MARKET REPORT 2010
NATIONAL REPORT TO THE EUROPEAN COMMISSION

E-CONTROL

A better deal - whenever change brings opportunities

WORKING FOR YOU – WHEREVER YOU NEED ENERGY.

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Major developments in 2009

Electricity and gas markets in figures

In 2008 natural gas accounted for 22.1% of total Austrian gross domestic energy consumption, and was the third most widely used energy form.[1] Electricity made up 19.4% of final energy consumption (second-largest share after oil), and gas 17.3% (third-largest share).

Electricity industry: key indicators

Electricity demand down

Total electricity consumption decreased by 3.9% year on year, to 65,793 GWh in 2009. In the 2009 calendar year a total of 5.8 million (m) metering points were supplied with electricity. Of these, 4.1m served households, 1.6m other small consumers (small and medium-sized enterprises, agricultural and interruptible consumers) and 33,000 demand metered consumers (industrial consumers). Household consumers accounted for 24% and other small consumers for 19% of overall electricity consumption. The consumer group with the heaviest demand was industry, at 57% of the total.

Table 1 shows the supply and demand balance for the electricity industry in 2009 and the changes from 2008. Gross electricity output rose by 2.3%, and foreign trade in electricity increased also.

ELECTRICITY SUPPLY AND DEMAND BALANCE, 2009		
	GWh (2009)	Change vs. 2008
Gross electricity generation	68,974	+2.3%
Physical imports	19,542	-1.3%
Physical exports	18,762	+25.6%
Consumption by pumped storage power plants (PSP)	3,961	–
Domestic electricity consumption	65,793	-3.9%

Table 1: *Electricity supply and demand balance, 2009*
Source: E-Control

Gas industry: key indicators

Total gas consumption declined by 2.1% year on year, to 98,056 GWh in 2009. Gas was supplied to a total of 1.35m metering points during the 2009 calendar year. Of these around 1.28m served household consumers, 70,000 other small consumers (small and medium-sized enterprises, agricultural and interruptible consumers) and 4,000 demand metered consumers (industrial consumers). Household consumers accounted for 21% and other small consumers 6% of overall gas consumption. The consumer group with the heaviest demand was industry, making up 73% of the total.

Table 2 shows the gas industry's supply and demand balance in 2009 and changes vis-à-vis 2008. Supplies to consumers edged down by 1.8%. Consumption by households and other small consumers grew slightly, but that by large-scale industry contracted by 3%.

[1] Statistics Austria, www.statistik.at.
Gross domestic consumption = gross domestic energy production + imports – exports + inventory movements
Final energy consumption = gross domestic consumption – conversion inputs + conversion output – own use by energy sector – non-energy use

Gas consumption down

Both imports and exports fell slightly. Due to the interruption of Russian gas supplies in January 2009, movements into and out of storage (injection and withdrawals) were significantly higher than in the previous year. Domestic production jumped by 9.1%, most of the gain coming in the first half of 2009.

GAS SUPPLY AND DEMAND BALANCE, 2009

	mcm (2009)	GWh (2009)	Change vs 2008
Imports	37,946	422,722	-3.0%
Production	1,667	18,569	+9.1%
Withdrawals from storage	3,346	37,277	+22.5%
Exports	30,383	338,467	-2.7%
Injection into storage	3,774	42,045	+19.8%
Own use, losses and system losses; statistical adjustments	585	6,514	–
Supply to end users	8,217	91,542	-1.8%
Max. daily consumption	45.9	511.8	+ 17.7%
Min. daily consumption	7.8	86.9	-11.1%

Table 2: *Natural gas supply and demand balance, 2009*
Source: E-Control

Price trends in 2009

Following an increase in the overall inflation rate in 2008 there was a sharp fall in 2009 to an average of 0.5%. The year-on-year inflation rate in June 2010 was 2.0%.

Electricity prices rose by 4.5% and gas prices by 7.01% in 2009. As a result electricity and gas prices again contributed significantly to headline inflation.

There was a pronounced decline in the gas CPI in the first quarter of 2009, and it was 5.1% down year on year in June 2010.

