get paid for it*" principle, unused TCRs are automatically sold by grid operators in the daily auction and the revenue from the sale is transferred to the original holders.

An additional change brought about by resolution ARG/elt 182/08 regards the criteria for distributing the revenues from the allocation of the TCRs going to the Italian grid operator, among users of the dispatching service of. However this change will only come into effect in 2010.

Finally, the resolution confirms the previous regulatory measures governing special import reserves, establishing free allocation of annual electricity import capacity on the Italian- Swiss border to:

- Enel S.p.A., for the fulfilment of its multi-year import contracts covering the demand of the Single Buyer;
- the Swiss company Raetia Energie for a quantity not exceeding 150 MW;
- the Republic of San Marino and the Vatican City;

- Edison S.p.A. for the importation of part of the electricity generated in the hydropower reservoir at Innerferrera, Switzerland, for a quantity not exceeding 60 MW.

To allow for the management of cross border congestions, the Italian Power Exchange identifies virtual zones representing the interconnections with the neighbouring countries. The current design of such zones, conceived in years in which separate allocation mechanisms existed on each side of the border between neighbouring grid operators, envisages zones representing the import capacity assigned by Terna and zones representing the capacity assigned by the Transport System Operators (TSO) of the neighbouring countries (France, Switzerland, Austria, Slovenia and Greece).

In the previous system, Terna allocated capacity through implicit auctions, that is on a daily basis and based on the offers presented on the Day-Ahead Market (MGP), with the result that in these zones significant price differences frequently emerged compared to the neighbouring geographical zones, reflecting the cost of access to transit capacity. The mechanism continued to be used in 2007 at the Slovenian and Swiss borders, until the end of August and the end of December, respectively, resulting in frequent market splitting (38.5% and 59.2% of the time, respectively) and appreciable average price differentials (27.4 €/MWh and 18.0 €/MWh).

By contrast, in the other zones the neighbouring grid operators used explicit auctions to assign capacity, selling transit capacity separately from energy by means of annual, monthly and daily auctions and setting a ceiling on available capacity in each hour slightly above the capacity allocated so as to avoid the emergence of a wider price differential with respect to the cost of capacity already paid in the auction. Starting in 2008, extension to the Swiss border of the mechanism previously adopted at the other borders reduced the cross-border congestion rent to zero, since this is already included in the price prevailing in the explicit auction.

Table 3.1 Import capacity in 2008 - approximate, non-binding values (MW)

PERIOD	BORDER	MONDAY TO SATURDAY		SUNDAYS AND HOLYDAYS	
		7a.m. to 11p.m.	11p.m. to 7a.m.	7a.m. to 11p.m.	11p.m. to 7a.m.
Winter	France	2,650	2,535	2,535	2,535
	Switzerland	3,890	3,400	3,400	3,400
	Austria	220	210	210	210
	Slovenia	430	395	395	395
	Greece	500	500	500	500
Summer	France	2,400	2,250	2,182	2,250
	Switzerland	3,160	2,790	2,876	2,790
	Austria	200	190	182	190
	Slovenia	330	310	300	310
	Greece	500	500	500	500

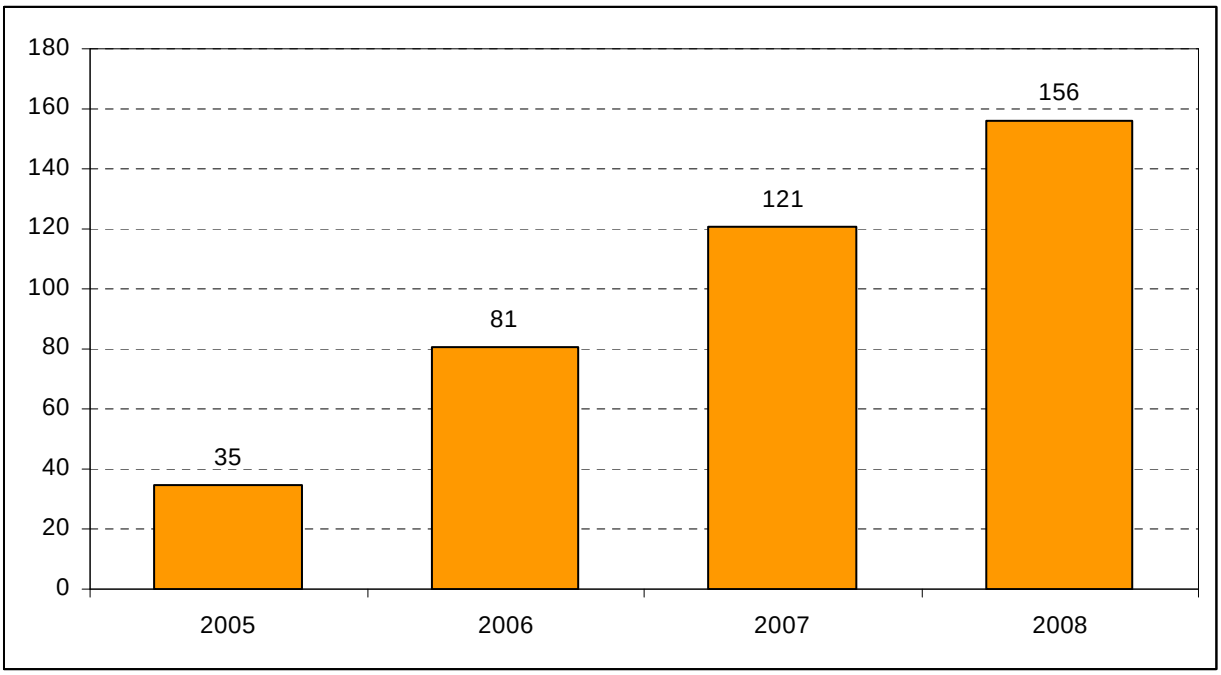
Source: "Access rules to France-Italy, Switzerland-Italy, Austria-Italy, Slovenia-Italy, Greece-Italy interconnections", compiled by Terna and other transport system operators participating in the working group within the ERGEG, Central and Southern Europe Regional Initiative.

Compared to the situation recorded in 2007, transits along foreign borders never became saturated, as a result of the extension of the mechanism of capacity allocation by explicit auctions to the borders with Slovenia (since the last quarter of 2007) and Switzerland (since 2008).

Table 3.1 shows the approximate values of the annual allocation of import capacity to Italy at each border in 2008.

An indicator of the degree of zone congestion in Italy is the level of the congestion rent, calculated from the price difference between zones multiplied by the volume of electricity traded. In 2008, the rent collected in the Day-Ahead Market for the country as a whole significantly increased by comparison with the previous year, from € 121 million to € 156 million (a 29% increase), while it grew fourfold with respect to 2005. Most of the rent was collected from the North-Centre North transit, although its share in the total domestic rent was considerably lower than that of the previous year (declining from 81% to 36%), being compensated by an appreciable increase in the rent collected from Sicilia -Calabria transit (from 3% to 20%) and from the Centre North-Centre South transit (from 3% to 16%).

Figure 3.1 Rent from domestic congestions between 2005 and 2008 (million €)



Source: Electricity Market Operator (GME).

3.1.2 Regulation of transmission and distribution companies

Terna owns almost all of the national transmission grid (RTN). Terna's main shareholder is Cassa depositi e prestiti (the Loan and Deposit Fund), with 29.99% of the share capital; other important shareholders are Enel and the asset manager Pictet Asset Management with a share of about 5.1% each, while the remaining 60% or so of the capital is quoted on the Stock Exchange.

The company owns around 97% of the national transmission system consisting of 44,172 km of power lines, 371 switching and transformer substations, 3 remote control stations and 18 interconnections with foreign grids. The remaining part of the electricity

transmission network belongs to other minor companies among which Self Rete Ferroviaria Italiana, Agsm Trasmissione (Verona) and Retrasm Asm (Brescia).

Terna significantly increased its infrastructure assets in 2006 with the acquisition (through RTL) of the entire share capital in Edison Rete Spa and of 99.99% of the share capital in AEM Trasmissione S.p.A. This was followed in 2007 by the acquisition of AEM Trasporto Energia S.r.l. Turin. Also, in December 2008 Terna S.p.A., Enel S.p.A. and Enel Distribuzione S.p.A. signed an agreement establishing the acquisition by Terna of the entire capital in Enel Linee Alta Tensione S.r.l. ("ELAT"), a company owning 18.583 km of high voltage (HV) lines mainly operating at 132 and 150 kV.

In January 2007, TERNA published its National Transmission System Development Plan for 2007-2016 subject to the approval of the Italian Ministry for Economic Development. The Plan set out to increase interconnections with foreign grids and reduce grid congestions.

On a yearly basis, Terna prepares a Development Plan, subject to public consultation, containing the analysis of current and future status and criticalities of the grid and identifying the main lines of development and infrastructure projects. The projects are classified according to the main benefits associated with them, such as adequacy to meet demand, security of grid operation, reduction of congestions and improvement of service quality. The Development Plan for 2009, circulated in draft form in January 2009, covers the years 2009 – 18 and is currently awaiting approval by the Ministry of Economic Development. The Plan's main objectives are to reduce grid congestions and increase cross border interconnection.

Electricity distribution is undertaken by Enel Distribuzione S.p.A. in over 95% of Italy's municipalities; more than 100 medium sized and small companies undertake distribution in the remaining municipalities. Legislative Decree no. 79/99 instructs the issue of a single distribution concession per municipality and envisages all distribution concessions to expire in 2028. It also empowers distribution companies controlled by local authorities to request the transfer from Enel Distribuzione of any of its distribution assets operating in the municipality. This process of rationalisation is now close to completion.

Table 3.2, based on the annual survey conducted by the Authority, presents the regional breakdown of distribution infrastructures by voltage level and the number of companies operating distribution networks in each region. In 2008 there were a total of 131 distribution companies, managing more than 1,200,000 km of grid, of which two thirds are low voltage lines and almost one third medium to high voltage lines.

Table 3.3 reports the breakdown of distribution activities by company in 2008. Enel Distribuzione was by far the largest operator with nearly 87% of distributed volumes, followed by the two major public utilities operating in Rome and Milan. Most other operators are quite minor having less than 6% of the market.

Table 3.2 Length of distribution networks on 31 December 2008

REGION	HIGH AND VERY HIGH VOLTAGE (km)	MEDIUM VOLTAGE (km)	LOW VOLTAGE (km)	NUMBER OF DISTRIBUTORS (A)
Val d'Aosta	57	1,489	2,563	3
Piemonte	1,401	28,177	63,677	7
Liguria	739	6,995	21,282	2
Lombardia	2,808	40,339	83,107	11
Trentino-Alto Adige	433	7,762	14,447	63
Veneto	2,147	26,242	61,064	3
Friuli-Venezia Giulia	540	8,119	14,955	6
Emilia-Romagna	2,049	31,517	66,219	3
Toscana	1,269	26,309	57,286	2
Lazio	1,744	28272	64,922	4
Marche	584	11,538	29,653	7
Umbria	57	8,565	20,025	2
Abruzzo	520	9,772	25,229	5
Molise	53	3,624	7,605	1
Campania	1,176	24,130	58,686	3
Puglia	1,758	28,490	59,681	3
Basilicata	629	9,792	14,765	1
Calabria	490	17,569	41,127	1
Sicilia	1,161	35,757	75,235	11
Sardegna	447	17,681	33,515	5
TOTAL	20,061	372,239	815,041	143

(A) Distributors operating in more than one region are counted in all regions in which they operate.

Source: AEEG annual survey of distributors companies.

Table 3.3 Electricity distribution by company in 2008

Distributed volumes

GROUP	GWh	% SHARE ON TOTAL
Enel (Enel Distribuzione and Deval)	256,498	87.0
A2A	12,067	4.1
Acea/Electrabel	10,054	3.4
Iride	2,621	0.9
Hera	2,170	0.7
Trentino Servizi	2,007	0.7
Agsm Verona	1,895	0.6
Aim Vicenza	1,105	0.4
Others	6,476	2.2
TOTAL	294,923	100.0

Source: AEEG annual survey of distributors companies.

Table 3.4 shows key distribution activities broken down by size of distributor, measured in terms of number of customers[3]. Distributors with more than 500,000 customers include Enel, A2A, Acea/Electrabel and Iride, while 50 distributors serve less than 1,000 customers with an average of only 311 customers per distributor.

Table 3.4 Distributors' activity

Year 2008

WITHDRAWAL POINT CLASS BY NUMBERS	NUMBER OF DISTRIBUTORS	DISTRIBUTED VOLUME (GWh)	TOTAL NUMBER OF WITHDRAWAL POINTS	AVERAGE VOLUME PER DISTRIBUTOR (GWh)	AVERAGE NO. OF WITHDRAWAL POINTS PER DISTRIBUTOR
> 500,000	4	275,865	34,185,708	68,966	8,546,427
100,000 - 500,000	8	13,797	1,400,409	1,725	175,051
50,000 - 100,000	2	1,460	141,602	730	70,801
20,000 - 50,000	8	1,836	260,108	229	32,514
5,000 - 20,000	22	1,399	218,965	64	9,953
1,000 - 5,000	37	453	79,135	12	2,139
< 1,000	50	81	15,560	2	311
Total	131	294,892	36,301,487	2,251	277,111

Source: AEEG annual survey of distributors companies.

Ownership of distribution companies is mostly in the hands of national and local public bodies (mainly municipalities), almost 43% of the capital (table 3.5).

Table 3.5 Ownership structure of distributors in 2008

SHAREHOLDER TYPES	% OF SHARE CAPITAL
Public bodies	42.8
Local energy companies	11.1
National energy utilities	9.6
Foreign energy companies	2.0
Foreign financial institutions	0.1
National financial institutions	0.9
Natural persons	12.7
Floating stocks	0.6
Miscellaneous companies	20.1
Total	100.0

Source: AEEG annual survey of distributors companies.

[3] More precisely, outlet points since some large customers have more than one outlet.

Transmission and distribution tariffs

The annual update of the tariffs for high voltage transmission, local distribution and metering, determined by the Authority consists of:

- the reduction in real terms of the tariff component covering operating costs, based on the *price cap* mechanism;
- the review of the remaining tariff components covering depreciation and return on invested capital, to adapt for new investments in infrastructures undertaken to improve security of supply, competition and quality of services.

In 2009 the average tariff covering transmission, distribution and metering costs in Italy increased by 1.7% over 2008, from 2.152 c€/kWh to 2.188 c€/kWh (table 3.6).

Table 3.6 Average tariffs for transmission, distribution and metering services

c€/kWh

	TRANSMISSION	DISTRIBUTION	METERING	TOTAL
Year 2009	0.363	1.547	0.278	2.188
Year 2008	0.345	1.534	0.273	2.152
Difference 2009 vs. 2008	0.018	0.013	0.005	0.036
% variation 2009 vs. 2008	5.2%	0.8%	1.8%	1.7%

Source: AEEG.

Increases in the average tariffs were largely caused by the high rate of inflation (+2.4%) recorded in the months preceding the annual review and used in the formula applied to operating costs. This implied a nominal increase in the transmission and distribution tariff components covering operating costs, despite the annual efficiency improvement imposed by regulatory practice, based on the price cap method.

The increase in the tariffs further reflects the increase in gross and net invested capital as a consequence of investments made by operators and the investment revaluation, obtained applying the deflator for fixed gross investments provided by ISTAT (Italian Statistics Institute).

In addition, given the exceptional gravity of the economic cycle, which could hardly be predicted in 2008, the Authority deemed it appropriate to implement measures designed to limit the risks associated with potential strong reductions in electricity demand which, in extreme circumstances, might imperil investments planned for the transmission network.

To this end, bearing in mind the need to reach a trade-off between risks and opportunities for both utilities and their customers, the Authority introduced a voluntary mechanism guaranteeing transmission revenues to be accessed by July 31 2009 at the latest. This enables a transmission company to share with consumers the negative effects on revenues related to fluctuations in demand greater than a 'physiological' threshold set at 0.5%.

In the interests of equity towards consumers, called upon to share part of the volume risk related to transmission services, the resolution issued by the Authority prescribes that if implemented, the mechanism has then to be extended up to the end of the regulatory period in order to guarantee absorbing the effects of both upward and downward fluctuations in demand and transmission revenues.

Continuity of electricity supply and commercial quality

In 2008, the continuity of transmission improved substantially with respect to the previous years. Between 2007 and 2008, the Energy Not Supplied (ENS) indicator, commonly used to measure transmission service continuity, fell from 8,469 to 2,440 MWh/year.

Moreover, the number of outstanding events (that is power outages having major impact in terms of ENS) were significantly reduced. In fact, only one outstanding event was recorded due to exceptional snowfall in December. The definition of outstanding event was modified with effect on January 1 2008. Up to December 31 2007, resolution no. 250 of December 30 2004 applied which defined an outstanding event as one with a level of ENS exceeding 150 MWh and a duration of more than 30 minutes. Resolution no. 281 of November 7 2007, formulated in the context of the 2008-11 regulatory period, defined outstanding events as power outages entailing a level of ENS exceeding 250 MWh.

Also in 2008 a new quality of transmission service regulation came into effect with resolution no. 341 of December 27 2007, amending the previous regulation which dealt mainly with transparency of performance of the TSO. Regulation of the quality of transmission service is based on the service continuity figures recorded by Terna, pursuant to Title VIII of resolution 250/04 and on the documents published by Terna as a consequence of this resolution.

Transmission service quality regulation envisages a system of penalties and incentives based on three key indicators: the energy not supplied for events affecting any part of the national transmission grid (RTN); the average number of power outages per customer directly connected to the RTN; the percentage of customers directly connected to the RTN without power outages. Between 2007 and 2008, the average number of outages per customer (due to all causes including those beyond Terna's control) increased from 0.39 to 0.42.

In the distribution sector interruptions without prior notice decreased steadily between 2000 (when service continuity regulation for distribution companies was first introduced) and 2007, amounting to an overall decline of 70% in number and 45% in duration (table 3.7). The trend was reversed for the first time in 2008, when the overall duration of interruptions per customer on both distribution and transmission networks was equal to 88 minutes, excluding outstanding events and backup operation, with an increase over 2007 of 51% in duration and of 9% in number. This increase was essentially due to exceptional climatic events occurring in November and December. More specifically, exceptional snowfall in the North and floods in Central Italy resulted in a number of trip-outs of power lines well above average monthly values recorded in the previous years, with difficulties and delays in power supply recovery for security reasons.

While the increased duration and number of outages recorded in 2008 are mainly attributable to *force majeure*, the net duration under the responsibility of distributors (that

is excluding the effects of exceptional weather conditions) confirmed the trend recorded in 2006 and 2007. The net duration under the responsibility of distributors, was equal to around 51 minutes nationwide (36 minutes in the North, 50 minutes in the Centre and 73 minutes in the South and Islands). The overall number of long unannounced outages per customer was 2.37, with only a slight increase from the previous year.

The impact of heavy weather on quality of supply seems clear also from the continuing improvement in the South and Islands, as opposed to a slight deterioration in Northern and Central Italy. In fact, the South and Islands registered a record low net duration (73 minutes lost per customer) while the total number of long power outages (3.46 per customer per year) was very close to the minimum value recorded in 2004.

The improving trend in the duration of interruptions recorded between 2000 and 2008 was obtained through the system of penalties and incentives applied by the Authority to electricity distributors since 2000. The system determined a substantial reduction in differences in supply continuity indicators between North and South, which benefited households as well as the competitiveness of the production sectors. The new scheme of penalties and incentives introduced by the Authority for the regulatory period 2008-11 with resolution no. 333 of December 19 2007, established a system of penalties and incentives related to both the duration of power outages (similar to the previous years) and, for the first time in Europe, to the number of both long and short outages, so that all outages lasting more than 1 second are now covered.

Commercial quality regulation has been in force since July 1 2000, with the application of nationwide standards defining the maximum time for provision of services (connections, activations, cost estimates, technical checks, replies to complaints, etc.) representing the minimum level of service that all suppliers are obliged to provide to their customers. Commercial quality regulation is intended to protect consumers, particularly those with less bargaining power, from a deterioration in the quality of service offered by suppliers in the competitive framework resulting from the process of liberalisation, with due respect for the freedom of choice between suppliers.

Clients receiving a service subject to specific quality standards have the right to be informed by the company providing the service of the maximum waiting times and the automatic compensation for not meeting the standards. At least once a year, all customers subscribing to the enhanced protection service must receive from their distributor a statement of the guaranteed quality standards, the automatic compensation for not meeting the standard and the results effectively achieved by them during the previous year. Annually, in the context of its enquiry on the quality of service, the Authority publishes the average time of service declared by the distribution companies, as well as the related standard control parameters (percentage of events not complying with the standard for reasons attributable to the distributor, excluding cases of *force majeure* and third-party liability).

The introduction of automatic compensations provided to customers in the event of failure to comply with specific quality standards, due to shortcomings of the distributor and not to *force majeure*, third parties or the customers themselves, has resulted in an increase over time in the number of compensation paid to customers compared with the previous regime based on service charters prepared independently by each company. The level of compensation, set by the Authority, is greater for customers that have higher energy use

or network costs. Automatic refunds are paid to customers through a deduction in the amount debited in the first invoice after the event, and in any case within 90 calendar days of the expiration of the maximum time for the provision of the service requested by the customer. Any operator failing to comply with these terms is obliged to refund from two to five times the base compensation, depending on the payment delay.

The new regulation in force since January 1 2009 envisages a doubling or tripling of the automatic refund as a result of the delay in the provision of a given service compared to the standards established by the Authority, and no longer on the grounds of the delay in the automatic payment.

In 2008 the regulation of commercial quality was extended to all companies operating in the electricity sector, including the very smallest, and was brought into line with the parallel Code on the Quality of Gas Services, including the procedure for monitoring commercial quality data. Since 2008, the regulation of commercial quality has also been adapted to take into account the process of complete liberalisation to all low voltage customers from July 1 2007 as well as the new regulation on functional unbundling. As a consequence, commercial quality regulation of retail sales was revised through a specific consultation process focussing, among other things, on timely and effective management of complaints. As a result of the consultation process, the regulation was taken out from the Code on the Quality of Electricity Services and incorporated in the Code on the Quality of Sales Services approved by resolution ARG/com 164/08 of November 18 2008.

The data provided by distributors indicate that until 2007 the number of cases of failed compliance with specific quality standards subject to compensation and the number of indemnities paid to customers increased steadily, while in 2008 they shrank by more than half from the previous year with the number of refunds actually paid being reduced by two thirds. This improvement is confirmed by analysing the services subject to specific standards: the reduction in the number of cases of failure to comply is quite general for all types of service. The verification of electricity supply voltage and meters, which were subject to a general standard until 2007, have been subject to a specific standard since 2008. Comparison with the figures of 2007 is not possible for these services since the standards have changed: from 10 to 30 days for verification of electricity supply voltage from 10 to 15 days for testing of meters.

Though automatic compensations based on specific standards are not currently envisaged for some services, general quality standards nevertheless allow monitoring commercial quality performance.

The available data indicate that major criticalities regard response time for complaints and requests for information related to distribution, which exceeded the standard value (26.92 days on average as opposed to the standard of 20 days), while for the response time for complaints and requests for information related to metering, the measured value is below the standard (15.66 days on average against the standard of 20 days).

Between 2007 and 2008 a sizeable reduction of the actual average times was observed for all services subject to a specific standard, with a consequent reduction of the number of compensations paid. In the case of activation and deactivation of supply as well as of reactivation after resolution of payment defaults, the reduction in effective average times resulted from the introduction of electronic meters and remote control systems for meters.

Table 3.7 Indicators of continuity of supply (excluding outstanding events and backup)

INDICATORS	2000	2001	2002	2003(A)	2004	2005	2006	2007	2008
Total duration of power outages per low voltage customer (minutes lost per customer	187	149	115	105	91	80	61	58	88
Duration of power outages under the responsibility of distributors (minutes lost per customer)	131	97	78	70	59	61	50	48	51
Number of long power outages per year per low voltage customer	3.6	3.1	2.8	2.8	2.5	2.4	2.3	2.2	2.4

(A) Excluding planned disconnections and black-outs

Source: AEEG.

Resolution ARG/com 164/08 incorporated regulation of the commercial quality of call-centre services in the Code on the Quality of Sales Services (TIQV[4]). Quality standards for commercial call-centre services were introduced to protect customers contacting suppliers through call-centres without detriment to the differentiation between suppliers and competition between them. The Authority fixed standard levels for average waiting time, service level (percentage of successful calls) and service accessibility in order to limit the number of calls on hold and reduce congestion on telephone lines.

The minimum Level of Service (LS) standard, calculated as the ratio between the number of successful calls and the total number of calls made by customers requesting to speak with an operator, is fixed at 80%. The data provided by companies with more than 100,000 electricity and gas customers (joint regulation of both sectors came into force on January 1 2008), indicate highly dissimilar performance during the first and second semesters of 2008.

Out of a total of 31 suppliers, the standard for average waiting time (AWT) for requests to speak with an operator was not met in 3 cases in the first half of 2008 and 2 cases in the second.

Finally, service accessibility (SA), measured as the ratio between the time during which at least one telephone line is not busy and the overall call-centre opening time with operators on duty, the standard of 90% fixed by the Authority was not complied with in 3 cases in the first half of the year, while it was respected by all electricity and gas suppliers in the second half of the year, based on the figures declared by them.

However, in the case of multiple service providers (for instance water supply, waste collection, etc), the indicators may be affected by the type of service eliciting the call. In fact, in such cases, the indicators are determined based on all phone calls received from consumers requesting to speak with an operator or which were rerouted to one by an automatic call-sorting system, irrespective of the service provided.

[4] Testo unico della qualità della vendita.

Table 3.8 General standards for call-centre quality

INDICATOR	GENERAL STANDARD
Service Accessibility (SA)	≥ 90 percent
Average Waiting Time (AWT)	≤ 240 seconds
Level of Service (LS)	≥ 80 percent

Source: AEEG.

Balancing

Since April 2004, physical balancing of electricity supply and demand has been managed in Italy through a market for dispatching services (MSD) to deal with imbalances between planned and real flows. Terna relies on this market to procure the resources required for managing congestions, balancing flows and ensuring an adequate reserve within the system. The MSD operating rules are described in detail in the Annual Report to the European Commission of last year.

In 2008, the Authority introduced specific measures intended to solve a number of criticalities in the procurement of resources, regarding both the availability of resources to be dispatched and the regulation of the merit order for choosing between the different offers.

As regards the first aspect, on July 23 2008 the Authority urgently issued resolution ARG/elt 97/08, following Terna's submission that, under certain load conditions, availability of all key generating plants was essential to avoid the emergence of critical conditions in meeting demand in the island regions. Based on Terna's account and considering the need to limit expenditure on the procurement of resources to meet dispatching requirements, likely to reach a record level in the following quarter, with this resolution the Authority ordered all key generating units in Sicilia and Sardegna to be included among those essential for system security according to resolution no. 111/06.

With regard to the second aspect, on December 29 2008 the Authority issued resolution ARG/elt 206/08 introducing a new incentive mechanism for Terna's dispatching activity to complement the previous scheme applied in 2008 with resolution no. 351/07 of December 28 2007. The new scheme of incentives and penalties envisaged by the Authority is intended to increase Terna's efficiency in procuring the resources for dispatching services as well as to improve the processing of data for the selection of offers submitted on the market, according to Terna's procedures and algorithms. The measures applied should further be effective in improving the Authority's monitoring activity to identify any market-power positions in the supply of the different types of dispatching resources. The incentive received by Terna within this resolution takes into account the benefits expected by the system as a whole in terms of cost reduction for the resources no longer required.

Further modifications to resolution no. 111/06 were introduced with resolution ARG/elt 203/08 of December 23 2008, regarding the merit order for the procurement of dispatching services. In line with its gradual approach to a definitive regulation, the Authority reduced by 1.5% the tolerance limit for imbalances in demand side offers. In addition, with this resolution Terna is no longer allowed to present "supplementary offers" in the MGP to

adjust overall demand in accordance with its own load forecasts and to correct supply forecasts of generation from intermittent renewable sources of energy. As a consequence, the Adjustment Market is now open to demand side offers so that the Bilateral Contracts Adjustment Platform (in acronym PAB) is no longer necessary and has therefore been suppressed.

