Autorità per l'energia elettrica e il gas

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31 March 2008

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The international oil market

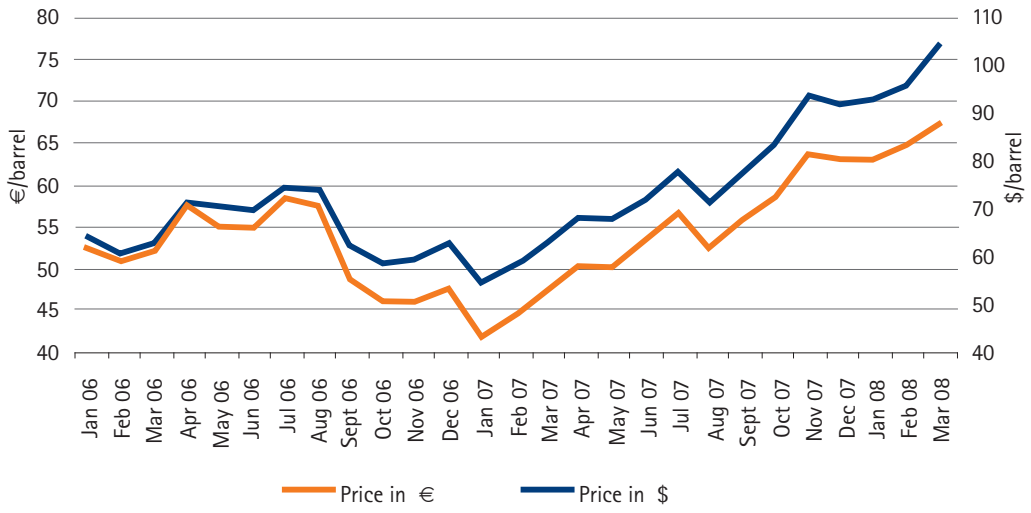
The sharp increase in oil prices that started in the second half of 2007 (Fig. 1.1) has revived the debate on industrial development of production capacity and the role of speculation. Indeed, compared to the previous years, 2005 and 2006, no events of such an extraordinary nature and with a potential to impact the oil market occurred in 2007. With regard to the geopolitical turbulence, supply of crude oil and derivatives and the weather conditions, 2007 was not a particularly difficult year. However, as proof of the critical conditions existing in the international market, in the last weeks of the year the price of crude oil was pushed up, with geopolitical tensions in Pakistan and Nigeria, new decreases in US stocks and forecasts of severe weather conditions all playing their role in the overall scheme.

The drop in the price, which began in September 2006 and seemed to herald a return to prices that were more palatable than those in the second quarter of that year (from 70 to 75$/barrel for Brent and WTI), did not extend beyond the second half of January 2007. The subsequent price escalation was essentially the result of expectations of a shortfall in the supply of gasoline on the US market which did not materialise. In the absence of that anticipated shortfall and with the end of the driving season in sight, the prices decreased sharply in August even though levels were quite high (71$/barrel for Brent), compared to what was expected at the beginning of the year. The subsequent sharp increase was also attributed to the depreciation of the US dollar: from 1.33 $/€ (as an average for the first half of 2007) to almost 1.5$/€ in November and December. However, this seems to have significantly affected prices in Euro which nevertheless increased by 33% between

FIG. 1.1

The price of Brent in 2006-2007

Average monthly amounts

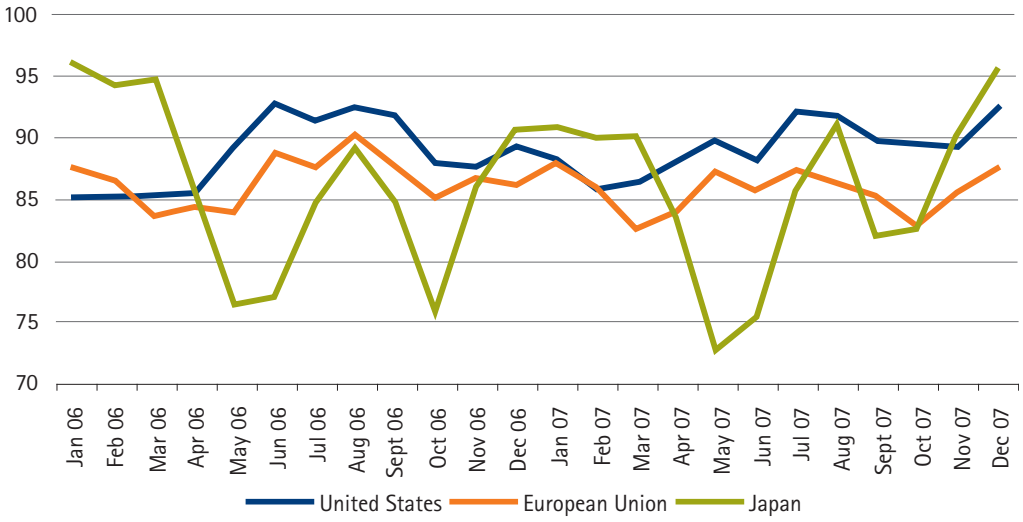


Source: Eni.

FIG. 1.2

Utilisation of refining capacity

Percentages



Source: OPEC, Monthly Oil Market Report, various issues.

December 2006 and December 2007, compared to 47% for prices in dollars.

Similarly, the situation characterising the refining sector cannot justify sharp increases in the price. The utilisation of refining capacity remained high throughout the world, though there were significant fluctuations in Asia. In the United States it increased from an average 88.5% in 2006 to 89.1% in 2007: in the European Union there was a slight drop from 86.8% to 85.5% while in Asia there was a drop from 87.0% to 86.1%. However, in the United States and Japan, it exceeded 92% in certain months of the year (Fig. 1.2).

In the United States, the rather long winter season, the interruption in the scheduled and extraordinary maintenance work and a strong increase in the demand for gasoline in preparation for the driving season and the consequent withdrawal from stocks kept the refining margins up to the point

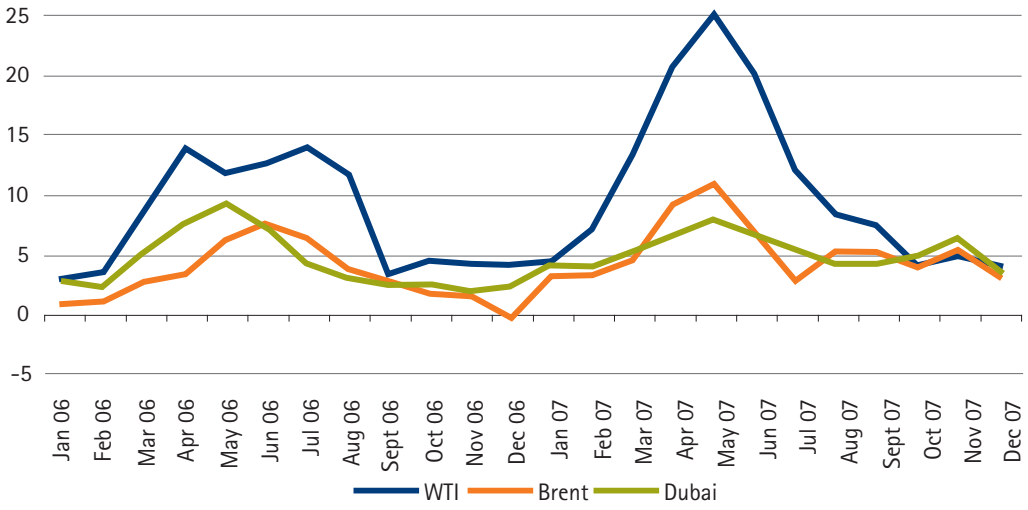


FIG. 1.3

Refining margins in 2006-2007 for the Mediterranean market

$/barrel

Source: OPEC, Monthly Oil Market Report, various issues.

that they quadrupled from March to May (Fig. 1.3).

European refining was helped by the increase in the exports to the United States and reacted with sharp increases. The reaction of the Asian refining capacity was less sharp, as it was affected by a drop in maintenance work and interruption of work at certain refineries. In any case, the increase in refining capacity in Asia and the Middle East continues to be insufficient to significantly influence international prices of oil products and crude as a consequence.

In the middle of the year the recovery of US refining capacity resulted in lower import volumes and the margins dropped from June to October both on account of the end of the driving season and above all due to the sharp increase in the price of oil during the period. In the last months of the year, shortfalls in the gasoil supplied on the European market pushed imports of this product from all over the world upwards, but without any obvious effect on the refining margins, which were by now pushed downwards on account of the high oil price. The refining margins have not increased, or have done so only to a limited degree, not even in conjunction with scheduled maintenance work at the refineries for medium distillates in preparation for the winter, which traditionally take place right after summer. It does not however appear likely that the concerns expressed by US refineries as a whole, also in relation to possible meteorological events, contributed significantly to pushing the price of oil higher.

Speculation has certainly played a role. Any recovery of the dollar over the euro was always almost instantly followed by massive sales on the Nymex with ensuing drops in prices and vice versa, when the dollar lost ground again. Furthermore, after the collapse of subprime loans, derivatives, insurance bonds and other structured products, the financial commitments in bonds and currencies, which had very satisfactory yields, were abandoned by brokers, hedge funds and mutual funds which turned their attention to crude oil (gold and other raw materials), as safe havens. However, all these actions would not have had any marked effects on the price, if it had not been for the fundamentals of supply and demand.

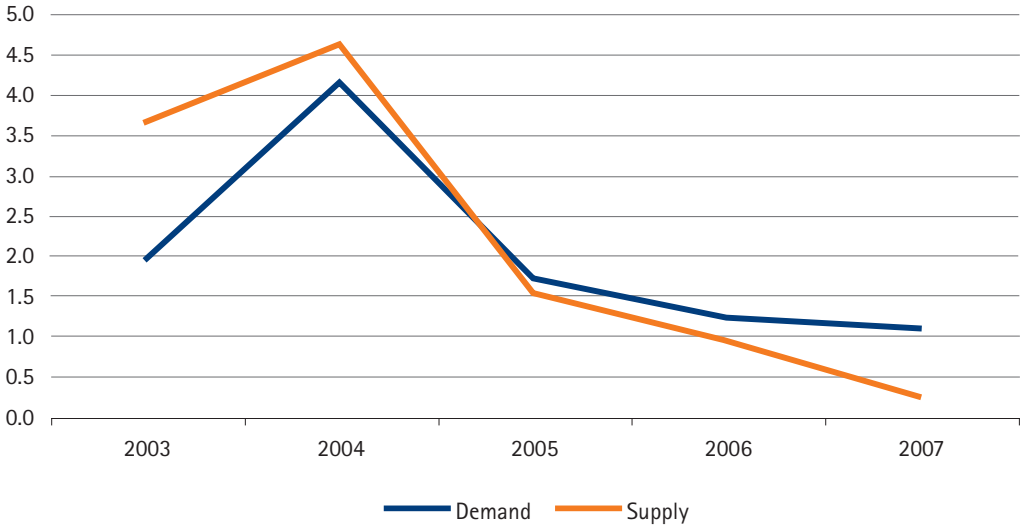
At the global level, demand increased by 1.1% compared to an increase in supply of only 0.2%. Supply lagged behind demand as in previous years. As a comparison, in 2006 supply increased by 0.9% against an increase in demand of 1.2%, while the rates for 2005 were 1.5% and 1.7%, respectively; in 2003 and 2004 supply was ahead of demand (Fig. 1.4). The gap between supply and demand moved from 0.2% in 2005 to 0.3% in 2006, to rise to 0.9% in 2007.

The spread between demand and supply was naturally reflected in the stocks (Table 1.1). Between 2004 and 2007, stocks increased, albeit to a decreasing degree (from 0.9 to 0.5 million barrels/day); in 2007, there was a negative change with withdrawals of 0.2 million barrels/day.

FIG. 1.4

Rate of increase in supply and demand for oil worldwide

Percentages



Source: IEA, Oil Market Report, March 2008.

TAB. 1.1

Supply and demand for oil worldwide in the period 2002 to 2007

	VOLUMES (millions of barrels/day)		ADDITIONS TO STOCKS (millions of barrels/day)	RATE OF GROWTH (%)	
	DEMAND	SUPPLY		DEMAND	SUPPLY
2002	77.7	76.9	-0.8	-	-
2003	79.2	79.7	0.5	1.9	3.6
2004	82.5	83.4	0.9	4.1	4.6
2005	83.9	84.6	0.7	1.7	1.5
2006	84.9	85.4	0.5	1.2	0.9
2007	85.8	85.6	-0.2	1.1	0.2

Source: IEA, Oil Market Report, March 2008.

Historically, the additions to the stocks usually take place in the second and third quarter of each year, while the first and fourth quarter are generally characterised by minimal or no withdrawals. During 2007, the changes in stocks were essentially nil throughout the entire year. The imbalance between demand and supply, especially in the second part of 2007, resulted in a significant reduction in OECD oil stocks[1], compared to a normal year. In general, the increase is approximately 2% between the first and last quarter of the year, while in 2007 the stocks remained practically unchanged corresponding to a drop estimated at about 4 days of consumption compared to the first two quarters of the year. The available stocks at the end of the year (82 days if consumption, of which 52 industrial) were well above the security level. However, it is well known that OPEC uses the data available on stocks to assess the state of the market's equilibrium. At mid year, the stocks had reached levels that were close to the maximum amounts recorded over the last few years, which contributed to OPEC's decision to limit production to the strictly necessary levels.

1 Reliable statistics on stocks exist only for OECD countries.

TAB. 1.2

Stocks of crude and oil derivatives in the OECD area

Millions of barrels

	January 2005	January 2006	January 2007	January 2008
CRUDE OIL	2,136	2,174	2,185	2,210
Industrial stocks	*907*	*941*	*937*	*942*
North America	402	449	456	446
Europe	326	336	311	329
Asia Pacific	179	156	171	167
Government stocks	*1,230*	*1,233*	*1,248*	*1,268*
DERIVATIVES	1,892	1,947	2,004	1,928
Industrial stocks	*1,669*	*1,698*	*1,750*	*1,669*
North America	793	825	828	800
Europe	620	636	657	619
Asia Pacific	257	237	266	250
Government stocks	*223*	*250*	*254*	*259*
TOTAL CRUDE OIL AND DERIVATIVES	4,028	4,121	4,189	4,138
Industrial stocks	*2,576*	*2,638*	*2,687*	*2.611*
North America	1,195	1,274	1,283	1,246
Europe	946	971	967	948
Asia Pacific	436	393	437	417
Government stocks	*1,452*	*1,483*	*1,502*	*1,527*

Source: IEA, Oil Market Report, March 2008.

This increased the recourse of OECD countries to stocks which resulted in their further reduction. Industrial stocks, which are those that count for normal management[2], decreased to a significant degree at the end of the year in three OECD areas (Table 1.2). This drop which was generalised across all derivatives, was offset only to a small extent by an increase in the government stocks.

Both demand and supply were factors in the increasing shortfall. The drop in demand of OECD countries as a whole, which had begun in 2005, was fully compensated by the increase in non-OECD countries in 2007 as well (Table 1.3). Overall, demand increased from 84.9 to 85.8 million barrels/day on average, in 2006 and 2007 respectively. On the supply side, the continuous drop in OECD production was counterbalanced by non-OECD and non-OPEC countries, essentially by Russia, other former USSR countries and Africa (Table 1.4). Indeed, OPEC production has decreased considerably from the maximum of 36.3 million barrels/day which it had reached in 2006, to 35.5 million barrels/day in 2007. According to the IEA (International Energy Agency), the OPEC production level that would be required to balance supply and demand (the so-called "call on OPEC")would have to rise to 37.0 million barrels/day as an average for 2008 to satisfy global requirements, despite the fact that a significant (albeit uncertain) increase in the production of Russia and non-OPEC African countries is forecasted along with a continually increasing contribution in biofuels, which has recently been at the centre of attention due to its impact on the food sector. However, these forecasts do not seem to take into account a potential recession in the United States and the effects this would have on the world economy[3].

The further decrease in the unused capacity of OPEC countries further aggravated the equilibrium between the demand and supply of oil globally, as it moved from 2.5 million barrels/day at the end of 2006 to 2.2 million barrels/day at the end of 2007, of which 80% refers to Saudi Arabia. Under these conditions of decreasing margins, it is not surprising that the price of oil suddenly went up from less than 60 to 95 $/barrel between January and December, breaking down the 100 $/barrel barrier in the initial months of 2008 and the 125 $/barrel threshold in the month of May. It does not seem that these increases will stop, especially if the position of the OPEC countries remains one that attributes the price increase to speculation and not to the shortfall in supply.

2 Government stocks are for use in emergencies.

3 In April 2008, following the review of world economy growth by the International Monetary Fund, the IEA reduced its forecasts for demand for oil to 87.2 million barrels/day.

TAB. 1.3

Global oil demand in 2004 – 2007 and forecast to 2008

Millions of barrels/day

	2004	2005	2006	2007	2008
Total OECD	**49.4**	**49.7**	**49.3**	**49.1**	49.3
North America	25.4	25.5	25.3	25.5	25.4
Europe	15.5	15.6	15.6	15.3	15.4
Asia Pacific	8.5	8.6	8.4	8.3	8.4
Total non-OECD	**33.1**	**34.2**	**35.6**	**36.7**	**38.3**
Russia and other former USSR countries	3.9	4.0	4.1	4.0	4.1
Europe	0.7	0.7	0.7	0.8	0.8
China	6.4	6.7	7.2	7.5	8.0
Rest of Asia	8.7	8.8	8.9	9.2	9.5
Latin America	4.9	5.1	5.3	5.5	5.7
Middle East	5.7	6.0	6.4	6.7	7.1
Africa	2.8	2.9	2.9	3.1	3.2
Total world	**82,5**	**83.9**	**84.9**	**85.8**	**87.5**

Source: IEA, Oil Market Report, March 2008.

TAB. 1.4

Global oil supply from 2004 to 2007 and the forecast for 2008

Millions of barrels/day

	2004	2005	2006	2007	2008
Total OECD	**21.2**	**20.3**	**20.0**	**19.8**	**19.5**
North America	14.6	14.1	14.2	14.3	14.2
Europe	6.1	5.6	5.2	5.0	4.5
Asia Pacific	0.6	0.6	0.6	0.6	0.8
Total non-OECD non-OPEC	**25.6**	**26.3**	**26.9**	**27.8**	**28.3**
Russia and other former USSR countries	11.4	11.8	12.2	12.8	13.2
Europe	0.2	0.2	0.1	0.1	0.1
China	3.5	3.6	3.7	3.7	3.8
Rest of Asia	2.7	2.7	2.7	2.7	2.8
Latin America	4.1	4.3	4.4	4.3	4.1
Middle East	1.9	1.8	1.7	1.6	1.6
Africa[A]	1.9	1.9	2.0	2.5	2.7
Other non-OPEC	**1.9**	**2.0**	**2,3**	**2.5**	**2.8**
Refining improvements	1.9	1.9	2.0	2.1	2.1
Biofuels[B]	0.1	0.1	0.3	0.4	0.7
Total non-OPEC	**48.8**	**48.6**	**49.1**	**50.1**	**50.6**
Total OPEC[C]	**34.6**	**36.0**	**36.3**	**35.5**	**37.0**
Total world	**83.4**	**84.6**	**85.4**	**85.6**	**87.5**
Changes in stocks[D]	**0.9**	**0.7**	**0.,5**	**-0.2**	**0.0**

(A) It does not include Angola retrospectively from its entry into OPEC on 1 January 2007.
(B) Biofuels originating from countries other than the United States and Brazil.
(C) Includes Angola. 2008 production refers to the call on OPEC and is not a forecast.
(D) Calculated as the difference between supply and demand. For 2008 this is equal to zero.

Source: IEA, Oil Market Report, March 2008.

In truth, it should be noted that in real terms the price of oil in 2007, averaged out over the entire year, continued to be lower than the priced recorded at the peak in 1980-1981: 68 $/barrel against 79 $/barrel in 2007 prices. However, the average price in the initial months of 2008 exceeded to a large extent 100 $/barrel and in the absence of an unlikely sharp drop in the average price over the entire year, it will be difficult for the price to remain lower than the all-time high in real terms. In order to carry out a valid comparison, it is necessary to consider that the incidence of the cost of oil on the global economy has more than

halved compared to the time of the energy crises of the 1970s and 1980s, dropping from a maximum amount close to 9% to around 2% in the 1990s and then rising again to 4% from 2000 (Fig. 1.5)[4].

In order to replicate the ratio of disbursements for oil purchases and worldwide GDP similar to 1980, the average price of crude oil in 2008 would need to exceed 200 $/barrel, or over 250 $/barrel as an average for the last six months of the year. However, such an increase would have repercussions on the performance of the world economy, as it did in the early 1980s.

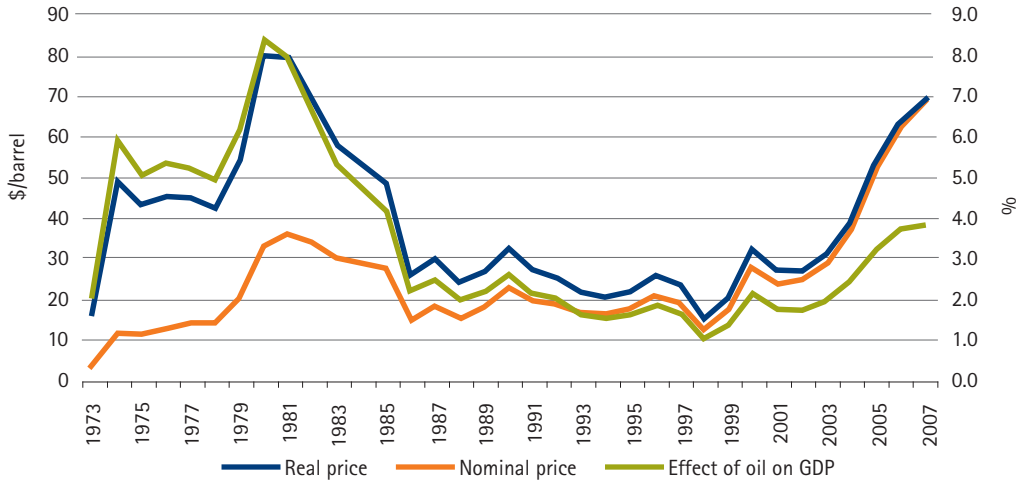


FIG. 1.5

Share of disbursements for oil purchases on global GDP in 1973 – 2007

Prices in $/barrel and share in percent

Source: AEEG calculations on IEA, BP and World Bank data..

The international natural gas market

After the slight drop in the initial months of the year, the price of gas at the European borders continued to grow significantly from July onwards, following the growth in the price of oil to which it is indexed, though diluted in time (Fig. 1.6). From an average value slightly above 21.5 c€/m^3 in June 2007, the average price increased to 23.5 c€/m^3 in December, continuing its growth to 26.5 c€/m^3 in the month of January 2008 and beyond.

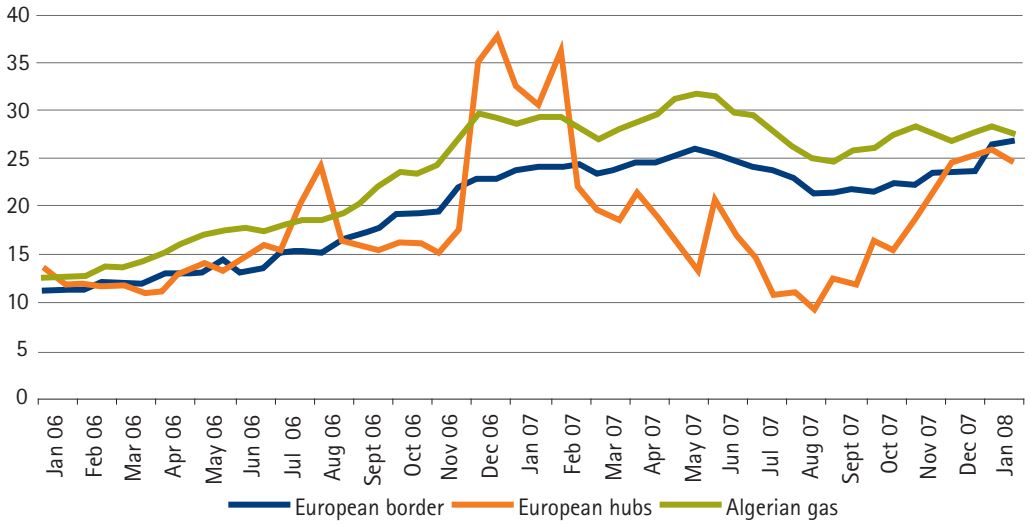
In 2007, the price of gas imported via pipeline was very similar across the various European borders (with differences of less than 5%), except for the Algerian gas, with prices lower by 15% and even lower during the first half of the year. This gap shrunk

4 This is an average value at the international level. There are evidently enormous disparities between individual countries according to their GDP and the role of oil in their economy.

FIG. 1.6

Average gas prices in European markets

c€/m³



Source: Bloomberg, Argus and World Gas Intelligence.

and almost became nil in the second half of the year. The price of gas imported from Algeria as LNG is 15% higher in the initial months of the year increasing to values close to 40% starting form the end of the summer.

The mild winter resulted, for the second year in a row, in a level of demand that was substantially lower than expected and which was reflected in a strong drop in the prices of European hubs: from 20.6 c€/m³ in November 2006 to 9.6 c€/m³ in April 2007. In the first part of 2007, the difference between the average price of imported gas at the European border, determined according to indexing formulas, and the gas sold through the hubs turned out to be significant, thus underlining the lack of a gas market in Europe.

In absolute values the price differential during the first part of the year remained around 12-13 c€/m³, or approximately half of the average price at the border. This gap then shrank considerably with the coming of winter and was reversed in November and December with a price at the hubs higher by approximately 2 c€/m³ compared to the average border price.

The growing affirmation of a global LNG market is evident from the many developments that took place in 2007, with loads of liquefied gas that often followed the highest prices offered around the world, rather than the route that was contracted, to cover unanticipated or unscheduled deficits. The process was triggered by the increase in gas-based generation in Japan in order to cover the deficit created by the shut down of one of the country's major nuclear facilities following an earthquake in the summer of 2007.

This had a domino effect on international LNG trade. Dozens of methane tankers headed for Korea, China and Taiwan were diverted to Japan, which was willing to pay prices that were higher by 60%. Japan also attracted various tanker loads of Algerian and Egyptian LNG that were on their way to Spain. In turn, Spain had to resort to LNG from the Caribbean to cover its gas deficit, which was further aggravated by the dry spell that reduced the generation of hydroelectricity in the country in November and December. In the last quarter of the year, a good 37 of the 48 loads of LNG coming from liquefaction terminals in Trinidad and Tobago that were originally destined for the United States were diverted to Spain, Korea, China and Taiwan, thus provoking a 90% increase in the price of LNG in the last months of the year.

The increasing globalisation and volatility of the LNG market over the last few years is also obvious from the increase in gas prices in the United Kingdom, which were caused by the diversion of Algerian LNG originally destined to British re-gasification plants to Turkey, in order to compensate the decrease in imports from Iran in February 2008. The growing flexibility of the LNG market and the volatility of the prices arises from the lack of a fixed relation between the origin and the

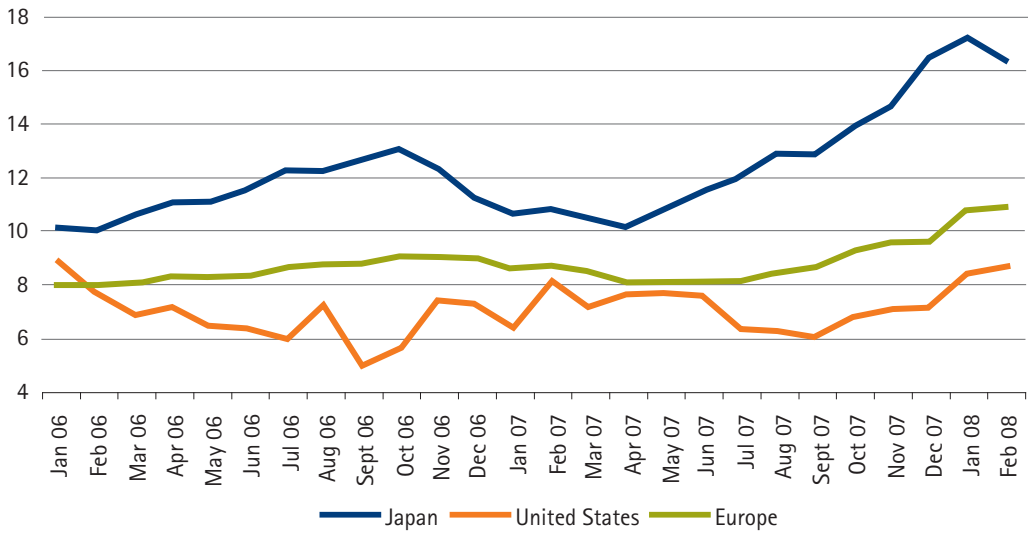
destination of the gas and the significant growth of infrastructures throughout the world. For some time now, more and more LNG contracts allow for the possibility of diverting the gas to markets offering higher margins. The buyers are protected by clauses that ensure equitable distribution of the margin between the parties.

These events have affected the major areas around the world very differently, due to the differing role of LNG compared to imports via pipeline, indexing formulas based on oil and derivatives, internal production and the market, as illustrated in figure 1.7. Table 1.5 illustrates the relation between internal production and imports in the main consumption areas of the world over the last four years. The table also shows the sharp differences between imports of OECD and non-OECD countries.

FIG. 1.7

International price of gas in the main consumption areas of the world

$/MBtu



Source: Argus, Platt's e *World Gas Intelligence.*

TAB. 1.5

Production and net imports in OECD countries by origin

M(m^3)

AREA OF ORIGIN	2004	2005	2006	2007
OECD North America	**893.0**	**882.2**	**894.4**	**933.3**
Internal production	753.7	744.6	761.6	788.0
Imports(A)	139.3	137.6	132.8	145.3
- from OECD countries	121.3	119.7	116.3	123.5
- The international oil market	18.0	17.9	16.5	21.8
OECD – Asia Pacific	**151.1**	**154.7**	**168.6**	**179.6**
Internal production	42.4	44.3	46.2	48.5
Imports(A)	108.7	110.3	122.4	131.2
- from OECD countries	13.8	17.0	19.5	18.6
- from non-OECD countries	94.9	93.3	102.9	112.5
OECD Europe	**690.4**	**709.7**	**724.0**	**713.0**
Internal production	325.7	315.4	307.9	296.6
Imports(A)	364.8	394.2	416.1	416.4
- from OECD countries	139.8	140.7	151.7	162.7
- from non-OECD countries	224.9	253.5	264.4	253.7

(A) The imports include the transport of gas across the internal borders of OECD countries.

Source: IEA, Monthly gas survey, January 2008.

The international coal market

In 2007, for the fifth year in a row, coal was the fossil fuel which grew the most rapidly, with over 50% of the growth in primary energy at the global level, pushed mainly by China, the major consumer of coal in the world, and India.

The worldwide consumption of steam coal has increased at rates that are substantially higher than those of other fossil fuels (a little less than 5% compared to 2.5% for gas and 1.1% for oil), bringing consumption for the year to 3.1 billion tons or 1.9 billion toe.

However, the performance of the coal industry was influenced by problems related to logistics and the weather, not under the control of governments and corporations and that resulted in prices that were double those of the previous year (Fig. 1.8). The sharp increase in coal prices is the result of shortfalls caused by continuing strong demand and of supply levels suffering from the concurrent effects of bottlenecks at ports no longer able to keep up with the growth in international traffic, lack of tankers, floods in the mining areas of Australia, power outages in South Africa and recently, the cold winter in China and other countries in the Far East.

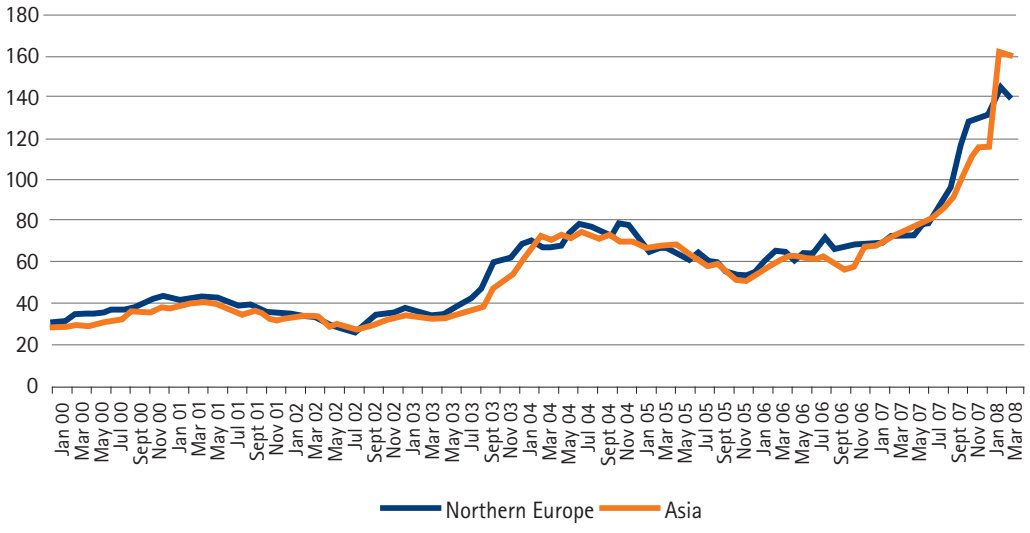
The increase in freight charges, which was particularly marked in the second half of 2007, was driven by the increase in the demand for transport to Asian countries, particularly China and India, for trading purposes, which pushed up freight over the Atlantic as well. Given the supply and demand on international markets, many operators were led to book the ships for 2008-2009 deliveries in order to cover any potential risks, thereby further increasing the freight charges.

The flooding in Queensland, Australia's main mining area, resulted in a 10 million ton deficit on the international market

FIG. 1.8

International price of steam coal in North American and Asian markets

Prices are *cif*; $/t



Source: Platt's, International Coal Report, March 2008.

and, more recently, the cold spell in China reduced exports to Japan in the initial months of 2008, further aggravating imbalances in demand and supply which involved several importing and exporting countries as well as entire industrial sectors.

The intense cold in China resulted in both a reduction in steam coal exports, and an increase in steam coal mining to the detriment of coke, with disruptive effects on the latter's price, which increased to over 300 $/t compared to 100 $/t for annual contracts entered into between March and April 2007.

South African production has experienced problems in maintaining the levels of previous years due to the reduction in investments in mines induced by a 2004 mining law. The government is aiming to put a brake on exports of steam coal in order to ensure that the resources are available for the Eskom power stations that drive the railway transport of the mineral. Repeated power outages (starting from November 2007) and breakdowns of the railway transport system, though of short duration, have reduced exports by several million tons.

Despite the logistics problems, steam coal traded internationally has averaged 18% of total production, which is higher than in previous years.

Table 1.6 provides a breakdown of the international transport flows from 2000 to 2007. The growth in Indonesia appears to be particularly vibrant (exports have tripled since 2000) as the main exporter after Australia, while China reached a high point in 2004 and, at the current rate of growth in consumption, could become an importing country in the not very distant future.

Coal continues to be by far world leader in electricity generation (39%), ahead of nuclear energy (20%) and natural gas (17%), though with strong differences between importers and exporters.

Among importers, the country that showed the greatest vitality was India, whose imports more than doubled between 2000 and 2007 (moving from 20 to 47 million tons). In order to satisfy the growing demand for electricity resulting from the rapid economic development (GDP has increased by 8.5% on the average each year over the last four years), the Indian government plans to increase electricity generation from coal by 60% over the next 5 years. In this scenario, the imports could even reach 100 million tons in 2013. The strategy of resorting to imports rather than producing domestically is also due to the fact that most Indian mines are located in areas affected by Maoist guerrilla warfare.

TAB. 1.6

Principal international flows of steam coal in 2000 – 2007

Millions of t

IMPORTS	EXPORTS FROM								
	AUSTRIA	INDONESIA	RUSSIA	SOUTH AFRICA	CHINA	COLUMBIA	UNITED STATES	OTHERS	TOTAL
Total imports									
2000	115.0	45.5	18.9	52.4	-30.2	21.7	0.4	31.5	255.3
2001	127.0	53.8	25.6	53.3	45.8	25.4	15.5	48.8	395.2
2002	128.9	61.6	25.3	47.6	55.7	22.7	7.4	49.2	398.3
2003	135.7	70.9	33.3	52.5	53.1	29.5	-3.6	52.3	423.8
2004	142.5	80.1	46.9	50.0	95.7	32.2	2.5	63.4	513.4
2005	150.1	90.4	52.7	53.8	67.3	36.4	2.4	63.8	516.9
2006	148.2	124.7	60.3	59.8	58.9	39.5	11.3	70.8	573.4
2007	156.2	132.0	62.2	59.4	50.5	41.6	15.2	65.1	582.3
2007									
European Union	2.8	12.8	49.9	37.7	0.4	26.1	7.7	10.1	147.5
India	0.6	15.8	0.0	4.1	0.5	0.0	0.0	4.6	25.5
Japan	108.4	26.2	10.8	0.2	14.4	0.0	0.0	12.1	172.0
Korea	15.4	22.1	0.0	0.1	18.2	0.0	0.0	7.4	63.1
Taiwan	17.7	18.9	1.3	0.0	12.7	0.0	0.0	15.0	65.6
Others	11.3	36.3	0.3	17.4	4.4	15.5	7.5	16.0	108.6

Source: Platt's, International Coal Report, various issues.

Energy policy and security of supply

Member states of the European Union did not have significant interruptions of supply during 2007. However, the interruption of gas flows from Turkmenistan directed to Iran at the end of 2007 and the threat of cut offs of Russian gas destined to Ukraine at the beginning of 2008 contributed to putting the issue of security at the top of the energy policy agendas of European governments and institutions of the European Union. The first of these events has brought to light how a small interruption to a country's supply can have amplified repercussions in surrounding countries.

Turkmen gas covers less than 5% of Iranian requirements but in a period of extreme cold with temperatures of -25 °C, Iran had to interrupt its supplies of gas to Turkey which, being also subjected to the same cold front, had to reduce the supplies to Greece.

The criticality factors that surround the security of European supplies mainly involve electricity, oil and natural gas.

Security in the supply of electricity

Between 2000 and 2006 net capacity within the 25 countries/areas comprising the UCTE (Union for the Co-ordination of Transmission of Electricity)[5], increased by 23% while guaranteed power increased by 22% in the same period. Excluding renewables from guaranteed power results in guaranteed capacity increase by 12% in the same period[6]. Renewable capacity increased more than fourfold between 2000 and 2006 (from 3% to 8% of the total net capacity); 80% of it consists of wind farms, the availability of which depends on weather conditions. The increase in guaranteed capacity, even excluding renewables, still continues to be higher than the overall increase in the demand for electricity, which is approximately 9% in the same period.

A tendency towards improvement of the security conditions of electricity supply in Europe is also evident from an examination of the main reliability indices of the electric system used by the UCTE, which are summarised in figure 1.9. Since 2002, the maximum monthly unavailable capacity as a percentage of total net capacity has dropped, albeit by a small amount (from 38% to 36%). In the period from 2000 to 2006, the residual capacity in the absence of exchanges with other countries has increased substantially: from a monthly minimum of approximately 12% to 18% of guaranteed power. The margin against peak loads is practically unchanged at minimum monthly percentages close to 4% of guaranteed capacity. However, compared to guaranteed capacity the residual margin, defined as the difference between residual capacity in the absence of exchanges and the margin against peak loads, has more than doubled (from 5% to over 10%).

Though the security indices of the electric system appear to be reassuring in terms of availability of power, the same cannot be said for the availability of energy, especially with regard to gas supplies on which the European Union will depend in an increasing and critical way over the next two decades and the price of gas which is implicitly or explicitly linked to the price of oil. Table 1.7 summarises the latest IEA forecasts to 2030 of the inputs to electricity generation in the main areas of the world.

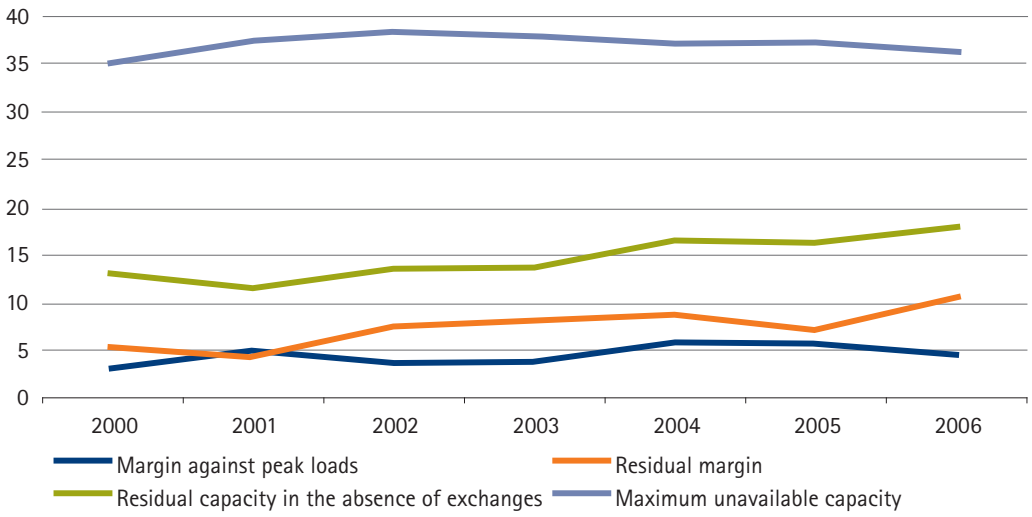
5 These are: Austria, Bosnia Herzegovina, Belgium, Bulgaria, Switzerland, the Czech Republic, Germany, Spain, France, Greece, Croatia, Hungary, Italy, Luxembourg, Montenegro, former Macedonia, the Netherlands, Poland, Portugal, Romania, Serbia, Slovenia, the Slovak Republic, Western Ukraine.

6 In 2006 the net power of the UCTE reached a monthly average of 619 GW compared to guaranteed power of 422 GW. Between 2000 and 2006, renewable power increased by approximately 10 GW to 45 GW.

FIG. 1.9

Indexes of security electricity supplies in UCTE countries in 2000-2006

Percentages



Source: UCTE, Statistical Yearbook 2000-2006.

TAB. 1.7

Forecasts of worldwide energy needs for electricity generation

Millions of toe

	COAL	OIL	NATURAL GAS	NUCLEAR POWER	RENEWABLE ENERGY RESOURCES	TOTAL
YEAR 2005						
Developed countries	918	118	383	612	203	2,234
Transition countries	135	26	278	73	31	543
Developing countries	902	154	250	36	146	1,488
WORLD	**1,955**	**298**	**911**	**721**	**380**	**4,265**
YEAR 2030 – REFERENCE SCENARIO						
Developed countries	1,097	65	599	616	438	2,815
Transition countries	142	18	360	104	56	680
Developing countries	2,218	155	778	134	445	3,730
WORLD	**3,457**	**238**	**1,737**	**854**	**939**	**7,225**
YEAR 2030 – ALTERNATIVE SCENARIO						
Developed countries	741	57	511	751	510	2,570
Transition countries	119	16	289	124	64	612
Developing countries	1,579	129	589	206	616	3,119
WORLD	**2,439**	**202**	**1,389**	**1,081**	**1,190**	**6,301**

Source: IEA, World Energy Outlook 2007.

Security in the supply of oil

The uncertainty involving supply of oil worldwide in the short term was discussed in the first part of this chapter. Over the next decade and beyond, additional critical issues will intervene, including the irreversible drop in the production of non-OPEC countries, OPEC's uncertain and in any event limited propensity to invest in a sufficient increase in production capacity and the sharp growth in the needs of developing countries.

In its reference scenario presented in table 1.8, the IEA forecasts an additional demand of 1.6 billion t/year in 2030 compared to 2005 (from 3.8 to 5.4 billion t/year). The alternative WEO (World Energy Outlook) scenario, which is based on a strong commitment to savings and energy efficiency and the development of renewable energy sources, does not appear

to be very realistic considering that only the European Union and perhaps Japan have taken this route with decisiveness, while countries with strong energy growth continue to take into account a traditional scenario[7]. Producing countries have yet to show convincing signs of their willingness to adapt to this acceleration in needs.

It will be very difficult for non-OPEC countries to increase their production significantly. The IEA believes that it will be difficult for Russia's production to increase in the future. Over the next ten years, there will be an increasing contribution of products derived from heavy oils and oil shales at costs that are by now fully compatible with market prices[8] even though, with current extraction technologies, the development of these fossil fuels involves significant local environmental problems. Nor is it possible to rely on the substitutes for oil products from biomass. One half of the slight increase of 0.5 million barrels/day in 2008 for non-OPEC countries overall (from 50.1 to 50.6 million barrels/day) is due to the biofuels originating from countries other than the United States or Brazil. However, it is difficult to count on further significant contributions from this source after FAO's and the World Bank's food alarm, which was also confirmed by the IMF, regarding the price increases of cereals and the consequent "bread wars" and millions of poor without food in some forty countries, due in part to the use of arable land for the production of biomass for energy, in place of cereals for food.

OPEC countries have no incentive to invest in oil and gas exploration and development as long as the price remains high. Knowing that an increase in production would result in a price drop, they aim to achieve the best equilibrium level maximising revenue at minimum cost. Serious doubts persist on the true willingness of OPEC countries to increase production while waiting to see the impact of higher prices on world consumption.

Given appropriate investments, Iraq, the reconstruction of which depends to a large extent on oil sales, could increase its production from the current 2.3 million barrels/day to over 5 million over the next five years. However, such a scenario would be possible only if peace were achieved quickly and it would involve a difficult agreement with other OPEC members on production quotas.

TAB. 1.8

Forecasts of worldwide energy needs for electricity generation

Millions of toe

	COAL	OIL	NATURAL GAS	NUCLEAR POWER	RENEWABLE ENERGY RESOURCES	TOTAL
YEAR 2005						
Developed countries	1,130	2,246	1,211	612	343	5,542
Transition countries	204	220	539	73	44	1,080
Developing countries	1,557	1,362	605	36	1,076	4,636
WORLD	**2,891**	**3,828**	**2,355**	**721**	**1,463**	**11,258**
YEAR 2030 – REFERENCE SCENARIO						
Developed countries	1,318	2,479	1,654	616	733	6,800
Transition countries	229	283	743	104	74	1,433
Developing countries	3,446	2,606	1,551	134	1,534	9,271
WORLD	**4,993**	**5,368**	**3,948**	**854**	**2,341**	**17,504**
YEAR 2030 – ALTERNATIVE SCENARIO						
Developed countries	943	2,242	1,480	751	872	6,288
Transition countries	198	250	640	124	84	1,296
Developing countries	2,558	2,213	1,326	206	1,689	7,992
WORLD	**3,699**	**4,705**	**3,446**	**1,081**	**2,645**	**15,576**

Source: IEA, World Energy Outlook 2007.

7 In this respect, it should be noted that future consumption as forecasted by the WEO in the last 15 years has always been more in line with the reference scenarios than the alternative scenarios.

8 Extraction costs vary from 20 $/barrel for Venezuelan heavy oils and 50 $/barrel for Canadian oil shales. However, given the remaining uncertainties about the future price of oil, companies hesitate to proceed with the high investment levels that are required

Security in the supply of gas

An even more critical problem for the EU involves natural gas, which is connected to energy policy choices for the majority of the member states which aim to increasing utilisation of this source in electricity generation. The problem involves three major issues: competition between internal demand and exports of producing countries; the availability of gas; control of networks and resources.

Gas security – Competition between internal demand and export

Increasing internal demand of producing countries is one of the most critical factors for the future of gas supply on international markets. For several years now, Indonesia has had to reduce exports in order to meet the growth in internal demand. In Nigeria, the investments of multinationals in two new LNG terminals are awaiting the decisions of the government on the development of domestic consumption. Similarly, increasing internal demand for Egyptian gas will have the effect of limiting future exports.

The problem may become particularly acute for supplies from Russia, whose economy is growing at annual rates that exceeding 6%, which will inevitably affect the need for natural gas. The Russian Ministry of Industry and Energy has forecast a potential shortfall for the domestic market of 4 billion m^3 in 2008 which will grow to 28 billion by 2010 and to 47 billion by 2015. An indication of the potential difficulties that are expected over the next decade is the development of the Sakhalin reservoir (currently under the guidance of the major Exxon Mobil) which seems to have undergone a temporary slowdown in anticipation of the Russian government's decision on whether to export the gas produced to China or make it available for internal consumption.

The internal demand for gas may be reflected on the availability of oil for export. As early as the 1970s Iran had in place a policy of developing natural gas for internal use aimed at freeing oil resources for export[9]. The exports of Saudi oil over the next decade depend to a great extent on the Kingdom's natural gas resources. Natural gas exploration in the large Rub al Khali area, whose fields were expected to satisfy internal gas needs for many decades, have not yet given the expected results, despite the contribution of western companies and technologies, allowed since 2003. Given the rapidly increasing demand for desalination, electricity generation, chemical synthesis and heavy industry, the country may quickly have to divert an increasing portion of its oil to internal use. Indeed, the increase in production capacity forecasted by the Saudi government from the current 11.2 million barrels/day to 12.5 and 15.5 million barrels/day in 2010 and 2020 respectively, will be to a great extent earmarked for internal consumption[10].

Gas security – gas availability

The increasing difficulty encountered in the development of Russian gas is surprising, considering that Russia possesses by far the largest resources of natural gas on the planet. However, at the end of the 1990s Russian production appeared to enter into crisis, requiring more and more contributions from Turkmen, Uzbek and of late, Kazakh gas. The contribution of these three gas sources to the production of the four exporting former USSR countries increased by 12% in 1997 to 19% in 2006 (Fig. 1.10).

After the sharp increase in 2006, due to the difficult weather conditions, Russian production dropped more than could be justified by demand. According to many analysts, the takeover of the Russian energy sector by the state once again has put a brake on investments thereby resulting in stagnation in production. The profits from Gazprom activities are not reinvested to the appropriate extent in exploration and production of hydrocarbons, but in activities other than the core business. However, the main problem regards the profits. Artificially low internal prices reduce Gazprom's profits and consequently the investments it makes. The average selling price on the internal market in 2007 was equal to only 51 $/1,000 m^3, while Gazprom sold gas at 109

9 Natural gas exports from Iran are an insignificant percentage (historically < than 5%) of production which exceed 100 billion m^3 in 2005. Conversely, exports of Iranian oil are 65% of production.

10 The internal consumption of oil of 2.0 million barrels/day in 2006 could rise to 3.5 million barrels/day if the production of natural gas cannot keep up with the forecast rates.

$/1,000 m^3 to former USSR countries and 263 $/1,000 m^3 to western European countries[11].

At these prices, Gazprom loses 20 $/1,000 m^3 sold on the internal Russian market, a loss that was only partially offset by the margin realised through sales to former USSR and European countries, of 12 and 71 $/1,000 m^3 respectively. The available margins would have been insufficient to cover the development costs of new fields necessary to sustain production in future years. The average cost of production in the Urengoi fields is currently approximately 15 $/1,000 m^3 but these reservoirs are quickly becoming depleted, with an annual decline of 4-5%. Maintaining current production requires high investments in order to reach the deeper strata increasing the costs. However, it will not be possible to cover future demand without the increasing contribution of the new Yamal and Shtokman reservoirs. Located north of the arctic polar circle in extreme weather conditions, these reservoirs will have costs of 45 $ and 70/$1,000 m^3, respectively, 3 to 4 times the current cost. In order to make it possible to proceed with the necessary investments, the Russian government has set an objective of imposing market prices on the non-domestic sector by 2011 and the domestic sector by perhaps 2015. The liberalisation programme has been greatly delayed however.

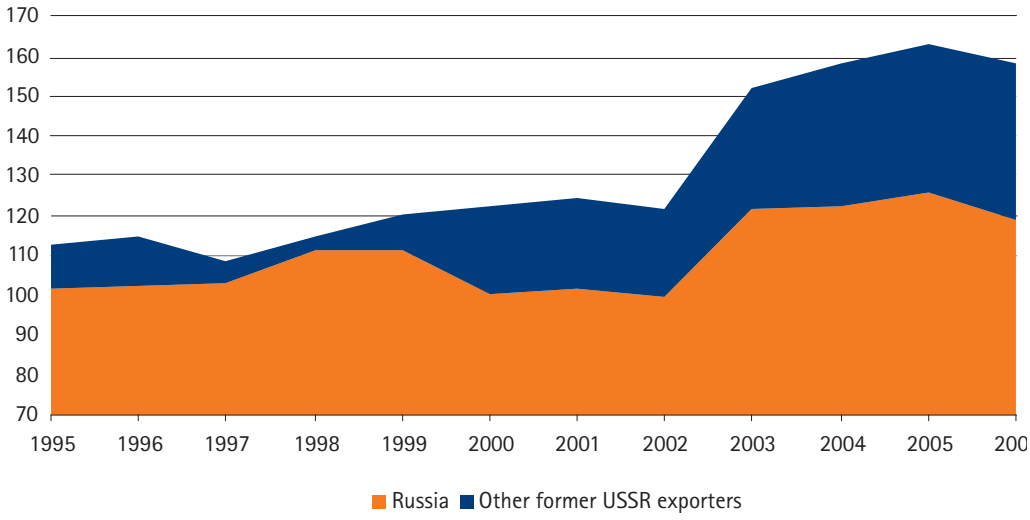
The availability of Russian gas creates concerns for European supplies. According to the European Commission forecasts, over 200 billion m^3 of the EU's needs for natural gas in 2020 are not currently covered by long term contracts. The increase in the needs over the next decade is so high that the South Stream and Nabucco projects cannot be considered to be competitive but must be considered as complementary to each other. The main problem is that currently neither project can be considered secure in terms of gas supply. Gazprom has not been making the necessary investments to supply South Stream, North Stream, China, etc. Unless there is a radical increase in the quality of the upstream investments, it will be difficult for Russia to contribute to covering more than one fourth of the European shortfall, given the drop in the current reservoirs and the increase in domestic demand.

In order to cover the expected needs, Russia must set up new production capacity of approximately 300 billion m^3/year by 2020, or 60% of current capacity, including the capacity required to replace depleted fields.

FIG. 1.10

Contribution of former USSR exporting countries to the exports of natural gas to western European countries

G(m^3)



Source: BP, Review of World Energy 2007.

11 The economic and financial figures for Gazprom are estimates of the Moscow based bank, Renaissance Capital.

The availability of the Nabucco project is currently limited to the gas produced by the Azeri and perhaps Turkmen reservoirs which does not amount to much more than 10 billion m^3, all still to be developed. The supply of the remaining 20 billion m^3 necessary to keep the gas pipeline full continues to be a problem. The Turkmen, Kazakh and Uzbek resources are currently covering the Russian production deficit and the Azeri resources are limited. The reserves in Turkmenistan and Kazakhstan allow for a significant additional production in these two countries, but are already reserved for the increasing needs of major Asian countries (China, India and Pakistan). The other potential gas sources for Nabucco, Iran and Iraq, have security problems and cannot be counted on at least for the near future. However, Iraq could offer approximately 7 billion m^3/year and Iran has already concluded an agreement for supplies to European customers of 5.5 billion m^3/year for 25 years starting from 2009[12]. Furthermore, in April of 2008, an agreement between Iran, India and Pakistan was finalised for the construction of a 2,600 km gas pipeline for the supply of 30 billion m^3 of Iranian gas.

Gas security – monitoring the networks and resources

Given the very high production costs of the new arctic fields, it is not surprising that Gazprom is trying to enter into exploration and production activities of other countries at lower costs, for oil as well as natural gas. A case in point is the agreement between Eni SpA for an equal share of 33.3% of the Libyan Elephant reservoir, which however must also be endorsed by the Libyan government[13]. This is not a gas field but the initiative allows Gazprom to enter the Libyan upstream which is rich in gas fields, at a low cost. Gazprom is interested in developing the entire chain of gas supply and the joint venture agreements with NOC (National Oil Corporation of Libya) which are supported by the Libyan government include, in addition to prospecting and production of oil and gas, a participation in the doubling of the Greenstream gas pipeline that was recently agreed with Eni. In the last ten years, starting from 1999, Gazprom had to resort more and more to the gas produced by central Asia, mainly Turkmenistan and Kazakhstan, in order to fulfill its European contracts. This was facilitated by the infrastructures within the former USSR and the relations that were set up between the Soviet Republics at the time; in the second half of the1980s Turkmen, Uzbeki and Azeri gas contributed 35% to Soviet production and approximately 50% to exports to the west. The renewed and growing dependence of Russia on gas supplies from central Asia obviously reduces the supply sources available to western Europe (and also to China, India and other importing Asian countries), which raises a big question mark as to the security of these supplies. The decision to purchase Turkmen and Kazakh gas as an alternative to investing in its own gas resources is probably not economically sound, considering the price paid per 1,000 m^3 according to the most recent agreements: approximately 100 $ as an average for 2007, 130 $ in the first half of 2008 and 150 $ in the second half, if these prices are compared to the current average cost of production of Russian gas which is 15 $/1,000 m^3. However, the strategic interest of Gazprom is to ensure control of the resources and of access routes to the gas and consequently of the price to the maximum extent.

The Russian giant has made many initiatives to acquire equity interests in infrastructures that are crucial to European gas supplies. With Blue Stream, North Stream and South Stream, all of which are projects that have been developed as joint ventures with European companies, Gazprom has practically acquired control of almost 80 billion m^3/year destined for the European market; the only unknown factor is the availability of gas with which to fill the pipelines. It has attempted to acquire part ownership of the pipeline for the supply of Azeri gas to Turkey and Greece, with a subsequent extension towards Italy (the IGI project). As already indicated, Gazprom is negotiating control of the Libyan gas supplies through investments in the Greenstream reservoirs and upgrade. It is formulating coordination strategies with Algeria for suppliers and a joint venture in the upstream. In Nigeria, Gazprom has had discussion with the government for participation in the construction of the 4,000 km gas pipeline in order to join the reservoirs of the Niger delta

12 TAP (Trans Adriatic Pipeline) project.

13 Such agreements also open the doors for Eni to enter into joint ventures in the development of the Russian upstream, a follow up to the agreements concluded between Eni and Gazprom in November 2006.

with the Algerian coast for exportation to Europe and elsewhere.
Gasprom's attempt to counter the European gas market through cartel agreements with the main producers is the most worrying. In the Teheran meeting at the end of April 2008, Russia proposed to the 15 members of the forum of gas exporting countries a single formula for calculating the price of exported gas, the definition of criteria for the determination of the transit tariffs, coordination of the new international gas pipeline projects and institution of procedural mechanisms for sales on spot markets. The IEA notes that it is difficult for such a cartel to form as long as there is competition between supplies via pipeline and LNG. Indeed, the countries whose exports are mainly in the form of LNG (Qatar, Oman, Indonesia, Malaysia, Trinidad and Tobago) that can take advantage of the extra margins allowed by the flexibility and liquidity of the LNG market, show little interest in the project.

The European Union's commitment to energy security

The European Union has adopted parallel security strategies for energy supply through actions on the energy markets, energy efficiency and the development of renewable sources. The existence of an international market that is liberalised and liquid is fundamental for security of supplies in the gas sector. It must be supported by multiple infrastructures (long distance transport via pipelines and LNG, interconnection between national networks, storage), exchange centres and widely diversified supplies. With the development of liberalisation and transparency, the liquidity of the European market increases while the possibilities of its manipulation by producing countries decrease.
This is why it is important for the European Union to impose rules that are equally applicable to all operators, especially as regards unbundling of transmission, distribution and storage activity, so as to allow for the neutral development of infrastructures and the full access of third parties. It is only in this way that companies can be made to feel responsibility towards making appropriate investments in infrastructures and resource development, without restraining competition. However, a free and open market cannot be achieved if the resources it requires are scarce, particularly when exporting countries aim at nationalising their energy businesses and focusing foreign policy on the politically advantageous use of their resources.
Achievement of the objectives of the European Union in regard to energy efficiency and development of renewable sources by 2020, will contribute to the security of fossil source supplies as they reduce the needs, but only marginally change the equilibrium between supply and demand at the worldwide level, as these objectives are neutralised to a great extent by the strong energy growth of developing countries. The forecasts of the IEA also note that turning to energy efficiency and renewable sources will not solve the problem of energy security except for long period of 50 to 100 years and beyond.
During 2007, in the face of escalating future oil and natural gas supply problems, the European Commission seems to have become aware of the need to place more attention on energy sources that are practicable in the short and medium term and which are characterised by a greater degree of certainty insofar as the conditions of their development. Recently, the Commission has abandoned its traditional energy neutrality and explicitly supported nuclear energy for two fundamental reasons: it is the source that contributes in the most economic and concrete way to reaching the objective of reducing CO_2 emissions while concurrently guaranteeing the security of electricity supplies. To this end, it is openly seeking cooperation between member states in order to increase the security of the generating plants, to find a solution for handling residual waste and to facilitate the procedures for providing authorisation, financing and reliable management of nuclear stations.

Energy demand and supply in Italy

In 2007, for the second year in a row, the consumption of primary energy dropped by 0.9% compared to the 0.8% drop in 2006. Similarly, the overall final consumption dropped by 1.1% compared to the 0.6% drop in the year before. Furthermore, consumption of electricity, not including losses from transport and distribution, have only increased by 0.3%. This has occurred on account of the relatively strong growth of the economy of 1.5% in terms of GDP at constant prices. The relation between the consumption of primary energy and GDP has however dropped for the third consecutive year, together with the consumption of final energy. In addition, for the first time in the last two decades[14] there was a drop in the intensity of electricity of the GDP (Fig. 1.11).

As in 2006, it is still too early to make reassuring conclusions about the causes of this improvement in the efficiency of the energy system. A period of strong GDP growth favours the restructuring of plants for more efficient use of energy, particularly if preceded by many years of weak growth; indeed, from an average annual increase in GDP of 0.4% between 2002 and 2005, in 2006-2007 growth recorded an average increase of 1,7%. Furthermore, 2007 even more so than 2006, was characterised by rather mild weather which resulted in lower energy consumption for heating[15]. Finally, the increase in the price of energy sources has presumably started to promote energy saving as it is more evident in the case of fuel. Furthermore, the significant growth potential of electricity consumption which has just reached the European average of 20% of final consumptions (Fig. 1.12) should also not be underestimated.

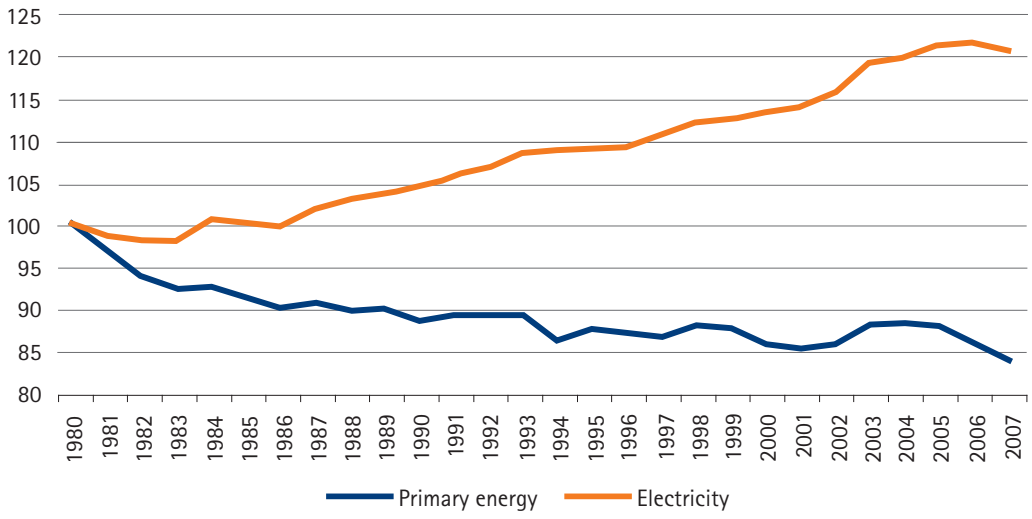


FIG. 1.11

Energy intensity of the GDP from 1980 to 2007

1980 = 100

Source: AEEG calculations on data from the Ministry of Economic Development and ISTAT.

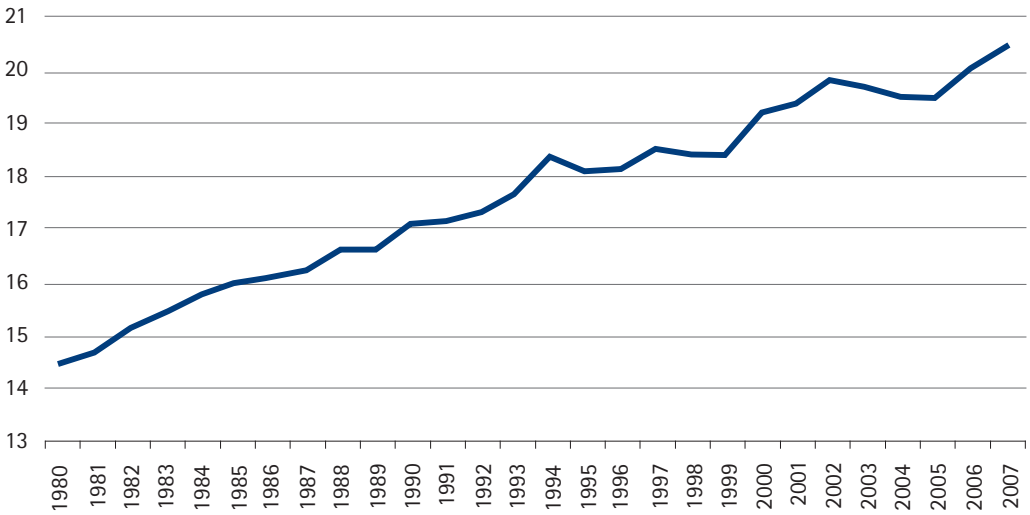
14 The last drop took place in 1984-1985 and in 1981-1982 prior to that, which were years of high energy prices and above all during which the restructuring of the domestic energy system was taking place.

15 2006 began with peaks of intense cold and a relatively mild end of the year; conversely, the first three months of 2007 were very mild while November and December were rather cold.

FIG. 1.12

Penetration of electricity in final energy uses

Percentages



Source: AEEG calculations on data from the Ministry of Economic Development and ISTAT.