OVERALL INFLATION VS. ELECTRICITY AND GAS PRICE INFLATION

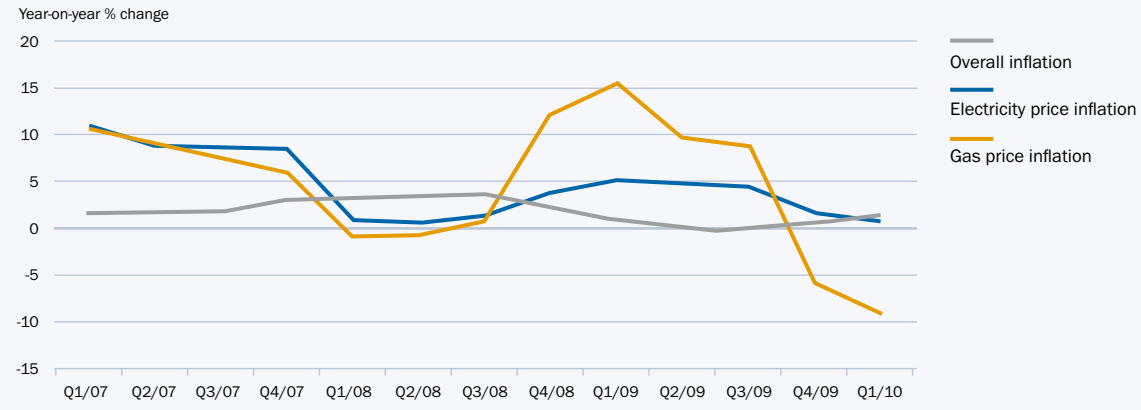


Figure 1: *Year-on-year changes in the overall consumer price index (CPI), the electricity CPI and the gas CPI*
Source: E-Control

Key market developments in 2009

Wholesale markets

Wholesale **electricity** prices were relatively stable in 2009. Spot and futures prices in Austria and Germany peaked at the start of the year and then held at moderate levels. Collapsing CO_2 allowance and gas prices were probably the main factors behind low electricity prices in 2009, as well as the swing into contango, following the backwardation that prevailed in 2008. The low spot prices in 2009 meant that short-term procurement strategies were more favourable for suppliers and long-term sales strategies more advantageous for generators.

Turnover up on the EXAA

The Austrian and German wholesale electricity markets normally form a single price zone, as regards both over-the-counter (OTC) and exchange-based trading. Wholesale prices are driven both by OTC transactions and exchange trading on the EPEX Spot, EEX Derivatives and EXAA markets. The EPEX/EEX and the EXAA offer spot products for the Austro-German price zone. As a result, all developments on the German wholesale market are also directly relevant to the decisions of Austrian wholesalers and retailers (fundamental data, marketing of German EEG power, etc.). The EEX Derivatives market also offers financially settled futures contracts.

Austria's EXAA power exchange recorded an increase in traded volume in 2009 due to increased membership; most of the new members are foreign companies. Total traded volume was equal to 7.1% of Austrian electricity consumption. It doubled in 2009, resulting in improved liquidity. The German EPEX Spot Germany-Austria market did not make any notable progress in 2009, and volume was about 17% of gross consumption.
Wholesale business was also conducted on an OTC basis. Even in the case of the highly liquid German EEX, the OTC cleared volume is three times as high as the exchange-traded turnover.

To enhance the transparency of the wholesale market, in autumn 2009 EPEX/EEX launched an internet platform carrying market information from the four German transmission system operators (data provided in accordance with statutory provisions). This fulfilled an important requirement of current European legislation – namely, the provision of ex ante/near realtime generation data. However, the duty of publication applies only to German generators operating generating units with capacities in excess of 100 MW.

On the wholesale **gas** markets there are still two procurement options: either long-term, bilaterally negotiated contracts, or OTC or exchange-based procurement. The opportunities for OTC or exchange-based procurement grew significantly in 2009. Partly in response to the interruption to supplies from Gazprom Export in January 2009, Austrian wholesalers have increasingly been turning to trading at the European hubs.

In 2009 major changes were introduced at the Austrian Baumgarten and Oberkappel (CEGH) trading points. Exchange trading in contracts for delivery to the CEGH Gas Exchange's two trading points (Baumgarten und Oberkappel) commenced on 11 December 2009. The CEGH Gas Exchange of Wiener Börse and CEGH OTC were formed to this end. European Commodity Cleaning AG (ECC)[2] is responsible for clearing on the exchange. On 17 June 2010 Vienna Stock Exchange operator Wiener Börse AG took a 20% interest in CEGH. The issue of a mooted investment by Gazprom has yet to be resolved.