3.1.3 Unbundling regulation

In 2008, the electricity distribution sector comprised 131 distributors, of which only 12 serve more than 100,000 customers and are consequently subject to unbundling envisaged by EU legislation. Of the 131 distributors, 21 are affiliated with at least one wholesale or retail supplier, while 28 are very small suppliers, having outsourced their sales activity.

With resolution ARG/com 132/08, the Authority established the Guidelines for preparing the agenda for company reorganisation to comply with the requirements of functional unbundling according to the Code on Unbundling of January 2007.

The agenda for the internal reorganisation of electricity and gas distributors subject to functional unbundling must envisage minimum compulsory measures, allowing for differences in size and organisation, to be implemented by management and necessary to achieve the unbundling objectives, in particular, the exclusion of discriminatory behaviour in the management of activities subject to separation.

The *Guidelines* describe minimum obligations that are binding on management for the effective implementation of the functional unbundling prescriptions. More precisely, specific provisions must be envisaged in relation to organisational and management structure, the independence of management, procedures for establishing the budget and development plan, procedures for the external procurement of goods and services and for decision-making flows within the company, and measures intended to ensure physical separation of the databases containing commercially sensitive information. Some parts of the above resolution are currently subject to litigation.

3.2 Competition

3.2.1 The wholesale electricity market

The major changes in the electricity balance between 2007 and 2008 are presented in table 3.9. Power requirements on the network fell slightly by 0,1% to 339,5 TWh, but due to lower network losses, final consumption actually increased marginally. Peak power demand, reached in July with 55.3 GW, was considerably lower than the peak in 2007 reached in December. Net power production increased 1.9%, resulting from a decline in thermoelectric generation and a strong increase in renewable power, while net imports declined sharply from the previous year (-13.5%), due to a decrease in imports and an increase in exports, but continued to account for a sizeable fraction of final consumption (11.8%). These changes are illustrated in greater detail in section 5.1.

Table 3.9 Italian electricity balance in 2007 - 08

GWh

	2008	2007	VARIATION
Gross generation	319,129.6	313,888.0	1.7%
Ancillary services	12,065.0	12,589.0	-4.2%
Net generation	307,064.5	301,299.0	1.9%
Energy for pumped storage	7,617.7	7,653.6	-0.5%
Energy available for consumption	299,446.9	293,645.5	2.0%
Net imports	40,034.1	46,282.7	-13.5%
Power requirements on the network	339,480.9	339,928.2	-0.1%
Network losses	20,443.7	20,975.7	-2.5%
Final Consumption	319,037.2	318,952.5	-0.03%

Source: Terna.

In terms of net generated electricity, the market share of the Enel group (31.4%) remained essentially the same as in 2007 (31.3%) interrupting the downward trend of the previous years. The four main competitors, Edison (12%), Eni (8.6%), Edipower (7.7%) and E.On (6.8%) all saw their market shares shrink to the advantage of other medium-sized and smaller producers.

The calculation of the Herfindahl-Hirschman Index (HHI) with reference to net production shows a further reduction in market concentration, from 1,418 in 2007 to 1,351 in 2008.

Table 3.10 Wholesale market development

	REQUIREMENTS(A) (TWh)	PEAK DEMAND (GW)	NET INSTALLED CAPACITY (GW)	NUMBER OF COMPANIES WITH A >5% SHARE IN NET GENERATION	% SHARE OF THE 3 LARGEST COMPANIES IN NET GENERATION
2001	304.8	52.0	76.2	4	70.7
2002	310.7	52.6	76.6	3	66.7
2003	320.7	53.4	78.2	4	65.9
2004	325.4	53.6	81.5	5	64.4
2005	330.4	55.0	85.5	5	59.4
2006	337.5	55.6	89.8	5	57.1
2007	339.9	56.8	93.6	5	54.7
2008	339.5	55.3	98.6	5	52.0

(A) Requirements on the network before network losses.

Source: AEEG calculations on data supplied by Terna and producers.

Maximum net installed generation capacity as on 31 December 2008 was equal to 98,625 MW, whereas net available capacity (for at least 50% of the time) was equal to 83,813 MW.

Five company groupings exhibited a market share in excess of 5% in 2008: Enel (40.9%), Edison group (8.6%), Edipower (8.2%), E.On (6.8%) and the Eni group (6.2%). Based on these data, the share held by the first three companies amounted to 57.6%.

The share of net available capacity held (for at least 50% of the time) is significantly more concentrated: Enel (44%), Edison group (9.8%), Edipower (8.6%), E.On (7.7%) and Eni group (6.8%). In this case share held by the first three operators was 62.4%.

The Herfindahl-Hirschman Indexes (HHI) nevertheless show a significant reduction in market concentration. In the case of maximum net installed capacity the HHI decreases from 2,126 in 2007 to 1,921 in 2008; in the case of net available capacity, it decreases from 2,629 to 2,242.

Electricity market structure

Electricity trading contracts with physical delivery can be both forward or spot contracts. The regulated spot market (MPE) managed by the Gestore del Mercato Elettrico5 S.p.A. is divided into two submarkets, the Day-Ahead Market (MGP), in which hourly volumes of electricity are traded for the next day, and the Adjustment Market (MA), in which operators can modify the schedules defined in the MGP through further purchase or sales offers.

Further along is the Dispatching Services Market or Ancillary Services Market (MSD) in which Terna procures the resources required for providing transmission and dispatching services and for power system security.

Transitional measures in force in the two years prior to 2009, envisaged that demand side bids could only participate in the MGP. Beginning with 2009, the new regulation governing dispatching provides that they can also participate in the MA.

A forward electricity market was established in May 2007, with the aim of increasing trading flexibility. The Forward Market Accounting Platform (PCE) virtually replaces the previous Bilateral Contracts Platform. Its operating rules are detailed in resolution no. 111/06 of June 9 2006 and subsequent amendments and in the regulation issued by the GME.

In November 2008 the GME also launched a trading platform in the electricity forward market (MTE), in which physical quantities of electricity are traded on a multilateral basis. Concurrently, Borsa Italiana[6] inaugurated trading of derivative financial instruments on the Italian Derivatives Electricity Exchange (IDEX), based on the National Single Price (PUN).

In 2008, for the fifth consecutive year, the GME recorded an increase in the number of listed participants which grew to 151 (+19% on 2007). The growth came mainly from companies bidding on the MGP, which now number 106, and was more marked on the demand side, +23% to reach 91, than on the supply side +20% to reach 85. Companies

[5] GME is the Electricity Market Operator with public limited company status.
[6] The Italian Stock Exchange.

listed in the MA (37) and in the MSD (22) have also grown moderately. Participants in the Bilateral Contracts Adjustment Platform (PAB) fell to 10 in its last year of activity.

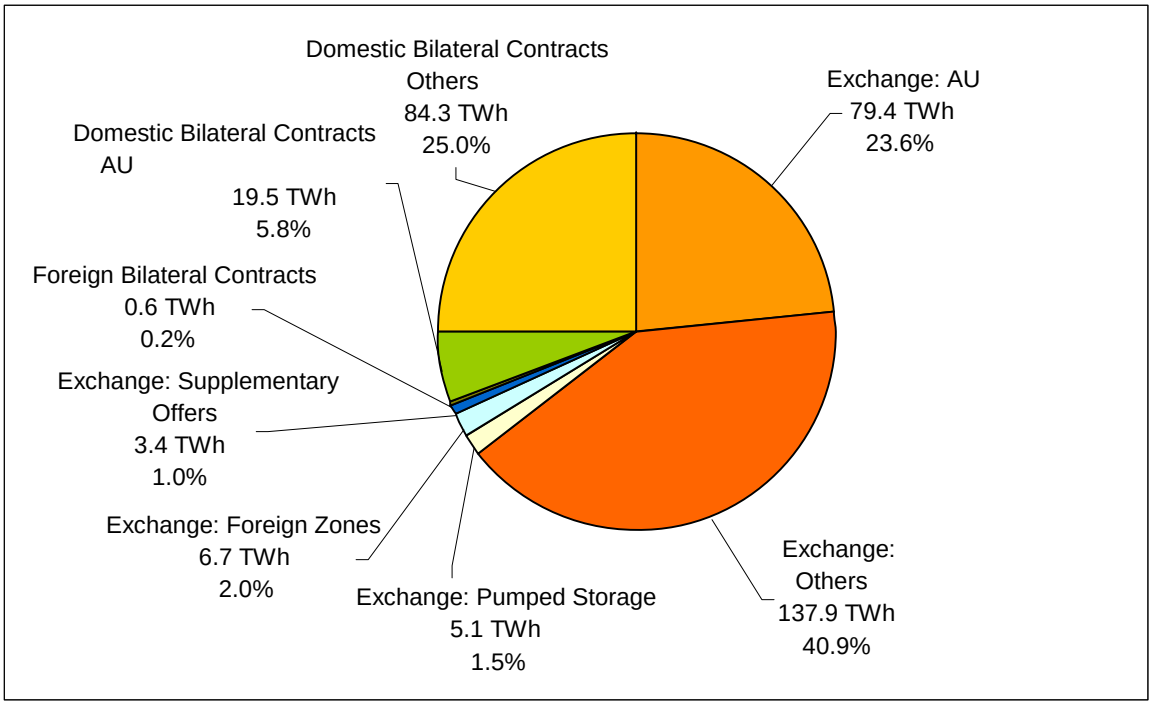
The Day-Ahead Market

Electricity demand measured on the Italian Power Exchange (IPEX) in 2008 amounted to 337 TWh, with a 1.8% increase from 2007[7].

Trading in the power exchange reached 232.6 TWh, a 4.8% increase on the previous year, confirming the increasing trend in market liquidity[8] from 59.6% in 2006, to 67.1% in 2007, to 69.0% in 2008.

Market liquidity, measured with reference to transactions free of regulatory restrictions[9] was equal to 54%. The increase in liquidity, which was particularly evident in the second half of 2007 and throughout 2008, is essentially due to growth of both sales and purchases by non-institutional participants (other than the Single Buyer (AU), the GSE[10] and Terna) and may be interpreted as a sign of increasing competition on the exchange.

Figure 3.2 Breakdown of electricity purchase offers in the MGP in 2008



Source: AEEG calculations on GME data.

[7] Includes bilateral contracts. The value is adjusted to the trading hours of an average normal year, also taking into account that 2008 was a leap year.

[8] Market liquidity is defined as the ratio between power traded in the exchange and total power demand, including bilateral contracts.

[9] Specifically, net of generation from CIP6 plants, which are plants receiving incentives for electricity generation from renewable sources of energy and high efficiency generation from fossil sources.

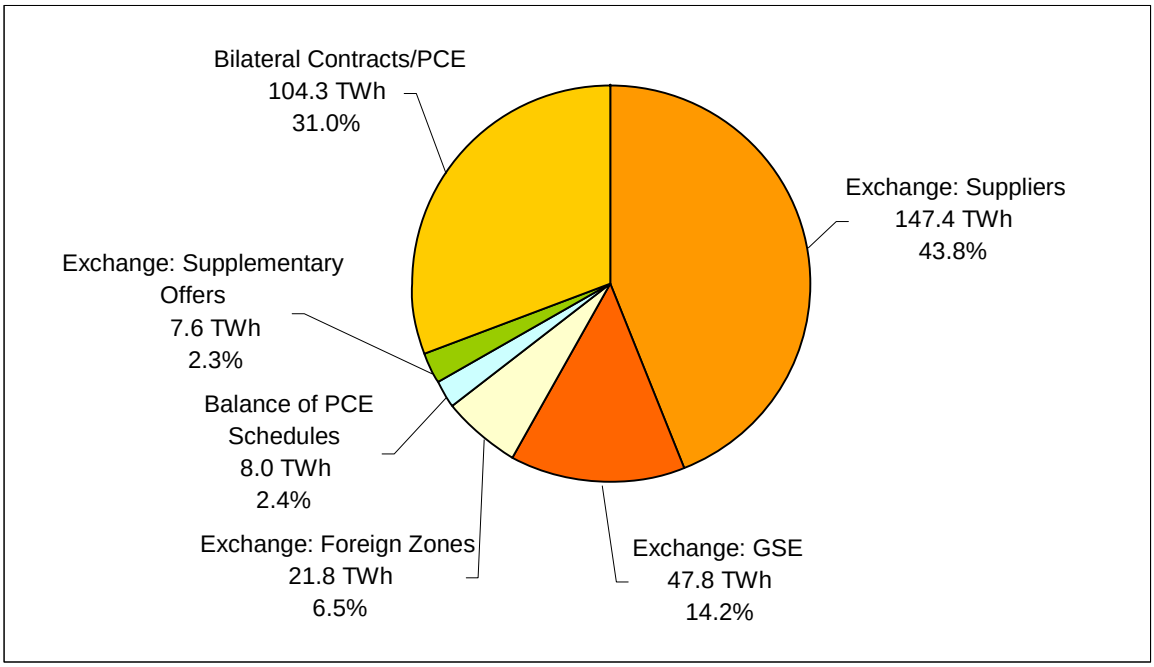
[10] The GSE (Gestore dei Servizi Elettrici S.p.A.) is a state-owned company (Ministry of Finances) active in the promotion, provision of incentives and development of renewables in Italy. It has 100% stake in the AU (Acquirente Unico or Single Buyer) and in the GME.

Due to the progressive contraction of the captive market and the complete liberalisation of sales from July 1 2007, purchase offers by the Single Buyer (AU) were further reduced by 25.7% from the previous year, being offset. by a substantial increase in purchase offers from other market participants: from 99.7 TWh in 2007 to 137.9 TWh in 2008.

Demand under bilateral contracts decreased by 4.3% from 2007 to 104.3 TWh. This reduction affected chiefly foreign bilateral contracts which fell by 23.2% from 2007 and, to a lesser extent (-8.3%), bilateral contracts entered into by domestic companies other than the AU, while it was only partially compensated by the increase in bilateral contracts take on by the AU which rose by 20.3% over the previous year.

Volumes offered on the Exchange by domestic companies grew by 2.8% compared to 2007 to reach 147.4 TWh in 2008. In addition, sales offers from foreign operators increased significantly (+29.4%) to reach 21.8 TWh, while growth in offers from the GSE grew 4.0% to 47.8 TWh. The balance of PCE schedules (measured as the difference between input and withdrawal schedules) was equal to 8.0 TWh, down 36.4% from the previous year. Terna's supplementary offers on the supply side were equal to 7.6 TWh, up 140.7% over 2007[11]. On the other hand, supplementary offers on the demand side declined 39.6% to 3.4 TWh.

Figure 3.3 Breakdown of electricity sales offers in the MGP in 2008



Source: AEEG calculations on GME data.

The average purchase price in the Italian power exchange (PUN) was equal to 86.99 €/MWh, up 16 €/MWh or 22.5% from the value in 2007. The increase in the PUN which continued throughout 2008 with the exception of the last two months, is attributable to the strong growth in fuel prices on international markets and the consequent increase in electricity generation costs. During the course of 2008 the price was also significantly

[11] Terna makes supplementary offers to compensate for forecasting errors made by traders. This mechanism will be phased out after 2009 by applying increasingly stringent tolerance limits.

affected by cyclical variations in demand which increased by 2.9% in the first quarter compared to the same period in 2007, followed by a 1.1% reduction in the fourth quarter.

Particularly worthy of note is the record peak price of 99.07 €/MWh (+41.8% compared to October 2007) as a consequence of the cost of fuel which reached its price maximum in July, reflected in electricity price a few months later. The lower fossil fuel prices and the worsening international economy situation favoured a sizeable reduction of the PUN in November and December 2008.

The zone-level HHI concentration index, calculated for both the accepted and unaccepted sales offers and for the actual sales of energy, shows an improvement of the competitive environment on the supply side. More specifically, the periods during which satisfactory concentration levels were recorded (HHI < 1,800) have further increased in the Northern macro-zone and progress was observed also in the Southern macro-zone. Obstacles to the development of competition persist in supplies to the zones of Sicilia and Sardegna, where the HHI index never attains values below the threshold of 1800.

The marginal market participant index declined very significantly with respect to 2007, indicating improvement in the competitive conditions. In fact, from the data published by the GME it can be deduced that the overall traded volumes for which the marginal market participant fixing the price was the incumbent Enel declined from 75% in almost all months of 2007, to 51% as an average for 2008, to values consistently below 35% in the last four months of the year.

The Adjustment Market

The MA is designed to accommodate for changes in the schedules defined in the MGP. Volumes traded on the MA in 2008 amounted to 11.7 TWh, down 8.8% from the previous year. This corresponds to 3.5% of overall demand on the MGP, compared to 3.9% in 2007. In 2008 the average purchase price on the MA weighted with traded volumes was strongly correlated to the PUN. The average price for the year as a whole was equal to 84.95 €/MWh, or 2.3% lower than the PUN in 2008. This represents a 22.5% increase with respect to 2007.

The Dispatching Services Market

Ex ante step-up purchases by Terna on the MSD amounted to 11.6 TWh in 2008, 20.8% lower than in 2007. Step-down quantities sold *ex ante* were equal to 11.3 TWh, down 6.6% from the previous year. Purchases on the MSD represented about 3.5% of the overall volume traded on the MGP, varying significantly on a monthly basis: step-up offers were relatively higher in July and August (4.1% and 4.8% of demand on the MGP) while step-down purchases were highest in January (3.9%), March (3.9%) and July (4%).

Ex post step-up purchases in 2008 were 9,7 TWh, up 3.4% over the previous year and corresponding to 2.9% of volumes traded in the MGP. In the *ex post* step-down MSD, Terna sold 11.3 TWh, up 6% over the previous year and corresponding to 3.4% of the volumes traded in the MGP.

Exchange trading and bilateral contracts

As also in 2007, electricity sold in the power exchange in 2008 increased significantly compared with the previous year at the expense of electricity traded through bilateral contracts recorded on the MGP, amounting to 104.3 TWh.

Table 3.11 Trading in the MGP 2002 - 08

TWh

YEAR	TRADING IN THE MGP			
	Total	*Of which in the Power Exchange*	*Of which through Bilateral Contracts*	*Of which through Forward Contracts*
2002	-	-	-	-
2003	-	-	-	-
2004	231.6	*67.3*	*164.3*	-
2005	323.2	*203.0*	*120.2*	-
2006	329.8	*196.5*	*133.3*	-
2007	330.0	*221.3*	*108.7*	-
2008	336.9	*232.6*	*104.3*	-

Source: AEEG calculations on GME data.

The reduction in electricity traded through bilateral contracts (-4.3% between 2007 and 2008) is essentially due to a decrease in the volumes traded between domestic traders other than the AU (-8.2%). Energy purchased under bilateral contracts with the AU increased strongly (+20.3%), partly compensating for this decrease.

Table 3.12 Bilateral Contracts recorded in the MGP in 2008

TWh

CONTRACTS	2008	2007	% change
Bilateral contracts	104.3	108.7	-4.0
Domestic	103.8	108.0	-3.9
of which by the Single Buyer	*19.5*	*16.2*	*20.4*
of which by other traders	*84.3*	*91.8*	*-8.2*
Foreign	0.6	0.7	-14.3

Source: AEEG calculations on GME data.

Integration of the Italian market with other European markets

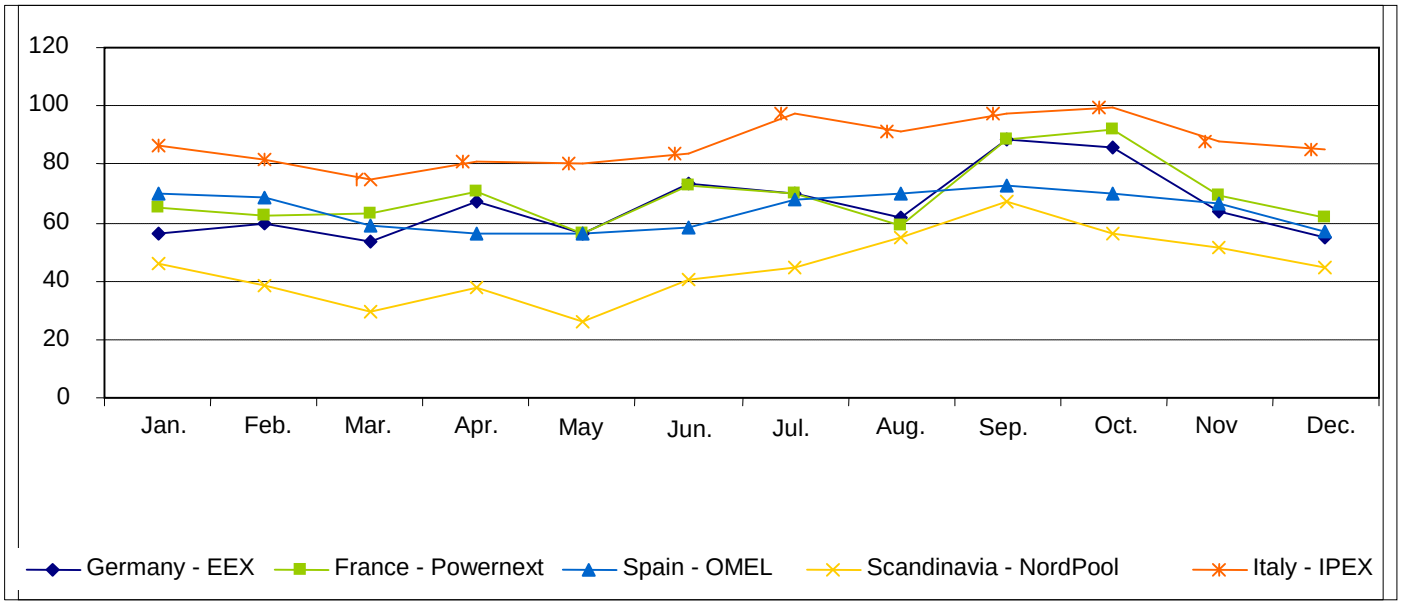
A significant price differential continues to exist between the IPEX and the other main European power exchanges, with average monthly prices being highest on the IPEX in all months of the year. In particular, compared to a price of 86.99 €/MWh recorded in the MGP, the wholesale price of baseload power averaged 65.76 €/MWh in the German power exchange (EEX), 69.15 in the French power exchange (Powernext), 64.44 €/MWh in the Spanish power exchange (OMEL) and 44.73 €/MWh in the Scandinavian power exchange (NordPool). During 2008 Italian prices nevertheless showed a tendency to

approach the levels prevailing in other European countries, more so in the late summer and early autumn.

In a context characterised by increasingly tight oil markets, the wholesale prices of electricity increased significantly in all European countries including Italy. Prices over most of Europe began to decline only in November in the wake of oil price reductions and the deterioration of the economic cycle. However, as observed also in previous years, the price in Italy reacted more slowly to the fuel price changes on international markets.

Figure 3.4 Electricity prices trends in the main European power exchanges in 2008

Average monthly baseload prices - €/MWh



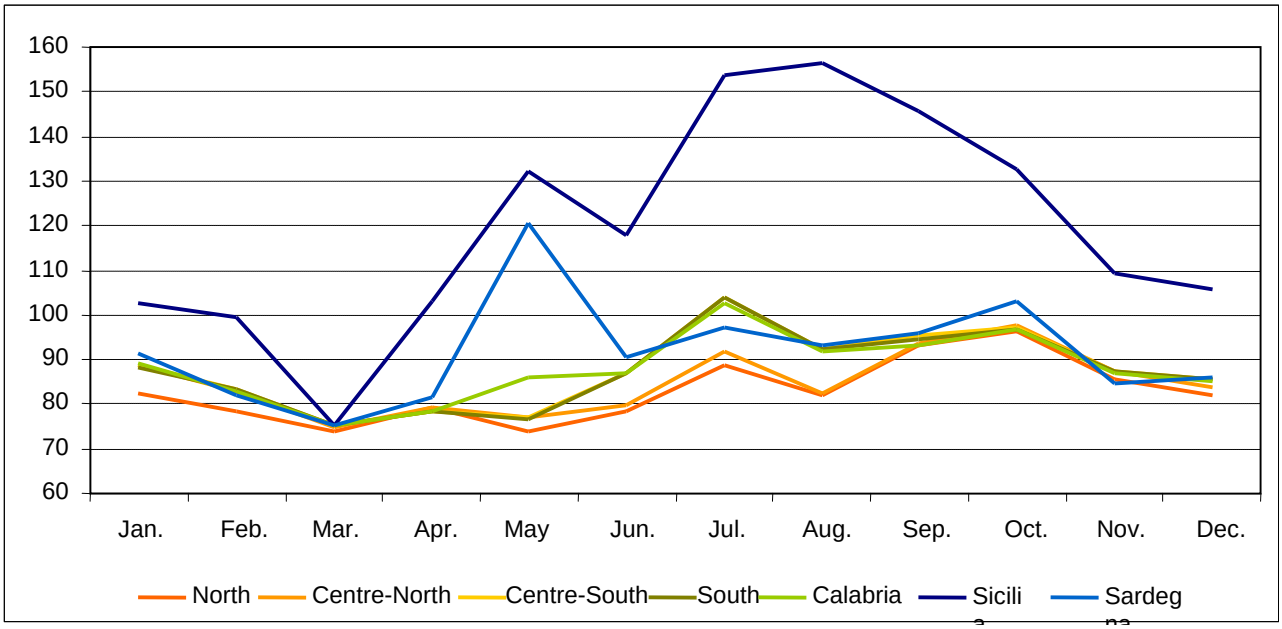
Source: AEEG calculations on data published by European power exchanges.

The reduction of the price differential between the IPEX and the other European power exchanges determined a significant increase in export flows in 2008 compared to previous year, which were mainly concentrated in the off-peak hours. This was most evident on the Swiss and Greek borders and on the French border in the months of June and October.

Import and export flows also reflect the sum result of price differentials between zones within Italy. Average sales prices in 2008 varied between 82.92 €/MWh in the North, the zone with the lowest prices also in this year, and 119.63 €/MWh in Sicilia. Between 2007 and 2008 price increases compared to the PUN were contained between 16.7% in the Centre-North and 22.5% in Sardegna, reaching a maximum in Sicilia, where the increase compared to the national average price was much higher at 50.5%.

Figure 3.5 Monthly price trends within Italian zones in 2008

€/MWh



Source: AEEG calculations on GME data.

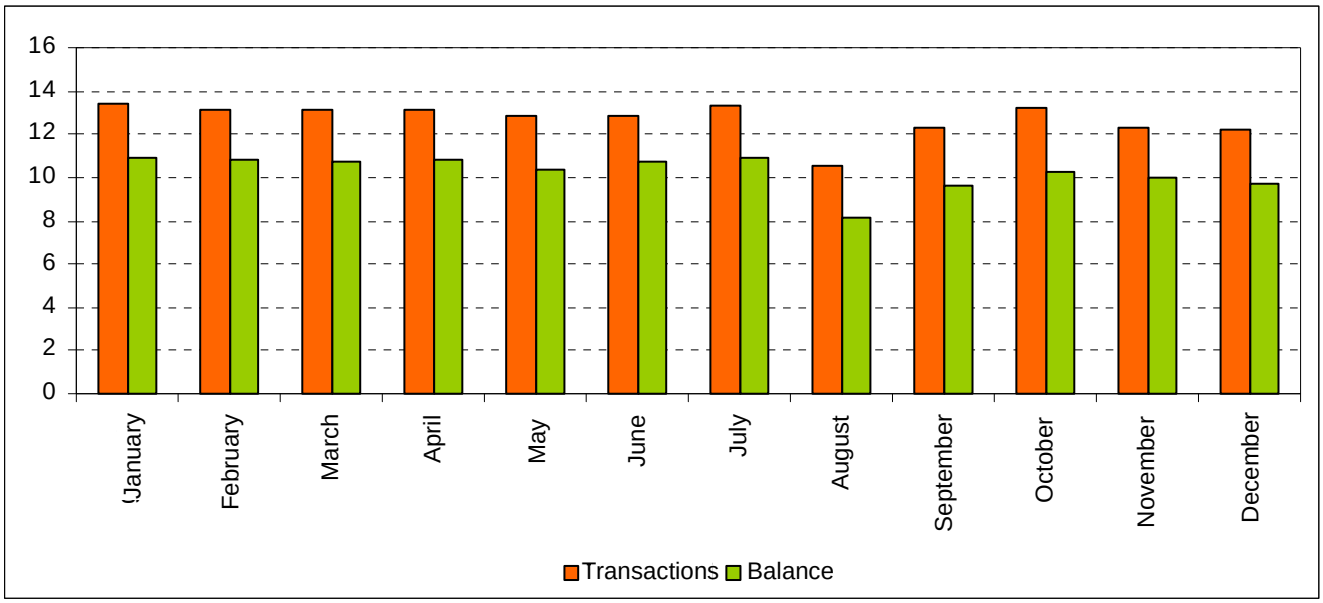
The Forward Market Accounting Platform (PCE)

The PCE is the platform for recording bilateral contracts in which traders may register quantity and period of delivery of forward contracts no more than two months in advance of physical delivery. In general, traders have one or more power delivery accounts and one or more power withdrawal accounts on each of which they may record purchases and sales on condition that the resulting net balance against the new registration is a net sale in the former case and a net purchase in the latter case. The balance determines the quantity of electricity that can be delivered/withdrawn or sold/purchased in the MGP.