TAB. 1.9

The Italian energy balance in figures, 2006 and 2007

Mtoe

	Solids	GAS	OIL	RENE-WABLE	ELEC-TRICITY(A)	TOTAL
YEAR 2007						
1. Production	0.56	8.01	5.86	13.55	0.00	27.98
2. Imports	16.65	61.01	108.48	0.68	10.69	197.51
3. Exports	0.11	0.06	30.98	0.00	0.58	31.72
4. Changes in stocks	-0.28	-1.08	0.67	0.00	0.00	-0.69
5. Availability for domestic consumption (1+2-3-4)	17.38	70.04	82.70	14.23	10.11	194.45
6. Consumption and losses of the energy sector	-0.64	-0.86	-6.25	-0.17	-42.43	-50.35
7. Conversion into electricity	-12.00	-27.43	-7.80	-11.72	58.95	0.00
8. Total final uses (5+6+7)	4.74	41.75	68.65	2.34	26.62	144.10
- Industry	4.57	16.40	7.61	0.35	12.09	41.02
- Transport	0.00	0.48	43.16	0.12	0.89	44.65
- Civilian usage	0,01	23.77	4.83	1.64	13.16	43.41
- Agriculture	0.00	0.16	2.47	0.23	0.48	3.34
- Chemical synthesis	0.16	0.94	6.98	0.00	0.00	8.08
- Bunkering	0.00	0.00	3.60	0.00	0.00	3.60
YEAR 2006						
1. Production	0.51	9.06	5.77	13.40	0.00	28.73
2. Imports	16.79	63.85	107.00	0.84	10.25	198.73
3. Exports	0.19	0.30	27.34	0.00	0.35	28.18
4. Changes in stocks	-0.05	2.91	0.22	0.00	0.00	3.08
5. Availability for domestic consumption (1+2-3-4)	17.15	69.70	85.21	14.23	9.90	196.19
6. Consumption and losses of the energy sector	-0.74	-0.83	-5.99	-0.09	-42.89	-50.53
7. Conversion into electricity	-11.86	-26.02	-9.50	-12.15	59.53	0.00
8. Total final uses (5+6+7)	4.56	42.85	69.73	1.99	26.55	145.66
- Industry	4.41	16.42	7.66	0.29	12.11	40.90
- Transport	0.00	0.44	43.07	0.15	0.88	44.54
- Civilian usage	0.01	24.89	5.96	1.37	13.08	45.30
- Agriculture	0.00	0.15	2.59	0.17	0.47	3.38
- Chemical synthesis	0.14	0.95	6.93	0.00	0.00	8.02
- Bunkering	0.00	0.00	3.52	0.00	0.00	3.52

(A) Primary electricity (hydroelectric, geothermoelectric, wind), imports, exports and losses measured by conventional and constant thermoelectric input of 2,200 kcal/kWh.

Source: AEEG calculation using figures published in the General Report on the Country's Economic Situation 2007 published by the Ministry of Economy and Finance, provisional figures from the Ministry of Economic Development and figures provided by TERNA.

The most significant changes characterising the energy sector in 2007 is illustrated with reference to the energy balance set forth in table 1.9. Final uses and the transformation stages into final energy, imports and exports of energy sources required for internal production of primary sources are briefly set forth. This course is opposite to the course of supply chain but has the advantage of allowing for a more realistic representation of the causes and effects that determine the dynamics along the energy chain.

Compared to 2006, there has been a reduction in the final uses for almost all the items in the balance. When the consumption did not drop, it remained constant or increased by very little. At sector level, only oil consumption for chemical synthesis increased while there was a marginal fuel increase for automobile transportation, which was influenced negatively by the increasing price of fuel during the year. In this latter sector, there was an obvious jump in the consumption of natural gas, which was close to 10% for the second year in a row, even though this source continues to represent only a little more than 1% of total consumption for transportation. Household uses show a strong drop in consumption, which is essentially due to the mild winter temperatures, as can be deducted from the very negative performance of oil and natural gas consumption in this sector. Consumption for industry increased only slightly, as it too was negatively influenced by the mild winter temperatures. The drop in agriculture is almost entirely attributable to the uses of oil in agricultural machinery, while there was an appreciable increase in the consumption of natural gas.

The drop in consumption, insofar as final uses, was concentrated on natural gas and oil, with an almost identical drop in absolute terms: 1.10 and 1.08 Mtoe respectively. Electricity consumption increased very modestly in agriculture (1.5%) and transports (1.3%) and even less in the household sector (0.6%). These results are quite opposite to last year's results, when growth of electricity consumption was close to 2% in all final sectors. These probably reflect the technological replacement in favour of more efficient plants which was the result of increases in the price of electricity, mainly in the more sensitive industrial sectors as well as of policies favouring energy efficiency (labelling of home appliances, Ministerial decrees of 20 July 2004 which set out the obligations of distributors and other energy savings incentives). The increase in the consumption of renewable sources in final uses (17.9%) was very sharp, though at levels that continue to be low (2.3 Mtoe).

2007 was characterised by a slight drop in the generation of electricity excluding pumping (-1.0%). This decrease does not represent a shortfall in the domestic electricity system, which has been very strong over the last few years. The growing spread in the price of domestic electricity generation which is mostly based on imported fossil sources compared to the imports of energy from France and other neighbouring countries, which is produced from internal sources that are amply protected from the increases in the international prices of oil and coal. Between 2006 and 2007, the average cost for generation in Italy for fuel alone has increased by over 25%.

Consequently, imports of electricity increased significantly compared to 2006 (+4.2%), though remaining lower than in 2005 (10.7 Mtoe compared to 11.1 Mtoe). As a counterbalance, the exports to the French border increased considerably (+64%), especially in the month of November, to cover peaks in demand and the high prices on Powernext which resulted from strikes as well as stoppages and breakdowns of certain French power stations. In these difficult times, the generation of Italian combined cycles can be competitive, despite the high price of natural gas. This has made it possible to contain the increase in net imports at a little more than 2.0% (from 9.9 Mtoe to 10.1 Mtoe).

The significant increase in the generation of natural gas (+5.4%) and the generation of coal (+1.2%) has been counterbalanced by the sharp drop in generation using oil (-17.9%) and hydroelectric generation from natural sources (-9.5%), which has decreased compared to the historic average also on account of the increase in domestic constraints placed on alternative uses of water. As a whole, other renewable energy sources have increased appreciably (+11.4%), as they were pushed by wind energy (+40%), so that overall the generation of renewable energy sources dropped by 3.6%.

In 2007, the consumption and leakages in the energy sector represented 25.9% of the availability for internal consumption, which was substantially in line with the values for 2005 and 2006. Imports contributed 85.3% to availability for internal consumption of all primary sources, while domestic production accounted for 14.4% and withdrawals from storages accounted for 0.3%. The contribution of domestic production

was the highest for renewable energy (93.4%), and for several years now imports of biomass have been on the rise, with an incidence that increased from 5.8% of the total in 2005 to 6.6% in 2007.

During the year, the contribution of domestic production of natural gas dropped further to only 11.4% of total availability, while the withdrawals from storages has allowed imports settle at 87.0% of total availability before consumption and losses, compared to 91.2% of the previous year. However stagnation of consumption resulted in a significant drop in natural gas imports (-4.5%) in 2007.

Despite a significant drop in consumption, imports of crude oil, semi-processed products and distillates have remained almost unchanged at 108.5 Mtoe, to cover the increased exports of finished products (+13.3%). National oil production has increased slightly following the deployment of the new oil fields in Val D'Agri, which however cover only 7.1% of total availability for domestic consumption in 2007. With the deployment of the new Tempa Rossa oil field in 2011, this contribution should increase considerably. More generally, over the last few years there has been a strong recovery of investments in Italian upstream, brought about more by the high international price of hydrocarbons than the improvements in the domestic authorising framework. This has resulted in a considerable number of discoveries of oil and gas fields and the drilling of 11 wells in 2007. It is however difficult for this to reverse the trend of decreasing domestic production which has been going on for almost a decade now.

Coal imports represented 95.2% of total availability for internal consumption in 2007. Despite the sharp increase in the price of coal on international markets, this continues to be the most competitively priced energy source for electricity generation; the average cost of generation from coal in 2007, referring only to fuel, could be estimated as no higher than 50% of the cost of generating form natural gas using modern combined cycles.

Electricity and gas prices in the European Union

The Statistical Office of the European Union (Eurostat) has been collecting and publishing data on the prices paid by final consumers in the various member states for the use of electricity and natural gas since 1985.

Since 1 July 1991, the data on the final prices paid by industrial consumers have been collected and published pursuant to Directive 90/377/EC concerning the community procedure relating to the transparency of prices to final industrial consumers of gas and electricity. This directive expanded the scope of the already existing statistical records insofar as industrial consumers are concerned and defined a procedure for the communication to Eurostat of data relating to each member state. Eurostat has continued to record the prices paid by domestic consumers, though this area is not covered by Directive 90/377/EC, on the basis of a gentleman's agreement with the member states.

On 7 June 2007 the European Commission, with its Decision 2007/394/EC, reviewed the Directive and updated the recor-

TAB. 1.10

Methodology for recording of final prices for electricity and gas

RECORDING CHARACTERISTICS	OLD METHODOLOGY 1991-2007	NEW METHODOLOGY FROM JANUARY 2008
Classification of customers	Standard consumers (precise annual consumption)	Annual consumption classes (average values)
Recording frequency	Bi-annually: 1 January and 1 July	Bi-annually: 1 January and 1 July
Reference period	Exact prices effective on 1 January and 1 July of each year	Average prices relating to the 6 month period preceding 1 January and 1 July
Geographic coverage	Local prices (representative areas or locations)	Domestic average prices
Price types	Tariffs/prices that are the most representative for the country, or, tariffs that benefit the consumer or the prices that are negotiated at arm's length that are applied more frequently	Weighted average prices based on market prices (volumes) for each consumption class, of suppliers of electricity and gas that participate in the statistical survey

Source: AEEG calculations on Eurostat data.

TAB. 1.11

Types of consumers for the electricity sector

DOMESTIC (kWh/year)	OLD METHODOLOGY 1991-2007	NEW METHODOLOGY FROM JANUARY 2008
Domestic (kWh/year)		
Class DA	600	< 1,000
Class DB	1,200	1,000-2,500
Class DC	3,500	2,500-5,000
Class DD	7,500	5,000-15,000
Class DE	20,000	>= 15,000
Industrial(A) (MWh/year)		
Class IA	30	<20
Class IB	50	20-500
Class IC	160	500-2,000
Class ID	1,250	2,000-20,000
Class IE	2,000	20,000-70,000
Class IF	10,000	70,000-150,000
Class IG	24,000	
Class IH	50,000	
Class II	70,000	

(A) Industrial consumers may include other non domestic consumers.

Source: AEEG calculations on Eurostat data.

ding methodology for the prices so as to render it more coherent with the new structure of the market as this ensued from the complete liberalisation of the selling activity as from 1 July 2007.

Eurostat has also updated the methodology for the collection of final prices paid by domestic customers, thereby confirming the voluntary agreement signed by the member states.

Table 1.10 shows the main differences between the old recording methodology and the new one that became effective on 1 January 2008

According to the Eurostat definition, which continues to remain in force with the new methodology as well, the price net of taxes has not only been stripped of effective taxes (such as excise duties or VAT), but also of any other duty or charge to the consumer that is not included in the industrial price (an Ecotax is a good example). In Italy's case this means that Eurostat, when reporting electricity prices, considers general system charges to be fiscal components of the gross price and excludes them from the net figure. In addition, Eurostat prices do not include the initial connection charge.

TAB. 1.12

Types of consumers for the gas sector

TYPES OF CONSUMERS	OLD METHODOLOGY 1991-2007		NEW METHODOLOGY FROM JANUARY 2008	
Domestic	GJ/year	m3/year(A)	GJ/year	m3/year(A)
Class D1	8.37	219.86	<20	< 525.36
Class D2	16.74	439.73	20-200	525.36-5,253.60
Class D3	83.70	2,198.63	>=200	>= 5,253.60
Class D3-b	125.60	3,299.26		
Class D4	1,047.00	27,502.60		
Industrial(B)	GJ/year	m3/year(A)	GJ/year	m3/year(A)
Class I1	418.6	10,995.78	< 1,000	< 26,268
Class I2	4186	109,957.85	1,000-10,000	26,268-262,680
Class I3(C)	41,860	1,099,578.48	10,000-100,000	262,680-2,626,800
Class I4(D)	418,600	10,995,784.80	100,000-1,000,000	2,626,800-26,268,000
Class I5	4,186,000	109,957,848.00	1,000,000-4,000,000	26,268,000-105,072,000

(A) Multiplication factor used for the conversion of gigajoules to cubic metres: 26,268.

(B) Industrial consumers may include other non domestic consumers; furthermore, all industrial consumption of gas is considered except for thermoelectric uses and non-energy uses (for example, chemistry industry).

(C) Class I3 in the old classification provided for further disaggregation of sub-classes I3-1 and I3-2 according to load factors of 200 days/1,600 hours and 250 days/4,000 hours respectively.

(D) Class I4 in the old classification provided for further disaggregation of sub-classes I4-1 and I4-2 according to load factors of 250 days/4,000 hours and 330 days/8,000 hours respectively.

Source: AEEG calculations on Eurostat data.

Tables 1.11 and 1.12 make it possible to compare the classification based on standard consumers with the new classification based on consumption classes for the electricity sector and the gas sector, respectively.

For domestic use, the more representative consumption classes for Italy, in terms of volumes, are the classes DB (1,000-2,500 kWh per year) and the classes DC (2,500-5,000 kWh per year) for the electricity sector and class D2 (525.36-5,253.60 m^3 per year) for the gas sector. For industrial use, small and medium-sized businesses consume up to 2 GWh of electricity per year and therefore belong to classes IA, IB and IC. On the other hand, for the gas sector industrial consumption (non-thermoelectric) is concentrated in classes I4 (2.6-26.3 million cubic metres per year) and I5 (26.3-105.1 million cubic metres per year).

With the adoption of the new methodology for recording prices, the historical series are not omogeneous starting from July 2007. Indeed, the new methodology officially became effective in January 2008 but from July 2007 member states were given the option of communicating the prices to Eurostat based on the new methodology rather than the pre-existing one, and most countries opted to do this. The tables and figures in the paragraphs that follow thus refer to prices provided to Eurostat for the second half of 2007 based on the new recording methodology and extracts from the Eurostat database as at 8 May 2008. The statistics also include countries that joined the European Union in April 2004 and January 2007.

Prices are expressed in cents of Euro per kilowatt hour for consumption of electricity and in cents of Euro per cubic metre[16] for gas consumption, converting the prices that are in domestic currencies at the current exchange rate (on the recording date) for countries that do not belong to the European Monetary Union. A comparison of the values with the same purchasing power would be more meaningful and this will become possible when Eurostat will start publishing the results of these calculations using the new recording methodology[17].

16 The Eurostat prices have been collected in domestic currencies per gigajoule. The unit of energy used is measured by the gross calorific value.

17 At the time the Annual Report was drawn up, the prices expressed with the same purchasing power were available, but in a provisional form, only for certain types of consumers.

Electricity prices

Prices for residential customers

In the second half of 2007, Italian families with consumption lower than 2,500 kWh paid for the use of electricity at prices that were 20% lower, gross of taxes, than the European average. For higher consumption levels, the Italian prices exceeded the corresponding European averages by over 40%, both net and gross of taxes (Table 1.13).

TAB. 1.13

Final electricity prices for domestic consumers

Prices net and gross of taxes; July-December 2007; c€/kWh

kWh/year	< 1.000		1.000-2.500		2.500-5.000		5.000-15.000		>= 15.000	
	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross
Austria	17.32	25.52	13.42	19.24	11.78	16.62	11.00	15.40	10.17	14.18
Belgium	18.73	24.43	14.24	18.67	12.86	16.83	11.29	16.21	9.66	15.62
Bulgaria	6.19	7.41	6.03	7.21	6.03	7.21	5.93	7.11	5.98	7.21
Cyprus	14.36	16.73	13.32	15.54	13.48	15.72	13.52	15.77	13.61	15.87
Denmark	12.47	26.76	12.47	26.76	10.27	24.01	8.70	21.24	8.70	21.24
Estonia	6.71	8.12	6.65	7.99	6.52	7.86	6.26	7.61	5.43	6.52
Finland	15.96	20.38	10.73	14.00	8.68	11.49	7.39	9.92	5.95	8.16
France	18.69	23.37	10.81	14.15	9.14	12.13	7.92	10.62	7.36	9.95
Germany	23.13	33.47	14.74	23.40	12.79	21.05	11.87	19.92	11.46	19.08
Greece	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	40.31	45.75	19.75	22.42	16.90	19.18	15.27	17.34	12.94	14.69
Italy	***10.56***	***13.19***	***10.67***	***13.32***	***16.74***	***23.77***	***15.54***	***22.35***	***16.05***	***22.95***
Latvia	6.94	7.29	6.94	7.29	6.94	7.29	6.86	7.20	6.64	6.96
Lithuania	8.13	9.59	7.64	9.01	7.37	8.70	7.01	8.27	6.65	7.85
Luxembourg	19.72	21.75	15.81	17.60	14.21	15.91	13.06	14.69	9.09	10.49
Malta	4.44	4.66	5.90	6.19	9.45	9.93	12.46	13.09	13.50	14.17
The Netherlands(A)	27.00	n.a.	16.00	14.00	13.00	18.00	12.00	20.00	11.00	18.00
Poland	11.50	14.94	10.88	14.08	10.69	13.80	7.93	10.43	9.90	12.84
Portugal	17.82	18.71	14.73	15.46	14.86	15.59	14.22	14.93	13.61	14.28
United Kingdom	16.10	16.89	15.52	16.30	14.11	14.81	12.77	13.40	10.72	11.25
Czech Republic	19.68	23.41	14.50	17.27	8.95	10.63	7.19	8.55	5.92	7.05
Romania	9.12	10.92	9.78	11.70	9.54	11.41	9.61	11.49	9.72	11.63
Slovakia	18.75	22.30	13.58	17.04	11.52	13.70	9.22	10.98	7.10	8.45
Slovenia	16.57	22.88	9.92	13.10	8.61	11.16	7.98	10.21	7.56	9.58
Spain	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sweden	20.49	29.06	11.11	17.34	10.13	16.13	8.99	14.70	7.72	13.11
Hungary	11.29	15.03	11.29	15.03	9.57	12.96	9.87	13.33	7.66	10.67
Croatia	14.89	18.31	8.75	10.93	7.93	9.84	7.52	9.29	7.11	8.88
Norway	27.83	36.42	16.88	22.72	10.69	14.98	7.31	10.75	6.29	9.48
European Union(B)	**18.05**	**22.95**	**12.90**	**16.92**	**11.98**	**16.36**	**10.80**	**15.10**	**10.05**	**14.20**

(A) In the Netherlands, there is a fixed discount, regardless of the consumption levels, on the final gross price. Thus for lower consumption classes, the unit price gross of taxes is lower than the net price.

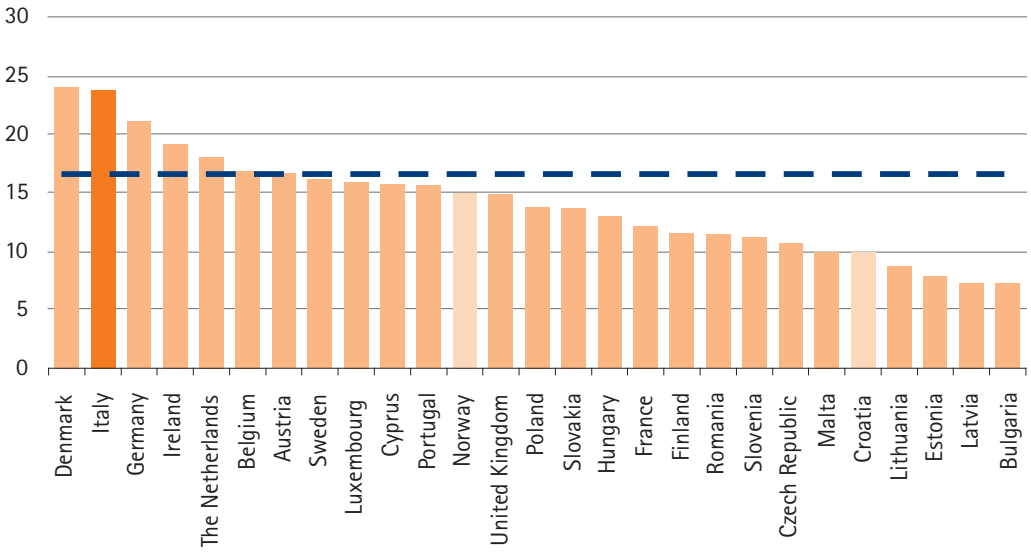
(B) Average price relating to the European Union (25 countries) weighted with national domestic consumption for 2004.

Source: AEEG calculations on Eurostat data.

FIG. 1.13

Final electricity prices for domestic uses

Prices gross of taxes for annual consumption from 2,500 to 5,000 kWh; July-December 2007(A); c€/kWh



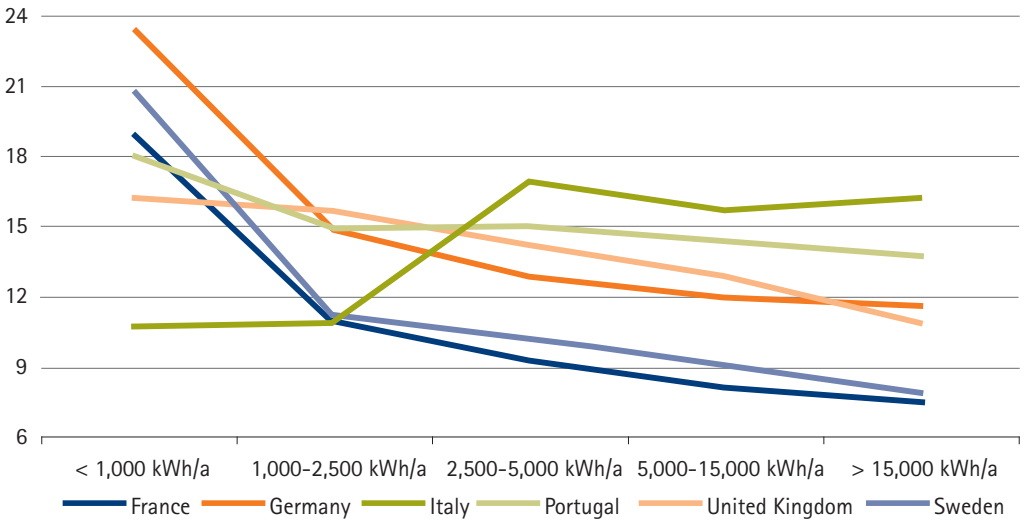
(A) The dashed line shows the weighted average price with domestic national consumption in 2004 for the European Union (inclusion of only 25 countries as the figures for Greece and Spain were not available). The graph also includes the prices of two countries that are not members of the EU: Norway and Croatia.

Source: AEEG calculations on Eurostat data.

FIG. 1.14

Final electricity prices for domestic uses for the major European countries

Prices net of taxes; July-December 2007; c€/kWh



Source: AEEG calculations on Eurostat data.

Compared to the 2,500-5,000 kWh consumption class in particular, Italian gross prices are at the higher European levels, together with Danish, German and Irish prices. It should be noted, however, that Denmark and Germany also have high taxation levels. On the other hand, the prices in Portugal, Norway, the United Kingdom, France and Finland fall below the European average, while the lowest prices are in Eastern Europe (the former Soviet Republics) (Fig. 1.13).

These countries have very low electricity and gas prices, if expressed in Euro, due to the fact that the corresponding national currencies are to a large extent undervalued compared to the Euro.

Prices for the second half-year of 2007 confirm the Italian anomaly, caused by a progressive tariff structure (magnified by the tax system, which does not affect the lowest levels of consumption) by which the unit price of electricity rises with an increase in consumption, at least up to a certain level of annual consumption. Italian customers who consume less power, less than 2,500 kWh per year, are charged much lower prices (both gross and net of taxes) than in the rest of Europe. Those who consume more incur the opposite: the prices applied in Italy are higher than those in the major European countries (Fig. 1.14).

Prices for industrial users

Italian businesses paid higher prices for electricity in the period from July to December 2007 compared to the European average for all consumption classes, both net and gross of taxes. The greatest variations, exceeding 35%, refer to the consumption of small and medium sized businesses: 500-2,000 and 2,000-20,000 MWh per year (Table 1.14).

The gross prices paid by Danish, Irish, German and British companies are at higher levels than the European average with regard to the 500-2,000 MWh per year consumption class, which is one of the most representative classes for the Italian market (Fig. 1.15). It should be noted, however, that Denmark and Germany also have particularly high taxation levels.

TAB. 1.14

Final electricity prices for industrial consumers

Prices net and gross of taxes; July-December 2007; c€/kWh

MWh/year	< 20		20-500		500-2.000		2.000-20.000		20.000-70.000		70.000-150.000	
	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross
Austria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Belgium	13.11	17.38	10.79	14.35	8.53	11.49	7.48	10.20	6.62	8.82	5.69	7.44
Bulgaria	6.75	8.13	6.34	7.67	5.62	6.80	5.01	6.08	4.24	5.16	3.83	4.70
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Denmark	8.70	22.04	8.35	21.62	7.65	20.74	7.61	20.68	7.08	20.02	7.08	20.02
Estonia	6.71	8.12	5.62	6.77	5.18	6.26	4.35	5.30	3.32	4.09	3.32	4.03
Finland	7.36	9.26	6.53	8.25	5.63	7.15	5.38	6.85	4.05	5.22	4.17	5.37
France	9.60	11.89	6.64	8.67	5.24	6.92	4.68	6.31	4.68	6.48	4.33	6.00
Germany	14.79	21.52	10.94	16.14	8.94	13.53	7.76	12.10	7.24	10.84	7.22	11.13
Greece	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	15.43	17.51	13.85	15.69	12.35	13.88	10.86	12.00	10.94	12.02	10.26	11.17
Italy	***15.04***	***22.22***	***12.05***	***17.52***	***11.60***	***16.04***	***10.55***	***14.04***	***7.20***	***9.42***	***7.20***	***9.42***
Latvia	13.03	15.38	7.17	8.46	5.94	7.01	4.99	5.88	4.47	5.28	4.30	5.07
Lithuania	9.88	11.65	8.34	9.84	7.20	8.50	5.95	7.03	5.31	6.27	5.05	5.95
Luxembourg	15.54	16.81	11.04	12.04	9.99	10.93	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	13.07	13.72	12.89	13.54	12.21	12.82	9.17	9.63	5.81	6.10	n.a.	n.a.
The Netherlands	18.00	26.00	10.00	14.00	9.00	12.00	8.00	10.00	8.00	10.00	8.00	9.00
Poland	13.51	17.39	10.03	13.03	8.43	11.04	6.26	8.46	4.70	6.52	4.35	7.47
Portugal	10.41	13.03	9.55	11.37	7.79	9.11	6.98	8.18	5.62	6.78	4.97	6.08
United Kingdom	13.94	16.82	11.59	14.21	10.33	12.67	9.06	11.10	8.65	10.43	8.24	9.93
Czech Republic	14.13	16.83	10.92	13.00	9.46	11.28	7.78	9.24	6.68	7.96	6.68	7.96
Romania	12.09	14.41	10.67	12.73	9.08	10.84	7.90	9.44	6.38	7.63	5.72	6.84
Slovakia	14.48	17.22	12.54	14.92	10.48	12.48	9.52	11.34	8.48	10.09	7.34	8.75
Slovenia	12.15	15.38	10.66	13.27	8.72	10.92	7.09	8.97	6.16	7.77	6.45	8.15
Spain	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sweden	9.49	9.54	7.53	7.59	6.51	6.56	5.77	5.82	5.21	5.26	5.08	5.13
Hungary	10.89	14.64	11.18	14.98	9.97	13.54	8.62	11.92	7.23	10.25	5.90	8.65
Croatia	9.16	11.34	7.79	9.70	7.24	9.02	6.15	7.65	4.51	5.74	3.96	4.92
Norway	7.13	10.51	6.41	9.60	6.28	9.45	5.14	8.02	4.06	6.66	1.95	4.03
European Union(A)	**12.95**	**17.41**	**9.95**	**13.46**	**8.59**	**11.60**	**7.55**	**10.23**	**6.61**	**8.88**	**6.38**	**8.67**

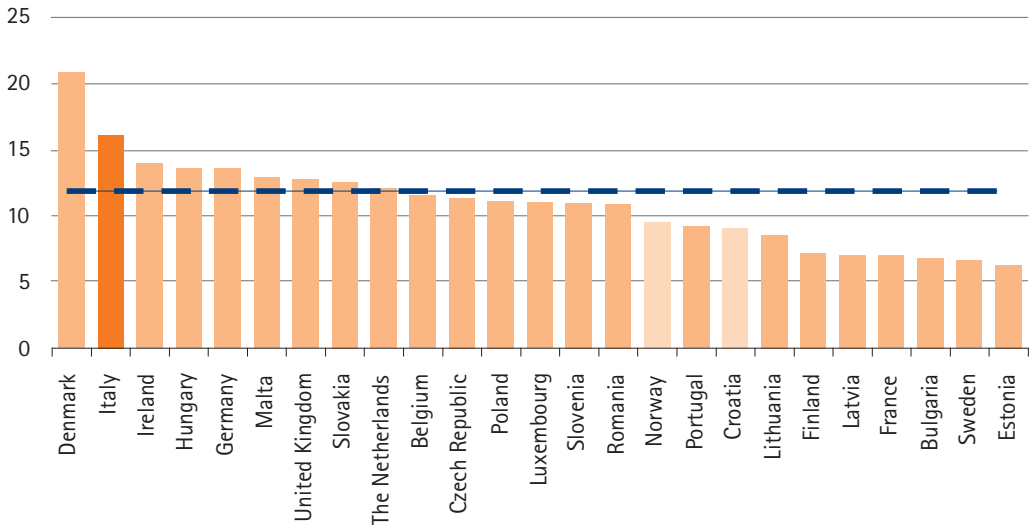
(A) Average price relating to the European Union (23 countries) weighted with national industrial consumption for 2004.

Source: AEEG calculations on Eurostat data.

FIG. 1.15

Final electricity prices for industrial uses

Prices gross of taxes for annual consumption from 500 to 2,000 kWh; July-December 20077(A); c€/kWh



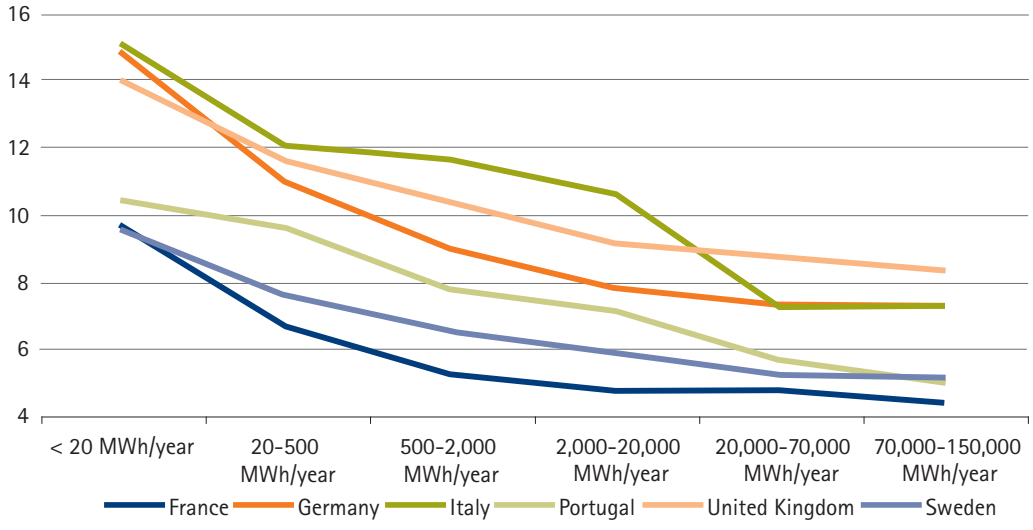
(A) The dashed line shows the weighted average price with industrial national consumption in 2004 for the European Union (inclusion of only 23 countries because the figures for Austria, Cyprus, Greece and Spain were not available). The graph also includes the prices of two countries that are not members of the EU: Norway and Croatia.

Source: AEEG calculations on Eurostat data

FIG. 1.16

Final electricity prices for industrial uses for the major European countries

Prices net of taxes; July-December 2007; c€/kWh



Source: AEEG calculations on Eurostat data.

Figure 1.16 shows the high level of net Italian prices paid by businesses compared to the prices in the major European countries. Italian prices are lower than or in line with German and British prices only for the higher consumption classes.

Natural gas prices

Prices for domestic customers

In the second half of 2007, the Italian price for gas for a domestic user was similar to the European average, both net and gross of taxes, for the lowest consumption class (less than 525 m^3 per year) while for the higher classes, the price was slightly higher than the European average net of taxes (with a positive variation of around 2%) and significantly higher with taxes included (with a positive variation of over 20%) (Table 1.15).

Sweden, the Netherlands, Portugal and Germany (Fig. 1.17) are included among the countries with higher prices gross of taxes compared to the European average, for the middle consumption class (annual consumption from 525 to 5,254 m^3). For Sweden, the Netherlands and Italy, these price levels are also the result of significantly higher tax rates.

TAB. 1.15

Final natural gas prices for domestic consumers

Prices net and gross of taxes; July-December 2007; c€/m^3

m^3/year	< 525,36		525,36-5.253,60		>= 5.253,60	
	Net	Gross	Net	Gross	Net	Gross
Austria	59.65	79.68	47.13	64.53	40.66	56.76
Belgium	66.43	86.61	42.52	58.47	37.95	50.02
Bulgaria	27.02	32.41	28.48	34.18	28.92	34.73
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Denmark	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Estonia	34.59	40.81	23.51	27.81	23.38	27.59
Finland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
France	86.57	99.25	46.37	54.44	40.66	48.27
Germany	67.46	98.90	48.27	64.87	45.30	61.29
Greece	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	101.07	114.70	56.49	64.15	48.65	55.20
Italy	58.60	74.80	42.80	65.90	39.30	65.50
Latvia	29.76	35.15	27.91	32.92	27.75	32.76
Lithuania	32.26	38.07	21.03	24.82	18.53	21.87
Luxembourg	51.36	67.84	37.23	41.69	37.23	41.23
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
The Netherlands	75.72	109.83	45.45	73.78	42.75	69.40
Poland	44.70	54.53	34.78	42.43	31.89	38.92
Portugal	83.91	88.11	65.73	69.02	53.84	56.53
United Kingdom	38.94	40.89	35.93	37.73	31.09	32.64
Czech Republic	36.71	43.69	31.99	38.07	31.56	37.56
Romania	24.14	36.61	24.03	36.19	24.05	35.48
Slovakia	72.20	85.92	36.83	43.83	36.34	43.24
Slovenia	55.96	70.77	42.29	54.32	40.54	52.23
Spain	63.39	73.54	53.00	61.47	43.34	50.27
Sweden	70.79	117.32	54.74	97.30	53.92	96.27
Hungary	33.50	40.20	33.69	40.42	33.26	39.91
Croatia	22.57	28.95	22.57	28.95	22.57	28.95
Norway	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
European Union(A)	58.70	74.85	42.16	54.48	38.26	50.46

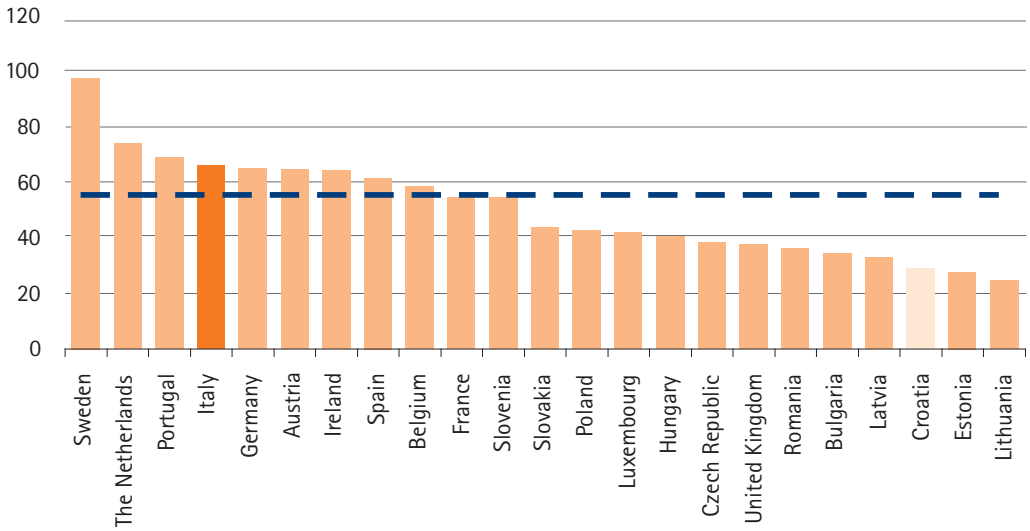
(A) Average price relating to the European Union (22 countries) weighted with national domestic consumption for 2004.

Source: AEEG calculations on Eurostat data.

FIG. 1.17

Final natural gas prices for domestic uses

Prices gross of taxes for annual consumption from 525.36 m³ to 5,253.60 m³; July-December 2007(A); c€/m³



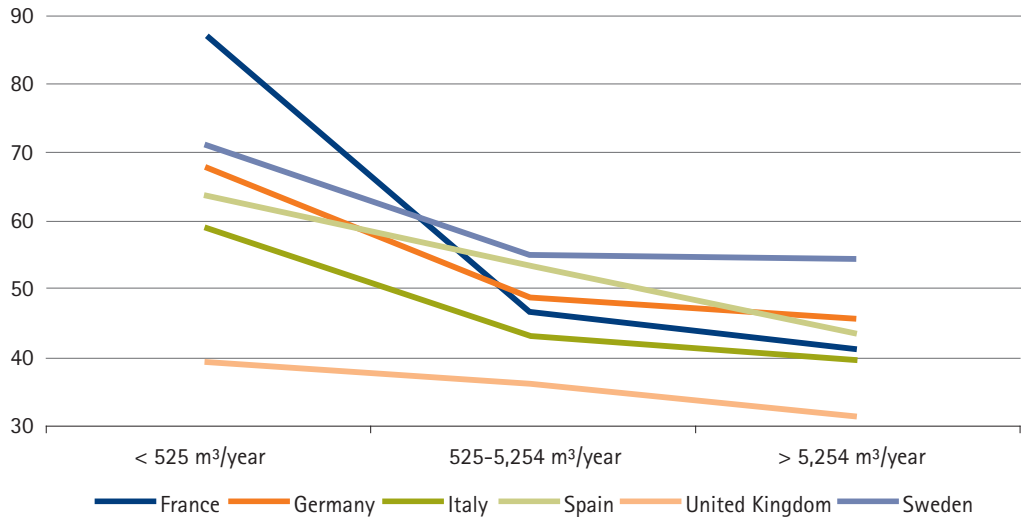
(A) The dashed line shows the weighted average price with domestic national consumption in 2004 for the European Union (inclusion of only 22 countries because the figures for Cyprus, Denmark, Finland, Greece and Malta were not available or not applicable). The graph also includes the price for Croatia which is not an EU member.

Source: AEEG calculations on Eurostat data.

FIG. 1.18

Final natural gas prices for domestic uses for the major European countries

Prices net of taxes; July-December 2007; c€/m³



Source: AEEG calculations on Eurostat data.

Compared to major European countries, net Italian prices are still lower for all domestic consumption classes than the prices in France, Germany, Spain and Sweden (Fig. 1.18).

Prices for industrial users

With regard to the period from July to December 2007, the gross prices paid by Italian companies for gas usage (not including the non-energy uses and electricity generation) were in a range from 29.20 to 52.10 c€/m³, at levels quite close to the European average for all consumption classes (Table 1.16). Conversely, net of taxes the variations of the average European values were sometimes higher than 10% (positive) for the highest consumption class (annual consumption between 26.3

and 105.1 million cubic metres) or higher by 5% (negative) for the first consumption class (annual consumption lower than 26,000 m^3).

Sweden, Germany and the Netherlands which have high taxation rates, have gross prices that are higher than the European average with regard to the 2.63-26.27 million of cubic meters annual consumption class, while Ireland, the United Kingdom and Portugal are at the lower European levels together with some Eastern European countries (Fig. 1.19).

Compared to the major European countries, Italian prices, net of taxes for the three middle consumption classes, are halfway between the lower prices of the United Kingdom and Spain and the higher prices of Sweden and Germany (Fig. 1.20).

TAB. 1.16

Final natural gas prices for industrial consumers

Prices net and gross of taxes; July-December 2007; c€/m^3

k(m^3)/year	< 26		26-263		263-2.627		2.627-26.268		26.268-105.072	
	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross
Austria	40.47	56.49	39.74	55.62	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Belgium	40.09	50.14	39.44	49.26	36.58	45.91	n.a.	n.a.	n.a.	n.a.
Bulgaria	21.02	25.23	20.11	24.12	19.10	22.91	17.40	20.89	17.13	20.55
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Denmark	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Estonia	22.22	26.19	20.47	24.15	19.17	22.62	18.34	21.64	17.93	21.16
Finland	n.a.	n.a.	n.a.	n.a.	23.98	31.60	23.60	31.22	21.70	28.93
France	43.51	51.28	36.58	43.55	31.75	38.26	27.75	33.39	26.04	30.34
Germany	45.00	58.13	40.12	52.08	37.54	48.88	29.54	39.33	23.87	32.55
Greece	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	47.85	54.32	41.23	46.83	37.00	41.34	26.31	28.59	n.a.	n.a.
Italy	***37.40***	***52.10***	***36.40***	***46.60***	***34.40***	***39.40***	***28.40***	***31.60***	***26.40***	***29.20***
Latvia	27.70	32.76	30.85	36.46	29.33	34.66	28.19	33.30	27.48	32.48
Lithuania	27.01	31.87	25.85	30.50	25.73	30.37	22.40	26.43	20.17	23.80
Luxembourg	37.23	41.11	37.23	40.16	35.18	37.92	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
The Netherlands	42.07	68.52	37.69	60.38	32.40	41.23	29.08	35.52	27.22	33.27
Poland	35.10	42.83	32.03	39.08	27.47	33.51	23.91	29.17	22.06	26.91
Portugal	48.51	50.94	41.05	43.10	31.21	32.77	22.24	23.36	20.76	21.80
United Kingdom	40.13	49.15	32.36	39.88	25.92	32.07	22.43	27.30	19.89	23.74
Czech Republic	30.50	36.29	27.98	33.30	25.95	30.88	24.27	28.88	23.41	27.85
Romania	23.91	35.92	23.85	35.22	24.66	35.75	23.84	33.64	22.32	30.45
Slovakia	36.86	43.87	31.03	36.93	30.24	35.98	28.03	33.35	26.83	31.92
Slovenia	44.31	56.80	40.47	52.15	30.72	40.47	25.85	34.64	n.a.	n.a.
Spain	33.67	39.06	27.82	32.28	26.93	31.24	25.49	29.58	21.07	24.44
Sweden	53.47	95.70	47.15	87.78	40.71	79.73	35.62	73.33	n.a.	n.a.
Hungary	36.71	45.07	33.91	41.71	31.79	39.16	26.27	32.53	26.95	33.35
Croatia	23.34	29.56	23.34	29.56	23.34	29.56	n.a.	n.a.	n.a.	n.a.
Norway	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
European Union(A)	**39.60**	**51.49**	**35.27**	**45.42**	**31.80**	**39.31**	**26.89**	**33.03**	**23.96**	**29,21**

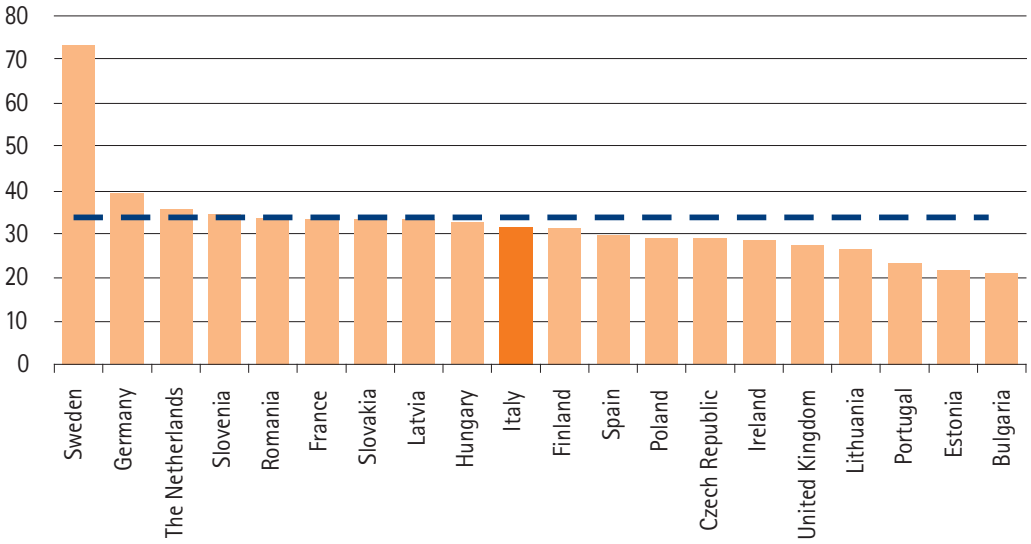
(A) Average price relating to the European Union (23 countries) weighted with national industrial consumption for 2004.

Source: AEEG calculations on Eurostat data.

FIG. 1.19

Final natural gas prices for industrial uses

Prices gross of taxes for annual consumption from 2.63 to 26.27 M(m3); July-December 2007(A); c€/m3



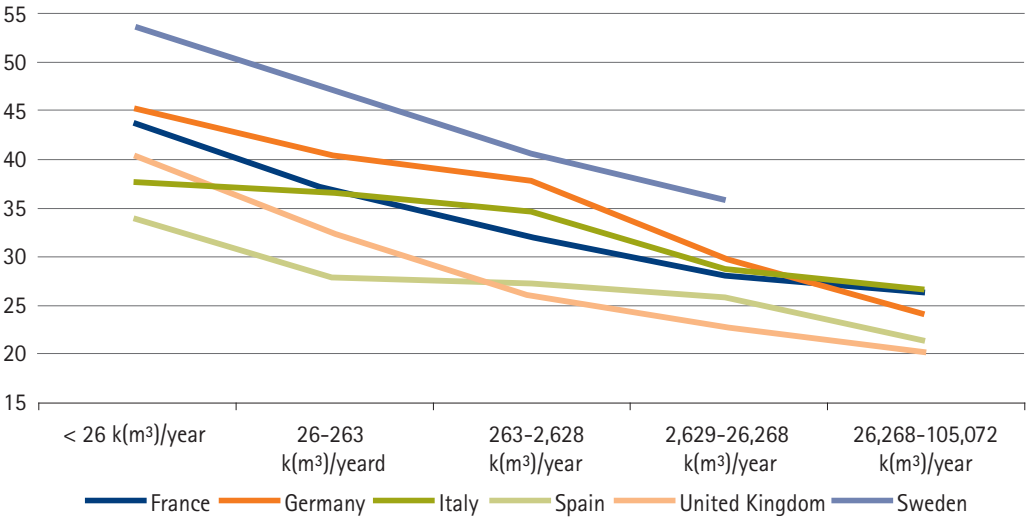
(A) The dashed line shows the weighted average price with industrial national consumption in 2004 for the European Union (inclusion of only 20 countries as the figures for Austria, Belgium, Cyprus, Denmark, Greece, Luxembourg and Malta were not available or not relevant).

Source: AEEG calculations on Eurostat data.

FIG. 1.20

Final natural gas prices for industrial uses for the major European countries

Prices net of taxes; July-December 2007; c€/m3



Source: AEEG calculations on Eurostat data.

European emission trading system

From 1 January 2005 the EU ETS European Emission Trading System introduced by Directive 2003/87/EC became effective. The aim of this system is to create a European market for greenhouse gas emissions that can put a price on CO_2 emissions and encourage businesses belonging to energy sectors and intensive industrial sectors to reduce them to the lowest possible cost. The emissions by the plants listed in the Directive are subject to authorisation and the attribution of quotas according to the national allocation plans.

Emission trading, which is part of the measures adopted to fulfil the commitments of the Kyoto Protocol, provides for an initial application period, which is considered as a trial period for the system, for 2005-2007 (Phase 1), prior to the second phase for 2008-2012 during which the emission reduction targets set forth in the Protocol must be achieved. The objective is to reduce emissions at the community level by 6.5% compared to the levels recorded in 2005.

On 23 January 2008 the European Commission adopted a proposal aimed at modifying the current trading system for quotas as defined in Directive 2003/87/EC, with regard to the years subsequent to 2012.

The results of EU ETS in the first three years of operation: allocations and actual emissions

During 2007 and in the initial months of 2008, the disclosure of actual CO_2 emissions by the plants subject to the 2005-2007 plan and the 2008-2012 plan took place; the figures are published in the Community Independent Transaction Log (CITL).

At the European level, the first two years of the ETS directive implementation were characterised by over-allocation; overall, European emissions were lower than the assigned quotas by approximately 117 Mt CO_2, without counting the allocations to new entrants[18]. The countries which contributed the most to the over-allocation were Poland (approximately 62 Mt CO_2), France (approximately 42 Mt CO_2) and Germany (approximately 36 Mt CO_2).

Based on the data of the emission register, Italy went against the European trend with a deficit in the quotas both in 2005 (approximately 10 Mt CO_2) and in 2006 (approximately 23 Mt CO_2). The United Kingdom is the only country to have experienced under-allocation that was greater than Italy's in the first years of the operation of EU ETS, of approximately 82 Mt CO_2. Among the other countries, Spain was the only one with a significant under-allocation, of approximately 25 Mt CO_2. It should be noted that these assessments were made without considering the actual allocations to new entrants which, pursuant to the limits relating to reserves set in the national allocation plans, are established on the basis of requests submitted by operators entering the market for the first time.

The three countries with the highest quota deficit, Italy, Spain and the United Kingdom, are also the countries that have assigned the highest quotas to new entrants (over 40 Mt CO_2 for the three year period for each country) and this, if the new entrants are indeed assigned quotas that are in line with those set forth in the reserves, could reduce significantly the under-allocation level presented here.

The preliminary figures for 2007 show that, at the European level, the emissions that were verified were lower than those allowed for member states, though to a significantly lesser degree than in the two previous years. In April 2008, it is estimated that the allocated quotas will exceed actual emissions by a little less than 20 Mt CO_2, not including new entrants.

The assessment of the amount of the reserves leads to the conclusion that, had the reserves actually resulted in an increase in overall allocations in favour of sectors subject to the emission trading scheme over the three year period from

18 Based on the currently available data, it is not possible to determine the value of the allocations to new entrants at the European level; the maximum value of the potential annual average reserve for the 2005-2007 period is approximately 73 Mt CO_2.

2005 to 2007, the under-allocation for Italy would have been lower than 12 Mt CO_2 and Spain would have had an under-allocation of approximately 11 Mt CO_2.

With regard to Italy, at the end of April 2008, the analysis of the figures published in the Community emission register, together with the information on the allocations in favour of the new entrant plants[19], shows that the overall deficit in the quotas amounts to approximately 6.6 Mt CO_2 in 2005 and 11.6 Mt CO_2 in 2006; in 2007 however, there is expected to be a deficit in the quotas of about 8 Mt CO_2[20].

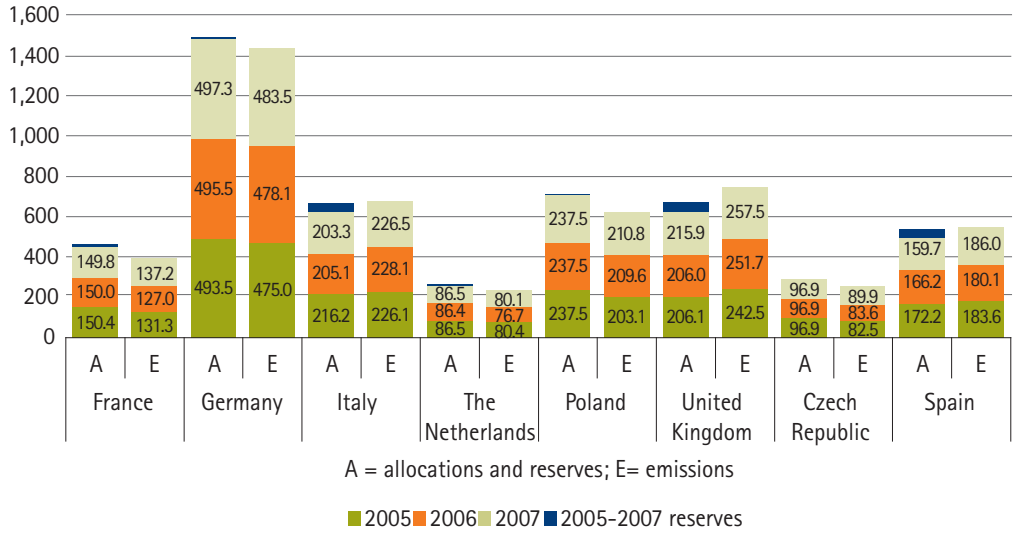
As can be seen in tables 1.17 and 1.18, the under-allocation was to a large extent due to a deficit in the quotas assigned to the thermoelectric sector, which in 2005 was uncovered by approximately 8.5 Mt CO_2 and by 15.8 Mt CO_2 in 2006; the deficit in the quotas for 2007 is estimated to be approximately 13 Mt CO_2. The other sectors involved in the system have experienced in the three year period lesser under-allocations, as in the case of the cement industry (approximately 5 Mt CO_2), or over-allocations, as was the case for combustion plants other than thermoelectric plants (almost 7 Mt CO_2), refining (almost 5 Mt CO_2) and plants producing or processing ferrous metals (approximately 3 Mt CO_2).

The difference between the potential reserve and the actual allocations for new entrants to the thermoelectric sector, in the three year period from 2005 to 2007 over 17 Mt CO_2, surely contributed to the under-allocations that occurred overall and which was, as already noted, to a great extent the result of the under-allocation of emission rights in the electricity production sector.

FIG. 1.21

Allocations and emissions(A) in the first three years of operation of the Emission Trading Scheme

$MtCO_2$



(A) The values of the emissions for subjects which did not disclose their figures have been estimated.

Source: AEEG calculations on CITL data.

19 Allocation to new entrants for 2005-2007 were decided with resolution no. 11 dated 18 January 2007 and following resolution no. 8/08 of the Ministry of Environment and of the Ministry of Economic Development.

20 It should be noted that for 2007, the figures contained in the register are incomplete and provisional, so that they ensure coverage of approximately 90% of overall emissions.

TAB. 1.17

Allocations and emission in Italy from 2005 to 2007

$MtCO_2$

	2005			2006			2007		
	Total Alloc.(A)	Emissions	Diff.	Total Alloc.(A)	Emissions	Diff.	Total Alloc.(A)	Emissions	Diff.
Activities involving energy	**166.9**	**173.1**	**-6.2**	**163.3**	**174.9**	**-11.6**	**164.4**	**172.5**	**-8.1**
Thermoelectricity	128.4	136.8	-8.5	124.4	140.2	-15.8	125.2	138.2	-13.0
Other combustion plants	14.8	13.7	1.0	15.1	13.0	2.1	15.5	11.9	3.5
- Pipeline compression	0.8	0.9	0.0	0.9	1.0	-0.1	0.9	0.7	0.2
- District heating	0.2	0.2	0.0	0.2	0.2	0.0	0.3	0.3	0.0
- Other	13.7	12.7	1.0	14.0	11.8	2.2	14.3	10.9	3.4
Refining	23.8	22.5	1.3	23.8	21.7	2.1	23.8	22.4	1.4
Industrial activities	**52.6**	**53.0**	**-0.5**	**53.2**	**53.2**	**-0.1**	**54.0**	**54.0**	**-0.1**
Production and processing of ferrous metal	14.8	13.9	0.9	14.9	13.7	1.2	15.1	13.9	1.2
Mineral products industry	32.6	34.0	-1.4	33.1	34.4	-1.3	33.6	35.0	-1.4
- Cement	26.2	27.6	-1.5	26.4	27.9	-1.5	26.6	28.7	-2.1
- Lime	2.7	2.7	0.1	2.9	2.8	0.1	3.1	2.7	0.4
- Glass	3.0	3.0	0.0	3.0	3.0	0.1	3.1	3.0	0.0
- Ceramic and brick products	0.7	0.7	0.0	0.7	0.7	0.0	0.7	0.6	0.2
Other activities: pulp for paper and cartons	5.1	5.1	0.0	5.2	5.1	0.0	5.3	5.1	0.1
TOTAL	***219.5***	***226.1***	***-6.6***	***216.4***	***228.1***	***-11.6***	***218.4***	***226.5***	***-8.1***

(A) Total allocations including the allocations to new entrants pursuant to resolution no. 11/07 and no. 8/08 of the Ministry of the Environment and of the Ministry of Economic Development.

Source: AEEG calculations on CITL data..

TAB. 1.18

Reserves for new entrants and allocations to new entrants from 2005 to 2007

$MtCO_2$

	2005			2006			2007		
	Reserve for new entrants(A)	Allocation for new entrants(B)	Diff.	Reserve for new entrants(A)	Allocation for new entrants(B)	Diff.	Reserve entrants(A)	Allocation for new entrants(B)	Diff.
Activities involving energy	**5.5**	**3.1**	**2.4**	**20.5**	**10.6**	**9.9**	**17.6**	**13.5**	**4.1**
Thermoelectricity	4.9	2.5	2.5	19.9	9.6	10.3	16.9	12.1	4.7
Other combustion plants	0.5	0.6	-0.1	0.6	1.0	-0.4	0.7	1.4	-0.6
Refining	-	-	-	-	-	-	-	-	-
Industrial activities	**1.0**	**0.2**	**0.8**	**1.0**	**0.8**	**0.2**	**1.1**	**1.6**	**-0.5**
Production and processing of ferrous metal	0.4	-	0.4	0.2	0.0	0.2	0,0	0.3	-0.3
Mineral products industry	0.5	0.0	0.5	0.6	0.5	0.1	0.8	1.0	-0.1
Other activities: pulp for paper and cartons	0.1	0.2	-0.1	0.2	0.3	-0.1	0.3	0.4	-0.1
TOTAL	***6.5***	***3.3***	***3.1***	***21.5***	***11.4***	***10.2***	***18.7***	***15.1***	***3.6***

(A) Reserves defined within the National Allocation Plan 2005-2007.

(B) Total allocations to new entrants pursuant to resolution no. 11/07 and no. 8/08 of the Ministry of the Environment and of the Ministry of Economic Development.

Source: AEEG calculations on CITL data.

The price per ton of CO_2 in 2007

During 2007, the price per ton of CO_2 followed the downwards tendency which had begun in the second half of April 2006, following the publication of the first figures relating to emissions in 2005. While in January 2007 the price per ton of CO_2 was approximately 5.5€/t CO_2, in December of that year the price had dropped to 0.03 €/t CO_2. The price dropped for the first time to a value under 1 €/t CO_2 in the month of February to then begin a trend that brought the value close to zero. This further collapse of the prices, compared to the dynamic during 2006, is due to the persisting excess of supply of quotas compared to demand.

During 2007, the weighted average price per ton of CO_2 on the French Powernext exchange was equal to 0.68 €/t CO_2, strongly below the average in 2006, which was 15.08 €/t CO_2 and in line with the price on the German EEX exchange (0.66€/t CO_2). In the first three months of 2008 the average price was 0.02 €/t CO_2.

With regard to traded volumes, in 2007 less than 24 Mt CO_2 in rights were exchanged on a spot basis on the Powernext, down by 24% compared to 2006. The decrease in traded volumes was steep on the EEX as well, with only 5 Mt CO_2.

Starting from the end of February 2008 exchanges began for the quotas of the second period of the operation of the EU ETS; the first quotas had a price of 21 €/t CO_2.

The trend of the spot price for quotas from the 2005-2007 period was reflected in the trend of the future prices for the initial period of EU ETS operation.

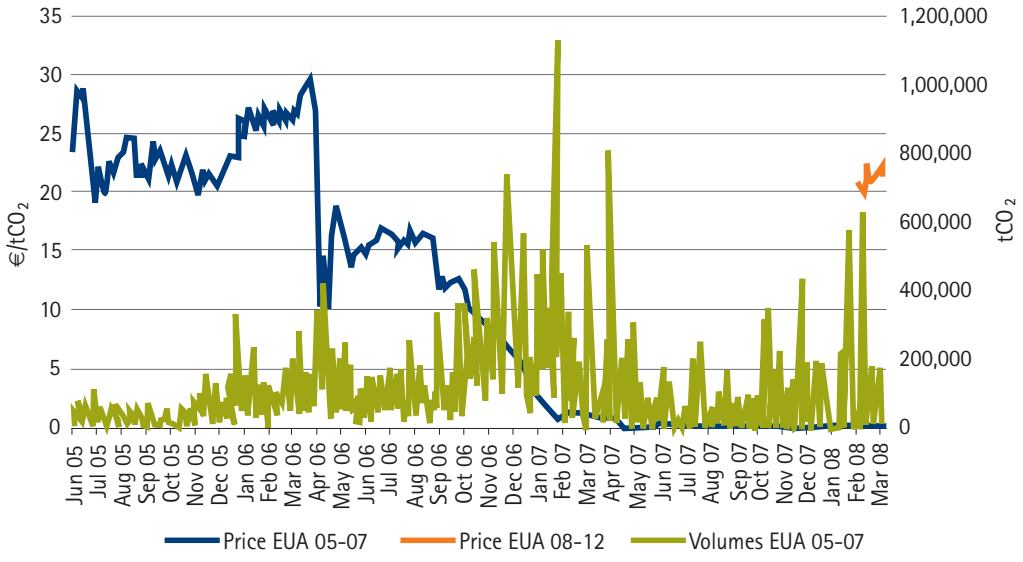
In particular, following the collapse of the spot quotas in April 2006, the prices of the futures for the first period in the ECX exchange[21] dropped rapidly to reach a ceiling a little above 15 €/t CO_2 in the second half of the year. In the same period there was a reduction in the future price of the quotas relating to the 2008-2012 period, which however was higher than the future price of the quotas in Phase 1 by approximately 5€/t CO_2.

After a slow price realignment phase in September 2006, the future prices for the two periods started to spread, while the future price for the 2005-2007 quotas dropped toward zero and, following a drop towards 15€/t CO_2 in the month of February, the prices of the Phase 2 quotas 2007 rose to values from 20 to 25€/t CO_2 in the second part of the year.

FIG. 1.22

Trend of the spot price of CO_2 in the Powernext exchange

€/tCO_2; tCO_2



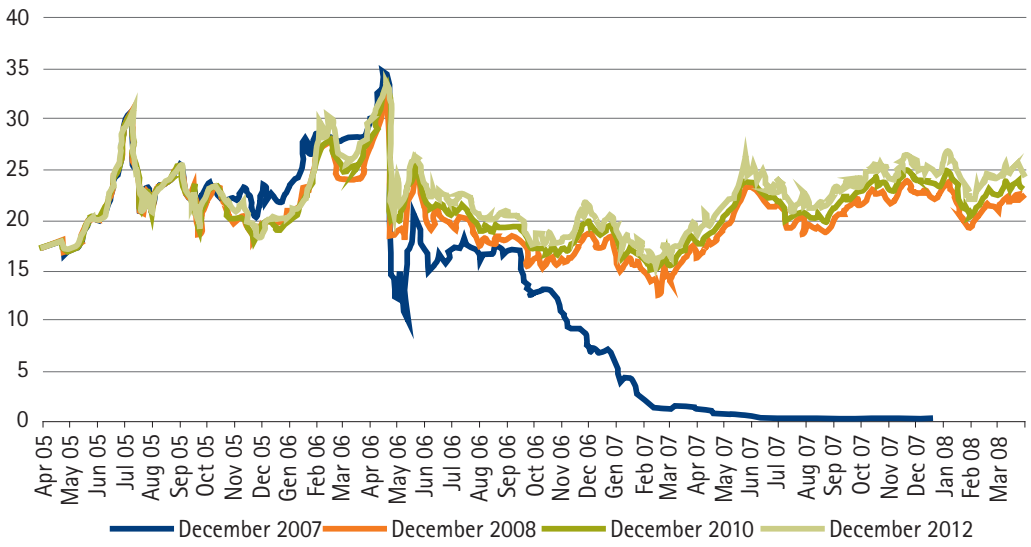
Source: AEEG calculations on Powernext data.

21 The European Climate Exchange manages the carbon markets that are traded on the European ICE (InterContinental Exchange).

FIG. 1.23

Trend of the future price of CO_2 in the ECX exchange

€/tCO_2



Source: AEEG calculations on ECX data.

The national allocation plans for the 2008-2012 period

Starting from November 2006, the European Commission approved the allocation plans for the 2008-2012 period, which require, with the exception of France, the United Kingdom, Slovenia and Denmark, a reduction in the amount of the quotas allocated by the plans that were initially submitted by the member states, the amount of which is particularly significant for Poland and Germany[22]. During 2007, the European Commission finalised the approval procedure for the allocation plans of all 27 countries participating in the second phase of the EU ETS.

On 15 May 2007 in particular, the Commission decided about the Italian plan for Phase 2, imposing a reduction of the quotas of 13.25 Mt CO_2 on an average annual basis. During the year, the Commission also approved the allocation plans for 2007 of Bulgaria and Romania, which had initially not taken part in Phase 1.

Overall, the quota ceiling at the European level for the 2008-2012 period is 2.08 billion t CO_2 on an average annual basis, which is 3.5% less than the ceiling for Phase 1[23].

In table 1.19 are the average annual allocations approved for the 2008-2012 period, compared to the average allocations for Phase 1 and with the actual emissions as these result from the national emission registers for 2005 and 2006, without an estimate of the emissions relating to subjects that did not make the relevant disclosure.

In November 2007, the Court of First Instance of the European Union cancelled the decision with which the Commission forbade for the German allocation plan the possibility of reducing, in certain specific cases[24], the number of quotas assigned to a plant during the allocation period. Furthermore, the compatibility with Directive 2003/87/EC concerning the possibility of transferring the quotas not emitted or withdrawn to the reserve for new entrants has been recognised.

22 In particular, the European Commission has requested a reduction in the amount of the quotas allocated in the plan of Poland of over 76 Mt CO_2 and a reduction in the quotas in the plan of Germany of almost 29 Mt CO_2.

23 It should be noted that the incidence of the reduced ceiling was changed following the decision of the United Kingdom to extend the ETS to new sectors and therefore to increase the allocations compared to the plan for the 2005-2007 period, overall.

24 Ex post adjustments are allowed, for example, if the annual emissions of a plant represent less than 60% of the emissions during the reference period, in the case of a new plant replacing an old plant with higher production capacity, or in the case in which the actual level of activity of a plant, the management of which has begun starting from 2005, is lower than what initially established.