Turnover rose during the first six months after the launch of the CEGHEX, but then retreated sharply. On 28 June 2010 the minimum size for spot contracts was reduced from 30 MW to 10 MW. This has so far had no influence on traded volume.

[2] ECC is also responsible for clearing on the APX/Endex, EEX, EPEX Spot and Powernext exchanges; see www.ecc.de/partners

The introduction of an organised spot market (exchange) in September 2009 has substantially improved the transparency of the CEGH market. CEGH now publishes average OTC prices and exchange prices.

Improved transparency at CEGH

Liquidity increased significantly at the other European hubs – especially the NCG and TTF markets – in 2009. This added to the importance of the hubs as a means of optimising procurement portfolios. Analyses of gas suppliers' earnings show that the combination of long and short-term procurement options would have improved margins – i.e. enabled suppliers to reduce the prices they charge to consumers. This procurement channel is constricted by congestion on transportation networks and the difficulty of reserving firm rather than interruptible capacity. It is also essential to strengthen the Austrian market. Developments in other countries such as Germany and the Netherlands have shown that market liquidity is boosted by consolidating all the sources of additional gas, namely, transits, domestic production and balancing energy. The separation of transit and domestic transportation severely constrains trading.

The growing importance of the spot markets has also been reflected in changes to the long-term contracts. Part-indexation to spot gas prices, adopted by long-standing trading partners E.ON Ruhrgas and Gazprom Export for the first time in February 2010, and increasing offtake flexibility mark major advances towards a competitive wholesale gas market in continental Europe.

Retail markets

Retail **electricity** sales shrank by 3.8% in 2009. Sales to the consumer group with the highest consumption – industry – registered the heaviest fall. The steepest declines were in sales to large-scale industrial consumers with an annual demand of over 20 GWh (-14%), and sales to medium-scale industrial consumers with an annual demand of 2–20 GWh also fell (-3.8%). Meanwhile, the demand of all other consumer groups grew, by between 0.2% and 4.4%.

Consumers did not all benefit equally from the downward trend in wholesale prices in 2009. Austrian industrial consumers enjoyed price reductions, but there were further increases in the rates charged to small consumers.

Electricity price increases for small consumers

Despite these price increases in 2009 and the substantial savings to be made, switching rates declined. The high level of market concentration due to largely static market shares, the electricity suppliers' low advertising spend, lack of product innovation and low levels of retail market integration all indicate that competition remains flaccid – especially in the small consumer segment.

Retail **gas** sales dipped by 2.1%. Consumption by households and small consumers grew slightly, but that by large-scale industry contracted by 3%.

The extent to which Austrian gas consumers benefitted from the changes on the procurement markets varied. Industrial consumers were accorded considerably larger price reductions than small consumers. Indicators such as switching rates suggest that competition has intensified in the industrial segment.

Austrian small and household consumers are still gaining little from the gas suppliers' wider procurement options. Low switching rates despite sharp price increases in 2008 and high potential savings indicate that, in the gas market too, competitive intensity has not increased in the small consumer segment. However, there is some switching activity among small consumers.

Competition still dormant in the small consumer segment

Access to gas storage

Article 33(1) Directive 2009/73/EC,[3] which forms part of the third energy package, gives member states a choice between negotiated and regulated access to gas storage facilities. The Directive requires member states/regulators to establish criteria for the decision on regulated or negotiated third party access (TPA), and to decide whether access to new storage facilities is technically or economically necessary.

The Directive does not directly oblige member states/regulators to make new decisions on the TPA regime, but does require regular reviews of access conditions and increased transparency with regard to the manner in which decisions on the selection of access regimes are taken.

In an Interpretative Note[4] the European Commission expands on Article 33 Directive 2009/73/EC and the criteria for determining access regimes. The questions to answer are:

- Existence of a flexibility market: Is there effective competition between storage facilities or between facilities and other flexibility services? Is there sufficient competitive pressure with regard to tariffs, products, product variety and access to services?
- Effective access to storage: Is there a high proportion of storage capacity booked long term without having previously been allocated in a non-discriminatory manner, and is only a comparatively small amount of capacity offered to the market each year?
- Degree of dispersion of storage clients: Is capacity largely booked by one or very few large undertakings? Are storage pricing and the access regime distorted by such concentrated interest?