During 2008, the overall transactions handled in the PCE amounted to 152.4 TWh against a net position of 122.9 TWh. The PCE allows for the registration of five types of contract of which four standard contracts (*baseload*, *peakload*, *offpeak* and *weekend*) as well as a non-standard contract. The most used contract profile in 2008 was non-standard, while among standard contracts the most popular was the baseload.

Figure 3.6 Monthly transactions in the PCE in 2008

TWh



AEEG calculation based on GME statistics.

The forward markets (MTE and IDEX)

MTE and IDEX are the two regulated forward markets managed by GME and Borsa Italiana, respectively, both launched in November 2008.

The MTE enable trading of physical quantities of electricity with delivery on date over a maximum period of one month. During the first quarter of MTE operation, eight traders participated in the market for total traded volume of about 0.1 TWh, mainly baseload contracts and one-month delivery. Participation of traders in this market seems to be discouraged by the limitation on delivery period.

The IDEX enables trading of financial *futures* contracts based on the PUN as reference price. As a start it was established that contracts traded on this market must be baseload and limited to monthly, quarterly and annual delivery periods. In the first quarter of operation, the overall volume traded on the IDEX amounted to about 2.3 TWh. The most frequently traded contracts were those with an annual delivery period (1.1 TWh) followed by those with three month delivery (0.9 TWh). Despite the low volume traded, this market is an important innovation in that it provides traders with a useful price signal over a longer time horizon.

Mergers and acquisitions in the electricity sector in 2008

Concentration in the electricity distribution and supply sector continued in 2008 with renewed vitality.

The most important transaction was the establishment of the A2A group from the merger by acquisition of Asm Brescia S.p.A. by AEM Milano S.p.A. As envisaged by the merger

project approved in the Shareholders' Meetings of ASM and AEM on October 22 2007, the merger took legal effect on January 1 2008 and since that date the purchaser AEM S.p.A. has changed its corporate name to A2A S.p.A.

In addition, in the course of 2008, a merger project was launched between the companies Iride, Enia and Hera which culminated in a preliminary agreement between the first two companies in October 2008. The merger agreement envisages the establishment of a holding company half of which will be under the control of the local authorities concerned (Municipalities of Torino, Genova, Reggio Emilia, Parma and Piacenza). The market share of the group to be formed by the merger, calculated from the electricity volumes sold in 2007, is equal to more than 5.5% of total national sales volumes.

Also, on July 25, Enel Produzione S.p.A. sold to Dolomiti Energia SpA 51% of the capital in Hydro Dolomiti Enel S.r.l., the company through which the parties intend to jointly develop the hydropower sector in the Autonomous Province of Trento. The company runs 20 large hydropower plants and 7 mini-hydropower plants for a total capacity of about 1.3 GW and a total annual energy capability of 3.1 TWh.

Finally, in the context of the acquisition of Endesa by the Enel group and related commitments, a number of Endesa and Enel assets were transferred to E.On of was executed. In particular, the transfer agreement envisages the sale to E.On of Endesa Italia, Enel Viesgo (operating on the Spanish market) and Snet (operating on the French market).

Activity of the Authority in the fields of renewable resources, distributed generation and high-efficiency cogeneration

With resolution ARG/elt 74/08 of June 3 2008, the Authority published the new Code on the Regulation of Net Metering Service (TISP). The new regulation, which came into effect on January 1 2009, concedes eligibility for net metering[12] to high-efficiency cogeneration plants with a capacity of up to 200 kW and renewable energy plants with a capacity of up to 20 kW. Moreover, with resolution ARG/elt 1/09 of January 8 2009, the Authority extended net metering to renewable energy plants commissioned after December 31 2007 having a capacity greater than 20 kW but not exceeding 200 kW. A precondition for eligibility for net metering is that the installations for electricity consumption and generation have a single connection to the grid.

Subscribers to net metering service have to enter into a contract with the GSE, which provides the service. This contract deals with all the terms and conditions for feeding electricity into the grid, but not with those for the purchase of electricity withdrawn from the grid.

The new[13] approach to trading generated energy allows offsetting the value of the energy fed into the grid (net of self-consumption) with the value of the electricity withdrawn and consumed at a time other than that of generation. Pursuant to the contract for net metering, the GSE provides users of the service with a contribution aimed at:

[12] Net metering is a particular form of consumption of self-generated energy in which the economic value of the energy generated and fed into the grid at any time can be offset with that of the energy withdrawn from the grid for on site consumption at any other time.

[13] Previously, regulation of net metering referred to the quantity instead of the value of the electricity.

- compensating for the difference between the economic value of the electricity fed into the grid and that withdrawn from the grid. Should the value of the electricity fed into the grid be greater than that of electricity withdrawn, the difference is credited to subsequent calendar years, without expiry;
- refunding the variable charge for transmission and dispatch of the difference between the energy withdrawn and the energy fed into the grid ("swapped energy") as well as the general system charges (only in the case of renewable generation).

While the financial compensation is determined as the value of the surplus power fed into the grid and is thus independent of net metering, the refund of the charges related to the use of the grid represents a real incentive for the use of net metering. It is as if the electricity fed into the grid and subsequently withdrawn were produced and consumed by the generator instantaneously without using the grid (although in actual fact the grid was used).

With resolution ARG/elt 99/08 of July 23 2008, the Authority adopted the new rules for connecting generating plants to the grid (*Code on Active Connections*), which came into effect on January 1 2009. The new Code prescribes the procedures for high and medium voltage connections previously regulated by resolution no. 281/05 as well as those related to low voltage connections previously regulated by resolution no. 89/07 of April 11 2007.

With resolution ARG/elt 99/08, the Authority prioritised the regulation of connections to the grid of renewable energy and high-efficiency co-generating plants with the objective of guaranteeing more certain and reliable procedures. The new rules also aim at avoiding that the technical solutions identified by distributors entail excessive charges on generators. More specifically, in the case of connections to medium and low voltage power distribution networks the resolution entails the:

- reorganisation of connection procedures and timelines, to make the process more transparent, introducing more stringent rules for distributors;
- revision of the methodological basis for determining the connection charge, using a formula that conventionally takes account the power fed into the grid and the distance of the plant from the existing grid;
- establishment a new mechanism for automatic indemnities in favour of producers in case of delays by distributors.

As regards high and very high voltage connections, the regulatory rules have been streamlined and a special methodology was introduced for determining the charge applicable to renewable energy plants. In addition, the new rules provide instructions on the coordination between generators and grid operators for obtaining the required authorisations. The Code on Active Connections further envisages priority treatment for applications regarding the connection of renewable energy plants and high efficiency co-generating plants. If these types of plant require connection at rated voltages greater than 1 kV, the applicant is entitled to autonomously undertake those parts of the connection that do not intrude on the existing grid, such as laying the power line and installing the delivery equipment.

3.2.2 The retail electricity market

Structure and functioning of the retail market

Based on the data published by Terna, sales of electricity to final customers in 2008 amounted to about 299 TWh, while overall consumption (including self-consumption) amounted to 319 TWh. Table 3.13 provides a breakdown of consumption by major end use sector.

Table 3.13 Breakdown of consumption by major end use sector in 2008

TWh

PRODUCTION SECTOR	2007	2008	% VARIATION
Industry	155.8	151.4	-2.8%
Services	90.3	93.6	3.7%
Residential	67.2	68.4	1.7%
Agriculture	5.7	5.7	0.2%
Total	319.0	319.0	0.0%

Source: Terna.

Table 3.14 shows the overall sales and the number of customers (assumed approximately equal to the number of outlets) broken down by type of market based on the data collected by the Authority from all companies active in the electricity supply industry: producers; providers of protected tariff and safeguard services; wholesalers and retail suppliers.

Table 3.14 Retail sales market in 2008

Net of self-consumptions and network losses

	VOLUME (GWh)	NUMBER OF CUSTOMERS (thousands)(A)	UNIT CONSUMPTION (KWh)
Protected-tariff service	89,288	32,445	2,752
Safeguard service	12,820	192	66,771
Liberalised market (B)	181,370	2,945	61,586
Total market	283,478	35,583	7,967

(A) The number of customers is assumed equal to the number of outlets and is calculated based on the number of days of supply.
(B) The data for the liberalised and safeguard markets are provisional, covering only about 93% of the real overall volume. In fact, according to Terna, consumption of the liberalised market, including consumers benefiting from the safeguard service, was 208.3 TWh as opposed to the figure of 194.2 TWh emerging from the AEEG survey.

Source: AEEG annual survey of market participants.

The enhanced protection service is directed to domestic customers and small businesses with low voltage connections which have not entered into a supply contract in the liberalised market. The service is provided by sellers or distributors with fewer than 100,000 customers connected to their system, based on the price conditions and commercial quality terms defined by the Authority. In 2008 enhanced protection service providers numbered 136 of which 128 were also electricity distributors.

Sales to enhanced protection service customers amounted to around 90 TWh for a total of a little over 32 million delivery points. About 67% of the volumes sold (around 60 TWh) was purchased by residential users which account for some 83% of the total enhanced protection service users, about 27 million.

Customers not eligible for access to the enhanced protection service and either permanently or temporarily without an electricity supply contract in the liberalised market are eligible for the safeguard service. The service has been provided since May 1 2008, by suppliers selected by auction.

In 2008 the safeguard service was provided to about 192,000 customers as measured by number of outlets and calculated on a per-day of use criterion, for a total electricity consumption of about 13 TWh. Industrial and commercial users with a prevalence of medium voltage connections (other than public lighting and uses subject to special tariffs) account for about three quarters of this.

Electricity sold in the liberalised market in 2008, resulting from Terna statistics, amounted to 195 TWh, implying a 10% increase over 2007. Table 3.15, provides a gross breakdown by type of customer of the provisional data collected by the Authority, which covers about 93% of the liberalised market.

Table 3.15 Breakdown of the liberalised market by type of customer

Year 2008(A)

TYPE OF CUSTOMER	VOLUMES (GWh)	NUMBER OF CUSTOMERS (thousands) (B)	UNIT CONSUMPTION (kWh)
Low voltage	44,086	2,866	15,382
Domestic	2,443	871	2,805
Public lighting	3,733	144	25,924
Other uses	37,910	1,850	20,492
Medium voltage	92,970	79	1,176,835
Public lighting	320	2	160,000
Other uses	92,649	77	1,203,234
High voltage and very high voltage	44,315	1	44,315,000
TOTAL LIBERALISED MARKET	181,370	2,945	15,382

(A) The data are provisional and cover about 93% of overall volumes.
(B) The number of customers is assumed equal to the number of outlets and is calculated based on the number of days of supply.

Source: AEEG annual survey of market participants.

Enel Servizio Elettrico (part of the Enel group of companies) is by far the major supplier of the enhanced protection service with a market share of nearly 84%, followed by AceaElectrabel Elettricità (5.5%), A2A Energia (3.4%) and Iride Mercato (1.5%). Other suppliers have shares lower than 1%.

The liberalised market has a much lower degree of concentration than the enhanced protection service market. More specifically, in 2008 the aggregate share of the three main operators was equal to 43.6%, with Enel companies supplying just 26.9%.

For the retail market as a whole three groups reached a market share greater than 5% in 2008: Enel (47.2%), Edison (6.0%) and A2A (5.6%). Table 3.16 provides a breakdown of concentration by voltage level.

Table 3.16 Concentration in the retail market by voltage levels

VOLTAGE LEVEL	GROUPS WITH A SHARE > 5%	AGGREGATE SHARE OF THE FIRST 3 GROUPS
Low voltage (domestic users and small businesses)	1	80%
Medium voltage	4	37%
High and very high voltage	4	64%
Total	3	59%

Source: AEEG annual survey of market participants.

Based on the provisional data available from the annual survey on electricity suppliers, undertaken by the Authority, the average volume weighted electricity price in the liberalised market in 2008 was around 76 €/MWh. This price is net of taxes, general system charges and tariff components covering transmission, distribution and metering costs but includes the cost of marketing and takes account of network losses. Table 3.17 provides the breakdown of this price by voltage level while tables 3.18 and 3.19 shows the breakdown by consumption class in the residential and non-residential sectors, respectively.

Table 3.17 Average retail price of electricity in the liberalised market by voltage level

Year 2008(A)

VOLTAGE	PRICE (€/MWh)	VOLUMES (GWh)
Low voltage	85.98	44,086
Medium voltage	72.62	92,970
High and very high voltage	72.66	44,315
Total	75.87	181,370

(A) The price are gross of network losses and include the cost of electricity purchases, marketing costs, imbalance charges and non-arbitrage charges (between bilateral and exchange contracts); they exclude taxes, general charges and transmission and distribution costs.

Source: AEEG annual survey of market participants.

Table 3.18 Average retail price of electricity in the liberalised market by consumption class: residential customers

Year 2008(A)

CONSUMPTION CLASS	PRICE (€/MWh)	VOLUMES (GWh)
< 1,000 kWh	105.57	41
1,000 – 1,800 kWh	107.93	221
1,800 – 2,500 kWh	95.25	385
2,500 -3,500 kWh	89.12	706
3,500 – 5,000 kWh	89.02	653
5,000 - 15,000 kWh	88.07	416
> 15,000 kWh	85.68	21
Total domestic consumers	91.83	2.443

(A) The price are gross of network losses and include the cost of electricity purchases, marketing costs, imbalance charges and non-arbitrage charges (between bilateral and exchange contracts); they exclude taxes, general charges and transmission and distribution costs.

Source: AEEG annual survey of market participants.

Table 3.19 Average retail price of electricity in the liberalised market by consumption class: non residential customers

Year 2008(A)

CONSUMPTION CLASS	PRICE €/MWh	VOLUMES (GWh)
< 20 MWh	98.60	8,006
20-50 MWh	87.77	8,788
50-100 MWh	85.19	7,847
100-500 MWh	80.19	21,776
500-2,000 MWh	75.97	26,370
2,000-20,000 MWh	72.48	49,963
20,000-50,000 MWh	71.06	15,423
50,000-70,000 MWh	72.62	3,950
70,000-150,000 MWh	70.25	9,988
> 150,000 MWh	69.07	26,816
Total non-domestic consumers	75.66	178,927

(A) The price are gross of network losses and include the cost of electricity purchases, marketing costs, imbalance charges and non-arbitrage charges (between bilateral and exchange contracts); they exclude taxes, general charges and transmission and distribution costs.

Source: AEEG annual survey of market participants.

In 2008, the Authority continued in its endeavour to provide increasing protection to consumers in the electricity as well as gas markets. The regulatory measures, described in greater detail in Section 6 below, contributed to effectively strengthening the consumer's ability to make informed choices from among the variety of offers available in the market

and to reduce information asymmetries which, given the peculiarity and characteristics of the services offered, are prone to jeopardise his ability to take advantage of the opportunities arising out of market opening to competition.

Complaints and appeals

The complaints, appeals and other communications examined by the Authority, from both individual customers and consumer associations, increased by 79% in 2008, confirming the trend of the previous years, although at a slightly lower rate. In the period between April 1 2008 and March 31 2009, out of a total of 8,691 communications sent to the Authority 6,323 (or 73%) regarded the electricity sector. The number of communications in the electricity sector alone increased by 103% in comparison with the previous year. Complaints accounted for 92% of all communications, enquiries for 5%, appeals and other notifications for the remaining 3%.

Somewhat more than 50% the complaints related to the electricity sector regarded suppliers operating exclusively in the liberalised market. This rather large fraction is not unusual in the early phases of market openness, and has also been observed in other countries opening their sales segment to liberalisation.

Communications received during the period April 2008 - March 2009 addressed the following issues: invoicing (36.4%); interpretation and application of contractual clauses related to both the liberalised market and the protected-tariff service (18.9%); market-related issues (17.2%); connections (8.2%); quality of supply, voltage and electricity outages (5%); disconnections (4.2%); tariffs (2.1%); transparency of bills (2%); electricity meters (1.9%); commercial quality (0.7%); metering (0.4%).

Table 3.20 Topic of communications received by the Authority over the last two years

SUBJECTS	APRIL 2007 – MARCH 2008		APRIL 2008 – MARCH 2009	
	No.	%	No.	%
Invoicing	926	33.4	2,303	36.4
Contracts; commercial quality	528	19.0	1,239	19.6
Market functioning	418	15.0	1,090	17.2
Connections	250	9.0	522	8.2
Power outages and voltage	267	9.6	322	5.0
Disconnections	45	1.6	267	4.2
Tariffs	135	4.9	135	2.1
Bills	37	1.3	126	2.0
Electricity meters	72	2.6	118	1.9
Metering	12	0.4	24	0.4
Other	89	3.2	191	3.0
Total	2779	100.0	6336	100.0

Source: AEEG calculations on own data.

The comparison between 2007 and 2008 shows no very significant variations in the frequency of communications related to contracts and commercial quality, connections,

billing transparency, meters, metering issues and other topics[14], while a clear reduction can be observed for service continuity and tariffs. Communications on invoicing, on disconnections following payment defaults and on issues related to market functioning visibly increased. The latter of these issues mainly addressed supplier switching and the correct application of the Commercial Code of Conduct in the electricity sector in relation to the development of liberalisation and to the growing number of consumers opting for a change of supplier or contacted by salespersons promoting commercial offers after July 1 2007. In the case of invoicing, the main complaint regarded invoicing of consumption up front by suppliers in the liberalised market and double invoicing[15]. Other major issues related to invoicing regarded the frequency and, to a decreasing degree, high arrears to be paid in relation to meters which had long remained unread (often following replacement of electromechanical meters with electronic meters).

Registration, classification and subsequent assessment of complaints and appeals is particularly important to the extent that it enables obtaining precious information on the problems affecting the provision of services and the areas on which to focus regulatory and/or monitoring actions. The analysis of issues related to clients switching to the liberalised market allows identifying particularly critical areas requiring improvements in the existing regulation and/or the introduction of new rules guaranteeing efficient functioning of the market.

3.2.3 Measures to combat the abuse of a dominant position

With resolution ARG/elt 115 of August 5 2008 titled *Code on the Monitoring of the Wholesale* Electricity Market and of the Dispatching Services Market, the Authority reformed the regulation for electricity market monitoring regulation.

Based on the experience gained over the last three years and in accordance with the Guidelines established in the preparatory phase, the Monitoring Code redefines the procedures and activities that the GSE, the GME and Terna are required to undertake to enable the Authority to expedite its market monitoring function. In particular, it prescribes:

- the data and market indices that the GME, Terna and the GSE are required to assemble for the purposes of electricity market monitoring;
- that the data and market indices be organised and stored in suitable data warehouses dedicated to electricity market monitoring, set up by the GME, Terna and the GSE, allowing remote and secure access by the Authority;
- that the GME, Terna and the GSE each set up a monitoring unit with adequate human and material resources to enable effective management of the monitoring activities and to interface with the Authority for the fulfilment of its monitoring functions;
- that the monitoring units of GME and Terna process the data and prepare weekly reports allowing the Authority to detect any irregularities in the markets administered by them;

[14] These include issues on call centres, energy thefts, resolution of defaults, taxes and other minor topics.
[15] Double invoicing (16% of invoicing complaints) could also be classified as an issue of market functioning.

- the standard analyses that must be undertaken to identify any unilateral or collective exercise of market power such as the appraisal of *physical and economic withholding* of production capacity by a participant in the MGP and the *what-if* assessment of the bids made by a participant in the MGP or the MSD.

As regards the retail market, the Authority issued a number of resolutions in 2008 aiming at improving data collection and analysis to better assess the impact of competition on final sales. As a result of these resolutions providers of protected-tariff and safeguard services and retailers operating in the liberalised market are now required to fulfil strict communication obligations on their respective markets. Protected-tariff service providers have to provide the Authority with a monthly report containing a forecast of the level of *switching* expected in the following month and any revisions to the data provided in the previous two months based on the effectively registered levels.

The data gathered in the case of customers served under the protected-tariff and safeguard regimes include the number of power outlets[16] switching to an affiliate operating in the liberalised market, the number switching to other operators in the liberalised market, the number switching to the safeguard market, the number switching back from the liberalised market, and finally activations and deactivations of power outlets. Safeguard service providers are also required to publish on their websites the unit charges for electricity purchases and dispatching for each type of contract and in each region in which they operate with reference to the entire period over which the service was provided.

With a view to providing maximum transparency on prices and price variations, resolution ARG/elt 167 of November 20 2008 requires that, within 45 days of the end of each quarter, retailers provide the Authority with the average monthly prices applied by them on the retail market, identifying procurement costs, network and metering costs, general system charges and taxes, broken down by:

- reference market (liberalised market, protected-tariff service and safeguard service);
- type of customers served (residential and non residential, further split into a number of consumption classes);
- voltage level (LV, MV, HV and VHV).

With resolution ARG/com 202 of December 23 2008, the Authority decided to post a summary of the data collected on its website within the month of January 2009, addressing the development of competition in retail sales on the liberalised markets of both electricity and gas with a particular highlight on customers moving away from protected regimes and on supplier switching. With the same resolution, the Authority established that such data would be updated on a quarterly basis, if significant variations should intervene, and further that the summary subsequently include also the information on the average prices applied to consumers.

[16] In the residential sector there is usually a one tone correspondence between power outlets and customers. This is not the case in the industrial and services sectors which frequently have two or more connections to the distribution network.

4 NATURAL GAS MARKET REGULATION AND PERFORMANCE

4.1.1 Allocation of interconnection capacity and mechanisms for congestion management

Table 4.1 shows the results of the allocation of firm transport capacity made at the beginning of thermal year 2008 - 09 and those of the thermal year underway.

Table 4.1 Firm transport capacity in Italy in thermal year 2008 - 09

M(m^3) standard per day, if not otherwise stated

ENTRY POINTS INTO THE NATIONAL NETWORK	VALUES AT THE BEGINNING OF THERMAL YEAR				VALUES AT 30/06/2009	
	TOTAL ALLOCABLE	ALLOCATED	AVAILABLE	SATURATION	ALLOCATED(C)	SATURATION
Passo Gries	59.4	59.4	0.0	100.0%	58.6	98.6%
Tarvisio	101.0	97.8	3.2	96.8%	98.7	97.7%
Mazara del Vallo(A)	99.0	93.2	5.8	94.2%	93.2	94.2%
Gorizia(B)	2.0	0.0	2.0	0.0%	0.4	18.5%
Gela(A)	28.4	25.6	2.8	90.1%	28.4	100.0%
TOTAL	289.8	276.0	13.8	95.2%	279.3	96.4%

(A) Maximum allocable and allocated capacity starting from June 2008.
(B) Imports at the Gorizia point are a "virtual" transaction resulting from lower physical exports.
(C) Maximum capacity allocated in some months of the thermal year.

Source: AEEG calculations on data supplied by Snam Rete Gas.

Increases in allocable capacity[17] compared to that made available in the previous thermal year are found in all entry points interconnected with neighbouring countries, except for Gorizia and Passo Gries. In particular, the communication on transport capacity which the Ministry for Economic Development releases pursuant to art. 3, paragraph 10, of legislative decree no. 164/00 states that:

- at Mazara del Vallo transport capacity increased gradually to 99.0 M(m^3)/day in the period between October 2008 and April 2009, during which the pipeline Montalbano-Messina was being completed;
- at Gela transport capacity increased from 25.6 to 28.4 M(m^3)/day with entry into operation of the Rende-Tarsia and Tarsia-Morano connections;
- at Tarvisio transport capacity will increase from 101.0 to 107.0 M(m^3)/day in October 2009 as a result of entry into operation of the Istrana and Malborghetto compressor station expansions.

[17] Transport capacity is calculated based on hydraulic simulations of the transport network taking into account expected withdrawal scenarios for the year under review. Transport capacity at each entry point is determined by considering the most demanding transport scenario (the summer months for Mazara del Vallo, Tarvisio and Gorizia; the winter months for the Passo Gries entry point). In particular, to ensure availability of transport services at the level requested throughout the thermal year, Snam Rete Gas assesses the maximum quantities that can be introduced into the network at each entry point without exceeding the pressure constraints at the various points of the system and the maximum ratings of plants and equipment.

Taken together these increases amount to an overall import capacity increase to 289.8 M(m^3)/day from 276.5 M(m^3)/day of the previous thermal year, or 4.8%.

At the beginning of thermal year 2008-09 firm transport capacity at the entry points of pipeline connections to neighbouring countries was allocated to 64 operators for an amount equivalent to 95.2% of the total allocable capacity. On June 30 2009 pipeline saturation had risen to 96.4%.

The table does not include the Panigaglia liquefied natural gas (LNG) facility, with 13 M(m^3) of daily allocable capacity. This is currently allocated to the terminal operator, GNL Italia, which feeds gas into the national network on behalf of its re-gasification customers, to allow the most efficient use of the transport capacity at the terminal. As specified by the communication from the Ministry for Economic Development, in gas year 2008-09, the terminal re-gasification capacity was equal to 6 M(m^3)/year corresponding to 172 dockings each year, or roughly one every two days.

Multi-annual allocations

Table 4.2 summarizes the longer term allocation of capacity at the entry points of the national network, including the LNG terminal, starting from thermal year 2010-11 and for five thermal years as set by Authority rulings. In 2009 the available capacity for the period up to 2014-15 was allocated to a total of 26 operators with multi year import contracts. The table also includes thermal year 2009-2010 with multi year capacities allocated in 2008.

Beginning with thermal year 2009-10, with entry into operation of the Cavarzere connection to the new LNG regasification terminal owned by Terminale GNL Adriatico, the number of entry points to the national network will increase to six.

Ten years after feasibility studies and preliminary engineering project this offshore terminal, located 17 km off the coast of Porto Levante (Rovigo), was built in Spain and arrived at destination in September 2008. In the ten years elapsed, the project obtained all the required authorisations – the last one being, in chronological order, the Integrated Environmental Authorisation (*Autorizzazione integrata ambientale*) issued in January 2009. Its entry into operation is envisaged in the second half of 2009. Exemption from third-party access for 80% of the terminal capacity, equal to 8 G(m^3), was granted in November 2004 for 25 years pursuant to law no. 239 of August 23 2004 and European Directive 55/03/EC, the exemption being subsequently approved by the European Commission. Consequently, the terminal's allocable capacity of 26.4 M(m^3)/day will be available to the extent of only 5.4 M(m^3)/day until thermal year 2032-33. Moreover, for the first 5 thermal years even this capacity is reserved for the re-gasification company following the Authority's resolution no. 168/06 of July 31 2006.

Table 4.2 Capacity allocation at entry points to the national network in thermal years 2009-10 to 2014-15

M(m^3) standard per day

THERMAL YEAR	ENTRY POINTS					
	TARVISIO	MAZARA DEL VALLO	GRIES PASS	GELA	GORIZIA	CAVARZERE
2009-2010						
Allocatable capacity	107.0	99.0	59.4	28.4	2.0	26.4
Allocated capacity	87.9	81.6	52.4	21.9	0.0	26.4
Available capacity	19.1	17.5	7.0	6.5	2.0	0.0
2010-2011						
Allocatable capacity	107.0	99.0	59.4	28.4	2.0	26.4
Allocated capacity	90.4	87.8	52.2	21.9	0.0	26.4
Available capacity	16.6	11.2	7.2	6.5	2.0	0.0
2011-2012						
Allocatable capacity	107.0	99.0	59.4	28.4	2.0	26.4
Allocated capacity	89.7	87.8	50.8	21.9	0.0	26.4
Available capacity	17.3	11.2	8.6	6.5	2.0	0.0
2012-2013						
Allocatable capacity	107.0	99.0	59.4	28.4	2.0	26.4
Allocated capacity	89.7	86.6	48.8	21.9	0.0	26.4
Available capacity	17.3	12.4	10.6	6.5	2.0	0.0
2013-2014						
Allocatable capacity	107.0	99.0	59.4	28.4	2.0	26.4
Allocated capacity	78.9	85.4	45.1	21.9	0.0	26.4
Available capacity	28.1	13.6	14.3	6.5	2.0	0.0
2014-2015						
Allocatable capacity	107.0	99.0	59.4	28.4	2.0	26.4
Allocated capacity	78.5	85.3	21.2	21.9	0.0	21.0
Available capacity	28.5	13.7	38.2	6.5	2.0	5.4

Source: Snam Rete Gas.