Worthy of notice is the decision of the European Commission on 26 October 2007 to approve the German request for an increase of 22%, with reference to the quotas assigned free of charge, of the maximum volume of the Certificates for Emission Reduction (CER) deriving from Clean Development Mechanisms and Emission Reduction Units (ERU) deriving from Joint Implementation projects that can be used by operators to comply with their obligations for each plant.

Among the other significant aspects of the national allocation plans, worthy of notice is the decision of the British government to dispose of 7% of the emission quotas against compensation, which were otherwise reserved for the large electricity plants free of charge, to which is added a further 3% deriving from surplus reserve quotas for new entrants and the closing of certain plants covered by the ETS System. The national allocation plan of the CO_2 quotas for the 2008-2012 period submitted to the European Commission was approved on 18 December 2006 by the Ministry of the Environment and the Ministry of Economic Development, with Decree DEC/RAS/1448/2006. The plan was finalised upon the conclusion of a consultation process that began on 13 July 2006 on the national allocation plan.

TAB. 1.19

National allocation plans for the 2008-2012 period approved by the European Commission on 31 March 2008

$MtCO_2$

MEMBER STATE	AVERAGE ANNUAL ALLOCATION 2005-2007	CO_2 EMISSIONS VERIFIED IN 2005	CO_2 EMISSIONS VERIFIED IN 2006	AVERAGE ANNUAL ALLOCATION APPROVED FOR 2008-2012
Austria	33.0	33.4	32.4	30.7
Belgium	62.1	55.4	54.8	58.5
Bulgaria	-	-	-	42.3
Cyprus	5.7	5.1	5.3	5.5
Denmark	33.5	26.5	34.2	24.5
Estonia	19.0	12.6	12.1	12.7
Finland	45.5	33.1	44.5	37.6
France	154.9	131.3	127.0	132.8
Germany	497.7	475.0	478.0	453.1
Greece	74.4	71.3	70.0	69.1
Ireland	22.3	22.4	21.7	21.2
Italy	223.1	225.9	227.4	195.8(A)
Latvia	4.6	2.9	2.9	3.4
Lithuania	12.3	6.6	6.5	8.9
Luxembourg	3.4	2.6	2.7	2.5
Malta	2.9	2.0	2.0	2.1
The Netherlands	88.9	80.4	76.7	85.8
Poland	238.4	202.8	209.3	208.5
Portugal	38.2	36.4	33.1	34.8
United Kingdom	224.9	242.5	251.1	246.2(B)
Czech Republic	97.3	82.5	83.6	86.8
Romania	-	-	-	75.9
Slovakia	30.5	25.2	25.5	32.6
Slovenia	8.8	8.7	8.8	8.3
Spain	179.8	183.6	179.7	152.3
Sweden	23.2	19.4	19.9	22.8
Hungary	31.7	26.0	25.8	26.9
Total	**2,156.1**	**2,013.6**	**2,035.0**	**2,081.6**

(A) The value defined in the Decision of the European Committee is net of the additional allocations for plants that were not included in the Plan that was announced in December 2006 and related to supplementary combustion plants that carry out combustions processes including cracking, the production of carbon black, gas flaring, manufacturing processes using ovens and the integrated production of steel.

(B) The increase in the quotas allocated compared to Phase 1 is linked to the extension on a voluntary basis of the mechanism to sectors that had not previously been included, such as the chemical, food, aluminium, services, aerospace, automotive, semiconductor, textile, rubber, tobacco and other non-metallic mineral product sectors.

Source: AEEG calculations on CITL and European Commission data.

Based on the initially proposed plan, the annual average allocation of emission quotas should decrease by 14 Mt CO_2 compared to Phase 1, to reach an average annual value of 209 Mt CO_2.

Following the observations made by the European Commission in its decision of 15 May 2007 and the consultation process on the Decision Scheme for the allocation of the CO_2 quotas for the 2008-2012 period which began on 10 January 2008, on 20 February 2008 the Decision for the allocation of CO_2 quotas for the 2008-2012 period was made. The overall quotas allocated were 201.6 Mt CO_2, of which 16.9 Mt CO_2 were allocated to the reserve for new entrants.

The Commission imposed a reduction in the quotas of the Plan disclosed on 15 December 2006 of 13.25 Mt CO_2 on an annual average basis. Further changes in the Plan disclosed to the Commission involved the necessity of providing more detailed information on the treatment of new entrants, the inclusion into the mechanism of other combustion plants that are part of the scheme in other member states[25], the elimination of ex post adjustment mechanisms[26] and the reduction in the contribution of mechanisms that are flexible to the pursuit of the objectives set by Kyoto beneath the 15% limit on an annual basis.

The reduction compared to the original ceiling of 209 Mt CO_2 ensues from the request for reduction of the quotas by the Commission, which was only partially balanced by an increase in the quotas following the extension of the scope of application of the mechanism to plants that had originally been excluded from the Plan submitted to the Commission of 6.28 Mt CO_2. The lowering of the ceiling imposed by the Commission was increased to 13.65 Mt CO_2 to maintain unchanged the percentage reduction in the overall ceiling following the extension of the scheme to new plants; a large part of the effort in terms of emission reduction was placed on the thermoelectric sector, which saw its quotas reduced by 9.5 Mt CO_2 to remedy the ceiling cut imposed by the Commission and a further 5.9 Mt CO_2 following a review of the quota redistribution procedures among sectors subject to the ETS. As a result, quotas of 85.3 Mt CO_2 were allocated to the thermoelectric sector, which was a sharp reduction compared to the plan announced to the Commission in December 2006 (100.7 Mt CO_2) and, above all, compared to the average allocations relating to the 2005-2007 period (131.1 Mt CO_2).

The plan provides for a maximum usage quota of flexible mechanisms so as to comply with the different obligations of each sector. The differentiation between the activities took place in such a way as to respect the maximum limit of 15% set by the CERs (Certified Emission Reductions) and ERUs (Emission Reduction Units) imposed by the European Commission with its decision of 15 May 2007 and thus to benefit to a greater extent the sectors on which the most effort was placed in terms of emission reductions, with regard to the plan submitted to the Commission. For this reason, the limit set for the thermoelectric sector is 19.3%, while the one defined for the other combustion plants, the mineral products industry and the paper industry is 7.5%.

With regard to new entrants an undifferentiated reserve has been set of 16.9 Mt CO_2, so as to ensure more efficient management of available resources. The initial reserve is fed with unreleased quotas that have been assigned to closed plants. The allocation is made free of charge upon valuation of the national committee for the implementation of Directive 2003/87/EC; the allocation is calculated using standard methodologies based on sector criteria and parameters that have been set beforehand. In the event of depletion of the reserves, the Government has committed to ensuring the availability of the quotas for new entrants.

The review of the EU ETS as from 2013

In November 2006, the European Commission addressed an initial report to the European Council and Parliament on the operation of the EU ETS scheme, in compliance with art. 30 of Directive 2003/87/EC. In the document, the Commission analysed how the system operated in the first two years of its existence, while highlighting the areas which should undergo revision as from 2013.

25 This involves, in particular, plants that carry out combustion processes including cracking, the production of carbon black, gas flaring, manufacturing processes using ovens and the integrated production of steel.

26 The Italian Plan provides for adjustment of the quantity of the allocated quotas in the case of expansion of the users of the cogenerative plant network that results in increased emissions of over 10%, the "resumption from closing/partial suspension of the 2nd period," "partial interruption of activity," "partial suspension of activity," and, to the extent that the operators maintain a part of the quotas that were allocated, "closures for purposes of rationalisation of production".

In March 2007, the European Council defined a reduction objective of 30% of the climate altering gas emissions by 2020 compared to those recorded in 1990, in the event that other developed countries adopt comparable measures and the countries that are more advanced insofar as their development adequately contribute to the reduction of emissions in relation to their responsibility and respective capacities. The Council also assumed the unilateral obligation of reducing climate altering gas emissions by 20% by 2020, independently of any other international agreement. With reference to the longer term, the Council reaffirmed the need for developed countries to reduce their emissions by 60%-80% compared to 1990, by 2050.

In light of these objectives, on 23 January 2008, the European Commission adopted a proposal[27] aimed at amending Directive 2003/87/EC, with the main objectives of:

- extend coverage of the mechanism, in terms of sectors and gases covered by the EU ETS;
- add to the level of harmonisation and predictability of the system;
- introduce uniform rules for monitoring and certifying emissions;
- promote the involvement of third countries, through linking of the EU ETS with other emission trading systems and upgrade the participation level of developing countries and of transition economies in projects related to the Clean Development Mechanism and Joint Implementation.

Insofar as coverage of the mechanism, the Commission has proposed inclusion of the petrochemical sector and plants producing ammonia and aluminium; furthermore, the mechanism should also be extended to N2O (nitrous oxide) and CH4 (methane) emissions. These provisions should increase coverage of the mechanism by 4.6% approximately compared to Phase 2 of the EU ETS. Concurrently, detailed rules were defined for inclusion of combustion plants into the mechanism and the contribution of the geological capture and storage of CO_2 through a reduction of the obligation to return emission quotas by plants that carry out such activities.

In order to increase the harmonisation and predictability of the mechanism, the Commission has proposed to define a single European ceiling, thus superseding the current system which is based on national ceilings. A linear update of the single ceiling on an annual basis should ensure that the objective of reducing emissions by 20% is reached by 2020.

Furthermore, the Commission has recognised in auctions the base instrument with which to carry out the allocations to individual plants; however, while for the thermoelectric sector a full auctioning system has been provided as from 2013, in other sectors a gradual transition towards such a system has been proposed, starting form a quota of 20%, subject to auction in 2013, which would increase until it reaches 100% in 2020.

The proposal of the Directive defines the overall allocation quotas that the single countries would have to enter into the auction, following an approach that ties 90% of the auction rights available to the countries to the actual emissions in 2005. Finally, the establishment of a single reserve for new entrants at the European level has been provided for, the allocations of which should follow the same rules as those defined for allocations to existing plants.

With regard to the rules that apply to monitoring, the reporting and verification of emissions, the Commission has proposed a revision of the current guidelines, using a committee procedure, so as to achieve greater harmonisation of the approaches followed by different countries.

A further aspect of interest of the proposal for the directive is the involvement of third countries in the EU ETS. In the Commission's proposal, the mechanism is expected to be able to establish an operating link with other emission capping systems that are mandatory in third countries, through agreements that ensure recognition of the emission quotas in the respective emission quota exchange systems.

It should be finally noted that the proposal for the Directive contains some automatic adjustments in the event of an actual stipulation of international agreements regarding emission reduction, to reach the desired target of reducing such emissions by 30% by 2020; the adjustments involve the allocation mechanism, the definition of a single European ceiling, the use of credits deriving from the Clean Development Mechanisms and from Joint Implementation projects and

27 See also Chapter 1 of Volume 2, in which the proposals for the review of the EU ETS are presented in the larger framework of the new European energy policy launched by the Council in March 2007.

potential types of credits and additional mechanisms compared to the ones currently being considered.

The European ETS system is currently the major operating scheme for the exchange of greenhouse gas emission quotas worldwide.

Last year it contributed with 2,061 million tons of CO_2 or 70% of the worldwide greenhouse gas market. If measured as a value, at 50 billion dollars (37 billion Euro), the ETS EU share is even larger (78%).

The fact that this system contributed greatly to assigning a price to climate altering gas emissions using market mechanisms is undoubtedly its most significant element.

As noted in a recent report published by the OCSE Emission Trading: Trends and Prospects, other countries are in the process of developing similar systems. In the United States in particular, despite the fact that the US has not signed the Kyoto Protocol, they are looking into a region cap and trade type scheme that will include the northeastern states and which is expected to become operational in 2009. The Australian government announced in June 2007 the launch of an emission trading system by 2012 that will cover both producers and importers of fossil fuels as well as the sectors that emit climate altering gases. The government of New Zealand announced in September 2007 the gradual adoption of a cap-and-trade system that will be extended to all sectors of the economy by 2013 and which will cover the emissions of six major greenhouse gases. In Canada, a rate-based trading system was presented in April 2007, which is based on percentage reductions at the base level rather than on a ceiling of an absolute value in emissions.

In order to facilitate the exchange of experiences between different governments in the designing of national and regional ETS systems and in view of their future integration, the European Union, certain states in the USA, Canada and New Zealand and Norway established on 29 October 2007 the International Carbon Action Partnership forum.

All these developments clearly point to a significant commitment by industrialised countries in the fight against climatic change. The European Union in particular has adopted very ambitious objectives for the reduction of emissions by 2020 that are largely based in the evolution of the current ETS system in the post 2012 period. In addition to being feasible, these objectives must also be evaluated in terms of efficiency compared to the global emission reduction objective. Based on the IEA's latest preliminary report (WorldEnergyOutlook2007), the United States, China, Russia and India will contribute by two thirds to the increase in CO_2 emissions that are connected to combustion processes for energy uses. China, in particular, is expected to exceed the United States in terms of annual emissions as from 2007 while India would be in third place, after China and the United States, by 2015.

A 20% reduction in the European emission levels in 2020 compared to 1990 will equal a 13% reduction compared to 2005 and, in absolute values, a cut of approximately 1,100 million tons of CO_2. In the IEA's best case scenario, by 2015 China and the United States should emit 8,100 and 6,200 million tons of CO_2 respectively, with increases of 60% and 7% compared to the 2005 level. This IEA report also shows how a significant percentage of China's emissions that are connected to combustion for electricity is incorporated into products destined for export (approximately 34% in 2004). In 2004 particularly, industrial and commercial equipment and mass consumption consumer electronics covered approximately 40% of the total energy used for production earmarked for international markets which, in turn, equalled about 28% of the energy consumed in the country itself.

It is not surprising that a country that is poor in natural resources like China has concentrated its major efforts in the initial internal development phase on labour intensive production by providing incentives for the delocalisation of plants from industrialised countries and by earmarking a large portion of its own production for export. However, this results in the industrialised countries importing products that have been produced by plants that are less energy efficient and which pollute more at the local as well as the global level.

The issue of coordinating trade policies with environmental policies is therefore very current. Multilateral efforts to liberalise trade exchanges and to fight climatic change have followed differing courses until now. However, these policies influence each other. The liberalisation of trade exchanges has resulted in economic growth and consequently contributed to the increase in greenhouse gas emissions. At the same time, increasing the disposable income of populations and promoting the dissemination of technological innovation can provide the instruments for reducing the energy intensity of this economic development. Environmental policies can in turn

create discrimination between countries that adopt strong intervention policies and those that follow less strict approaches, pushing the former to adopt compensation measures to protect the competitiveness of their own industries that are exposed to international competition.

Another issue that is receiving much more attention than in the past involves the selection of economic instruments with which to reduce greenhouse gas emissions. Given the uncertainties of the new Directive proposal for European emission trading, with particular regard to the handling of energy intensive sectors and the possible usage of flexible Kyoto mechanisms in the post 2012 period, there are those that propose to replace completely the current system with the imposition of a carbon tax on fossil fuels. This approach would have the advantage of establishing a system that would be foolproof and transparent, though probably more difficult for consumers to accept.

An alternative system to EU ETS and to the Kyoto Protocol could be based on the imposition of a carbon tax on the carbon content of single products, whether produced domestically or imported, at the time they are consumed rather than on production processes or fossil fuels (see also the Authority's view as presented to Parliament in May 2007, which is set forth in Volume II of this Annual Report). An intervention of this type would have the undoubted advantage of more efficiency at the global level insofar as reducing emissions, though implementation and international law require interventions on the regulations of the General Agreement on Tariffs and Trade (GATT), adopted by the WTO (World Trade Organisation).

The challenge over the next few years, provided the objective is to achieve concrete results in the fight against climatic change due to the economic development of emerging and underdeveloped countries, will probably need to concentrate more on designing an integrated approach of trade and environmental policies at the international level and on more careful assessment of all economic instruments available to policy makers.

2.

Structure, prices and quality in the electricity sector

Electricity supply and demand in 2007

In 2007 the demand for electricity increased by a modest 0.7% over the previous year, compared to 1.5% growth of the Italian economy. The differing dynamic of the demand for electricity compared to the GDP is a result of the relatively mild temperatures in 2007 and the stagnation of industrial production. Consequently, electricity intensity dropped last year after twenty years of positive performance.

Based on the preliminary data published by Terna Rete Elettrica Nazionale Spa, the 2007 requirements were covered by 86.5% by domestic production for consumption while the rest (13.5%) was covered by imports.

In Table 2.1, the electric energy balance in Italy for 2007 was broken down according to the end sales (in volume) of retail market operators, with 3 main electricity groups coming out at the top: Enel, Edison and Electrabel/Acea. The figures shown in the table are provisional and based on the survey of electricity operators (producers, wholesalers, suppliers and grid operators) conducted by the Authority; the total values may differ from the corresponding preliminary values published by Terna or by Gestore del mercato elettrico Spa (GME), insofar as the methodological aspects connected to the readings and because certain groups did not respond to the survey.

While the Enel group is the main producer in the country, it is interesting to note how approximately 30% of the electricity generation is attributed to companies that do not operate in the retail segment.

Enel's contribution was over one quarter of total intermediary sales (wholesale), while the contribution of traders that do not sell on retail markets (including Acquirente Unico Spa) was a little over one third.

The other two major groups, Edison and Electrabel/Acea, have reached shares of 12.6% and 3.4% respectively in this segment.

In the final sales market (retail), the overall share of the Enel Group was 47.5% (of which 32.6% refers to sales in the captive, protected and safeguarded markets and 14.9% refers to sales in the free market). The end sales of the Edison Group, which are concentrated in the free market, were 6.9% while those of the Electrabel/Acea group were 6.2% of the total retail market, of which 3.2% in the free market and 2.9% in the captive market).

TAB. 2.1

Balance of operators in the electricity sector

Year 2007; TWh

	Enel	Edison	Electra-bel/Acea	Over 5 TWh	1-5 TWh	< 1 TWh	W/o sales	AU	Total
Net national production	**94,2**	**41,2**	**4,7**	**41,7**	**9,3**	**4,9**	**83,5**	**-**	**279,6**
Energy for pumping	**7,5**	**-**	**-**	**-**	**-**	**0,0**	**0,0**	**-**	**7,5**
Net imports	**2,9**	**0,8**	**2,1**	**5,6**	**5,7**	**3,1**	**9,2**	**8,2**	**37,7**
Imports(A)	3,3	1,2	2,2	6,2	5,8	3,6	9,7	8,2	40,1
Exports	0,4	0,4	0,1	0,6	0,1	0,5	0,5	-	2,4
Intermediary purchases	**232,1**	**70,3**	**35,0**	**104,3**	**76,9**	**35,7**	**39,7**	**116,5**	**710,5**
Power Exchange	72,7	8,7	5,9	27,7	15,7	6,8	8,6	106,5	252,7
Bilateral contracts(B)	66,4	29,3	18,9	23,5	49,4	16.7	29,8	1,9	236,0
Unbalancing(C)	1,5	1,0	0,5	3,2	3,3	1,6	1,3	2,0	14,3
Tolling and Mandate	-	31,3	1,1	44,6	5,1	7,3	-	-	89,4
Single Buyer (AU)	91,5	-	8,6	5,4	3,4	3,2	-	-	112,1
Legislative decree no. 387/03	-	-	-	-	-	-	-	6,1	6,1
Intermediary sales	**183,2**	**86,9**	**23,2**	**94,2**	**38,9**	**21,8**	**124,7**	**117,0**	**689,9**
Power Exchange	101,5	32,3	5,0	28,7	9,2	6,6	41,8	-	225,2
- of which CIP6 and surpluses (resolution no. 108/97)	*1,8*	*18,1*	-	*1,0*	*1,0*	*0,1*	*17,1*	-	*39,1*
Bilateral contracts(B)	69,5	53,2	13,4	26,2	24,7	11,4	54,2	-	252,4
Unbalancing(C)	7,8	1,3	0,1	2,9	4,3	2,5	2,0	-	20,9
Tolling and Mandate	-	-	4,5	36,5	0,5	1,0	24,2	-	66,6
On-the-spot trading	2,6	-	-	0,0	0,1	0,0	1,2	-	4,0
Surpluses (resolution no. 34/05)	1,8	-	0,2	0,0	0,1	0,4	1,4	-	3,9
Protected distributors/suppliers								117,0	117,0
Net transfers	**4,3**	**-1,0**	**0,0**	**-1,2**	**-2,1**		**-2,3**	**-7,7**	**10,6**
Grid leakages	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**21,6**
Self-consumption(D)	**-**	**3,5**	**-**	**5,4**	**2,5**	**1,5**	**5,5**	**-**	**18,4**
Final sales	**142,8**	**20,8**	**18,5**	**50,8**	**48,5**	**19,5**	**-**	**-**	**301,0**
- Free market	44,7	20,8	9,7	45,2	45,1	16,2	-	-	181,7
- Captive market	98,1	-	8,8	5,6	3,4	3,3	-	-	119,3
of which Captive 1st half of the year	51,3	-	3,0	2,9	1,7	1,7	-	-	60,6
of which greater protection 2nd half of the year	38,4	-	5,5	2,3	1,5	1,5	-	-	49,2
of which Safeguarded 1st half of the year	8,4	-	0,3	0,4	0,2	0,2	-	-	9,5

(A) The total value of imports differs from the preliminary value that was published by Terna as several foreign operators did not respond to the survey.

(B) The item includes both bilateral contracts recorded on the Bilateral Platform/ Energy Account Platform as well as contracts that were not recorded on such platforms.

(C) Both unbalances and scheduled unbalances are included.

(D) Self-consumption includes sales to consumers of self-production consortia and well as sales to consumers of internal networks.

Source: AEEG calculations on data provided by the operators.

Market and competition

Structure of the electricity offer

Domestic production

As shown in Table 2.2, during 2007 the total gross production was essentially unchanged from the year before. The figures broken down by source show strong growth in thermoelectric production of 1.1%, which is equal to approximately 258 TWh. Natural gas production increased by 6.4%, concurrently with a contraction in the production of oil products (-23.6%).

The production of renewable energy sources dropped by 3.5%. Along with the decrease in the production of hydroelectric power from natural sources, a sharp increase in wind power (39.5%) and photovoltaic energy is to be noticed.

Figure 2.1 shows the amounts generated by the main operators in 2007 as compared to the previous year. In line with the trend over the last few years, there has been a further contraction in the market share of the Enel Group of approximately 3% and an upwards change for the Edison and Eni Groups.

The Herfindahl-Hirschman Index (HHI) shows a decrease in market concentration insofar as gross generation is concerned. The index for 2007 is 1,440[1], while for 2006 it was 1,660.

With regard to installed capacity in 2002, authorisations were issued for the construction/transformation of thermoelectric stations for a total of 21,402 MWe, against applications for approximately 27,600 MWe (Table 2.3).

TAB. 2.2

Gross production by source 2000-2007

GWh

	2000	2001	2002	2003	2004	2005	2006	2007
Thermoelectric power	**218,549**	**216,792**	**227,646**	**238,291**	**240,488**	**246,918**	**255,420**	**258,356**
Solids	26,272	31,730	35,447	38,813	45,518	43,606	44,207	45,000
Natural gas	97,608	95,906	99,414	117,301	129,772	149,259	158,079	168,200
Oil products	85,878	75,009	76,997	65,771	47,253	35,846	33,830	25,860
Others	8,791	14,147	15,788	16,406	17,945	18,207	19,304	19,296
Production from renewable energy sources	**51,386**	**55,087**	**49,013**	**47,971**	**55,669**	**49,893**	**52,239**	**50,423**
Biomass and waste	1,906	2,587	3,423	4,493	5,637	6,155	6,745	7,200
Wind power	563	1,179	1,404	1,458	1,847	2,343	2,971	4,144
Photovoltaic	6	5	4	5	4	4	2	40
Geothermal	4,705	4,507	4,662	5,341	5,437	5,325	5,527	5,570
Hydroelectric from natural sources	44,205	46,810	39,519	36,674	42,744	36,067	36,994	33,469
Production of hydroelectric power from pumping	**6,695**	**7,115**	**7,743**	**7,603**	**7,164**	**6,860**	**6,431**	**5,574**
Total production	276,629	278,995	284,401	293,865	303,321	303,672	314,090	314,353
For memory:								
Total production of hydroelectric power	**50,900**	**53,926**	**47,262**	**44,277**	**49,908**	**42,927**	**43,425**	**39,043**

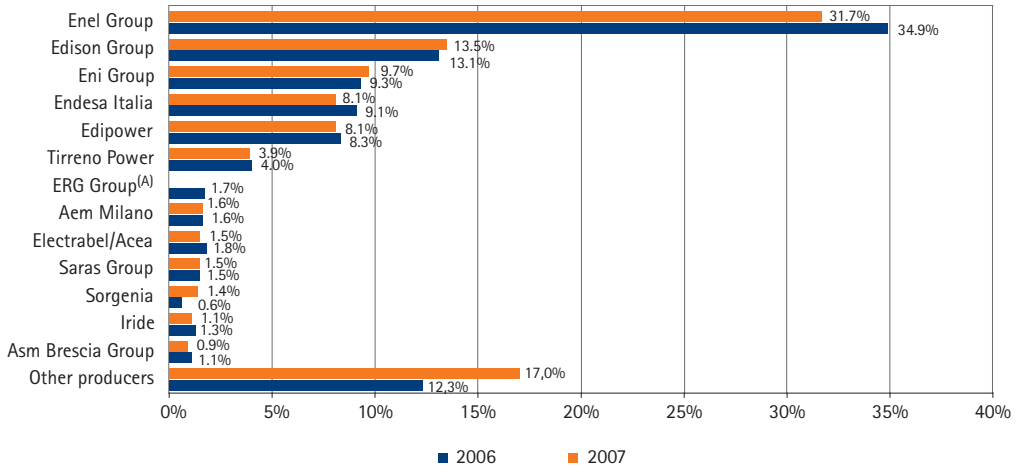
Source: AEEG calculations on Terna data. The data for 2007 is provisional.

1 The value was calculated by estimating the production figures that were not communicated by the operators as part of the Authority's annual survey concerning the electricity and gas sectors. Among the major operators, these figures are those that relate to the production of the ERG group and Elettra.

FIG. 2.1

Contribution of main operators to gross national production

Comparison 2006-2007, data in percentages



(A) The 2007 production figures for the ERG group were not communicated.

Source: AEEG calculations on data provided by the operators.

TAB. 2.3

Authorisations for thermoelectric plants (capacity in excess of 300 MWt)

Figures updated as at 1 June 2007; the list does not include initiatives that were withdrawn and filed

	APPLICATIONS CURRENTLY BEING EVALUATED FOR AUTHORISATION		AUTHORISATIONS ISSUED SINCE 2002	
REGION	INITIATIVES	CAPACITY (MWE)	PLANTS	CAPACITY (MWE)
VALLE D'AOSTA	-			
PIEDMONT	5	3,012	4	2,200
LIGURIA	1	460	1(A)	
LOMBARDY	11(A)	4,300	8(A)	3,660
TRENTINO ALTO ADIGE	-			
VENETO	7(A)	3,090	-	
FRIULI VENEZIA GIULIA	1		1	800
EMILIA ROMAGNA	3	1.790	4(A)	1,712
TUSCANY	1	250	3(A)	790
LAZIO	5	2,000	2(A)	750
MARCHE	2	950		
UMBRIA	1	800		
ABRUZZI	1	980	2	830
MOLISE	2	1,180	1	750
CAMPANIA	5	2,721	5	3,160
APULIA	5	3,410	6(A)	2,670
BASILICATA	3	1,550		
CALABRIA	3(A)	1,190	5	4,000
SICILY	-			
SARDINIA	1(A)		2(A)	80
TOTAL ITALY		**27,683**		**21,402**

(A) The changes to the plants are included.

Source: Ministry of Economic Development.

During 2007, new gross capacity of approximately 1,700 MW became operative, which is largely comprised of thermoelectric plants belonging to Enel, Edipower Spa and Edison (Fig. 2.2). The thermoelectric plants of the six major operators guaranteed in 2007 available generation capacity for at least 50% of the hours, equal to approximately 88% of the related installed capacity (Fig. 2.3).

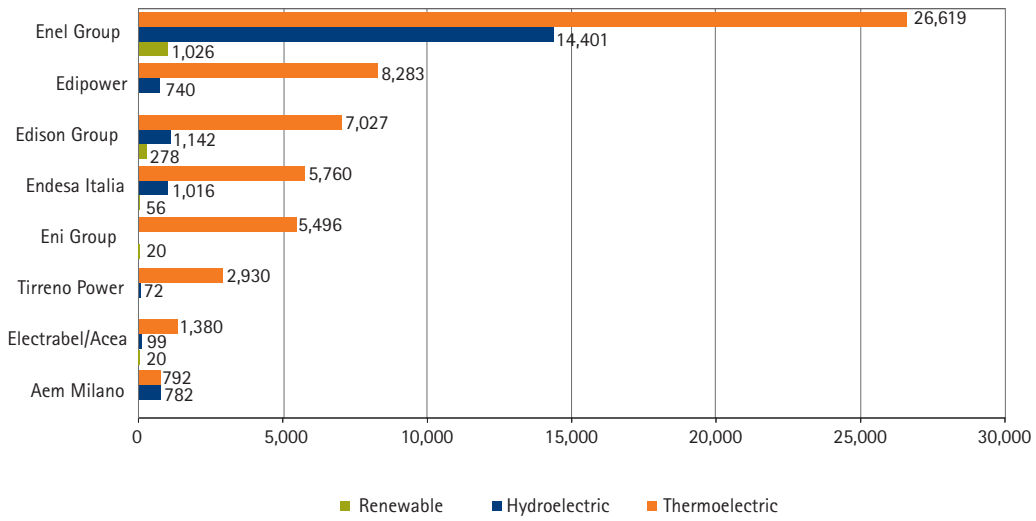
Figure 2.4 shows the percentages of energy aimed at consumption for major domestic operators.

The calculation of the percentages was carried out net of the

FIG. 2.2

Gross capacity available from the major groups

MW, 2007

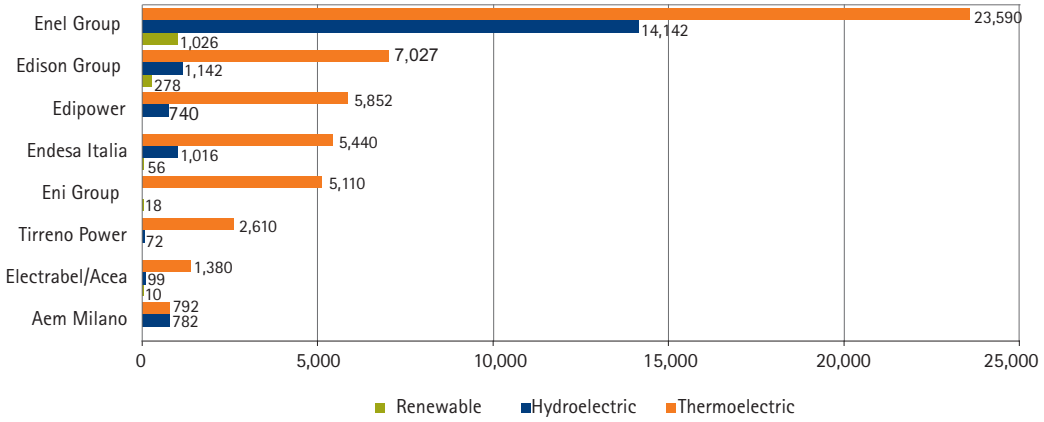


Source: AEEG calculations on data provided by the operators.

FIG. 2.3

Available power (for at least 50% of the hours) for the major groups

MW, 2007



Source: AEEG calculations on data provided by the operators.

energy already supplied by Gestore dei Servizi Elettrici Spa (GSE) to the market, following the compulsory withdrawals, net of the energy for pumping and exports. It should be noted that, compared to 2006, there was a decrease in Enel's market share of approximately 3.6 percentage points which was gained by Eni and Edison.

Overall, the market concentration of the power generation for consumption appears to have contracted with respect to 2006; in 2007, the HHI index was at 1,639[2], while in 2006 it was 1,891.

Table 2.5 shows the percentage contribution by the major groups to thermoelectric production from natural gas, compared to 2006.

Enel is the major producer of electricity from this source, followed by Edison and Eni, though their shares decreased compared to 2006.

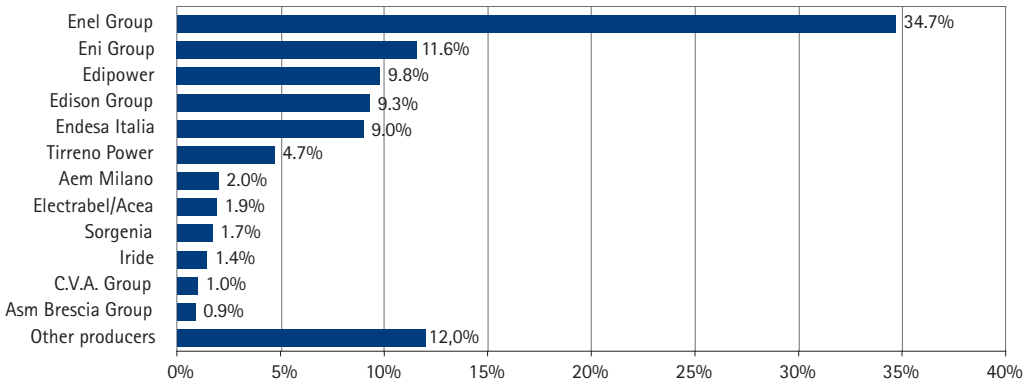
Insofar as renewable energy sources, Enel is the major producer of hydroelectric production and geothermal energy, of which it maintains almost total control (Table 2.4).

2 The value was calculated by estimating the production figures that were not communicated by the operators as part of the Authority's annual survey of the electricity and gas sectors. Among the major operators, these figures are those that relate to the production of the ERG group and Elettra.

FIG. 2.4

Contribution of the main operators to the production of electricity for consumption

Data in percentages; 2007

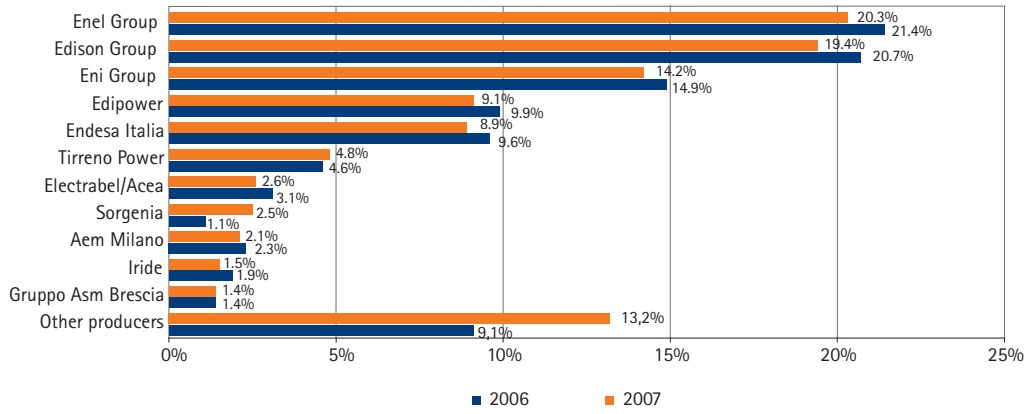


Source: AEEG calculations on data provided by the operators.

FIG. 2.5

Contribution of the main operators to the generation of thermoelectric energy from natural gas

Comparison of 2006 and 2007; data in percentages



Source: AEEG calculations on data provided by the operators.

TAB. 2.4

Contribution of the main domestic operators to the generation of renewable energy by energy sources

Data in percentages, 2007

	HYDRO	GEOTHERMAL	WIND	BIOMASS, BIOGAS AND WASTE
Enel Group	43.7	100.0	11.4	0.8
Edison Group	8.3	0.0	12.6	0.0
C.V.A. Group	8.0	0.0	0.0	0.0
Endesa Italia	4.0	0.0	2.2	0.0
Edipower	5.2	0.0	0.0	0.0
Aem Milano	4.4	0.0	0.0	0.0
International Power	0.0	0.0	24	0.0
IVPC	0.0	0.0	9.2	0.0
Asm Brescia Group	0.1	0.0	0.0	6.7
Iride	1.9	0.0	0.0	0.0
Electrabel/Acea	0.7	0.0	0.4	0.0
Amsa Holding	0.0	0.0	0.0	5.4
Api	0.0	0.0	0.0	6.4
Other operators	23.7	0.02	40.2	80.7
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source: AEEG calculations on data provided by the operators.

The major operator in wind power is International Power, while the Asm Brescia Spa group (now A2A Spa) is the major producer of energy from biomass, biogas and waste with a share of approximately 6.7%, followed by Amsa Holding Spa and Api Spa. This segment is characterised by the significant presence of small sized companies that hold scant market shares.

Subsidised production: photovoltaic energy

The "Conto Energia" (energy account) incentive mechanism became operative in Italy from September 2005, to promote the production of electricity by photovoltaic plants; in particular, Conto Energia provides for tariffs with incentives for energy produced by such plants for a twenty year period. This mechanism which was set forth in Legislative Decree no. 387 of 29 December 2003, became operative following the entry into force of the implementation decrees of 28 July 2005 and 6 February 2006 by the Ministry of Economic Development and the Ministry of the Environment.
On 19 February 2007, the Ministries of Economic Development and the Environment issued a new ministerial decree which introduced radical changes, simplifying the original scheme. The new decree became operative following publication of resolution no. 90 of the Authority for Electricity and Gas on 11 April 2007, which defined the conditions and terms for the granting of the incentive tariffs.
The main changes compared to the previous decree involve:

- abolition of the investigative phase prior to admission to the incentive tariffs; based on the new decree, the incentive request is to be submitted to GSE only once the photovoltaic plants have started operations;
- abolition of the annual limit on subsidisable power, which is replaced by a maximum accrued amount of subsidisable capacity of 1,200 MW;
- greater differentiation of the tariffs, in order to assist small plants that are housed in structures or buildings[3];
- the introduction of a premium for photovoltaic plants that also feature efficient use of energy.

The 2007 decree has also removed two technical constraints that were present in the previous decrees:

- the 1,000 kW limit in the maximum subsidisable capacity per individual plant;
- the limitation on the use of photovoltaic thin film technology which is very widely used in architectural integration.

The new Conto Energia provides for that electricity produced by photovoltaic plants that started operations after 13 April 2007 but before 31 December 2008 will be entitled to an incentive tariff which will be calculated according to the values set forth in Table 2.5. The tariffs are granted for a twenty year period from the date the plant starts operations and remain constant in current currency for the entire period. The plants which receive higher incentives are domestic plants of up to 3 kW which are integrated architecturally.
For plants which will start operations from January 2009 until 31 December 2010, the values indicated in Table 2.5 will be reduced by 2% for each of the calendar years after 2008, while they will remain constant for the twenty year period during which the incentive will be granted. The Ministries of Economic Development and the Environment will redefine the incentive tariffs for plants that will start operations in the years after 2010 in new decrees that they will issue.

3 In particular, the decree of February 2007 defines three types of integration so as to determine the appropriate incentive tariff to apply to each photovoltaic plant:
1. Non-integrated plant
2. Partially integrated plant
3. Plant with architectural integration.

A non-integrated photovoltaic plant is one with modules installed on the ground, or placed on urban and road structures, the external surfaces of buildings, constructions or buildings of any type and which are used in ways other than those defined for types 2 and 3. For partial integration, Annex 2 of the abovementioned ministerial decree describes three specific types of intervention while for architectural integration Annex 3 sets forth ten specific intervention types. GSE has published a guide for interventions that are accepted for recognition as architectural integration, and illustrates the thirteen specific types of interventions while defining the minimum functional and architectural requirements that each plant must fulfil in order to be recognised as having partial or total architectural integration.

TAB. 2.5

New Conto Energia incentive tariffs (Ministerial Decree of 19/02/2007)

NOMINAL POWER (kW)	TYPE OF PHOTOVOLTAIC PLANT		
	NON-INTEGRATED (c€)	PARTIALLY INTEGRATED (c€)	INTEGRATED (c€)
1 ≤ P ≤ 3	0.40	0.44	0.49
3 < P≤ 20	0.38	0.42	0.46
P > 20	0.36	0.40	0.44

Source: GSE.

It should be noted that photovoltaic plants up to 20kW that operate undernet metering conditions are entitled to a premium provided that they carry out energy efficiency interventions on the plant building which results in a reduction of the primary energy needs of the building of at least 10%. This premium consists of an increase of the basic tariff which is recognised which is equal to one half of the reduction of the primary energy need that is achieved for the building (the maximum premium is 30%).

In addition to the incentive, the entity responsible for the photovoltaic plant may receive further economic benefits deriving from the sales of the energy that is produced and coverage of self-consumption, whether partial or total. For the sale of the energy produced by the plant, the entity can sell "indirectly by entering into a dedicated withdrawal agreement with GSE pursuant to the Authority's resolution no. 280 of 6 November 2007.

Net metering, which was set forth in the Authority's resolution no. 28 of 10 February 2006, represents an alternative to the sale of the energy which is produced and injected by the plant.

This service, which can be provided by the local grid operators only for plants with power not exceeding 20 kW[4], consists in annual balancing of the electricity injected into the grid and the electricity withdrawn from the grid, if the points of injection and withdrawal of electricity from the grid coincide. Should the annual balance be higher than zero, this will be carried forward as a credit for offsetting, in energy, of negative balances concerning the following year. One year's positive balance can be used to offset any negative balances for a maximum of 3 years: if the energy offsetting does not occur by the third year following the year in which the credit was recognised, it is cancelled.

It should be noted that, contrary to what was established for the previous Conto Energia, for plants up to 20 kW that practice on-the-spot trading, the 2007 decree provides the incentive tariff for the total electricity produced rather than only the electricity that was self-consumed.

Table 2.6 shows the number and power of the plants in operation, following the introduction of the first Conto Energia, with their regional distribution, while Table 2.7 contains information on the plants that are subsidised according to the second Conto Energia. Lombardy has the highest number of incentives (1,817) and the highest level of installed power (a little less than 14 MW) followed by Apulia (11.7 MW), Trentino Alto Adige (10.6 MW), Emilia Romagna (10.2 MW) and Tuscany (7.9 MW).

With regard to the new Conto Energia, it should be also taken into account that as from 1 May 2008, most of the plants fall under the "partially integrated" category, in terms of units as well as power.

Subsidised production: CIP6 energy and other compulsory withdrawals

In 2007, the total electricity withdrawn by GSE pursuant to art. 3, par. 12 of Legislative Decree no. 79 of 16 March 1999 amounted to 46,577 GWh, which corresponded to 15.4% of domestic production.

Compulsory withdrawals which almost entirely involved the energy produced in CIP6 plants, were reduced by approximately 2.5 TWh compared to the previous year, following a drop

4 Law no. 244 of 24 December 2007 has extended to 200 kW the maximum power up to which the plants that operate on renewable energy sources are entitled to net metering. This rule will become effective following publication by the Authority of a resolution which must redefine the terms and conditions governing the use of this service.

TAB. 2.6

The first Conto Energia (Ministerial Decrees of 28 July 2005 and 6 February 2006)

Plants in operation as at 1 May 2008

	CLASS 1 1kW ″ P ″ 20kW		CLASS 2 20kW < P ″ 50kW		CLASS 3 50kW < P ″ 1.000kW		TOTAL	
	NUMBER	POWER (kW)	NUMBER	POWER (kW)	NUMBER	POWER (kW)	NUMBER	POWER (kW)
VALLE D'AOSTA	-	-	1	46	-	-	1	46
PIEDMONT	206	1,445	49	1,950	3	1.147	258	4,542
LIGURIA	89	431	3	149	-	-	92	580
LOMBARDY	596	3,327	57	2,365	3	235	656	5,928
TRENTINO ALTO ADIGE	164	1,010	60	2,595	8	3,698	232	7,303
VENETO	387	2,322	41	1,608	1	74	429	4,004
FRIULI VENEZIA GIULIA	202	1,058	5	230	1	509	208	1,797
EMILIA ROMAGNA	447	2,386	84	3,558	3	412	534	6,356
TUSCANY	227	1,679	22	920	3	2,080	252	4,679
LAZIO	268	1,711	25	1,149	1	470	294	3,330
MARCHE	221	1,373	26	1,114	2	210	249	2,697
UMBRIA	151	1,173	51	2,183	2	560	204	3,916
ABRUZZI	54	459	20	931	1	212	75	1,602
MOLISE	11	80	1	30	-	-	12	110
CAMPANIA	97	885	11	515	1	996	109	2,396
APULIA	297	1,775	45	2,110	8	5,920	350	9,805
BASILICATA	48	470	8	338	1	84	57	892
CALABRIA	69	500	7	330	5	4,407	81	5,237
SICILY	216	1,224	13	637	4	3,083	233	4,943
SARDINIA	90	525	2	99	3	2,992	95	3,616
TOTAL ITALY	3,840	23,834	531	22,856	50	27,088	4,421	73,778

Source: GSE.

TAB. 2.7

New Conto Energia (Ministerial Decree of 19 February 2007)

Plants in operation as at 1 May 2008

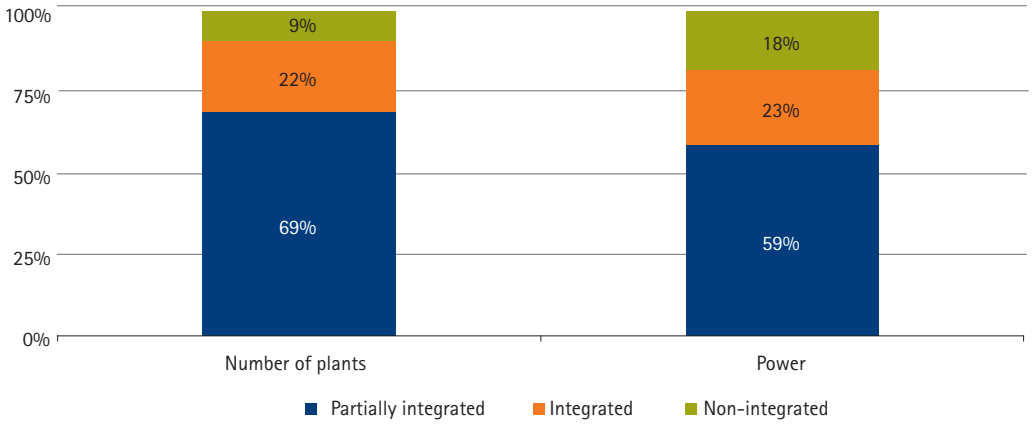
	CLASS 1 1kW ″ P ″ 3kW		CLASS 2 3kW < P ″ 20kW		CLASS 3 P > 20kW		TOTAL	
	NUMBER	POWER (kW)	NUMBER	POWER (kW)	NUMBER	POWER (kW)	NUMBER	POWER (kW)
VALLE D'AOSTA	2	5	4	65	-	-	6	70
PIEDMONT	359	923	185	1,442	12	671	556	3.037
LIGURIA	58	141	21	124	1	46	80	311
LOMBARDY	687	1,709	448	3,258	26	3,030	1,161	7,997
TRENTINO ALTO ADIGE	152	401	147	1,353	25	1,516	324	3,270
VENETO	387	1,007	221	1,448	6	206	614	2,662
FRIULI VENEZIA GIULIA	137	364	130	777	5	248	272	1,389
EMILIA ROMAGNA	498	1,274	226	1,777	10	770	734	3,822
TUSCANY	327	821	195	1,628	8	746	530	3,195
LAZIO	206	525	111	717	6	315	323	1,557
MARCHE	143	369	57	439	5	385	205	1,193
UMBRIA	44	113	34	271	3	1,179	81	1,563
ABRUZZI	37	90	47	307	2	80	86	476
MOLISE	5	14	6	31	-	-	11	45
CAMPANIA	53	137	33	245	1	30	87	412
APULIA	236	598	160	1,094	5	216	401	1,908
BASILICATA	13	37	17	133	1	49	31	219
CALABRIA	31	87	43	362	2	68	76	517
SICILY	140	364	89	675	-	-	229	1,038
SARDINIA	130	349	31	198	-	-	161	547
TOTAL ITALY	3,645	9,329	2,205	16,344	118	9,557	5,968	35,229

Source: GSE.

FIG. 2.6

New Conto Energia: percent breakdown by plant type

Plants in operation as at 1 May 2008



Source: AEEG calculations on GSE data.

in energy subject to the agreement of approximately 1.9 TWh and a drop of approximately 0.6 TWh in the energy withdrawn pursuant to resolution no. 108 of 28 October 1997.

The breakdown of the energy deriving from assimilated sources receiving CIP6 subsidisation shows how the total reduction recorded in 2007 of 0.8 TWh was largely determined by the decrease in electricity produced by new plants using fossil fuels with hydrocarbons, while the energy generated by existing plants has increased by approximately 2.7 TWh during the year.

The energy assimilated under the CIP6 agreement comprised approximately 15% of the domestic thermoelectric production in 2007. The decrease in CIP6 production from renewable ener-

TAB. 2.8

Compulsory withdrawals by GSE

GWh

	2003	2004	2005	2006	2007
CIP6	50,361	52,398	50,296	48,340	46,462
of which assimilated	40,723	42,268	40,463	39,068	38,268
of which renewable	9,638	10,131	9,833	9,272	8,194
Resolution no. 108/97	1,140	1,218	966	689	115
Resolution no. 62/02	2,411	3,064	-	-	-
Total	**53,912**	**56,680**	**51,262**	**49,029**	**46,577**

Source: AEEG calculations on GSE data.

TAB. 2.9

Energy withdrawn by assimilated sources during the period between 2003 and 2007

GWh

	2003	2004	2005	2006	2007
New plants	33,963	34,182	25,097	20,465	16,935
of which plants that use process fuels, residuals or energy recoveries	16,530	17,773	12,891	13,290	12,929
of which plants that use fossil fuels with hydrocarbons	17,433	16,409	12,206	7,175	4,006
Existing plants	6,760	8,086	15,366	18,603	21,333
Total	**40,723**	**42,268**	**40,463**	**39,068**	**38,268**

Source: AEEG calculations on GSE data.

gy sources in 2007 of approximately 1.1 TWh was on the other hand mainly due to a decrease in the generation from new hydroelectric plants with large or small reservoir and run of river hydroelectric plants with power exceeding 3 MW (-0.4TWh) and from the generation from new wind power and geothermal plants (-0.3 TWh).

The CIP6 agreements relating to plants producing renewable energy constituted 16.7% of total generation from renewable energy sources, an 18% decrease compared to 2006.

In 2007, the total costs of GSE's compulsory withdrawals which are set forth in Table 2.11, are estimated at 5.3 billion Euro and are in large part (approximately 71%) related to the remuneration of CIP6 energy produced by assimilated plants.

The related revenue which mainly derives from the sale of electricity on the Day Ahead Market (MGP), net of the contracts for differences charges and unbalancing charges, amounted to 2.8 billion Euro, up by a little less than 100 million Euro compared to the year before. The cost to be recovered by the tariff, which equals the difference between the costs and revenues connected to compulsory withdrawals, amounts to approximately 2.4 billion Euro, considerably down compared to 2006 (3.7 billion Euro). Table 2.12 shows a breakdown of the costs that relate to assimilated and renewable sources that are subsidised by the CIP6 mechanism, by production type. The reduction in the costs relating to assimilated sources compared to 2006, which exceeds 600 million Euro, is largely due to the decrease in the withdrawal costs of energy produced by plants that use fossil fuels with hydrocarbons and is approximately 400 million Euro; this reduction was the result of a reduction in the quantities withdrawn and a reduction in unit remuneration of approximately 12%.

With regard to renewable energy sources, the cost reduction which was a little less than 300 million Euro, mainly involved energy withdrawals from photovoltaic, biomass and municipal

TAB. 2.10

Energy withdrawn from renewable sources during the period between 2003 and 2007

GWh

	2003	2004	2005	2006	2007
New plants	9,547	10,031	9,685	8,958	7.858
of which large and small reservoir hydroelectric plants and run of river hydroelectric plants >3 MW	1,450	1,397	1,181	987	591
of which run of river hydroelectric plants <3 MW	383	334	184	137	88
of which wind and geothermal plants	3,850	3,418	3,040	2,566	2,217
of which photovoltaic, biomass, MSW and equivalent plants	3,666	4,648	5,084	5,198	4,949
of which repowered hydroelectric plants	199	234	196	70	13
Existing plants	90	100	148	314	337
Total	**9,638**	**10,131**	**9,833**	**9,272**	**8,194**

Source: AEEG calculations on GSE data.

TAB. 2.11

Costs and revenues of compulsory withdrawals in 2007

Millions of Euro

COSTS AND REVENUES	VALUE
Remuneration of assimilated energy plants	3,746.5
Remuneration of renewable energy plants	1,476.7
Total remuneration of CIP6 energy	5,223.2
Other costs for measuring and transporting CIP6 energy	13.9
Costs concerning resolution no. 34/05 (GSE purchases)	9.0
Energy remuneration concerning resolution no. 108/97	11.5
Total withdrawal costs	**5,257.7**
Revenues from energy sales	2,834.6
Revenues from sales of green certificates	-0.1
Total revenues	**2,834.5**
Cost to be recovered through the tariffs (Component A_3)	**2,423.2**

Source: AEEG calculations on GSE data.

TAB. 2.12

Breakdown of costs and quantity of CIP6 energy subsidised in 2007, by source

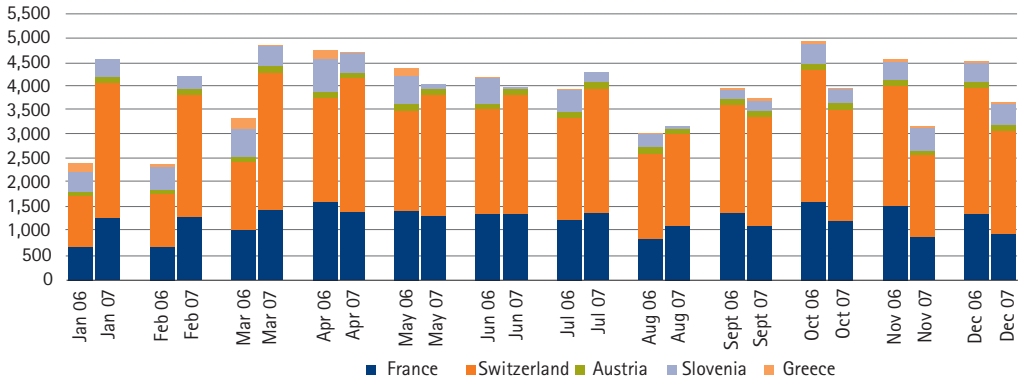
	TOTAL REMUNERATION (MILLIONS OF EURO)	QUANTITIES (GWh)	REMUNERATION PER UNIT (€/MWh)
Assimilated sources	3,746.5	38,268	97,9
New assimilated sources	1,949.7	16,935	115.1
of which plants that use process fuels, residuals or energy recoveries	1,565.0	12,929	121.0
dof which plants that use fossil fuels with hydrocarbons	384.6	4,006	96.0
Existing assimilated sources	1,796.8	21,333	84.2
Renewable energy sources	1,476.7	8,194	180.2
New renewable sources	1,447.2	7,858	184.2
of which large and small reservoir hydroelectric plants and run of river hydroelectric plants >3 MW	81.6	591	138.1
of which run of river hydroelectric plants <3 MW	10.8	88	123.4
of which wind and geothermal plants	323.2	2,217	145.8
of which photovoltaic, biomass, MSW and equivalent plants	1,030.3	4,949	208.2
of which repowered hydroelectric plants	1.3	13	100.1
Existing renewable sources i	29.5	337	87.4
TOTAL	**5,223.2**	**46,462**	**112.4**

Source: AEEG calculations on GSE data.

FIG. 2.7

Imports of electricity by border in 2006 and 2007

GWh



Source: AEEG calculations on Terna data.

solid waste (MSW) plants and plants equivalent to the latter, for an amount of approximately 100 million Euro and withdrawals of hydroelectric energy of approximately 90 million Euro. In this case too the reduction ensues from a decrease in the quantities withdrawn as well as a decrease in unit remuneration.

Imports

The foreign balance for 2007 amounted to 45,930 GWh which was the difference between the imports of 48,570 GWh (+4.2%) and the exports of 2,640 GWh (+63.9%). Compared to 2006, the foreign balance decreased by 2.1%; this has guaranteed in 2007 the coverage of the needs by 13.5%.

Imports from Switzerland have increased by 20.6%, while those from Slovenia and Greece have decreased by 40.4% and 82.6%, respectively.

With regard to exports, the increase in the flows has been determined mainly by the contribution of Greece (1,134 GWh) and Slovenia (289 GWh), as shown in Fig. 2.8.

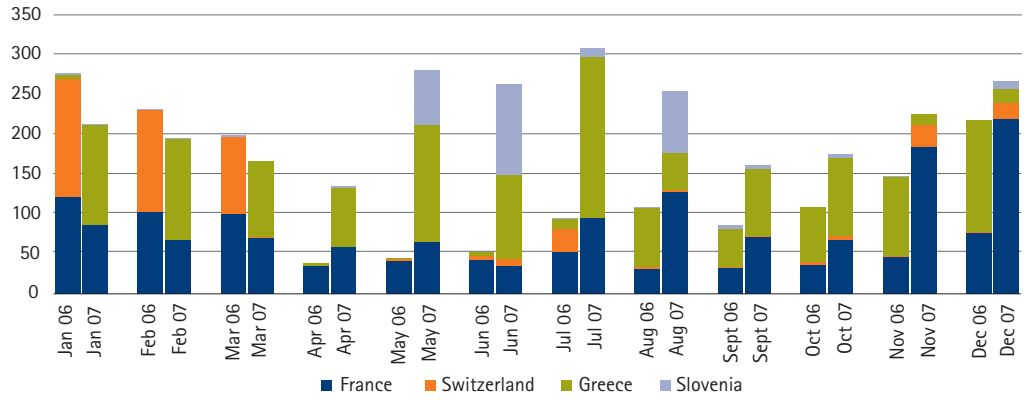


FIG. 2.8

Exports of electricity by border in 2006 and 2007

GWh

Source: AEEG calculations on Terna data.

Electricity facilities

Transmission

In November 2005, with the transformation of Terna, the reunification of ownership of Rete di Trasmissione Nazionale (national transmission grid – RTN) became operative again.

Terna is a listed company; currently the major shareholder is Cassa Depositi e Prestiti which hold 29.99% of the shares. The company owns over 98% of RTN which owns approximately 39,500 kilometres of lines, 366 transformation and switching stations and 3 remote stations.

The share of the infrastructures held by Terna has increased considerably during 2006 with the purchase, through its 100% owned subsidiary Rete Trasmissione Locale R.T.L. Spa, of the entire share capital of Edison Rete Spa and 99.99% of the capital of Aem Trasmissione Spa.

In 2007, it also acquired the entire share capital of Aem Trasporto Energia Srl Torino.

In January 2007, Terna issued its 2007-2016 development plan for the national electricity transmission grid, subject to the approval of the Ministry of Economic Development. The plan aims to increase the interconnection with other countries and reduce grid congestion.

The 2008 Development plans contain an analysis of the current and future critical grid areas and identify the main areas requiring development. These interventions have been classified on the basis of the main benefits they provide: adequacy of the system as far as meeting expected demand is concerned, security in grid operation, reduction of congestion and improvement of the service quality.

Distribution

Legislative decree no. 79/99, which provided for the granting of only one distribution concession per municipality and the attribution to investee companies of local bodies of the right to request the conveyance of branches that carry out distribution activities in the territory of the municipality, implemented the gradual rationalisation process of the activity, which is expected to fade away soon.

Table 2.13 shows the regional distribution of the operators and distribution networks by network type as this ensues from the

data collected from the distributors by the Authority. It is interesting to note the high number of distributors in the Trentino Alto Adige region for a network that, in terms of length, represents approximately 2% of the country's total.

Figure 2.14 shows the percentages of the main operators involved in the distribution of electricity in 2007.

Enel is the top operator, with approximately 86% of the distributed volumes, followed by other operators that hold minimal portions.

Table 2.15 shows the activity of the distributors by number of withdrawal points, with the corresponding distributed volumes, the withdrawal points and the average volumes per operator.

The operators with more than 500,000 customers are Enel, Electrabel/Acea, Aem Milano Spa and Iride Spa, while it is worthy of note the high number of operators (52) with less than 1,000 customers. Ten of these 52 operators have less than 100 withdrawal points.

TAB. 2.13

Length of the distribution networks as at 31 December 2007

REGION	HIGH AND VERY HIGH VOLTAGE (km)	MEDIUM VOLTAGE (km)	LOW VOLTAGE (km)	NUMBER OF DISTRIBUTORS(A)
Val d'Aosta	56	1,483	2,547	3
Piedmont	1,497	28,061	63,263	6
Liguria	832	6,981	21,080	2
Lombardy	3,524	40,700	81,292	14
Trentino Alto Adige	497	7,904	14,744	70
Veneto	2,200	26,051	60,888	3
Friuli Venezia Giulia	539	7,976	14,517	5
Emilia Romagna	1,923	31,287	66,257	3
Tuscany	1,154	26,200	57,299	2
Lazio	1,776	27,964	64,160	5
Marche	565	11,487	29,490	6
Umbria	57	8,512	20,084	2
Abruzzi	531	9,719	24,847	4
Molise	45	3,602	7,696	1
Campania	1,215	23,984	58,155	3
Apulia	1,719	28,396	59,514	3
Basilicata	629	9,755	14,659	1
Calabria	489	17,579	40,592	1
Sicily	1,161	35,755	74,156	10
Sardinia	498	17,687	32,931	5
TOTAL	**20,907**	**371,083**	**808,171**	**149**

(A) Each distributor is counted as many times as the regions in which the distributor operates.

Source: AEEG calculations on data provided by the operators.

TAB. 2.14

Distribution of electricity by corporate group in 2007

Distributed volumes

GROUP	GWh	% SHARE OF TOTAL
Enel	254,671	86.4
Electrabel/Acea	10,616	3.6
Aem Milano	7,526	2.6
Asm Brescia	4,506	1.5
Iride	3,412	1.2
Trentino Servizi	2,263	0.8
Hera	2,237	0.8
Agsm Verona	1,928	0.7
Other operators	7,764	2.4
TOTAL	**294,923**	**100.0**

Source: AEEG calculations on data provided by the operators.

TAB. 2.15

Distributor activity
Year 2007

CLASSES OF WITHDRAWAL POINTS	NUMBER OF OPERATORS	DISTRIBUTED VOLUME (GWh)	NUMBER OF WITHDRAWAL POINTS	AVERAGE VOLUME PER OPERATOR (GWh)	AVERAGE NUMBER OF WITHDRAWAL POINTS PER OPERATOR
> 500,000	4	276,225	33,482,844	69,056	8,370,711
100,000 -500,000	7	13,239	1,272,778	1,891	181,825
50,000-100,000	2	1,481	131,797	740	65,899
20,000-50,000	10	2,070	307,288	207	30,729
5,000 -20,000	21	1,265	213,675	60	10,175
1,000-5,000 i	42	567	97,500	14	2,321
< 1,000	52	75	20,323	1	391
TOTAL	138	294,922	35,526,205	2,137	257,436

Source: AEEG calculations on data provided by the operators.

The wholesale market

The regulated market managed by GME is divided into two sub-markets: the Day Ahead Market (MGP), in which hour blocks of energy are exchanged for the following day and the Adjustment Market (MA), which allows operators to make changes to the schedules defined within the MGP through further offers to buy or sell.

The Balancing Market (MSD) follows these two markets; through it, TERNA (and previously GRTN – Gestore della Rete di Trasmissione Nazionale S.p.A.) provides the resources which are necessary to their transmission and dispatching activities and guarantee the security of the electricity system.

The regulations governing dispatching provide for the active participation of demand in all these markets over time, but the provisional regulations for 2006 – extended for 2007 and 2008 - provide for the participation of MGP only. Participation of demand to the MGP only has made necessary the implementation of provisional mechanisms to compensate for the reduced negotiation flexibility due to the inability to participate in the MA and MSD. These mechanisms are represented by:

- scheduled unbalancing, which allows entities that own contracts that have been entered into outside the offer system to submit injection and withdrawal programs that are not balanced on the MGP;
- the bilateral adjustment platform (PAB) for demand, which allows balanced hourly exchanges of electricity between operators that manage the withdrawal bid points which belong to the same geographic area.

An element that provides for additional flexibility is the energy account platform (PCE) which replaces the previous Bilateral Platform in practice. The operating terms of the PCE are regulated by resolution no. 111 of 9 June 2006 (as subsequently integrated and amended) and the Regulation issued by GME.

For 2007, a lowering of the tolerance threshold for unbalancing penalties was provided, so that it became 3% for 2007 compared to 7% for 2006.

This mechanism, which aims to facilitate operators while scheduling demand, did not prove to be compatible with the structure of the market and thus should be removed at full scale production.

Actually, with its resolution no. 350 of 28 December 2007, the Authority decided to maintain unchanged the calculation procedures for the unbalancing amounts that were provisionally forecasted for 2007.

To provide the demand side with the time required to efficiently manage its negotiations on the MGP, the regulations for the electricity market also provide for that Terna can submit additional offers on the MGP in order to ensure that the level of demand on the MGP does not deviate by more than 5% from the absolute value of its own forecasts. For 2007, this mechanism was extended with a threshold of 2%.

In addition to the confirmation of the tolerance margins, for 2008 resolution 350/07 also provides for Terna to be able to submit additional offers so as to contain the supply costs of dispatching resources. The additional offer mechanism is not compatible with the opening of the adjustment market for demand which is therefore postponed until after 2008.

The Power Exchange: demand

The demand for electricity in the wholesale Italian market for 2007 was 329.9 TWh, which is a 0.05% increase over 2006. The domestic demand has increased by 0.3% with increments at the local level that were relatively contained: the highest is the Southern zone (1.3%) while there has been a decrease in the Sardinia macro zone.

Contrary to 2006, purchases from abroad have decreased by 8.6%.

Worthy of notice is also a drop in demand for the first quarter of 2007 (-4.4%), compared to the same period in 2006. This reduction was particularly marked in the month of March (-5.7%).

The transactions on the power exchange reached 221.3 TWh, up by 12.6% compared to the previous year; therefore, the market's average liquidity has also increased by 67.1% in 2007 compared to 59.6% in 2006.

The increase in liquidity, which can be interpreted as a signal that the Power Exchange has become more competitive, is essentially attributable to the increase in the selling as well as the buying transactions by non-institutional operators (other than the Single Buyer, GSE and Terna) that are mainly concentrated in the second half of 2007. A further element that influenced the increase in the volumes traded on the Power Exchange compared to the overall volumes traded on the Wholesale Italian market was the increase in the transactions abroad and, only for the months of October, November and December, the increase in the exports due to a considerable increase in the prices of the main European exchanges (mainly in France on Powernext).