Rules for capacity allocation and management

The allocation of capacity for firm transmission service on the national network is made on an annual and sub-annual basis (resolution n. 137/02, see *Annual Report 2005*). During the thermal year, the transmission system operator allocates the capacity that becomes available as a result of capacity additions or following the commissioning of new delivery and redelivery points. The allocation is made on a monthly basis starting from the month following publication of availability. To obtain capacity operators must submit an application to the transmission company within 7 working days of publication.

Until 2007 allocation of capacity at entry points interconnected with neighbouring countries was undertaken on an annual basis and two years in advance of the thermal

year, with the possibility for holders of long term import contracts to reserve capacity up to the daily average contracted quantity for as many as five thermal years.

In July 2007, in order to increase flexibility and facilitate imports particularly in critical supply periods, the Authority introduced new regulation allowing sub-annual allocation of capacity strictly associated with the effective availability of foreign gas. To this end the regulation established that the transport company may implement sub-annual allocations under the following terms and conditions:

- at the beginning of the thermal year concurrently with annual transport capacity allocation and with effect from the start of the thermal year or with effect during the thermal year only in case of multi year contracts starting during the thermal year;
- during the thermal year, with effect from the month following the month in which the allocation is made;
- giving priority to longer lasting sub-annual allocations;
- for the overall duration of the allocation, as long as this does not exceed the duration of the import contracts;
- including the months corresponding to the starting and/or expiry date of the import contracts.

The regulation also envisages the possibility of allocating interruptible capacity to deal with circumstances in which allocated capacity is not nominated.

It is recalled that the regulation was issued following the emergency measures defined by the Ministry for Economic Development in 2007 to address the risk of potential shortfalls due to insufficient import capacity, particularly after the interruption of supplies from Russia in the preceding winter. As discussed in Section 5, with the significant expansion of import capacity the situation is no longer one of severe emergency but the regulations governing sub-annual allocation of capacity and interruptible capacity continue to be applicable, providing increased flexibility and improving efficiency.

Capacity can be exchanged on the secondary market based on bilateral transactions according to freely negotiated terms and conditions. The transmission company charges the capacity buyer the same transport tariff applying to the original buyer of the capacity.

Finally, as already observed in the *Annual Reports* of previous years, it is recalled that the regulation on transport contracts does not envisage any specific conditions for transits; however, these currently play a very marginal role in Italy.

4.1.2 Regulation of transmission and distribution companies

The ownership structure and management of the gas transmission system has not changed significantly over the last few years. In 2008 it was operated by 8 companies with the breakdown by national and regional scope shown in Table 4.3. The only change from 2007 is the entrance of Edison Stoccaggio among the group of national transport companies operating in more than one region. This company in fact operates the Cavarzere-Minerbio pipeline which connects the new Rovigo regasification plant to the national network.

Table 4.3 Networks of the transmission companies in 2008

km

COMPANY	NATIONAL SYSTEM	REGIONAL SYSTEM	TOTAL
Snam Rete gas	8,779	22,695	31,474
Società Gasdotti Italia	120	1,162	1,282
Edison Stoccaggio	83	0	83
Consorzio della Media Valtellina per il trasporto del gas	0	29	29
Gas Plus Trasporto	0	32	32
Carbotrade	0	49	49
Metanodotto Alpino	0	76	76
Netenergy Service	0	36	36
Retragas	0	399	399
TOTAL	8,982	24,478	33,460

Source: AEEG calculations on the operators' declarations.

The main transmission operator, Snam Rete Gas owns 31,474 km out of a total network of 33,460 km constituting the Italian gas transmission system. The second operator is the Edison group which runs both the networks of Società Gasdotti Italia and of its subsidiary Edison Stoccaggio (which owns storage assets as well as the new pipeline connecting the Rovigo LNG terminal to the national network) for a total of 1,365 km of high pressure pipeline, of which 203 km are part of the national network. The transport network is completed by 6 minor operators which own small sections of the regional system. Among these, the company Carbotrade sold its gas transmission business to Metan Alpi Energia on January 1 2009.

The gas transmission activity is regulated by Network Codes prepared by the transmission companies on the basis of criteria established by the Authority and approved in specific regulatory decisions. Network Codes for gas transmission have been in place since October 1 2003 and are constantly updated.

Natural gas distribution is currently fragmented between some 300 companies. With increasing competition and regulation the degree of concentration of the sector has been increasing rapidly over the past decade (from over 750 in 1998 and 430 in 2005) and is certain to increase even more in the future. The Eni group controls 26.6% of the market (in terms of distributed volumes). Table 4.4 reports the extension and principal characteristics of the distribution networks in Italian regions.

In 2004 the Authority issued the rules for the provision of natural gas distribution services and for access to local networks, establishing among other things that all distribution companies must operate on the basis of a clearly defined Network Code. In 2006 the Authority issued regulations on a standard Network Code. Distributors were given the option of adopting this Code or adapting it to their own specific company structure and characteristics, subject to approval by the Authority. Amendments to the Standard Network Code were introduced in December 2007, mainly regarding meter reading.

Table 4.4 Regional characteristics of distribution networks in 2008

km

REGION	NETWORK EXTENSION		
	HIGH PRESSURE	MEDIUM PRESSURE	LOW PRESSURE
Val d'Aosta	0.3	165.9	194.0
Piemonte	84.6	11,783.2	10,788.5
Liguria	57.4	1,898.8	4,147.2
Lombardia	108.1	13,919.4	30,848.7
Trentino-Alto Adige	179.7	1,994.1	1,933.8
Veneto	291.6	9,985.0	17,307.1
Friuli-Venezia Giulia	5.0	2,064.3	5,029.6
Emilia-Romagna	371.6	15,966.4	12,505.6
Toscana	204.6	6,053.7	9,131.2
Lazio	185.0	6,601.2	7,359.2
Marche	24.6	4,174.9	4,423.4
Umbria	105.3	1,768.9	3,123.7
Abruzzo	1.4	4,019.4	4,533.4
Molise	5.6	978.2	1,018.5
Campania	17.5	3,535.0	7,412.2
Puglia	89.7	3,235.7	8,119.7
Basilicata	0.8	769.6	1,477.5
Calabria	34.7	2,173.1	3,283.0
Sicilia	60.3	3,911.5	8,213.3
Inoperative	0.0	127.6	527.1
TOTAL	1,827.9	95,125.8	141,376.7

Source: AEEG annual survey of distribution companies.

Gas transmission tariffs

According to the regulatory procedures applied in Italy, the transport tariffs applicable in thermal year 2008-09 are proposed by the transport companies and approved by the Authority on the basis of the criteria established for the second four-year regulatory period (from October 1 2005 to September 30 2009) with resolution no. 166/05 issued in July 2005 (see *Annual Report 2006*). In July 2008, prior to the beginning of the new thermal year, the Authority issued resolution ARG/gas 108/08, approving the values of the transmission charges to be applied in thermal year 2008-09.

Approaching the end of the second regulatory period, in April 2008 the Authority launched the procedure for the regulation of natural gas transmission tariffs in the third regulatory period running from October 2009 to September 2013. The definition of gas dispatch and transport tariff is considered a very important regulatory act and is therefore subjected to full Regulatory Impact Analysis (RIA), which consists essentially in examining the impacts of a number of alternative regulatory scenarios.

The main proposals described in the document submitted to consultation on March 31 2009, are as follows:

• to ensure the development of transmission infrastructures to guarantee adequate supply margins against expected growth in demand and to favour the development of competition in the internal market, also by maintaining regulatory incentives for new investments;

• to introduce mechanisms aiming at increasing efficiency in the implementation of new investments, by identifying standard costs to be used as a basis for assessing the relative efficiency of operators;

• to maintain the use of the entry-exit tariff model for the determination of entry and exit charges on the national network, with modifications in the terms and conditions where they are assessed to be instrumental in promoting competition;

• to exclude the costs incurred for the purchase of gas required for the operation of compressor stations and to make up for network losses from the price cap mechanism, replacing this with a specific incentive scheme;

• to treat unaccounted gas volumes with criteria analogous to those envisaged for network losses in transport, by investing the leading transmission operator with the responsibility for their reallocation to network users through the introduction of suitable mechanisms within the balancing service;

• to exclude the allowed costs related to amortisation/depreciation from the price cap mechanism, as in the methodology adopted for updating tariffs in the electricity sector;

• to envisage a different allocation of revenues to the capacity and commodity components so to more closely reflect the breakdown of gas transmission costs in their capital and operating components;

• to separate costs related to transmission metering so as to determine a specific charge for this service.

Regasification tariffs

With resolution ARG/Gas 92/08 of July 7 2008, the Authority defined the regulatory criteria for re-gasification tariffs to be applied in the third regulatory period running for four years beginning with thermal year 2008-09. The new criteria are coherent with those of the previous regulatory period, with the objective of defining a regulatory framework favouring the development of re-gasification infrastructures so to increase supply security and market competition.

In particular, the regulatory mechanism for re-gasification tariffs defined for the third regulatory period includes:

• resumption of a 4-year duration for each regulatory period;

• application of a real pre-tax rate of return on invested capital equal to 7.6%, in line with most international practice;

• promotion of the development of re-gasification infrastructures by increasing return on invested capital for terms lasting longer than the regulatory period, through the introduction of an appropriate definition of investment categories;

• determination of the allowed operating costs for the first year of the new regulatory period by applying the profit-sharing principle to allocate equally between terminal operators and users the efficiency gains obtained over and above the compulsory levels fixed in the second regulatory period;

• application to new terminals of a zero price cap in the first few years of operation and to existing terminals of a price cap eliminating the profit sharing revenues earned by the companies over an 8-year period;

• application of the price cap mechanism to update the revenues remunerating operating costs;

• exclusion of amortisation/depreciation from price cap regulation of the revenues remunerating invested capital and depreciation/amortisation, as in the regulation of electricity sector tariffs;

• allocation of revenues to capacity and commodity components based on a 90/10 ratio;

• application of re-gasification tariffs that do not discriminate between users for any type of service offered by terminal operators;

• submission of specific charges applied for ancillary and optional services other than re-gasification for approval by the Authority, based on the costs incurred for the provision of these services, which must be suitably separated from the costs remunerated through the re-gasification tariff.

In addition, resolution ARG/Gas 92/08 contains the terms for implementing rules on the "guarantee factor" originally introduced by resolution no. 178/05 of August 4 2005. By way of continuity with the "corrective factor" envisaged in the previous regulatory period, the guarantee factor is designed to ensure 71.5% coverage of capacity revenues even in case of failure to allocate the capacity of a terminal.

The Authority subsequently proceeded to review and approve the tariff proposals for the re-gasification service provided at the Panigaglia and Rovigo terminals for thermal year 2008-09, based on resolution ARG/Gas 92/08 and submitted by GNL Italia and Terminale GNL Adriatico, respectively.

Distribution tariffs

As in the case of transmission tariffs, the tariffs applied for local gas distribution are proposed by the companies, based on their reference revenues and the regulatory criteria defined at the beginning of each four-year regulatory period, reviewed and subsequently approved by the Authority on an annual basis.

With resolution ARG/gas 128/08 of September 22 2008, the Authority extended the duration of the second regulatory period, which was characterised by an intense administrative dispute, by three months to December 31 2008.

The procedure for the definition of gas distribution tariffs for the third regulatory period, originally started in September 2007, was nevertheless concluded in 2008.

The consultation procedure was among those subjected to RIA and was conducted concurrently with the related procedure on the regulation of service quality, with three successive consultation documents being published in the months of February, June and September. The procedure was concluded on November 6 2008 with the adoption of resolution ARG/gas 159/08 approving Part II of the *Regulatory Code on the Quality and Tariffs of the Gas Distribution and Metering Services for Regulatory Period 2009-2012, Containing Provisions on the Regulation of Tariffs for Gas Distribution and Metering Services for Regulatory Period 2009-2012* (RTDG).

The main objectives set forth by the Authority in the definition of the regulation for the third period include *inter alia*: regulatory stability; convergence of the criteria for tariff regulation between the electricity and gas sectors; reduction of revenue risks for service providers; consistency between tariff and service quality regulation; simplification of tariff mechanisms to promote competition.

The RTDG, provides for far-reaching reforms in the regulation of gas distribution, metering and marketing both as regards tariffs and quality of service. The following illustrates the principal innovations in the tariff system, while quality of service regulation is discussed further on in this Section.

Reform of the tariff system was undertaken bearing in mind the ultimate goal of achieving greater efficiency through cost reductions and competition, foremost by:

- separating the tariff into distinct components for distribution, metering and marketing services each with its own specific characteristics and production process;

- promoting the gradual convergence of tariffs throughout the country, initially by applying a uniform standard tariff within six supra-regional areas[18] with the concurrent introduction of mechanisms to compensate for the differences in cost between different local distribution areas.

The compulsory tariff applied to network users has maintained the binomial structure it had in the first and second regulatory periods, with a fixed and a variable component. The variable component, linked to the volume distributed in standard cubic metres, is calculated on the basis of 8 consumption classes, just one more than in the previous regulatory period. On the other hand, the allowed revenues are calculated as the product of the fixed component and the number of outlets served.

This last aspect represents a significant change in the regulatory framework since, through the application of suitable compensation mechanisms, it allows protecting the level of allowed revenues covering the costs incurred in the provision of distribution and metering services from fluctuations in weather conditions.

As in the second regulatory period, in coherence with the regulatory approach applied in the electricity sector, two distinct systems are envisaged for determining allowed revenues for distributors (referred to as the "ordinary" and "specific" regimes[19]). In the ordinary

[18] Currently each local distribution network has its own distinct tariffs, to accommodate for large differences in costs.
[19] In the ordinary method the applicable value is based on key characteristics of the locality in which the gas is distributed such as population, length of the distribution network, etc., updated for new investments and efficiency

regime the RTDG introduces new methods for the calculation of invested capital and operating costs. Specifically, a distinction is made between capital invested centrally by the company as a whole (determined parametrically) and capital invested in each of the local distribution areas (determined with the principle of revalued historic cost), so to ensure the maximum degree of flexibility in switching between operators. Also operating costs have been redefined to include connection charges, which are consequently deducted from the invested capital, distinguishing between nine classes differentiated by size in terms of population served and user density per pipeline length.

One of the main innovations in tariff regulation, regards the exclusion of depreciation from the price cap. As in the electricity sector, the Authority introduced methods for updating depreciation similar to those envisaged for the invested capital. In particular, the Authority decided to differentiate the planned productivity recovery targets considering the differentiation in operating costs as a function of size of distributor, in such a way as to start convergence during the third regulatory period.

As for electricity sector regulation, during the third regulatory period the Authority introduced tariff mechanisms for the promotion of particular types of investment deemed useful for the development and the efficiency of distribution network (renovation of odorisation systems at control and measurement (REMI) pressure reduction stations and replacement of cast-iron pipes with hemp and lead joints). A 2% higher return over an 8-year period is provided as incentive for such investments, over and above the incentives provided by quality of service regulation.

It is finally recalled that, beginning with 2011, in order to send correct signals to operators in the interests of efficient development of network infrastructures, the tariff updates for new investments will be made on the basis of standard costs included in a price list to be defined by the Authority in a separate resolution.

Storage tariffs

With resolution no. 50/06 issued in 2006, at the end of the first regulatory period for storage, the Authority defined the criteria for the determination of storage tariffs for the second regulatory period (April 2006 – March 2010). In order to promote the improvement of existing reservoirs and the development of new ones, characterised by increasing costs, storage regulation features a single national tariff. To ensure that each company recovers the recognised revenues, a compensation mechanism has been introduced financed by an additional variable surcharge applied to energy handled in the corresponding reservoirs (a detailed description of storage tariff is provided in *Annual Report* of 2007).

Pursuant to resolution no. 50/06, storage companies submitted to the Authority the data required to validate the charges proposed for gas year 2008-09. After their examination, the Authority approved the proposed charges with resolution ARG/gas 35/08, set single nation-wide injection/withdrawal charges for storage activities and ratified the proposals for reducing such charges for supplying interruptible storage capacity.

---

improvements. The specific method takes into account the actual company data on costs as they appear in their annual accounting. All distributors must prepare a tariff proposal based on the ordinary method, which can be replaced the tariff proposal based on the specific method after approval by the Authority.

Balancing

The primary objective of the gas balancing reform, which went into effect beginning on October 1 2007, was to redefine the procedures and operating schedules for the allocation of balancing charges based on the responsibilities of individual users, as an essential precondition for achieving a daily commercial balance and for setting up of a balancing market. To this end the Authority defined new standard withdrawal profiles and gas use categories to be used uniformly throughout the country.

In April 2008, the Authority published a consultation document (DCO 10/08) on the *Possible evolution of the balancing service in the natural gas market*. The document sets out to identify a roadmap for the definition of a new gas balancing regime based on market criteria correctly allocating balancing costs among users and fostering the development of a regulated natural gas market. In particular, gas balancing reform is to be seen as a preparatory phase in the development of a transparent place (gas exchange) for the promotion of natural gas transactions, whether for all or only part of the gas. The Authority considers that correct pricing of resources for system balancing must be based on economic signals which are adequate to ensure the efficient use of resources, also in the light of interactions between the gas market and the markets using gas as a prevailing factor of production.

The document submitted for consultation is an exploratory enquiry considering the regulatory reference framework, the international context, the forthcoming development of transmission and re-gasification infrastructures, the required expansion of storage capacity and the existing gas supply obligations in terms of shares of national production and imported quantities. It describes balancing services within the scope commercial dispatch services, which include:

- allocation of transport capacity, which consists essentially in the assignment of rights of use of gas transport capacity to individual users;
- balancing service, which concerns the terms whereby third parties may exercise rights of use on the allocated transport capacity.

In the document the Authority makes a general enquiry into possible alternative development of the structural aspects and the characteristics of the balancing service with a special focus on:

- identity and role of the balancing service provider;
- relevant balancing period (gas day and hour) necessary to secure efficiency in its broad sense, allocation efficiency and transparency, in the medium to long term;
- programming/registration of transactions, with reference to the geographical dimension of the dispatching service supplied, the registration times and reporting procedure;
- procurement and management of balancing resources, to be selected based on an order of economic merit, at the same time as guaranteeing physical balance between withdrawals and injections;
- charges applied to users of balancing services in order to meet the costs incurred for procuring the resources required for balancing.

The consultation is currently at the stage of preparation of suitable measures for reforming the balancing service.

With resolution ARG/gas 75/08 of June 10 2008, the Authority launched the procedure for the definition of criteria for the settlement of any adjustments arising out of differences in allocation and/or metering required to bring the system into balance. As part of this process, on February 4 2009 the Authority published consultation document DCO 1/09 which focuses on adjustments for allocations and/or metering differences related to the months preceding the time window within which the transmission system operator still considers the transmission network balances to be provisional ("delayed corrections"). This contemplates the introduction of a transparent, non-discriminatory procedure for the correct identification of the physical and economic components of the users of the transmission service, which includes balancing, in such a way as to minimise related economic, financial and administrative impacts.

With reference to the existing balancing system and the applicable regulatory and legislative framework, the consultation document identifies both a methodology for pricing the physical adjustments related to delayed corrections, based on a reference price indicator (with different possible options), and alternatives for the frequency of sessions required to manage the economic differences.

In order to increase the efficiency of the current balancing system, on March 16 2009 the Authority published the consultation document DCO 3/09 regarding revisions in the treatment of gas quantities not subject to direct metering (network losses, unrecorded gas, differences resulting from pressure changes) as part of the gas balancing service. This takes into account the results of the enquiry, launched with resolution VIS 41/08 of April 15 2008 and concluded with resolution VIS 8/09 of February 3 2009, on the correct application of forecasts of unrecorded gas quantities in the natural gas transmission system in the period 2004-06. The Authority's proposal envisages that the transmission company take on the responsibility for defining the terms of the system-balance equation which are not subject to metering, in order to remove any elements of uncertainty affecting users of balancing services, such as the *ex post* allocation of unrecorded gas quantities reflecting ambiguities in meter readings or procedural irregularities.

In particular, the Authority proposes refunding the transmission company for the overall quantity of unmetered gas on an annual basis at the same time as providing incentives to the users of balancing services for gradually reducing these quantities. According to this proposal, the transport company would determine the reduction of balancing gas for each user of the service based on criteria defined by the Authority and communicate it sufficiently in advance to enable users to correctly plan injections/withdrawals and consequently reduce the balancing risk.

Quality and safety of gas services

Regulatory activity on the quality and safety of gas service is mostly concerned with safety, continuity and commercial quality in natural gas distribution and sales. In addition, some time ago the Authority also launched a consultation process on regulation of the quality of transport services so as to be ready to come into force of the third regulatory period (2009-12).

With resolution ARG/gas 120/08 of August 7 2008, the Authority approved the new *Regulation for the quality of gas distribution and metering services for regulatory period 2009-2012 (RQDG)*.

The RQDG was issued in the context of the procedure launched in September 2007 for reviewing quality of gas distribution, sales and metering services, conducted in parallel with the analogous procedure for the review of gas distribution and metering tariffs in the same regulatory period (described in a previous paragraph). Both procedures were included in the RIA three-year experimental programme.

Resolution ARG/gas 120/08 provides for the enactment of a Consolidated Text on the Regulation of the Quality of Gas Distribution and Metering in regulatory period 2009-2012, of which the RQDG is Part I.

The Authority published the RIA on its website illustrating the goals, motivations and contents of the regulatory options and proposals presented by the stakeholders in the course of the procedure on the quality of gas services, during which two consultation documents on distribution and metering services were issued: the first in February 2008 and the second in June 2008.

The RQDG encompasses all of the regulatory standards applicable to gas distribution and metering quality and replaces the Code on the Quality of Gas Services applicable to regulatory period 2005-08 (Annex A of resolution no. 168/04 of September 29 2004, and subsequent amendments). For economic and/or logistic reasons, a number of standards will continue to be applied throughout 2009 following the Code rather than the RQDG, as indicated in Resolution ARG/gas 120/08.

The procedures launched separately in 2006 and 2007 for reviewing commercial quality regulation of electricity and gas sales in the third regulatory period, were later merged in the dual fuel procedure concluded with the issue of resolution ARG/com 164/08 of November 18 2008, approving the *Code on the Regulation of the Quality of Electricity and Natural Gas Sales Services* (TIQV).

The TIQV was approved after a public consultation process involving the consumer associations and gas sector industries, and consisting of two consultation rounds in June and November 2008. The new Code sets stricter rules to ensure prompt management of complaints and correction of inaccurate invoices, with automatic compensations payable to consumers for failure to comply with the new standards. The TIQV also incorporates the previous regulation on quality of supply, including the quality of call-centre services formerly issued with resolution no. 139/07 of June 19 2007. This envisaged service obligations regarding the straightforwardness of the automatic answering system, opening hours, toll-free calls, customer information, standards for average waiting time, service level and accessibility.

The Authority approved stricter rules to improve the handling of complaints and introduced an obligation on retailers to identify the person and unit within their organisation responsible for handling the complaint and to provide customers with a satisfactory response. Moreover, following the separation between distributors and retailers after market liberalisation, retailers have been obliged to intermediate between consumers and distributors in order to simplify the procedures for making complaints.

Retailers have been obliged to reduce the time taken to examine invoicing complaints and specific standards have been introduced for coping with delays in remedying double invoicing, following supplier switching. In particular, double invoicing has to be amended within 20 days of receiving a request failing which the customer has to be paid an automatic compensation of 20 €.

The TIQV provides for an automatic indemnity of 20 € to customers whose complaints are not answered by retailers within 40 days. In addition, a specific 20 € automatic compensation has been established in case of failure to comply with the 90-day term for rectification of invoices. Requests for correction can be advanced for both invoices that have been paid as well as for those that are payable by instalments. The indemnities applied are designed to increase the certainty of response times and to ensure prompt answers; to avoid abuses, indemnities for the same complaint are payable not more than once per year to the same customer.

The TIQV will come into force on 1 July 2009, except for the provisions on the quality of the retailer's call-centre services which have been in force since 2008.

With resolution ARG/com 199/08 of December 23 2008, further rules were introduced at a greater level of detail to handle complaints for which retailers are obliged to request technical data from the distributor: for example, data on multiple complaints originating from large scale malfunctions; on the publication of comparative data on quality of service provided by other retailers as a means of improving customer choice of their electricity and gas suppliers; on the obligation of prompt communication between retailers and distributors.

Safety and continuity of gas distribution services

Safety of gas distribution services refers to the protection of persons and property from damage arising out of explosions, blasts and fires caused by distributed gas. It depends on: suitable gas odorisation through odorising substances for the quick detection of gas from leaks into the air; provision of emergency services following calls to swiftly restore system safety; elimination of gas leaks identified through inspection of the distribution system; cathodic protection of steel networks. Continuity of gas distribution services refers instead to the number and duration of gas supply interruptions affecting final customers.

The Authority first introduced regulation of safety and continuity of gas distribution services at the end of 2000 with resolution no. 236/00 of December 28 2000, which defined a system of service obligations for distributors and established nationwide basic and reference levels for a number of relevant indicators as well as obligations of data registration and communication to the Authority. In order to avoid that a set of service obligations result in driving operators to achieve only the minimum compulsory levels of safety, at the end of 2005 the Authority introduced a system of incentives for improving the safety of natural gas distribution which rewards operators providing greater safety levels compared to the minimum acceptable values (resolution no. 243/05 of November 22 2005).

The incentive mechanism is characterised by two independent components which reward, respectively, reductions in gas leakage and number of controls of the degree of gas odorisation compared to the annual compulsory minimum level fixed by the Authority.

The incentives are not foreseen in the case of distribution systems which have experienced a gas accident attributable to the distributor or for which the responsibility has yet to be ascertained. During the first three years of application, in 2006-08, access of distributors to the system of incentives was made on a voluntary basis.

Between 2006 and 2007 the number of distribution systems and final customers receiving incentives doubled, while the total value of the incentives grew by 33% to reachi more than € 5 million in 2007, almost equally divided between leakage and odorisation.

In 2007 a total of 14 companies subscribed to the bonus scheme, representing 1,043 out of a total of about 3,000 distribution systems and 44% percent of all final customers (8.7 as compared with 20.5 million customers. Incentives granted were approved with resolution ARG/gas 16/09 of February 16 2009.

In the third regulatory period, to achieve the general objective of improving safety in gas distribution, the Authority is passing from the system of voluntary subscription to incentives to compulsory application of rewards and penalties for all natural gas distributors, with penalties being imposed in cases of failure to achieve the compulsory annual improvements in the level of safety predetermined by the Authority.

To achieve this general objective, the Authority intends to focus on the following specific objectives:

- to favour the elimination of gas leaks in networks;
- to increase measurements of gas odorisation
- to rationalise the allocation of rewards and penalties applied safety improvements between the different components;
- to improve the emergency service, aiming at achieving uniform behaviour between distributors.

In order to give distributors sufficient time to adapt to the new mechanism of rewards and penalties, the Authority delayed the date of application to 2010, limiting it initially to distributors with more than 50,000 final customers. Its application will be extended gradually to all other distributors (with the exclusion of companies distributing gases other than natural gas).

More specifically, the schedule for the implementation of the rewards and penalty scheme is as follows:

- on January 1 2010 for natural gas distributors which as of December 31 2007 served at least 50,000 final customers;
- on January 1 2011 for natural gas distributors which as of December 31 2007 served less than 50,000 and at least 10,000 final customers;
- on January 1 2012 for natural gas distributors which as of December 31 2007 served less than 10,000 final customers.

Natural gas distributors with at least 50,000 final customers were able to participate voluntarily in the new mechanism for improving safety already in 2009, by sending a

written notice to the Authority no later than March 31 2009. However, unlike the previous voluntary scheme, the new regulation envisages that incentives for safety gains must refer to the set of all distribution plants operated by the distributor.

At the beginning of 2009, the Authority investigated the fulfilment of emergency service obligations by distributors. As a result of this activity, on February 23 2009 the Authority issued resolution VIS 13/09 ordering 19 gas distributors to comply with the regulatory provisions regarding gas emergency call-centres by March 31 2009, on pain of opening sanctioning proceedings.

More specifically the regulation provides that distributors activate one or more telephone lines exclusively dedicated to emergency services, answered directly by an operator to avoid customers having to dial other phone numbers. However, it was found that in the most severe cases of non compliance (12 out of 19) the distributors limited themselves to activating only mobile phone numbers while in the other cases (the remaining 7) both mainline telecommunication and mobile numbers were provided, with the risk of causing confusion among users calling to report a potential danger (for example, a gas leak).

At the beginning of 2008, the Authority and the Italian Gas Committee (CIG) signed a Memorandum of Understanding for initiatives in support of market safety and efficiency. The CIG is a member of the Italian Standards Organisation (UNI) with institutional functions in relation to setting of standards, prevention, training and information on safety in the use of combustible gases. Activities of the CIG provide a natural technical complement to the regulatory provisions of the Authority in the gas sector. The 3-year agreement signed between the two institutions contemplates strengthened coordination and cooperation in activities of common interest in the gas sector for the development of an increasingly advanced regulatory framework.

Commercial quality of gas distribution and retail sales

The regulation of the commercial quality of gas distribution and retail sales was introduced on January 1 2001 with resolution no. 47/00 of March 2 2000 and was subsequently revised in 2003-04; in light of the criticalities identified in the implementation of the previous regulation and the positive results of the more recent regulation, the latter was substantially confirmed in the Code on the Quality of gas Distribution, Metering and Sales Services approved with resolution no. 168/04.

With resolution ARG/gas 51/08 of April 29 2008, the Authority changed the Code on the Quality of Services in relation to the inspection of metering units established *inter alia*:

- the replacement of the metering unit by the distributor free of charge when the equipment provides defective readings;
- the introduction of a time limit for the replacement of metering units corresponding to 90% replacement within a maximum term of 10 working days from the date of notification to the retailer of faulty readings;
- the application of more favourable charges to domestic customers requesting meter inspection: specifically, the introduction of a 5 € fee if metering errors are identified not

exceeding the admissible levels, depending on the age of the metering unit and provided that the same has not already been inspected in the last 5 calendar years.

In the case of defective meters, the resolution also obliges distributors to recalculate the customer's historic consumption in accordance with the procedures and within the time limits established by articles 9, 10 and 11 of resolution no. 200/99 of December 28 1999. Given the importance of the issue, the Authority launched a technical consultation with the associations of distributors and retailers on the interpretation of some articles of this resolution. Subsequently, with resolution ARG/gas 90/08 of July 3 2008, the Authority modified the Code on the Quality of Services establishing that metering regulation prevails over technical regulation.

These modifications were incorporated in the RQDG together with the following changes related to commercial quality:

- from January 1 2009, the extension the regulation to all natural gas distributors with fewer than 5,000 low pressure customers but more than 3,000; from January 1 2010, the extension of the regulation to all natural gas distributors with fewer than 3,000 low pressure customers;
- the obligation on distributors to prepare cost estimates for works requested by medium to high pressure customers that:
  - include the costs of necessary network extensions and pressure upgrades, taking into account the minimum pressure requirements of the customer;
  - specify the minimum supply pressure among the essential data to be included in the cost estimate;
  - guarantee the minimum supply pressure to individual customers through network extensions and pressure upgrade.
- the introduction of specific standards for gas supply pressure.

In addition, with a view to achieving greater convergence between the regulation of commercial quality of gas and electricity services, the provisions on customised appointments and automatic compensations were revised, more specifically:

- when the appointment fails owing to absence of the customer, the concept of "postponed appointment" replaces that of "customised appointment" and the time required to perform the task runs from the moment in which the customer requests the new appointment;
- the amount of compensation increases in proportion to the delay in the performance of the service and terms for the payment of automatic compensations is revised.

4.1.3 Unbundling regulation

Since January 1 2002, gas transport has been subjected to mandatory legal separation from all other gas industry activities, except for storage with respect to which it must nevertheless have separate accounting and management. Storage is therefore subject to

legal unbundling from all other activities of the gas sector excepting transport. The distribution activity is legally unbundled from all other activities of the gas sector.

In accordance with the gas industry liberalisation law, in 2001 the Authority has imposed rules for accounting and administrative unbundling of companies operating in the gas sector which came into effect on July 1 2003. Based on the provisions set in 2001, gas transport and distribution companies draft separate statements of assets and liabilities and balance sheets for each activity, as well as more detailed annual accounts for exclusive confidential use by the Authority. These accounts are drafted according to the guidelines fixed by the Authority which has precisely specified the subdivisions of each activity , the criteria for sharing common costs and revenues, financial revenues and direct taxes. Finally, the Authority has ruled that the separate accounts report transactions between legal entities belonging to the same group and that separate consolidated financial statements are drafted for each entity. If entities fail to comply with these regulatory provisions, the Authority may impose administrative fines. Separate annual accounts, both those published and those for confidential use by the Authority, are subject to audit and certification by a qualified auditor attesting their conformity with Italian civil and commercial law as well as with the regulatory provisions.

In January 2007 the Authority updated unbundling regulation with resolution no. 11/07 which introduced a number of simplifications in the rules previously in force and introduced new standards on functional unbundling, implementing European Directives 2003/54/EC and 2003/55/EC. More specifically, the new regulation obliges distributors with 100,000 or more customers to provide for functional separation of distribution from other activities (such as metering). Distributors serving fewer than 100,000 customers nevertheless have to apply accounting unbundling with the exception of "marginal" cases (serving fewer than 5,000 customers).

In the field of unbundling, the only new development in 2008 was the definition of *Guidelines for the preparation of the programme for implementing unbundling requirements* with resolution ARG/com 132/08 of September 23 2008, implementing the provisions resolution no. 11/07 of January 18 2007. Said programme must be prepared by the independent management of the functionally unbundled activities and satisfy minimum compulsory criteria to avoid discriminatory behaviour in the management of activities, taking into account differences in size and organisation and between electricity and gas companies.

The *Guidelines* illustrate the minimum obligations that must be fulfilled by independent management in the implementation of functional unbundling. In particular, specific requirements must be satisfied in relation to: the organisation and administration of the unbundled activities, the powers of the independent management; the procedures for budget preparation and for planning infrastructure development; the procurement of goods and services; the decision-making flows; the measures taken to ensure the physical separation of databases containing commercially sensitive information. Some parts of the resolution are currently subject to litigation.

Table 4.5 Summary information on unbundling in the gas sector

YES/NO

	TRANSMISSION	DISTRIBUTION
Separate offices	Y	N
Separate presentation of organisation and management	Y	N
Unbundling of accounts and guidelines	Y	Y
Audits of unbundled reports	Y	Y
Publication of unbundled accounts	N	N
Separate board of directors (some members are also on the boards of associated companies)	Y	N

Source: AEEG.

4.2 Competition

4.2.1 Description of the wholesale market

Preliminary figures published by the Ministry for Economic Development indicate that gross domestic consumption of natural gas in 2008 was essentially stable at around 85 G(m^3) with only a small 0.02% contraction compared to 2007, in spite of the rather rigid weather conditions in the late months of 2008. Zero growth was partly due to a mild winter but mostly caused by the economic crisis which developed gradually to culminate in the early months of 2009. This is evident from the fact that the downturn was strongest in the industrial sector (-9.1%), while the consumption in power generation was almost stable and actually rose to +6.1% in the services and residential sector.

In line with longer term trends, domestic production of natural gas continued to fall reaching 9.3 G(m^3) from 9.7 in 2007. Imports grew 3.9% from 73.9 to 76.9 G(m^3), similarly exports grew from 68 to 210 M(m^3). Part of the gas, nearly 1.5 G(m^3), remained in storage. As a consequence domestic production and imports contributed, respectively, 11% and 89% to gross consumption. Considering that another 1.5 G(m^3) were consumed for the operation of the gas sector or disappeared as network losses, net demand in 2008 amounted to 83.4 G(m^3), 41% in thermal power generation, 36% in the residential and services sector, 21% in industry and 2% in other sectors (agriculture, road transport and non-energy uses).

Production was virtually under the control of the Eni group (80% of the total), with Edison and other smaller producers producing the remaining 20%. The incumbent also accounts for 60% of imports to which might be added another 4 G(m^3) or so of gas under Eni contracts which selected gas companies purchased from Eni before crossing the Italian border.

Import capacity increased by about 1.9 G(m^3) from the previous year, but practically all of this increase is reserved for long-term import contracts.

As in the previous year, the three corporate groups[20], Eni, Enel and Edison had a market share greater than 5% of the overall gas supplied (that is produced or imported), with an overall total share of 85.0%; other market participants held shares of imported and/or produced gas lower than 1.8% of the market. The share of gas available for sale by these three companies was slightly greater (85.2%).

About 80% of imports originate in non-EU Countries and arrive in Italy almost exclusively through pipelines with only 2% of being transported by ship from Algeria. The main sources of pipeline import are Algeria and Russia. Imports from Algeria in 2008 amounted to 25.9 G(m^3) of which: 24.4 by pipeline, at the national network entry point of Mazara del Vallo, and 1.6 by ship, at the re-gasification plant of Panigaglia. Altogether the Algerian gas covered 33.8% of Italy's requirements. Russia supplied 24.6 G(m^3), or 32% of total imports through the entry points of Tarvisio and Gorizia. The third exporter is Libya, which supplied 9,9 G(m^3) or 12.8% of overall imports to Italy.

Significant quantities of gas are also imported from the Netherlands (10.4%) and Norway (6.9%), entering the national network through the entry point of Passo Gries at the Swiss border. The remaining 4.1% of imports in 2008 came from other European countries, of which almost 1% from Croatia.

Table 4.6 Wholesale market development

Year	Total Demand (A) G(m^3)	Peak Demand (B) M(m^3)/day	Production G(m^3)	Import Capacity G(m^3)/year				No. of companies with a production share and importation capacity >5%	No. of companies with a share of available gas >5%	Share of the three leading wholesalers
				Total	Priority Access for Transit (C)	Priority Access for LT Contracts	Unreserved Access			
2001	125.1	n.a.	15.5	n.a.	n.a.	n.a.	n.a.	n.a.	2	68.2%
2002	111.8	n.a.	14.3	84.0	0.5	77.3	4.2	3	3	67.4%
2003	123.6	n.a.	13.9	84.8	0.5	78.8	3.1	3	3	63.8%
2004	127.3	386	12.9	88.7	0.5	84.6	2.1	3	3	62.4%
2005	138.3	421	12.0	90.6	0.5	73.5	16.7	3	3	66.7%
2006	134.3	443	11.0	92.3	0.5	74.5	17.3	3	3	66.5%
2007	136.1	429	9.7	98.4	0.5	86.1	11.8	3	3	63.8%
2008	150.3	410	9.3	100.3	0.5	96.1	3.7	3	3	57.6%

(A) Gas volumes sold in the wholesale and retail national markets; inclusive of any resale.

(B) Injection peak reached on 26/01/2004, 19/12/2005, 25/01/2006, 18/12/2007 and 18/02/2008; the volumes shown include injections, supplies from storage facilities, losses and consumption for network operation.

(C) In Italy transits receive the same treatment as all other transport; the values included in the table refer to a transit contract with long term priority access.

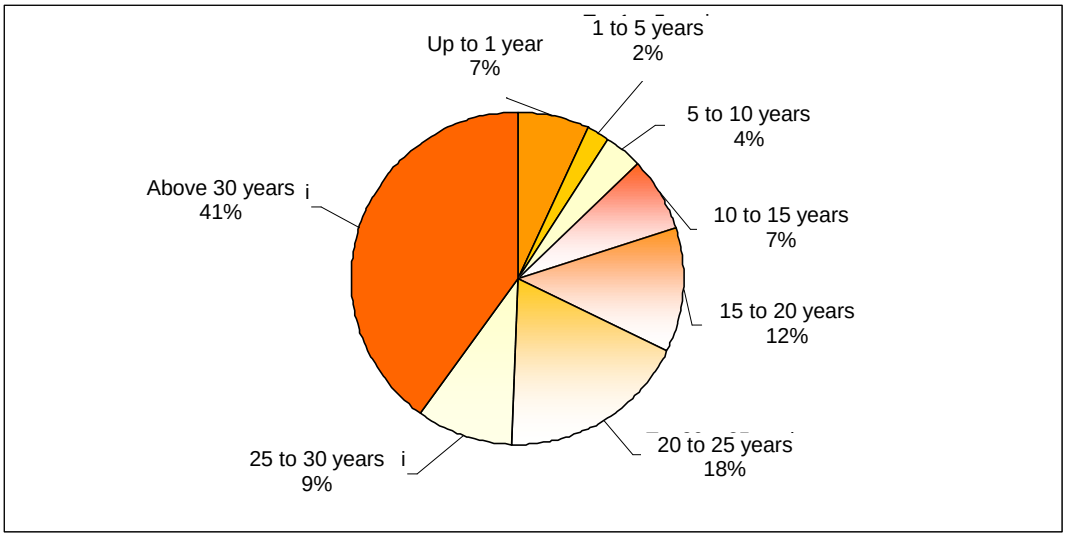
Source: AEEG calculations on data supplied from Snam Rete Gas or declared by other market participants.

[20]According to art. 7 of law no. 287 of October 10 1990 (establishing the Antitrust) a company belongs to a group even also when an affiliate is *de facto* controlled by the parent company.

The data collected by the Authority in its annual survey of gas companies, indicates Italy's continuing dependence on contracts extending over more than ten years. Contracts in force in 2008 with more than 30 years of full duration account for 41% of the total (figure 4.1), followed by contracts with full duration between 20 and 25 years (18%) and by those with full duration between 15 and 20 years (12%). Contracts with full duration shorter than or equal to one year amount to just 7% of total contractual volumes.

Figure 4.1 Import contracts in force in 2008 broken down by full duration

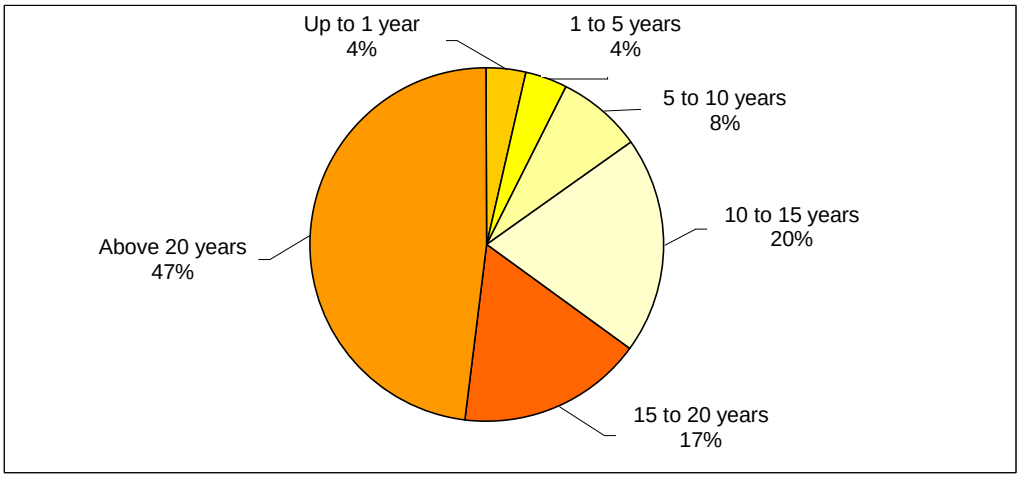
Percentages in volume terms



Source: AEEG Annual Survey of market participants.

Figure 4.2 Import contracts in force in 2008 broken down by residual duration

Percentages in volume terms



Source: AEEG Annual Survey of market participants.

If the same contracts are analysed based on residual duration in 2008 (figure 4.2) contracts currently in force are still very long lived with almost half expiring in 20 years or more and 65% in 15 years or more, in terms of contracted volumes. Only 15% of contracts currently in force will expire in the next 10 years.

Total demand of the gas sector, in terms of gas volumes sold on the wholesale and retail markets (including resale) reached 150.3 G(m^3) in 2008 with a remarkable 10.4% growth over 2007 (table 4.6). Four market participants had a market share greater than 5%, compared to 3 in the previous year, and included aside from Eni, Enel and Edison also the group A2A (originating from the merger of AEM Milano and ASM Brescia). The four groups taken together covered 64.4% of total demand with shares of 36.1%, 12.4%, 9.1% and 6.8%, respectively, followed closely by the E.On and Hera groups, with 4.9% and 3.1%. The remaining competitors held shares lower than 2.2%. In 2007 the three groups with a share greater than 5% accounted for 63.8% of total demand.

Table 4.7 Gas market

G(m^3)

	Total Consumption(1)	Trading in the Organised Spot Market	Trading in the Forward Hub Market	Bilateral OTC(2) Trades	Of which trades at the PSV
2002	71.0	not applicable	not applicable	1.7	-
2003	77.4	not applicable	not applicable	2.7	-
2004	80.3	not applicable	not applicable	5.4	-
2005	86.2	not applicable	not applicable	7.0	-
2006	84.5	not applicable	not applicable	7.4	4.3
2007	84.9	not applicable	not applicable	12.1	9.7
2008	84.9	not applicable	not applicable	16.4	14.9

(1) Gas availability gross of network consumption and losses.

(2) Gas volumes purchased at the PSV or at entry points to the national network. Such volumes are purchased in the secondary market; the bulk of the gas is purchased in the primary market (directly from domestic producers, importers and storage)

Source: AEEG Annual Survey of market participants.

Purchases in the secondary market have been growing rapidly as evidenced in table 4.7. In 2008, transactions registered at the PSV totalled 16.4 G(m^3). However, 1.5 G(m^3) of these relate to gas redelivery at the Panigaglia re-gasification terminal which, though registered at the PSV, are not attributable to trading between participants in the secondary market. Trading at the PSV in 2008 therefore amounted to 14.9 G(m^3) against the 9.7 G(m^3) in 2007, with a 53.6% increase to reach one fifth of overall consumption, excluding network losses, of 83.4 G(m^3). About 1.1 G(m^3) of the total transactions refer to volumes released by Eni as provided for by the Italian Antitrust Authority (AGCM).

The strong growth of trading at the PSV since 2004 in terms of both volumes and number of transactions, particularly in the last three thermal years, has been facilitated by measures adopted by the Ministry for Economic Development and by the Authority to increase liquidity in the regulated gas capacity market. Among these is the provision (effective since November 2006) allowing traders to deal at the national hub without being users of the transmission system and, more recently, the obligation on importers to offer quotas of imported gas at the PSV.

4.2.2 Description of the retail market

Table 4.8, showing the main features of competition in the retail market in 2008, indicates significant changes in the competitive framework with respect to the previous year, despite the stable level of consumption (including network losses): which amounted to 84.88 G(m^3), compared to 84.90 G(m^3) in 2007.

Table 4.8 Development of the retail market 2001 - 08

Year	Gross consump-tion G(m^3) (A)	No. of Companies with >5% share in the Retail Market	No. of Inde-pendent Companies (B)	Market Shares of the first three Companies (%)				Cumulative % of customers opting for supplier switch (by volume)			
				Power Genera-tion (E)	Large Industries (E)	Small and medium enterprises (C, G)	Very small enterprises and residential (D, G)	Power Genera-tion (E)	Large Industries (B, E)	Small and medium enterprises (C, G)	Very small enterprises and residential (D, G)
2001	70.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2002	70.0	4	n.a.	85.7		54.3		n.a.	n.a.	n.a.	n.a.
2003	76.4	5	n.a.	74.4		45.6		n.a.	n.a.	n.a.	n.a.
2004	80.6	5	110	80.3	54.1	n.a.	33.2	53.0		6.0	1.0
2005	86.3	3	123	91.2	71.1	43.1	47.3	7.0		4.0	1.0
2006	84.5	3	182	89.7	71.1	47.3	47.1	7.0		4.0	1.0
2007	84.9	3	178	84.7	67.0	47.1	44.6	n.a.		4.7	1.0
2008	84.9	4	184	78.1	66.4	41.4	49.0	47.4		7.3	1.3

(A) Including self consumption and network losses
(B) Fully independent of distribution
(C) Trade and service sector
(D) Domestic customers
(E) Standard consumers with annual consumption > 200,000 m^3/year.
(F) Standard consumers with annual consumption of 5,000-200,000 m^3/year.
(G) Standard consumers with annual consumption < 5,000 m^3/year.

Source: AEEG Annual Survey of market participants.

Based on the annual survey conducted by the Authority on the evolution of the gas sector, sales to the retail market in 2008 were equal to 69.9 G(m^3). Adding 13.45 G(m^3) of self consumption (gas directly consumed in the power plants owned by the suppliers), then overall consumption in Italy net of network losses was equal to 83.38 G(m^3) in agreement with the figures published by the Ministry for Economic Development.

Out of 318 survey respondents, 171 sold gas exclusively to retail market, 91 sold gas to other suppliers as well as directly to retail market and 25 sold gas to other suppliers (31 remained inactive in the course of 2008). Among groups selling to the retail market, four had nationwide operations (Eni, Enel, Edison, Energie Investimenti) and ten groups operated on most of the national market (at least 10 regions out of the 19 with gas distribution infrastructures). Gas suppliers unaffiliated and therefore independent of distributors numbered 184 out of a total of 318 respondents, or 57.9%. A much larger number of suppliers were independent of transporters, 303 or 95.3%.

In 2008 the overall level of market concentration in terms of the share of the first three groups(including self-consumption) declined to 63.4% from 66.5% in 2007. As also in 2007, the market share of Eni declined (to 37.5% from 42.7% in 2007) in favour of Enel (15,4%

compared to 13.8% in 2007) and Edison (10.5% from 10.1%). Furthermore, the number of suppliers with a share greater than 5% increased from 3 to four with the addition of the A2A group originating from the merger of two pre-existing groups (AEM Milano and ASM Brescia).

The level of concentration declined in all principal sectors with the exception of the residential sector (inclusive of very small enterprises). The order of importance varied somewhat between sectors as:

- Eni followed by Edison and then by Enel, with 78.1% of overall sales to the power generation sector;
- Eni followed by Enel and by Energie Investimenti, with 66.4% of overall sales to large industries;
- Eni followed by Energie Investimenti and by Enel, with 41.4% of overall sales to small and medium enterprises in the trade and services sector;
- Eni followed by Enel and by Hera with 49.0% of overall sales to households (including very small enterprises).

The picture changes somewhat if gas quantities produced, imported and/or purchased and used for self generation by the suppliers are excluded from the computations. In this case Edison, which uses much of its gas for power generation, loses ground with respect to E.On. More specifically, companies with more than 5% of sales in 2008 were: Eni, with 38.4% (as compared with 44% in 2007), Enel with 18.3% (16.4% in 2007) and E.On with 5.6%. In 2007 the third group was Edison but with a lower share of 3.1%.

Table 4.9 Shares of the first three groups in end customer sales in 2007 – 08

Excluding self consumption by suppliers

Consumption Sector	2007		2008	
Power Generation	86.1%		81.0%	
	Eni	47.8%	Eni	42.5%
	Enel	32.2%	Enel	29.8%
	Edison	6.2%	Edison	8.7%
Industry	67.0%		66.4%	
	Eni	55.1%	Eni	46.5%
	Enel	6.8%	Enel	11.8%
	Energie Investimenti	5.0%	Energie Investimenti	8.1%
Trade and Services	47.0%		41.3%	
	Eni	30.1%	Eni	20.8%
	Hera	11.3%	Energie Investimenti	10.4%
	Enel	5.7%	Enel	10.1%
Domestic	44.5%		48.9%	
	Eni	29.0%	Eni	29.9%
	Enel	10.0%	Enel	12.9%
	Hera	5.5%	Hera	6.1%

Source: AEEG Annual Survey of market participants.

The overall concentration level in the power generation sector shown in Table 4.9 increases because the larger groups competing with the incumbent (above all the Enel and Edison groups) are also power generators and use very significant gas volumes in their own energy generating plants, consequently reducing the quantities sold on the retail market. On the other hand, no significant change appears in the concentration levels by type of customer or in the order of the first three groups in the other sectors of consumption.

Foreign penetration in the retail market does not seem significant. Among respondents in the Authority's survey, as few as 27 were the retailers with at least one foreign shareholder (with a direct capital share not below 30%). Together they account for 2.7% of the total market (including self-consumption) and 1.2% of final sales. The leading companies with foreign shareholders selling gas to power generators included EGL (Elektrizitats-Gesellschaft Laufenburg), BG Gas Marketing Trading Italia and Shell Italia E&P (which together cover 3.8% of this market); the first three selling to large industries are the Burgo Group, Spigas and Electra Italia (with an overall share of 1.3%); the first three companies selling to customers in the trade and service sectors are Gas Natural Vendita Italia, EGL Italia and Selgas (with an overall share of 1.9%); finally, the first three companies with at least a foreign shareholder selling to household consumers are Gas Natural Vendita Italia, Libera Energia and Energetica (with an overall share of 1.3%).

Integration between supply and retail sales was significant with the first three companies (Eni, Enel and Edison) accounting together for 85% of the gas produced and imported and for 61.6% of the gas sold to consumers (net of self-consumption) in 2008. In all there 24 companies operating in both supply and retail sales in this year.

Table 4.10 Retail market by consumption sector

Customers in thousands; volumes in M(m^3)

	RESIDENTIAL	TRADE AND SERVICES	INDUSTRY	ELECTRICITY GENERATION	TOTAL
CUSTOMERS					
Self-generation	2	1	10	0,05	12
Liberalised market	824	468	80	0,48	1,372
Protected market	17,597	731	82	0,06	18,411
TOTAL	18,423	1,200	172	0,60	19,795
VOLUMES					
Self-generation	56	43	51	13,305	13,454
Liberalised market	1,704	3,967	19,824	24,692	50,187
Protected market	17,001	2,015	718	2	19,735
TOTAL	18,761	6,025	20,592	37,998	83,377

Source: AEEG Annual Survey of market participants.

The retail market ((Table 4.10) consists of 20 million customers with the following breakdown: 18 million in the residential sector (including very small enterprises), 1.2 million in the trade and service sector, 172.000 in industry and 600 in the power generation sector. In terms of volumes, the proportions are the reverse; including self generation the

household sector absorbs 18.8 G(m^3), trade and services 6 G(m^3), industry 20.6 G(m^3) and power generation 37.6 G(m^3).

The percentage of customers served in the liberalised market increases from the residential sector with 4.5% to gas-intensive sectors or sectors for which gas is a key input of the production process, being equal to 39% in trade and services, 49% in industry and 89% in the power generation.

The data on retail sales by sector, consumption class and type of market, reported in table 4.11, show a strong shift to the liberalised market with size of consumption. As will be further discussed further in the following paragraph on prices, very few customers with consumption greater than 200,000 m^3 have remained in the protected market preferring the contractual conditions regulated by the Authority. Moreover, their number and overall gas purchases are shrinking in time: in 2008, gas sold on protected terms to customers with consumption greater than 200.000 m^3 amounted to just 202 M(m^3) compared to more than 19 G(m^3) sold on protected terms to customers with less than this level of consumption.

Table 4.11 Retail sales by sector, consumption class and type of market

M(m^3)

SECTOR	CUSTOMERS BY ANNUAL CONSUMPTION CLASS (m^3)					TOTAL
	< 5,000	5,000-200,000	200,000 – 2,000,000	2,000,000 – 20,000,000	> 20,000,000	
Residential	14,520	2,392	72	18	–	17,001
Trade and services	526	1,427	60	1	–	2,015
Industry	92	575	45	5	–	718
Power generation	0	1	1	0	–	2
TOTAL VOLUMES SOLD AT PROTECTED PRICES	15,138	4,395	178	24	–	19,735
Residential	693	768	175	34	34	1,704
Trade and services	514	1,801	1,058	565	28	3,967
Industry	105	987	3,952	7,719	7,061	19,824
Power generation	5	12	513	875	23,286	24,692
TOTAL VOLUMES SOLD AT MARKET PRICES	1,317	3,568	5,344	9,193	30,766	50,187
TOTAL	16,455	7,963	5,522	9,217	30,766	69,922

Source: AEEG Annual Survey of market participants.