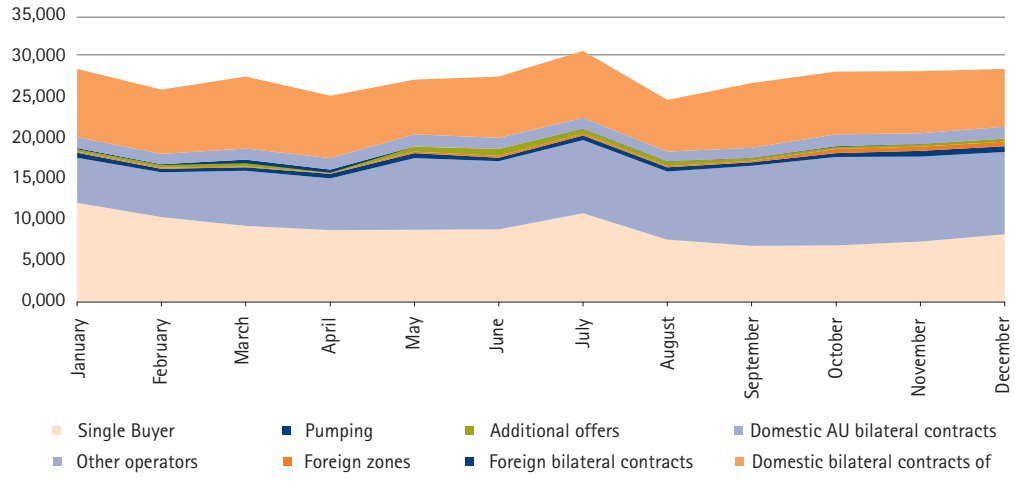
Due to the progressive contraction of the captive market and the complete liberalisation of the retail sector as from 1 July 2007, the demand expressed by the Single Buyer has decreased further by 19.4% compared to the previous year. This trend was balanced by a substantial increase in demand from other operators that amounted to 99.76 TWh compared to 49.7 TWh for 2006.

This reduction particularly affects the bilateral contracts with foreign countries which are down by 43.1% compared

FIG. 2.9

Monthly trend of demand for electricity in 2007

GWh



Source: AEEG calculations on GME data.

to 2006 and the bilateral contracts signed with the Single Buyer (-23.1%) and those entered into with domestic operators other than the Single Buyer (-17.3%) to a relatively minor degree.

The Power Exchange: supply

The volumes supplied in the Exchange have increased by 15.7% compared to 2006 for domestic supplies which, for all of 2007, amounted to 143 TWh in total.

In addition to this, there was a further increase in supplies from abroad of 8.8 TWh overall, which has been distributed uniformly across the 12 month period. Only the supply by some of the entities owning CIP6 plants has decreased slightly by a total of about 3 TWh.

The scheduled unbalances amounted to 10.6 TWh, significantly lower than the previous year (-22%).

This decrease is attributable to the beginning of operations of the PCE.

The additional offer on the supply side amounted to 3.2 TWh,

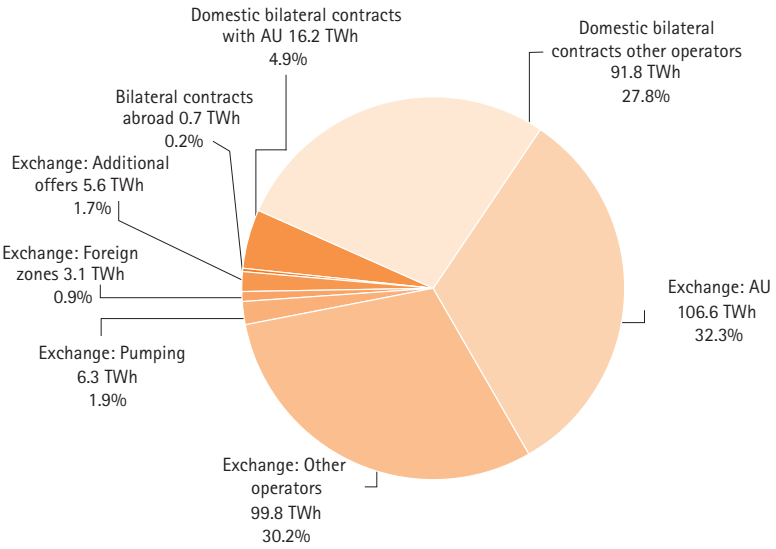


FIG. 2.10

Composition of demand for electricity in 2007 in percentages

Source: AEEG calculations on GME data.

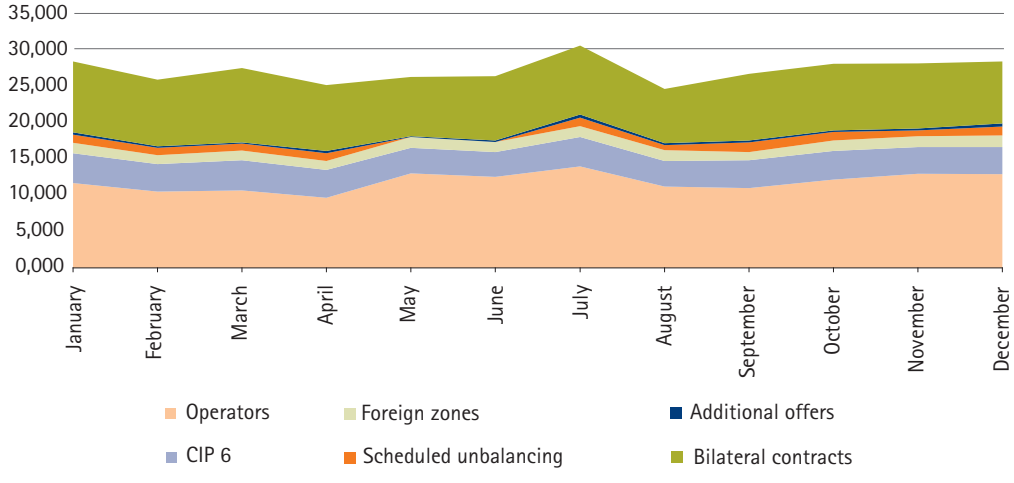


FIG. 2.11

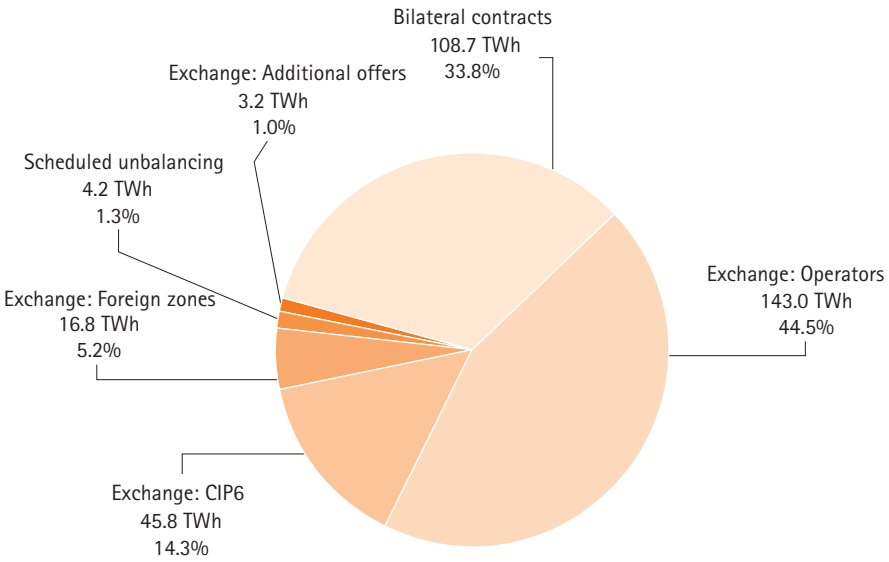
Monthly trend of supply of electricity in 2007

GWh

AEEG calculations on GME data.

FIG. 2.12

Composition of supply of electricity in 2007 in percentages

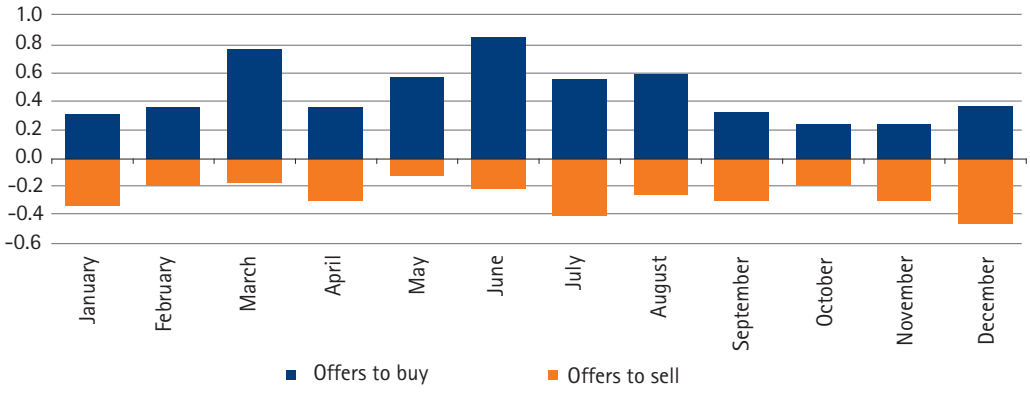


Source: AEEG calculations on GME data.

FIG. 2.13

Additional Terna offers for purchase and sale in 2007

TWh



Source: AEEG calculations on GME data.

up by 4.7% compared to 2006. Fig. 2.13 shows the monthly profile of additional sales offers by Terna, compared to the demand side offers; the latter amount to 5.6 TWh, up by approximately 46.6% compared to the previous year.

While the offers to buy reached maximum levels, in terms of the overall demand on the MGP in the months of May and June of 2.8% and 3.1% respectively, the offers to sell reached their maximum level in December (1.6%).

Finally, we note how the overall increase in additional offers presented on the MGP by Terna in 2007 compared to 2006 did not provide a clear signal of stabilisation over the months, following the acquisition by the entities operating on the demand side of the required organisational and forecasting skills.

The Power Exchange: results on the Day Ahead Market (MGP)

The average purchase price on the Italian power exchange (PUN) was 70.99 €/MWh, down by 3.8 €/MWh compared to 2006 (-5.0%).

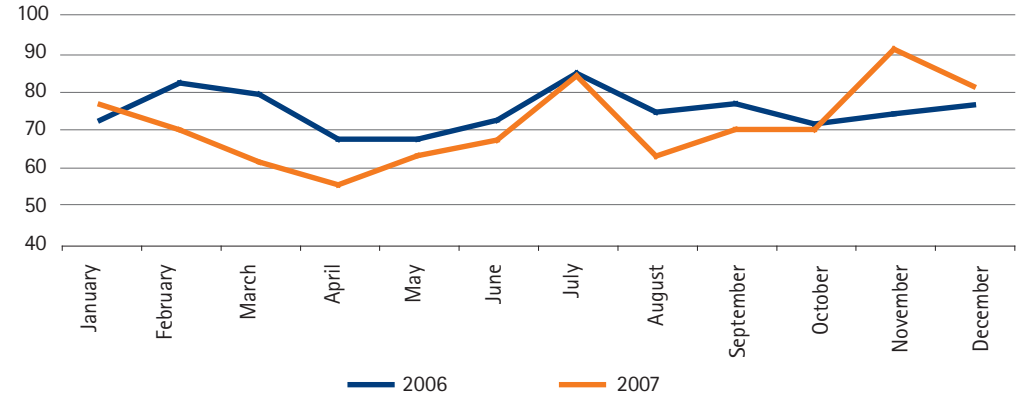


FIG. 2.14

Trend of the national single price

€/MWh

Source: AEEG calculations on GME data.

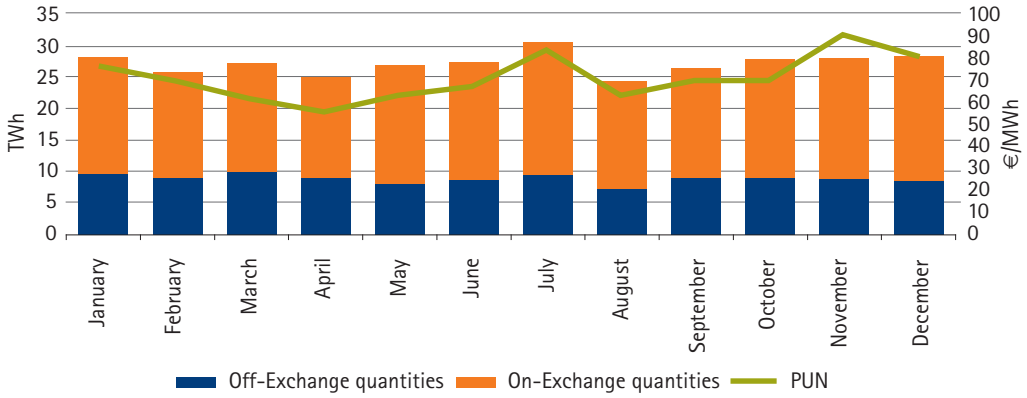


FIG. 2.15

Volumes traded on the MGP in 2007

TWh; €/MWh

Source: AEEG calculations on GME data.

The drop in the PUN during the initial months of 2007 is attributable in part to the temporary slowdown in the tension on the international oil markets in the first part of the year and the concurrent containment of the price for importing natural gas to Europe. A further element in relation to the economic trend to be considered is the drop in demand (-4.4%) in the first quarter of 2007 compared to the first quarter of 2006.

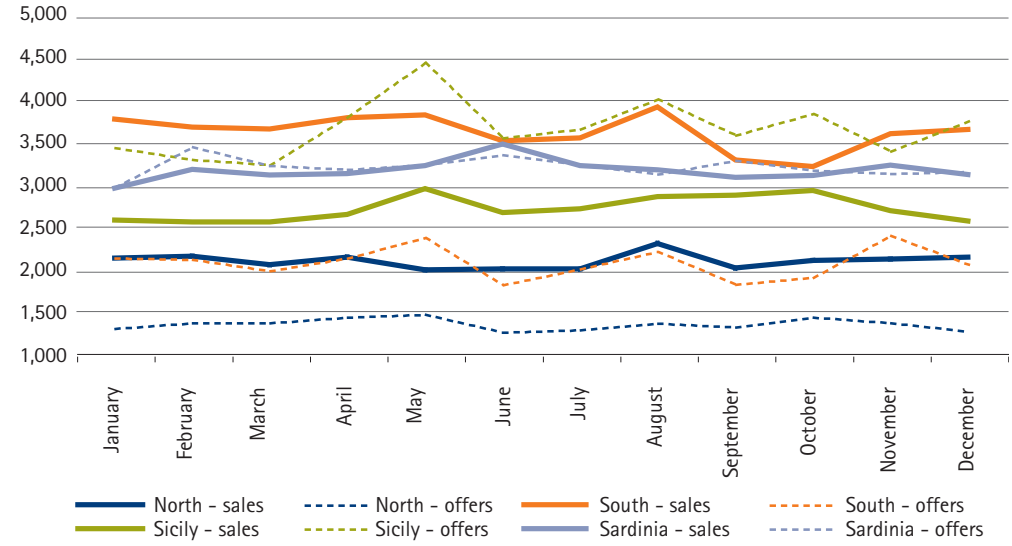
The peak reached in the month of November when the average purchase price reached a historic high of 90.82 €/MWh (+22.7% compared to November 2006) due to the price tension on Central European exchanges is particularly significant. The increase in the level and the volatility of the prices was concentrated in the middle of the month, when there was also a drop in net imports (which in some hours gave rise to export phenomena) due to the high prices recorded in the neighbouring European exchanges.

The HHI index at the zone level, calculated in respect of the actual sales of electricity and the sales offers (whether accepted or not), shows the structural problems which in turn are connected to the development level of the competition on the supply side. This dynamic is particularly visible in the macro zones other than in the North.

The marginal operator index shows the presence of a single operator per macro zone able to set the exchange prices; figure 2.17 shows a slight improvement in competition in 2007 compared to 2006: indeed, while the percentage of the overall traded volumes on which the marginal operator has set a price exceeded 80% at the domestic level in all the months of 2006, in the following year this percentage dropped below 80% in five months.

FIG. 2.16

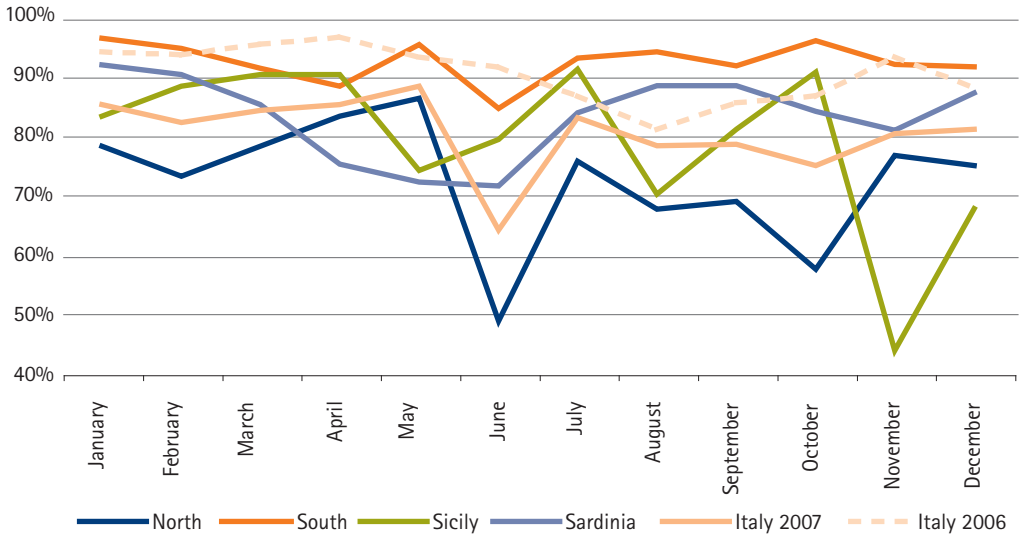
Value of the HHI index in 2007



Source: AEEG calculations on GME data.

FIG. 2.17

Marginal operator index values: percentage of volumes on which the major operator per macro zone set prices



Source: AEEG calculations on GME data

The zonal sales prices vary from 68.47 €/MWh n the North, which is also the zone with the lowest prices and 79.51 €/MWh in Sicily. Compared to 2006, the prices have dropped in line with the annual fluctuation of the PUN, from -7% in the North and Sardinia and -3% in the remaining macro zones, except for Sicily where an increase of 1% occurred.

A monthly breakdown of the prices shows a consistent rise in the prices throughout all zones, which is particularly evident in Sicily, in the months of July, November and December, in line with the highest increases of the average purchase price. The overall increase in the sales prices throughout all market zones in the last two months of the year is particularly significant. The increase of the price in the North and other continental zones happened when net imports dropped due to the high prices on Central European exchanges. The frequent price

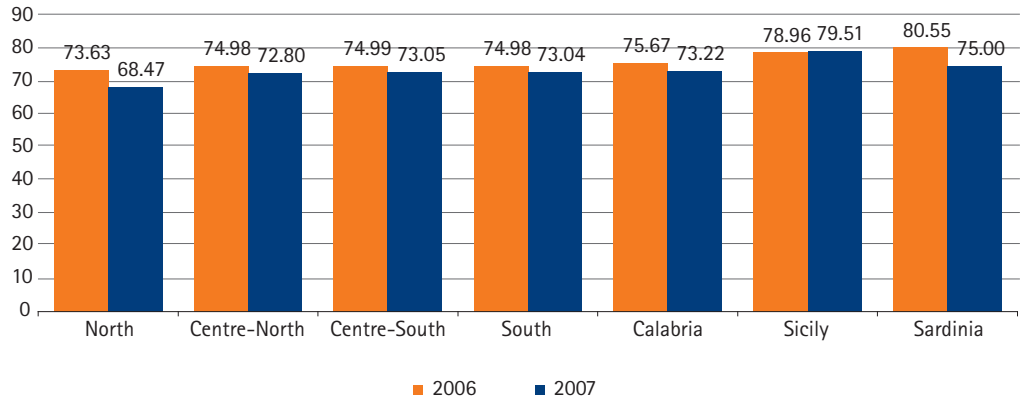


FIG. 2.18

Trend of zonal prices in 2007

€/MWh

Source: AEEG calculations on GME data.

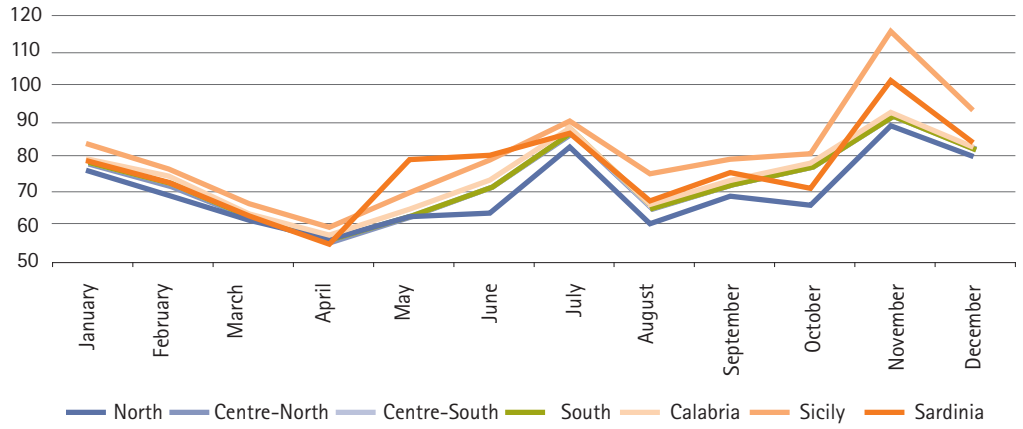


FIG. 2.19

Monthly trend of zonal prices in 2007

€/MWh

Source: AEEG calculations on GME data.

tensions in Sicily are connected to the abrupt limitations in the offered quantities (and the subsequent reduction in the island's reserves) as well as the interruption of the connection with the continental network, which occurred in October and November only.

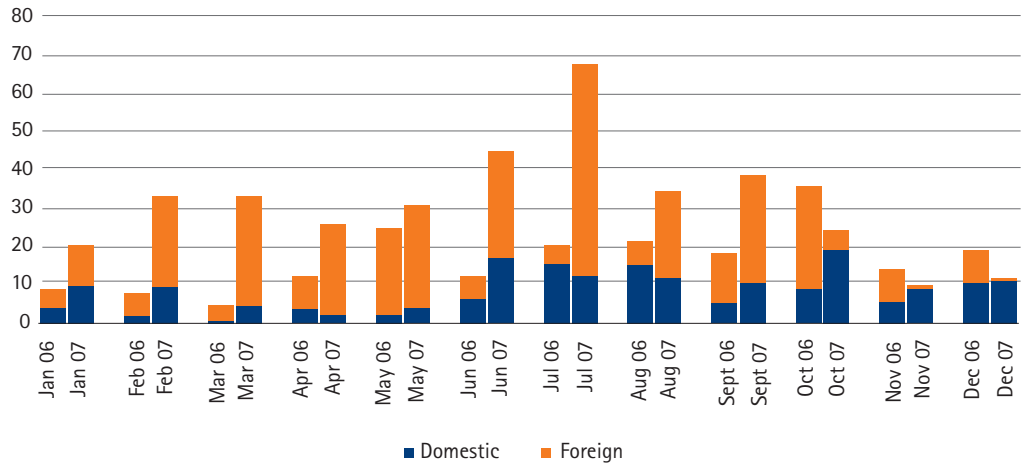
With regard to the congestion fees, at the national level the monthly trend closely follows the degree of differentiation of the price in the North compared to other zones; indeed the fees reach a peak in the months of June and October, when the price in the North zone is lower than that in the other continental zones by 8 €/MWh and 12€/MWh respectively. In 2007, the domestic fees increased considerably compared to the previous year, from 81 million to over 121 million Euro. The domestic transit that was affected the most by this increase is the North-Centre North transit.

The fees on foreign congestion, which derive from the new cross-border congestion resolution mechanism that was adopted as a consequence of EC regulation 1228/2003/EC, amounted to approximately 254 million Euro during 2007, which is a considerable increase over the previous year, when the amount was a little over 119 million Euro. The highest values of foreign fees were in the months of March, June, July and September on the Switzerland-North West transit. Overall, the fees on congestion, domestic and foreign, increased to a significant extent in 2007 moving from approximately 200 million Euro to over 375 million Euro.

FIG. 2.20

FEES on congestion in 2006 and 2007

Millions of Euro

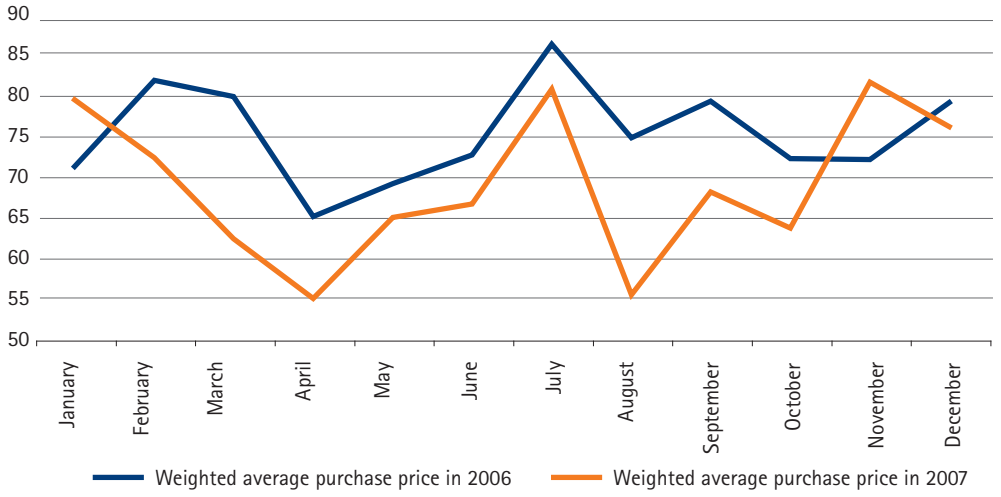


Source: AEEG calculations on GME data.

FIG. 2.21

Trend of the weighted average price on the MA

€/MWh

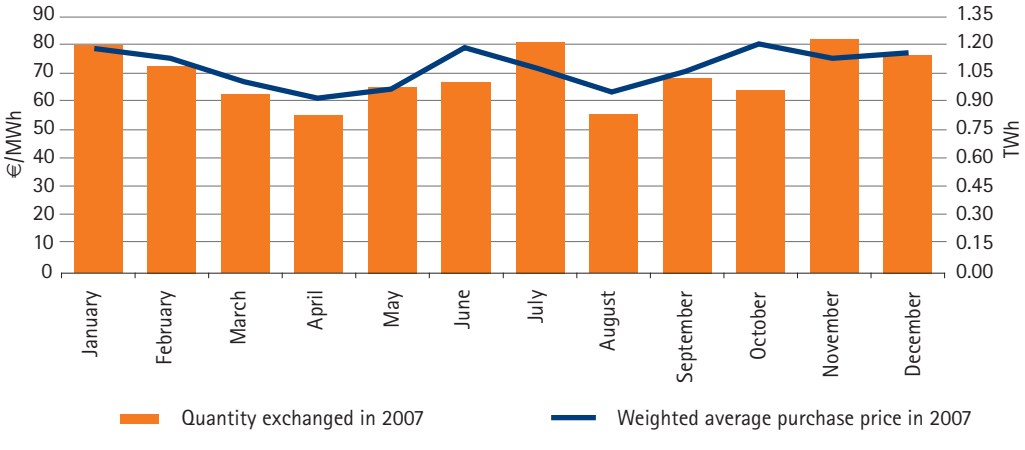


Source: AEEG calculations on GME data.

FIG. 2.22

Trend of weighted average prices and quantities on the MA

€/MWh; TWh



Source: AEEG calculations on GME data.

The Power Exchange: results on the adjustment market (MA)

During 2007 the monthly average weighted price on the MA was to a considerable extent in line with the PUN. The average purchase price in 2007, weighted for the exchanged quantities, was approximately 69.36 €/MWh, down by 2.3% compared to the PUN. Compared to 2006, the weighted average price on the MA was down by 8.2%.

The market volumes with reference to the quantities exchanged on the wholesale Italian market (MGP plus bilateral contracts) were between a maximum of 4.3% in the month of August and a minimum of 3.4% in the month of February; on the average the volumes were equal to 3.9% of the overall demand on the MGP.

The Power Exchange: the market for dispaching services

With regard to the MSD, the step-up ex ante purchases that increased were 14.58 TWh, up by 19.8% compared to 2006. The step-down ex ante sales were equal to 11.65 TWh, down by approximately 2.7 TWh compared to the previous year. Compared to the overall quantities exchanged on the MGP, these volumes represented 4.4% and 3.5%, with a marked monthly variability. The step-up offers were higher in relative terms in the summer months of June and August (respectively 5% and 5.6% of the monthly demand) and, similarly, the step-down offers reached their lowest point in relative terms in the months of June (4.3%) and July (3.8%).

The Power Exchange: comparison with the major European exchanges

Throughout 2007, the monthly average of the Italian power exchange (IPEX) was the highest among the prices recorded in the other major European exchanges: the average base-load price of wholesale electricity was indeed 37.97 €/MWh on the German exchange (EEX), 40.78€/MWh on the French exchange (Powernext), 39.32 €/MWh on the Spanish exchange (OMEL) and 43.03 €/MWh on the Scandinavian exchange (NordPool). These figures must be compared to the 70.99 €/MWh registered on the MGP on the Italian exchange.

The price differential shows that the Italian price is gradually approaching the prices that are prevalent in Europe, especially in the last months of 2007. The trend, which had already been observed in previous years, of the Italian price reacting more slowly to fluctuations in the price of oil on the international markets was confirmed as well.

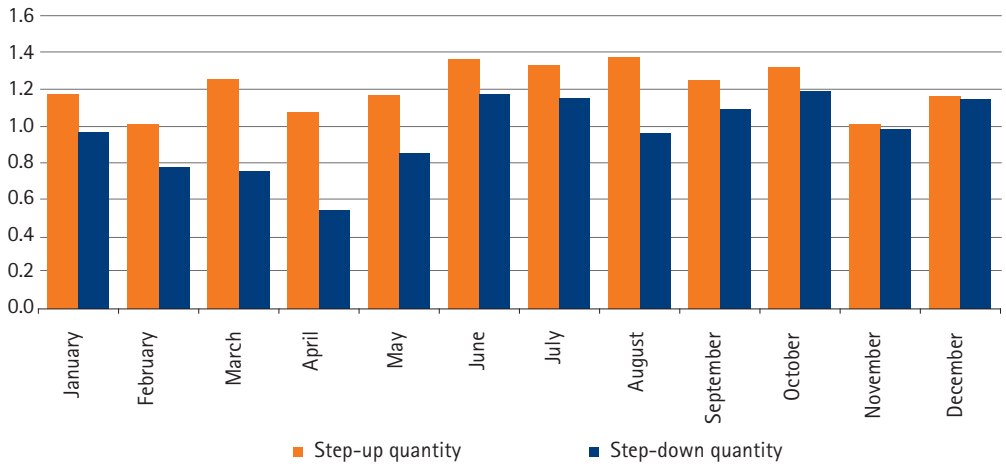


FIG. 2.23

Quantities on the market for ex ante dispatching in 2007

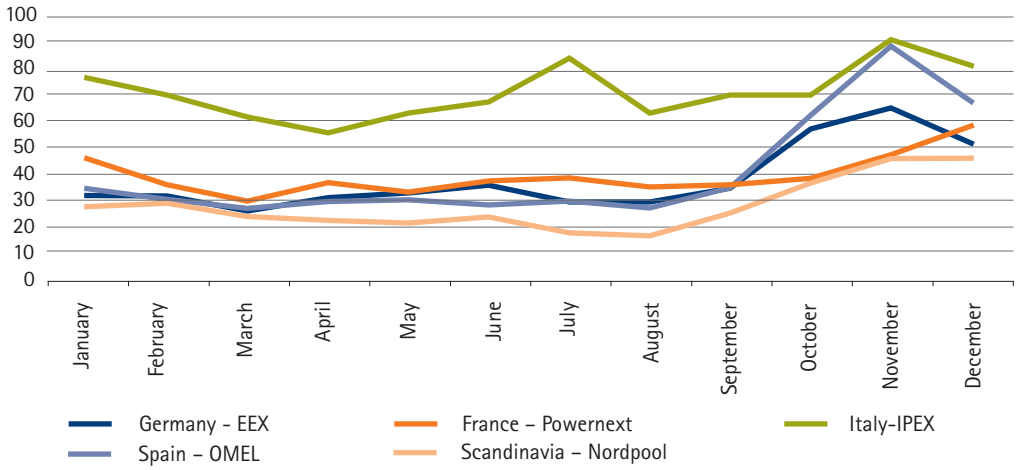
TWh

Source: AEEG calculations on GME data.

FIG. 2.24

Trend of the average monthly price on the major European exchanges

Average base-load values; €/MWh

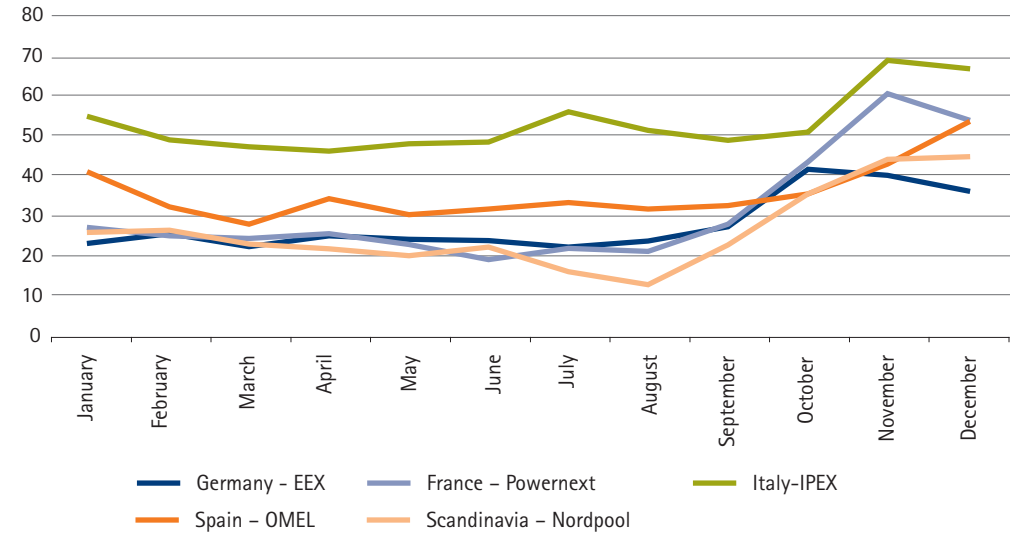


Source: AEEG calculations on figures from the European power exchanges.

FIG. 2.25

Trend of the average monthly price on the major European exchanges during off-peak hours

€/MWh



Source: AEEG calculations on figures from the European power exchanges.

In the initial months of 2007, in a context characterised by lower tensions on the oil markets and demand levels that were relatively low on account of an exceptionally warm climate, the wholesale prices of electricity tended to be lower in all European countries, including Italy. In the last four months of the year, European prices began to rise in the wake of the increases in oil prices.

The gap between the IPEX prices compared to the prices on other European exchanges resulted in significant import flows during the year, which were concentrated in peak hours thus corresponding to the higher price differential.

This dynamic which was stable overall during 2007, did change significantly from the month of October. In November, there were sharp price increase in France, Italy and Germany. In particular, the prices on Powernext were higher than those on IPEX which resulted in an increase in the export flows, especially during peak hours, and a subsequent reduction in imports in peak as well as in off-peak hours. The significant increase in the prices on the French electricity market is attributable to a great extent to the wave of strikes that also involved the energy sector and a break down of a nuclear power station.

The Italian power exchange showed a price differentiation between the peak and off-peak hours that was particularly marked. The average price in 2007 was indeed 103.39 €/MWh in peak hours and 52.97 €/MWh in off-peak hours. Conversely, on other European exchanges the lower average price is associated with a smaller difference between peak and off-peak prices. The average peak-load price and the average off-peak price were 56.09 €/MWh and 27.87 €/MWh respectively on the German exchange, 58.22 €/MWh and 31.00 €/MWh on the French exchange, 46.24 €/MWh and 35.48 €/MWh on the Spanish exchange and 31.09 €/MWh and 26.20 €/MWh on the Scandinavian exchange.

Bilateral adjustment platform

The bilateral adjustment platform (PAB) is an electronic platform in operation since 31 December 2004, which allows the recording of balanced hourly exchanges of electricity between operators that manage the withdrawal bid points which belong to the same geographic area.

In 2007 3.3 TWh were exchanged on the PAB, a value significantly lower than the previous year (60.5%). The exchanges were 1% of the MGP's volumes. The monthly performance of the volumes traded on the PAB shows a decreasing trend during the year which is mainly concentrated in the second part of 2007, starting form the month of May.

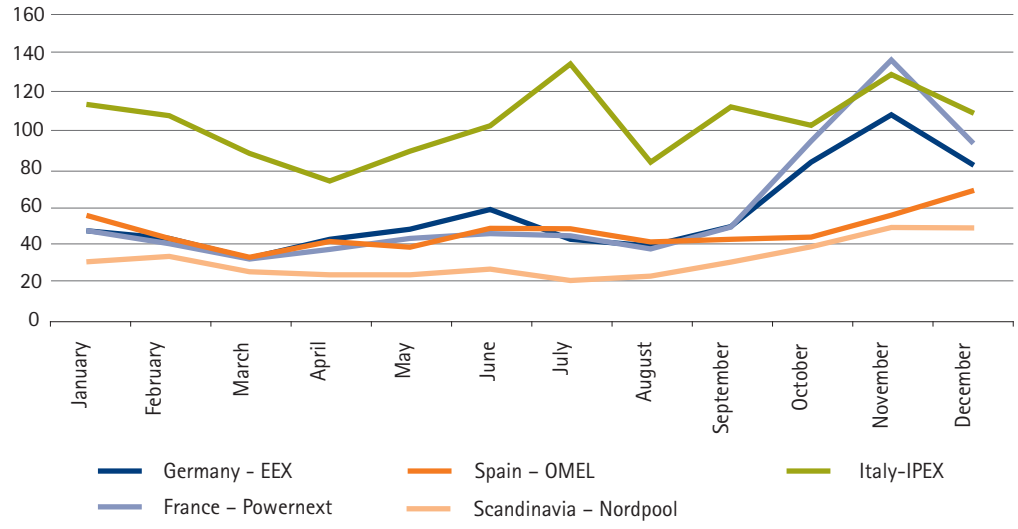


FIG. 2.26

Trend of the average monthly price on the major European exchanges during peak hours

€/MWh

Source: AEEG calculations on figures from the European power exchanges.

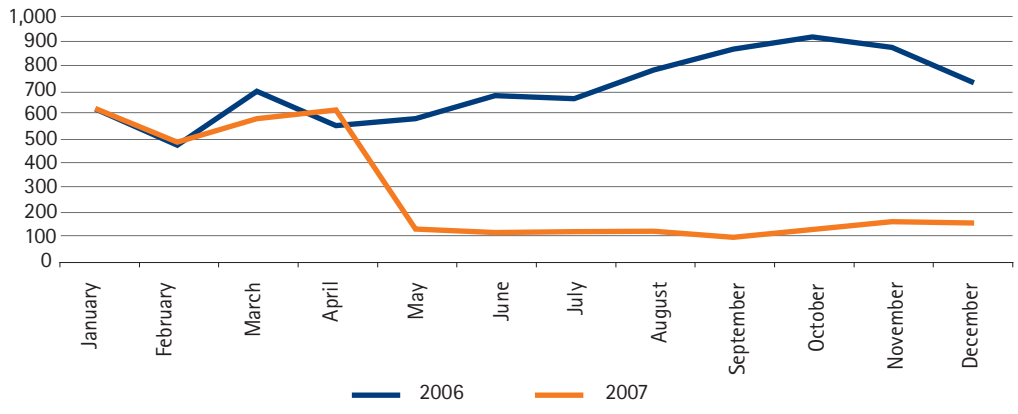


FIG. 2.27

Trades on the PAB

GWh

Source: AEEG calculations on GME data.

The net decrease of the traded volumes is attributable to the launch, in the month of May, of the new forward PCE on which transactions began among operators executing forward contracts registered the previous month.

Energy account platform (PCE)

The PCE is a new platform for registration of bilateral contracts on which operators can register the quantities and durations of deliveries for forward contracts two months ahead of the physical delivery. In general, each operator has one or more energy accounts for injection and one or more accounts for withdrawal and can register the purchases and sales on each provided that when the new registration takes place, the net balance is a net sale in the first case and a net purchase in the second. The balance of the account determines the quantity of energy that can be injected/withdrawn or sold/purchased on the MGP.

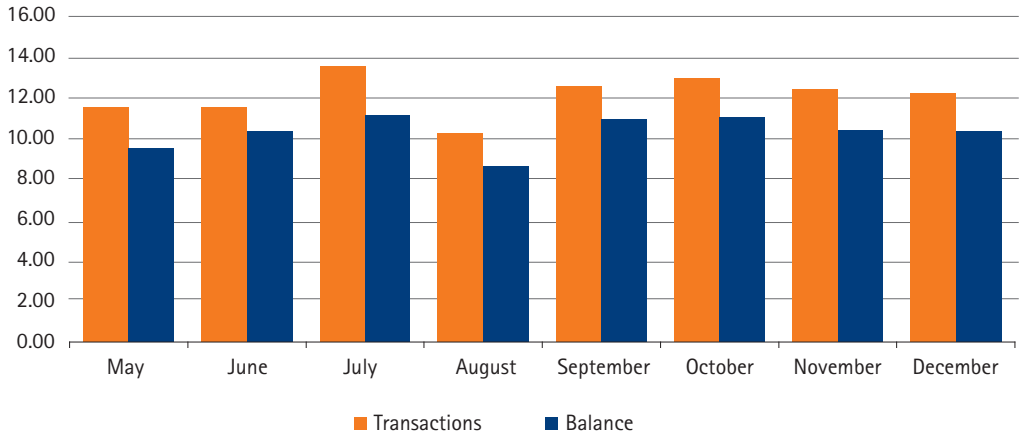
In the month of May, the delivery of forward contracts registered in April began. The volumes traded during the year show the widespread usage by operators of the flexible opportunities offered by the new platform. The overall transactions amount to 96.7 TWh against a net position of 82.1 TWh.

The PCE allows registration of five types of contracts of which four are standard (base-load, peak-load, off-peak, weekend) and one is non-standard. During 2007, throughout all the months of the year, the type of contract that was used the most was the non-standard type, while among the standard contracts, the most widely used was the base-load contract. It should be finally taken into account that the weekend contracts were entered into only in the month of May.

FIG. 2.28

Performance of the transactions on the PCE in 2007

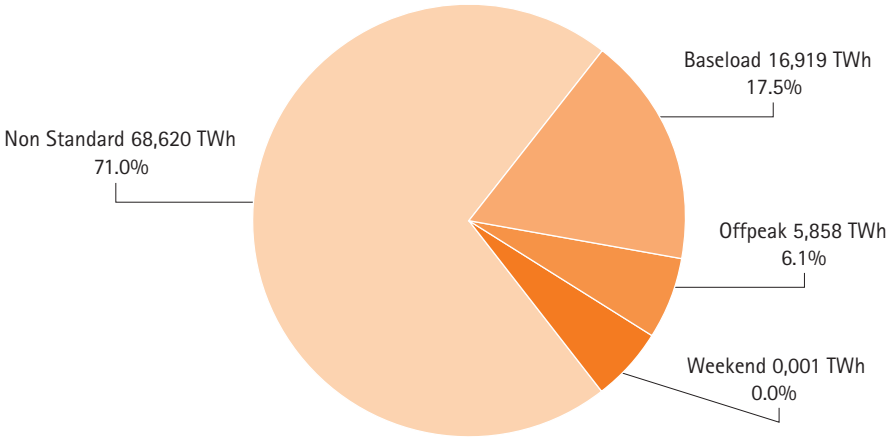
TWh



Source: AEEG calculations on GME data.

FIG. 2.29

Types of contracts registered on the PCE



Source: AEEG calculations on GME data.

Sales of CIP6 energy on the market

In 2007, the electricity withdrawn by GSE was placed on the market according to the conditions set forth in the decree issued by the Ministry of Economic Development on 14 December 2008 which, compared to the previous year, introduced a quarterly update mechanism for the allocation price based on the average price for the quarter registered on the power exchange. The decree provided the following scheme for allocation of 5,400 MW of CIP6 rights for 2007:

- CIP6 energy withdrawn by GSE is offered on the electricity market;
- the capacity that can be assigned for 2007 is defined by GSE according to the total energy that is expected to be acquired on the basis of the existing contracts with producers and the prudential statistical base for production from non-programmable sources;
- 35% of the electricity (1,890 MW), assigned to operators through allocation procedures carried out by GSE, is for the Single Buyer for supplying to the captive market and, after 1 July 2007, to the protected market and 65% (3,510 MW) is provided to the free market;
- the allocation price for the first quarter of 2007 is 64 €/MWh and is adjusted during the year using procedures identified by the Authority and calculated on a quarterly basis according to the price index pursuant to art. 5 of the decree issued on 19 December 2003 by the Ministry of Productive Activities (now the Ministry of Economic Development);
- the assignee enters into a contract with GSE for the difference and commits to take from the electricity market quantities that are no lower than the allocated hourly electricity quota;
- if the price that results in the market is higher (lower) than the allocation price, the assignee will receive from (or grant to) GSE an amount equal to the price difference multiplied by the allocated quantity.

The allocations for the free market, in which all users of the dispatching withdrawals were able to participate, were, as in 2006, on a pro rata basis, based on the average annual consumption declared by the entities themselves and certified by the distributing companies; requesting eligible consumers were allocated fixed bands of 1 MW on a constant annual basis. For 2007 as well, the decree has not excluded the allocation to entities that benefit from instant and with notice interruptibility. The rules for the transferral of the CIP6 rights must also take into account the provisions of Legislative Decree no. 73 of 18 June 2007 (as it was converted into law no. 125 on 3 August 2007) and resolution no. 156 of 27 June 2007 issued by the Authority, for which the safeguarding service will be introduced as from 1 July 2007. Indeed, from 1 July 2007, the users of the dispatching withdrawals guaranteeing the safeguarding service will participate in the transferral procedure of CIP6 rights insofar as the single power quota for safeguarded customers for which the trader directly carries out the supply function.

TAB. 2.16

Allocation of CIP6 rights to the free market

MW

	CIP6 RIGHTS 2007	CIP6 RIGHTS 2008
Enel	639	1,148
Edison Energia	389	287
Eni	343	332
Asm Energy	219	2
Egl Italia	191	70
Dalmine Energie	-	126
Ergon Energia	-	107
Energetic Source	-	100
Acea Electrabel Elettricità	184	177
Sorgenia (ex Energia)	142	144
Iride Mercato (ex Amga comm. E Siet)	141	97
Modula	134	121
Green Network	75	56
Others	1,053	908
TOTAL	3,510	3,675

Source: AEEG calculations on GSE data.

Environment markets

Green certificate market

The green certificate system provides an incentive to produce electricity from renewable energy sources based on market mechanisms. Pursuant to Law no. 244 of 24 December 2007, the production of electricity from renewable energy sources in plants which started operations or plants repowered as from 1 April 1999 to 31 December 2007, is entitled to certification of production from renewable energy sources (green certificate) for the first 12 years of operation. The production of electricity from renewable energy sources in plants which started operations or plants repowered as from 1 January 2008 on the other hand, is entitled to certification of production from renewable energy sources for the first 15 years of operation. Previously, the Ministerial Decree of 11 November 1999 had set a duration of eight years for green certificates, which was then extended to twelve years by Legislative Decree no. 152 of 3 April 2006.

The green certificate is issued by GSE upon the notification of the producer and refers to the production of electricity through renewable energy sources for the year before or the production expected for the current year or that of the subsequent year. Green certificates in particular are issued to operators with plants that have obtained IAFR (plants powered by renewable energy sources) qualification from GSE or which produce from waste that is allowed by the incentive mechanism, and to GSE itself, for electricity produced by CIP6 plants.

In the green certificate market, the demand is composed of the obligation for producers and importers to inject into the grid a percentage of electricity produced from renewable energy sources. Legislative decree no. 79/99 in particular has provided for the injection into the grid of 2% of the electricity produced (net of self-consumption) or imported by a non-renewable sources the previous year, in excess of 100GWh/year. Starting from 2004 and until 2006, the minimum amount of electricity produced from renewable sources to be injected into the grid the following year was increased by 0.35% annually, based on Legislative Decree no. 387/03. In the period from 2007 to 2012, the percentage was increased by law 244/07 by 0.75% annually.

In addition to the production/import of renewable energy, the obligation to inject into the grid a percentage of electricity from renewable energy sources can be fulfilled through the purchase of green certificates related to the production of electricity from renewable energy sources by other entities.

GME has set up an organised trading platform for green certificates which has been operative since March 2003 and which was added to bilateral contracts. The sessions of this market are carried out at least once a week in the period from January to March of each year and at least once a month the rest of the year, through continuous negotiations. Domestic and foreign producers, importers of electricity, wholesale customers and associations can participate in the market, upon application to GME and upon obtaining the qualification of market operator. GSE in particular places green certificates on the market to ensure that any demand that is not covered through production carried out by private entities is met as well. Table 2.17 shows the transactions on the market set up by GME during 2007 and in the first quarter of 2008, which involved certificates with years of validity from 2004 to 2008. It should be noted that the prices determined on the market are significantly different from the reference prices set by GSE for each year of reference.

Figure 2.30 shows the average accrued price of green certificates on the market set up by GME for each reference year, weighted for the quantities traded and considering all the sessions in which these were negotiated up to March 2008. As can be seen from the chart, from 2004 most of the demand was covered by transactions carried out over the counter; in the period from 2005 to 2007 the transactions on the regulated market referred to less than 10% of overall demand. Concurrently, there was a sharp drop in the sales of certificates by GSE, which almost never intervened in the market to balance the demand and supply of certificates in 2006 and 2007.

TAB. 2.17

Outcome of the transactions on the green certificate market set up by GME in 2007 and Q1 2008

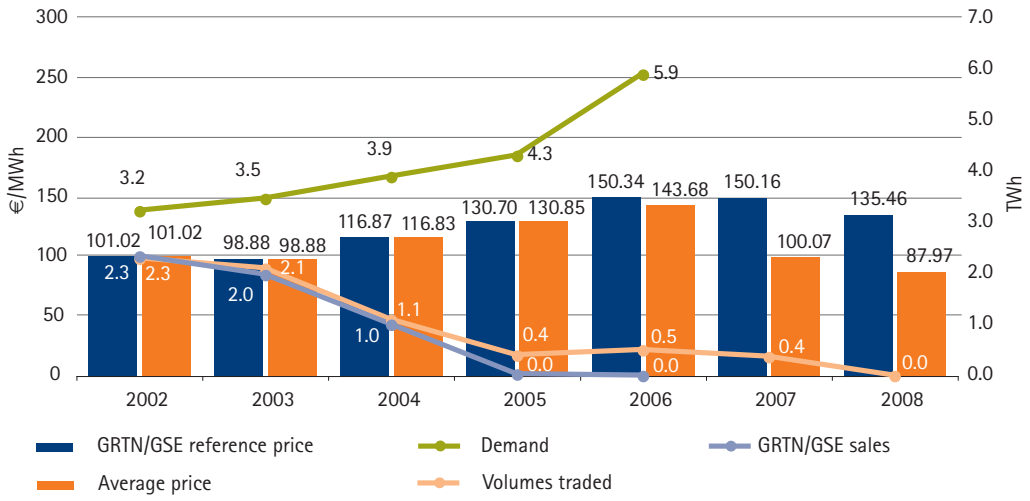
TRADING PERIOD	YEAR	GREEN CERTIFICATES TRADED (MWh)	AVERAGE PRICE (€/MWh)
2007	2004	450	129,51
	2005	8,400	141,56
	2006	376,950	145,96
	2007	24,300	118,45
2008 (Jan-Mar)	2006	9,050	104,36
	2007	344,147	98,78
	2008	2,390	87,97

Source: AEEG calculations on GME data..

FIG. 2.30

The green certificate market: market prices and reference prices of GRTN/GSE

€/MWh; TWh



(A) The figures relating to 2008 refer to the first three months of the year.

Source: AEEG calculations on GSE and GME data.

Figure 2.30 shows a trend towards misalignment between the market prices and the reference prices set by GSE starting from 2006; this trend has become more marked in 2007 and the initial negotiations for certificates with 2008 as the reference year. The reference price for 2007, determined by GSE following the criteria set forth in the ministerial decree of 24 October 2005, is 137.49 €/MWh net of VAT, calculated as the difference between:

- the average cost of CIP6 energy purchased by GSE in 2007 that is produced uniquely by renewable energy plants that benefit from the incentive, calculated using the account values for 2007 communicated by Cassa Conguaglio per il Settore Elettrico (Compensation Fund for the Electricity Sector) in September 2007 following the cancellation of the Authority's resolution no. 249 of 15 November 2006, as provided by the Lombardy Regional Administrative Court;
- the revenue deriving from the sale of this energy during 2007.

With the provisions of judgment no. 26/2008 and following of 22 January 2008, the State Council admitted the appeal proposed by the Authority for the Lombardy Regional Administrative Court judgment no. 5361/2007 and following and, as a result, rejected the first instance appeal against resolution no. 249/06 of the Authority, concerning the updating for 2007 of the average price of conventional fuel in the avoided fuel cost as per heading II, chapter 2 of the CIP6 regulation.

Due to these provisions, in March 2008 GSE updated the reference price of green certificates for 2007. The value, not including VAT, is equal to 125.13 €/MWh, calculated as the difference between:

- the average cost of CIP6 energy purchased by GSE in 2007 that is produced uniquely by renewable energy plants that benefit from the incentive, calculated using the account values for 2007 communicated by Cassa Conguaglio per il Settore Elettrico in May 2007 (determined on the basis of the value of the avoided fuel cost as set forth in Authority resolution no. 249/06);
- the revenue deriving from the sale of this energy during 2007.

Starting from 2008, as set forth in Law 244/07, the green certificates issued by GSE are put on the market at a price that is equal to the difference between 180 €/MWh and the average annual value of the sales price of electricity defined by the Authority and recorded the previous year. With resolution no. 24 of 26 February 2008 (ARG/elt), the Authority set the average annual value of the sales price at 67.12 €/MWh, equal to the arithmetic average of the prices for 2007. Thus, the value of the green certificates for 2008, if available from GSE, will be 112.88 €/MWh.

Among the new aspects introduced by Law 244/07 is the introduction of a differentiation of the types of incentives in relation to the power of the plants that produce renewable energy. Indeed, the production of electricity by plants that are powered by sources that benefit from green certificates with an average nominal annual power not exceeding 1 MW and that started operations after 31 December 2007 are entitled to a fixed tariff that varies according to the source used, for a period of fifteen years, as an alternative to green certificates and upon the request of the producer.

The production of electricity using plants having a nominal annual power above 1 MW and that started operations after 31 December is rewarded only through green certificates, in quantities equal to the net production of electricity from renewable energy sources multiplied by a coefficient differentiated in relation to the type of source used. Certificates continue to be provided to plants which started operations before 31 December 2007 and which are entitled to them according to the net production of electricity.

Finally, it should be taken into account that law 244/07 established the size of green certificates at 1 MWh; previously, this was 50 MWh for all plants benefiting from them, pursuant to Law no. 239 of 23 August 2004.

Energy Efficiency Certificate Markets

Energy efficiency certificates (TEE), which are also known as white certificates, were established by the decrees of the Ministry of Productive Activities on 20 July 2004 and set national quantitative objectives for additional energy efficiency for the electricity and natural gas sectors for the period from 2005 to 2009. Until 2007, these objectives were made the responsibility of the distributors of electricity and of natural gas having no less than 100,000 consumers as at 31 December 2001, through projects that provide measures and incentives for increasing the energy efficiency of the end uses of energy.

On 21 December 2007, the Decree of the Ministry of Economic Development in conjunction with the Ministry of the Environment, added to and amended the previous 2004 decrees, setting the national quantitative objectives for increased energy efficiency that must be achieved by the distributors of electricity and natural gas from 2008 to 2012 .

For each year subsequent to 2007, are subject to obligations the distributors that, as at 31 December of the two years prior to each obligation, have no more than 50,000 consumers.

The energy efficiency certificates are issued by GME to distributors, subsidiaries of the distributors and to companies operating in the energy services sector (ESCOs – Energy Services Companies), so as to provide certification of the reduction in consumption achieved through interventions and plans aimed at increasing energy efficiency starting from 2005. To carry out this task, GME has organised and manages the energy efficiency register.

5 In particular, the decree set san overall objective for the increase in the energy efficiency of the consumers of electricity and natural gas of 2.2 Mtoe nel 2008, 3.2 Mtoe nel 2009, 4.3 Mtoe nel 2010, 5.3 Mtoe nel 2011 and 6.0 Mtoe nel 2012.

Certificates are issued on the basis of the savings achieved by distributors or the ESCOs and are disclosed to GME by the Authority. With its resolutions no. 103 of 18 September 2003, no. 200 of 11 November 2004 and no. 70 of 20 April 2005, the Authority issued the Guidelines for the preparation, execution and valuation of the projects set forth in art. 5 of the decrees of 2004 and defined the criteria and terms for issuing of the energy efficiency certificates.

The energy efficiency certificates have a value of 1 toe and are available in 3 forms:

- type I, certifying the achievement of savings in primary energy through actions aimed at reducing the final consumption of electricity;
- type II, certifying the achievement of savings in primary energy through actions aimed at reducing the consumption of natural gas;
- type III, certifying the achievement of savings in primary energy through actions other than those specified under Type I and Type II.

The distributors of electricity and natural gas can achieve the objective of increasing energy efficiency by purchasing certificates from other entities, through bilateral contracts or transactions on a regulated market managed by GME, which has set, together with the Authority, the market rules.

The energy efficiency market in particular allows the purchase of certificates by distributors who, through their own projects, realised savings that are lower than their annual objective and allows the sale of them by distributors which reach savings that surpass their annual objective and which can sell the excess on the market. ESCOs that have achieved energy efficiency certificates can also offer certificates on the market following the implementation of independent projects. During 2007, 225,951 energy efficiency certificates were traded on the regulated market, mostly of type I (167,502) and type II (58,439); only 10 energy efficiency certificates traded were of type III.

The trading on an average monthly basis, amounting to 18,829 energy efficiency certificates in 2007, increased considerably compared to 2006 (3,430 energy efficiency certificates). In the first three months of 2008 83,518 energy efficiency certificates were traded, which is a further increase compared to the trend in 2007. As an indication of the liquidity level of the market for white certificates, it should be taken into account that, as at 31 May 2007, with savings certificates of a little less than 900,000 toe, trading on the regulated market of GME were a little over 102,000 toe (approximately 11% of the total).

Figure 2.31 shows the monthly trend of the average energy efficiency certificate prices, without distinction by type. The traded volumes increased significantly compared to April 2007, with a peak in the month of October; the reason for the increase in the volume is due to the fact that, in October, the energy efficiency certificates for the July-September quarter were issued, thus resulting in an increased quantity of energy efficiency certificates offered on the market.

The average weighted price of the energy efficiency certificates traded in 2007 is 48.25 €/toe, sharply down compared to the 2006 average (77.71 €/toe).

It should be noted that there is a differentiation of the price depending on the type of energy efficiency certificates traded; in the period from 2006 to 2008 on average the type II certificates were sold at a price that was higher by almost 40 €/toe compared to type I certificates.

The price of type III certificates is much lower, though the comparison is of little significance given the low quantities traded to date.

TAB. 2.18

Certificates traded on the white certificate market as at 31 March 2008

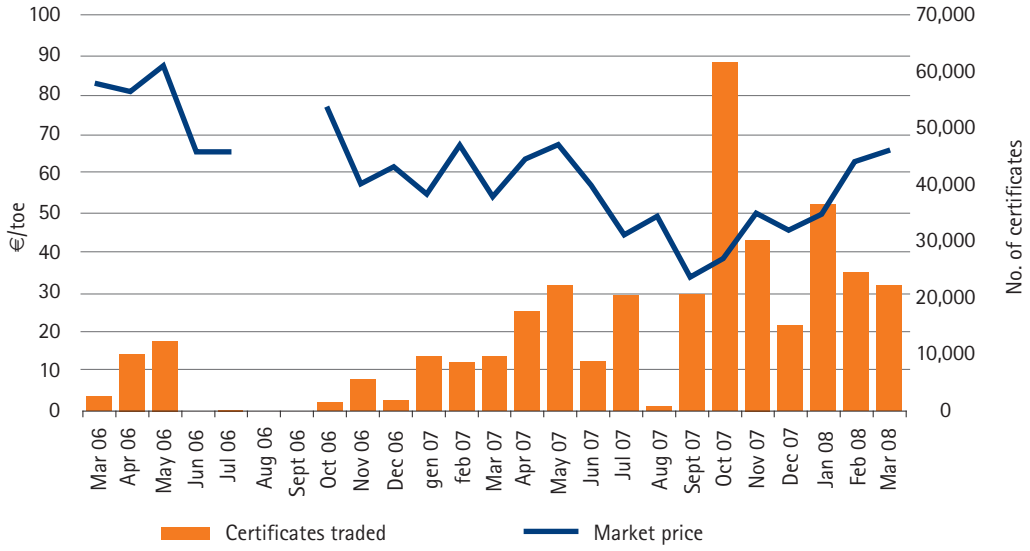
YEAR	TYPE I	TYPE II	TYPE III
2006 (Mar-Dec)	22,664	11,564	76
2007 (Jan-Dec)	167,502	58,439	10
2008 (Jan-Mar)	70,808	12,583	127
TOTAL	260,974	82,586	213

Source: AEEG calculations on GME data.

FIG. 2.31

Trend of prices and quantities on the energy efficiency certificate market

€/toe; number of certificates

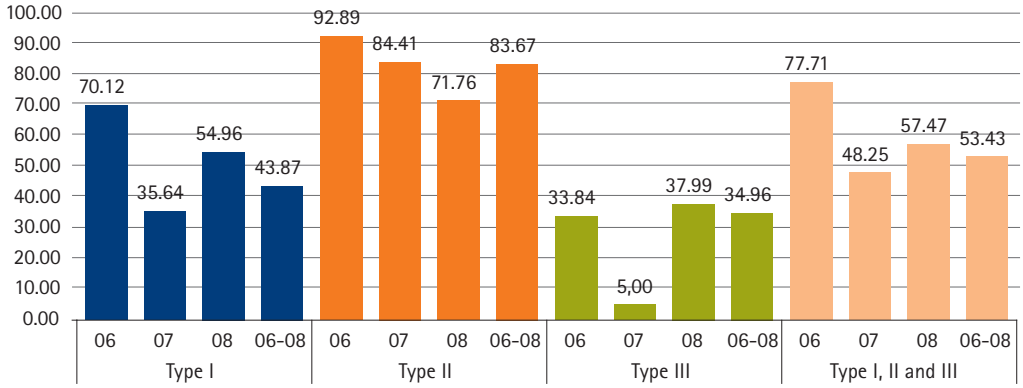


Source: AEEG calculations on GME data.

FIG. 2.32

Trend of prices by type of certificates traded

€/toe



Source: AEEG calculations on GME data.

The retail market

As from 1 July 2007, with the complete opening of the retail electricity market, all consumers were given the option of selecting their own supplier. Until that date, only eligible customers (i.e., all non-domestic customers starting from 1 July 2004) were allowed access to the free market. The non-eligible customers (domestic and non-domestic who, though eligible, had decided not to choose the free market) were supplied by the local distributor according to the tariffs set by the Authority. The energy for non-eligible customers was acquired on the wholesale market by the Single Buyer. Law no. 125 of 12 August 2007 (the law converting Legislative Decree no. 73 of 18 June 2007), which implemented measures at EU level set

forth in Directive 2003/54/EC, as from 1 July 2007, provided for:

- the establishment of a protection service (sort of universal service) for domestic customers and small companies with LV connections (with less than 50 employees and an annual turnover not exceeding 10 million Euro);
- the establishment of a safeguarding service (sort of last resort supplier service) accessible to all customers (that are not covered by the greater protection service), so as to ensure that the customers have their own supplier at all times;
- the legal unbundling obligation for distribution companies, the networks of which supply at least 100,000 consumers, which as at 30 June 2007 performed integrated retail services.

In the second half of 2007, on the basis of the data collected by the Authority, the number of operators carrying out the greater protection service was 130; of these, 120 were also distributors and about 100 also carried out the safeguarding service. 272 operators on the free market responded to the survey carried out by the Authority: the number includes the suppliers that operated in the retail segment (135), the companies that were also wholesalers or sellers of gas (136), the parent companies of distributors of electricity (39) or a producer of electricity (61).

In 2007, the retail market, in terms of volumes, was approximately 301 TWh[6], of which 60.3% was attributable to the free market, for over 36 million withdrawal points overall.

The protection service

The protection service is targeted to domestic customers and small companies with low voltage connections that have not signed a contract for purchases on the free market. The service is guaranteed by distributors, including through specific suppliers, based on the economic conditions and commercial quality indicated by the Authority. Companies providing protection services must request the owners of low voltage withdrawal points for non-domestic uses and public lighting to provide a declaration stating that they possess the necessary requirements for access to this service.

With reference to the protection service market in the second half of 2007 sales to domestic customers were 62.9% of the entire market segment in terms of volume (approximately 49 TWH) and involved 82% of the withdrawal points (in total approximately 17 million calculated with the per diem criterion) (Table 2.20).

In the second half of 2007, residential customers with power of up to 3 kW consumed 2,300 kWh on an annual basis while the customers with power in excess of 3 kW consumed approximately 4,600 kWh in the same period. Average consumption of non-residential customers (holiday houses) amounted approximately to 1,380 kWh annually.

On the regional level, the regions with the highest average consumption levels for domestic customers using protection services are Sardinia, Campania, Lazio and Veneto while Molise, Liguria and Valle d'Aosta have levels of consumption that are lower than 1,800 kWh/year (Fig. 2.33).

TAB. 2.19

Structure of the retail market in 2007

TYPE OF MARKET(A)	TIME PERIOD	VOLUMES GWh	NUMBER OF WITHDRAWAL POINTS(B)
Captive market	1st half of 2007	60,648	17,754,718
Protection service market	2nd half of 2007	49,243	16,837,635
Safeguarded market	2nd half of 2007	9,497	142,274
Free market	Year 2007	181,678	1,505,791
Total market	**Year 2007**	**301,066**	**36,240,417**

A) The segmentation of the market as captive, protection service and safeguarded is to be considered as an approximation given the limited comparability of the half year figures.