Supplier switching

The annual survey conducted on natural gas transport system operators and distributors in 2008 included questions on supplier switching, quantifying the number of customers changing supplier in the course of the year. The use of a new methodology compared to previous years, in accordance with the definition of the European Commission, makes the data presented in this section not comparable to those published on other occasions by the Authority, or with those contained in the *Annual Reports* of past years.

From the survey returns it may be concluded that the percentage of all customers changing their gas supplier in 2008 was 1.2% in number, corresponding to 34.9% in terms of gas volumes. Table 4.12 shows the details of supplier switching differentiating between consumption classes. In evaluating these results it should be borne in mind that the number of customers decreases very rapidly with increasing consumption class: for example, only about 250 customers consumed 20 M(m^3)/year or more in 2008.

Supplier switching increases with customer size, because of the higher costs of gas purchases, the customer's better knowledge of the sector and greater ability to make informed choices. The data collection methodology nevertheless fails to exclude cases of switching back to the previous supplier and, even more important, the reasons for this.

Table 4.12 Supplier switching by size of consumption in 2008

Per cent

Customer size class	By number (outlets)	By volume
< 5,000 m^3	1.1%	1.3%
5,000 – 200,000 m^3	3.7%	7.3%
200,000 – 2,000,000 m^3	11.5%	16.0%
2,000,000 – 20,000,000 m^3	28.8%	28.7%
> 20,000,000 m^3	44.4%	55.7%
Total	1.2%	34.1%

Source: AEEG Annual Survey of market participants.

Average selling prices

The price of gas in Italy can be freely determined since full market opening in 2003. Owing to the fact that liberalisation took place in a context of poor effective competition, it was deemed appropriate to retain protected price conditions for the weaker customers (specifically households and small non-domestic users) by obliging retailers to offer the prices determined by the Authority in parallel with their customised proposals. This protection has been gradually reduced over time. Since October 2006, the protected tariff obligation applies exclusively for supplies to domestic customers consuming more than 200.000 m^3, though there are some customers with higher levels of consumption that have not yet negotiated a new contract. The average prices applied in the gas market and reported in table 4.13 therefore distinguish between protected customers accepting the pricing terms calculated by the Authority and customers in the liberalised market paying a price freely negotiated with suppliers.

The data collected in the Authority's survey of 2008 shows that the average price of gas net of taxes and weighted with the volumes sold, applied by retailers or wholesalers operating in the final market, was equal to 39.24 c€/m^3 (Table 4.13). This represents a 21.5% increase from the average of 32.29 c€/m^3 in 2007. The rather high increase is expected on the basis of the strong growth in oil prices (33.8% in the same period) to which the price of gas is linked.

The average price for gas supplies to the protected market was 47.45 €c/m³ compared to 36.01 €c/m³ in the liberalised market. The price escalation form the previous year, was however highly differentiated with the greatest increases in the liberalised market and in the higher consumption classes. Compared to an average 10% growth in the protected market, the gas sold in the liberalised market rose by 28%. The differentiation depends not so much on the type of market (protected versus free) as on the average size of customers.

Table 4.13 Average prices of sales net of taxes in the retail market (€c/m³)

CONTRACT AND CUSTOMER PROFILE	2004	2005	2006	2007	2008	% VAR. 2008/2007
PROTECTED MARKET	33.65	35.36	41.57	43.15	47.45	10.0
Consumption below 5,000 m³	35.32	37.01	43.32	44.59	48.66	9.1
Consumption of 5,000 to 200,000 m³	30.44	32.12	37.94	39.16	43.66	11.5
Consumption of 200,000 to 2,000,000 m³	27.04 (A)	29.39 (A)	32.64 (A)	33.75	38.97	15.5
Consumption of 2,000,000 to 20,000,000 m³				33.28	38.89	16.9
Consumption above 20,000,000 m³				–	–	–
LIBERALISED MARKET	18.76	23.23	28.53	28.13	36.01	28.0
Consumption below 5,000 m³	32.99	31.95	41.99	41.01	44.64	8.9
Consumption of 5,000 to 200,000 m³	27.24	29.76	35.53	37.10	37.41	14.0
Consumption of 200,000 to 2,000,000 m³	18.46 (A)	23.00 (A)	28.07 (A)	30.86	37.41	21.2
Consumption of 2,000,000 to 20,000,000 m³				27.85	35.13	26.1
Consumption above 20,000,000 m³				26.39	34.90	32.2
TOTAL	23.13	26.89	32.61	32.28	39.24	21.5

(A) Up to 2006, there was no distinction between customer classes for consumption levels greater than 200,000 m³. The data are therefore not directly comparable with those of 2007 and 2008.

Source: AEEG Annual Survey of market participants.

The results by customer size confirm that, over the last few years, customers in the protected market have been paying higher prices than those in the liberalised market with similar consumption profiles. However, as already pointed out, the price increases have been significantly more contained as customer size grows in terms of consumption.

The smaller customers of the protected market, with consumption below 5,000 m³/year pay on average 48.66 €c/m³ in 2008. This is close to the average national price calculated for a standard residential customer consuming 2,700 m³/year, equal to 46.83 €c/m³ in the same year (equal to 74.38 €c/m³ gross of taxes).

Prices in the protected market fall appreciably with increasing consumption, more rapidly for the lower levels of consumption. The price differential with respect to the highest consumption class (2,0-20,0 M(m³) decreases from 9.77 €c/m³, for the lowest consumption class, to 4.77 €c/m³ to 0.08 €c/m³. The highest consumption class, with more than 20 M(m³), is not represented in the protected market. The other two classes with consumption greater than 200,000 m³ continue to exist only because of a number of customers that still have to negotiate new contracts and have retained the contractual conditions protected by the Authority. However, the number of such customers is shrinking over time with only 202 M(m³) of gas being purchased in this category in 2008, compared to more than 19 G(m³) sold on protected terms to customers with consumption below 200,000 m³ and

almost 15 G(m^3) sold on the liberalised market to customers consuming more than 200,000 m^3.

Prices offered on the liberalised market are more sensitive to customer size, with the differential declining more slowly than in the protected market compared to the average price of 34.90 €c/m^3 paid on average by the largest customer class. As already recalled in Annual Report of 2007, it is however worth noting that distribution costs are much greater for smaller consumers, explaining much of the price differences between consumption classes.

A breakdown of average consumer prices by sector and customer size and by sector, provided in table 4.14, confirms that the prices paid by customers in the protected market are higher than those paid in the liberalised market in practically all sectors and customer size classes. Also the results of the survey indicate that the decline in prices with customer size is more marked in the liberalised market.

However, in the residential and in the trade and services sectors, differences between the protected and liberalised markets are less significant, at least up to levels of consumption of 2 M(m^3)/year. Beyond this volume and in the other sectors (industry and power generation) the differentials are more significant. The different prices paid by customers of the protected and liberalised markets in the various sectors is largely accounted for by the corresponding increase in overall consumption: the differential between protected and liberalised prices amounts to 4.25 €c/m^3 for the residential sector as a whole; to 3.65 €c/m^3 for the trade and services sector; to 7.39 €c/m^3 for the industrial sector; to 6.87 €c/m^3 finally, in the power generation sector, with a few small to medium sized consumers.

Table 4.14 Retail prices by type of market, sector of consumption and customer size

c€/m^3

CONTRACT TYPE AND SECTOR	ANNUAL CONSUMPTION CLASS (m^3)					TOTAL
	< 5,000	5,000–200,000	200,000 – 2,000,000	2,000,000 – 20,000,000	> 20,000,000	
Residential	48.68	44.20	41.50	47.33	-	48.02
Trade and services	48.05	43.07	38.79	36.20	-	44.24
Industry	47.57	42.89	35.17	39.03	-	42.98
Power generation	50.81	43.04	40.73	-	-	41.94
AVERAGE PRICE IN THE PROTECTED MARKET	48.66	43.66	38.97	38.89	-	47.45
Residential	44.09	44.50	41.76	39.14	36.10	43.77
Trade and services	46.16	42.26	37.91	35.54	34.16	40.59
Industry	41.25	40.61	36.96	34.97	34.73	35.59
Power generation	35.34	38.90	38.29	36.12	34.95	35.07
AVERAGE PRICE IN THE FREE MARKET	44.64	42.27	37.41	35.13	34.90	36.01
TOTAL AVERAGE PRICE	48.33	43.07	37.45	35.16	34.90	39.24

Source: AEEG Annual Survey of market participants.

Customer satisfaction and management of complaints

The number of complaints, appeals and notifications received by the Authority from both individual customers and consumer associations continued to grow as in previous years, increasing by 79% in 2008. In the period between April 1 2008 and March 31 2009 the number of communications of all types regarding the gas sector was 27% of total. Specifically, out of the 8,691 communications sent to the Authority 2,368 referred to the gas sector[21], with a 55% increase over the previous year, of which 94% were complaints and appeals, 4% information requests and the remaining 2% notifications (Table 4.15).

Communications on the gas sector were far less numerous than those on electricity (about one third), due both to the smaller number of customers and lower degree of market development. The smaller number of complaints, particularly on supplier switching and the Commercial Code of Conduct, is probably also due to the lower propensity to change supplier and to the smaller number of market offers.

Table 4.15 Communications received by the Authority on the gas sector

April 2008 – March 2009

COMMUNICATIONS	GAS SECTOR	TOTAL
Complaints and appeals	2227	8044
Requests for information	101	429
Notifications	40	218
TOTAL COMMUNICATIONS	2368	8691

Table 4.16 Subjects of the communications received by the Authority

SUBJECTS OF COMMUNICATIONS	APRIL 2007 – MARCH 2008		APRIL 2008 – MARCH 2009	
	No.	%	No.	%
Invoicing	465	30.4	1088	45.9
Contracts & commercial quality/supplies	311	20.3	422	17.8
Connections	351	22.9	362	15.3
Market and competition issues	191	12.5	154	6.5
Gas meters	66	4.3	112	4.7
Bills	24	1.6	49	2.1
Disconnections	38	2.5	38	2.2
Metering	14	0.9	36	1.5
Tariffs	23	1.5	32	1.4
Other	47	3.1	75	2.6
Total	1530	100	2368	100

[21] The statistics do not include complaints pertaining to specific tariff issues and repetition of complaints sent by the same customer. In addition, the statistics do not include communications related to subjects not falling under the Authority's responsibilities. Finally, numerous requests for information were made and followed up by phone or email; however, the data on calls and answers given by email were not considered for statistical purposes.

Analysis of the communications (Table 4.16) reveals that the most recurrent were invoicing (45.9%), followed by contracts and commercial quality (17.8%), by connections (15.3%) and market issues (6.5%).

Comparison with the previous year shows a reduction in absolute and/or percentage terms, of communications regarding contracts and commercial quality, connections and market issues. The strongest increase, from 465 to 1,088 communications, regards invoicing, the most significant subject of communications in both years, (45.9% of all communications in the last year). Recurrent complaints on this issue regard primarily the level of consumption (specifically when invoiced in advance) and, secondarily, adjustments payable and double billing.

Complaints on bills, tariffs, metering and disconnections have remained stable and relatively minor in both years. Communications on gas meters, including on site verifications, increased significantly in absolute terms though only slightly in percentage terms. A stronger increase might have been expected as an outcome of the new regulation on gas meters which, among other things, has reduced the costs of inspections on old gas meters. Statistics do not include complaints on the application of VAT. Other issues, largely related to safety, accounted for less than 3% of all communications received. The statistics include multiple complaints received in a single communication.

4.2.3 Measures to combat the abuse of a dominant position

Among legislative and regulatory developments introduced in 2008 to favour of competition in the gas sector, the most important regard:

- a number of rules aiming at expanding the liquidity for trading capacity and volumes at the PSV including the compulsory sale of imported and domestic gas assigned to the State;
- the adoption of provisions, in both the electricity and gas sectors, promoting the diffusion of information on markets among final customers in order to improve their capability for choosing between competing suppliers. Among these, the most significant initiative is the publication of an offer finder (*Trova-offerte*), described in detail elsewhere in this Report;
- the publication of consultation documents on alternative proposals for the development of the natural gas balancing service (see above) and for the establishment of a gas exchange.

Measures to promote competition, described in the *Annual Reports* of the previous years, remain in force including above all those implemented with Legislative decree no. 164/00 which provides that from January 1 2003 to December 31 2010:

- no gas company is allowed to sell to consumers more than 50% of internal natural gas requirements on an annual basis;
- no gas company is allowed to supply from imports or domestic production more than 70% of internal requirements in 2003, declining to 60% by 2010 on an annual basis[22];

[22] Such percentages are calculated net of network losses and self-consumption.

whether directly or through subsidiaries, parent companies or companies under control of the same parent company.

In practice, in order to comply with these antitrust ceilings, Eni has been required to reduce supplies from imports and domestic production by two percentage points every year until 2010.

These norms are now close to expiry. What is more, they have proved easy to elude, since the incumbent supplied the gas it could not import to competitors of its own choice just outside the national borders, imposing prices that were significantly higher than the cost to Eni of the imported gas.

Further measures imposed on the incumbent in the last few years were two gas release transactions, following the investigations of the Antitrust Authority (AGCM) demonstrating abuse of dominant position. The first of these was gas release at the border pursuant to measure A329B (Blugas-Snam) of March 18 2004 lasting four thermal years until September 2008; subsequently, pursuant to measure A371 (Management and use of regasification capacity) of April 19 2006, Eni was obliged to release gas exclusively at the PSV over two gas years starting from October 2007.

5 SECURITY OF SUPPLIES

5.1 Electricity

Peak demand in 2008 and outlook for 2009 - 14

The recession started in 2008 and the collapse of the economy in the second half of the year resulted in a significant reduction in power demand over most of the year and, even more significantly, an unprecedented increase of the summer peak over the winter peak (+3.1 GW or +5.9%). Over the previous five years, the two peaks had vied for supremacy with differences of less than 1-2% in favour of one or the other, mainly determined by climatic conditions. By contrast, in 2008 the summer peak attained on June 26 was down by as little as 2.3% compared to the previous year whereas, as the crisis worsened, the winter peak on December 10 fell by 8.2%.

The uncertainty of the economic cycle does not facilitate forecasts of the relation between summer and winter peaks over the next year or two. However, based on the trends of recent years, it may reasonably be assumed that the summer peak will grow more rapidly than the winter peak, at least in the medium to long term. TERNA's forecasts for 2014, shown in table 5.1, report a winter peak of 63.5 GW against a summer peak of 65.0 GW.

Table 5.1 Peak power demand in the years 2007 – 14

GW

	2007	2008	2009	2010	2011	2012	2013	2014
Average winter	56.8	52.2	57.3	58.5	59.7	61.0	62.3	63.5
Torrid summer	56.6	55.3	57.7	59.1	60.5	62.0	63.6	65.0

Source: TERNA.

Table 5.2 Annual peak power demand forecasts in the period 2009 -14

GW

Year of Forecast	Year of Peak					
	2009	2010	2011	2012	2013	2014
Average winter						
2006	60.5	62.1	64.0			
2007	60.4	61.7	63.0	64.4		
2008	59.6	61.0	62.4	63.9	65.4	
2009	57.3	58.5	59.7	61.0	62.3	63.5
Torrid summer						
2006	61.9	64.0	65.9			
2007	61.6	63.2	64.9	66.6		
2008	60.3	62.0	63.7	65.4	67.2	
2009	57.7	59.1	60.5	62.0	63.6	65.0

Source: AEEG calculations based on TERNA data.

The strong decline in the forecasts of peak demand made over the last 4 years, shown in table 5.2, provide a clear indication of the uncertainty in the outlook for electricity sector growth related to the performance of the economy and the international crisis.

Generation capacity in 2008

The strong expansion in generation capacity starting in 2004-05, continued in 2008. According with the provisional data published by TERNA, net installed power at the end of 2008 amounted to 99.4 GW with a 6.2% increase over the previous year, the biggest increase in the last five years in absolute terms.

Table 5.3, providing the breakdown of installed capacity by type of generation, underscores the fact that, as in previous years, the increase in capacity was mainly from thermoelectric plants (more than 75%) followed by wind power plants (17%). Once again photovoltaic plants rank third (4.4%), with an overall installed capacity expected soon to overtake that of geothermal plants, which has been stagnant for four years. As a whole, the generation structure has not changed much from the previous years, remaining dominated by thermal and hydro electric generating plants, with respectively 74% and 21% of the total capacity, while wind power plants account for 3.7% of installed power, up from 2.9% in the previous year.

Table 5.3 Net generation capacity on December 31 in the period 2003 – 08

MW

	2003	2004	2005	2006	2007	2008(A)
Hydro	20,660	20,744	20,993	21,072	21,117	21,230
Thermal(B)	56,047	58,990	62,164	65,797	69,022	72,674
Geothermal	665	642	671	671	671	671
Wind	877	1,135	1,642	1,908	2,714	3,710
Photovoltaic	7	7	7	7	87	340
Total	78,256	81,518	85,477	89,455	93,611	98,625

(A) Provisional data.
(B) Includes generation from biomass and waste.

Source: TERNA.

Peaking capacity

With the continuous expansion of generating capacity over the last few years power availability at the peak has increased substantially. The electric power deficit of 3.7 and 0.9 GW in 2003 and 2004, respectively, turned into growing surpluses over the years to reach 2.5 GW in 2006 and 3.6 GW in 2007. The 7.9 GW surplus for 2008 in table 5.4 is misleading since it was mainly determined by the strong fall in the peak demand, down 2.3% from the previous year. If peak power demand had reached the value of 58.7 GW forecast by TERNA in the previous year, instead of the actual 55.3 GW, then the surplus would have been equal to 4.5 GW, or 7.5% of demand.

Table 5.4 Peaking capacity in the years 2003 – 08

GW

	2003	2004	2005	2006	2007	2008
Net output capacity	78.2	81.5	85.5	89.4	93.5	98.9
Hydro	20.7	20.7	21.0	21.1	21.1	21.2
Conventional thermal	56.0	59.0	62.2	65.8	69.0	73.3
Geothermal	0.7	0.6	0.7	0.7	0.7	0.7
Wind and photovoltaic	0.9	1.1	1.6	1.9	2.7	3.7
Peaking capacity	49.7	52.8	56.3	58.1	60.4	63.2
Hydro	13.5	13.6	13.7	13.8	13.8	13.9
Conventional thermal	35.5	38.4	41.6	43.2	45.4	47.8
Geothermal	0.6	0.6	0.6	0.6	0.6	0.6
Wind and photovoltaic	0.2	0.3	0.4	0.5	0.7	0.9
Peak demand	53.4	53.6	55.0	55.6	56.8	55.3
Power surplus/deficit	-3.7	-0.9	1.3	2.5	3.6	7.9

Source: AEEG calculations on TERNA data.

The increase in peaking capacity was determined by an increase in generating capacity as well as by a reduction in long-term shutdown for refurbishment and repowering or for unscheduled maintenance accompanying generating plant renewal and more efficient use of plant and equipment. By contrast, the strong increase of wind power plants had a reverse effect due to the intermittent nature of this source of energy.

Electricity balance in 2008

Two main factors influenced the electricity balance in 2008 shown in table 5.5: the stagnation in demand, increasing by only 0.03% from the previous year, and the very strong increase in hydropower availability. In the spring and summer of 2008 Italy benefited from a normal level of rainfall which helped to refill the reservoirs. Between October and December, following heavy rainfall, the hydropower availability index grew from 0.63 to 1.38 against 0.55 and 0.64 respectively in 2007[23]. Energy stored in the reservoirs at the end of December 2008 amounted to 3,965 GWh compared to 3,141 GWh in the previous year.

Unlike demand, power generation consequently grew, driven by the strong recovery in hydro generation (+24.4%) after several years of decline due to poor rainfall. While on the subject of renewables, the strong leap in wind energy (+59.5%) is worthy of note bringing it very close to geothermal generation (4.9 versus 5.5 TWh), while the contribution of photovoltaic generation still remains negligible (193 MWh), despite its strong growth to five times the level of the previous year. The boost in renewables, unburdened by fuel costs, resulted in limiting recourse to thermal generation which fell 1,7% (from 265.8 to 261.3 TWh in gross power). Oil continued its two decade old decline (- 20% from 2007) to

[23] This increase is to be compared to the record highs and lows of the last 50 years of 0.52 and 1.56 respectively.

contribute a mere 7% to total thermal generation. Owing to the high price of coal in international markets until after the summer 2008, generation from this source of energy recorded a 1.1% fall. With prices now back to the levels of 2006 and entry into operation of the coal fired units of the Civitavecchia power plant, coal generation is expected to undergo an appreciable increase in 2009.

Table 5.5 Electricity balance in the years 2003 – 08

TWh

	2003	2004	2005	2006	2007	2008
Gross production	293.9	303.3	303.7	314.1	313.4	319.1
Conventional thermal power	*238.3*	*240.5*	*246.9*	*255.4*	*259.3*	254.7
Solid fuels	*34.3*	*39.9*	*37.5*	*37.5*	*37.7*	37.3
Natural gas	*117.3*	*129.8*	*149.3*	*158.1*	*172.6*	173.7
Oil products	*65.8*	*47.3*	*35.8*	*33.8*	*22.9*	18.3
Other sources of energy	*20.9*	*23.6*	*24.4*	*26.0*	*26.1*	25.4
Hydropower	*44.3*	*49.9*	*42.9*	*43.4*	*38.0*	47.2
Natural water sources	*36.7*	*42.7*	*36.1*	*37.0*	*32.4*	41.5
From pumped-storage	*7.7*	*7.6*	*7.2*	*6.9*	*6.4*	5.7
Other renewables	*11.3*	*12.9*	*13.8*	*15.2*	*16.1*	17.2
Geothermal	*5.3*	*5.4*	*5.3*	*5.5*	*5.6*	5.5
Biomass and waste	*4.5*	*5.6*	*6.2*	*6.7*	*6.5*	6.6
Wind and photovoltaic	*1.5*	*1.9*	*2.3*	*3.0*	*4.1*	5.1
Ancillary services	13.7	13.3	13.1	12.9	12.6	12.1
Net production	280.2	290.0	290.6	301.2	300.8	307.1
Pumped storage	10.5	10.3	9.3	8.8	7.7	7.6
Energy availability for consumption	269.7	279.7	281.3	292.5	293.1	299.4
Net imports	51.0	45.6	49.2	45.0	46.3	40.0
Imports	*51.5*	*46.4*	*50.3*	*46.6*	*48.9*	43.4
Exports	*0.5*	*0.8*	*1.1*	*1.6*	*2.6*	3.4
Energy fed into the grid	320.7	325.4	330.4	337.5	339.4	339.5

Source: TERNA. Provisional 2008 data.

The strong increase of low-cost hydropower generation as opposed to thermal power significantly changed the reference parameters for international energy trade, determining a substantial fall in imports (-12%) and an even higher increase in exports (+30%) compared to the previous year. Imports from Slovenia and Greece increased by 46% and 2.9%, respectively, compared to a decline in imports from France (-14.9%) and Switzerland (-16.2%). The increase in export flows was mainly determined on the Greek (+55.3%) and Swiss (+516.5%) borders. The favourable import-to-export ratio was facilitated by the reduction in electricity demand which released resources for internal use.

Also worthy of note are the improvements in thermal generation efficiency, following the replacement of traditional thermal power stations by natural gas-fired combined-cycle plants resulting in savings of nearly 5.0 Mtoe in 2008 compared to 2003.

New installed power in the period 2009 – 14

The overhaul and expansion of the Italian generating system continued with the implementation of combined-cycle and wind power plants. The data shown in table 5.6 illustrate the size of the initiatives under way, allowing for impediments in the course of the authorisation and construction phases, which may significantly slow down the increase in new installed power.

Table 5.6 Thermal, wind and photovoltaic power installed since 2002

MW

Regions	Thermal Power			Wind Power			Photovoltaic Power at 2008
	2002-08	2009-12	2013 and beyond	2002-08	2009-12	2013 and beyond	
North	8,580	1,850	9,536	34	35	70	214
Piemonte	2,290	250	2,150	13	0	15	38
Valle d'Aosta	0	0	0	0	0	0	0
Lombardia	3,720	800	2,806	0	0	0	53
Trentino-Alto Adige	0	0	0	3	5	5	32
Veneto	0	0	2,330	1	0	0	32
Friuli-Venezia Giulia	760	0	0	0	0	0	13
Liguria	150		460	14	10	10	4
Emilia-Romagna	1,660	800	1,790	4	20	40	42
Centre	730	750	2,800	52	70	230	99
Toscana	540	0	250	42	40	60	30
Umbria	190	0	800	2	5	30	19
Marche	0	0	950	0	0	0	25
Lazio	0	750	800	9	25	140	24
South and Islands	8,070	3,795	9,850	3,651	5,885	9,300	145
Abruzzo	800	0	980	170	240	300	9
Molise	750	0	1,180	188	270	350	1
Campania	1,200	1,660	1,380	688	1,000	1,300	14
Puglia	2,290	385	2,250	946	1,300	2,400	58
Basilicata	0	0	1,550	209	325	350	6
Calabria	2,400	1,600	2,510	188	600	1,000	19
Sicilia	550	150	0	795	1,500	2,400	20
Sardegna	80	0	0	467	650	1,200	17
Italy	17,380	6,395	22,186	3,736	5,990	9,600	458

Source: TERNA. Data on photovoltaic energy from APER as of April 30 2009.

Forecasts for the entry into operation of thermoelectric plants in the years 2009-12 refer to plants with issued authorisations. Out of the 6.4 GW envisaged, 4.0 GW are now in the construction phase, while for 2.4 GW construction is yet to start. With these additions, the new thermal power installed since 2002 amounts to nearly 24 GW, over one quarter of the total thermoelectric generating capacity on this date, inclusive of decommissioned plants. Data for 2013 and beyond relate to applications for authorisation and are therefore less certain, although from the experience of the last few years it can be assumed that approval will be given for at least half of the installed power.

Improvement of installed wind power is foreseeably even more dynamic. As on 31 December 2008, nearly 950 applications for connection to the national transmission system had yet to be processed for an overall power of more than 50 GW, corresponding to 50% of the current total generating capacity, including decommissioned plants[24]. The forecast entry into operation of new wind power by 2012 relates to plants for which applicants have made economic commitments to meet the costs of connection to the transmission and distribution systems. For the subsequent years, TERNA has considered only plants with commitments for conceptual design. It is however significant that the new wind power to predictably come into operation in the next few years is of the same magnitude as the new thermoelectric power additions. The data shown in table 5.3 for photovoltaic power include only plants installed up to April 30 2009, since medium-term forecasts at the regional level are not available. The nationwide capacity achievable in 2015 based on the current decrees on incentive schemes is notoriously equal to 3.3 GW[25].

The data presented highlight the strong concentration of new installed power in the southern regions of the Country. The South and the Islands would host 47% of the new thermoelectric power and 97% of wind and photovoltaic power installed since 2002, 62% of the total new installed power. The North would host 43% of the thermoelectric power and less than 1% of the wind and photovoltaic power, or 30% of the total new installed power. The new capacity expected to be installed in the Centre amounts to 7% of the total, specifically 9% of the thermoelectric power and 2% of the wind and photovoltaic power. A significant disparity appears also in the incidence of new wind and photovoltaic power compared to thermoelectric power in the three macro-regions: specifically wind and photovoltaic energy accounts for less than 1% in the North, for 8% in the Centre and 46% in the South.

State of network operation and security

Most of the criticalities found in previous years continued into the present; there have been some improvements, but in many cases the situation has worsened as a result of insufficient transmission line capacity and/or inadequate transformer capacity in VHV/HV stations. Table 5.7 provides data allowing an evaluation of security of supply and quality of service.

[24] Applications for connection have shown increasing growth over the years, particularly in 2007 following the publication of resolution no. 281/05 of the Authority. Total applications increased from 16 GW in 2005, to 23 GW in 2006 and 44 GW in 2007.

[25] The decrees of July 28 2005 of the Ministry for Production Activities and of February 19 2007 of the Ministry for Economic Development, providing incentives for a maximum of 300 and 3,000 MW, respectively.

Table 5.7 Indicators of security and quality of service of power transmission 2007–08

Regions	Risk of overloading (%)				Unsupplied power (MWh)		Despatching charges (million €)		Share of consumption in 2008 (%)
	Primary Grid		Secondary Grid		2008	2007	2008	2007	
	2008	2007	2008	2007					
North-West	16	8	5	22	110	35	48	44	11
Lombardia	12	12	19	7	83	314	97	88	21
North-East	56	55	25	17	83	175	65	59	15
Centre-North	4	3	25	17	166	175	275	191	15
Centre	3	0	17	20	138	279	210	264	14
South	9	22	7	3	1,242	733	404	411	13
Sicilia	0	0	2	14	331	1.431	307	279	7
Sardegna	0	0	0	0	607	349	210	132	4
Total	100	100	100	100	2,760	3,490	1,616	1,467	100

Source: AEEG calculations on TERNA data. The data for risk of overloading refers to simulations of the number of events with overloading > 120% of rated current in n-1 safe conditions.

In 2008 network overloading of the high voltage grid mainly concerned the North-Eastern area of the Country, specifically the Veneto and Friuli-Venezia Giulia regions, with 56% of all events occurring in 2007. The transmission capacity in this part of the network continues to remain unsuited for the transit of imported power from the Austrian and Slovenian borders and the concomitant transit of locally generated power. Development of the power system, generating plant growth in Europe and the gradual interconnection of the UCTE system to those of East European countries is determining a gradual increase of energy flows from Northern Europe which makes the operation of the transmission grid between the North-West and the North-East of the Country potentially critical.

The problems of the North-Western area have worsened in comparison with 2007 due to the presence of intensive power transit on the import lines from Switzerland and to risks of overloading on the 220 kV lines between Turin and Milan should a failure affect primary grid elements. Lombardia remains the most critical area, with nearly 12% risk of overloading on the primary grid owing to limited grid transmission capacity powering the city of Milan. In Liguria a number of lines for the transmission of power from Piemonte and from Lombardia to La Spezia and Parma have reached their safety limit.

The situation has somewhat worsened in the Centre, with overloading in the Florence area on the 380 and 220 kV lines engaged in power transit in the section between the North and the Centre-North macro-areas. The entry into operation of new power supplies in Campania decisively reduced overloading problems in the South, bringing the risk down from 23 to 9% of total. However, the supply of power to Salerno, Naples and Caserta remained problematic given the limited transmission capacity at 380 and 220 kV from Calabria and Puglia, aggravated by entry into operation of the new combined-cycle plants in the Rossano, Brindisi and Foggia districts.

Overloading risks have been aggravated also by the energy market. The division of the Day-Ahead Market (MGP) into zones following inter-zone congestions caused by network constraints, results on the one hand in reduced efficiency arising from the use of less

competitive generating plants to the detriment of more cost-effective plants and, on the other, in the determination of congestion surcharges payable by suppliers and indirectly by end-users. In comparison with the previous year, charges due to recourse to dispatching services (MSD) increased 10%[26]. Some 70% of dispatching charges originated in the Islands, the Centre-South and Calabria, which as a whole only accounted for 21% of Italy's electricity requirements. More specifically, in Sardegna the share of all charges grew from 9% to 13%.

Quality of transmission services

The Centre-South region and the Islands remain the most critical areas in terms of vulnerability and cost of dispatching services. More than 70% of unsupplied energy due to malfunctioning of the network affected the South and the Islands, where the ratio of unsupplied power to consumption is highest compared to other areas of the Country. Malfunction is also caused by system elements (beside the transmission grid) which are not always in optimum conditions (outdated and unreliable installations), as well as by low levels of network meshing and a insufficient transformation capacity under specific loads. The malfunctions reported in the South mainly affected the Naples and Galatina districts, the latter with insufficient meshing of the 150 kV distribution system and heavy use of the 380/150 kV transformers chiefly in the summer months. In Sicilia and Sardegna, due to limited capacity of several 150 kV lines, the high voltage grid is partly operated as without meshing with consequent risks of power shut-offs in case of malfunctions in the generating plants.

Over the last few years, voltages have mostly been maintained within 5% of the rated value, in compliance with the indications of the applicable Network Code, while for some nodes voltage was contained within 3% of rated value, with a tendency towards improvement.

Higher than rated voltages were observed in Calabria and Toscana, both with numerous particularly long 380 kV lines bearing low loads in the off-peak hours which need to be kept operating for security of supply reasons. High voltages were also registered in Lombardia due to the presence of underground lines and the reduced loads on connections involved in the transmission of imported power from Switzerland during off-peak hours.

Voltage values below the rated values, but still within the range envisaged by the Network Code, are observed in areas with poorly meshed grids, having sections with sizeable power transits and overloaded transformer stations. In the South, areas with the largest deviations from the rated limits were in Sicilia (Priolo industrial park) and Puglia (Brindisi area), due to the considerable load and to power transients from the Brindisi industrial park and from Greece. Non-optimum voltage levels were also recorded in the areas of Brescia and Milan owing to high network loads. On the other hand, the situation improved significantly in Campania where, as a result of the commissioning of the new

[26] Increase was from little less than 1,500 million euro in the July 2006 – June 2007 period to more than 1,600 million euro in the July 2007 – June 2008 period.

combined-cycle plants of Teverola and Sparanise, the reduction of voltage levels below the 390 kV limit is no longer frequent.

Main projects for the transmission grid implemented in 2008

In the course of 2008, new installations were commissioned which are critical for the functioning of the national transmission system. Among these the following deserve to be mentioned:

- the completion and entry into operation of the Mendrisio – Cagno merchant line, of two 220 kV transmission lines and four 132/150 kV transmission lines. Among these the Avise – Villeneuve 220 kV line replaces an old transmission line which is currently being dismantled as part of the upgrading to 380 kV of the Val d'Aosta network;
- nine 380 kV stations, four 220 kV stations and two 132/150 kV stations;
- around twenty connections to generating plants at 132/150 kV and 220 kV, of which one half regard direct lines and one third wind generators and other renewable energy plants,

for a total number of 43 projects.

Several other grid related developments contemplated in previous Plans are also currently under implementation, many of which are expected to enter into operation in the course of 2009 and in the years immediately thereafter. As a whole, 133 interventions are under way divided in eight categories, as shown in table 5.8. This table does not show the number of interventions for generating plant connections.

Table 5.8 Grid developments underway in 2009

Excludes development of connections to the transmission system

Type of development	Number
Increase in transit between the North-West and North-East	5
Reduction of congestions between market zones	7
Reduction of limited production areas and removal of constraints on generating capacity	11
Removal of operation and maintenance constraints	61
Interconnection with other countries	6
Rationalisation and expansion in metropolitan areas	7
Development of the grid in the South	11
Quality of service	25
Total	133

Source: TERNA.

In many cases these projects are not progressing owing to lacking authorisations or have in any case been slowed down by national and local bureaucracy. If grid-connection projects are excluded, then average waiting time can be estimated at around 6 years from the date of application to final commissioning. However, this is an average for all projects with waiting times extending from just two years for simple operations to even more than

10 years in the case of particularly demanding local projects. The projects with longer waiting times are usually also the most critical for the efficient operation of the power grid, such as the 380 kV Sorgente – Rizziconi line, designed to increase transmission capacity between continental Italy and Sicilia.

New grid development projects identified in 2008

TERNA's Development Plan for 2009 differentiates between three types of new short-to-medium-term projects: reduction of congestions and increased security of supply; grid expansion and upgrading in the South; improvement in the quality of service.

Projects for reducing congestions and increasing security of supply consist in the upgrade of specific grid sections and are planned with the twofold goal of reducing or removing constraints limiting or influencing the operation of generating plants and ensuring the secure coverage of national demand in the short to medium term. More specifically they include:

- HV network rationalisation in Val d'Aosta, the Bergamo valleys and the Arezzo district so as to remove the criticalities limiting safe grid operation and quality of service;
- upgrading of 380 and 150 kV transmission lines in the Centre-South area and in Sicilia;
- construction of four new 380 and 220 kV substations in the North so as to remove energy congestions and improve the quality of service.

The majority of lines in Southern Italy are obsolete, unreliable and/or have inadequate transmission capacity, with security of supply problems which impair the quality and continuity of service. Moreover, the poor meshing of the 150 kV grid, consisting of long sub-transmission lines, results in significant losses along the HV grid. In addition, further problems are posed by the high and growing concentration of wind power plants in the South. Already today, but even more so in the future, dispatching of these plants is limited by insufficient transmission capacity of the 150 kV grid sections to which they are normally connected. This problem may be partly remedied by interconnection to the 380 kV grid, which is dimensioned for higher transmission capacity.

As a result, one of the most important projects in the South regards the upgrading of 150 kV lines to enable the dispatching of wind power generated in Puglia. Related to this is the construction or upgrading of 380/150 kV transformer substations throughout the South and in Sicilia as well as the implementation of 380 kV connections, wherever necessary. Finally, the Plan foresees the interconnection to continental Italy of the Islands of the Campania region (Capri, Ischia and Procida) which are currently without adequate, efficient and secure energy supplies.

Projects aiming at the improvement of the quality of service include the construction or reconstruction of five transmission lines at 132/150 kV, the restructuring of four HV grids and the construction of a 380 kV substation, seven 220 kV substations (of which two in the 380 kV class) and five 150 kV substations. The geographic distribution of such projects is as follows: two in the Novara and Milan areas; six in Central Italy, of which two on the Adriatic Sea and four on the Tyrrhenian Sea; four in Sicilia and three in Sardegna.

Table 5.9 shows a summary of transmission grid projects, which include the short-to-medium-term projects described above, the projects presented in previous Plans and longer term projects currently under study.

Table 5.9 Medium and long term projects for the development of the transmission grid

Negative signs indicate plant decommissioning

Voltage level	New substations (number)			Transformer capacity (MVA)			Transmission line (km of circuits)		
	Medium term	Long term	Total	Medium term	Long term	Total	Medium term	Long term	Total
380 - 500 kV	20	19	39	15,950	4,000	19,950	1,877	2,225	4,102
220 kV	14	11	25	610	1,730	2,340	-776	-513	-1,289
120 - 150 kV	46	3	49	18	150	168	1,912	-134	1,778
Total	80	33	113	16,578	5,880	22,458	3,013	1,578	4,591

Source: TERNA.

Network planning process

Network planning criteria are described in TERNA's Concession Regulation[27] and in the Network Code[28] whereby TERNA is required to ensure the development of transmission services to guarantee security of supply under conditions of efficiency, reliability and continuity in the short, medium and long term, to provide impartial and neutral dispatching services and to contribute to the protection of the environment.

With the liberalisation of power generation, the size and location of new generating plants is no longer determined on the basis of an integrated planning process and there is a serious risk that the development of the transmission system is inadequately aligned to the growth in generating plants, resulting in reduced efficiency due to transmission constraints (congestions) on market functioning.

The geographical distribution of new power capacity described in the above may contribute to reducing congestions in some southern areas of the Country but also to determine further congestions in power transmission especially in the North – Centre North section, in the short to medium term.

There is a clear risk that the geographical distribution of new power capacity foreseen entering into operation over the next five years may aggravate congestions in the medium to short term, chiefly in the North – Centre North section. In the longer term, implementation of the planned network upgrades will reduce such risks, but it is not possible to rule out the reverse risk that new operational constraints may emerge in the sections of the network employed in the transmission of energy generated in the South to the Centre-North load areas.

[27] Ministerial decree of 20 April 2005.

[28] Code on Network Transmission, Dispatching, Development and Safety contemplated by the Prime Minister's Decree (D.P.C.M.) of 11 May 2004.

Among the various methodologies available for the analysis and resolution of this problem, TERNA uses the WTLR (Weighted Transmission Loading Relief) index, which provides an indication of the impact that the connection of a generating plant has on the transmission system, by highlighting areas in which the new installed power contributes to reduce congestions and those in which the power grid is unsuited for the new load. The analysis consists in a comparison between the values of the WTLR indicators calculated on the terrain before and after the transmission network upgrade, so as to identify the required network upgrades necessary to reduce congestions and consequently improve supply security and market efficiency.

Such procedure is subsequently refined by simulating network operation in supply and demand scenarios deemed most likely to occur. Criticalities are highlighted in terms of primary grid overloading risk, with at least one grid element (line or transformer) supporting flows that are 20% greater than the maximum rated value.

Development of interconnectors to neighbouring countries

The only interconnector commissioned in 2008 was the 380 kV merchant line Mendrisio – Cagno connecting to the Swiss grid and belonging to Società Ferrovie Nord Milano. The other authorised merchant line is the Campocologno – Tirano 150 kV line owned by Edison, which will enter into operation before the end of 2009. No other merchant lines originating in Italy have yet been authorised.

The main projects scheduled in the short to medium term have remained unchanged from 2008. More specifically, these are: the 380 kV transmission line from Udine to Okroglo upgrading the interconnection with Slovenia; the 220 kV interconnection of Avise – Villeneuve – Chatillon upgrading the interconnection with Switzerland; the 150 kV line of Prati di Vizze – Steinach, currently a medium voltage line, amplifying the interconnection with Austria. Furthermore, to increase interconnection capacity on the north-western border, a new 380 kV interconnector is planned to connect the Udine Ovest - Sandrigo line to the 380 kV node at Lienz in Austria. Studies are also being conducted for the longer term implementation of new 380 kV interconnection with Austria and Slovenia as well as for two 220 kV lines for connection to France.

Finally, the DC connection to Montenegro, between the nodes of Villanova in Italy and Tivat in Montenegro, is now at an advanced stage of study. The possible connections to Croatia and Albania are still in the preliminary study phases.

5.2 Gas

Gas consumption in 2008 and forecasts of demand in the following years

In 2008, for the third consecutive year, natural gas consumptions in Italy remained practically constant at 85.0 G(m^3), a volume which in any case was lower than the 86.3 G(m^3) consumed in 2005 (see Table 5.10). After the relatively rigid climatic conditions and strong increase in natural gas consumptions at the beginning of the year, the price increases occurring several months after the oil price increases, finally resulted in a fall in

consumption in both relative and absolute terms over the rest of the year to determine an overall almost zero variation over the previous year. The fall in consumption was particularly strong from November onwards, owing to the negative impact of the economic crisis on the industrial sector, continuing into the early months of 2009, despite the unusually cold winter. The 2008 fall in consumption in the industrial sector as a whole was equal to 9.1%, whereas consumption in the residential sector, mainly space heating, increased by 6.1%.

Table 5.10 Natural gas requirements in 2005 – 08 and forecasts for the future

G(m^3);

Scenario	2005	2006	2007	2008	2010	2013	2020
Low growth(A)	86.3	84.5	84.9	84.9	78.0	100	98
High growth(B)						105	110

(A) Low growth: forecasts of Eni for 2013 and Unione Petrolifera for 2020.
(B) High growth: Ministry of Economic Development forecasts of 2007.

Sources: Eni, Unione Petrolifera, Ministry for Economic Development.

The depth of the current economic crisis does not allow dependable forecasts of consumption recovery. Eni, the main supplier with more than 60% of the natural gas market in Italy, forecasts an 8 - 9% fall in demand in 2009 compared to 2008, corresponding to a total consumption of about 78 G(m^3) in an average winter scenario. Crossing over the 100 G(m^3) line, which most recent forecasts indicated would occur around the year 2010[29], is now postponed to at least 2012 – 13.

No "official" forecasts exist for the next decade, but most recent analyses are unanimously cautious on predicting demand growth given the current crisis and above all considering the European obligations of energy savings and efficiency, development of renewable generation and reduction of greenhouse gas emissions by 2020.

Domestic production in 2008 and production forecasts

The long standing decline in domestic natural gas production continued in 2008, though less markedly compared to previous years. Production of natural gas from both onshore and offshore fields amounted to 9.2 G(m^3), compared to 9.7 in 2007 and 11.0 in 2006. Roughly one quarter originated from land fields and three quarters from offshore fields. Declining production over the years has led to a progressive reduction of the share of domestic gas in overall demand from values of around 30% at the end of the 1990s to around 20% in the first half of the 2000s and ultimately to 11% in the last year.

Classical indicators of exploration and development activities continued and in some cases accelerated their historic fall, in spite of the strong growth in the price of oil and gas from 2007 until the summer of 2008 (table 5.11). Following the oil price slump in the second half of 2008, it is presumably even less advantageous to invest in domestic upstream activities, which depend essentially on market prices. At the end of 2008, proven reserves amounted

[29] E.g. the forecasts of the Ministry for Economic Development published in May 2007 suggested 98 – 99 G(m3) in 2010 and 105 – 108 billion in 2015.

to a bare 99 G(m^3), or 29 G(m^3) less than in the previous year, chiefly as a consequence of the lower price of oil which heavily influences the cost-effectiveness of their exploitation and consequently their magnitude. The reserves-to-production ratio which remained relatively stable throughout the previous decade at values in the range of 13 – 14 years, has thus fallen to less than 11 years. Under such circumstances, unless the price increases substantially in 2009 and 2010, production may hardly exceed 8 and 6 G(m^3) respectively in these two years.

Table 5.11 Exploration and development activity in 1985 - 2008

Years	Permits	Number of Wells		Drilling (thousand m)		Recoverable Reserves G(m^3)	Production G(m^3)	R/P Ratio (years)
		Exploration	Development	Exploration	Development			
1985-89	312	88	68	189.4	157.7	296	16.0	18.5
1990-94	175	40	63	101.2	173.1	316	18.6	17.0
1995-99	164	28	34	75.6	74.6	274	19.4	14.2
2000-04	123	12	29	27.1	60.8	213	14.8	14.4
2005	90	7	33	15.1	66.0	170	12.0	14.2
2006	93	15	31	27.0	51.3	151	10.8	13.9
2007	90	10	28	19.4	50.9	128	9.7	13.2
2008	98	7	25	13.9	56.1	99	9.3	10.7

Source: UNMIG bulletin.

Gas imports in 2008

In 2008 gas imports grew by nearly 3 G(m^3). The appreciable increase in imports against virtually unchanging demand is explained by their reduction in 2007 owing to strong withdrawal from storage built up during the previous year in preparation for the winter of 2006 - 07, as evidenced in table 5.12. Surplus imports in 2008 were stored and used in the course of the last winter.

Table 5.12 Gas imports by country of origin

G(m^3)

Countries	2002	2003	2004	2005	2006	2007	2008
Algeria	24,158	24,561	25,632	27,464	27,549	24,584	25,981
Russia	20,713	21,688	23,624	23,326	22,520	22,667	24,597
Libya	0	0	521	4,493	7,692	9,241	9,839
The Netherlands	7,825	7,630	8,074	8,040	9,372	8,038	7,994
Norway	4,884	5,030	5,190	5,723	5,745	5,581	5,304
Others[(A)]	1,711	3,886	4,866	4,414	4,521	3,839	3,152
Total	59,291	62,794	67,908	73,460	77,399	73,950	76,867

(A) Nigeria, Croatia and United Kingdom.

Source: Ministry for Economic Development - Department of Energy and Mineral Resources.

Italian supply sources are relatively diversified in comparison with those of most countries of the European Union. In 2008, imported gas quantities originated from nine countries

with a concentration index (HHI) of 2,500. However, 66% of imports came from two non-EU countries (Algeria and Russia). The degree of diversification should be improved appreciably already in 2010 with new gas supplies from Qatar made possible by the entry into operation of the offshore LNG terminal off the coast of Rovigo. In a longer-term perspective beyond 2012, further progress may be expected with the entry into operation of the IGI pipeline and other projects for the supply of gas from countries of the Caucasus.

Import capacity in 2008 and short-term forecasts

In the course of 2008, with the entry into operation of a new compressor station in the Austrian town of Eggendorf, the first phase of expansion of the TAG pipeline connecting Austria to the Tarvisio entry point of the national gas network was completed, thereby increasing capacity from 38 to 41.5 G(m^3)/year. The second phase is scheduled for the autumn of 2009. Both phases are result from the commitments made by Eni with the European Commission in 2003 in the context of the enquiry conducted by the Directorate-General for Competition on the territorial sales restrictions contained in the gas supply contracts between Gazprom and Eni.

In October 2008 the second phase of expansion of the TTPC pipeline connecting Tunisia to the Mazara del Vallo entry point of the national gas network was completed. It is recalled that, following an investigation for abuse of dominant position conducted by the Italian Antitrust Authority (AGCM) in 2004, Eni had committed to two pipeline upgrades: the first for 3.2 G(m^3)/year and the second for 3.3 G(m^3)/year amounting to a total increase in throughput capacity of 6.5 G(m^3)/year. These upgrades increased the total firm-import capacity from 264 M(m^3)/day in gas year 2005 – 06 to 314 M(m^3)/day in gas year 2008 – 09. With the commissioning of the Rovigo LNG terminal in the second half of 2009 import capacity grew even more to 349 M(m^3)/day (table 5.13).

Table 5.13 Firm import capacity by gas year

M(m^3)/day

Entry Point	Gas Year						
	2004 - 05	2005 - 06	2006 - 07	2007 - 08	2008 - 09	2009 - 10	2010 - 11
Tarvisio	88.2	88.3	100.9	100.9	109.9	118.7	118.7
Gorizia	1.0	2.0	2.0	2.0	2.0	2.0	2.0
Gries Pass	57.5	57.5	57.5	57.8	59.4	59.4	59.4
Mazara del Vallo	80.5	80.5	86.0	94.8	103.8	103.8	103.8
Gela	21.5	22.8	25.0	25.6	25.6	25.6	25.6
Panigaglia	11.4	13.0	13.0	13.0	13.0	13.0	13.0
Rovigo	0.0	0.0	0.0	0.0	0.0	26.4	26.4
Total	260.1	264.1	284.4	294.0	313.7	348.9	348.9

Source: Snam Rete Gas.

New import pipelines

Table 5.14 illustrates the main characteristics of new gas pipelines of interest for Italy, whose overall annual transport capacity amounts to 40 – 50 G(m^3).

Table 5.14 New gas pipelines of interest for Italy

	Nominal Capacity (Gm^3/year)	Length (km)	Entry Point	Feasibility Study Date	Scheduled Start-up
IGI	8 – 10	212	Otranto (BR)	2005	2012
Italy – Austria Interconnector	1.3	48	Bressanone (BZ)	2005	2012
TAP	10 – 20	520	Brindisi (BR)	2006	-
Galsi	8	940	Iglesias (CA)	In progress	-
TGL	11.4	290	Malborghetto (UD)	In progress	2015

Source: Ministry for Economic Development.

New steps forward were made in the TAP (Trans Adriatic Pipeline) project planned by Egl and Statoil Hydro connecting Greece to Italy through Albania for gas imports from the Caucasus and the Middle East. In January 2009, the planning and engineering studies were awarded and the survey of the sea bed in the stretch of water between Italy and Albania was started. Subsequently, an intergovernmental agreement was signed between Italy and Albania and meetings were fixed for the establishment of a legal framework for development of the pipeline.

June 2008 saw the establishment of the fifty-fifty joint venture IGI Poseidon between Edison International Holding and Depa, for developing, building and operating the IGI pipeline connecting Greece to Italy. The IGI pipeline is part of the ITGI energy corridor for gas imports from the Caspian Sea through Turkey and Greece, which are interconnected since November 2007. The pipeline is now in advanced stages of authorisation with the competent Greek and Italian Authorities and three Memorandums of Understanding were signed: between Italy and Greece (November 2005); Italy, Greece and Turkey (July 2007); Italy and Azerbaijan (December 2007). Pursuant to the agreements signed between the two companies, 80% of the capacity will be reserved for the Italian group and the remaining 20% to the Greek group. Following the favourable opinion of the European Union, Edison and Depa are entitled to use the full transmission capacity of the pipeline for a 25 year period, but will nevertheless release a quota of nearly 1 G(m^3) of capacity for third-party access through an open season procedure. In addition, 10% of the imported gas will be made available to increase liquidity at the Italian PSV.

A final decision on the GALSI pipeline, connecting Algeria and Italy, was expected within 2009 but has been postponed to June 2010, pending the conclusion of the authorisation procedure started in July 2008 as well as of additional engineering and environmental studies for project optimisation. The project was included among those to be financed in the EU planning framework. A longer term and less clearly defined project is the TGL (Tauern Gas Leitung) managed by E.On and five Austrian companies, which has the primary advantage of envisaging flows in both directions, thus facilitating European market integration.

New liquefied natural gas terminals

Table 5.15 sums up the state of advancement of new LNG regasification projects planned for Italy's coastline highlights significant steps forward since the previous years.

Ten years after the project was first presented, the offshore terminal located 17 km off the coast of Porto Levante (Rovigo) arrived from Spain in September 2008 and is ready for entry into operation in the second half of 2009, after completion of the Cavarzere – Minerbio pipeline connection. It is worth emphasising that the permitting process took at least seven years with the last authorisation, the Integrated Environmental Authorisation (*Autorizzazione integrata ambientale*) being issued only in January 2009. Exemption from third-party access for 80% of the terminal's capacity, equal to 8 G(m^3), was granted in November 2004 for 25 years. In November 2007, an open season procedure was launched for the allocation of the remaining 20% not subject to exemption, about 1.6 G(m^3); after commissioning, 0.6 G(m^3) will be marketed through annual procedures.

Steps forward were also made by the Gioia Tauro terminal (in the Reggio Calabria province) which in June 2008 received a grant from the European Commission worth 1.6 million euro as part of the TEN-E framework; in September of the same year, a favourable impact assessment was issued by the Italian Environment Ministry. The final clearance by the Economic Development Ministry is expected by the summer 2009.

The OLT project also progressed significantly. The contract for building the terminal was awarded in March 2008. In September 2008 the *Consiglio di Stato* (highest administrative court in Italy) suspended the rulings of the competent Regional Administrative Court (TAR) which, following petitions received from Greenpeace and a number of local residents, had declared the construction and operation permit for the regasification terminal inadmissible. Currently, the application for total exemption from third party access for 20 years is being examined and the terminal is still scheduled to enter into operation by 2010.

Finally, in April 2008, the Porto Empedocle project obtained a favourable opinion from the Evaluation Impact Assessment (EIA) Regional Committee and in September a favourable "environmental compatibility" decree was issued with prescriptions. The Local Government Agencies' Conference (*Conferenza dei Servizi*) of Sicilia gave its definitive approval for the construction of the regasification terminal in January 2009 and it may reasonably be assumed that it will be commissioned by 2010.

Table 5.15 New liquefied natural gas terminals

Project	Location (Province)	Capacity G(m^3)/year	Project Promoters	Scheduled Start-up	Advancement Status
Porto Levante offshore	Rovigo	8	GNL Adriatico (Edison - ExxonMobil - Qatar Petroleum)	2009	Entry into operation in the second half of 2009.
Brindisi	Brindisi	8	Brindisi LNG (British Gas Italia)	NA	The Evaluation Impact Assessment (EIA) on the regasification terminal project in the Capobianco area (started in January 2008) is still in progress. British Gas is supplying the supplements requested at the end of April 2009 by the Italian Environment Ministry.
Toscana offshore	Livorno	3.75 - 4.7	OLT LNG (Endesa Italia, Iride, Asa, OLT Energy	2010	Clearance issued in 2006; petitions to the TAR (regional administrative court) were suspended by the *Consiglio di Stato* (the administrative high court); the request for exemption from third-party access is it its preliminary investigation phase.
Rosignano	Livorno	8	Edison, BP, Solvay	NA	A feasibility clearance was issued in 2006, but the authorisation process is still in progress.
Gioia Tauro	Reggio Calabria	12	LNG MedGas (Cross Gas, Sorgenia, Iride)	2014	A feasibility clearance was issued in 2007; a favourable EIA was conducted by the Environment Ministry; the final clearance by Economic Development Ministry's is expected by summer 2009.
Taranto	Taranto	8	Gas Natural Internacional	NA	An unfavourable opinion was delivered by the EIA Regional Committee and by the Regional Cabinet (*Giunta Regionale*) in July 2008.
Trieste Zaule	Trieste	8	Gas Natural Internacional	NA	Italy and Slovenia are assessing the impact of the two regasification terminals in the gulf of Trieste.
Trieste offshore	Trieste	8	Endesa Italia	NA	An investigation on the new location is now in progress.
Porto Empedocle	Agrigento	8	Nuove Energie (Enel)	2010	All construction permits have been received.
Rada di Augusta	Siracusa	8	Erg Power & Gas - Shell Energy Italia	NA	A favourable opinion with prescriptions was delivered by EIA Regional Committee; a favourable "environmental compatibility" decree was issued.
Ravenna	Ravenna	8	Gruppo Belleli	NA	Under examination by the Economic Development Ministry.
Senigallia	Ancona	5	Gaz de France	NA	Under examination by the Economic Development Ministry.
Portovenere	La Spezia	4.5	GNL Italia (ENI)	2014	An unfavourable opinion was delivered by the Municipality of Portovenere and the EIA Regional Committee; the Environment Ministry has requested clarifications and supplements.