(B) The withdrawal points, for the half year figures, are calculated on a per diem basis.

Source: AEEG calculations on data provided by the operators.

6 Terna's preliminary figure as at 27 February 2008 for total consumption (excluding self-consumption) was 298.4 TWh.

TAB. 2.20

Protection service market by type of customer
July-December 2007

CUSTOMER TYPE	VOLUMES (GWh)	NUMBER OF WITHDRAWAL POINTS(A)
Residential customers up to 3 kW	**24,499**	**10,618,081**
hourly	24,458	10,606,805
two-hourly	41	11,276
Residential customers up to 3 kW and non-residential	**6,458**	**3,102,608**
hourly	6,335	3,067,114
two-hourly	123	35,494
Public lighting	**1,009**	**65,085**
hourly	911	65,083
multi-hourly	98	2
Other uses	**17,278**	**3,051,862**
hourly	17,183	3,051,575
two-hourly	7	110
multi-hourly	88	177
TOTAL GREATER PROTECTION	49,243	16,837,635

A) The withdrawal points are calculated on a per diem basis.

Source: AEEG calculations on data provided by the operators.

TAB. 2.21

Sales to domestic customers by type of customer and consumption class
July-December 2007

CUSTOMER TYPE	VOLUMES (GWh)	NUMBER OF WITHDRAWAL POINTS(A)
Residential customers up to 3 kW	**24,499**	**10,618,081**
0 -900 kWh/year	603	1,293,094
901 -1,800 kWh/year	3,804	2,741,139
1,801 -2,640 kWh/year	6,374	2,879,793
2,641 -3,540 kWh/year	6,405	2,103,782
3,541 -4,440 kWh/year	3,795	966,379
Over 4,440 kWh/year	3,518	633,894
Residential customers up to 3 kW and non-residential	**6,458**	**3,097,531**
0 -900 kWh/year	476	1,301,649
901 -1,800 kWh/year	770	589,486
1,801 - 2,640 kWh/year	749	342,258
2,641 -3,540 kWh/year	808	263,564
3,541 - 4,440 kWh/year	780	196,865
Over 4,440 kWh/year	2,874	403,709
TOTAL DOMESTIC	30,956	13,715,612

(A) The withdrawal points are calculated on a per diem basis.

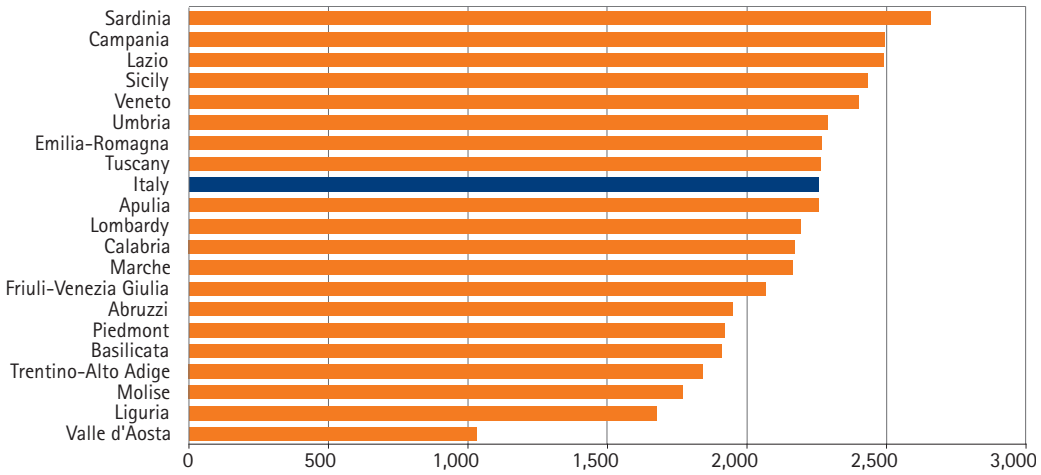
Source: AEEG calculations on data provided by the operators.

The protection service market, like the former captive market, is strongly concentrated in the second half of 2007, Enel Distribuzione Spa (now Enel Servizio Elettrico Spa) served 80% of the withdrawal points for a total of approximately 38 TWh, or 78% of the entire segment. The second operator, AceaElectrabel Elettricità, has a market share of 11% in terms of volumes and 9% in terms of withdrawal points. The other operators have shares that are less than 4% each.

FIG. 2.33

Average annual consumption of domestic customers subject to protection service by region

kWh/year; July-December 2007



Source: AEEG calculations on data provided by the operators.

TAB. 2.22

Major companies providing the protection service

July-December 2007

COMPANY NAME	VOLUMES (GWh)	% SHARE
Enel Distribuzione	38,376	77.9%
AceaElectrabel Elettricità	5,468	11.1%
Aem Distribuzione Energia Elettrica	1,624	3.3%
Iride Mercato	699	1.4%
Asm Energia e Ambiente	610	1.2%
Hera Comm socio unico Hera	401	0.8%
Trenta	340	0.7%
Agsm Verona	237	0.5%
Enia energia (ex Amps Energie)	180	0.4%
Acegas-Aps Service	166	0.3%
Aziende Industriali Municipali Vicenza Energia	108	0.2%
Others	1,034	2.1%
TOTAL COMPANIES PROVIDING GREATER PROTECTION	49,243	100.0%

Source: AEEG calculations on data provided by the operators.

The free market

As at 31 December 2007, the customers of the free market during 2007 amounted approximately to 1.5 million withdrawal points for a total of approximately 181 TWh (Table 2.23). In terms of volumes, over 50% of the sales involved the companies connected to the medium voltage network while approximately one quarter was the contribution of the customer segment connected to the high and very high voltage network. Conversely, the breakdown of the retail sales based on withdrawal points attributes over 85% of the free market to the non-domestic customer segment that is connected to low voltage networks while the number of withdrawal points of domestic customers (approximately 38,000), which for the first time were able to access this market, reached 2.5%.

The segmentation of the free market by consumption classes reflects the productive structure of our country in which there is a predominance of smaller sized businesses (99% of the withdrawal points relates to consumption classes of up to 2,000 MWh/year) while in terms of volumes, the most significant class, in which 29% of sales are concentrated, is characterised by annual consumption of between 2,000 and 20,000 MWh (Table 2.24).

TAB. 2.23

Free market by type of customer

Year 2007

CUSTOMER TYPE	VOLUMES (GWh)	NUMBER OF WITHDRAWAL POINTS
Low Voltage	36,949	1,425,114
Domestic	97	38,124
Public lighting	2,811	110,140
Other uses	34,041	1,276,850
Medium Voltage	97,603	80,058
Public lighting	263	595
Other uses	97,340	79,463
High and Very High Voltage	47,126	619
TOTAL FREE MARKET	181,678	1,505,791

Source: AEEG calculations on data provided by the operators.

TAB. 2.24

Free market by consumption class

Year 2007

CUSTOMER TYPE	VOLUMES (GWh)	NUMBER OF WITHDRAWAL POINTS
< 20 MWh/year	5,478	1,048,618
20-50 MWh/year	6,766	212,644
50-100 MWh/year	6,677	95,360
100-500 MWh/year	23,280	111,463
500-2,000 MWh/year	26,121	26,860
2,000-20,000 MWh/year	53,577	10,024
20,000-50,000 MWh/year	17,388	563
50,000-70,000 MWh/year	4,951	81
70,000-150,000 MWh/year	12,226	112
>150,000 MWh/year	25,215	65
TOTAL FREE MARKET	181,678	1,505,791

Source: AEEG calculations on data provided by the operators.

In the free market the annual average consumption was around 120 MWh in 2007. With reference to "other uses", that is those that exclude domestic customers and public lighting, the national average was approximately 130 MWh.

At the regional level, the regions characterised by annual average consumption for other uses in excess of 180 MWh were Umbria, Sardinia, Lombardy and Trentino Alto Adige while Sicily, Apulia, Liguria, Calabria and Abruzzi had average levels below 100 MWh/year (Fig. 2.34).

In 2007, the sales of the Enel group on the free market were approximately one fourth of the total in terms of volumes, corresponding to approximately half of the withdrawal points. The first seven operators each reached a percentage in excess of 3% and together 63% of total sales (Table 2.25).

Figure 2.35 shows a comparison of the segmentation of the free market related to other uses by corporate group and by voltage level the customers are connected with. The Eni and CIR groups appear to have a relatively stronger presence in the lower voltage segment compared to other groups while the ENI group has the highest percentage in the high to very high voltage segment.

The safeguarding service

All customers that cannot access the protection segment and who are even temporarily without a contract for electricity on the free market, are admitted to the safeguarding service.

The entities that provide this service from 1 May to 31 December 2008 have been selected through local tender pro-

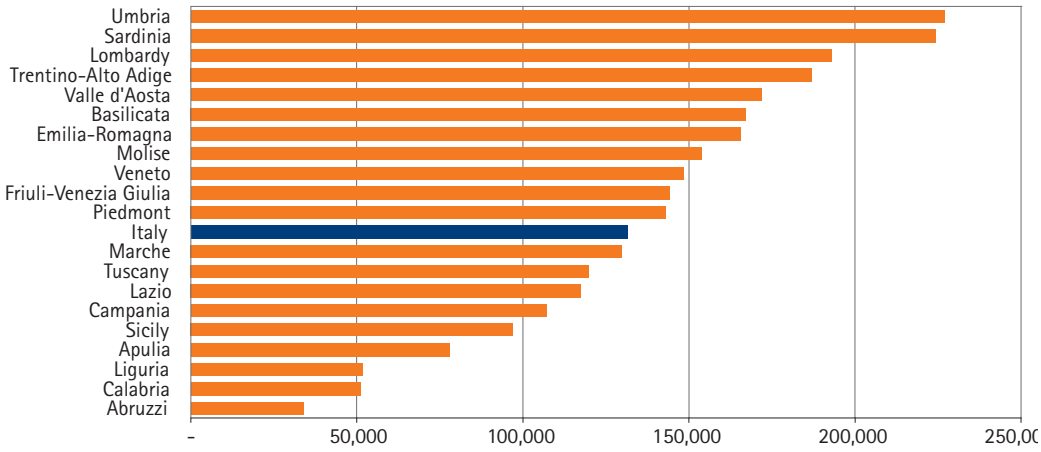


FIG. 2.34

Average annual consumption on the free market (not including domestic customers and public lighting) by region

kWh/year; 2007

Source: AEEG calculations on data provided by the operators.

TAB. 2.25

Main companies operating on the free market

Year 2007

GROUP	VOLUMES (GWh)	% SHARE
Enel	44,717	24.6%
Edison	20,844	11.5%
Eni	12,030	6.6%
Axpo Group	10,733	5.9%
Electrabel/Acea	9,706	5.3%
CIR	8,158	4.5%
Ergon Energia	7,566	4.2%
Others	67,925	37.4%
TOTAL OPERATORS ON THE FREE MARKET	181,677	100.0%

Source: AEEG calculations on data provided by the operators.

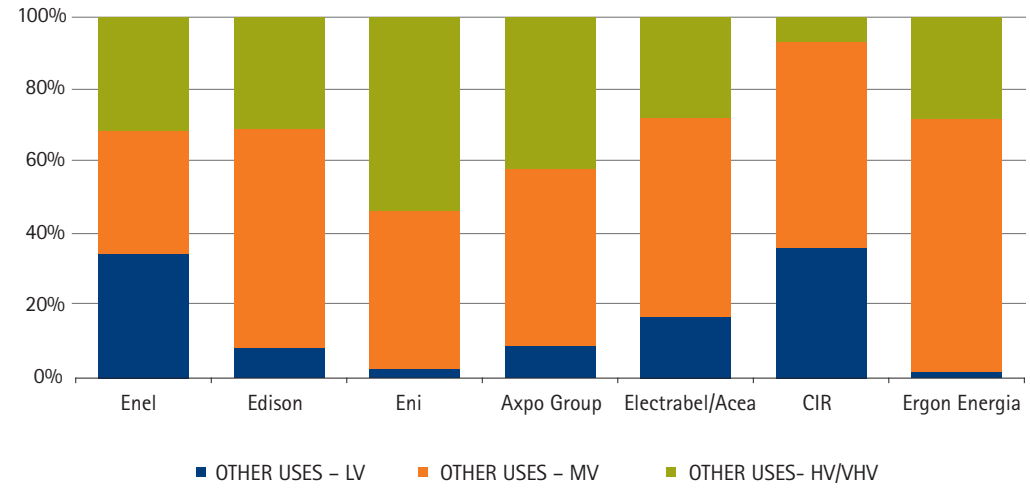


FIG. 2.35

Percentage distribution on the free market (not including domestic customers and public lighting) by voltage of main companies

Year 2007

Source: AEEG calculations on data provided by the operators.

cedures after a provisional phase in which the continuity of the supply was ensured by distributors or suppliers connected to the latter.

Unlike the protection service market, the economic terms for the safeguarding service are set by the provider so as to reflect the cost incurred for provision of the service; the related sales offers to consumers must be transparent and non-discriminatory.

In the second half of 2007, the safeguarding service involved more than 140,000 withdrawal points, calculated on a per diem basis, which withdrew 9.5 TWh of electricity. Of these, approximately two thirds are industrial/commercial users (other than public lighting and users subject to special tariff terms), using mainly medium voltage (Table 2.26). Over half of the total sales under safeguarding fall under the middle consumption classes of the new price recording method adopted by Eurostat, that is to say that they are in the 100 to 200,000 MWh per year range (Table 2.27).

In terms of annual average consumption, Lombardy and Campania were characterised by gaps in the period from July to December 2007 of over 40% compared to the national average of approximately 57 MWh/year, while for Liguria, Emilia Romagna and Friuli Venezia Giulia the consumption levels were 25% lower than national average.

In the provisional period, there were approximately 100 providers of the safeguarding service of which about seventy served customers having access to this service. Enel Distribuzione in particular covered about 90% of total sales.

TAB. 2.26

Safeguarding service by type of customer

July-December 2007

CUSTOMER TYPE	VOLUMES (GWh)	NUMBER OF WITHDRAWAL POINTS(A)
LV	1,882	126,507
Public lighting	520	28,072
Other uses	1,290	95,562
Special tariff terms	72	2,873
MV	5,103	15,710
Public lighting	35	141
Other uses	4,996	15,476
Special tariff terms	71	93
HV and VHV	2,513	56
Other uses	99	54
Special tariff terms	2,414	2
TOTAL SAFEGUARDING SERVICE	**9,497**	**142,274**

(A) The withdrawal points are calculated on a per diem basis.

Source: AEEG calculations on data provided by the operators.

TAB. 2.27

Safeguarding service by consumption class

July-December 2007

CUSTOMER TYPE	VOLUMES (GWh)	NUMBER OF WITHDRAWAL POINTS(A)
< 20 MWh/year	616	100,501
20-50 MWh/year	749	24,536
50-100 MWh/year	502	7,302
100-500 MWh/year	1,644	7,281
500-2,000 MWh/year	2,063	2,281
2,000-20,000 MWh/year	1,435	369
20,000-50,000 MWh/year	56	2
50,000-70,000 MWh/year	33	1
70,000-150,000 MWh/year	19	0
>150,000 MWh/year	2,380	1
TOTAL SAFEGUARDING SERVICE	**9,497**	**142,274**

(A) The withdrawal points are calculated on a per diem basis.

Source: AEEG calculations on data provided by the operators.

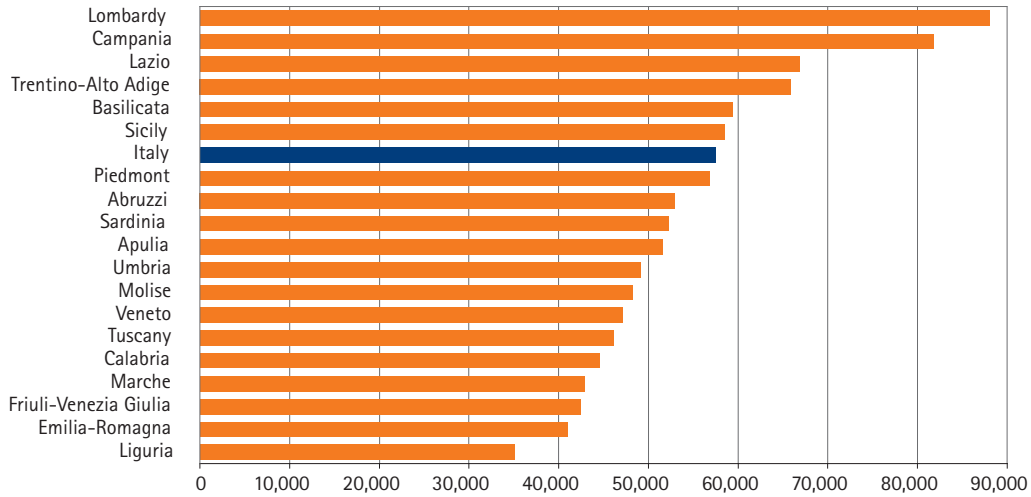


FIG. 2.36

Average annual consumption of the customers with access to the safeguarding service (not including public lighting and special tariff terms) by region

kWh/year; July-December 2007

Source: AEEG calculations on data provided by the operators.

TAB. 2.28

Major companies providing the safeguarding service

July-December 2007

COMPANY NAME	VOLUMES (GWh)	% SHARE
Enel Distribuzione	8,418	88.6%
AceaElectrabel Elettricità	326	3.4%
Aem Distribuzione Energia Elettrica	282	3.0%
Iride Mercato	103	1.1%
Trenta	76	0.8%
Hera Comm socio unico Hera	49	0.5%
Azienda Energetica - Etschwerke AG	31	0.3%
Acegas-APS Service	27	0.3%
Others	185	1.9%
Total companies providing the safeguarding service	**9,497**	**100.0%**

Source: AEEG calculations on data provided by the operators.

Prices and tariffs

Tariffs for the use of the facilities

Upon completion of the review of the tariff regulation for the electricity sector for the 2008-2011 period, concluded with Authority resolution no. 348 of 29 December 2007, the average national tariff covering transmission, distribution and meterig costs for 2008 was reduced by 11.1% overall compared to 2007, moving from 2,420 c€/kWh to 2,152 c€/kWh. The most significant change, relating to the distribution service, is partly connected to the removal of the role of the distributor (and therefore to recognition of the cost) as an interface with low voltage consumers, due to the completion of the liberalisation process of the electricity sector which assigned this role to the suppliers.

Table 2.29 illustrates the changes between 2007 and 2008 of the average tariff considering the aforementioned activities separately.

It should also be taken into account that the costs of the marketing activity (which until July 2007 was remunerated through the COV tariff component), are no longer regulated as part of the tariff covering the costs linked to the grid facilities, but are considered in the second half of 2007 as part of the regulation of the supply of electricity governed by Annex A of resolution no. 156/07, as subsequently integrated and amended.

Tables 2.30 and 2.31 show the changes between 2007 and 2008 of the average tariffs for transmission, distribution and metering services, by contract type.

TAB. 2.29

Average annual tariffs for transmission, distribution and measurement services

c€/kWh

	TRANSMISSION	DISTRIBUTION	METERING	TOTAL
Year 2008	0.345	1.534	0.273	2.152
Year 2007	0.350	1.780	0.290	2.420
Difference between 2008 and 2007	-0.005	-0.246	-0.017	-0.268
% change between 2008 and 2007	-1.4%	-13.8%	-5.9%	-11.1%

TAB. 2.30

Transmission and distribution service: average tariffs by type of customer

c€/kWh

	2007	2008	DIFFERENCE BETWEEN 2008 AND 2007
LV for domestic use	3.850	3.417	-0.433
LV public lighting	1.820	1.706	-0.114
LV other uses	3.190	2.726	-0.464
MV public lighting	1.120	1.072	-0.048
MV other uses	1.310	1.133	-0.177
HV	0.450	0.446	-0.004
VHV>220 kV	0.450	0.405	-0.045

TAB. 2.31

The metering service: tariffs by type of customer

c€/kWh

	2007	2008	DIFFERENCE BETWEEN 2008-2007
LV for domestic use	0.840	0.926	0.086
LV public lighting	0.110	0.065	-0.045
LV other uses	0.340	0.287	-0.053
MV public lighting	0.060	0.061	0.001
MV other uses	0.060	0.029	-0.031
HV	0.050	0.005	-0.045
VHV>220 kV	0.050	0.001	-0.049

Compared to the previous regulation period, with its resolution no. 348/07 the Authority introduced a special contract for users of very high voltage (users with a nominal voltage over 220 kV). For them a reduced amount for the coverage of the distribution costs compared to the other high voltage uses has been introduced.

With reference to the metering charges, also in view of the remarks made by the sector operators during the consultation process which preceded resolution no. 348/07, the Authority also redefined the allocation of the costs relating to the metering service of the various contract types so as to determine the most cost reflective tariff structures compared to those that were in force during the second regulatory period. This intervention explains the different impact of the tariff plan decided by the Authority on the different customer types.

Free market prices

In 2007, based on the figures collected from the operators by the Authority, the average volume weighted price of electricity on the free market was at about 74€/MWh. This price is net of tax, general non fiscal charges and tariff elements covering transmission, distribution and measurement costs, while it includes the marketing costs. In Table 2.32, the free market prices are broken down by voltage level while Table 2.33 shows the segmentation by consumption class.

TAB. 2.32

Average final electricity prices on the free market by voltage level

Year 2007

VOLTAGE	PRICE (€/MWh)	VOLUMES (GWh)
LV	80.50	36,949
MV	75.76	97,603
HV & VHV	65.78	47,126
Total	**74.14**	**181,678**

Source: AEEG calculations on data provided by the operators. Provisional figures

TAB. 2.33

Average final electricity prices on the free market by consumption class
Year 2007

CONSUMPTION CLASS	PRICE (€/MWh)	VOLUMES (GWh)
< 20 MWh/year	81.83	5,478
20-50 MWh/year	80.90	6,766
50-100 MWh/year	80.55	6,677
100-500 MWh/year	80.53	23,280
500-2,000 MWh/year	79.24	26,121
2,000-20,000 MWh/year	74.66	53,577
20,000-50,000 MWh/year	69.62	17,388
50,000-70,000 MWh/year	68.43	4,951
70,000-150,000 MWh/year	65.89	12,226
> 150,000 MWh/year	64.90	25,215
Total	**74.14**	**181,678**

Source: AEEG calculations on data provided by the operators. Provisional figures

Captive market prices – economic terms of supply

Procurement of the Single Buyer

For the period between 1 April 2004, the date on which the power exchange became operational, and 30 June 2007, the Single Buyer was assigned the task of ensuring the supply of electricity to customers of the captive market, pursuant to the decree of the Ministry of Productive Activities of 19 December 2003. Following the complete liberalisation of the electricity market on 1 July 2007, pursuant to Legislative Decree no. 73 of 18 June 2007, the Single Buyer is the entity that supplies customers that use the enhanced protection service, which is a service for domestic customers and small companies that do not have a supplier on the free market. Customers who, despite not having a supplier on the free market, are not covered by the enhanced protection service, are served through the safeguarding service for which the Single Buyer has carried out the electricity supply function only for the period from July to October 2007. As part of the functions it is responsible for, the Single Buyer has the task of supplying electricity while minimising the costs and risks connected with the various supply conditions it can resort to.

Table 2.34 shows the volumes supplied by the Single Buyer for the period from January to December 2007. This data shows that the Single Buyer entered into contracts outside the offer system for approximately 13% of its needs. With regard to the purchases made on the day ahead market, 53% of these purchases were covered by the price risk under contracts for differences and with the electricity corresponding to the production capacity as set forth in the CIP6 resolution (CIP6 production capacity).

The quantities of unbalancing electricity allocated to the Single Buyer in its capacity as a user of the dispatching service for the consumption units was greater than the 2006 values and amounted to approximately 1.6% of needs. Table 2.35 shows the Single Buyer's portfolio amounts which are not subject to the price risk connected with the volatility of the exchange prices.

TAB. 2.34

Volumes procured by the Single Buyer from January to December 2007

GWh

PURCHASES OF ELECTRICITY	F1	F2	F3	TOTAL
Outside the offer system	**5,218**	**3,788**	**7,197**	**16,203**
of which:				
annual imports	1,030	690	1,275	2,995
multi-year imports	1,658	1,224	2,348	5,231
other import contracts	3	2	3	8
legislative decree no. 387/03	1,959	1,427	2,712	6,098
bilateral contracts	567	444	859	1,871
day ahead market	43,591	28,371	34,572	106,534
of which:				
contracts for differences	20,867	11,101	10,959	42,927
CIP6	4,428	3,254	6,236	13,918
purchases at the PUN	18,296	14,016	17,376	49,688
Unbalancing of Consumption Units(A)	406	962	610	1,977
TOTAL	**49,214**	**33,121**	**42,379**	**124,714**

(A) For the sake of simplicity, the conventional sign set pursuant to resolution no. 111/06 as amended was not followed.

Source: AEEG calculations on Single Buyer data.

TAB. 2.35

Composition of the portfolio of the Single Buyer in 2007

	INCIDENCE OF THE PROCUREMENT SOURCES WHICH ARE NOT SUBJECT TO THE PRICE RISK ON THE TOTAL NEEDS FOR 2007			
CIP6	9%	10%	15%	11%
Bilateral contracts	1%	1%	2%	2%
Imports	5%	6%	9%	7%
Differences	42%	34%	26%	34%

Source: AEEG calculations on Single Buyer data.

For 2008[7], pursuant to resolution no. 280/07, the contribution of the so called "Legislative Decree no. 387/03" electricity ceased[8]. Overall, the amount of electricity purchased on the MGP involves about 81% of the needs of the Single Buyer, but compared to 2007, the contracts for differences for coverage of the volatility risk of the exchange prices have noticeably decreased.

This is mainly due to the elimination of the so-called "one-way" contracts for differences, which terminated in 2007 and to a decreased number of other annual differential contracts. The share of the Single Buyer's portfolio covered by contracts for differences against the risk of volatility of the prices of electricity purchased on the day ahead market forecasted for 2008 refers to:

- the power allocated in the tenders called for by the Single Buyer for 2008 (contracts for differences 2008);
- the power underlying the contract for the sale of virtual power plant (VPP contract) for 2008, entered into between the Single Buyer and Enel Produzione Spa.

With regard to contracts for differences for the year 2008, the Single Buyer called for two tenders for entering into "two way" contracts for differences. The power assigned individually in every tender is shown in Table 2.36, where the base-load and peak-load products are shown with their respective durations. The portion of the portfolio which is covered by contracts for differences for the year 2008 is expected to be approximately 2% of needs.

7 The figures for 2008 refer to the information available in the month of March 2008.

8 This involves the electricity produced by plants running on renewable energy sources that had to be compulsorily injected into the grid by producers and importers of electricity produced from non renewable sources, pursuant to art. 4, par. 1, of legislative decree no. 387 of 29 December 2003.

TAB. 2.36

Quantities assigned in every single tender: contracts for differences for 2008

DATE	MW	PRODUCT	DURATION
3 gennaio 2008	55	*base-load*	1 January – 31 December 2008
3 January 2008	150	*base-load*	1-29 February 2008
	140		1-31 March 2008
	150		1-30 April 2008
	140		1-31 May 2008
	150		1-30 June 2008
	80		1-31July 2008
	120		1-31 August 2008
	130		1-30 September 2008
	90		1-31 October 2008
	130		1-30 November 2008
	120		1-31 December 2008
	150	*peak-load*	1-29 February 2008
	150		1-31 March 2008
	150		1-30 April 2008
	140		1-31 May 2008
	130		1-30 June 2008
	80		1-31 July 2008
	150		1-31 Augus 2008
	150		1-30 September 2008
	120		1-31 October 2008
	110		1-30 November 2008
	150		1-31 December 2008

Source: AEEG calculations on Single Buyer data.

These products are "two-way" contracts for differences with strike prices equal to a price component that results from the allocation procedure, indexed to the price of Brent in the various months of validity of the contract. The differences between the hourly price (PUN) and the strike price of the contracts, must be paid/received to/from the Single Buyer.

Finally, the Single Buyer has concluded with Enel Produzione a contract for the sale of virtual production capacity (a VPP contract) for 2008. With this contract, for each hour, Enel Produzione has committed to:

- pay the Single Buyer the difference between the market price and the strike allocation price, multiplied by the allocated quantity, if the difference is positive;
- receive from the Single Buyer the difference between the market price and the strike allocation price, multiplied by the allocated quantity, if the difference is negative.

The market price is defined in the contract as the average of the MGP prices in the market zones comprising the South Macro-zone. The quantity won by the Single Buyer upon completion of the allocation procedure and the related products is set forth in Table 2.37.

TAB. 2.37

Allocated quantities: Virtual production capacity (VPP) 2008

PRODUCT	MW
base-load	150
on-peak	100
off-peak	100

Source: AEEG calculations on Single Buyer data.

For 2008, the Single Buyer also called for three tenders for entering into bilateral physical contracts of the base-load type. The power allocated individually in each tender is set forth in Table 2.38.

Insofar as the settlement price of the single bilateral contracts, the tender of 19 September 2007 provides for valuation at a fixed price with an option to index to the Brent price, the tender of 12 December 2007 provides for valuation at a fixed price and the tender of 20 December 2007 provides for valuation indexed to the price of Brent.

Finally, insofar as the annual import contracts, the Single Buyer has called for import tenders from Switzerland: the power assigned individually in every tender is shown in Table 2.39, where the base-load and peak-load products are set forth together with their respective durations.

To the power allocated through the above mentioned tenders must be added:

- 175 MW of base-load product in the month of March
- 150 MW of peak-load product in the period from April to December 2008,

which relate to the import contracts from Switzerland signed with the Single Buyer.

Finally, an estimate of the supply volumes and the related valuation terms for 2008 are set forth in Table 2.40.

TAB. 2.38

Allocated quantities: bilateral contracts 2008

	MW
Tender of 19 September 2007	580
Tender of 12 December 2007	367
Tender of 20 December 2007	30

Source: AEEG calculations on Single Buyer data.

TAB. 2.39

Allocated quantities: import contracts from Switzerland 2008

TENDER	MW	PRODUCT	DURATION
Annual tender	312	base-load	1 January – 31 December 2008
Monthly tenders	547	base-load	1-29 February 2008
	337	peak-load	1-29 February 2008
	400	base-load	1-31 March 2008
	200	peak-load	1-31 March 2008
	675	base-load	1-30 April 2008
	125	peak-load	1-30 April 2008

Source: AEEG calculations on Single Buyer data.

TAB. 2.40

Single Buyer procurement forecasted for 2008

SOURCE	QUANTITY DESCRIPTION	ESTIMATED QUANTITY FOR 2008 (GWh)	% OF TOTAL SINGLE BUYER NEEDS	PRICE
Annual imports	The Single Buyer is to havethe rights of use of transmission capacity for the import of an amount of at least 20 percent of total import capacity	4,178	4.3	Defined within the contract
Multi-year imports	The Single Buyer is to have the rights of use of transmission capacity for the import of an amount of at least 20 percent of total import capacity	5,270	5.5	68 €/MWh corresponding to the maximum price allowed pursuant to the Decree of the Ministry of Economic Development of 18 December 2007 (updated quarterly pursuant to resolution no. 329/97)
Bilateral contracts	The power assigned at tenders called for by the Single Buyer for 2008	8,576	8.9	Defined within the contract
Power exchange (day ahead market -MGP)	The remaining amount required to satisfy the demand of consumers	78,418	81.3	National single price (PUN)
of which:				
CIP6 bands	The Single Buyer is to have 25% of the CIP6 bands allocated	9,771	10.1	66 €/MWh, corresponding to the maximum price pursuant to the Decree of 15 November 2007 (updated quarterly pursuant to resolution no. 331/07)
Contracts for differences	The power allocated in the tenders called for by the Single Buyer for 2008 and the power allocated upon entering into contracts for the sale of the virtual production capacity (VPP)	4,085	4.2	Fixed strike prices or indexed depending on the contracts, price function of the tender
	TOTAL NEEDS	**96,442**	**100.0**	

Source: AEEG calculations on Single Buyer data.

Electricity and inflation

After two years of constant, but relatively moderate growth, the international prices of oil products began to increase significantly throughout 2007. In light of these international trends, the electricity tariff began to rise throughout 2006, backtracked in the first half of 2007 and started to increase again in autumn of the same year.

The price index of electricity, as recorded by the national institute of statistics as part of the domestic basket of consumer prices[9],

9 More precisely, ISTAT shows the price of electricity within the "home expenses" category in the context of the consumer price index. The weight of electricity in the basic index not including tobacco was 1.1% in 2006. It rose to 1.4% in 2007 and dropped back to 1.2% in 2008.

TAB. 2.41

Monthly Istat indices of electricity prices

Index numbers 1995 = 100 and percentage variations

MONTHS	2006				2007			
	NOMINAL PRICE	2006-2005 PERCENT. DIFF.	REAL PRICE(A)	2006-2005 PERCENT. DIFF.	NOMINAL PRICE	2007-2006 PERCENT. DIFF.	REAL PRICE(A)	2007-2006 PERCENT. DIFF.
January	108.8	7.7	85.0	5.4	121.5	11.7	93.4	9.9
February	108.8	7.7	84.8	5.5	121.5	11.7	93.1	9.8
March	108.8	7.7	84.7	5.4	121.5	11.7	93.0	9.9
April	114.3	11.4	88.6	9.1	121.0	5.9	92.4	4.3
May	114.3	11.4	88.5	9.1	121.0	5.9	92.2	4.2
June	114.3	11.4	88.3	9.1	121.0	5.9	92.0	4.2
July	120.2	16.9	92.7	14.6	121.2	0.8	91.9	-0.8
August	120.2	16.9	92.5	14.5	121.2	0.8	91.7	-0.8
September	120.2	16.9	92.5	14.5	121.2	0.8	91.7	-0.8
October	121.8	14.0	93.9	12.1	123.7	1.6	93.4	-0.6
November	121.8	14.0	93.8	12.0	123.7	1.6	93.0	-0.8
December	121.8	14.0	93.7	12.0	123.7	1.6	92.7	-1.0
Annual average	116.3	12.6	89.9	10.3	121.9	4.8	92.6	2.9

A) Ratio between the electricity price index and the general index (not including tobacco), expressed in percentages.

Source: Calculations on Istat data, overall index numbers – National indices.

did in fact post more and more significant increases during 2006, but began to decrease again in the first half of 2007.

In greater detail, Table 2.41 assists in observing that throughout 2006, electricity recorded increases that were significant (1.9% in January, two increases of approximately 5% in April and July and a more modest increase of 1.3% in October). In the summer, the trend rate (which indicates the increase in the price compared to the previous year) reached a maximum point of 17%. For the year, the price of electricity for families increased by 12.6%. Since in the meanwhile the general price level also increased, in real terms the price of electricity for families increased by 10.3%.

2007 began with a decrease of 0.2%, followed by another decrease of 0.4% in April and a moderate increase of 0.2% in July. The 2.1% increase recorded in October has reversed the trend which, after a marked decrease at the beginning of the year, began to increase in the last quarter. Indeed, from 17% in September 2006, the electricity price trend rate dropped to 0.8% in July to then touch 1.6% in December 2007. Over the year, the price of electricity for Italian families increased by 4.8% in 2007, while the general inflation rate stopped at 1.8%. Thus, in real terms, the price of electricity for families increased by 2.9%. The good performance of the price of Italian electricity in 2007 can also be compared with the main European countries, using the harmonised consumer price indices collected by Eurostat (Fig. 2.37).

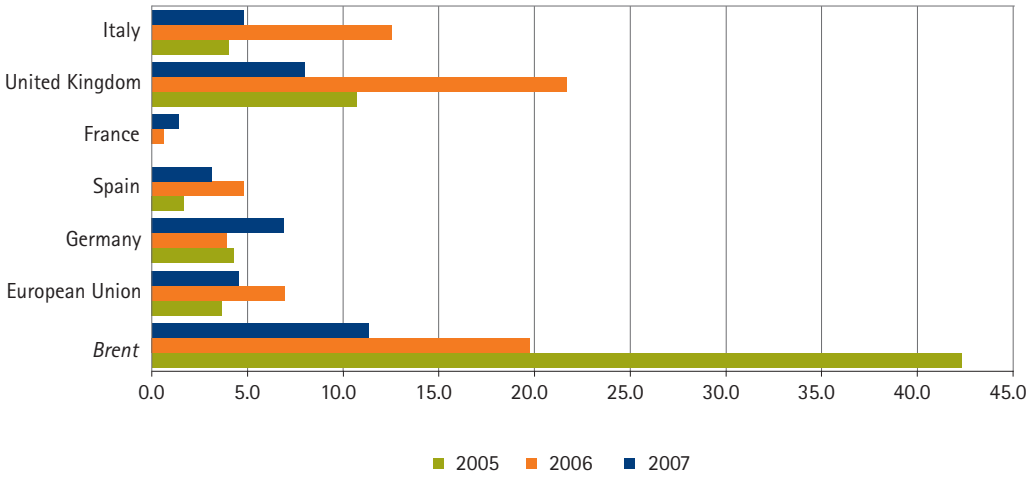
After 2005 when the Italian price, in the face of a change in the price of Brent oil in excess of 40% (which is reproduced below) was able to remain in line with the average European price (3.7%), in 2006 a 12.5% increase made the Italian price performance the worst after that of the United Kingdom (21.7%). With an increase in the price of Brent oil of 20%, on average, electricity price in the member states of the European Union increased only by half, that is 6.8%.

In 2007 the changes in the Italian price were perfectly in line with the member states of the European Union: the 4.8% Italian growth is comparable to the 4.6% average for the entire European Union (27 countries). The increase in the Italian price is much more modest than in the United Kingdom (8%) and Germany (6.9%), but higher than in Spain (3.1%) and France (1.4%). As already noted in the Annual Reports of previous years, the trend of electricity price increases for the countries under consideration reflects the importance of their share of thermoelectric generation, compared to other sources of electricity production, in those same countries. In period of marked increases in the international price of crude oil, when the share of electricity deriving from thermal sources (which is therefore dependent on fossil fuels such as oil and natural gas) is high, the final price of electricity tends to register higher increases.

FIG. 2.37

Changes in the prices of electricity in the major European countries

YoY percentage variations



Source: AEEG calculations on Eurostat data, harmonised consumer price index figures.

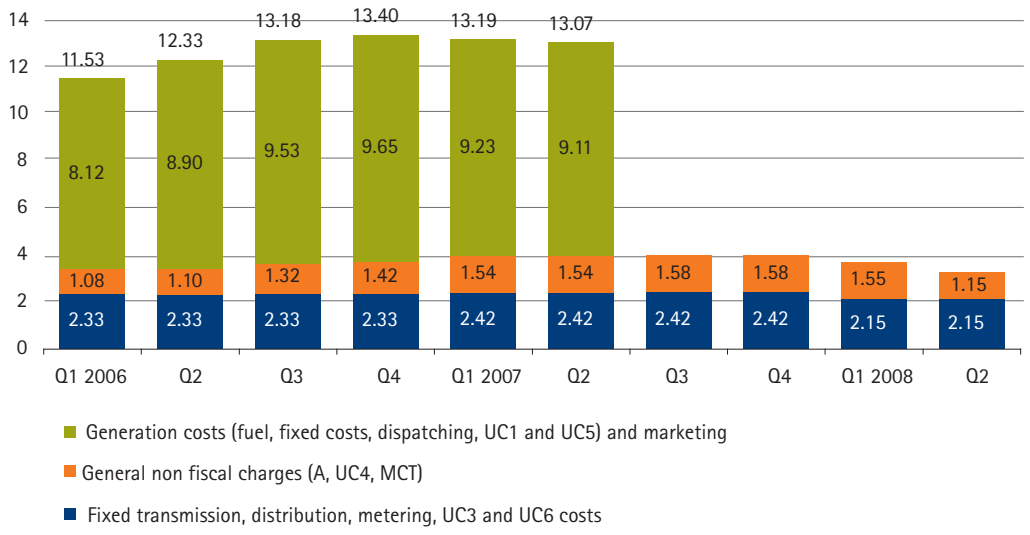
Average national electricity tariff and economic conditions for the protection service

The data referring to the average national electricity tariffs from 1 July 2007, with the complete opening of the retail sale segment to consumers, does not show continuity. On a uniform basis, starting from the third quarter of 2007, it is possible to compare with previous data only the components that relate to the coverage of transports and metering costs and the general non fiscal charges (Fig. 2.38). Thus from the third quarter of 2007, the new historic data relating to the average economic terms for the customer classes that fall under the enhanced protection service is added to the historic data of the average national tariff. This new series of data also includes the components covering the electricity supply costs which however cannot be compared to the components of the average national tariff for the captive market for the period from April 2004 to July 2007. For statistical purposes, the Authority has calculated the average economic conditions for the first quarter 2006, so as to show the performance over time, under the assumption that the protection market, rather than the captive market, also existed in the past. In figure 2.39, the trend of the average national tariffs is compared to the trend of the average economic terms for enhanced protection service. The figures show the

FIG. 2.38

Average national electricity tariff: trend over the last two years

Net of taxes, c€/kWh



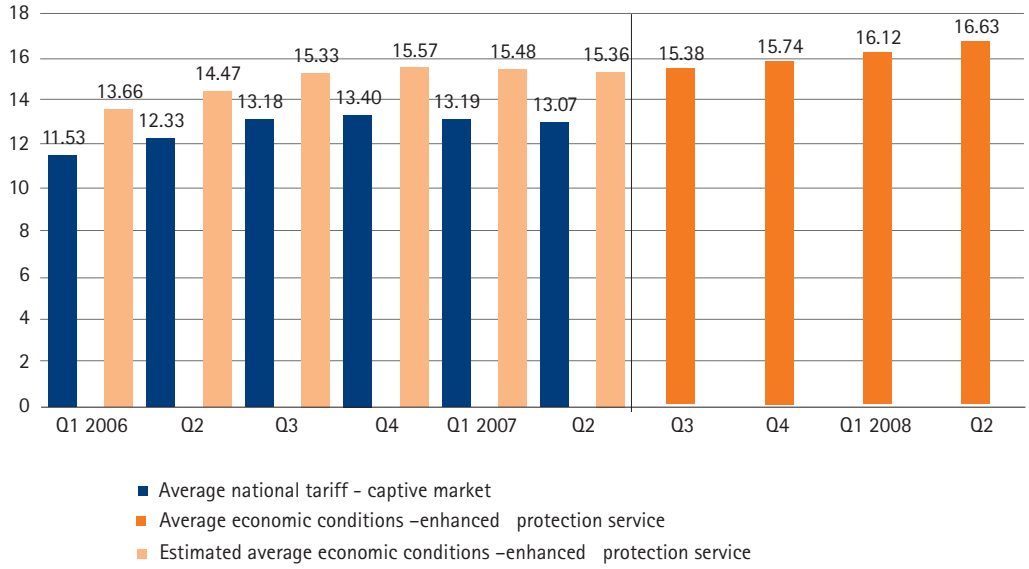


FIG. 2.39

From the average national electricity tariff to econonomic conditions governing the greater protection service

Net of taxes, c€/kWh

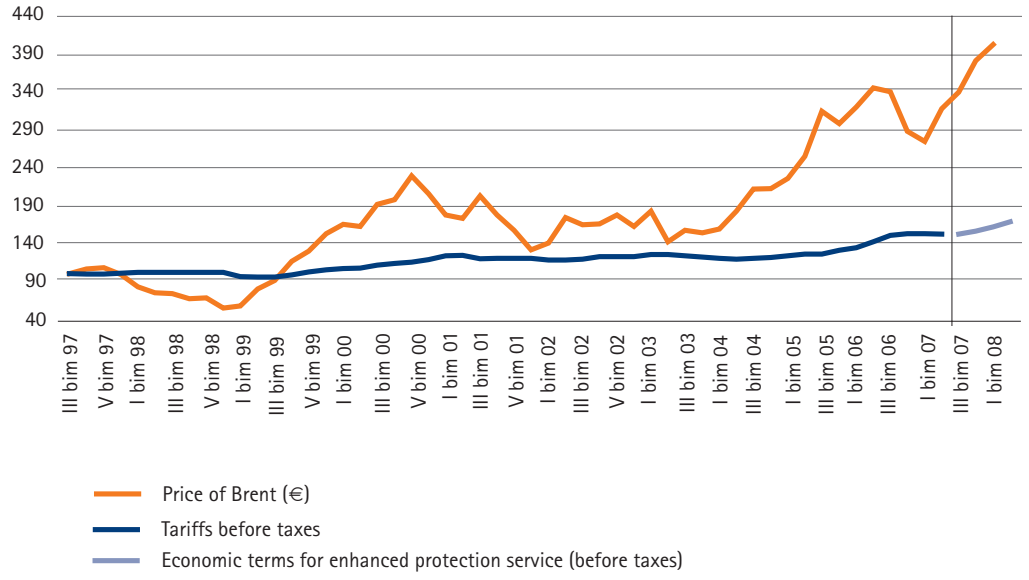


FIG. 2.40

Trend of the electricity tariff (then enhanced protection service economic conditions) and oil price

Index number third two-month period 1997=100(A)

(A) Standard domestic consumer with annual consumption of 2,700 kWh an power of 3 kW.

Source: AEEG elaboration on internal data and data provided by Platts

higher level of the latter, which refer to domestic customers and small non-domestic customers with low voltage connections, compared to the average national tariff where the types of contracts relating to customers connected under high and medium voltage are also shown.

In the last 11 years, in light of oil prices that have nearly quadrupled (in Euro, nominal terms), the overall price per kilowatt hour paid by the standard domestic consumer has increased by approximately 61%. The restructuring of the electricity sector and the liberalisation process have made it possible to contain the impact on the electricity tariff of the strong tensions that occurred on international fuel markets starting from the spring of 2004 (Fig. 2.40).

From the second quarter of 2007, with the publication of the

Sales code (Testo integrato della vendita – TIV), the Authority introduced new terminology to define the charge components constituting the economic terms for provision of the enhanced protection service so as to emphasise the move from the captive market to the new enhanced protection market. Table 2.42 compares the tariff components that were applied to the captive market with the components that are applied to greater protection service price.

TAB. 2.42

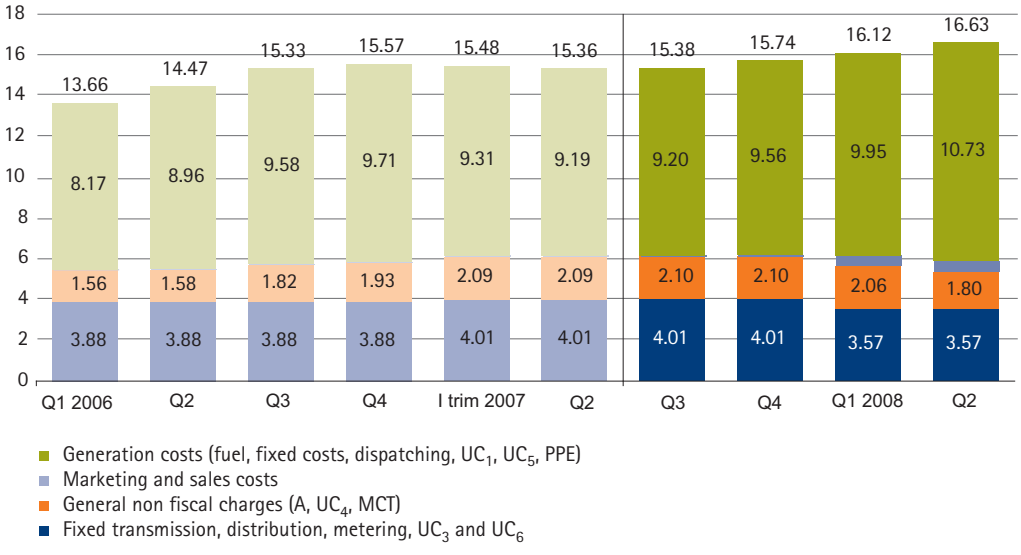
Components applied to the captive and enhanced protection service market

AS AT 30 JUNE 2007: CAPTIVE MARKET	AS FROM 1 JULY 2007: ENHANCED PROTECTION SERVICE	FOR COVERAGE OF:
COV component	PVC component	Marketing and sales costs
CCA component	PED component	Electricity procurement costs
VE	-	Costs incurred by electricity producers for the purchase of green certificates from 2002 to 2003
DP	-	Costs incurred by Terna for reconciliation in 2001
PC	PE	Electricity purchase costs
OD	PD	Dispatching costs including the costs for remunerating the availability of production capacity, the load interruption service, with or without prior notice, and the difference between actual and standard losses in the networks
CD		
INT		
UC_5 component		
UC_1 component	UC_1 component	Unbalances of the procurement costs equalisation system for electricity intended for customers of the captive market from 2004 to 2007
-	PPE component	Unbalances of the procurement costs equalisation system for electricity intended for customers of the protection service from 1 January 2008

FIG. 2.41

Average economic conditions - enhanced protection(A)

Net of taxes, c€/KWh



(A) The value prior to Q3 2007 are internal estimates made for statistical purposes and not actual values.

As at 1 April 2008, the average price of electricity after taxes for customers of the enhanced protection service regime is 16.63 c€/kWh. The component covering the fixed costs involving transmission, distribution and metering (including the UC3 and UC6 tariff components, as they are connected to the equalisation of the transmission and distribution costs and the recoveries of continuity in the service) is 21% of the net total price. In the second quarter of 2006, this component was 27%.

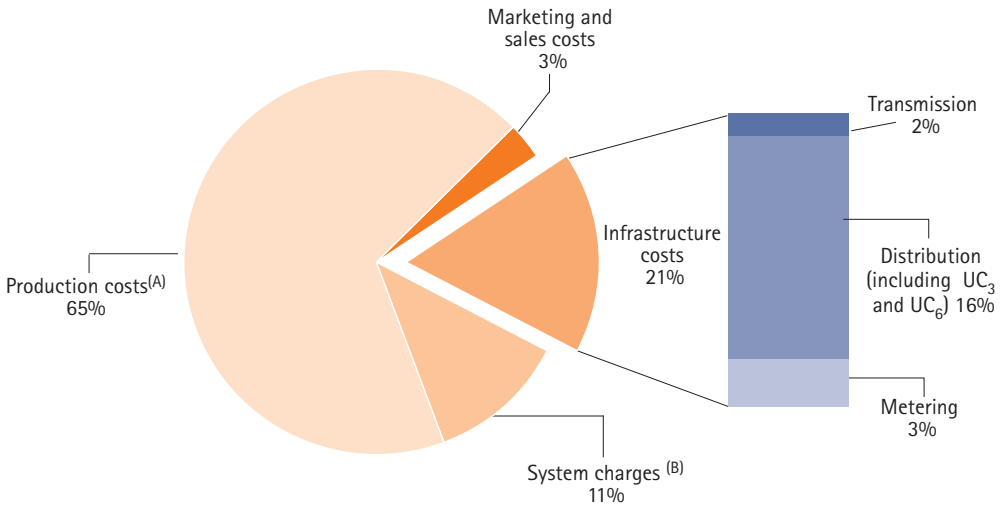
The components covering the procurement cost of electricity in April 2008 represent 65% of the net price while their incidence on the second quarter in 2006 was 62%. These components also include the following items:

- the UC-1 component relating to unbalances of the procurement costs equalisation system for electricity intended for customers of the captive market from 0.441 c€/kWh;
- the PPE component, effective from January 2008 but not yet activated, is to be used for financing the unbalances of the equalisation system for purchasing and dispatching electricity for customers under the protection service regime;
- the items which in the system defining the tariff components of the captive markets were included in the UC5 component (differences between actual and standard losses in the networks) and the CD elements (remuneration of availability of production capacity) and INT (remuneration of the interruptibility service), which were integrated into a single element (the PD element) to cover dispatching costs, as from the third quarter of 2007.

The component covering the marketing costs as at April 2008 is 0.54 c€/kWh and is approximately 3% of the total price, while its effect in April 2006 was completely marginal (0.3%). In the second quarter of 2008 the other general non fiscal (including the UC4 components which relate to tariff integrations and MCT, for territorial compensation) amount to 1.80 c€/kWh on average for customers under the enhanced protection service regime and affect the total price after taxes by 10.8%, in line with the percentage that had been recorded in April 2006.

FIG. 2.42

Percent composition of the average economic terms for enhanced protection service after taxes as at 1 April 2008



(A) Production costs include the cost of fuel, the fixed generation costs, the dispatching cost, the remuneration of production capacity and the interruptiblity service and the UC1, UC5 and PPE components.

(B) The system charges include all the A components, the UC4 component and the MCT component.

The quality of the service

The quality of the transmission service

The regulation concerning the quality of the transmission service has significantly developed over the last years. Resolution no. 250 of 30 December 2004 had set, as part of the GRTN directives for the preparation of the grid code, certain rules regarding the quality of the transmission service, which defined the obligation to record the outages concerning national transmission grid (RTN) users as well as transparency obligations covering various aspects of service quality; among these in particular is the annual publication of a report on service quality. This report was published for the first time by Terna in 2007 and provides information on the quality of the transmission service in 2006, compared to the "expected quality levels" for the transmission service set forth by Terna itself and approved by the Authority for 2006, with its resolution no. 6 of 17 January 2006. The expected quality levels for the transmission service were updated for 2007 with resolution no. 37 of 23 February 2007 and involve the outages concerning customers and distributors (directly connected to the RTN) which are attributable to the transmission grid operator, excluding "significant accidents" (outages with energy not supplied of over 150 MWh/event) and outages due to force majeure.

Examining the data on the transmission service quality net of significant accidents, over an average outage duration per customer of approximately 1 hour per year, less than 1 minute, net of significant accidents on the RTN, depends on the transmission (Table 2.43).

It is important to point out that the levels expected and the final levels achieved are assessed without including the effects of significant accidents or outages due to force majeure. The distinction between "significant accidents" and "other outages," introduced initially with resolution no. 250/04, was reviewed as part of the procedure for the development of provisions for the third regulatory period, since an even extremely low number of significant accidents can significantly increase the level of energy not supplied or worsen the levels of the overall quality indicators for the transmission service.

With its resolution no. 341 of 27 December 2007, the regulation of the transmission service quality was changed through the introduction of a reward and penalty system for energy not provided and for the number of outages regarding the RTN (See Volume 2). This system requires the reconstruction of the historic data on the continuity of the transmission service pursuant to the rules that will be used in the period from 2008 to 2011. Based on the data received from Terna as at 30 April

TAB. 2.43

Average system interruption time(A)

Minutes/year – 2007 (not including significant accidents)

AREA	FINAL	EXPECTED LEVELS
Turin	0.21	0.80
Milan	1.75	1.00
Venice	0.45	1.10
Florence	1.13	0.70
Rome	0.64	1.10
Naples	1.41	3.00
Palermo	1.07	2.80
Cagliari	0.29	1.00
Domestic	**0.99**	**1.00**

(A) Levels calculated for the entire country and for the eight Terna local zones, with reference to outages suffered by all RTN users, whether directly or indirectly connected, which have experienced the service inefficiencies due to Terna ("other causes"), except for significant accidents and without any distinction regarding the origin of the outage.

2008, which is still being verified by the Offices, the situation of the transmission service quality is that which is set forth in Table 2.44, concerning energy not supplied and Table 2.45 , regarding the average number of outages per user of the RTN grid *(see the box: Indicators of transmission service quality)*.
The main accident among the significant accidents that took place in 2007 and which caused inefficiencies on the transmission grid, took place in Sicily at the end of June 2007, following a combination of breakdowns that occurred at the same time and the opening of high voltage lines to allow for fires on the island to be extinguished, with energy not supplied amounting to 4,762 MWh; during the event the security systems also intervened and it was necessary to use the emergency plan for the security of the electricity system (PESSE), "in real time" in order to be able to gradually put the system back in order. The significant accidents concerning the RTN and the interventions of the security systems affected the service continuity indicators in 2007 with 9 minutes of outage per customer per year. The system providing incentives that was introduced for the transmission grid as well with resolution no. 341/07 for the regulation period 2008-2011 will make it possible to reduce the gap in the quality levels of the Centre-North and Southern Italy and reduce the inefficiencies on the transmission grid, for most types of significant accidents.

TAB. 2.44

Energy not supplied due to outages concerning all users

MWh//year, including significant accidents

AREA	YEAR 2006 CONDITIONS	YEAR 2007 CONDITIONS
Domestic	**3,477**	**8,469**

Source: Data provided by Terna pursuant to resolution no. 341/07

TAB. 2.45

Average number of outages (long or short) per user directly connected to the RTN

Number/year – 2007 including significant accidents

AREA	YEAR 2006 CONDITIONS	YEAR 2007 CONDITIONS
Torino	0,32	0,13
Milano	0,11	0,25
Venezia	0,21	0,41
Firenze	0,25	0,46
Roma	0,79	0,34
Napoli	0,29	0,37
Palermo	1,05	0,94
Cagliari	0,75	0,82
National	**0,38**	**0,39**

Source: Data provided by Terna pursuant to resolution no. 341/07

Indicators of the quality of the transmission service

The ENS (Energy not supplied) indicator is the most common indicator of transmission service quality and it is used on an international level. The ENS corresponds to the quantity of energy that would have been supplied if there had not been an outage in the transmission grid.

The ENS is calculated as follows:

$$\sum_{i=1}^{n}\sum_{j=1}^{m}(P_{i,j} * T_{i,j})(MWh)$$

where the sum includes all outages during the period and/or calendar year and the area and, for each of these, the users affected by the outage where:

- n is the number of outages in the reference period;
- m is the number of users involved in the ith outage;
- T_{ij} and P_{ij} are respectively the duration (in hours) of the outage and the power interruption (MW) for the jth user involved during the ith outage; P_{ij} is the average constant value in the first 15 minutes if the duration of the outage is lower than or equal to 15 minutes, while it is estimated according to the forecasted and/or historical power diagram if the duration is above 15 minutes.

The Average number of outages per user expresses the number of times on average a user of the RTN was disconnected (for more than 1 second). This is calculated as follows:

$$\frac{\sum_{i=1}^{n} U_i}{U_{tot}}(N)$$

where the sum includes all outages n during the period and/or calendar year and the area and where:

- Ui is the number of users involved in the ith outage considered;
- Utot is the number of users directly connected to the RTN during the calendar year.

Quality and continuity of the electricity distribution service

Following a trend of continuous improvement since 2000, the year in which a system based on incentives related to the continuity of service for distribution companies was introduced, both the number and the duration of outages without notice improved in 2007, net of the effects of the significant accidents described in the previous paragraph. Considering the outages over the distribution and transmission grids (not including "significant accidents" and the interventions of security systems), in 2007 the overall duration of the outages per customers dropped to 58 minutes, a 70% reduction of the national average compared to 1999 (the last year before the introduction of the incentives by the Authority; see figure 2.43).

In 2007, as in the previous years, the decrease in the minutes lost per customer is the result of the improvements related to

the distribution networks: 48 minutes in 2007 compared to 50 minutes in 2006 (-4%).

The number of long outages (duration of over 3 minutes) per customer results from 2.16 outages per customer (considering all outages); the overall improvement for the average number of long outages is 43% compared to 1999. There was an improvement in the indicator at national level for the number of short outages (duration less than 3 minutes but more than 1 second) per customer as well, from 4.77 short outages per customer in 2006 to 4.73 short outages in 2007; the improvement over 2002 (the first year for which data on short outages is available) is approximately 30% (Fig. 2.43, Fig. 2.44, Fig. 2.45). All the information relating to the continuity of the electricity service can be viewed on the Authority's Internet site.

The improvement is due to the reward and penalty system that the Authority has applied to electricity distributors in the first two regulation periods (2000-2003 and 2004-2007) and made it possible to significantly reduce the gap in the continuity of the electricity service between North and South, benefiting not only the families but increasing the competitiveness of production sectors as well (Fig. 2.44).

For the four year period from 2008 to 2011, the Authority has strengthened the reward and penalty system with its resolution no. 333 of 19 December 2007. From 2008, the Italian distributors are subject to incentives and penalties related not only to the duration of the outages (as in previous years) but also, for the first time in Europe, to the improvement of the number of long and short outages, that is, all outages lasting for more than 1 second.

If the effects on continuity due to "security" systems that intervene automatically or manually in the event of inadequate power generation are taken into account, the improvement over eight years is reduced to 64%; this is due to certain "significant accidents" that occurred on the RTN in 2007 (see the previous paragraph).

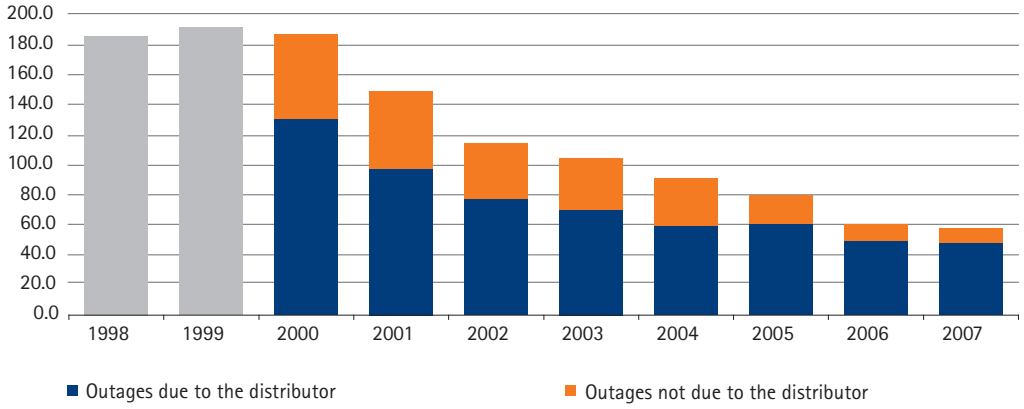


FIG. 2.43

Duration of outages of low voltage customers since 1998

Minutes lost per customer per year; Enel Distribuzione and local electricity companies with more than 5,000 consumers (not including significant accidents and interventions by security systems)

FIG. 2.44

Duration of outages for low voltage customers

Minutes lost per customer per year; Enel Distribuzione and local electricity companies with more than 5,000 consumers; only outages on the medium and low voltage networks.

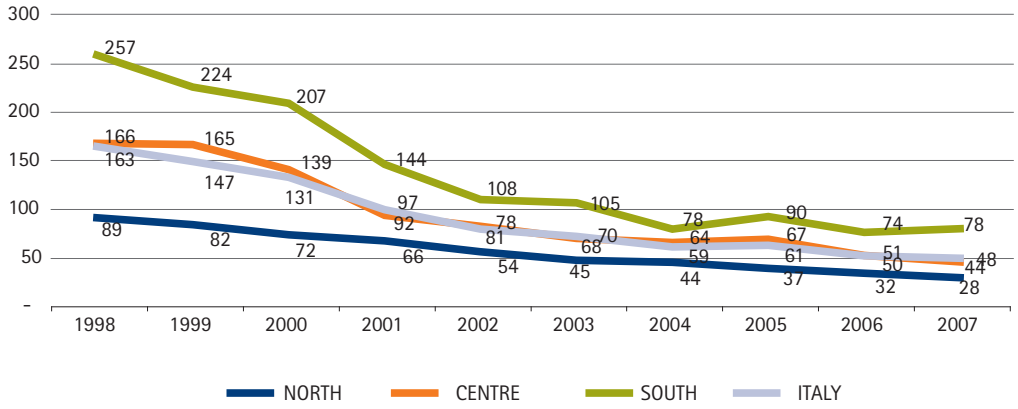


FIG. 2.45

Number of long unanticipated outages for low voltage customers

Domestic average annual values: Enel Distribuzione and local electricity companies with more than 5,000 consumers (not including significant accidents and interventions by security systems)

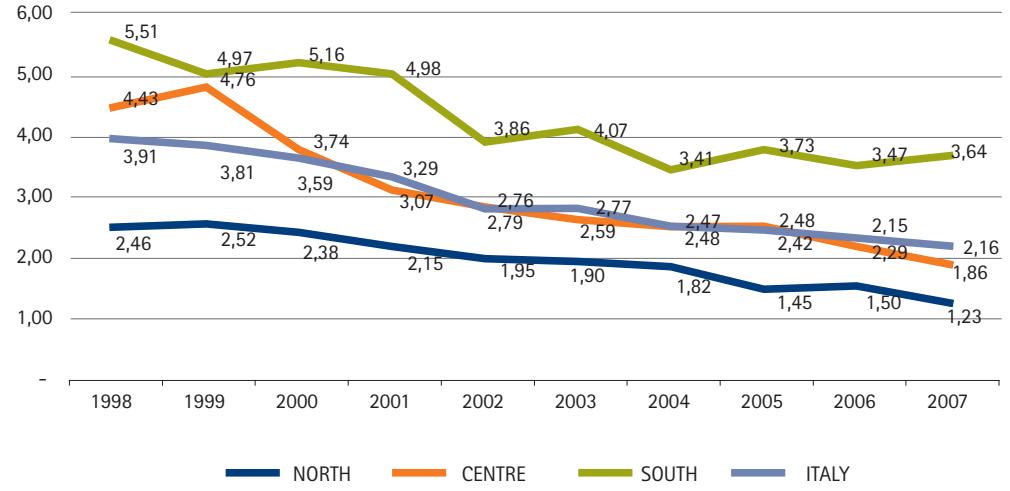


FIG. 2.46

Number of long and short outages for low voltage customers

Enel Distribuzione and local electricity companies with more than 5,000 consumers (not including significant accidents and interventions by security systems)

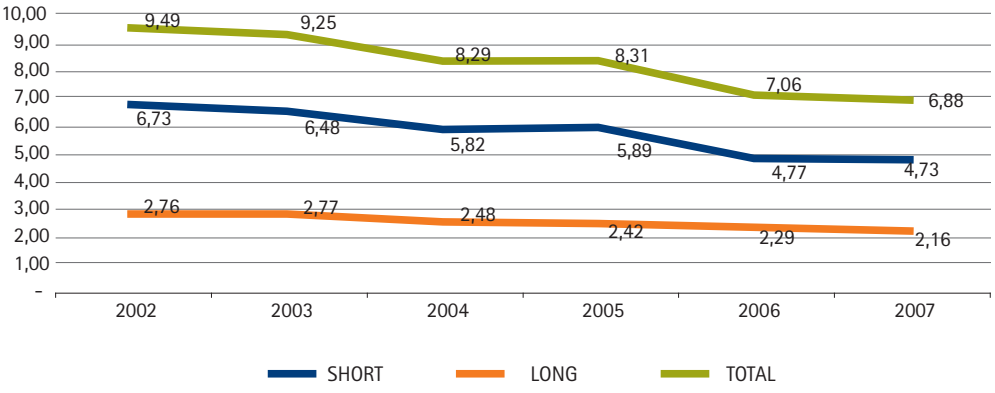


Table 2.46 shows the continuity of the service relating to the service inefficiencies on the distribution and transmission grid (excluding the interventions of security systems and significant accidents on the RTN) in 2006 and 2007 at regional level.