Source: Ministry for Economic Development.

The storage system in 2008 – 09 and new concessions

In the gas year 2008-2009 the storage system had a working gas capacity of about 13.9 G(m^3). The capacity allocated to strategic storage amounts to 5.1 G(m^3), as provided for by the Ministry for Economic Development based on the import programmes from non-EU Countries notified by storage users, on the status of import infrastructures and on injections into and withdrawals from storage facilities in the previous winters. As a result, the capacity available for upstream production activities, flexibility and balancing of the transmission network amounted to 8.8 G(m^3). In practice, the space made available for upstream production and flexibility services amounted to 8.3 G(m^3) while 0.11 G(m^3) were used for balancing of the transmission network.

Gas deliverability for flexibility and upstream production at the end of the heating season was equal to about 152 M(m^3) at standard conditions as provided for by the Authority's resolution no. 50/06 of March 3 2006.

Table 5.16 shows the current state of applications for the concession of new storage sites filed at the Ministry of Economic Development, all of which concern depleted gas fields except Rivara, where the construction of an aquifer site in deep lithological units is planned.

Main developments compared to the situation illustrated in the last year, include the project in the San Potito – Cotignola area, which obtained a concession from the Ministry of Economic Development in late April 2009. Entry into operation of this facility, at least three years into the future, will increase the current national capacity for upstream production, flexibility and balancing of the transmission network by nearly 900 M(m^3).

In June 2008 the Commission for Hydrocarbon and Mineral Resources delivered a favourable opinion on the Piadena Est, Romanengo and San Benedetto projects. In July 2008 the Cornegliano project received a favourable opinion from the Environmental Impact Assessment Committee and is now awaiting an appraisal by the competent Local Government Agencies' Conference (*Conferenza dei Servizi*); in October 2008 a favourable environmental impact assessment was also obtained by the Cugno Le Macine - Serra Pizzuta and Sinarca projects which are consequently awaiting an appraisal by the competent *Conferenza dei Servizi*.

Table 5.16 Status of storage concessions in June 2009

Project	Province	Type	Working Gas Capacity M(m^3)	Gas Deliverability M(m^3)/day	Scheduled Start-Up	Awardee	Advancement Status
Alfonsine	RA	Field	1,550	10.0	NA	Stogit	Authorised but start-up has met with some technical and environment impediments.
Bordolano	CR, BG	Field	1,440	12.5 - 20	NA	Stogit	Authorised but with modifications in project resumption.
Cornegliano	LO	Field	590 - 1,010	16.5	NA	Ital Gas Storage	A favourable opinion was received from the competent EIA Committee; currently awaiting an appraisal by the competent *Conferenza dei Servizi*.
Cotignola - San Potito	RA	Field	915	7.2	2012	Edison Stoccaggio	Authorised to proceed with construction in April 2009.
Cugno le Macine - Serra Pizzuta	MT	Field	742	6.6	NA	Geogastock	A favourable opinion was received from the competent EIA Committee; the applicability of the Seveso directive is now being assessed.
Rivara	RA	Aquifer	3,000	32.0	NA	Independent Gas Management	Project is under study; objections were raised by the Municipalities concerned.
Verdicchio	AP	Field	70	0.8	NA	Edison Stoccaggio	Under study.
Sinarca	CB	Field	324	3.3	NA	Gas Plus Storage and Edison Stoccaggio	A favourable opinion was received from the competent EIA Committee; currently awaiting an appraisal by the competent *Conferenza dei Servizi*.
Poggiofiorito	TE	Field	160	1.7	NA	Gas Plus Storage	Definitive documentation for EIA is yet to be presented.
Bagnolo Mella	BS	Field			NA	Edison Stoccaggio and Retragas	The site was awarded in May 2009.
Piadena Est	CR	Field			NA	Blugas Infrastrutture	Under study; a favourable opinion was received from the UNMIG(*) Commission.
Romanengo	CR, BG	Field			NA	Enel Trade	Under study; a favourable opinion was received from the UNMIG Commission.
Rapagnano	AP	Field			NA	Not Awarded	Project is yet to be awarded.
San Benedetto	AP	Field	500		NA	Gas Plus Storage, Acea, Gaz de France	Under study; a favourable opinion was received from the UNMIG Commission.
Total			9,291 - 9,711	90.6 - 98.1			

Source: Ministry for Economic Development.

(*) UNMIG is the National Office of Mining, Hydrocarbons and Geothermal Energy.

Supply/demand balance in the short to medium term

Considering the economic crisis and the import capacity expansion currently underway in Italy, it is difficult to imagine supply problems emerging over the next few years except in the case of long term supply interruptions by the main suppliers (Algeria and Russia). Table 5.17, which simulates the natural gas balance in a high demand growth scenario, shows a growing import surplus in future years both under normal conditions and under maximum import security conditions. "Normal conditions" assume load factors of 85% for pipelines and 90% for terminals while "maximum security conditions" assume a 10% reduction in both load factors. On the supply side, increases in capacity include only projects most likely to enter into operation in the next few years: the Rovigo terminal, the Livorno and Gioia Tauro terminals and the IGI and TAP pipelines.

Table 5.17 Natural gas-import capacity demand and supply simulation as on 2015

G(m^3)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Requirements	**86**	**84**	**85**	**85**	**78**	**84**	**90**	**97**	**105**	**106**	**106**
Domestic production	**12**	**11**	**10**	**9**	**9**	**8**	**7**	**7**	**7**	**6**	**6**
Imports	**74**	**74**	**75**	**76**	**69**	**76**	**83**	**90**	**98**	**100**	**101**
Minimum import capacity											
- under normal conditions	89	88	89	90	83	91	99	108	118	119	120
- under maximum security conditions	99	98	99	100	92	101	110	120	131	132	134
Total available capacity	**96**	**100**	**106**	**111**	**120**	**126**	**130**	**139**	**149**	**155**	**155**
- existing facilities after upgrade	96	100	106	111	116	118	118	118	118	118	118
- new LNG facilities	0	0	0	0	4	8	12	16	20	20	20
- new pipelines	0	0	0	0	0	0	0	5	12	18	18
Surplus capacity											
- under normal conditions	7	12	16	21	37	35	30	31	32	37	35
- under maximum security conditions	-3	2	6	11	28	25	19	19	19	23	22

Source: Assessments based on forecasts of the Ministry for Economic Development and Snam Rete Gas.

6 PUBLIC SERVICE OBLIGATIONS AND CUSTOMER PROTECTION

The main changes in public service obligations, customer protection and retail supply in 2008 result from the primary and secondary legislation implemented in Italy following the complete liberalisation of retail markets (an account of which was given in the *Annual Report* of last year) and from the implementation of legislation on vulnerable customers.

Following complete market opening for domestic customers in the electricity sector (it is recalled that the gas market has been fully liberalised since 2003), the Authority's regulatory activity has focused on concretely strengthening the capability of end users to make informed choices from a variety of commercial offers and on the reduction of information asymmetries due to the complexity and specificity of the services offered.

Besides perfecting existing regulation on Commercial Codes of Conduct for suppliers, on rules for transparency of customer billings and on the rights of customers to rescind from previous contracts, the Authority developed dedicated tools for consumers such as the "*Sportello del consumatore*" (Consumer's Helpdesk), a call-centre located at the Single Buyer and the "*Trova-offerte*" (Offer Finder), an online tool for comparing the various commercial offers. In 2008, quality standards for the call centres of electricity and gas suppliers came into force as well as the new rules for tariff transparency implementing, *inter alia*, the provisions of Annex A of Directive 54/EC/03

As for vulnerable customers, the decree-law of November 29 2008, known as "anti-crisis Decree" (titled "*Urgent measures in favour of households, workers, employment and undertakings aimed to reframe national strategies to overcome the crisis*" and converted to act by law no. 2 of January 28 2009) entrusted the Authority with specific monitoring functions on the internal market and on end-user gas and electricity prices, and extended tariff discounts for disadvantaged and economically vulnerable customers (already in place for electricity customers) to the natural gas market. The same act extended social tariff beneficiaries to include patients using electrically powered life-saving medical devices and households with four or more children having an Indicator of Equivalent Economic Status (ISEE) up to and including 20,000 euro. The tariff reduction for this class of users typically corresponds to about 20% and 15% of the overall bill, net of taxes, to standard users of the electricity and gas sectors, respectively.

In 2008 the Authority approved specific rulings for vulnerable electricity consumers and launched activities to design the regulations also in the gas sector.

Retail supplies to the electricity market

Law 125/07 implemented a number of provisions of EC Directives 55 and 54 of 2003 and imposed legal unbundling between electricity retailers and distributors with more than 100,000 customers (12 out of a total of 131). In the course of 2008, Guidelines were issued by the Authority for the implementation of the unbundling rules (Resolution ARG/com 132/08 of September 23 2008).

In Italy retail electricity supply undertakings do not require any form of authorisation or licensing. However in order to provide consumers with better information, since June 2007

the Authority publishes on its website a list of active electricity retailers meeting a number of reliability requirements.

Law 125/07, in providing for full liberalisation of the electricity market, established an "enhanced protection regime" (*servizio di maggior tutela)* targeting domestic customers and small low-voltage businesses to benefit from standard supply conditions (in terms of quality and equitable prices) set by the Authority. It also instituted a "safeguard regime " (*servizio di salvaguardia*) targeting non-domestic low-voltage medium-sized customers and medium voltage customers opting not to choose a supplier on the liberalised market, to be provided by a "supplier of last resort" (*fornitore di ultima istanza*) selected by the Ministry for Economic Development through competitive bidding procedures.

In the second half of 2007, based on the surveys performed by the Authority, there were around 140 retailers operating under the "enhanced protection regime" and 200 operating on the liberalised market.

In the second half of 2007, based on the data collected by the Authority, protective-tariff service providers amounted to 140 and those active in the free market to more than 200.

In the course of 2008, the first year of enforcement of the safeguard regime under the terms and conditions specified by the Authority in 2007 (see the *Annual Report* of 2008), a number of irregularities were reported requiring review of the regulations and procedures. These resulted in the selection of 3 suppliers of last resort in 12 areas, namely:

- Exergia S.p.A. was selected for the regions of Trentino-Alto Adige, Veneto, Friuli-Venezia Giulia; Emilia-Romagna;
- Enel Energia S.p.A. was selected for the regions of Piemonte, Val d'Aosta and Liguria; Lombardia; Sardegna; Campania; Lazio, Abruzzo and Molise; Puglia and Basilicata; Calabria; and Sicilia;
- Hera Comm was selected for Toscana; Umbria and Marche.

Retail supplies to the natural gas market

Requirements for the supply of natural gas to the retail market in 2008 remained unchanged from last year; natural gas retailers are required to be a) legally unbundled from distributors and b) licensed by the Ministry for Economic Development. In May 2008, there were 393 licensed retailers according to the data published by the Ministry for Economic Development. However, since many companies with licences granted by the Ministry remain inactive, licensed retailers operating in 2008 were not many more than 300, as evidenced in the Authority's annual survey.

With resolution ARG/gas 114/08 of August 5 2008, the Authority changed its open procedure for the annual selection of suppliers of last resort for consumers with annual consumption up to and including 200,000 m^3, previously established in resolution no. 10/07 of January 18 2007. With resolution ARG/gas 127/08 of September 22 2008, implementing the new procedures for 2008-2009, the Authority approved the resulting list of 7 suppliers of last resort for the 5 subdivisions of the Country.

Table 6.1 Assignment of suppliers of last resort by regional subdivisions

AREA	No.	SUPPLIER	QUANTITY (m^3)
AREA 1: Northern Piemonte (E1), Southern Piemonte and Liguria (E2)	1	Eni - Divisione Gas & Power	30,000,000
AREA 2: East Lombardia (C), West Lombardia (D)	1	Eni - Divisione Gas & Power	30,000,000
AREA 3: Friuli-Venezia Giulia (A), Trentino-Alto Adige and Veneto (B), Lower Veneto (G)	1	Eni - Divisione Gas & Power	30,000,000
AREA 4: Emilia and Liguria (F), Romagna (I), Toscana and Lazio (H), Umbria and Marche (L)	1	Enel Energia	30,000,000
	2	Eni - Divisione Gas & Power	30,000,000
AREA 5: Lower Lazio (N), the Lower Marche and Abruzzo (M), Basilicata and Puglia (O), Campania (P), Calabria (Q) and Sicilia (R)	1	Eni - Divisione Gas & Power	30,000,000

Supplier obligations, supply conditions and consumer protection

The system of obligations and supply conditions designed to guarantee consumer protection in both the electricity and gas markets already in force in December 2007 (see *Annual Report 2008*) largely reflects the Authority's jurisdiction over customer protection provided for by its law instituting law no. 481/95, which in may ways goes beyond the requirements of the European Directives of 2003. This system is described in some detail in the *Annual Report 2008* and in previous reports and can be summarised as follows:

- **billing transparency** (regarding contracts and supply terms, invoicing, volume consumed, rate calculation, terms of payment);
- **rules for minimum mandatory contractual supply terms and conditions** (regarding meter reading, calculation of volume consumed, billing frequency, terms and method of payment, payment delays and defaults, disconnections, payment by instalments and handling of complaints);
- **Commercial Codes of Conduct** for supply to consumers (specific conduct obligations, foremost the obligation to provide adequate information in contacts with prospective clients and in contract preparation) which also envisage the use of a **price comparison table** facilitating comparison between offers, to both domestic and non-domestic consumers, in order to reduce non-transparent behaviour by suppliers;
- procedures for filing **complaints;**
- uniform nationwide quality standards for **commercial quality of service, security and continuity of supply** compulsory for all distributors with provisions for **automatic refunds** in case of failure to comply.

It is symptomatic that after many years of increasing refunds since the first implementation of quality standards in Italy, the number of automatic indemnities to consumers following the failure to comply with the commercial standards was more than halved in both sectors between 2007 and 2008: from 70,7102 to 32,509 in the electricity sector and from 43,886 to 19,954 in the natural gas sector.

In the course of 2008, the following principal measures were implemented in the sphere of consumer protection and public service obligations:

- compulsory quality standards for call centres of electricity and gas retailers with more than 100,000 customers came into force with resolution no. 137 of June 20 2007;
- new standards for billing transparency as defined by the Authority's directive on Transparency of Bills for Electricity Consumption in 2006 (see the *Annual Reports* of 2007 and 2008), became effective on October 1 2008. Such standards provide for the improvement of legibility, transparency, clarity and completeness of the information contained in the bills, the specification of additional information to assist customers in their relationship with retailers (how to file a complaint, what to do in case of payment delays or default), and provision for special sections for communications by the Authority to customers and for information on the type of consumption (average daily or annual consumption, if possible broken down by time of day). In the future, retailers will also be required to provide information on the mix of energy resources employed to generate the electricity sold by them as well as on the types of plant as listed in Annex A of Directive 54/EC/03 implemented in Italy with law 125/05 (resolution ARG/elt 70/08 of May 29 2008);
- the tables annexed to the Commercial Codes of Conduct providing information on electricity charges, were revised to facilitate comparison of commercial offers and make the choice between retailers more transparent (resolution ARG/com 34/08 of March 18 2008);
- the rules for rescinding from electricity and gas supply contracts defined in 2007 were simplified (resolution ARG/com 79/08 of 20 June 2008);
- specific provisions governing the handling of customer payment defaults by retailers were established (resolution ARG/elt 186/08 of December 18 2008).

Customer awareness was further strengthened by the promotion of an information service on electricity and gas market liberalisation with the start-up of the "**Sportello per il consumatore"** ("Consumer Helpdesk"). To assure a more efficient use of resources and reduce costs, the new service combines the pre-existing call centres at the Single Buyer (see the *Annual Report* of 2008) and at the Electricity Sector Compensation Fund (CCSE) (Resolution GOP 28/08 of May 14 2008), handling customer information and complaints, respectively. The Consumer Helpdesk provides information to consumers on the liberalisation process, on the regulations enacted by the Authority, on consumer rights and on the procedures for filing customer complaints and notifications.

Finally, 2008 saw also the launch of the "**Trova-offerte"** (Offer Finder), an online interactive service available on the Authority's website, providing consumers with comparative information on the various offers available on the market to facilitate taking effective economic advantage from a change in supplier. The search scope is currently limited to the commercial offers of electricity retailers but will be extended to gas retailers in the future. By enabling consumers to better assess the characteristics of commercial offers, the tool increases the degree of transparency and allows customers to make better choices, resulting in greater market competition, all in coherence with the Authority's institutional mandate.

Treatment of vulnerable consumers

The legislative framework for the introduction of protection mechanisms for disadvantaged and vulnerable domestic customers is defined in interministerial decree of December 28 2007, published in the Official Journal of the Italian Republic (*Gazzetta Ufficiale*) on February 18 2008, which also entrusts the Authority with the task of defining the terms and conditions for the implementation of the protection mechanism. In particular, in the electricity sector the decree:

- defines the date of first application of the mechanism for compensating vulnerable customer expenditures as January 1 2008;
- identifies the circumstances making domestic customers particularly vulnerable in terms of "economic disadvantage" and "serious health conditions";
- identifies the Indicator of Equivalent Economic Status (ISEE) as the economic criterion for selecting potential beneficiaries and defines a single threshold for access at the national level;
- allows combining tariff rebates granted in cases of economic disadvantage with those granted in cases of serious health conditions, such as for patients using an electrically powered life-saving medical device;
- establishes that the amount of compensation is to be defined by the Authority, so as to roughly cover 20% of the expenditure of a standard user, net of taxes;
- instructs that the costs arising from the introduction of the measure shall be met from the electricity bills paid by all domestic and non-domestic customers.

Such provisions were further supplemented by decree law no. 185 of 29 November 2008, which extended the compensation mechanism to the gas sector and introduced a different access threshold for households with more than three children. On this basis the regulatory framework for vulnerable customers now grants rebates to:

- households of residence having an ISEE not exceeding 7,500 €, in all cases;
- households of residence with more than three children and an ISEE not exceeding 20,000 €;
- households with a seriously ill patient requiring the use of an electrically powered life-saving medical device, without limitation of domicile or contractual demand.

With resolution ARG/elt 117 of 6 August 2008, the Authority identified the beneficiaries of the compensation establishing that the benefits are to be granted to all customers in their household of residence having a power supply contract of up to 3 kW with a maximum of four household members and of up to 4.5 kW with more than four household members. The resolution, further establishes that the amount of compensation for electricity expenditures of economically disadvantaged households will be differentiated according to the officially registered number of household members. The compensation fixed by the Authority for 2008 and 2009 is shown in table 6.2.

Table. 6.2 Compensation amounts for economically disadvantaged customers

€/year per power outlet

DESCRIPTION	2008	2009
Households of 1-2 members	60 €	58 €
Households of 3-4 members	78 €	75 €
Households of more than 4 members	135 €	130 €

The resolution ARG/elt 117/08 finally establishes that:

- the vulnerable customers apply for the power-expenditure refund by filing an application to their municipality of residence or other local institution, providing the information and documentation requested on the forms prepared by the distributor in coherence with the SGATE system;
- the local municipality transfer to the distributor the customer data required for handling the compensations, preferably through the IT system used for the management of rebates (SGATE);
- the power-expenditure rebate be settled by distributors through the application of a compensation tariff component defined in euro per power outlet per year, applied in proportion to the number of days;
- the amounts settled through the distributor be transferred from the retailer to the domestic customer benefiting from the compensation.

The compensation mechanism envisaged by resolution ARG/elt 117/08 has been fully in force since January 2009, though the benefit is retroactive to January 2008 1. Charges covering the disbursement of compensations are included in the general charges incorporated in the power tariff.

As regards the gas sector, decree no. 185/08:

- identifies the general criteria for defining the level of compensation of natural gas expenditures incurred by economically disadvantaged customers;
- defines eligibility criteria based on the ISEE, establishing the right to access the benefits for all households with an ISEE level not exceeding 7,500 € and for households with at least 4 children and an ISEE level not exceeding 20,000 €;
- instructs that the compensation be commensurate with the registered number of household members and be such as to roughly ensure a 15% rebate on a standard user's natural gas expenditure, net of taxes;
- establishes that the compensation of the expenditure must take into account the need to protect customers using condominium installations and be differentiated by climatic zone of the country;
- entrusts Municipalities with the task of collecting applications for compensations;

- provides for a budget of euro 96.5 million for 2009, excluding euro 47 million to be allocated for refunding excise duties, and that the budget for subsequent years will be specified on an annual basis by the Budget law;
- establishes that if the charges exceed these resources, the Authority will include the extra costs in a specific tariff component applied to non-domestic consumers financing an account managed by the CCSE.

In the course of 2008, the Authority started preparatory work for the definition of a system of benefits for vulnerable customers in the natural gas sector replacing that previously in place (see the Annual Report of 2008). More specifically, as part of the gas distribution tariffs review for the new regulatory period beginning on January 1 2009, the Authority revoked the previous social protection mechanisms and instituted a new component covering the extra costs of the rebate for economically disadvantaged customers within the tariff for natural gas distribution and metering. This component has been temporarily set as zero for all customers.

Disconnections for defaulting customers

The contractual conditions for retail supply defined by the Authority also regulate disconnections following defaults in the payment of bills. Distributors may proceed with disconnections only after sending a written notice to defaulting customers referring to: the final date for payment, the procedure for notifying that the payment has been made and the date after which disconnection will be made in default of payment. Disconnection are nevertheless not allowed when required to drive medical devices, on Fridays and weekends, holidays or on days preceding a holiday.

The Authority does not monitor the number of disconnections related to payment defaults, but rather the number of requests for reactivation following such disconnections. Between 2007 and 2008, in the electricity sector requests for reactivation of low-voltage customers increased from 946,624 to 1,159,628, while in the natural gas sector they fell from 66,715 to 64,681, (low-pressure customers)[30]. The number of reactivation requests following disconnections on the ground of payment default in the electricity sector has grown over the last few years (from 310,540 in 2004) as a consequence of, among other things, the introduction of smart meters through which suppliers, as an alternative to outright disconnection, can drastically reduce the power supplied to a "minimum vital" level (around 0.5 kW). Such practice, which is recommended by the Authority in the interests of increasing consumer protection, minimises the actual damage caused to customers while the default is pending.

Tariff regulation

Tariff regulation, primarily directed at infrastructural activities performed by the network and implemented through a price cap mechanism as set by the instituting law of the

[30] In the natural gas sector, the number of "domestic" customers is nearly half that of the electricity sector (30 million) but the significant difference in the number of disconnections is primarily explained by technical and safety reasons which persuade distributors to discontinue supply only in extreme cases.

Authority (law 481/95), reflects the efficiency goals of the regulator over a four-year regulatory period.

In the electricity sector, the Authority set the transmission, distribution and metering tariffs for the third regulatory period (2008 – 11) in December 2007. In 2008 the Authority set tariff calculation criteria for distribution in the third four-year regulatory period (2009 – 2012) as well as for regasification (2008–2011). The price caps, or productivity gains, applied in 2008 are shown in table 6.3.

Table 6.3 Price caps applied on December 2008

<table>
<tr><th colspan="2">ELECTRICITY SECTOR</th><th colspan="2">NATURAL GAS SECTOR</th></tr>
<tr><td>Transmission
(2008 –2011)</td><td>2.3%</td><td>Transmission
(2005 –2009)</td><td>2% (capacity)
3.5% (commodity)</td></tr>
<tr><td>Distribution
(2008 –2011)</td><td>1.9%</td><td>Distribution
(2004 –2008)(A)</td><td>4.6% for gas year 2007-2008</td></tr>
<tr><td rowspan="2">Metering
(2008-2011)</td><td rowspan="2">5.0%</td><td>LNG Regasification(B)
(2008 –2012)</td><td>1.5% for gas year 2007-2008
0.5% for existing terminals
0% for new terminals</td></tr>
<tr><td>Storage
(2006-2010)</td><td>1.5% (capacity)
2.0% (commodity)</td></tr>
</table>

(A) The price caps were revised following a ruling by the highest administrative court in Italy, the *Consiglio di Stato* in September 2006, and apply only to operating costs and depreciation.
(B) The third regulatory period for LNG started in 2008. Unlike the second regulatory period, for which the price cap was applied to both operating costs and depreciation, in the period October 1 2008 to September 30 2012, it will be applied exclusively to operating costs.

End-user price regulation

Law no. 125/07 established the "enhanced protection regime " for domestic customers of the electricity and natural gas sectors and for small non-domestic low-voltage customers (with less than 50 employees and a turnover of less than euro 10 million). As also in the second half of 2007 (see the Annual Report of 2008), in 2008 the Authority introduced rules governing the "enhanced protection regime" and defined standard terms for its provision and temporary reference prices for power supplies, based on the actual costs of supply. The reference prices are updated on a quarterly basis by the Authority and must be offered by suppliers on an obligatory basis in addition to their ordinary offers.

In compliance with the provisions of law no. 125/07 "reference price terms" were defined also for natural gas customers in the domestic sector (locally differentiated maximum prices updated on a quarterly basis) which retailers are required to offer on an obligatory basis in parallel with their commercial proposals so as to provide greater degree of protection to final consumers. It is recalled that, given the scarce degree of competition in natural gas retail sales in Italy, such terms have been applied ever since the beginning of

full market opening, as already pointed out in the Report to the European Commission of July 2007.

At the end of 2008, after one and a half years of full liberalisation of the electricity sector, almost all domestic customers (96% in terms of volume and 97% in terms of number of customers) continued to be supplied on the basis of the reference prices set by the Authority, although there are initial signs of change affecting also the household sector (at the end of 2007 domestic customers in the protected market were 99.7% of total).

In the natural gas sector, more than 95% of domestic customers continued to be supplied in the protected market based on the prices fixed by the Authority (91% in volume terms); the share of protected customers nevertheless fell slightly from 2007 (to 92.0%). By contrast, as in 2007, the non-domestic sector continued to show signs of dynamism in 2008, especially small business and services which continued to switch to the liberalised market (an increase of around 10% compared to 2007 in volume terms). The share of large industrial concerns still being supplied from the protected market, and power generators continued to fall accounting for an increasingly marginal share of the gas volumes consumed (3.5% and 0.01% respectively in 2008).

In summary, both markets show signs of dynamism, even at appreciable levels, and there clearly have not been any signs of switching back from the liberalised to the protected market in any of the consumer classes, providing evidence that Italy's end-user reference price regulation model, introduced to protect consumers during the transition is not distorting the liberalised market.

Table 6.4 Reference prices on December 31 2008

	ELECTRICITY			GAS			
	Large industrial enterprises	SMEs in the industrial and service sectors	Domestic customers	Power generation	Industrial enterprises	Trade and services sector	Domestic customers
Reference prices regulated by the AEEG pursuant to law 125/07 (Y/N)	N	Y(A)	Y	N	N	N	Y(B)
% of customers with reference-price contracts (by number of customers)	73.0		96.9	0.1	46.5	61.0	95.5
% of customers with reference-price contracts (by volume)	19.2		96.1	0.01	3.5	33.4	90.6
Option to revert to the reference-price terms defined by the AEEG (Y/N)	N	Y	Y	N	N	N	Y
Number of suppliers with the obligation to offer reference prices	140(C)			393(D)			

(A) Pursuant to law no. 125/07 the reference prices defined by the Authority apply to low-voltage non-domestic customers with less than 50 employees and a turnover of less than 10 billion euro. For the remaining non-domestic customers, the terms defined for the "safeguard" service apply only to customers which have never changed supplier.
(B) Only domestic customers are eligible for the price terms defined by the Authority.
(C) Providers of the "enhanced protected tariff" service as defined in paragraph 3, art. 1 of law no. 125/07, AEEG Annual Survey, provisional data, May 2009.
(D) Figure supplied by the Ministry of Economic Development, corresponding to the number of sales licences granted as on September 11 2008, which are known to include inactive companies; in May 2009, there were 300 active suppliers based on the provisional data reported in the Authority's Annual Investigation.

Source: AEEG calculations on data declared by suppliers.