TAB. 2.46

Duration of outages per customer and average number of long outages (exceeding 3 minutes) per low voltage customer per year

Enel Distribuzione and local electricity companies with more than 5,000 consumers (not including significant accidents on the transmission grid and interventions by security systems)

	OUTAGE DURATION minutes lost per year for low voltage customers		NUMBER OF LONG OUTAGES PER YEAR per low voltage customer	
	2006	2007	2006	2007
Piedmont	53	35	1.79	1.35
Valle d'Aosta	43	25	1.12	0.76
Liguria	49	36	2.23	1.44
Lombardy	32	30	1.24	1.07
Trentino Alto Adige	47	40	1.82	1.98
Veneto	65	36	1.68	1.45
Friuli Venezia Giulia	36	28	1.01	0.89
Emilia Romagna	27	22	1.32	1.05
Tuscany	42	41	1.61	1.49
Marche	47	41	1.93	1.56
Umbria	38	41	1.67	1.64
Lazio	77	66	2.67	2.24
Abruzzi	60	64	2.43	2.14
Molise	31	20	1.81	1.06
Campania	86	105	3.89	4.29
Apulia	76	73	2.65	2.76
Basilicata	83	46	2.28	1.39
Calabria	91	93	3.53	3.43
Sicily	109	127	4.38	4.85
Sardinia	83	125	3.17	3.17
NORTH	42	31	1.50	1.23
CENTRE	59	53	2.15	1.86
SOUTH	87	98	3.47	3.64
ITALY	**61**	**58**	**2.29**	**2.16**

Individual quality standards for MV customers

Concerning individual regulation of the number of outages per MV customer (see last year's Annual Report), in 2007 the distributors incurred penalties of approximately 7.4 million Euro due to failure to fulfil the quality standards for larger customers (calculated only in relation to high and medium voltage customers with available power exceeding 100 kW).

The MV customers with outages that exceeded the standard (defined as "worst served" customers), are mostly located in southern regions: the percentage of "worst served" customers in the southern regions is approximately 21%, which is much higher than the national average (6%) (Fig. 2.47). To receive the compensation, the MV customers with outages exceeding the standard must have submitted to the distributor a declaration of adequacy. If the customers have not submitted such a declaration, the penalty is paid by the distributor to Cassa Conguaglio per il Settore Elettrico and decreases the national average tariff; compared to 2006, the overall adequacy declarations sent as at 31 December 2007 have more than doubled (Fig. 2.48).

FIG. 2.47

Percentage of "worst served" customers as a percentage of total customers, per region

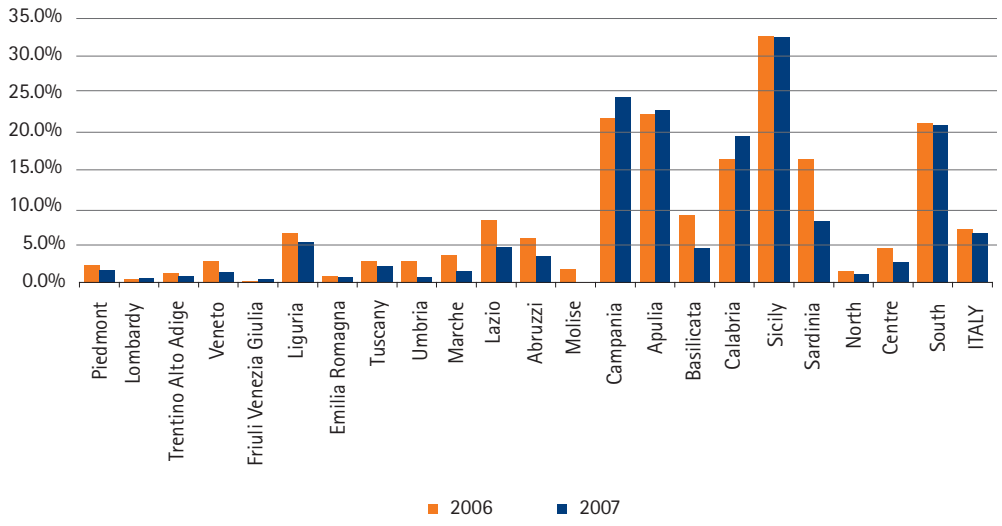
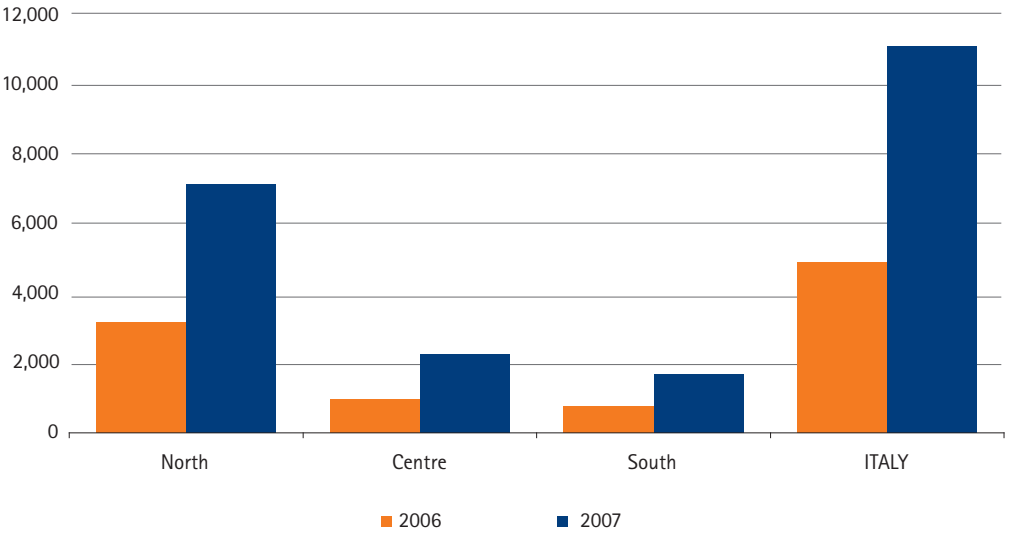


FIG. 2.48

Adequacy declaration sent as at 31 December 2007



The quality of the voltage: monitoring of voltage dips and short-circuit power on MV networks

In the previous paragraph, the main indices of service continuity relating to long and short power outages were examined. The long and short power outages are the main source of annoyance to customers, but not the only one. Some customers have electrical systems that are sensitive to other problems, such as voltage dips and transient outages, which are also known as "micro-outages". The Authority has dealt with these "voltage quality" issues with some initiatives that make it possible to provide an initial outline of the situation at the national level.

Between 2005 and 2006, the Authority has promoted as part of its system research the setting up of a system for monitoring the quality of the voltage on medium voltage networks, while requesting the participation of customers to the greatest possible extent. The system was carried out by CESI RICERCA Spa as part of the system research and became operative at the beginning of 2006; it is available to the public through the Internet site http://queen.ricercadisistema.it on which information is provided regarding the regional and temporal distribution of voltage dips and other important voltage quality parameters taken over a sample of 10% of the MV distribution networks, which is representative of the actual distribution in Italy (urban/rural, with cable and overhead lines, for different voltage levels, , etc.).

At the European level, the Authority has actively cooperated with European regulators initiatives (CEER/ERGEG - Council of European Energy Regulators/European Regulators Group for Electricity and Gas) with regard to voltage quality. This effort resulted in the public consultation document Towards Voltage Quality Regulation in Europe (December 2006) and subsequently in a Conclusions Paper with the same title, in which the position of European regulators on voltage quality standards is set forth[10].

The main reason why European energy regulation authorities undertook this initiative was the need to fill the regulatory gaps that exist in standard CEI EN 50160. Indeed, the current regulation does not provide rules or criteria that would allow the responsibility of voltage disturbances to be attributed; furthermore, the limits that are indicated are either not strict enough or are only indicative and carry the risk of becoming counterproductive for customers and developers. Four task forces were set up within the CENELEC context (European Committee for Electrotechnical Standardisation), the objective of which is to review certain critical parts of the regulation regarding slow voltage changes, classification of voltage dips and the implementation of standard EN 50160 to high voltage networks.

Currently a new draft of standard EN 50160:2008 is under public consultation and the national standardisation committees (in Italy the CEI, Italian Electrotechnical Committee) are expected to submit their comments within the month of August 2008; the approval of the regulation could occur by the end of the year.

The major disturbance for industrial customers is voltage dips. A voltage dip is a sudden drop in voltage, without circuit outages, followed by re-establishment of the voltage. Voltage dips are characterised by two parameters: residual voltage and duration (in milliseconds). For the first time, the monitoring system makes it possible to acquire data on voltage dips on MV networks in Italy. Tables 2.47 and 2.48 illustrate 2007 values of

10 Both documents are available on www.energy-regulators.eu.

the average number of voltage dips and the percentage distribution by class of severity.

The classification scheme by severity (depth/duration) is the one proposed in the draft for the revision of European standard EN 50160, currently under public consultation by CENELEC.

TAB. 2.47

Average number of voltage dips in 2007

RESIDUAL VOLTAGE u [%]	DURATION OF THE VOLTAGE DIP (MS)					
	20 < t " 200	200 < t " 500	500 < t " 1,000	1,000 < t " 5,000	5,000 < t " 60,.000	TOTAL
90>u>=80	37.7	5.5	1.1	0.9	0.1	45.3
80>u>=70	19.9	4.1	0.5	0.2	0.0	24.7
70>u>=40	38.8	6.6	0.6	0.2	0.1	46.3
40>u>=5	12.5	2.6	0.3	0.1	0.0	15.5
5>u	0.3	0.0	0.0	0.0	0.0	0.3
TOTAL	109.2	18.8	2.5	1.4	0.2	132.1

TAB. 2.48

Percent distribution of the voltage dips by severity in 2007

RESIDUAL VOLTAGE u [%]	DURATION OF THE VOLTAGE DIP (MS)					
	20 < t " 200	200 < t " 500	500 < t " 1,000	1.000 < t " 5,000	5,000 < t " 60,000	TOTAL
90>u>=80	29%	4%	1%	1%	0%	34%
80>u>=70	15%	3%	0%	0%	0%	19%
70>u>=40	29%	5%	0%	0%	0%	35%
40>u>=5	9%	2%	0%	0%	0%	12%
5>u	0%	0%	0%	0%	0%	0%
TOTAL	83%	14%	2%	1%	0%	100%

Given the difficulties deriving from the micro-outages, i.e. the transient outages and the severe voltage dips, in industrial processes, the Authority has commissioned a research study to be carried out by the Department of Administrative Engineering of the Politecnico di Milano University on the costs incurred by industrial users on account of micro-outages. The box titled Assessment of costs incurred by customers due to micro-outages illustrates the main results of the research; the complete executive summary was published in Annex 2 of consultation document no. 36 of 2 August 2007.

Assessment of costs incurred by customers due to micro-outages

Users of the electricity distribution service are subject to different voltage disturbances. The research project, in particular, was focused on micro-outages, that is transient outages (with durations of less than 1 second) and voltage dips, so as to assess, for industrial consumers, the costs incurred by individual businesses and by the domestic economy as a whole.

The research identified two types of costs: direct and indirect. Direct costs are those incurred by businesses due to a micro-outage and become economically significant only when they involve a production stoppage. Overall, they include costs that relate to repairs of machines and equipment, defects in semi-finished products and rejects, production

recovery and loss. Indirect costs refer to the investments in protection systems such as UPS devices, which mitigate indirect costs but give rise to a prevention cost. Total costs represent all costs, direct or indirect, incurred by businesses.

The results of the study relating to the direct costs incurred by businesses and the sectors under observation, i.e. 50 Italian businesses participating in the voltage monitoring campaign conducted by Cesi Ricerca, represent the study's most significant output.

One of the main indicators is the direct annual cost standardised over the power [€/kW]. As illustrated in Table A, the median (average) of this indicator for the entire sample is estimated at 10.7 €/kW (61.7 €/kW); if the companies that had no production stoppages or damages of any type during the course of a year (focus on the sub-sample) are excluded, the median assumes values of 21.3 €/kW (74.6 €/kW)[11].

All values are aligned with those indicated in the literature.

TAB. A

Direct annual cost per kW

€/kW

SECTOR	COMPLETE SAMPLE AND (SUB-SAMPLE)	
	AVERAGE	MEDIAN
Food	79.1	15.3
Textiles	6.5	6.5
Paper	19.0 (22.8)	6.4(14.0)
Refineries	13.3	13.3
Chemical	10.6 (15.9)	4.8 (15.9)
Plastics	78.4	71.1
Non-metallic minerals	17.4	18.9
Metal	225.4(338.1)	67.0 (338.1)
Electric machines	252.3	268.7
Cars and vehicles	42.8	42.8
ALL SECTORS	61.7 (74.6)	10.7 (21.3)

The survey confirms the particular sensitivity to disturbances in the voltage quality of the production processes in the following sectors: paper, plastics, weaving of natural and artificial fibres, production of electric and electronic equipment, production of motor vehicles and related parts, mechanical processing, glass, ceramic and plaster manufacturing and the food sector. The research also assessed the "impact" of the costs that result directly from micro-outages in sensitive sectors and the Italian economic system as a whole[12].

Table B shows the median (minimum and maximum) of the direct annual costs for the entire Italian economic system, when the assumption is that the micro-outages only affect the observed sectors (SO) and when the assumption is that it affects both the SOs and other sectors identified as sensitive which were not observed directly (the so called

11 It should be noted that the median value of the different indicators results in a statistical figure that is especially interesting, since the sample contains a small number of businesses for which direct costs were especially high, thus resulting in an average value that is less representative; however, this second figure is provided for completeness.

12 The results of the estimates set forth below ensue from rather strict assumptions, though they are motivated by knowledge gained during the study; such estimates are based on a limited sample which is not differentiated according to the characteristics of the Italian economic system. Therefore, the results should be considered as a preliminary result, though the research was conducted to the best knowledge of the researchers.

"potentially sensitive sectors that were not observed": PSNO)[13].

Once the observation moves from the sensitive sectors to the entire Italian economic system, the results show that the micro-outages are an economically "concentrated" problem, the effects of which are significant only for a rather small part of the economic system. Indeed, the SOs produce 7.03% of the turnover (5.76% of the added value) produced by the entire Italian economic system; the segment that takes into account the SOs and PSNOs is bigger, but still minor, with 16.97% of the national turnover (14.98% of the added value). The remaining part of the economy is either not affected by the phenomenon or defends itself against it using protective equipment.

Thus, the total annual indirect costs of micro-outages were estimated for the entire Italian economic system. Using the annual depreciation rate of all UPS protection systems currently used by Italian businesses, given the technical and economic duration of this equipment, a cost is obtained of 196.8 m€/year (Table B) These costs are distributed in an unequal manner throughout the economic system. The sector that uses UPS systems the most is the service sector, which accounts for 33% of the purchases of such equipment. The telecommunications system is in second place (17%) and the manufacturing and construction sector is in third place (13%), these being the sectors which a large portion of the companies observed belong to. In conclusion, the total annual indirect costs have a volume that is comparable to the total direct annual costs, though they are lower in level.

Finally, the "weight" of the total costs associated with the micro-outages within the entire Italian economic system was estimated (Table B).

If reference is made to the "spread" between the median SO value and the median value "SO + PSNO" of total annual costs, the result is that for each 1,000 Euro of turnover (of added value), Italian businesses incur a cost (direct and/or indirect) for micro-outages of between 0.20 and 0.34 Euro (between 0.81 and 1.36 Euro). To assess the volume of the economic damage, it is useful to compare the aforementioned "spread" and the direct costs throughout all sensitive sectors. In the sensitive sectors, which correspond to 16.97% of the national turnover, for each 1,000 Euro of turnover the businesses incur a direct cost for micro-outages of 1.5 Euro. The "weight" of the micro-outages in these sectors is significantly higher (by a factor in excess of 4) than the "weight" in the "generic" Italian business.

The empirical results of the research can be summarised as follows: the probability that an Italian business will incur significant economic damage from voltage disturbances is low, but this economic damage is significant for a subgroup of businesses. A second observation is that these costs are distributed in a non-uniform manner throughout the sectors and businesses: only a small group of manufacturing sectors (16.97% of the turnover of the econo-

TAB. B

Annual costs for the Italian economic system

M€/year

	SO (MEDIAN)	SO (MIN - MAX)	SO + PSNO (MEDIAN)	SO + PSNO (MIN - MAX)
Annual direct costs	267.8	252.1 – 296.3	583.4	567.7 – 611.8
Annual indirect costs		196.8		
Total annual costs	464.6	448.9 – 493.0	780.2	764.5 – 808.6

13 These are the printing, rubber, electric cable, mechanical processing, cement and iron and steel sectors.

mic system) incurs significant economic damage, in absolute and relative terms, resulting from micro-outages (direct costs); furthermore, the businesses that belong to this group of sectors appear to be affected by direct costs at levels that differ to a significant extent.
As a third aspect, the Italian economic system incurs a further cost, which is less significant than direct costs but fairly large nonetheless: several businesses belonging to a rather large group of sectors have decided to equip themselves with protective equipment. Concerning the regulation of voltage disturbances, it is evident that, because of the high costs resulting from micro-outages, an intervention is needed; however, the lack of uniformity of these costs would seem to discourage an intervention having a general character. In other words, the regulator should consider the possibility of adopting "targeted" remedies, giving priority to measures that benefit customers incurring higher costs.

With regard to short-circuit power on MV networks, an issue which is of particular interest for industrial customers, it should be taken into account that in 2007 the work begun the previous year was completed, in collaboration with System Research, for the definition of a methodology for assessing the minimum level of short-circuit power in the MV network nodes. In particular, in one day of research carried out in Milan, on 8 March 2007 at CEI, the Italian body for technical standardisation, the results of an analysis of a sample of nodes in medium voltage networks, carried out by the Electrotechnical Department of the Politecnico di Milano University, were presented. The survey carried out on the levels of short circuit power in the nodes of MV networks allowed for the development of certain proposals concerning technical connection rules, carried out with the assistance of CEI (CEI work group 136/04). These proposals, subject to public consultation, resulted in Standard CEI 0-16 (in particular, see Annex F – short circuit power), which sets out the technical rules for the connection of active and passive users to HV and MV networks of distributors of high and medium voltage electricity throughout the country. This standard is an integral part of resolution no. 33 (ARG/elt), which establishes the technical conditions for the connection of users that inject or withdraw electricity from distribution electricity networks with nominal voltage above 1 kV at the connection point.

Commercial quality of the electricity distribution, metering and supply services

The regulation of commercial quality has been effective since 1 July 2000 and provides for the introduction of national quality standards regarding the maximum time allowed for carrying out the services required by customers (connections, activations, estimates, technical checks, responses to complaints, etc.), which constitute the minimum standards that each company is required to provide to its customers. The regulation of the commercial quality aims to safeguard all consumers with interventions guaranteeing and promoting service quality, so that the liberalisation does not result in a weakening of the consumer protection, in particular for consumers which have less bargaining power, safeguarding the right of choice of the interested parties in a competitive environment.

Customers requesting services subject to a specific standard are informed by the supplying company about the maximum time and the automatic compensation provided in the event of non-compliance with the standard. At least once a year all customers must receive from the company, through the bill, information on the guaranteed quality standards and the results actually achieved during the year. As part of its own survey on the quality of services, the Authority publishes information on the average time required for carrying out the services, as declared by the companies and the related control parameters for the standards (percentage of cases not complying with the standard, due to reasons that fall under the responsibility of the company itself, excluding force majeure or the responsibility of third parties).

The introduction of automatic compensation, provided to the customers in the event of failure to comply with specific quality standards at the fault of the providing companies that are not due to force majeure or the responsibility of third parties or the customer itself, has resulted in an increase in the compensation paid to customers compared to the "service cards" system that was in force prior to the current regulation (Table 2.49).

The amount of the compensation, which is defined by the Authority, is higher for customers that incur higher energy and network costs. Customers receive automatic compensation by deducting the amount debited from the next following bill and in any case within 90 calendar days from the expiration of the deadline for the provision of the service requested by the customer. If the retailer is unable to meet this deadline a compensation must be made to the customer of an amount that is two or five times higher, depending on the delay in payment.

In consideration of the progress of the liberalisation in the sector, concerning all LV customers since 1 July 2007, and of the recent legislative measures, the regulation of commercial quality was updated with resolution no. 333/07 in order to:

- adapt the provisions to the new legal and functional unbundling requirements;
- review the commercial quality standards in relation to the quality level recorded in the second regulation period and to the remote management system impact;
- gradually extend the regulation of the commercial quality to all the companies of the electric sector, including the smaller ones;
- align the regulation of the commercial quality of the electric sector with the Gas Service Quality Code, including adoption of the verification method for carrying out audits of figures regarding commercial quality.

In 2009, a new compensation system will become effective allowing to link compensation to the actual time a service is

provided, and introducing, in particular, a doubling of the compensation for provision that exceeds twice the time set out by the standard and triple compensation for provision in over three times the standard time; furthermore, the compensation will be tripled further in the event that it is not paid within 6 months, while it must mandatorily be paid within 7 months, or penalties may be applied.

As from 2009 all appointments will be subject to automatic compensation in the event of failure to be punctual and to the compensation for lack of puntuality can be added the compensation for the lack of fulfilment of the response time standards (in terms of days), if the service is provided with a delay.

The data provided by retailers shows that in 2007 the number of cases of non-compliance with specific quality standards that were subject to reimbursement as well as compensation paid to customers remained essentially unchanged (Table 2.49). In particular, an examination of the services subject to a specific standard shows an increase in the number of cases of non-fulfilment concerning all services, except for reactivations in case of late payments. The standard relating to invoicing corrections, introduced during 2004 as a standard subject to compensation to remedy the critical points stemming from the use of the previous standard, has decidedly worsened (Fig. 2.49).

TAB. 2.49

Number of reimbursements paid due to non-compliance with commercial quality standards

Enel Distribuzione and local electricity companies with more than 5,000 consumers as at 1 July 2000

	SERVICE CARD			COMMERCIAL QUALITY REGULATION							
	1997	1998	1999	2000 2nd half year	2001	2002	2003	2004(A)	2005	2006	2007
Cases of standards subject non-compliance to reimbursement	6,099	4,167	8,418	7,902	25,650	61,881	67,344	57,479	64,696	73,868	73,903
Actual reimbursements paid during the year	21	54	22	4,711	12,437	52,229	79,072	53,006	62,725	73,690	70,712

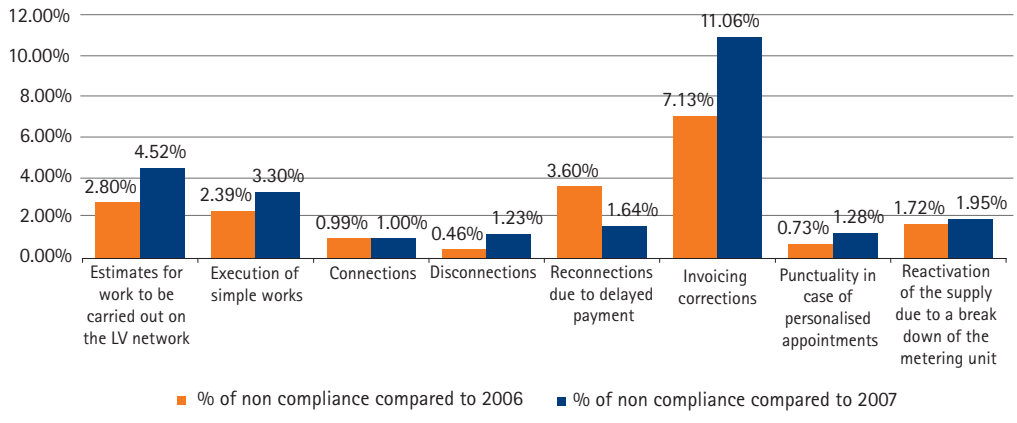
(A)) Data from February to December 2004

Source: declarations of operators provided to AEEG.

FIG. 2.49

Percentage of non-compliance with specific quality standard

Domestic and non-domestic low voltage users; Enel Distribuzione and local electricity companies with more than 5,000 consumers



Source: declarations of operators provided to AEEG.

For some services, standards are not associated with automatic compensation. Overall quality standards have been set for these services, which allow monitoring of commercial quality.

An examination of the data shows that the major critical areas involve the response time to complaints and the requests for information concerning distribution and metering, with a significant differentiation of the average effective time for the different activities; in particular, an increase in the actual effective times for the distribution and metering activities has been observed, well over double the standard (which is 20 working days), while for the supply activity the average response times are below the standard. The particularly bad performance of the distribution activity indicator depends to a significant extent on figures regarding Enel Distribuzione, which provided the Authority with the details illustrating the actions undertaken to eliminate the problems encountered in 2007.

Table 2.50 shows, for 2006 and 2007, summary data on the overall services which are subject to automatic compensation (annual number of requests, average actual time and number of automatic compensations paid to customers), over the most widespread group of consumers, which is LV domestic and non-domestic consumers.

While overall the number of services and the average actual time is essentially unchanged, the average time relating to invoice adjustments has increased from 46 to 53 days. This can be explained in part by the increasing need to acquire further data in order to carry out the technical verifications which require on-site visits, thereby increasing the time required, while reduction in the time for providing services with the best performance is essentially due to the widespread use of remote control. In consideration of data on standards relating to commercial services, the Authority intends to conduct a special consultation focusing on supply services.

TAB. 2.50

Services subject to automatic compensation for low voltage consumers (domestic and non-domestic)

Enel Distribuzione and local electricity companies with more than 5,000 consumers

SERVICE	STANDARD	YEAR 2006			YEAR 2007		
		NUMBER OF REQUESTS PER YEAR	ACTUAL AVERAGE TIME	NUMBER OF AUTOMATIC COMPENSATIONS	NUMBER OF AVERAGE PER YEAR	ACTUAL AVERAGE TIME	NUMBER OF AUTOMATIC COMPENSATIONS
Estimates regarding execution of works on the LV network	20 working days	328,637	13.08	8,434	336,423	13.71	14,657
Execution of simple works	15 working days	419,042	8.77	9,688	411,978	8.96	12,403
Connections	5 working days	1,702,160	1.97	16,653	1,576,899	1.56	15,104
Disconnections	5 gg. working days	826,458	1.58	3,144	814,666	1.50	9,683
Reconnections due to delayed payment	1 weekday	863,530	0.51	32,361	946,624	0.36	15,393
Invoicing corrections	90 calendar days	11,453	46.65	515	13,239	53.85	898
Reactivation of the supply following a break down of the metering unit	3 hours 4 hours	130,461	1.70	2,501	114,259	1.66	1,819
Punctuality in case of personalised appointments	3 hours	52,674		259	46,483		493

Source: declarations of operators provided to AEEG.

Quality of telephone services

With its Electricity Service Quality Code (resolution no. 4 of 30 January 2004), the Authority began monitoring the quality of electricity services. From the second half of 2004, data has been collected on the average waiting time for telephone calls, the incidence of abandoning the call and the level of service provided. Up to now, the monitoring involves the electric companies that distribute or sell to over 100,000 consumers. In July 2007, the Directive on the quality of the telephone services provided by electricity and gas suppliers was issued (see Chapter 4, Volume 2).

With regard to the service level (which is the ratio of calls that were completed satisfactorily and the number of calls to call centres with requests to speak to an operator), it should be taken into account that the half year performances of businesses are characterised by a certain degree of variableness and dissimilarity. In the second half of 2007, the values recorded of the indicator in 9 cases out of 13 exceed 80%, which corresponds to the general standard set forth in resolution no. 139 of 19 June 2007 (Fig. 2.50).

The average waiting times for customers which requested to speak to an operator show a level of dissimilarity at the individual company level. On the average, over a total of 21.5 million calls per year to companies being monitored with a request to speak to an operator, average waiting times were recorded (which include the time related to the interactive voice response – IVR) of 222 seconds, which are in line with the 240 seconds provided by resolution no. 139/07. As from 1 January 2008, the effective date of entry into force of the Directive on the quality of the telephone services, significant effects will occur on the level of service and on the average waiting times, which will be published and updated every six months (see Chapter 4 of Volume 2).

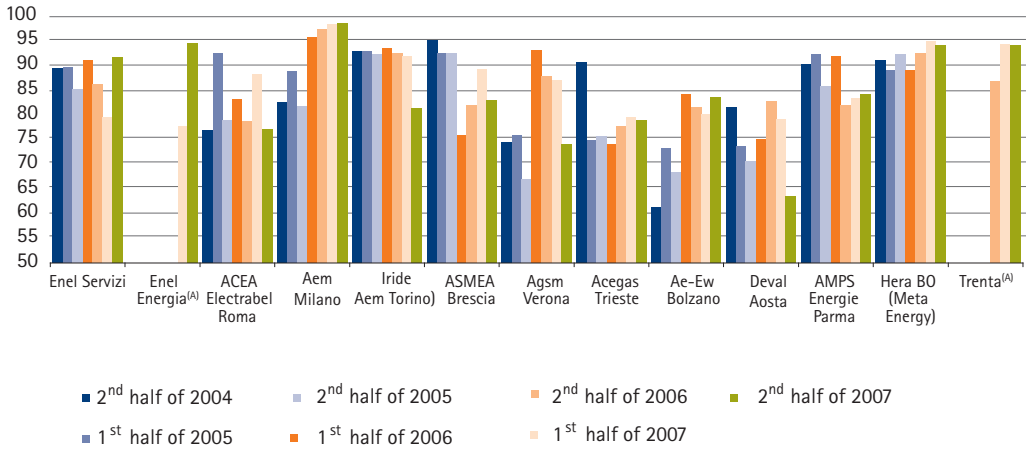


FIG. 2.50

Level of telephone services provided by electricity companies with over 100,000 consumers

From the 2nd half of 2004 to the 2nd half of 2007

(A) Enel Energia was monitored as from the first half of 2007 and Trenta was monitored as from the second half of 2006.

Source: Declarations of operators provided to AEEG.

Survey of domestic customer satisfaction

Istat added to the periodic surveys aimed at gauging the satisfaction of domestic customers (mainly families) concerning the use of electricity and gas, some specific queries aimed at determining the satisfaction and efficiency of the services in the electricity and gas sectors, as part of its multi-purpose survey on families titled "Aspects of daily life."

The national survey, which covers 22,000 families and 60,000 individuals, contains an ad hoc module on the satisfaction of families with the electric and gas supply services. The large sample ensures that representative results are obtained at regional level, so as to ensure constant monitoring of the effects of quality regulation, which also aims to reduce the differences between regions. As from 2004, the survey is carried out in the month of February, while up to 2003 it was carried out in November; for this reason, the results for 2004 are not available. To the usual queries are added, since 1998, queries that aim to determine other aspects of interest, such as the comprehensibility of the bills by users, knowledge of the Authority's role and the degree of openness of the gas supply market. In 2007 the general satisfaction level of customers was good overall and better than the previous year, though there are differing situations in the different areas (Table 2.51).

TAB. 2.51

Overall satisfaction with the electricity service

Percentages obtained from "very satisfied" and "quite satisfied" responses

	1998	1999	2000	2001	2002	2003	2005	2006	2007
North-West	94.6	94.5	94.1	94.5	94.9	93.2	90.4	91.8	91.3
North-East	93.1	94.1	92.0	94.3	92.9	91.5	88.0	88.8	90.1
Centre	89.4	91.3	89.6	91.1	90.9	89.4	87.1	87.5	89.1
South	86.4	88.1	88.7	89.2	89.5	89.9	87.8	87.9	88.5
Islands	83.7	83.9	84.5	84.5	85.6	84.2	80.4	82.7	83.3
Italy	**90.3**	**91.2**	**90.6**	**91.7**	**91.5**	**90.3**	**87.7**	**88.6**	**89.2**

Source: Istat multi-purpose study

TAB. 2.52

Satisfaction with the continuity of the electricity service

Percentages obtained from "very satisfied" and "quite satisfied" responses

	1998	1999	2000	2001	2002	2003	2005	2006	2007
North-West	95.4	95.4	95.1	94.5	95.6	94.1	93.5	94.3	93.7
North-East	94.2	94.8	93.9	95.8	95.0	93.1	93.1	93.5	95.0
Centre	89.5	90.6	89.0	91.9	91.7	89.9	89.4	90.5	92.3
South	85.9	87.5	88.3	88.5	89.2	89.6	90.0	89.7	90.8
Islands	85.0	83.1	85.8	85.9	88.4	86.4	83.5	86.6	88.4
Italy	**90.8**	**91.1**	**91.2**	**92.0**	**92.5**	**91.1**	**90.8**	**91.6**	**92.5**

Source: Istat multi-purpose study

TAB. 2.53

Overall satisfaction including various aspects of the electricity service in Italy

Percentages obtained from "very satisfied" and "quite satisfied" responses

	1998	1999	2000	2001	2002	2003	2005	2006	2007
Continuity	90,8	91,1	91,2	92,0	92,5	91,1	90,8	91,6	92,5
Sags	86,3	87,2	87,1	87,8	86,2	86,1	85,4	86	87,3
Metering frequency	72,8	74,1	73,5	72,5	72,5	70,7	71,5	79,1	83,0
Bill transparency	75,0	76,1	74,3	76,3	72,9	72,8	70,3	70,7	71,8
Information about the service	73,2	74,1	73,4	73,5	71,6	69,5	67,4	69	69,1
Overall satisfaction	**90,3**	**91,2**	**90,6**	**91,7**	**91,5**	**90,3**	**87,7**	**88,6**	**89,2**

Source: Istat multi-purpose study

Among the factors that influence the satisfaction of the customers of the electricity sector, continuity of the service (in case of no interruptions in the supply of electricity to users) plays an important role. Overall satisfaction is however adversely affected by negative views that are connected to commercial aspects of the service (frequency of metering, easy-to-read bills and information on the service); however, these issues are perceived by customers as less important than continuity. In consideration of the liberalisation process, the Authority is called upon to constantly monitor the performance of companies and to strive to achieve constant improvements in customer relations aspects, so as to allow a competitive environment to develop.

Furthermore, in 2007, the Authority carried out a survey on the quality of the electricity service covering domestic and non-domestic customers, to determine the expectations and awareness of quality standards[14]. The survey consisted in a qualitative phase, through the establishment and meeting of focus groups with the participation of domestic customers and interviews with non-domestic customers and in a quantitative phase with interviews with two representative samples of 1,000 domestic and 1,500 non-domestic customers.

The main results of the survey on the quality of the electricity service in 2007

The research had as its main objective to determine the expectations and the satisfaction of families and small businesses, while also trying to understand the real attitude towards liberalisation. Seven Italian families out of ten are aware of the liberalisation of the electricity market which began on 1 July 2007 and, among these, 7% declare themselves to be ready to change supplier over the next few months. Approximately one half of domestic customers claims to be "interested" in new offers, but almost the same percentage expresses some concerns about switching to a new supplier.

The results of the survey show a customer who is generally interested in the opportunities offered by the open market, who is satisfied with the technical quality provided by the service (though certainly not the prices), but not aware of their own rights concerning continuity and efficiency of the supply. For example, 89% of the families declare themselves to be "very" or "quite" satisfied with the technical quality of the electricity service (continuity of supply, number and duration of disconnections), but only 19% of custo-

14 The survey is part of the report analysing the impact of the Code on the regulation concerning the quality of electricity supply, metering and supply service over regulation period 2008-2011 and is available on the Authority's Internet site.

mers are aware of the automatic compensation set by the Authority in the event of failure of the suppliers to comply with the commercial quality standard.

Awareness of the liberalisation

With reference to the electricity market, it should be taken into account that 72% of families are aware that the market has been completely liberalised since July 2007, while 86% of the companies are aware of the fact that the market for non-domestic customers (businesses, users with a VAT code, etc.) has been liberalised since 2004. The users that are inclined to change supplier in the next few months, that is, those that declare that they will certainly or probably not continue to use their current supplier constitute 7% of families and 8% of companies. Approximately one half of the domestic customers declare themselves to be "curious" about offers made by other suppliers, but almost the same percentage shows some concern about switching to a new supplier, mainly due to the fear that this could result in more outages, a higher bill or that the switching process is too complicated (among non-domestic customers, these fears regard a little more than one fourth of the customers).

50% of domestic customers and 63% of non domestic customers are also aware of the fact that the electricity market in Italy is regulated by the Authority; if the Authority created an Internet site on which it would be easy to compare the prices of different electricity suppliers, 33% of domestic customers and 49% of non-domestic customers would certainly consult it.

Technical quality of the service

Insofar as the technical quality of the service is concerned (continuity of supply, number and duration of outages), the level of satisfaction expressed by consumers of electricity is high. Concerning domestic customers, 89% declare themselves to be "very" or "quite" satisfied, compared to 11% of "not very" or "not at all" satisfied, while 93% of non-domestic customers claim that they are "very" or "quite" satisfied, compared to 7% who are unsatisfied. The main cause of the dissatisfaction, though not strictly connected to the quality of the service, are the prices which are considered to be too high. In this regard, among the main reasons for the dissatisfaction with the service are long and short outages (i.e., those that are longer than three minutes and lower than or equal to three minutes), which are considered to be too frequent by 22% of non-domestic and 24% of domestic customers.

Commercial quality and automatic compensation

If we focus on the level of consumer awareness of the automatic compensation mechanism in case of failure to comply with commercial quality standards (maximum times for connection or disconnection, estimates, execution of work, etc.), it should be noted that only 19% of either families or companies is aware, while 43% and 40% declare that they noticed that once a year, together with the bill, some information on the quality of the service is provided. 14% of domestic customers and 18% of non-domestic customers declare that they have contacted their electricity supplier in the last 12 months for information or complaints: the preferred method of contacting the supplier is via telephone, while the number of complaints made via the Internet continues to be very low.

Outages

As part of the survey, the way in which consumers perceive the power outages was also analysed. In particular, the interviewees were asked if in the last 12 months they had experienced any outages (with or without notice, long or short) in their home or business and to what

extent these outages had caused a disturbance. 23% of domestic customers and 16% of companies replied that they had experienced an outage with notice (outages due to planned interventions on the network, which are preceded by notifications to the affected customers); 23% of families and companies declared that they had experienced an outage without notice that was decidedly longer than a few minutes; 46% of domestic customers and 40% of non-domestic customers claimed that they had experienced a short outage without notice that lasted a few minutes; 37% of the companies had experienced micro-outages, that is, outages of less than one second; finally, 7% declared that they had experienced them "often" over the last 12 months, while the remaining 30% claimed they had experienced them sometimes or rarely.

The highest level of disturbance is definitely that which is created by long outages without notice: over 50% of consumers that experienced an outage of this type claims that this caused significant or quite a bit of disturbance. Unlike for long outages, where the disturbance level is quite similar, non-domestic customers are much more sensitive to the disturbances created by outages with notice (+15% compared to domestic customers) and short outages (+14%).

3.

Structure, prices and quality in the gas sector

Supply and demand of natural gas

2007 was another relatively stable year for the natural gas sector: according to the preliminary data released by the Ministry of Economic Development (MSE), last year gas consumption in Italy increased by only 0.5%. The reason for this was a relatively mild winter which resulted in an increase from 84.5 G(m^3) in 2006 to 84.9 G(m^3) in 2007. National production continued to decrease as it has for many years now, to just under the threshold of 10 G(m^3). Thanks to storage, from which approximately a total of 1.3 G(m^3) were withdrawn, also imports from abroad decreased by 4%, dropping to 73.9 from 77.4 G(m^3) in 2006. The sector balance for the previous year, which is traditionally discussed in these pages, shows the data that result from the initial processing of sector operator statements collected through the annual survey of the AEEG on the evolution of regulated markets. However, this year, in contrast to the past, the balance was drawn up by aggregating the data received from the individual companies in the respective corporate groups and it is therefore not strictly comparable to the data of previous years. The groups were also separated according to size, taking into account the overall value of self-consumption plus sales (to the final market as well as to the wholesale market).

According to the declarations of the operators themselves as well (Table 3.1), gas consumption in Italy appears to be stable compared to last year: when added to sales which reached 69.1 G(m^3), self-consumption of 13.2 G(m^3) adds up to an estimated total of 82.3 G(m^3). 8.8 G(m^3) of this consumption was accounted for by national production, while the major part was covered by imports which reached 73.2 G(m^3). A part of the gas derived from storage as well: the variation in the stocks is actually positive at 1.3 G(m^3).

Insofar as supply is concerned, the effort made by smaller groups that produced 0.6 G(m^3) and imported approximately 9 G(m^3) was substantial, even though one third of this involved cross border purchases from Eni Spa. The stocks were used by larger groups, probably also on account of their greater specialisation in sales to large industrial and thermoelectric consumers, while smaller groups seem to have accumulated excess stocks, perhaps in anticipation of a cold winter which did not materialise.

Most domestic sales are carried out by the ENI group, which accounts for almost 40% of the wholesale market on its own. Part of the sales of this group takes place on the basis of the so called gas release. These are sales of gas carried out following investigations by the Antitrust Authority which proved that the company made improper use of its dominant position.

In particular the gas release at the border was decided following measure A329B (Blugas-Snam) of 18 March 2004 for four thermal years up to September 2008, while following measure A371 (Management and use of the re-gasification capacity) of 19 April 2006, Eni has to carry out new sales exclusively by at the Virtual Trading Point (VTP) for two thermal years starting from October 2007.

Compared to last year, the VTP transactions have more than doubled to reach almost one fifth of the total volume provided by operators domestically.

Self-consumption constitutes a very important item for groups that have electricity generation. As can be seen, the figure is substantial for the Eni and Edison Spa groups, as well as for larger sized groups. The value of self-consumption for Enel Spa is nil, since the gas for its own power stations is sold as a normal sale to companies involved in electricity generation within the group, as can be seen from the fact that the sales to the Enel thermoelectricity generation sector constitute almost 70% of the group's final sales. Compared to last year the free market has grown to reach almost three quarter of the total market (last year it was 68.7%).

Smaller sized groups with sales that are lower than 100 M(m^3) concentrate on the final market and in particular the protected market to which they sell 60% of the gas. Indeed, these groups seem to be particularly specialised in selling to domestic customers: the amount of gas sold to this sector for this class of operators is 55% of final sales, compared to amounts that fluctuate from Edison's 8% to 44% for groups selling up to 1 G(m^3). Furthermore, except for the Edison Group, the share of gas for families grows as the total volumes of gas sales decreases, which demonstrate that small operators are not able to remain competitive for customers with more substantial consumption levels. The opposite occurs for electricity production which is provided mainly by larger groups.

TAB. 3.1

Natural gas balance in 2007

G(m^3); the amounts refer to industrial groups

	Eni	Enel	Edison	2-5 Gm^3	1-2 G(m^3)	0,1-1 G(m^3)	< 0,1G(m^3)	Total
Net domestic production	7.9	-	0.7	-	-	0.6	0.0	9.1
Net imports(A)	47.1	9.3	5.9	7.7	2.1	1.1	0.0	73.2
- of which cross-border Eni sales	-	-	1.2	3.0	0.1	-	-	4.4
Changes in stocks	1.3	0.2	0.2	0.0	-0.1	-0.3	0.0	1.3
storages at 31 Dec. 2006	4.3	1.0	0.8	1.0	0.2	0.5	0.0	7.7
storages at 31 Dec. 2007	2.9	0.7	0.6	1.0	0.3	0.8	0.0	6.4
Domestic purchases	2.1	8.5	5.9	12.4	6.0	14.9	4.4	54.2
from Eni	1.0	3.0	3.6	4.9	2.4	5.1	1.2	21.2
- of which border gas release	-	0.1	0.2	0.8	0.2	0.5	0.1	1.8
- of which VTP gas release	0.0	0.0	-	0.6	0.1	0.1	0.0	0.9
from Enel	-	4.8	0.2	0.1	0.1	0.1	0.2	5.5
from Edison	0.0	0.3	0.7	0.1	1.1	1.2	0.5	3.8
from other operators	1.1	0.3	1.4	7.4	2.5	8.4	2.6	23.7
Sales to other operators	22.4	5.7	4.3	8.8	4.4	7.8	0.4	53.8
- of which VTP sales	2.8	0.2	0.5	1.5	1.8	2.1	0.1	9.0
Net transfers	-22.5	-6.5	-4.3	-8.7	-4.2	-7.5	-0.5	-0.1
Consumption and losses(B)	0.4	0.1	0.1	0.1	0.1	0.1	0.0	1.0
Self-consumption	4.7	-	6.1	1.4	0.8	0.2	0.0	13.2
Final sales	30.5	11.3	2.2	9.9	2.9	8.3	3.9	69.1
to the free market	24.2	9.5	1.9	6.9	1.8	4.2	1.6	50.0
to the protected market	6.3	1.9	0.2	3.0	1.2	4.1	2.4	19.1
Final sales by sector	30.5	11.3	2.2	9.9	2.9	8.3	3.9	69.1
electricity generation	11.6	7.8	1.5	1.7	0.7	0.7	0.1	24.2
industry	12.3	1.5	0.4	3.8	0.9	2.4	0.9	22.2
commerce	1.7	0.3	0.0	1.0	0.3	1.5	0.8	5.6
domestic	5.0	1.7	0.2	3.3	1.0	3.7	2.2	17.0

(A) Imports are net of re-exports.

(B) Consumption and losses are estimated based on production, imports, storage and domestic purchases.

Source: AEEG calculations on data provided by the operators.

Market and competition

Structure of the gas offer

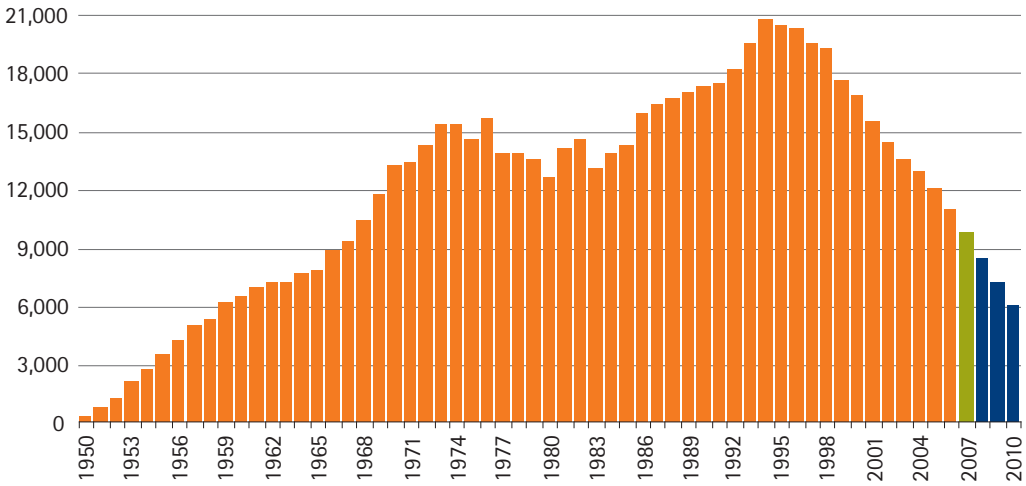
Domestic production

In 2007 domestic production decreased for the umpteenth time to reach levels below the threshold of 10 G(m^3). As forecasted by the Ministry of Economic Development, in 2007 the production stopped at 9,706 M(m^3), down by a further 11.7% compared to 2006. Therefore, the percentage of domestic production on total consumption further decreased to 12.5% from 14% last year (it was 33.6% in 1997).

Figure 3.1 shows the historic domestic production curve and the forecasted production until 2010.

9 companies responded to the annual survey on the electricity and gas sectors carried out by the Authority. These 9 companies produced a total of 9,132 M(m^3) of natural gas. Compared to the preliminary production figure released by the Ministry of Economic Development, the survey had a 94% coverage.

The natural gas production segment in Italy is dominated by the Eni group which with production of 86.2% has the largest share of domestic production that is higher by far than that of



Source: MSE.

FIG. 3.1

Domestic natural gas production since 1950

M(m^3); historic values from 1950 to 2006; preliminary 2007 and forecasts from 2008 to 2010

TAB. 3.2

Production of natural gas in Italy in 2007

COMPANY	M(m^3)	% SHARE
Eni Group	7,875	86.2
Edison Group	674	7.4
Royal Dutch Shell Group	340	3.7
Gas Plus Group	236	2.6
Others	6	0.1
TOTAL	**9,132**	**100.0**
TOTAL (Source: MSE)	**9,706**	**-**

Source: AEEG calculations on data provided by the operators.

its competitors. Indeed, the Edison group is in second place with a 7.4% share and the Royal Dutch Shell group is in third place with a 3.7% share. The Gas Plus group follows behind with a 2.6% share (Table 3.2). The shares of these groups decrease when calculated based on the figures of the domestic production of 9,706 M(m^3) as provided by the Ministry of Economic Development: as a matter of fact, using this last figure Eni drops to 81%, Edison to 6.9%, Shell to 3.5% and Gas Plus to 2.4%. As can be seen, even the most widespread total does not change the significance of the figures that were collected and of the competition situation that they bring to light.

Imports

Despite the reduction in the imported quantities compared to 2006, Italy's dependence on imports remains considerably high. According to the preliminary figures provided by the Ministry of Economic Development, in 2007 73,882 M(m^3) were imported, which is 4.1% less gas than 2006 and 87% of the total gas injected into the grid (Fig. 3.2).

The main sources of supply via natural gas pipelines, both non-EU, are Russia and Algeria. Figure 3.3 shows the breakdown of imported gas volumes based on the country of origin (physical and not contractual).

Once again in 2007, the highest volumes of gas were imported from Algeria, where 33.2% of the totally imported gas comes from. The gas arrives from Algeria mainly via pipeline, at the Mazara del Vallo entry point (22,153 out of 24,584 M(m^3) from Algeria entered via this route) and to a lesser extent by ship in which case the gas is re-gasified at the Panigaglia plant.

The imports from Russia are second (30.7%) and arrive in Italy via the Tarvisio and Gorizia national grid entry points. Libya is the third most important country of origin for gas imported in Italy; in 2007 its share had reached 12.5%, which, for the first time, exceeded the shares of the Netherlands and Norway, taken separately.

The total imports from northern European countries reach 18.4% and originate from the Netherlands (10.9%) and from Norway (7.5%), entering Italy through the Passo Gries (Swiss border) national grid entry point. The remaining 5.2% of the imported gas originates from other countries.

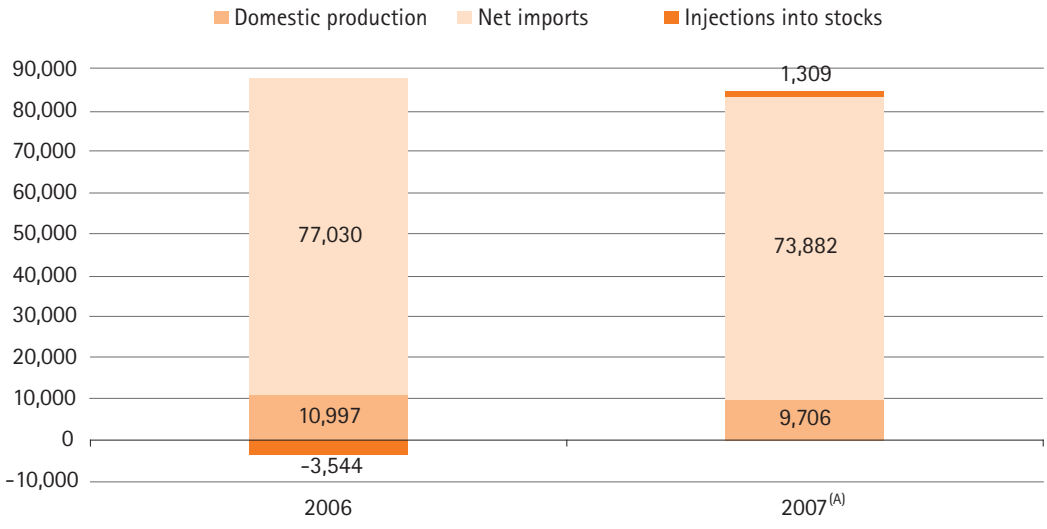
At the re-gasification plant in Panigaglia, in the Liguria region, around 3.2% of import volumes were re-gasified and injected into the grid in 2007.

25 importers[1] responded to the Authority's annual survey and in 2007 they imported a total of 73,317 M(m^3) (Table 3.3). The total figure ensuing from the initial processing of the operator

FIG. 3.2

Grid injections in 2006 and 2007

M(m^3)



(A) The figures for 2007 are preliminary.

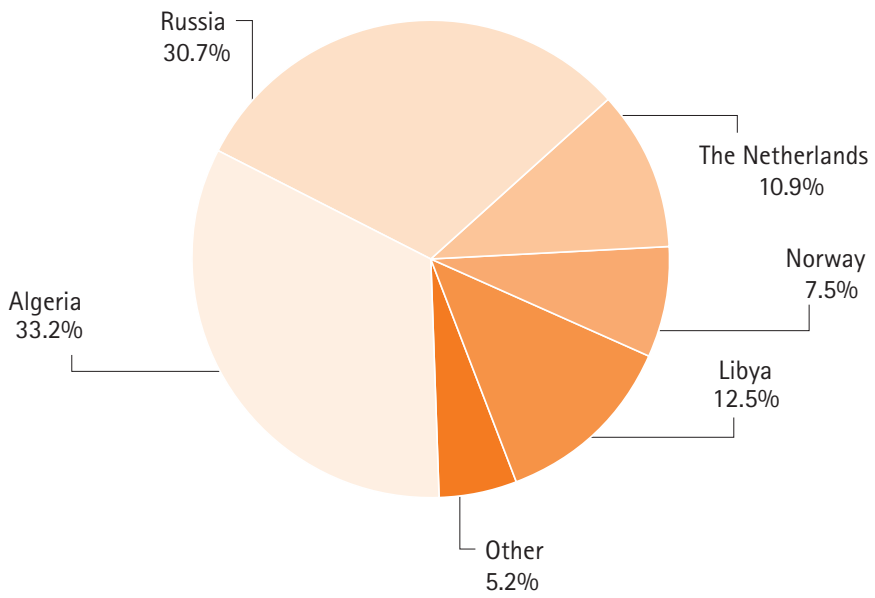
Source: MSE.

1 "Importer" means the entity that owns the gas at the Italian borders insofar as customs obligations are concerned.

FIG. 3.3

2007 gross gas imports based on country of origin

Percentages



Source: Calculations on MSE data.

TAB. 3.3

Gross imports of gas into Italy

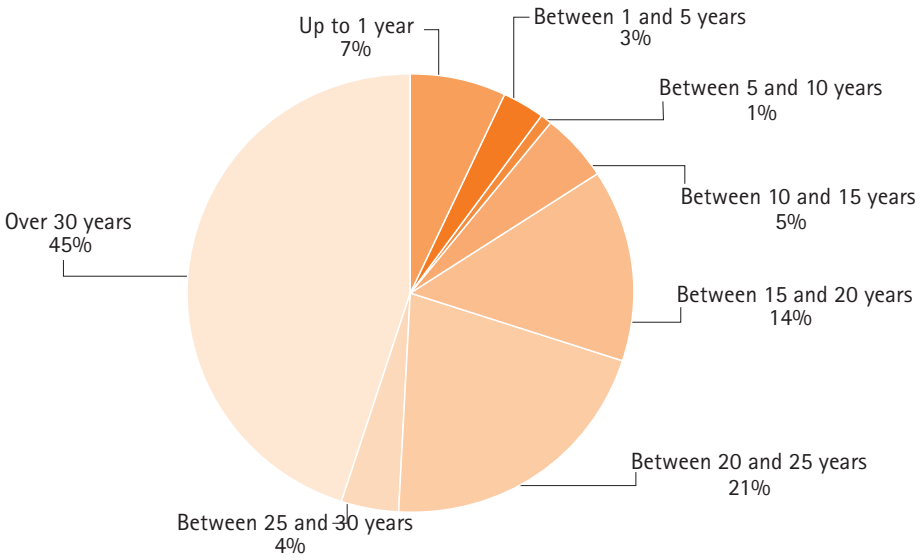
M(m³)

	2007	% SHARE
Eni	47,212	64.4
Enel Trade	9,278	12.7
Edison	5,907	8.1
Plurigas	2,875	3.9
Gaz de France, secondary headquarters	2,004	2.7
Sorgenia	1,614	2.2
ENOI	901	1.2
Dalmine Energie	714	1.0
Asm Brescia	537	0.7
EGL Italia	514	0.7
Hera Trading	350	0.5
Italtrading	251	0.3
Spigas	195	0.3
E.On Ruhrgas	171	0.2
Speia	158	0.2
Enìa energia	147	0.2
AceaElectrabel Trading	129	0.2
Elettrogas	86	0.1
EDF Trading Limited	81	0.1
2B ENERGIA	80	0.1
Gas Plus Italiana	50	0.1
Exergia	41	0.1
Libera Energia	10	0.0
Energetic Source	8	0.0
Enova	4	0.0
TOTAL	**73,317**	**100.0**
TOTAL IMPORTS (Source: MSE)	73,950	-

Source: AEEG calculations on data provided by the operators.

FIG. 3.4

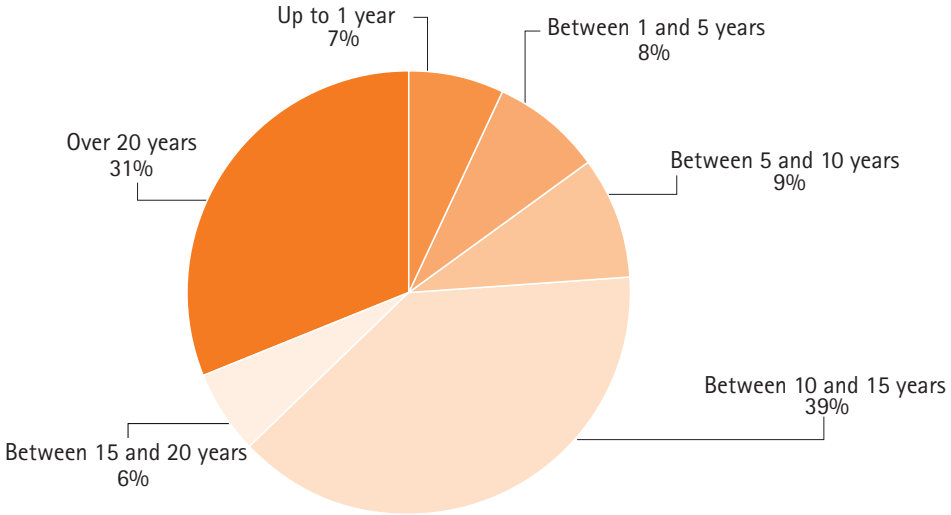
Structure of active contracts (annual and multi-year) in 2007, based on the entire validity period



Source: AEEG calculations on data provided by the operators.

FIG. 3.5

Structure of active contracts (annual and multi-year) in 2007, based on the residual validity period



Source: AEEG calculations on data provided by the operators.

declarations is slightly lower than the total value of the imports (preliminary figure) as provided by the Ministry of Economic Development, which is 73.9 G(m^3).

This occurs because in the Authority's survey a small number of operators provided figures according to a cash criterion rather than the competence criterion that was requested.

In this segment of the supply chain as well, Eni is dominant with a share of 64.4% of the total and quite far ahead of the remaining operators. The imports of Enel Trade Spa amounting to 12.7% of the total are in second place, followed by Edison (8.1%), Plurigas (3.9%), Gaz de France (2.7%) and Sorgenia Spa (2.2%). The first three importers acquire a little over 85%

of the natural gas imported into Italy.
With regard to the analysis of the import contracts that were active in 2007 for the entire (Fig. 3.4) and residual (Fig. 3.5) durations, the data collected by the Authority's annual survey confirms that the importing activity mainly took place through long term take or pay contracts with an overall duration exceeding 30 years.
Indeed, they represent almost one half of the contracts concluded for the purchase of gas from abroad. On the other hand, one quarter of the import activity is carried out through contracts having a total duration between 20 and 30 years and the remaining one quarter involved durations of less than 20 years with an overall importance that decreases in proportion to the shorter duration of the contracts. The spot imports, which take place based on agreements having a duration of no more than one year, have increased compared to last year to reach 7% of the total.
Active contracts in 2007 continue to have long residual durations: a little over 75% will expire in 10 years or more (and among these 31% will have a residual duration of 20 years or more). A little over 24% of the existing contracts will expire within 10 years at the latest.

Import Permits

As set forth by Legislative Decree no. 164 of 23 May 2000, import activity is free as regards imports of gas produced in the European Union countries (in this case the importer must inform the Ministry of Economic Development), while non-EU imports are subject to ministerial authorisation[2].
Insofar as imports of natural gas produced in countries that are not part of the EU, in 2007 13 permits were issued with durations of several years and 30 permits were issued for spot imports with durations not exceeding one year. To these another 4 were added in the initial months of 2008. From 2001 to date the Ministry of Economic Development has issued a total of 67 multi-year permits and 108 permits for imports of less than one year (spot). On the other hand, the Ministry received 38 inter-EU import notifications in 2007 and 6 in the initial months of 2008. Overall, from 2001 to date, the Ministry has received 246 notifications relating to natural gas produced in countries belonging to the European Union.

Development of Import Facilities

The updating of the framework presented last year concerning the pipeline import facilities is set forth in Tables 3.4 and 3.5 which show the expansion of existing facilities and new projects, respectively.
On 1 April and 1 October 2008 two increases in transport capacity amounting to 6.5 G(m^3)/year are expected on the Trans Tunisian Pipeline Company (TTPC) import pipeline which conveys Algerian gas through Tunisia to the national grid entry point at Mazara Del Vallo. The completion of the two expansion phases resulted from the closing of the Antitrust Authority's investigation no. A358 (Eni - Trans Tunisian Pipeline). Insofar as the first 3.2 G(m^3)/year tranche, the capacity was assigned to the following companies: Bridas (now Begas), Edison, Compagnia Italiana del Gas and Worldenergy; for the second tranche for which there were 45 requests, the assignees were: Enel and Sonatrach. Insofar as the quantities assigned for the first tranche, there is also a margin of flexibility for the performance of the contract granted to Edison and Bridas. The import permit was granted to Sonatrading Amsterdam BV in January 2007 and in January 2008 the permit was transferred to Sonatrach Gas Italia Spa. For the expansion of the pipeline the Trans Tunisian Pipeline Company Ltd., (100% Eni) obtained in December 2007 a loan from the European Investment Bank of 185 million Euro.
Insofar as the Trans Austrian Gasleitung (TAG) pipeline, in 2007 there was a 4 G(m^3)/year capacity increase for the build up of the IV contract between Eni and Gazprom. The first tranche is expected to be operational as from 1 October 2008 for 3.2 G(m^3)/year of the pipeline's total 6.5, the primary capacity of which was allocated in 2006 to approximately 150 operators, according to the terms that were unilaterally established by the transporter. To date, this figure has decreased considerably due to the transfer of capacity.

2 It should be taken into account that the figures relating to the applications for import permits do not indicate the actual presence of operators in the process of importing gas but rather the completion of the administrative formalities that precede the activity of importing natural gas (provisions of legislative decree no. 164/00).

TAB. 3.4

Expansion of existing natural gas pipelines

PROJECT	COMPANY	ENTRY INTO ITALY	NOMINAL CAPACITY G(m^3)/year	LENGTH Km	COMPLETION OF FEASIBILITY STUDY	FORECAST START YEAR	STATUS
TTPC (Tunisia-Italy)	Trans Tunisian Pipeline Company Ltd.	Mazara del Vallo	3.2	372	2002	2008 (April)	Currently being constructed; capacity assigned to 4 operators (Edison, CIG, Bridas, World Energy); Eni has obtained from the EIB a loan of 185 million Euro for the expansion.
TTPC (Tunisia-Italy)	Trans Tunisian Pipeline Company Ltd. (Eni 100%)	Mazara del Vallo	3.3	372	2002	2008 (October)	Second tranche of the expansion
TAG Trans Austria Gasleitung (Austria-Italy)	Trans Austria Gasleitung GmbH (Eni International B.V. 89%; OMV Gas GmbH 11%)	Tarvisio	3.3	380	2002	2008	Currently being constructed; capacity assigned to 146 operators for approximately 20 M(m^3)/year each.
TAG Trans Austria Gasleitung (Austria-Italy)	Trans Austria Gasleitung GmbH (Eni International B.V. 89%; OMV Gas GmbH 11%)	Tarvisio	3.2	380	2002	2009	Second tranche of the expansion within 2009; under construction.
Green Stream (Libya-Italy)	Greenstream B.V. (Eni 75%; NOC 25%)	Gela	3	---	---	2012	In October 2007 a strategic agreement was concluded between ENI and NOC; the agreement was ratified in February 2008 by the Libyan government.

Source: MSE.

It seems the second tranche will be postponed to October 2009, as in 2007 it was not possible to begin the works for the construction of a compressor station in Weitendorf, Austria, which was essential for the expansion, due to failure to obtain the necessary permits. The Municipality of Weitendorf finally approved the change in the use of the location to be used for construction of the compressor station in December of last year, thereby making it possible to proceed with authorisations at the regional level and to complete the environmental impact procedure. The entire procedure, including the expiration of any petitions, is expected to be concluded in April 2008.

With regard to the expansion of existing facilities, worthy of notice is also the Green Stream project, which is the pipeli-

ne importing Libyan gas into Italy, through the Gela national grid entry point. The Libyan National Oil Company (NOC) and Eni, both of which are owners of the pipeline, are considering a project that could double the export capacity of the Libyan Mellitah hub from 8 to 16 G(m^3)/year which could also be obtained through repowering of 3 G(m^3)/year of the Green Stream and the construction of a new LNG liquefaction terminal of 5 G(m^3)/year. A strategic agreement on this project was concluded in October 2007 between the two companies. The agreement was ratified by the Libyan government last February.

Insofar as the new pipelines in the planning stage that are of potential interest to Italy, worthy of notice are the announcements regarding a new pipeline that would connect Germany and Italy through Austria, which is the Tauern Gas Leitung promoted by E.On Ruhrgas. The gas pipeline, which could be deployed in 2014, would belong to E.On Ruhrgas (45%), Energie AG Oberösterreich and Salzburg AG (15%), Rohöl-Aufsuchungs Aktiengesellschaft (RAG) (10%) and Kelag and Tigas with an equal portion of the remaining 15%. Except for E.On Ruhrgas and Salzburg AG, the rest are operators of local Austrian networks.

The objective is to bring Italian gas and/or gas from a potential LNG terminal in Croatia to central Europe and mainly Germany (even if the gas pipeline will be bidirectional for possible imports into Italy).

The project will be completed with the scheduled doubling of the storage capacity from 1.2 to 2.4 G(m^3) of the Haidach reservoir (in Austria) which belongs to RAG, Gazprom Export and Wingas.

TAB. 3.5

New natural gas pipeline projects

PROJECT	COMPANY	ENTRY INTO ITALY	NOMINAL CAPACITY G(m^3)/year	LENGTH Km	COMPLETION OF FEASIBILITY STUDY	FORECAST START YEAR	STATUS
TAP Trans Adriatic Pipeline (Greece-Albania-Italy)	EGL; Statoil Hydro (quote paritetiche)	Brindisi	10/20	520	2006	----	Supply contract concluded with Iran for 5.5 G(m^3) for 25 years; final decision on the investment awaited for the second half of 2009.
IGI Interconnector Italy-Greece	DEPA; Edison (quote paritetiche)	Otranto	8/10	212	2005	2012	Exemption of 100% granted for 25 years under Ratification obtained from the European commission.
Interconnectirol (Italy-Austria)	SEL (Provincia di Bolzano 93,9%)	Bressanone	1,3	48	In corso	2009	Funding provided as part of the TEN regulation.
GALSI (Algeria-Italy)	GALSI (Sonatrach 41.6%; Edison 20.8%; Enel 15.6%; Sfirs 11.6%; Hera Trading 10.4%)	Porto Botte (Carbonia-Iglesias)	8	940	2005	2012	Intergovernmental concluded between Italy and Algeria; final decision on the investment awaited for the second half of 2009.

Source: MSE.

Gas facilities

Transport

The ownership structures of gas transport have not changed significantly since last year. The gas transport network is divided into a national and a regional network, handled by a limited number of companies: 2 for the national network and 7 for the regional network. The main transport operator is Snam Rete Gas Spa which owns 31,081 km of network over the approximately 32,900 km constituting the Italian gas transport system. The second operator is Società Gasdotti Italia Spa, which manages 1,263 km of networks (of which 120 are on the national grid). There are also 5 smaller operators (Retragas Srl, Metanodotto Alpino Srl, Carbotrade Spa, Consorzio della Media Valtellina per il Trasporto del Gas, Netenergy Service Srl) which own small sections of the regional network.

Table 3.6 shows the results of the allocation of firm transport capacity at the beginning of the 2007-2008 thermal year. Compared to the capacity[3] made available in the previous thermal year, in thermal year 2007-2008 there was a significant change in the allocable capacity at the Mazara del Vallo point, where there was an increase of 4.9M(m^3)/day following the deployment of the Mazara-Menfi and Montalbano-Messina gas pipelines and the repowering of the Enna station. The transport capacity relating to other entry points are in line with the values published last year. The Panigaglia entry point, which has a daily available capacity of 13 M(m^3)/day, is not indicated in the table. According to the current procedures, the entry point is assigned to the Panigaglia terminal operator, GNL Italia Spa, which injects gas into the grid for its re-gasification users. This is in order to allow for an efficient use of the transport capacity at the interconnection with the terminal.

Results relating to available capacity for the 2007-2008 thermal year show how almost 83% of the continual transport capacity at the entry points in the national network interconnected with abroad via natural gas pipeline was allocated to 50 entities. Considering the additional capacity allocated once the thermal year is underway, the allocated capacity, compared to the allocable capacity, increases by about 10 percentage points. In the previous thermal year, 2006-2007, 29 entities had requested continuous capacity while 4 had requested interruptible capacity at the entry points of the national grid and the requested capacities were satisfied in full.

TAB. 3.6

Continual transport capacity in Italy

M(m^3) standard per day, unless otherwise indicated; 2007-2008 thermal year

ENTRY POINT IN THE NATIONAL GRID	ALLOCABLE	ALLOCATED	AVAILABLE	SATURATION (%)
Passo Gries	58.0	52.8	5.2	91.0%
Tarvisio	100.9	84.9	16.0	84.1%
Mazara del Vallo	90.0(A)	69.2(A)	20.8	76.9%
Gorizia(B)	2.0	0.0	2.0	0.0%
Gela	25.6	21.9	3.7	85.5%
TOTAL	276.5	228.8	47.7	82.7%

(A) Maximum allocable and allocated capacity starting from June 2008.

(B) It should be kept in mind that imports at the Gorizia point are a "virtual" transaction, resulting from lower physical export volumes

Source: AEEG calculations on Snam Rete Gas data.

3 The transport capacity values are calculated using hydraulic simulations of the transport network that take into account the withdrawal scenarios for the year in question. The transport capacity of each entry point is determined by considering the most onerous transport scenario (the summer one for the Mazara del Vallo, Tarvisio and Gorizia entry points and the winter one for the Passo Gries entry point). In particular, Snam Rete Gas has estimated the maximum quantities that can be injected into the grid from each entry point without the minimum pressure limitations being exceeded at the various points in the system and without exceeding the maximum performances of the plants. This is to ensure the availability of the transport service at the requested level for the entire thermal year.

Multi-year allocations

Table 3.7 summarises the multi-year capacities allocated at the entry points in the national grid that are interconnected with abroad via natural gas pipeline. As provided by Authority resolutions, this year capacities for the next five years were assigned, starting from 2009-2010. The capacities were assigned to 23 entities with multi-year import contracts. The table also includes the 2008-2009 thermal year, with the multi-year capacities allocated last year.

TAB. 3.7

Allocations to entry points in the national network interconnected with abroad via natural gas pipelines for the thermal years from 2008-2009 to 2013-2014

M(m^3) standard per day

	ENTRY POINTS				
	TARVISIO	MAZARA DEL VALLO	PASSO GRIES	GELA	GORIZIA
2008-2009 THERMAL YEAR					
Allocable capacity	100.9	99.0	59.4	25.6	2.0
Allocated capacity	87.5	77.5	52.9	21.9	0.0
Available capacity	13.4	21.5	6.5	3.7	2.0
2009-2010 THERMAL YEAR					
Allocable capacity	100.9	99.0	59.4	25.6	2.0
Allocated capacity	87.5	77.5	52.2	21.9	0.0
Available capacity	13.4	21.5	7.2	3.7	2.0
2010-2011 THERMAL YEAR					
Allocable capacity	100.9	99.0	59.4	25.6	2.0
Allocated capacity	87.4	77.5	52.2	21.9	0.0
Available capacity	13.5	21.5	7.2	3.7	2.0
2011-2012 THERMAL YEAR					
Allocable capacity	100.9	99.0	59.4	25.6	2.0
Allocated capacity	87.1	77.5	50.8	21.9	0.0
Available capacity	13.8	21.5	8.6	3.7	2.0
2012-2013 THERMAL YEAR					
Allocable capacity	100.9	99.0	59.4	25.6	2.0
Allocated capacity	87.1	76.4	48.8	21.9	0.0
Available capacity	13.8	22.6	10.6	3.7	2.0
2013-2014 THERMAL YEAR					
Allocable capacity	100.9	99.0	59.4	25.6	2.0
Allocated capacity	0.0	0.0	0.0	0.0	0.0
Available capacity	100.9	99.0	59.4	25.6	2.0

Source: Snam Rete Gas.

Storage

For the 2007-2008 thermal year, the storage system has a total availability for conferrals (in terms of space for working gas) of approximately 13.6 G(m^3). (Table 3.8).

The portion dedicated to strategic storage is approximately 5.1 G(m^3), as established by the Ministry of Economic Development (in implementation of the provisions set forth in art. 3, par. 4 of the decree of the Ministry of Industry, Commerce and Crafts of 9 May 2001 and art. 2 of the decree issued by the Ministry of Productive Activities on 26 September 2001) based on the import schedules from non-EU countries as these were communicated by the users, the status of import facilities and the progress of the phases involving the injection and distribution from storage during the previous winters. Availability for "minerario" storage (storage available for producers in Italy) services, for modulation and operational balancing services of the transport network is 8.5 G(m^3).

The peakdaily gas availability, as determined at the end of the distribution of gas for modulation and "minerario" services, as

provided by the provisions introduced by resolution no. 50 of 3 March 2006, amounts to approximately 152 M(m^3) standard.
The results of the conferral by the storage companies for the 2007-2008 thermal year are indicated in Table 3.9. In terms of space for working gas, the capacity allocated by Stogit Spa on 1 April 2007 amounted to approximately 13.5 G(m^3), which are equivalent to approximately 533.5 million GJ, given a GCV of 39.4 MJ/m3 standard. Compared to thermal year 2006-2007, the space made available has increased by approximately 0.4 G(m^3).
During the injection campaign certain authorisation problems emerged in connection with the overpressure of the Settala field which caused the available capacity to be reduced by 350 M(m3) overall; therefore the availability at the beginning of October amounted to approximately 13.2 G(m^3).
Of the 13.2 billion made available by Stogit, 8 G(m^3) (equal to approximately 315 million GJ) were reserved for modulation and "minerario" services, 0.11 G(m^3) (approximately 4.3 million GJ) were reserved for the operational balancing of the transport network and 5.1 G(m^3) for the strategic reserve.
Overall, in the 2007-2008 thermal year, Stogit concluded contracts for storage services with 36 operators: 34 use the modulation service (of which 5 also use the "minerario" service and 7 the strategic storage service), and 2 use the transport company operational balancing service. Total volumes handled (physical handling) from the global storages of Stogit amounted to approximately 8.5 G(m^3) in March 2007, of which 5.3 were distributed and 3.1 were injected.
The capacities in terms of working gas that Edison Stoccaggio Spa made available during the 2007-2008 thermal year amount to roughly 0.4 G(m^3). In total, there were 10 users of the Edison storage system: 9 use the modulation service (of which 1 also uses the strategic storage service), and 1 uses the transport company balancing service.

TAB. 3.8

Storage availability in Italy

	M(GJ) PER DAY FOR THE PEAK	M(m^3) STANDARD(A)
Space for strategic storage	200.9	5,100
Space for modulation, "minerario" storage and operational balancing services of the transport network	333.7	8,482
Daily peak deliverability capacity for "minerario" storage, modulation and operational balancing of the transport network at the end of the supply season	6.0	152.1

(A) Determined according to the reference gross calorific value (GCV) of the Edison Stoccaggio and Stogit systems, of 38.1 and 39.4 MJ/m^3 respectively.

Source: AEEG calculations on Edison Stoccaggio e Stogit data.

TAB. 3.9

Allocations of storage capacity

Space for modulation, "minerario" storage and operational balancing services of the transport companies

STORAGE COMPANIES	2006-2007 THERMAL YEAR NUMBER OF OPERATORS	2006-2007 THERMAL YEAR CAPACITY (GJ)(A)	2007-2008 THERMAL YEAR NUMBER OF OPERATORS	2007-2008 THERMAL YEAR CAPACITY (GJ)(A)
Stogit	35	315,226,000	36	319,533,000
Edison Stoccaggio	9	12,102,934	10	14,172,000

(A) For the Stogit system the reference gross calorific value (GCV) is 39.4 MJ/m3 standard, while for the Edison system it is 38.1 MJ/m^3 standard.

Source: AEEG calculations on Edison Stoccaggio and Stogit data.

Requests for new storage concessions

Table 3.10 summarises the requests and the current status of the concessions for new storage sites from the Ministry of Economic Development, which concern depleted gas fields to be converted into storage and aquifers in deep lithologic units. Compared to last year's framework, the new items are the Poggiofiorito field and the project to convert 5 fields (3 in Lombardy and 2 in Marche) into storage. For the Poggiofiorito field which is located in the Abruzzi region, in the province of Teramo, Gas Plus Storage Srl has started a fact-finding investigation to convert a pre-existing field which it owned the exploitation concession for, into storage. For five new projects, located in Bagnolo Mella (Brescia), Piadena Est (Cremona), Romanengo (between Bergamo and Cremona), Rapagnano and San Benedetto (both in the province of Ascoli Piceno) the authorisation procedure is in its initial stages.

TAB. 3.10

Storage concession petitions as at March 2008

PROJECT	COMPANY	WORKING GAS M(m^3)	PEAK M(m^3)/day	FORECAST START YEAR	STATUS
Alfonsine (RA)	Stogit	1,550	10.0	n.d.	Permit granted; technical and environmental difficulties encountered upon launching.
Bordolano (CR-BG)	Stogit	1,440	12.5/20	2010	Permit granted; project for the construction of the compressor and processing station awaiting environmental impact assessment (EIA).
Cornegliano (LO)	Ital Gas Storage	891	16.5	n.d.	Under investigation; EIA applicationsubmitted.
San Potito – Cotignola (RA)	Edison Stoccaggio	8.0	915	2012	Under investigation; under construction.
Cugno Le Macine – Serra Pizzuta (MT)	Geogastock	742	6.6	n.d.	EIA rapplicationsubmitted.
Rivara (RA) (in deep acquifer)	Indipendent Gas Management	3,000	32	n.d.	Under investigation; EIA application submitted.
Sinarca (CB)	Gas Plus Storage (60%), Edison Stoccaggio (40%)	324	3.3	n.d.	Under investigation; EIA applicationsubmitted.
Poggiofiorito (TE)	Gas Plus Storage	150	1.7	n.d.	Under investigation.
Bagnolo Mella (BS)					Under investigation.
Piadena Est (CR)					Under investigation.
Romanengo (CR-BG)					Under investigation.
Rapagnano (AP)					Under investigation.
San Benedetto (AP)					Under investigation.

Source: MSE.

LNG terminals

Table 3.11 summarises the status of the projects to build new terminals on the Italian coasts.
Compared to last year's framework, the new projects are:

- a project for a new onshore terminal in Lazio, in Civitavecchia, presented in February 2007 by Gavio. The project is still being assessed by the Ministry of Economic Development;
- the repowering of Eni's Panigaglia terminal, which is the only one currently operative in Italy that would bring capacity from the current 3.5 to 8 G(m^3); presented in July 2007 by GNL Italia Spa; local community opposition already emerged.

TAB. 3.11

Status of new LNG terminal projects as at 31 March 2007

Projects, proposing companies, re-gasification capacity in G(m^3)/year and permit status

PROJECT	COMPANY	CAPACITY	FORECAST BEGINNING OF THE YEAR	STATUS
Porto Levante *offshore* (RO)	Adriatic LNG Terminal (Edison 10%, Exxon Mobil 45%, Qatar Terminal Limited 45%)	8	2009	Third party access exemption issued on 26.11.2004 for 80% of the capacity for 25 years, pursuant to law no. 239/04 and Directive 55/03/EC; approval of the European Commission granted. Construction of 60% of the offshore terminal in Spain. The investigations for occupation of the areas by the Cavarzere-Minerbio pipeline are underway.
Brindisi	Brindisi LNG (100% British Gas Italia)	8	n.d.	Third party access exemption issued on 06.04.2005 for 80% of the capacity for 20 years, pursuant to law no. 239/04 and Directive 55/03/EC; approval of the European Commission granted. In March 2007, the validity of the permit issued in 2003 was suspended; appeal to the regional administrative court by the municipality in 2007 for annulment of the construction permits
Toscana *offshore* (LI)	OLT Offshore LNG Terminal (Endesa Italia – Amga – Asa 51%, OLT Energy Toscana 49%)	3,75	2009	Authorisation issued on 23.02.2006. Total TPA exemption requested for 20 years pursuant to law no. 239/04; the application is under investigation. Appeals to the regional administrative court against the terminal are still pending. In March 2008, Saipem was awarded the contract for the construction of the terminal.
Rosignano (LI)	Edison – BP – Solway	8	n.d.	Environmental impact assessment underway. In October 2006, the project was granted the go ahead insofar as the preliminary feasibility for the plant. The authorisation procedure is currently suspended.
Gioia Tauro (RC)	LNG MedGas Terminal (49% CrossGas; 25,5% Sorgenia; 25,5% Iride)	12	2012	Environmental impact assessment underway. In March 2007 Sorgenia and Iride acquired equal shares in the company totaling 51%. In August 2007 the go ahead was granted with certain conditions attached.
Taranto	Gas Natural Internacional	8	n.d.	Environmental impact assessment currently suspended. Agreement with Snam Rete Gas for the construction of the gas pipeline for connection to the national network, once the project receives authorisation.
Zaule (TS)	Gas Natural Internacional	8	n.d.	Authorisation procedure carried out by the Friuli Venezia Giulia region Environmental impact assessmentunderway. The go ahead has been granted for feasibility. Agreement with Snam Rete Gas for the construction of the gas pipeline for connection to the national grid, once the project receives authorisation.
Trieste *offshore* (TS)	Endesa Italia	8	n.d.	The Friuli Venezia Giulia region appears willing to grant authorisation but for one plant only (see the previous project). In August 2007, Endesa was asked to identify a new location; in October 2007, the company provided clarifications on the location it selected.
Porto Empedocle (AG)	Nuove Energie (Enel 99%)	8	2010	The authorisation procedure is being carried out by the Sicily region. Go ahead for feasibility issued in June 2005. Environmental impact assessment underway. Favourable opinion of some local authorities. A variation to the project was presented in order to make it compliant with the port development plan.
Rada di Augusta (SR)	ERG Power&Gas – Shell Energy Italia	fase 1: 8 fase 2: 12	n.d.	The authorisation procedure is being carried out by the Sicily region. Environmental impact assessment under way. Go ahead for feasibility issued in July 2006 for 8 billion re-gasification capacity. Two municipalities have approved an opposing motion with suspension request to the Region.
Ravenna (RA)	Atlas Ing. (Gruppo Belleli)	8	n.d.	New offshore facility being studied by MSE.
Senigallia (AN)	Gaz de France	5	n.d.	New offshore facility being studied by MSE.
Civitavecchia	Gavio	8	n.d.	New offshore facility being studied by MSE.
Portovenere (SP)	GNL Italia (Eni 100%)	4,5	2014	Repowering of Eni's Panigaglia terminal, which is the only one currently operative in Italy that would bring capacity from the current 3.5 to 8 G(m3). VIA procedure launched in July 2007. The municipality of Portovenere has expressed an opposing opinion.

Source: MSE.

Distribution networks

A section of the annual survey on the evolution of the electricity and natural gas sectors is dedicated to an analysis of natural gas distribution. It therefore includes detailed information concerning the gas volumes distributed through secondary networks for delivery to consumers of the residential and service sectors, and to small, urban businesses. The figures do not include the gas volumes used by industrial or thermoelectric customers directly connected to the transport networks, nor do they include amounts of gas other than natural gas distributed through city networks (to which a paragraph is devoted in this chapter). Furthermore, as usual, distributors have been requested to provide preliminary data relating to the year preceding the survey – 2007 for this year – and final figures on the year before the year preceding the survey – this being 2006.

In the section on gas distribution, this year the survey was extended to the municipal level. As it will be seen further on, analysis of data disaggregated at the municipal level which is still to be considered as preliminary, has allowed us to study in greater detail certain aspects of the concessions and assignment methods on the basis of which the service is provided. 296 distributors responded to the survey, 37 of which stated that they were inactive in 2006 or 2007 (Table 3.12). For long time now the number of companies operating in the gas distribution segment has been decreasing considerably 10 years ago there were over 800 operators and more than 500 in 2004. In Italy, the gas distribution segment continues to be very fragmented. Of the 275 operators active in 2007, only 7 were classified as very large (that is, with more than a half million customers supplied); there were 25 operators with between 100,000 and 500,000 customers and 30 companies were medium sized with between 50,000 and 100,000 customers. Less than one eighth of the companies operating in Italian gas distribution exceeds the threshold of 100,000 customers, for which the Authority requires functional separation pursuant to its unbundling regulation, and for almost one third of the companies involved in gas distribution the obligation to keep separate accounting records does not even apply, as there are 87 operators serving less than 5,000 customers. An analysis of the volumes distributed by active businesses shows that the leading 32 medium or large sized companies cover 75% of the total volumes, while the remaining 243 small or very small sized companies distribute only one fourth of the total volumes.

Of the 296 companies that responded to the survey, a little more than half (154 companies) declared that they were affiliated companies[4] of a supplier.

TAB. 3.12

Distributor activity in the 2006–2007 Period

OPERATORS[A]	2006	2007
NUMBER	296	296
Very large	7	7
Large	21	25
Medium	30	30
Small	130	126
Very small	92	87
Inactive	16	21
DISTRIBUTED VOLUME (billions of m3)	34,584	31,398
Very large	18,194	15,303
Large	7,742	8,282
Medium	3,690	3,589
Small	4,520	3,864
Very small	439	359
Inactive	0	0

A) Very large: operators with more than 500,000 customers.
Large: Operators with between 100,000 and 500,000 customers.
Medium: Operators with between 50,000 and 100,000 customers.
Small: Operators with between 5,000 and 50,000 customers.
Very small: operators with less than 5,000 customers.

Source: AEEG calculations on data provided by the operators.

4 Two companies are considered to be affiliated when they belong to the same group or there are cross investments between them.

Table 3.13 shows the regional distribution over the last two years. In 2006, a total of approximately 34.6 G(m^3) of natural gas was distributed (final figures), which dropped to 31.4 in 2007 (preliminary figures). This distribution shows that there is high variability by region, with 4 regions (Piedmont, Lombardy, Veneto and Emilia Romagna) absorbing more than 10% each and over 64% of the total gas injected into the secondary networks. Two regions, Tuscany and Lazio, have a share in excess of 5%, 9 regions have a share ranging from 1.5% to 3% and the remaining regions have shares of less than 1%. The traditional geographic breakdown between North, Centre and South and the Islands shows the absolute predominance of the North which, with a share of 71%, grossly exceeds the 20% of Central Italy and the 9% of the South and the Islands. Furthermore, the drop of 9% in the volumes distributed compared to last year affected to a lesser extent the North where volumes dropped by 7%, while in Central and Southern Italy/Islands volumes dropped by 13% and 14% respectively. Comparing the figures for 2007 and 2006 and considering also those of more recent years (see the Annual Reports of previous years), it should be noted how the regional diversification of gas distribution has remained rather stable over time. This breakdown reflects the different diffusion of gas networks, the climatic differences in the various areas of the country, and a different distribution of the medium-small production activities, which are typically those served by secondary distribution networks. Table 3.14 provides a breakdown for 2007 of the distribution activity and lists, by region, the number of operators, the number of customers (metering units) and the municipalities served. The table also shows the number of municipalities that belong to each regions as derived from the Istat list of Italian municipalities as at 1 January 2008 which was also used to calculate the degree of coverage of the distribution service, as the ratio between the number of municipalities served and the number of municipalities in the region.

The table shows 396 operators serving 20.7 million customers in 6,300 municipalities. The total number of distributors that appears in Table 3.14 is naturally higher than the number of respondents to the survey, as each distributor is counted as many times as the number of regions the distributor operates in. The degree of coverage exceeds 70% in 15 regions out of 19 in which the natural gas distribution activity is carried out (Sardinia is not connected). Insofar as the network infrastruc-

TAB. 3.13

Natural gas distributed by region

Volumes of natural gas distributed on secondary networks to the residential, service, industrial and thermoelectric sectors

REGIONS	2006		2007		CHANGE BETWEEN
	VOLUMES M(m^3)	% SHARE	VOLUMES M(m^3)	% SHARE	2007-2006
Val d'Aosta	50.7	0.1	40.0	0.1	-21.2
Piedmont	4,147.1	12.0	3,673.9	11.7	-11.4
Liguria	959.5	2.8	845.1	2.7	-11.9
Lombardy	8,620.5	24.8	8,337.0	26.6	-3.3
Trentino Alto Adige	602.8	1.7	570.4	1.8	-5.4
Veneto	4,255.2	12.3	3,884.3	12.4	-8.7
Friuli Venezia Giulia	845.2	2.4	702.2	2.2	-16.9
Emilia Romagna	4,646.9	13.5	4,287.7	13.7	-7.7
Tuscany	2,527.2	7.3	2,132.6	6.8	-15.6
Lazio	2,301.3	6.7	1,988.5	6.3	-13.6
Marche	1,025.8	3.0	899.9	2.9	-12.3
Umbria	568.2	1.6	507.9	1.6	-10.6
Abruzzi	744.4	2.2	685.7	2.2	-7.9
Molise	136.1	0.4	129.2	0.4	-5.1
Campania	1,030.8	3.0	850.1	2.7	-17.5
Apulia	1,024.7	3.0	893.7	2.8	-12.8
Basilicata	218.2	0.6	182.2	0.6	-16.5
Calabria	274.0	0.8	233.0	0.7	-15.0
Sicily	605.7	1.8	554.2	1.8	-8.5
ITALY	**34,584.3**	**100.0**	**31,397.7**	**100.0**	**-9.2**

Source: AEEG calculations on data provided by the operators.

TAB. 3.14

Breakdown of the distribution activity by region in 2007

REGION	NUMBER OF OPERATORS	CUSTOMERS (THOUSANDS)	MUNICIPALITIES SERVED	NUMBER OF MUNICIPALITIES AS AT 1/1/2008	DEGREE OF COVERAGE(A)
Val d'Aosta	1	18	24	74	32.4
Piedmont	30	1,928	960	1,206	79.6
Liguria	9	838	152	235	64.7
Lombardy	77	4,475	1,437	1,546	92.9
Trentino Alto Adige	14	236	185	339	54.6
Veneto	34	1,941	580	581	99.8
Friuli Venezia Giulia	11	446	168	219	76.7
Emilia Romagna	32	2,069	331	341	97.1
Tuscany	16	1,460	248	287	86.4
Lazio	15	2,094	301	378	79.6
Marche	29	613	245	246	99.6
Umbria	11	319	89	92	96.7
Abruzzi	30	547	226	305	74.1
Molise	12	110	123	136	90.4
Campania	20	1,180	320	551	58.1
Apulia	13	1,042	235	258	91.1
Basilicata	14	180	116	131	88.5
Calabria	11	353	261	409	63.8
Sicily	17	851	301	390	77.2
ITALY	**396**	**20,699**	**6,301**	**7,724**	**81.6**

(A) The degree of coverage of the distribution service is calculated as the percentage ratio between the municipalities served and the number of municipalities in the region, as listed in the Istat register of Italian municipalities as at 1 January 2008. This can be higher than 100% as some municipalities are served by more than one operator: in this case, the municipality is counted as many times as the operators that operate within it.

Source: AEEG calculations on data provided by the operators.

TAB. 3.15

Extensions of the networks and their ownership in 2007

REGION	GRID EXTENSION			SHARE OWNED IN %	
	HIGH PRESSURE	MEDIUM PRESSURE	LOW PRESSURE	COMPANY	MUNICIPALITY
Val d'Aosta	0.3	165.5	191.7	99.0	0.6
Piedmont	107.7	11,295.2	10,871.4	89.6	2.0
Liguria	57.4	1,874.8	4,114.8	99.9	0.1
Lombardy	98.2	13,561.2	30,224.8	73.8	14.7
Trentino Alto Adige	185.0	1,975.9	1,948.2	90.5	6.5
Veneto	225.2	10,723.8	17,466.4	81.1	12.1
Friuli Venezia Giulia	5.1	1,890.2	4,469.8	74.2	25.5
Emilia Romagna	372.2	15,615.7	11,929.2	67.8	10.3
Tuscany	201.1	5,723.8	8,914.0	76.8	9.0
Lazio	178.7	6,445.1	7,340.1	98.3	1.7
Marche	31.5	4,070.0	4,297.1	45.8	25.9
Umbria	105.1	1,734.2	3,062.7	62.5	37.4
Abruzzi	1.4	3,850.1	4,435.3	81.5	18.5
Molise	5.2	967.3	981.9	85.7	14.0
Campania	17.4	3,276.2	7,157.8	85.6	12.1
Apulia	89.6	2,916.7	7,383.9	94.6	5.1
Basilicata	0.8	763.4	1,508.0	76.6	22.7
Calabria	35.7	2,013.3	3,242.5	90.1	9.9
Sicily	62.4	3,505.9	7,279.9	96.9	3.1
Not in operation	6.9	179.5	174.6	-	-
ITALY	**1,787.0**	**92,548.0**	**136,994.2**	**80.2**	**11.1**

Source: AEEG calculations on data provided by the operators.

ture, distributors in Italy manage a little less than 231,000 km of network, 40% of which is medium pressure while almost 60% is low pressure. As can be seen in Table 3.15, the networks are mainly located in the North (139,400 km compared to 52,300 in Central Italy and 39,300 in the South and the Islands) and, on average, they belong to the distributors themselves (80%) and the municipalities (11%).

The ownership of the networks may belong to the company, the municipality or other entities (thus the total of the percentages in the table many not reach 100), however this varies considerably from region to region, with areas such as Liguria in which they belong to the distributor almost in their entirety. A preliminary analysis of the data provided by the operators with municipal disaggregation shows that the distribution of gas in Italy takes place through approximately 6,300 concessions(Table 3.16). The maintype of assignment is the direct assignment: in approximately 58% of the cases, this is how the municipalities have allocated the management of the service to distribution companies. On the other hand, in approximately 15% of the cases, the assignment of the service was granted directly to companies with public sector shareholders; in 19% of the cases this has taken place through calls for tenders prior to the issuing of legislative decree no. 164 of 23 May 2000 (this category also included competitive comparisons with multiple private negotiations) which implemented the first European directive on liberalisation of the gas market (the so-called "Letta decree") and in 4% of the cases through a public procedure. As can be seen in the table, in many regions of the South, the municipalities have taken advantage of the benefits provided in order to promote gas supply to the area through laws no. 784 of 28 November 1980 and no. 266 of 7 August 1997.

Table 3.17 shows a preliminary estimation of the distribution of the customers based on the use categories defined by resolution no. 17 of 2 February 2007 which are associated to specific standard withdrawal profiles. As this resolution became effective starting from the thermal year underway (October 2007), it is not yet possible to know the overall volumes that have been withdrawn

TAB. 3.16

Method of assignment of the distribution activity by region in 2007

Number of municipalities that assigned distribution through the indicated procedures

REGION	COMPETITION (PRIOR TO LETTA DECREE)	PUBLIC PROCEDURE (AFTER LETTA DECREE)	DIRECT ASSIGNMENT	DIRECT ASSIGNMENT TO COMAPNIES WITH SECTOR SHAREHOLDERS	OTHER(A)	OF WHICH WITH ADVANTAGES DERIVING FROM METHANISATION DECREES APPLYING TO SOUTHERN ITALY
Val d'Aosta	24	0	0	0	0	-
Piedmont	205	11	646	102	11	-
Liguria	12	0	94	43	3	-
Lombardy	206	106	897	217	41	-
Trentino Alto Adige	0	1	103	77	4	-
Veneto	114	13	238	169	46	-
Friuli Venezia Giulia	66	2	81	14	5	-
Emilia Romagna	43	5	144	151	6	-
Tuscany	12	4	115	77	40	-
Lazio	46	7	246	0	2	105
Marche	60	8	108	64	6	12
Umbria	6	1	67	14	1	-
Abruzzi	44	25	134	26	2	159
Molise	43	17	67	0	0	80
Campania	60	41	214	2	3	305
Apulia	98	1	128	3	5	222
Basilicata	28	7	80	1	0	90
Calabria	69	21	166	3	2	245
Sicily	79	5	194	4	19	252
ITALY	1,215	275	3,722	967	196	1,470

(A) This item includes cases in which the distributor serves customers located in areas that are near to or border on the territory of a municipality for which the distributor is not holder of a concession or assignment, as well as cases of service ownership that cannot be attributed elsewhere.

Source: AEEG calculations on data provided by the operators.

TAB. 3.17

Distribution of customers by classes of usesin 2007

Percentage shares of customers of distribution networks as at 31.12.07

USE CLASSES	% SHARE
Cooking	10.8
Production of hot water	0.6
Cooking and hot water	11.2
Technical usages (crafts-industry)	1.1
Air conditioning	0.1
Individual/central heating	4.2
Individual heating + cooking + hot water	61.1
Individual heating + cooking	7.6
Individual heating + production of hot water	1.6
Central heating + cooking + hot water	0.4
Central heating + production of hot water	0.5
Technological uses + heating	0.8
Conditioning + heating	0.0
Total	100.0

Source: AEEG calculations on data provided by the operators.

TAB. 3.18

Distribution of customers and withdrawals by withdrawal classes

Customers of the distribution grids as at 31.12.07

WITHDRAWAL CLASS	2006		2007	
(GJ/anno)	CUSTOMERS (THOUSANDS)	VOLUMES M(m^3)	CUSTOMERS (MIGLIAIA)	VOLUMES M(m^3)
0-4	3.613	279,0	3.857	209,0
4-20	4.429	1.412,8	5.429	1.764,3
20-200	11.256	16.095,4	10.713	13.497,8
200-3.000	522	7.345,9	620	6.670,4
3.000-8.000	17	1.920,7	21	1.791,5
8.000-40.000	7	2.899,0	14	2.827,2
Oltre 40.000	31	4.631,5	45	4.637,5
Totale	19.875	34.584,3	20.699	31.397,7

Source: AEEG calculations on data provided by the operators.

by the categories listed in the table. Based on the number of customers, the main category in Italy is the one that provides for the use of gas for individual heating purposes, cooking and hot water, which applies to 61% of the cases. The categories "cooking: and "cooking with hot water production" which the T1 tariff once referred to, both amount to approximately 11%. In 7.6% of the cases however, the gas is used only to heat homes and cooking (hot water is acquired using another device fed through another source of energy). It is however obvious that the percentages would change considerably if instead of customers the volumes of gas consumed were considered; however these figures will only be available as of next year.

The distribution ofcustomers by volumes consumed can be extrapolated from the figures in the following table that shows the number of customers and their withdrawals by withdrawal class, expressed in GJ/year according to the tarriff system that is applicable to the distribution service. Families that use gas only for cooking and hot water will most probably fall into the first two categories. The biggest category both in terms of metering units and volumes is the one with annual consumption of between 20 and 200 GJ (approximately 520 to 5,200 m3) where the families or small business concerns that use gas for heating fall under. The last four classes which are relatively less populated are those with more intensive uses: indeed, they absorb almost half of the gas distributed.

Table 3.19 shows, finally, the leading 20 groups in natural gas distribution for 2007 and their shares.

As in the other segments of the supply chain, the Eni group is dominant, with a minority share (26%), which however is more than double if compared to that of the companies that follow behind it. A comparison with 2006 shows a slow erosion of the incumbent's share. The five percentage points lost by Eni benefited competitors in a well-distributed way. Except for Italcogim, whose share increased by 0.6% and the Enel group which gained one half of a percentage point, the others (Hera, Aem, E.On, Iride, Enia) saw their market share increase by a little over a tenth of a point on average. Overall, the leading 20 groups cover more than 75% of the market.

TAB. 3.19

The leading 20 groups operating in natural gas distribution in 2007

Volumes of natural gas distributed in M(m^3)

GROUP	2006	% SHARE	2007	% SHARE
Eni	10,743.7	31.1	8,197.1	26.1
Enel	3,644.7	10.5	3,472.0	11.1
Hera	2,233.0	6.5	2,075.2	6.6
Aem Milano	1,250.8	3.6	1,225.8	3.9
E.On	1,218.0	3.5	1,143.7	3.6
Iride	1,140.5	3.3	1,054.1	3.4
Italcogim	1,131.7	3.3	1,225.8	3.9
Enia	1,013.7	2.9	958.4	3.1
Asco Holding	818.2	2.4	743.5	2.4
ASM Brescia	619.4	1.8	707.1	2.3
Acegas-Aps	487.9	1.4	452.1	1.4
Consiag	331.0	1.0	316.2	1.0
Energie	325.3	0.9	301.2	1.0
Gas Rimini	315.1	0.9	297.4	0.9
Gruppo Erogasmet	292.7	0.8	270.2	0.9
Edison	291.7	0.8	271.1	0.9
ACSM Como	286.3	0.8	250.9	0.8
Trentino Servizi	271.2	0.8	244.0	0.8
AIM Vicenza	254.4	0.7	229.6	0.7
Aimag Modena	249.0	0.7	212.7	0.7
Others	7,666.1	22.2	7,749.4	24.7
Total	**34,584.3**	**100.0**	**31,397.4**	**100.0**

Source: AEEG calculations on data provided by the operators.

The wholesale gas market

The data on the wholesale gas market come from initial (and provisional) processing of the figures collected in the annual survey carried out by the Authority on the state of the electricity and gas markets the year before. In the gas sales sector, the survey was addressed to all companies which in 2007 were authorised by the Ministry of Economic Development to sell gas to consumers, as well as to parties that only engage in trading activities and, for this reason, are not obliged to request ministerial authorisation.

Of the companies in question, operators that made less than 95 percent of their sales to consumers were classified as wholesalers; these also include companies that offer their own production of natural gas on the wholesale market.

In 2007 the number of companies that operate in this market, which is a little over 70, has remained unchanged compared to the previous year (Table 3.20). As a whole, the wholesalers have sold 101.1 G(m^3) of gas, of which 47.4 to the final market and 53.6 to other intermediaries of the wholesale market (Table 3.23). Compared to last year, the overall traded volume was lower by 2% i, but the sales to the wholesale market increased. These were 49.9 G(m^3) last year, while the direct sales to consumers which were 53.3 G(m^3) last year, decreased.

On average, the unit sale volume dropped by 3.4%, having decreased from 1.43 to 1.38 G(m^3), following the general contraction of the volumes traded and the fact that the number of operators was essentially unchanged.

The slight decrease in the unit sale volume was not distributed equally among operators, as the sales of the larger operators decreased and this benefited medium and small sized competitors. Indeed, the total volumes of gas sold by Eni decreased by nearly 10%, while those of the larger operators, that is those with sales exceeding 10 G(m3), dropped by 2.7% while there was growth of 13.5% in the volumes sold by medium sized wholesalers, that is those with sales from 1 to 10 G(m^3), 10% in the volumes of small operators, with sales ranging from 0.1 to 1 G(m^3), and 5.1% in the sales of the very small wholesalers, which are those with sales of less than 0.1G(m^3).

The 13.5% increase in the volumes traded by medium sized operators coincided with the modest growth in the number of these operators, which increased from 9 to 11. Therefore, the average unit volume decreased by 7% compared to last year. The increase in the sales volumes of the very small sized wholesalers occurred despite the decrease of this portion by 2 operators; thus the average unit volume traded by these operators increased by 13%.

The procurement methods of the operators on the wholesale market are set forth in Table 3.21, which shows that for the most part, wholesalers procure gas through imports (65%). Of the remaining, nearly 20% of the gas is purchased by other suppliers domestically (whether at the border or the city gates), nearly 8% is produced directly while as much gas is purchased at the VTP. Imports are the main source of supply for the large wholesalers, while as the size of the operators decreases, the volumes purchased on the domestic market and the VTP increase. The incidence of the latter is at its maximum for small sized wholesalers, where it reaches 30%.

Given the resources available to the wholesalers as set forth in Table 3.21, the following Table 3.22 shows the uses of the gas carried out by these same operators. Overall, 47% of the gas procured is sold on the wholesale market, 42% to consumers (one fourth of the gas is sold to consumers that are affiliated) and the remaining 11% is used for self-consumption, that is, it is employed directly in the production of electricity by the operators themselves.

TAB. 3.20

Wholesaler activity in the 2002-2007 period

OPERATORS(A)	2002	2003	2004	2005	2006	2007
NUMBER	55	40	41	60	72	73
Eni	1	1	1	1	1	1
Large	1	1	1	2	1	1
Medium	4	4	6	8	9	11
Small	17	20	19	29	29	30
Very small	32	14	14	20	32	30
VOLUME SOLD (billions of m3)	85.2	90.6	95.9	110.5	103.2	101.1
Eni	52.3	51.3	53.6	58.0	57.3	51.6
Large	12.9	17.8	16.3	27.0	13.5	13.1
Medium	15.8	15.6	18.4	14.0	20.1	22.8
Small	4.0	5.6	7.6	10.8	11.3	12.4
Very small	0.2	0.2	0.1	0.7	1.0	1.1
AVERAGE UNIT VOLUME (millions of m3)	1,550	2,264	2,340	1,842	1,433	1,385
Eni	52,349	51,320	53,632	58,027	57,292	51,643
Large	12,865	17,808	16,268	13,486	13,451	13,131
Medium	3,954	3,902	3,061	1,748	2,233	2,074
Small	234	279	399	372	391	414
Very small	7	17	7	37	31	35

(A) Large: operators with sales of over 10 G(m^3).
Medium: operators with sales between 1 and 10 G(m^3).
Small: operators with sales between 0.1 and 1 G(m^3).
Very small: operators with sales of under 0.1 G(m^3).

Source: AEEG calculations on data provided by the operators.

TAB. 3.21

Wholesaler procurement in 2007

Percentages

PROCUREMENT	WHOLESALERS(A)					
	Eni	Large	Medium	Small	Very small	Total
Domestic production	13.6	0.0	2.2	4.9	0.9	7.8
Imports	84.5	71.6	47.5	18.5	3.8	65.0
Purchases by domestic operators	1.8	25.7	35.0	47.3	62.0	19.1
Storage purchases	0.0	0.0	0.5	1.6	4.7	0.4
Purchases at the VTP	0.2	2.7	14.7	27.9	28.6	7.7
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

(A) Large: operators with sales of over 10 G(m^3).
Medium: operators with sales between 1 and 10 G(m^3).
Small: operators with sales between 0.1 and 1 G(m^3).
Very small: operators with sales of under 0.1 G(m^3).

Source: AEEG calculations on data provided by the operators.

TAB. 3.22

Uses of gas by wholesalers in 2007

Percentages

SALES	WHOLESALERS(A)					
	Eni	Large	Medium	Small	Very small	Total
To other domestic suppliers	39.3	43.1	51.5	75.7	56.4	47.2
- of which storage sales	0.0	0.5	0.5	1.9	2.2	0.6
- of which VTP sales	12.7	2.9	18.8	31.4	35.9	17.0
To consumers	52.4	56.9	22.9	23.9	42.5	41.7
- of which to affiliated entities	4.9	100.0	37.8	13.9	6.4	25.3
Internal-consumption	8.3	0.0	25.5	0.5	1.1	11.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

(A) Large: operators with sales of over 10 G(m^3).
Medium: operators with sales between 1 and 10 G(m^3).
Small: operators with sales between 0.1 and 1 G(m^3).
Very small: operators with sales of under 0.1 G(m^3).

Source: AEEG calculations on data provided by the operators.

The table shows how the wholesale brokerage activity becomes more widespread as the sizes of the companies decrease, at least as long as the volumes handled by these operators exceed the threshold of one million cubic meters. Indeed, very small sized operators tend to distribute the gas they purchase in a more balanced way between the wholesale and final market.

Table 3.23 shows the breakdown of the activity of 27 companies (last year they were 26), the sales of which reached at least 300 M(m^3) on the wholesale market. Together, these operators cover 95% of the total sales carried out on this market that continues to be very concentrated, though it is slowly improving: the shares of the leading 3 companies Eni, Enel Trade and Edison have indeed dropped to 59.8% (last year they amounted to 63%); those of the leading 5 which include Plurigas and Gaz de France have dropped to 67.8%, while last year they were slightly above 70%.

The last row of the table shows the average price of companies classified as wholesalers, which in 2007 amounted to 28.50 c€/m^3. However, consumers obviously paid a price that was higher than the price paid by other intermediaries. The difference between the two types of customers is estimated to be 2.5 c€/m^3, as the price for consumers was 29.83 c€/m^3 while that paid by other wholesalers and suppliers was 27.33 c€/m^3.

TAB. 3.23

Sales of the largest wholesalers in 2007

M(m^3)

COMPANY	TO WHOLESALERS AND SUPPLIERS	TO CONSUMERS	TOTAL
Eni	22,135	29,508	51,643
Enel Trade	5,660	7,471	13,131
Edison	4,274	1,502	5,776
Plurigas	2,517	1,080	3,597
Gaz de France, secondary headquarters	1,771	698	2,470
Hera Trading	1,322	18	1,340
ENOI	1,113	39	1,152
Aem Trading	1,077	1	1,078
Blugas	973	58	1,030
Sorgenia	889	1,336	2,226
AceaElectrabel Trading	831	5	836
Dalmine Energie	780	393	1,173
Gas Plus Italiana	730	0	730
Elettrogas	681	0	681
2B Energia	614	0	614
Enia Energia	594	1,056	1,651
EGL Italia	585	53	638
Begas Energy International	568	27	594
Spigas	538	108	646
Asm Brescia	537	0	537
Italtrading	498	23	521
Iride Mercato	478	850	1,327
ENOVA	438	6	444
Shell Italia EεtP	424	0	424
E.On Ruhrgas AG	388	119	507
Energy Trade	381	0	381
Worldenergy SA	328	0	328
Others	2,508	3,092	5,600
TOTAL	**53,631**	**47,443**	**101,074**
Average price (c€/m3)	27.33	29.83	28.50

Source: AEEG calculations on data provided by the operators.

Virtual Trading Point

In the first half of the 2007-2008 thermal year, 61 operators traded, sold and purchased gas at the VTP; of these 51 were also users of the transport system. Ten operators are therefore VTP traders.

Figures 3.6 and 3.7 show the gas transactions that took place at the entry points in the national gas system and at the VTP until March 2008, in terms of volumes and number of transactions[5]. As regards transactions at the VTP, re-deliveries of gas (in terms of volumes sold and the number of daily re-deliveries) by the operator of the re-gasification terminal of Panigaglia GNL Italia to the users of the terminal, deliveries that take place at the VTP since November 2005, are indicated distinctly with the term "VTP LNG". Although recorded as VTP transactions, they are not due to agreements between operators on the secondary market.

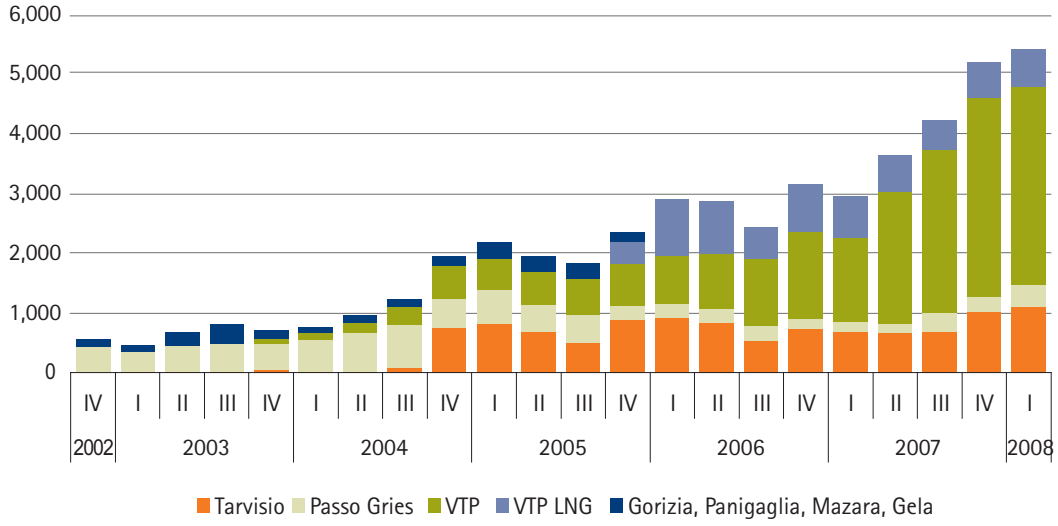
Starting from 2004, but especially over the last two thermal years, the VTP has increased in importance, both in terms of traded volumes and in terms of number of agreements. This is also due to the fact that since November 2006, according to the provisions of the Authority, the traders can carry out transactions at the domestic hub without concurrently being users of the transport system. The average quantities traded are

5 In order to make the transactions recorded at the VTP comparable with those that took place at the indicated entry points, the average number of daily transactions together with the total volumes traded were considered for the VTP.

FIG. 3.6

Transaction volumes at the domestic grid entry points

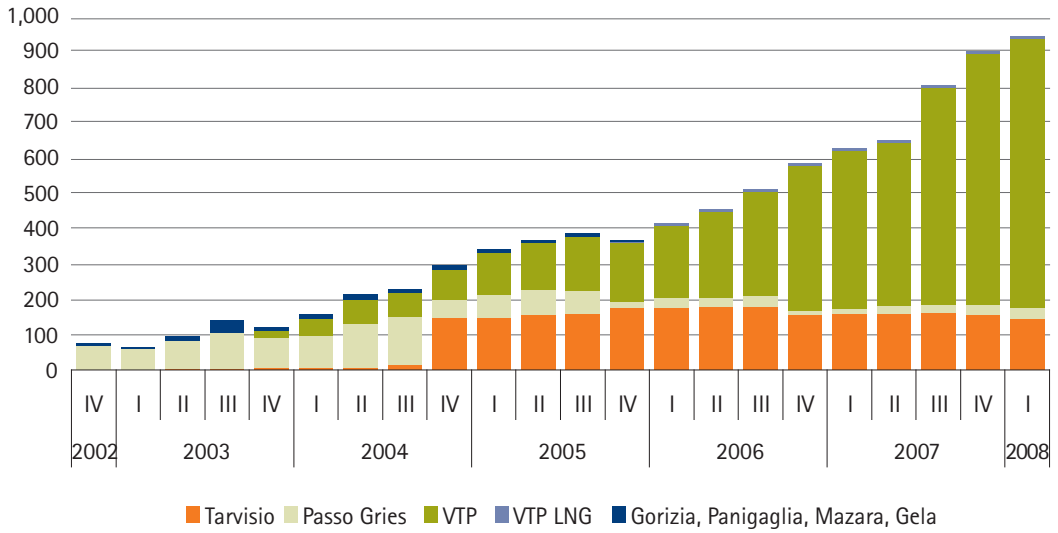
M(m³) standard of 38.1 MJ; the transactions refer to the gas injected into the grid by the seller.



Source: AEEG calculations on Snam Rete Gas data.

FIG. 3.7

Number of transactions at the domestic grid entry points



Source: AEEG calculations on Snam Rete Gas data.

however relatively small. A comparison between the 2005-2006 and 2006-2007 thermal years (Fig. 3.8) shows how the VTP increased in comparizon to other domestic grid entry points. This is indeed the only entry point that had an overall increase in the transaction volumes of 22 percent.

The substantial growth is continuing currently: in the first few months of the 2007-2008 thermal year, until March 2008, gas transactions at the VTP in terms of volumes accounted for just over 63% of the total volumes handled (the percentage climbs to around 74% when considering all transactions at the VTP, including the deliveries carried out by the Panigaglia terminal operator).

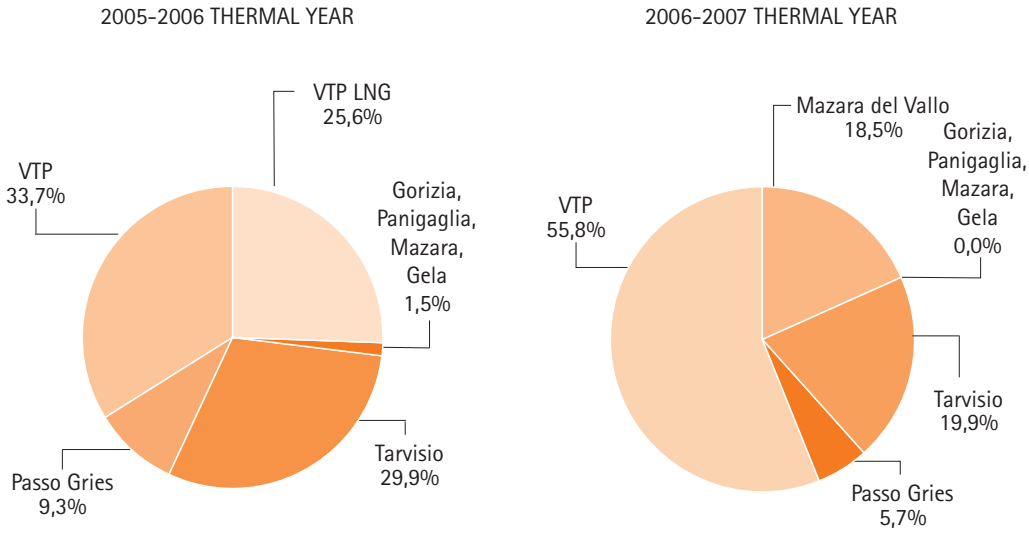


FIG. 3.8

Breakdown of volumes traded/conveyed at the entry points of the national grid interconnected with abroad and the VTP

Comparison between the 2005-2006 and 2006-2007 thermal years

Source: AEEG calculations on Snam Rete Gas data.

Retail market

As at 10 May 2007 there were 399 companies authorised by the Ministry of Economic Development to engage in retail market sales. However, it is known that some of the companies that request ministerial authorisation remain inactive. Upon closing this Annual Report, 312 suppliers on the list of those authorised by the Ministry of Economic Development had responded to the annual survey of the Authority on electricity and gas sectors. Considering however that the overall volumes sold to consumers as calculated on the basis of the responses obtained by the Authority's survey is in line with the preliminary figures provided by the Ministry of Economic Development, it is reasonable to assume that the operators that did not respond were inactive during the year or had very low volumes.

Based on the initial results of the annual survey, the sales to the retail market in 2006 were 69.1G(m^3) and these were carried out by wholesalers for 47.4 G(m^3) and by "pure" suppliers[6] for 21.8 G(m^3). If the self-consumption of 13.2 G(m^3) is added, the total volume of gas consumed in Italy reaches 82.3 G(m^3), which is a value that is not far away from the 83.8 G(m^3) indicated by the Ministry of Economic Development.

As can be seen in Table 3.24, in 2007 the number of operators classified as "pure suppliers" (those who sold at least 95% of the total volumes sold to consumers) rose to 232, compared to 226 last year.

The overall quantity sold however dropped from 24.1 to 21.8 G(m^3) and therefore the average unit sale volume of the operators considered overall was lower. The overall volumes sold by the 4 large operators, that is those with sales exceeding 1,000 M(m^3) rose from 8.3 to 9.1 G(m^3) and, therefore, the average unit sale volume also increased, almost reaching 2.3 G(m^3).

6 Companies which carried out at least 95% of their sales to consumers are classified as suppliers.

The average unit sale volume of the very small operators, that is operators with sales less than 10 M(m^3), had an increase of almost 8% compared to last year, due to a slight increase in the sales volume and a reduction in the number of operators.

The increase in the volumes of the categories at either end of the spectrum (large and very small operators), was to the detriment of the intermediate categories, that is the medium and small sized suppliers.

Indeed, both saw drops in the number of operators and the total volumes sold. However, the reductions affected the medium sized suppliers (with sales from 100 to 1,000 M(m^3) more, as they had a drop of 25%.

The procurement of operators classified as suppliers is based exclusively on the purchases from other domestic suppliers and VTP purchases. The uses of gas of these operators obviously show mostly the volumes sold to consumers; however, on average, 0.6% of the available gas is consumed internally and the same amount is sold to the wholesale market.

Table 3.25 shows a breakdown of 18 companies classified as pure suppliers, whose sales to consumers in 2007 exceeded 200 M(m^3) overall. It therefore does not include the companies already listed in Table 3.23, which sell quantities that are higher than the indicated threshold but continue to be classified as wholesalers and are analysed as such in the paragraph above.

Similarly to the table on the wholesalers, the supplier table shows the average price charged by these companies in the two markets. The price on the wholesale market is in line with that of the wholesalers, though higher (28.84 compared to 27.33 c€/m^3); the price on the retail market is, as can be expected, significantly higher.

Indeed pure suppliers are relatively more oriented to the mass marketwhile wholesalers are more oriented to large scale industrial/thermoelectric consumers who are able to contractlower prices.

To correctly calculate the market shares and the level of concentration of the retail market, it is necessary to ignore the distinction between wholesalers and pure suppliers and to analyse the quantities sold by all the companies, including groups of companies (Table 3.26).

The retail market also appears to be rather concentrated, as is the wholesale market: the first three groups cover more than 63%, while the first five cover 69.4%. With a share of 43.9%, Eni is the dominant group, quite ahead of the 16.4% held by the Enel group (last year it had 15.3%).

Edison, Energie Investimenti and Hera follow with significantly lower shares.

TAB. 3.24

Supplier activity in the 2002–2007 period

OPERATORS(A)	2002	2003	2004	2005	2006	2007
NUMBER	504	432	353	258	226	232
Large	2	5	4	4	4	4
Medium	42	40	37	38	39	33
Small	222	176	149	100	107	103
Very small	237	211	163	116	76	92
VOLUME SOLD G(m^3)	26.6	33.0	31.4	24.5	24.1	21.8
Large	7.5	15.8	14.6	8.5	8.3	9.1
Medium	11.2	11.1	11.6	11.5	11.3	8.4
Small	6.8	5.2	4.6	4.2	4.2	3.9
Very small	1.0	0.8	0.7	0.3	0.3	0.4
AVERAGE UNIT VOLUME M(m^3)	53	76	89	95	107	92
Large	3,756	3,169	3,640	2,135	2,076	2,287
Medium	267	279	313	301	290	254
Small	31	30	31	42	39	38
Very small	4	4	4	3	4	4

(A) Large: operators with sales of over 1,000 M(m^3).
Medium: operators with sales of between 100 and 1,000 M(m^3).
Small: operators with sales of between 10 and 100 M(m^3).
Very small: operators with sales of less than 10 M(m^3).

Source: AEEG calculations on data provided by the operators.

TAB. 3.25

Retail market sales in 2007

M(m³)

COMPANY	TO WHOLESALERS AND SUPPLIERS	TO CONSUMERS	TOTAL
Enel Energia	0	3,862	3,862
Italcogim Energie	85	2,096	2,181
Hera Comm	4	1,951	1,955
E.On Vendita	5	1,143	1,149
Aem Acquisto e Vendita Energia	0	962	962
Toscana Energia Clienti	0	864	864
Edison Energia	1	648	649
Asm Energia e Ambiente	0	500	500
Estenergy	0	438	438
ConsiaGas Servizi Energetici	3	349	352
Trenta	12	291	304
Erogasmet Vendita - Vivigas	1	282	283
SGR Servizi	0	258	258
Gas Plus Vendite	0	250	250
ETA3	0	250	250
Enercom	0	249	249
Prometeo	6	224	230
Sinergas	1	202	203
Others	8	6,879	6,887
TOTAL	**126**	**21,698**	**21,824**
Average price (c€/m³)	*28.84*	*37.63*	*37.58*

Source: AEEG calculations on data provided by the operators.

TAB. 3.26

Sales of the leading twenty groups to the retail market in 2007

Volumes in M(m³)

GROUP	VOLUME	% SHARE
Eni	30,372.2	43.9
Enel	11,344.4	16.4
Edison	2,150.2	3.1
Energie Investimenti	2,117.7	3.1
Hera	1,969.0	2.8
E.On	1,759.7	2.5
Cir	1,336.2	1.9
Enia	1,097.4	1.6
Plurigas	1,079.7	1.6
Aem Milano	962.9	1.4
Iride	912.0	1.3
Asm Brescia	784.5	1.1
Ascopiave	762.5	1.1
Gaz de France, secondary headquarters	698.2	1.0
Acegas - Aps	437.9	0.6
Endesa	390.7	0.6
Linea Group Holding	360.0	0.5
Consiag	349.3	0.5
Amga - Azienda Multiservizi	308.7	0.4
Gas Rimini	291.7	0.4
Others	9,656.2	14.0
Total	**69,141.0**	**100.0**

Source: AEEG calculations on data provided by the operators.

The retail natural gas market, which does not include self-consumption, is composed of approximately 20 million customers, of which 19 are domestic customers (Table 3.27). A little more than 1.1 million are commercial and service customers, 175,000 are industrial customers and over 500 are thermoelectric customers.

In terms of volumes, the domestic sector absorbs 17 G(m³), 5.6 are purchased by the commercial sector, 22.2 by the

TAB. 3.27

Retail market by consumption sector

Customers in thousands; volumes in M(m³)

	DOMESTIC	TRADE AND SERVICES	INDUSTRY	ELECTRICITY GENERATION	TOTAL
CUSTOMERS					
Free market	793.5	379.5	82.7	0.5	1,256.2
Protected market	17,988.9	763.6	92.5	0.0	18,845.0
Total	**18,782.5**	**1,143.0**	**175.2**	**0.5**	**20,101.2**
VOLUMES					
Free market	1,235.6	3,225.5	21,392.7	24,184.3	50,038.1
Protected market	15,854.0	2,417.4	823.9	7.5	19,102.9
Total	**17,089.6**	**5,642.9**	**22,216.7**	**24,191.8**	**69,141.0**

Source: AEEG calculations on data provided by the operators.

TAB. 3.28

Breakdown of the retail market by region and consumption sector

M(m³)

	DOMESTIC	TRADE AND SERVICES	INDUSTRY	ELECTRICITY GENERATION	TOTAL
Piedmont	1,871.8	560.7	2,709.9	2,300.8	7,443.2
Valle d'Aosta	21.5	16.0	36.0	2.0	75.5
Lombardy	4,593.3	1,234.9	5,619.7	5,969.1	1,741.0
Trentino Alto Adige	280.9	158.8	331.6	63.0	83.3
Veneto	1,831.6	690.4	2,320.3	108.3	4,950.7
Friuli Venezia Giulia	434.7	184.4	678.8	75.9	1,373.7
Liguria	509.2	148.0	242.2	576.8	1,476.2
Emilia Romagna	2,024.2	1,029.6	3,392.7	3,515.3	9,961.8
Tuscany	1,269.8	338.0	1,458.1	1,752.1	4,818.0
Umbria	236.1	86.5	528.3	449.4	1,300.3
Marche	448.5	226.2	540.7	265.1	1,480.6
Lazio	1,271.3	318.1	814.6	3,175.3	5,579.3
Abruzzi	390.6	105.0	571.9	319.9	1,387.4
Molise	82.3	61.4	753.5	201.7	1,098.9
Campania	477.8	178.3	639.2	1,185.8	2,481.1
Apulia	682.3	128.6	694.6	369.6	1,875.1
Basilicata	121.8	39.3	204.7	150.6	516.4
Calabria	160.8	41.9	138.4	732.1	1,073.1
Sicily	398.0	77.0	1,269.7	2,253.6	3,998.3
ITALY	**17,106.6**	**5,623.1**	**22,945.0**	**23,466.3**	**69,141.0**

Source: AEEG calculations on data provided by the operators.

industrial sector and 24.2 by the electricity generation sector. The percentage of customers served on the free market grows in line with the average size of the customer: 4.2% in the domestic sector, 33.2% in the commercial and service sector, 47.2% in the industrial sector and 92% in the thermoelectric sector.

Insofar as regions are concerned (Table 3.28), the major region is Lombardy which absorbs one fourth of the total sales to the retail market on its own.

Emilia Romagna (14.4%), Piedmont (10.8%), Lazio (8.1%), Veneto (7.2%) and Tuscany (7%) also have significant positions.

The territorial distribution of the industrial customers is classified in a similar manner: 24.5% reside in Lombardy, 14.8% in Emilia Romagna, 11.8% in Piedmont, 10.1% in Veneto and 6.4% in Tuscany; that of the thermoelectric customers is also similar, except that in this sector Sicily takes the place of Veneto (25.4% of the gas sold to the retail market is purchased in Lombardy, 15% in Emilia Romagna, 13.5% in Lazio, 9.8% in Piedmont and 9.6% in Sicily).

Supply of LPG and other gases through local networks

This year too, in the Authority's annual survey on electricity and gas sectors a section was dedicated to the provision of gas other than natural gas through secondary networks. Entities involved in the distribution and/or sale of gas other than natural gas were asked to provide preliminary figures on the activity carried out in 2007 and final figures for 2006. The main results will be briefly set forth in the tables below and should be read considering that the values for 2006 may differ from those published in the Annual Report last year, when the figures were still preliminary.

Overall, 98 operators responded to the survey, 61 of which declared that they carried out integrated distribution and sales services in 2007; 21 were distributors and 10 were "pure" suppliers, while the remaining 6 declared that they had been inactive. The same entities in 2006 were distributed as follows: 53 integrated distributors/suppliers, 23 distributors, 8 suppliers and 14 inactive entities. As the activity regulated by the Authority refers to operators that carry out the distribution service of gas other than natural gas through local networks, whether this is accompanied by sales or not, the figures for "pure" suppliers were not included in the rest of the analysis.

Overall, the volumes of distributed gas other than natural gas dropped from 34.1 M(m^3) in 2006 to 32.1 M(m^3) in 2007, despite the increase in the number of customers (metering units), which increased from 114,000 to 122,000 and the municipalities served which increased from 568 to 582. The average consumption per unit actually dropped from 301 to 263 m^3. The major part of this distribution concerns LPG, which represents 57% in terms of volumes supplied and 77% in terms of customers served. (Table 3.29). The regional distribution (Table 3.30) shows that Sardinia, which does not receive natural gas, is the region in which the distribution of gas other than natural gas is by far higher than in other areas, in terms of volumes supplied as well as customers: indeed, it absorbed almost 30% of the volumes distributed in 2007. In the region however, the service does not appear to be particularly widespread considering that it concerns 57 municipalities, compared to the 377 that exist in this area. The second area in which the distribution via grid of other types of gas is significant is Tuscany which consumes 15% in terms of volumes and 18% in terms of customers served. In this region, the distribution of LPG and other gases covers one half of the municipalities of the region. A significant share of 19% of the volumes distributed is absorbed by Lombardy, which however has a much lower percentage of customers served (7%). As a matter of fact, in this region the distribution mainly involved the production sites (there is a large refinery in the Pavia area),

TAB. 3.29

Distribution through networks of gas other than natural gas in Italy

Volumes in M(m^3) and number of customers

TYPE OF GAS	2006 (FINAL FIGURES)		2007 (PRELIMINARY FIGURES)	
	VOLUME SUPPLIED	CUSTOMERS	VOLUME SUPPLIED	CUSTOMERS
LPG	19.1	89,546	18.1	94,569
Propane-air	9.7	21,781	9.3	24,780
Other gases	5.4	2,676	4.7	2,846
TOTAL	34.1	114,003	32.1	122,195

Source: AEEG calculations on data provided by the operators.

7 In Table 3.20 the number of total customers served is lower than the number published in Table 3.19, as some operators only provided one national figure rather than a regional breakdown of their customers.

TAB. 3.30

Regional distribution through networks of gas other than natural gas in Italy

	2006 (FINAL FIGURES)				2007 (PRELIMINARY FIGURES)			
	VOLUME SUPPLIED	OPERATORS(A)	CUSTOMERS	MUNICIPALITIES SERVED	VOLUMI SUPPLIED	OPERATORS(A)	CUSTOMERS	MUNICIPALITIES SERVITI
Val d'Aosta	0.09	3	232	3	0.08	3	254	4
Piedmont	1.47	10	4,920	59	1.35	11	5,330	60
Liguria	2.08	15	10,367	60	2.00	15	10,875	62
Lombardy	7.29	13	8,608	47	6.16	13	8,084	40
Trentino Alto Adige	0.16	1	455	5	0.20	2	641	7
Veneto	0.13	3	565	6	0.11	4	623	8
Friuli Venezia Giulia	1.06	2	1,453	7	0.99	3	1,784	8
Emilia Romagna	2.50	12	8,525	41	2.26	12	9,023	42
Tuscany	4.98	22	21,752	143	4.72	22	22,589	142
Lazio	1.66	12	11,654	44	1.63	13	12,646	46
Marche	0.78	10	2,865	30	0.66	10	2,899	30
Umbria	0.50	10	2,877	26	0.48	10	3,125	27
Abruzzi	0.56	8	3,679	19	0.52	8	3,825	19
Molise	0.04	1	156	1	0.04	1	168	1
Campania	0.67	5	2,804	12	0.65	6	3,079	13
Apulia	0.07	2	317	2	0.09	2	390	2
Basilicata	0.28	3	1,165	5	0.26	3	1,251	5
Calabria	0.27	2	1,958	6	0.24	2	1,986	5
Sicily	0.05	3	219	4	0.05	3	231	4
Sardinia	9.50	8	28,739	48	9.61	8	33,392	57
ITALY	34.13	145	113,310	568	32.10	151	122,195	582

(A) In this column, operators are counted as many times as the regions in which they operate.

Source: AEEG calculations on data provided by the operators.

TAB. 3.31

Extension of the distribution networks for gas other than natural gas and their ownership

Year 2007; extension expressed in kilometres and ownership in percentage shares

	NETWORK EXTENSION			SHARE OWNED IN %	
	HIGH PRESSURE	MEDIUM PRESSURE	LOW PRESSURE	COMPANY	MUNICIPALITY
Valle d'Aosta	0	6.2	0	100.0	0
Piedmont	0	128.5	39.2	100.0	0
Liguria	0	138.6	66.9	100.0	0
Lombardy	0	75.6	86.9	60.4	27.6
Trentino Alto Adige	0	19.5	0.4	100.0	0
Veneto	0	18.8	2.8	100.0	0
Friuli Venezia Giulia	0	0.3	52.3	79.5	20.5
Emilia Romagna	0	109.0	151.5	96.8	0
Tuscany	0.8	289.8	253.7	98.9	0
Lazio	0	69.6	226.6	99.0	1.0
Marche	0	31.3	39.0	93.2	0
Umbria	0	39.8	103.9	81.3	18.7
Abruzzi	0	79.3	10.8	83.9	16.1
Molise	0	2.7	0.6	100.0	0
Campania	0	69.3	46.3	100.0	0
Apulia	0	21.9	0	100.0	0
Basilicata	0	3.6	36.0	100.0	0
Calabria	0	60.4	0	100.0	0
Sicily	0	8.8	0	100.0	0
Sardinia	0	606.3	550.5	75.0	11.3
ITALY	0.8	1,779.2	1,667.3	87.6	6.7

Source: AEEG calculations on data provided by the operators.

in which average consumption is high. Relatively significant amounts of gas (other than natural gas) which are distributed through the network are used in Emilia Romagna, Lazio and Liguria as well.

Finally, the extension of the networks and their ownership are set forth in Table 3.22, which shows that, in Italy overall, almost 3,500 kilometres of networks are in operation; they are supplied with gases other than natural gas and they are predominantly owned by the operators themselves (87.6%). Municipalities have very low or no shares throughout the country, with the average for Italy being 6.7%. It is important to note that the total shares owned by the operator or the municipality may not equal 100% due to the presence, in some cases, of other entities owning parts of the networks.

Prices and tariffs

Tariffs for the use of the facilities

Transport and LNG

In August 2007, the Authority published the tariffs for the 2007-2008 thermal year for the transport of natural gas (resolution no. 205 of 2 August 2007) and the re-gasification of the LNG imported by sea (resolution no. 182 of 16 July 2007).

The new levels of the transport tariffs on the regional and national grid (Table 3.32) were determined upon verification of the tariff proposals submitted by the eight operators of this segment in the supply chain and based on criteria established by resolution no. 166 of 29 July 2005 (relating to tariffs for the transport and dispatching of natural gas) and its subsequent amendments. The following companies presented tariff proposals together with the operator of the national grid, Snam Rete Gas Spa: Società Gasdotti Italia Spa, Consorzio della Media Valtellina per il Trasporto del Gas, Metanodotto Alpino Srl, Retragas Srl, Netenergy Service Srl.

The new tariff levels for the LNG re-gasification service at the Panigaglia terminal (Table 3.33) were determined upon verification of the tariff proposals submitted by GNL Italia Spa and based on the criteria established by resolution no. 178 of 4 August 2005.

Storage

The single national storage fees for the 2008-2009 thermal year (Table 3.34) were set by the Authority in March 2008, after verifying the data, provided by the two national storage operators, Edison Stoccaggio and Stogit.

Together with the tariff proposals, the Authority also approved percentage reductions proposed by the operators of the unit fees for injection (f_{PI}) and for supply (f_{PE}) for the interruptible capacity offer which is part of the modulation storage service.

TAB. 3.32

Transport and dispatching tariffs for thermal year 2007-2008

Variable unit fees (commodity); €/GJ

VARIABLE UNIT FEES	
CV	0.153745
CV^P	0.018596

National grid unit capacity fees; €/year/m^3 standard/day

CP_E – FEES BY ENTRY POINT			
5 interconnection points with import foreign methane pipelines			
Mazara del Vallo	2.432155	Tarvisio	0.765603
Gela	2.432155	Gorizia	0.598189
Passo Gries	0.522866		
1 point from the LNG re-gasification plant			
LNG Panigaglia	0.656553		
Storage hub			
Stogit Storages/Edison Storage	0.327874		
68 points from the main national production fields or from their hubs			
Bordolano, Casteggio, Caviaga, Cornegliano, Corte/Colombarola, Fornovo, Leno, Ovanengo, Piadena Est, Piadena Ovest, Pontetidone, Quarto, Romanengo, Settala, Soresina, Trecate	0.205220	Alfonsine, Casalborsetti, Certaldo, Correggio, Cotignola, Manara, Montenevoso, Muzza, Pomposa, Ravenna Mare, San Potito, Santerno, Scandiano, Spilamberto, Tresigallo/Sabbioncello, Vittorio V./ S. Antonio/S.Andrea	0.458404
Calderasi/Monteverdese, Ferrandina, Metaponto, Monte Alpi, Pisticci A.P./B.P., Sinni (Policoro)	1.168349	Larino, Fonte Filippo, Poggiofiorito, Reggente, S. Salvo/Capello, Santo Stefano Mare	0.885837
Rubicone	0.426053	Falconara, Fano	0.658429
Carassai, Cellino, Fontevecchia, Grottamare, Montecosaro, Pineto, Rapagnano, San Benedetto del Tronto, San Giorgio Mare, Settefinestre/Passatempo	0.819898	Candela, Masseria Spavento, Roseto/Torrente Vulgano, Torrente Tona	0.961589
Crotone, Hera Lacinia, Lavinia	1.763735	Bronte, Gagliano, Mazara/Lippone, Noto	2.029590

CP_U – FEES BY POINT OF EXIT					
5 interconnection points with exports					
Bizzarone		1.744991	Passo Gries		1.139523
Gorizia		0.937127	Tarvisio		0.440733
Republic of San Marino		0.750593			
17 withdrawal areas distributed on the entire national territory					
Friuli Venezia Giulia	A	0,563979	Romagna	I	0,563979
Trentino Alto Adige and Veneto	B	0,754502	Umbria e Marche	L	0,477796
Eastern Lombardy	C	0,754502	Marche e Abruzzo	M	0,668319
Western Lombardy	D	0,945025	Lazio	N	0,477796
North Piedmont	E1	1,135549	Basilicata e Puglia	O	0,512872
South Piedmont and Liguria	E2	0,945025	Campania	P	0,322348
Emilia and Liguria	F	0,754502	Calabria	Q	0,322348
Lower Veneto	G	0,563979	Sicilia	R	0,131825
Tuscany and Lazio	H	0,668319			

National grid unit capacity fees; €/year/m3 standard/day

CR_r	
Unit capacity fee on the regional network	1.269359

TAB. 3.33

Re-gasification tariff for use of the Panigaglia terminal for thermal year 2007-2008

FEE	UNIT OF MEASURE	CONTINUATIVE SERVICE(A)	SERVICE BASED ON SPOT((B)
C_{qs} – Unit commitment fee associated with contractual amounts of LNG	€/m³ liquid	2.752746	1.926922
C_{na} – Unit fee associated with actual mooring points	€/approdo	17,262.822084	17,262.822084
Unit variable fees for energy associated with re-gasified volumes			
CVL	€/GJ	0.036849	0.036849
CVL^P	€/GJ	0.004424	0.004424
Percentage to cover consumption and leakage paid by the terminal user	per m³ delivered	1.7%	1.7%

(A) The continuative re-gasification service is the re-gasification service that provides for LNG delivery according to the monthly delivery schedule.

(B) The spot re-gasification service is the re-gasification service that is provided with a single discharge carried out on a date set by the re-gasification company following monthly delivery scheduling.

TAB. 3.34

Single storage fees that are part of the tariff for the 2008-2009 thermal year

UNIT FEES	UNIT OF MEASURE	VALUE
for space f_S	€/GJ/year	0.166261
for injection capacity f_{PI}	€/GJ/day	9.88074
for supply capacity f_{PE}	€/GJ/ day	11.690370
for gas movement C_{VS}	€/GJ	0.103441
for strategic storage f_D	€/GJ/year	0.159156
Component π	€/GJ	–0.005909

TAB. 3.35

Reference national tariff structure for distribution tariffs

BRACKET	LOWER LIMIT (GJ/YEAR)	HIGHER LIMIT (GJ/YEAR)	FIXED SHARE (€/CUSTOMER/YEAR)	VARIABLE SHARE (€/GJ)
1	0	4	30.00	0
2	4	20	30.00	2.87
3	20	200	30.00	1.58
4	200	3,000	30.00	1.14
5	3,000	8,000	30.00	0.61
6	8,000	40,000	30.00	0.26
7	40,000	infinite	30.00	0.05

Distribution

There were no new interventions tariff regulatory framework for the distribution of natural gas and the supply of gas other than natural gas of the second regulatory period, which goes from 1 October 2004 to 30 September 2008, (resolutions no. 170 of 29 September 2004 and no. 173 of 30 September 2004 on the criteria for definition by businesses of natural gas distribution tariffs and other gas distributed through the network, respectively).

According to the criteria defined by the Authority, the distribution tariffs were determined starting from the reference national tariff structure set forth in Table 3.35. Starting from this structure, the distribution tariffs are then determined in a different way for each tariffarea, by applying a specific coefficient to the variable rate (as shown in the last column of Table 3.35). The tariff proposals for each segment of the natural gas distribution service and supply of gas other than natural gas service presented by companies for the thermal year 2007-2008 were approved by the Authority with resolutions no. 261 of 15 October 2007, no. 293 of 23 November 2007, no. 321 of 14 December 2007, no. 7 of 28 January 2008 (ARG/gas), no. 19 of 22 February 2008 (ARG/gas) and can be viewed on the Authority's Internet site.

Prices on the free market

In 2007, the average gas price (weighted with the volumes sold), net of taxes, charged by suppliers or wholesalers active on the end-user market was 32.28 c€/m^3. The customers of the protected market paid an average of 43.15 c€/m^3 for gas, while 28.13 c€/m^3 was the average price paid by customers in the free market. These are the results that emergefrom the initial, provisional processing of data provided by operators in the annual survey on electricity and gas markets. For the first time this year the survey provided data in a higher number of classes in which the customers are classified by consumption volume. The class that in the previous year included customers with annual consumption "exceeding 200,000 m^3", was split up into three newclasses: one for customers with annual consumption "from 200,000 to 2,000,000 m^3," one with customers consuming "from 2,000,000 to 20,000,000 m^3" and one with customers that consume "over 20,000,000 m^3." The reason for this was to analyse better the volumes and prices paid by large sized energy customers.

The addition of new classes confirms the expectationa on performance and volumes: protected market customers pay much more than free market customers having similar consumption profiles; as the customer gets larger in terms of annual consumption volumes, the price tends to decrease, and to a greater extent in the case of free customers.

In the classes subject to regulatory protection, the price on the free market is higher than the economic conditions set by the Authority for domestic customers that consume less than 200,000 m^3 only (which, in 2005, was 39.46 c€/m^3 on average, net of taxes – see the paragraph below). Smaller consumers pay an average of 44.59 c€/m^3, against 39.16 and 33.75 c€/m^3 of medium consumers and 33.28 c€/m^3 of large consumers. The price differential between small and large consumers of 11.31 c€/m^3 is therefore considerable. A substantial portion of this difference is due to the distribution cost, as low consumption customers are usually served though distribution networks. This consideration is also applicable to small free market customers.

The largest customer class is obviously not represented on the protected market. To this end, it is important to note that the presence of volumes and prices in the protected consumption classes that exceed 200,000 m^3 is due to the fact that these classes include the consumption and prices of those customers that have the option of changing supplier but have not yet done so and therefore continue to be covered by the contractual terms that are safeguarded by the Authority.

In the free market, price is more directly influenced by customer size: smaller customers pay almost 15 c€/m^3 more than larger consumers, which on average obtain gas at a price of 26.39 c€/m^3.

A comparison with the 2006 data shows a rise in the cost of gas that varies a lot depending on the market and consumptionclass: customers of the protected market have incurred increases of 3.8% on average.

Conversely, free market customers have seen the price of gas drop by 1.4% on average, except for those in the 5,000 - 200,000m^3 class which appear to have shared the same fate as the protected customers, with a price that increased by 4.4%. It can also be noticed that, in absolute terms, the average price increase between 2004 and 2007 was practically identical for both markets.

TAB. 3.36

Average sales prices net of taxes on the end market

c€/m³

CUSTOMER AND CONTRACT TYPES	2004	2005	2006	2007	VAR. %
PROTECTED MARKET	33.65	35.36	41.57	43.15	3.8
Consumption of under 5,000 m³	35.32	37.01	43.32	44.59	2.9
Consumption of between 5,000 and 200,000 m³	30.44	32.12	37.94	39.16	3.2
Consumption of between 200,000 and 2,000,000 m³	27.04(A)	29.39(A)	32.64(A)	33.75	-
Consumption of between 2,000,000 and 20,000,000 m³	27.04(A)	29.39(A)	32.64(A)	33.28	-
Consumption of over 20,000,000 m³	27.04(A)	29.39(A)	32.64(A)	-	-
FREE MARKET	18.76	23.23	28.53	28.13	-1.4
Consumption of under 5,000 m³	32.99	31.95	41.99	40.96	-2.4
Consumption of between 5,000 and 200,000 m³	27.24	29.76	35.53	37.10	4.4
Consumption of between 200,000 and 2,000,000 m³	18.46(A)	23.00(A)	28.07(A)	30.86	-
Consumption of between 2,000,000 and 20,000,000 m³	18.46(A)	23.00(A)	28.07(A)	27.85	-
Consumption of over 20,000,000 m³	18.46(A)	23.00(A)	28.07(A)	26.39	-
TOTAL	23.13	26.89	32.61	32.28	-

(A) Up to 2006, the price was recorded for a single category of users with consumption above 200,000 m³. The values are therefore not comparable with the 2007 figure.

Source: AEEG calculations on data provided by the operators.

Economic reference conditions

The constant rise in international oil prices triggered a constant and significant increase in gas tariffs for Italian families in 2006 and until Spring 2007. The dynamics of the elementary gas index, gathered on a monthly basis by Istat in the context of the inflation basket[8] is illustrated in Table 3.37.

In the first four months of 2006, the price of gas for Italian families as reported by Istat rose by 1% per month. There were two drops in May and April, which were mostly offset by the abrupt increase in July (3%).

The increases ceased in the summer: indeed, as from the month of August, the price remained essentially unchanged until the end of the year. Thanks to this stability, the trend rate started to decrease, reaching single-digit values again (in December it was 6.6%).

The decrease continued in 2007. Except for January, in which the index recorded a substantial increase of 1.2%, up to the fall the price of gas remained unchanged or dropped (there was a significant -2.3% drop in May). As from October, the increases in international oil prices made the index go up again.

On average, gas prices recorded a total variation of 9.3% in 2006 and 0.1% in 2007. Given that in the meantime the general price level had risen by 2.1% and by 1.8% respectively, the gas trend posted an increase of 7.1% in real terms in the first of the two years considered and a reduction of 1.7% in the second.

Compared to other European countries (Fig. 3.9), this confirms a substantial degree of stability in the price of gas in the European environment as well.

Against a variation in the Brent price of 11% in 2007 (following the 20% and 42% of the previous two years, as illu-

8 More precisely, as part of the basket of the consumer price index, Istat shows the price of gas (which includes the gas used for heating, cooking and hot water production, distributed through urban network or gas cylinders) within the "home expenses" category. In 2008, the weight of the gas basic index in the basket, not including tobacco, dropped to 2.0% from 2.3% in 2007.

TAB. 3.37

Istat monthly gas price indices

Index numbers (1995=100) and percentage variations

MONTHS	2006				2007			
	NOMINAL PRICE	% CHANGE 2006-2005	REAL PRICE(A)	% CHANGE 2006-2005	NOMINAL PRICE	% CHANGE 2007-2006	REAL PRICE(A)	% CHANGE 2007-2006
January	145.2	9.5	114.1	7.2	154.9	6.7	119.1	5.0
February	146.8	10.5	115.0	8.3	154.9	5.5	118.7	3.7
March	148.2	11.3	115.9	8.9	153.7	3.7	117.7	2.0
April	149.3	10.8	116.4	8.5	150.1	0.5	114.7	-0.9
May	147.9	9.7	115.1	7.4	149.0	0.7	113.5	-0.9
June	147.6	9.5	114.7	7.2	149.1	1.0	113.4	-0.6
July	152.1	9.5	117.7	7.0	148.0	-2.7	112.2	-4.3
August	152.6	9.9	117.9	7.5	147.4	-3.4	111.6	-4.9
September	152.8	9.7	118.2	7.4	147.4	-3.5	111.6	-5.1
October	153.1	7.8	118.7	6.0	149.0	-2.7	112.5	-4.7
November	153.2	6.8	118.5	4.9	149.8	-2.2	112.6	-4.5
December	153.1	6.6	118.4	4.7	150.2	-1.9	112.6	-4.4
Annual average	**150.2**	**9.3**	**116.7**	**7.1**	**150.3**	**0.1**	**114.2**	**-1.7**

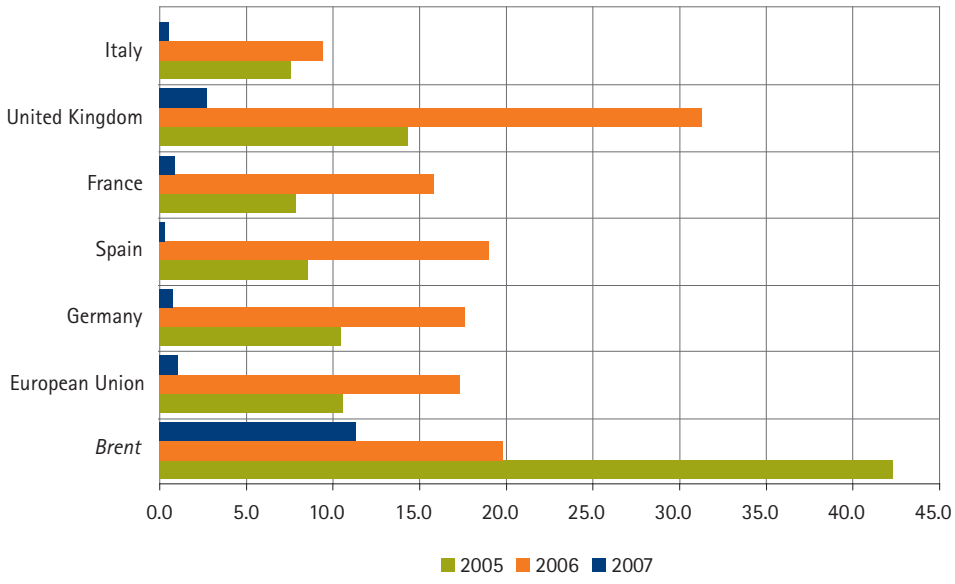
(A) Percentage ratio between the gas price index and the general index (excluding tobacco products).

Source: AEEG calculations on Istat data, index numbers for entire population – National indices.

FIG. 3.9

Changes in the prices of gas for families in the major European countries

YoY percentage variations



Source: Eurostat data, harmonised consumer price index figures.

strated in the graph), the figure shows that Italy was the country that managed to contain the increase in the price of gas for families the most (7.6% in 2005, 9.4% in 2006 and 0.5% in 2007), at a level that was much lower than the average of the European countries (10.6%, 17.3% and 1% in the three years analysed).

In 2007, only Spain recorded a change in the price of gas which, at 0.3%, was lower than Italy's.

Average National Reference Gas Tariff

The dynamics recorded by Istat are confirmed by the performance of the national average "reference price" for domestic consumers (Fig. 3.10).

This is the national average value of the reference economic conditions (differentiated by region), as defined by resolution no. 138 of 4 December 2003, which suppliers must

offer to families[9], in addition to any conditions of their own. In 2007, the average reference price of 67.29 c€/m^3, was lower by 0.5% compared to the value recorded in 2006 of 67.63 c€/m^3.

The increase in international oil prices caused the component relating to the raw material purchase costs to continue to increase (the so-called QE component) from the third quarter 2005 to the entire third quarter2006. After two quarters, fourthof 2006 and first2007, in which it remained unchanged, the QE then had two significant reductions, of 8.5% and 4.3% in the second and third quarter of last year. 2007 then closed with an increase of 6.2%.

At the beginning of 2006, the increases in the QE were mitigated by a drop in the component covering sales costs (which in turn was due to a reduction in the cost of wholesale marketing), which was partially offset by an increase in infrastructure costs (which increased on account of an increase in the cost of transport). In the second and third quarter of the same year though, the raw material increases were accompanied by an increase in this component as well (due to an increase in storage costs in April and an increase in transport costs in October).

In the last quarter of 2007 the increase in the raw material component was associated with an increase of 1.7% in the components covering the allowed transport and retail sales costs. To the increases in these components is added the effect that taxes, partially calculated as a percentage, add to the total price.

2008 opened with a new, substantial increase of 5.5%, which was due to raw materials as well as upwards revisions of transport costs and retail marketing. In April, persisting international hydrocarbon price increases since summer of 2007, caused the raw material costs to increase further and to this was added a slight increase in the storage cost component. Overall, the average national value of economic reference conditions for domestic customers that consume less than 200,000 m^3 per year increased in the second quarter by 4.1%.

As at 1 April 2008 61% of the average national reference tariff (Fig. 3.11) was comprised of cost coverage components while the remaining 39% of the taxes that burden the natural gas sector (excise duty, regional surcharge and VAT).

The cost of raw materials accounts for more than one-third (36.1%) of the total tariff, selling costs for 8.7% and those for facility use and maintenance for the remaining 15.9%. In relation to infrastructure costs, the largest component is the one needed to cover distribution; as a matter of fact, the Cd component accounts for 10% of the total tariff, while the

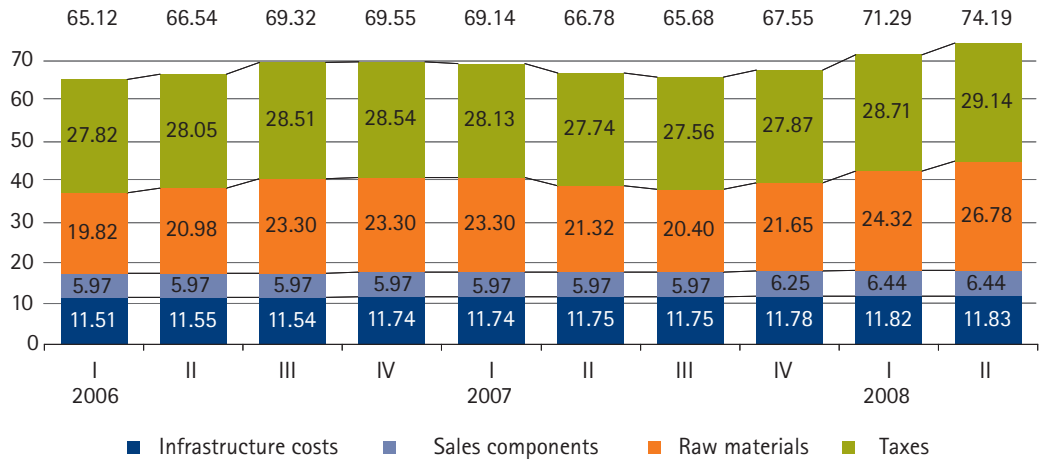


FIG. 3.10

Breakdown of the average national reference natural gas tariff for the last two years

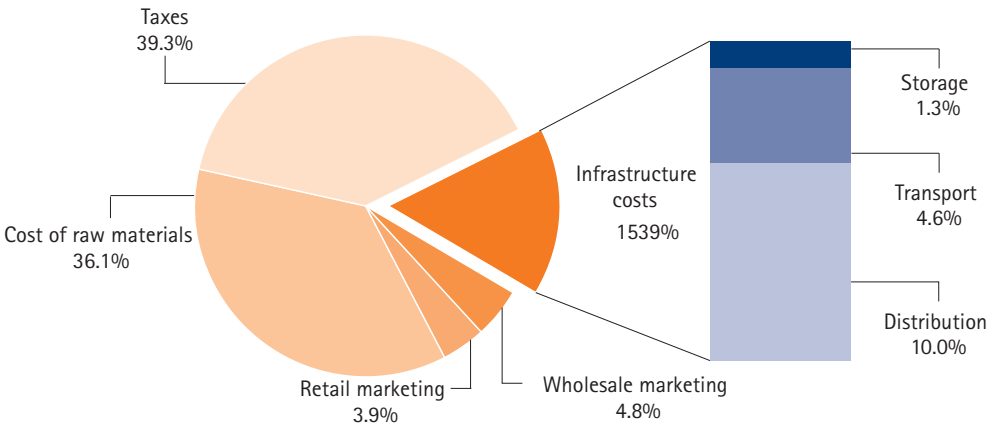
c€/m^3

9 As from 1 October 2006, the reference economic conditions established by the Authority pursuant to resolution no. 138/03, must be offered by suppliers to domestic consumers only, while as from 1 January 2004 to October 2006 these terms had to be offered to all customers (small commercial, artisans and families) using less than 200,000 m^3 per year.

FIG. 3.11

Percentage breakdown of the average reference natural gas price as at 1 April 2008

Average national value of the economic terms for supplying of domestic users consuming less than 200,000 m^3 annually; percentage values



component covering transport costs reached 4.6% and the storage component 1.3%.

Table 3.29 shows the value of the new excise duty and the VAT rates effective for 2008.

From 1 January 2008 the tax reform for energy products (as established by legislative decree no. 26 of 2 February 2007) which implemented European Directive 2003/96/EC, according to which the excise duties on natural gas are now calculated based on consumption rather than final uses. Legislative decree no. 26/07 replaced the consumption tax with excise rates for combustion gas for civilian uses, structured along progressive ratesfor annual consumption (up to 120 m^3; from 120 to 480 m^3; from 480 to 1,560 m^3; over 1,560 m^3), eliminating the previous references to T1, T2, T3 and T4 tariffs, the application of which had been established on the basis of gas usage (respectively: tariff for cooking and hot water production; for individual heating; for central heating; use in crafts or commercial uses, industrial uses). The decree also revised the VAT rate which followed a similar scheme: the rate reduced by 10%, which had been previously used only for cooking and production of hot water, is now applicable to almost all uses for the first 480 m^3 of annual consumption.

Legislative decree no. 26/07, which defined the effectiveness of the new tax also for other energy and electricity products as from 1 June 2007, postponed to 1 January 2008 the implementation of art. 2 which concerns the excise duty rates and the value added tax rates applicable to natural gas for combustion in civilian uses so as to allow for the appropriate adaptation of the sales company invoicing systems.

The values of the excise rates described in Table 3.38 are however not those established by legislative decree no. 26/07, but those established by the decree of the Ministry of the Economy and Finance dated 13 February 2008 which reduced them, starting from 1 January 2008 (and therefore with retroactive effect), so that they approached the excise duties on natural gas for combustion in civilian uses consumed in the areas set forth in art. 1 of the Consolidated Law on interventions in the South. This is a part of the progressive process of harmonising the excise rates applied on natural gas throughout Italy.

TAB. 3.38

Taxes on gas

c€/m³ for excise duties and percentage rates for VAT, in effect in 2008

Consumption class	CIVILIAN USES			INDUSTRIAL USES		
	< 130 m³	120–480 M(m³)	> 1,560 M(m³)	< 1,560 M(m³)	< 1.2 M(m³)	> 1.2 M(m³)
EXCISE DUTY						
Normal	3.80	17.10	16.60	18.30	1.2948	1.2948
Towns in formerly subsidised areas of Southern Italy (former Cassa del Mezzogiorno)(A)	3.80	13.50	12.00	15.00	-	-
REGIONAL SURCHARGE (B)						
Piedmont	1.9000	2.5800	2.5800	2.5800	0.6249	0.5200
Veneto	0.7747	2.3241	2.5823	3.0987	0.6249	0.5165
Liguria						
- climate zones C and D	1.9000	2.5800	2.5800	2.5800	0.6249	0.5200
- climate zone E	1.5500	1.5500	1.5500	1.5500	0.6249	0.5200
- climate zone F	1.0300	1.0300	1.0300	1.0300	0.6249	0.5200
Emilia Romagna	2.2000	3.0987	3.0987	3.0987	0.6249	0.5165
Tuscany	1.5000	2.6000	3.0000	3.0000	0.6000	0.5200
Umbria	0.5165	0.5165	0.5165	0.5165	0.5165	0.5165
Marche	1.5500	1.8100	2.0700	2.5800	0.0000	0.0000
Lazio	1.9000	3.0990	3.0990	3.0990	0.6249	0.5160
Abruzzi						
- climatic zones E and F	1.0330	1.0330	1.0330	1.0330	0.6474	0.6474
- other zones	1.9000	2.3241	2.5823	2.5823	0.6474	0.6474
Molise	3.0987	3.0987	3.0987	3.0987	0.6200	0.6200
Campania	1.9000	3.1000	3.1000	3.1000	0.6249	0.6249
Apulia	1.9000	3.0980	3.0980	3.0980	0.0000	0.0000
Calabria	2.2000	2.5823	2.5823	2.5823	0.6474	0.6474
VAT rate (%)	10	10	20	20	10(C)	10(C)

(A) These are the territories indicated by law no. 218/78.

(B) The special-status regions set the regional surcharge at zero; the region of Lombardy, abolished it in 2002 (art. 1, paragraph 10, regional law no. 27 of 18 December 2001) while Basilicata abolished it in 2008 (regional law no. 28 of 28 December 2007).

(C) Rate for businesses involved in extraction, agriculture and manufacturing; for other businesses the rate rises to 20%.

The quality of service

Quality of gas transport

The analysis of the figures relating to the quality of service provided to consumers, as communicated by operators to the Authority pursuant to resolution no. 168/04, showsthe fulfilment by the operators of the provisions set forth in the Gas Service Quality Code. Below are the figures for the entire sector, as well as some tables showing the performance of opera-

tors that serve more than 100,000 customers. Figure 3.12 shows data on the inspection of the low and high pressure network which took place as from 1997. Nearly 40% of the network had been inspected from 2004, when the second regulation period started, up to 2005.

As from 2006, the inspection activities increased reaching a percentage higher than 45%, for both the high and the low pressure networks. Overall, the inspection carried out by the entire gas sector complies with the service obligations set by resolution no. 168/04.

As regards emergency intervention calls (Fig. 3.13), the average time required is considerably less than the maximum time of 60 minutes set forth in resolution no. 168/04. The average time in 2007 decreased slightly in line with the total number of emergency intervention calls received.

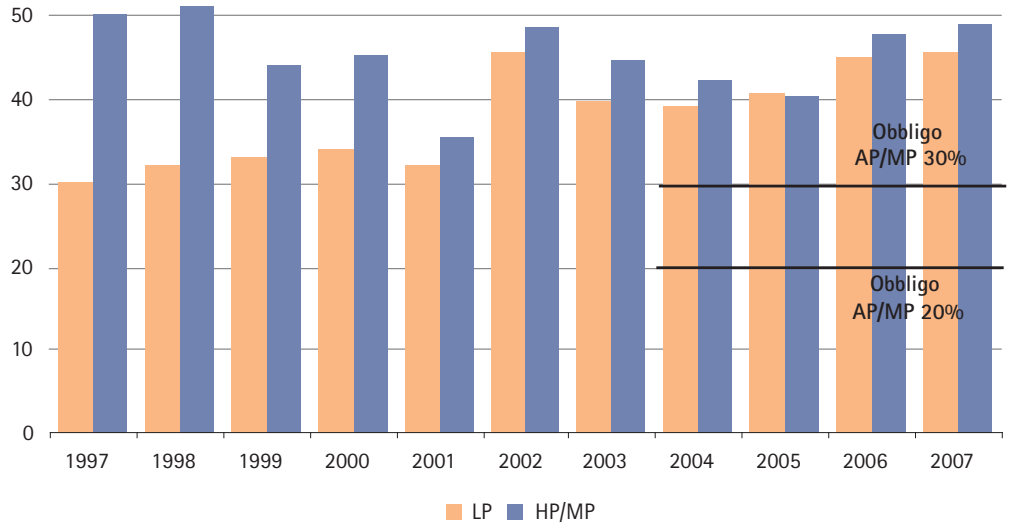
Table 3.39 summarises the leakages as recorded by operators by location (i.e location in the distribution plant) and divided according to the origin of the location activity (following scheduled inspections and notification by third parties).

Table 3.40 gives a general summary of the emergency intervention services provided in 2007 in relation to the large operators.

Tables 3.41 and 3.42 provide a general summary of the grid inspection and leakage detection activities carried out in 2006 concerning large distributors. Table 3.43 provides a general summary of the cathode protection activity relating to large operators in 2006.

FIG. 3.12

Percentage of grid inspected during the 1997-2007 period



Source: declarations of operators provided to AEEG.

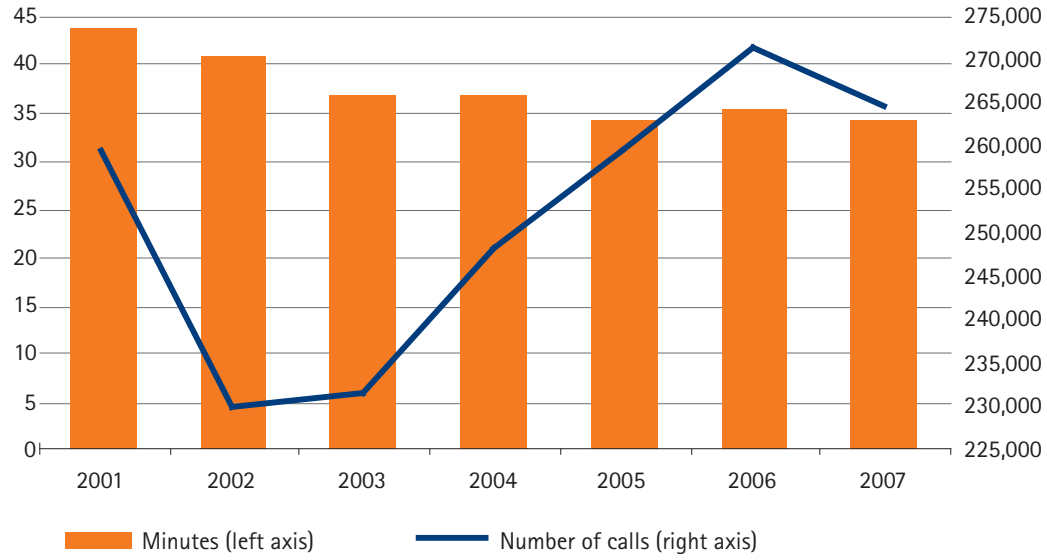


FIG. 3.13

Calls for emergency intervention on distribution grid

2001-2007 period; actual average time (in minutes) and number of calls

Source: declarations of operators provided to AEEG.

TAB. 3.39

Leakages broken down by type

Year 2007

LOCATION	NUMBER OF LEAKAGES FOUND AFTER SCHEDULED INSPECTIONS					NUMBER OF LEAKAGES FOUND AFTER THIRD PARTY NOTIFICATION					TOTAL
	A_1	A_2	B	C	Total	A_1	A_2	B	C	Total	
On the grid	1.321	1.310	1.187	1.098	4.916	3.311	1.260	1.215	1.297	7.083	11.999
On user derivation plant (sunken part)	182	229	364	636	1.411	4.615	2.157	1.612	2.532	10.916	12.327
On user derivation plant (aerial part)	747	54	192	1.243	2.236	16.868	5.932	7.011	24.660	54.471	56.70
On metering unit	132	23	45	327	527	26.674	7.868	5.504	24.864	64.910	65.437
TOTALE	2.382	1.616	1.788	3.304	9.090	51.468	17.217	15.342	53.353	137.380	146.470

Source: declarations of operators provided to AEEG.

TAB. 3.40

Emergency intervention in relation to the large operators in 2007

COMPANY	CONSUMERS	DISTRIBUTION PLANT		AFTER THE DELIVERY POINT		TOTAL CASES
		CASES	CASES EVERY 1,000 CONSUMERS	CASES	CASES EVERY 1,000 CONSUMERS	
Società Italiana per il Gas	4,554,000	58,746	12.9	4,726	1.0	63,472
Enel Rete Gas	2,020,652	27,719	13.7	2,008	1.0	29,727
Hera	1,003,747	16,452	16.4	1,118	1.1	17,570
Aem Distribuzione Gas e Calore	827,885	20,362	24.6	1,498	1.8	21,860
Napoletana Gas	708,234	12,910	18.2	119	0.2	13,029
Italcogim Reti	650,906	9,331	14.3	829	1.3	10,160
Toscana Energia	645,645	10,413	16.1	826	1.3	11,239
Azienda Energia e Servizi	471,476	5,219	11.1	1,066	2.3	6,285
Enìa	381,836	5,872	15.4	286	0.8	6,158
Asm Reti	379,484	2,785	7.3	1,079	2.8	3,864
Siciliana Gas	336,543	7,490	22.3	964	2.9	8,454
Iride Acqua Gas	327,564	4,551	13.9	229	0.7	4,780
Ascopiave	319,845	2,166	6.8	423	1.3	2,589
AcegasAps	260,618	1,838	7.1	490	1.9	2,328
Arcalgas Progetti	253,463	4,389	17.3	781	3.1	5,170
Consiag Reti	180,359	2,288	12.7	301	1.7	2,589
Linea Distribuzione	161,846	310	1.9	393	2.4	703
SGR Reti	160,493	901	5.6	175	1.1	1,076
Thüga Laghi	157,496	1,917	12.2	265	1.7	2,182
Thüga Padana	144,076	3,224	22.4	186	1.3	3,410
Edison DG	137,008	1,646	12.0	162	1.2	1,808
AMG Energia	136,790	4,119	30.1	360	2.6	4,479
Gas Natural Distribuzione Italia	134,214	2,351	17.5	742	5.5	3,093
Thüga Mediterranea	133,178	1,804	13.6	154	1.2	1,958
Agsm Rete Gas	130,154	2,364	18.2	348	2.7	2,712
Trentino Servizi	121,717	577	4.7	132	1.1	709
GEI Gestione Energetica impianti	121,260	1,187	9.8	75	0.6	1,262
Erogasmet	120,782	1,897	15.7	221	1.8	2,118
Multiservizi	113,771	1,943	17.1	31	0.3	1,974
AMG Gas	112,555	1,693	15.0	18	0.2	1,711
Coingas	111,689	1,314	11.8	108	1.0	1,422
Acam	108,053	2,046	18.9	292	2.7	2,338
Amga Azienda Multiservizi	102,036	702	6.9	236	2.3	938
TOTAL	**15,529,375**	**222,526**	**14.3**	**20,641**	**1.3**	**243,167**

Source: declarations of operators provided to AEEG.

TAB. 3.41

Network inspected by large operators in 2007

OPERATOR	LOW PRESSURE NETWORK			HIGH PRESSURE NETWORK		
	NETWORK EXTENSION km(A)	LENGTH OF NETWORK INSPECTED IN km	%INSPECTED NETWORK	NETWORK EXTENSION km(A)	LENGTH OF NETWORK INSPECTED IN km	%INSPECTED NETWORK
Società Italiana per il Gas	23,000	7,697	33.5	17,245	6,786	39.4
Enel Rete Gas	18,189	6,247	34.3	11,512	4,692	40.8
Hera	4,562	2,454	53.8	7,668	4,166	54.3
Aem Distribuzione Gas e Calore	2,359	1,890	80.1	483	478	98.8
Napoletana Gas	3,122	1,495	47.9	1,300	619	47.7
Italcogim Reti	2,742	2,348	85.6	1,936	1,756	90.7
Toscana Energia	3,657	1,623	44.4	2,664	1,438	54.0
Azienda Energia e Servizi	1,139	413	36.2	186	56	30.4
Enìa	2,743	1,533	55.9	2,692	1,655	61.5
Asm Reti	3,332	2,111	63.3	1,085	840	77.4
Siciliana Gas	2,495	653	26.2	1,078	385	35.7
Iride Acqua Gas	1,252	424	33.9	419	141	33.8
Ascopiave	3,467	1,258	36.3	1,681	586	34.9
AcegasAps	1,698	1,311	77.2	417	330	79.2
Arcalgas Progetti	1,680	904	53.8	1,962	1,147	58.5
Consiag Reti	988	370	37.4	546	203	37.1
Linea Distribuzione	1,086	141	13.0	457	66	14.4
SGR Reti	1,200	617	51.4	1,338	528	39.5
Thüga Laghi	1,263	499	39.5	640	336	52.5
Thüga Padana	1,342	930	69.2	927	679	73.2
Edison DG	1,343	1,296	96.5	1,049	667	63.6
AMG Energia	500	500	100.0	237	231	97.3
Gas Natural Distribuzione Italia	540	540	100.0	257	223	86.7
Thüga Mediterranea	1,228	515	42.0	1,188	585	49.2
Agsm Rete Gas	822	635	77.2	290	223	77.0
Trentino Servizi	828	288	34.8	366	151	41.4
GEI Gestione Energetica impianti	1,483	680	45.8	578	270	46.7
Erogasmet	917	399	43.5	359	170	47.4
Multiservizi	430	107	24.9	522	153	29.4
AMG Gas	427	177	41.5	120	42	34.8
Coingas	1,033	963	93.2	672	647	96.2
Acam	1,118	344	30.8	294	121	41.1
Amga Azienda Multiservizi	1,113	383	34.4	392	131	33.5
TOTAL	**93,100**	**41,743**	**44.8**	**62,560**	**30,503**	**48.8**

(A) The network extension includes that of the plants of municipalities in the start-up phase, which have been taken over or which have been lost during the year.

Source: declarations of operators provided to AEEG.

TAB. 3.42

Leakages detected in large operator networks in 2007

OPERATOR	METERS OF NETWORK PER CONSUMER	NETWORK LENGTH (km)	LENGTH OF NETWORK INSPECTED (km)	NUMBER OF LEAKAGES			
				FROM INSPECTED NETWORK (km)[A]	PER km OF INSPECTED NETWORK	NOTIFIED BY THIRD PARTIES	PER km BASED ON THIRD PARTY
Società Italiana per il Gas	9.00	40,245	14,483	1,301	0.09	23,848	0.59
Enel Rete Gas	14.77	29,701	10,939	229	0.02	13,390	0.45
Hera	11.97	12,230	6,620	474	0.07	9,831	0.80
Aem Distribuzione Gas e Calore	3.43	2,842	2,368	1,501	0.63	14,340	5.05
Napoletana Gas	6.42	4,422	2,114	205	0.10	7,818	1.77
Italcogim Reti	13.91	4,678	4,104	25	0.01	4,189	0.90
Toscana Energia	9.80	6,322	3,061	135	0.04	4,909	0.78
Azienda Energia e Servizi	2.81	1,324	469	19	0.04	3,120	2.36
Enìa	14.37	5,435	3,189	155	0.05	3,351	0.62
Asm Reti	12.65	4,417	2,951	147	0.05	1,640	0.37
Siciliana Gas	10.61	3,573	1,038	8	0.01	4,448	1.24
Iride Acqua Gas	5.10	1,671	565	892	1.58	3,394	2.03
Ascopiave	20.30	5,148	1,844	25	0.01	810	0.16
AcegasAps	8.11	2,115	1,641	119	0.07	941	0.44
Arcalgas Progetti	19.29	3,642	2,051	35	0.02	2,309	0.63
Consiag Reti	8.51	1,534	573	57	0.10	771	0.50
Linea Distribuzione	9.54	1,544	207	10	0.05	221	0.14
SGR Reti	16.36	2,538	1,145	15	0.01	772	0.30
Thüga Laghi	12.40	1,902	834	586	0.70	1,100	0.58
Thüga Padana	16.24	2,270	1,608	49	0.03	2,045	0.90
Edison DG	17.45	2,392	1,963	142	0.07	839	0.35
AMG Energia	5.39	737	731	5	0.01	3,178	4.31
Gas Natural Distribuzione Italia	12.39	797	763	58	0.08	988	1.24
Thüga Mediterranea	18.14	2,415	1,100	28	0.03	960	0.40
Agsm Rete Gas	8.54	1,112	858	42	0.05	998	0.90
Trentino Servizi	12.34	1,194	439	6	0.01	232	0.19
GEI Gestione Energetica impianti	17.00	2,062	950	8	0.01	1,235	0.60
Erogasmet	11.24	1,277	569	104	0.18	1,340	1.05
Multiservizi	9.80	952	261	1	0.00	992	1.04
AMG Gas	4.86	547	219	30	0.14	837	1.53
Coingas	15.27	1,705	1,609	19	0.01	385	0.23
Acam	13.24	1,412	465	146	0.31	845	0.60
Amga Azienda Multiservizi	14.75	1,505	515	25	0.05	383	0.25
TOTAL	**10.50**	**155,660**	**72,246**	**6,601**	**0.09**	**116,459**	**0.75**

Source: Declarations of operators provided to AEEG.

TAB. 3.43

Cathode protection of large operators' networks in 2007

Grid extension in Km

OPERATOR	NETWORK EXTENSION	STEEL NETWORK EXTENSION	STEEL EXTENSION WITH CATHODE PROTECTION	UNPROTECTED STEEL NETWORK EXTENSION	% OF STEEL NETWORK WITH CATHODE PROTECTION
Società Italiana per il Gas	40,245	31,221	31,033	188	99.4%
Enel Rete Gas	29,701	27,706	27,328	377	98.6%
Hera	12,230	10,273	10,062	211	98.0%
Aem Distribuzione Gas e Calore	2,842	1,050	663	387	63.2%
Napoletana Gas	4,422	3,250	3,117	133	95.9%
Italcogim Reti	4,678	4,035	4,035	-	100.0%
Toscana Energia	6,322	5,202	4,595	608	88.3%
Azienda Energia e Servizi	1,325	514	514	-	100.0%
Enìa	5,435	5,198	4,940	258	95.0%
Asm Reti	4,417	3,080	2,564	516	83.2%
Siciliana Gas	3,573	2,971	2,932	39	98.7%
Iride Acgua Gas	1,671	511	84	427	16.4%
Ascopiave	5,148	5,073	5,073	-	100.0%
AcegasAps	2,115	686	481	205	70.2%
Arcalgas Progetti	3,642	2,430	2,430	-	100.0%
Consiag Reti	1,534	1,440	1,435	4	99.7%
Linea Distribuzione	1,544	1,230	988	242	80.3%
SGR Reti	2,538	2,518	2,518	-	100.0%
Thuga Laghi	1,902	1,779	1,762	17	99.0%
Thuga Padana	2,270	2,249	2,249	-	100.0%
Edison DG	2,392	1,507	1,502	5	99.7%
AMG Energia	737	231	231	-	100.0%
Gas Naturai Distribuzione Italia	797	787	512	275	65.0%
Thuga Mediterranea	2,415	2,006	1,979	26	98.7%
Agsm Rete Gas	1,112	808	769	39	95.1%
Trentino Servizi	1,194	1,164	1,164	-	100.0%
GEI Gestione Energetica impianti	2,062	2,020	2,020	-	100.0%
Erogasmet	1,277	1,277	1,277	-	100.0%
Multiservizi	952	767	758	9	98.8%
AMG Gas	547	523	426	97	81.5%
Coingas	1,705	1,699	1,699	-	100.0%
Acam	1,412	1,317	846	471	64.2%
Amga Azienda Multiservizi	1,505	1,146	1,032	114	90.1%
TOTAL	**155,660**	**127,665**	**123,016**	**4,649**	**96.4%**

Source: Declarations of operators provided to AEEG.

Commercial quality of the gas distribution service

Natural gas distribution service

As from 2006, the Gas Service Quality Code has provided stricter specific standards and transformed into a specific standard the provision of a time estimate for complex work.

According to the data submitted out of a total of 1,782,514service sprovided, compensation paid to customers for failure to comply with the standards increased reaching the number of 43,886. (Table 3.44). Compared to 2006 there was a 25% increase in the compensations paid. In 2007, the number of cases of failure to comply with standards and the actual number compensations effectivelypaid in the year are

TAB. 3.44

Number of compensations paid due to non-compliance with commercial quality standards

1997-2007 period; operators with more than 5,000 consumers

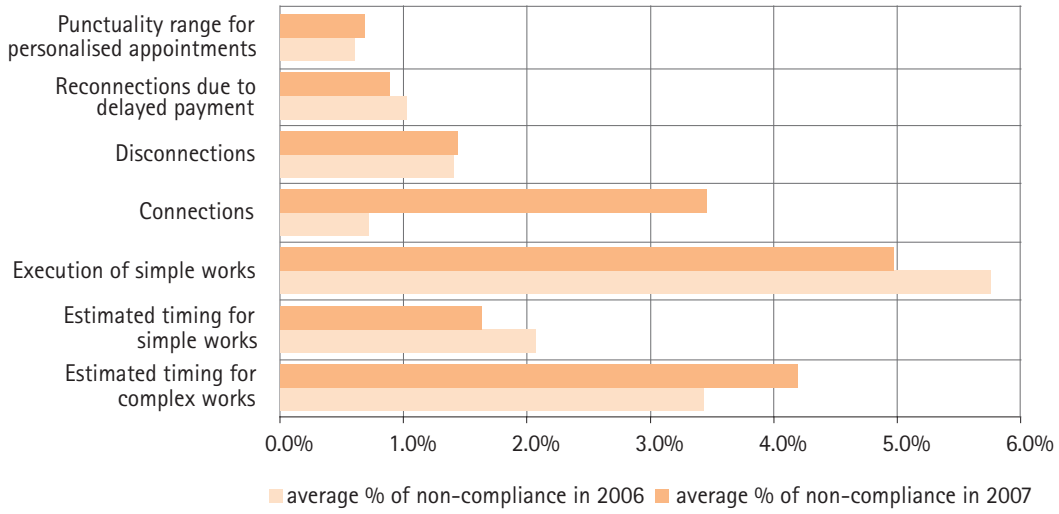
	SERVICE CARD					COMMERCIAL QUALITY REGULATION					
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Case of failure to comply with standards subject to reimbursement	14,265	12,366	11,212	14,635	16,424	14,651	11,766	25,826	34,330	31,439	43,741
Reimbursement actually paid during the year	1,237	707	1,640	3,709	12,086	13,368	8,535	19,249	31,189	35,146	43,886

Source: Declarations of operators provided to AEEG.

FIG. 3.14

Percentage of non-compliance with specific commercial quality standards

2005-2007 period; operators with more than 5,000 consumers



Source: Declarations of operators provided to AEEG.

almost equal. This shows that operators tend to pay compensation more promptly andand respecting set deadlines. The largest class of services providedsubject to specific standards is service connection, which alone covers almost 41% of the total. Users with a metering unit up to class G6 (domestic use) generated almost all of the requests for services provided and is therefore the one protected the most by the regulations introduced by the Authority.

Regarding percentages of non-compliance in 2007 (Fig. 3.14), it should be noted that the service with the highest value is the "execution of simple works", followed by the "estimated timing for complex works".

It should be however taken into account that the actual time for both services for customers with a metering unit up to G6 is by far lower than the standard set by the Authority (Fig. 3.15).

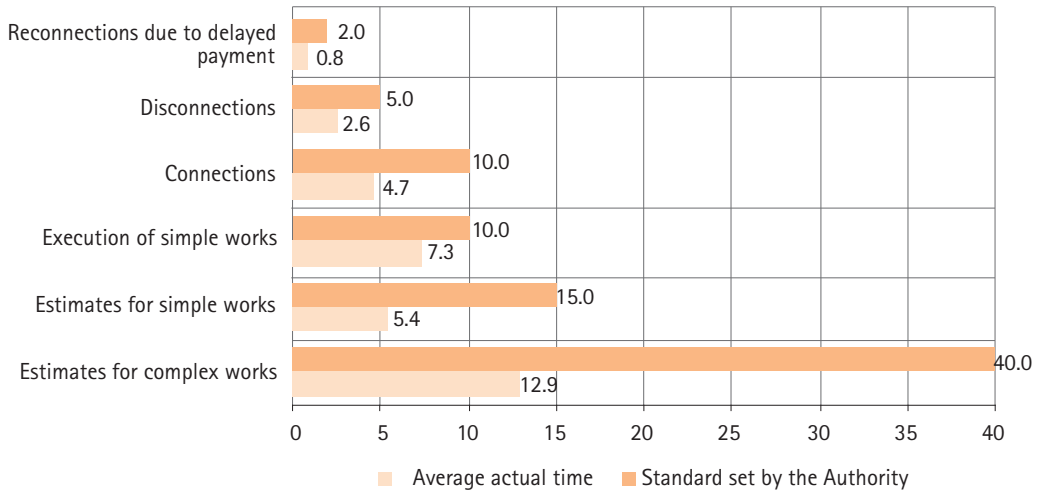


FIG. 3.15

Comparison of average actual time and standard defined by the Authority for all commercial quality services for customers with a metering unit up to class G6

2007; operators with more than 5,000 consumers

Source: Declarations of operators provided to AEEG.

TAB. 3.45

Services subject to automatic compensation for consumers supplied in low pressure with metering unit up to class G6

2006-2007

SERVICE	AUTHORITY STANDARD	YEAR 2006			YEAR 2007		
		NUMBER OF REQUESTS	AVERAGE ACTUAL TIME	NUMBER OF AUTOMATIC COMPENSATIONS	NUMBER OF REQUESTS	AVERAGE ACTUAL TIME	NUMBER OF AUTOMATIC COMPENSATIONS
Estimates for simple works	15 working day	270,704	5.7 working day	6,034	265,788	5,4 working day	5,032
Estimates for complex works	40 working day	12,076	12.8 working day	219	10,732	12.9 working day	369
Execution of simple works	10 working day	224,788	5.7 working day	12,142	204,557	7.3 working day	8.605
Connections	10 working day	739,587	3.5 working day	8,531	725,210	4.7 working day	22,963
Disconnections	5 working day	318,864	2.7 working day	5,265	316,572	2.6 working day	4,170
Reconnections due to delayed payment	2 weekdays	60,597	0.8 weekday	731	66,715	0.8 weekday	530
Punctuality range for personalised appointments	2 hours	162,168	–	900	146,175	–	1,009
TOTAL	-	1,788,784	-	33,822	1,735,749	-	42,678

Source: Declarations of operators provided to AEEG.

Table 3.45 summarises the main figures for 2006 and 2007 regarding all of the services subject to automatic compensation, with reference to the most common user type, i.e. consumers supplied in low pressure with a metering unit up to class G6. There has been compliance with all standards set by the Authority for all services.

Natural gas sales service

Table 3.46 shows the "Invoice adjustments" service which is subject to a specific standardsince 2006. The average number of services managed by suppliers as well as the average waiting times and compensations paid are indicated. There has been compliance with all standards set by the Authority for all services for corrections as well. Figure 3.16 shows the trend in the management of written complaints or information requests received by suppliers serving more than 100,000 consumers for 2007, regarding the most common user type, i.e. consumers supplied in low pressure with a metering unit up to class G6. Operators respond to 90 percent of written complaints or written requests for information within the established 20 working days.

Quality of telephone services

For the first time in 2007, data was collected on quality of services provided by telephone for the gas sector. Figure 3.17 shows the performances of suppliers with call centers serving more than 100,000 customers. The datacommunicated by the operators on a voluntary basis show a marked disparity due to the organisational and technological differences between the various companies. Despite this fact, it is interesting to note that 16 suppliers rank at a service level that exceeds 80%.

TAB. 3.46

Service subject to automatic compensation for low pressure supplied consumers with metering unit up to class G6

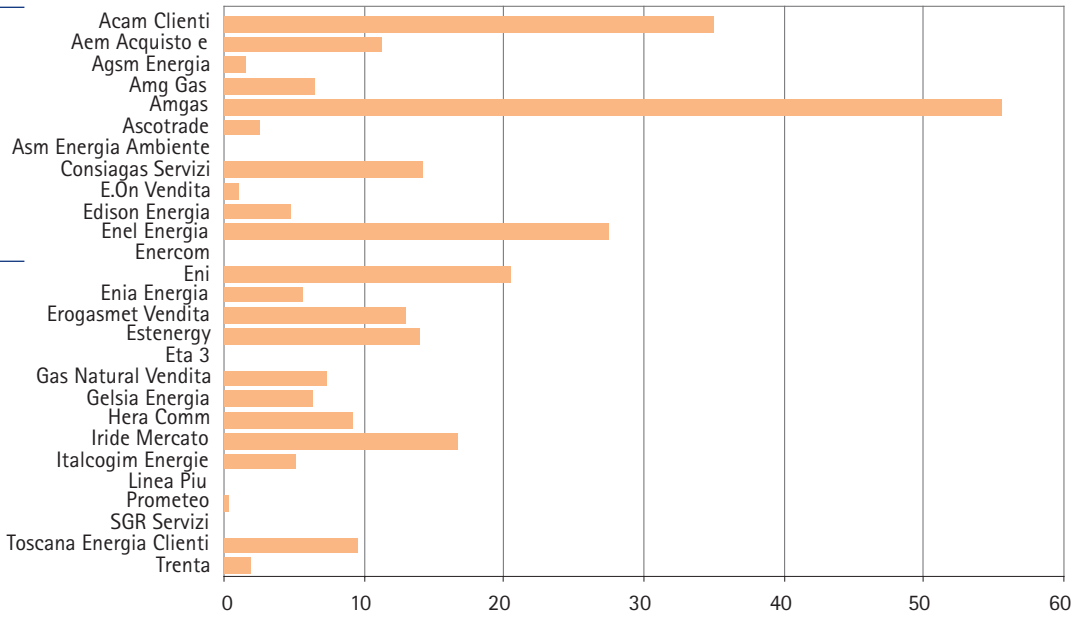
SERVICE	YEAR	AUTHORITY STANDARD	NUMBER OF REQUESTS	NUMBER OF NON-STANDARD CASES	ACTUAL AVERAGE TIME	NUMBER OF AUTOMATIC COMPENSATIONS
Invoice adjustments	2006	90 calendar day	125,858		15.9	1,897
	2007	90 calendar day	88,939	926	22.9	1,016

Source: Declarations of operators provided to AEEG.

FIG. 3.16

Time needed to respond to complaints from consumers supplied in low pressure and with a metering unit up to class G6

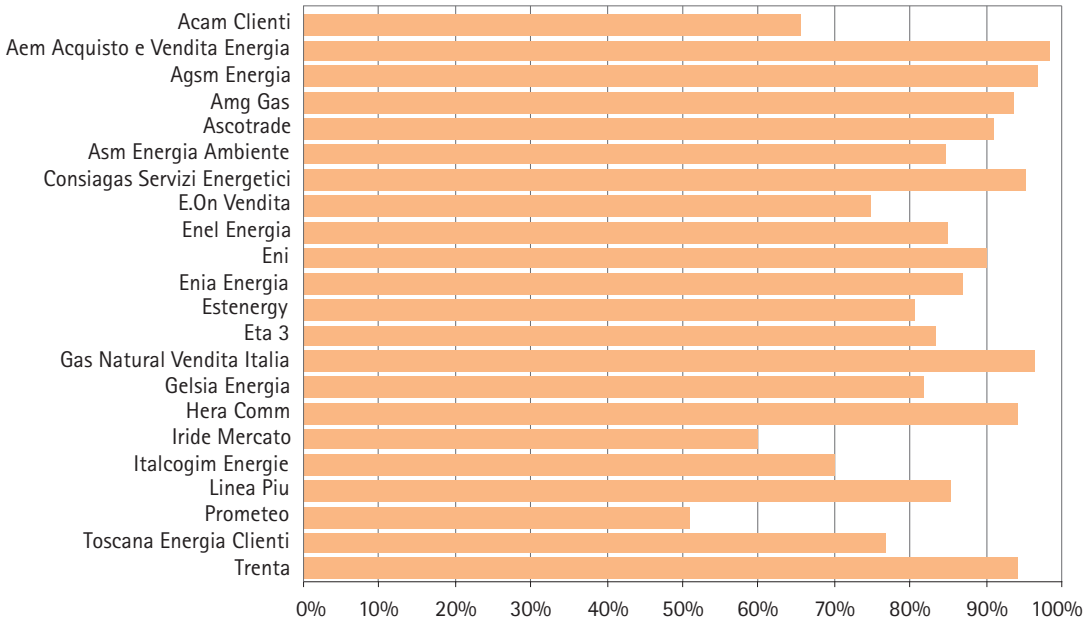
Year 2007; days



Source: Declarations of operators provided to AEEG.

FIG. 3.17

Level of telephone services provided by suppliers of gas with over 100,000 consumers
Year 2007



Source: Declarations of operators provided to AEEG.

Gas quality and safety after the re-delivery points

Gas installation safety inspections

In the third year of implementation of resolution no. 40 of 18 March 2004, in the period from 1 October 2006 to 30 September 2007, gas distributors have carried out safety checks on over 428,000 new plants (Table 3.47). The implementation of the regulation issued by the Authority has produced significant effects; indeed, there has been an increase in the checks of 16% compared to the previous year in the third year as well.

In particular, it should be noted that approximately 95% of these have received approval following checking of all documentation required by law no. 46 of 5 March 1990Secondly in 14,768 plants which did not pass initial checks gas was provided only after an additional check and the elimination of the causes for non-compliance with law no. 46/90. Furthermore, 9% of the checks could not be carried out for "failure to submit the required documentation".

The summary data intables 3.47 and 3.48 are splitted in distribution by type of plant and size of the gas distributors.

The quality of transport

In terms of natural gas quality, pursuant to resolution no. 185 of 6 September 2005, natural gas transporters provided for

TAB. 3.47

Summary of data concerning resolution no. 40/04 provided by distributors

2006-2007 thermal year

TYPE OF OF INSTALLATION	REQUESTS WITH POSITIVE INSPECTIONS	REQUESTS WITH NEGATIVE INSPECTIONS	INSTALLATIONS WITH MORE THAN ONE INSPECTION
≤ 34.8 kW	401,122	18,439	13,478
> 34.8 kW e ≤ 116 kW	21,860	1,471	1,009
> 116 kW	5.822	431	281
TOTAL	428,804	20,341	14,768

Source: Declarations of operators provided to AEEG.

TAB. 3.48

Summary of data concerning resolution no. 40/04 provided by gas distributors based on distributor size

Anno termico 2006-2007

DISTRIBUTORS	REQUESTS WITH POSITIVE INSPECTIONS	REQUESTS WITH NEGATIVE INSPECTIONS	INSTALLATIONS WITH MORE THAN ONE INSPECTION
Large	307,527	16,491	10,256
Medium	107,249	3,510	3,952
Small	14,028	340	560
TOTAL	428,804	20,341	14,768

Source: Declarations of operators provided to AEEG.

thermal year 2006-2007 information on the measuring points of a uniform withdrawal area (AOP) and the measuring points upon entry into the transport grid. The results show that the metering points have 154 gas chromatographs, 138 of which belong to transporters and 16 to third parties.

Insurance for civil gas consumers

In compliance with paragraph 3.3 of resolution no. 152 of 12 December 2003, the Italian Gas Committee (CIG) sent the Authority, in reference to the thermal year that had just ended, a brief summary of the accident claims it had received, and the status of the compensation procedures from 1 October 2006 to 30 September 2007. There was a total number of 51 accident claims. The statistical survey of accidents caused by fuel gas, carried out by CIG in observance of resolution no. 168/04, for the 2006-2007 thermal year, shows that there were 170 accidents after the delivery points attributable to the definition set forth in resolution no. 152/03.

Survey of domestic customer satisfaction

For 2005-2009 the Authority and Istat entered into an Agreement in order to measure domestic customer satisfaction in relation to electricity and gas services. For gas services, the survey covers over 17,000 families, monitoring, on a regional level, their degree of satisfaction with the various aspects subject to quality control, such as the frequency of meter readings, bill transparency, and information about the services. This survey was carried out for the first time in 1998 and has been repeated every year[10]. The general level of user satisfaction has remained basically unchanged over the years (Table 3.49). Over the last few years, there has been a slight drop in the overall degree of satisfaction compared to the previous period (Table 3.50) while there has been a slight improvement in individual aspects of the services, on account of the various procedures set by the Authority in order to promote efficient execution of the services.

10 Results of the survey for 2004 are not available as since 2004 the survey has been done in February, while until 2003 it had been conducted in November.

TAB. 3.49

Overall satisfaction with the gas service

Percentages obtained from "very satisfied" and "quite satisfied" responses

	1998	1999	2000	2001	2002	2003	2005	2006	2007
North-West	94.9	95.0	94.6	94.7	95.4	94.7	94.7	92.9	94.2
North-East	94.5	94.8	94.0	94.5	93.1	94.3	92.3	91.5	91.1
Centre	94.3	95.7	94.9	94.3	95.0	94.6	92.9	92.7	93.7
South	94.5	95.1	94.9	96.0	94.0	93.9	92.5	92.9	94.0
Islands	89.6	95.6	91.5	96.3	94.6	90.8	95.3	93.3	93.4
Italy	**94.5**	**95.2**	**94.5**	**94.9**	**94.6**	**94.3**	**93.4**	**92.6**	**93.4**

Source: multi-purpose survey by Istat for 1998-2007.

TAB. 3.50

Overall satisfaction and satisfaction with the various aspects of the gas service

Percentages obtained from "very satisfied" and "quite satisfied" responses

	1998	1999	2000	2001	2002	2003	2005	2006	2007
Meter reading frequency	86.1	86.9	85.7	82.9	82.4	81.0	78.5	80.9	82.0
Bill transparency	80.2	81.5	79.6	80.4	78.4	77.0	74.4	74.4	75.2
Information about the service	79.4	81.1	79.5	79.0	77.3	75.8	72.9	73.2	74.8
Overall satisfaction	**94.5**	**95.2**	**94.5**	**94.9**	**94.6**	**94.3**	**93.4**	**92.6**	**93.4**

Source: multi-purpose survey by Istat for 1998-2007.

Autorità per l'energia elettrica e il gas

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Editorial and contents

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