The Commission proposes technical, administrative or economic barriers to market entry as a further relevant criterion.

Improved access to gas storage crucial to increased competition

In E-Control's opinion the competition indicators point to a low level of competitive intensity on the Austrian storage market. Access to storage capacity (capacity allocation and congestion management) therefore needs to be improved by making clear, binding rules. Since the prices of storage products are mostly competitive but access to storage capacity is inadequate, regulation should focus on the access and allocation rules, and the congestion management mechanisms.

[3] Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC

[4] Interpretative Note on Directive 2009/73/EC concerning common rules for the internal market in natural gas, third-party access to storage facilities, Brussels, 22 January 2010; p. 12

Another step towards electricity market integration

One of our key regulatory goals is Austrian integration into the European electricity market. Due to the absence of congestion on the border interconnectors, the Austrian and German markets are already highly integrated, so there are no significant obstacles to cross-border exchanges of electricity. However, facilitating deliveries to and from other countries is still very much on our to-do list. The third energy package should make it easier to use existing transportation infrastructure more efficiently and expand capacity.

Improvements possible through market enlargement

Austria is divided into three control areas. This makes for smaller markets and hinders competition. The planned cooperation between Verbund APG and TIWAG Netz opens the way for closer integration of the Austrian wholesale and balancing markets. It will enable suppliers to deliver power virtually all over Austria without incurring administrative and financial burdens, and allow wholesalers to procure electricity in a one-step process, as well as making the balancing market more liquid.

Network regulation

Electricity distribution system operators have been subject to an incentive based regulation system since 1 January 2006. The first regulatory period lasted four years, and the second four-year period began on 1 January 2010.

Under the regulatory regime for gas networks, further adjustments to the system charges came into force on 1 January 2010. The changes were mainly driven by high inflation, heavy fuel costs, additional transmission network capacity, and investment in the *Südschiene* (southern trunk line).

Unbundling

All of the provinces have fulfilled the statutory unbundling requirements, and passed legislation to implement the unbundling provisions of the *EIWOG* (Electricity Act). The electricity companies have for the most part used the leeway for interpretation left by the legislation to form network subsidiaries that neither have sufficient staff of their own, nor control the resources necessary to provide their services. The freedom of action of the typical Austrian network company is effectively limited to formulating contracts for and billing for services provided by others under service contracts.

In our view inadequate oversight of unbundling in the electricity sector is a serious weakness, as many of the problems that have emerged in the gas industry also extend to the electricity sector. These include:

> Overlapping organisational structures and personnel;
> A danger of discriminatory behaviour;
> Reciprocal service provision;
> Failure to protect commercially sensitive data;
> Inadequate data access policies;
> Staff with dual network services and energy marketing roles.

Directive 2009/72/EC (part of the third package), which must be transposed by 3 March 2011, provides for changes in the unbundling rules for distribution system operators (DSOs). While legal, organisational and accounting unbundling are retained, structural changes must also be made. The unbundling rules require DSOs to have the necessary human, technical, financial and physical resources at their disposal to fulfil their tasks (the operation, maintenance and development of the network) efficiently, i.e. exercising effective decision-making rights, independent from the integrated undertaking.

DSOs' communication activities and branding policies must ensure that the retail business has a separate identity and cannot be confused with the vertically integrated undertaking. Moreover, the compliance officer must be fully independent, and have access to all the information from the distribution system operator and any affiliated undertaking needed to fulfil his/her task. Member states are currently in the process of transposing the third package.

Regulation and performance of the electricity market

Regulatory framework of the Austrian electricity market

ELECTRICITY TRANSMISSION: CROSS-BORDER CAPACITY AND CONGESTION MANAGEMENT MECHANISMS

Figure 2 shows the thermal transmission capacity (active load only) at the cross-border interconnection points between the Austrian and neighbouring transmission grids. The most significant recent changes were the increase in cross-border capacity between the APG and CEPS control areas following the commissioning of a second 380 kV transmission line in late autumn 2008 and the commissioning of another such line between the APG and MAVIR areas in spring 2010. A schematic diagram of the cross-border interconnection points is shown in *Figure 2*.

CROSS-BORDER TRANSMISSION CAPACITY, 2009

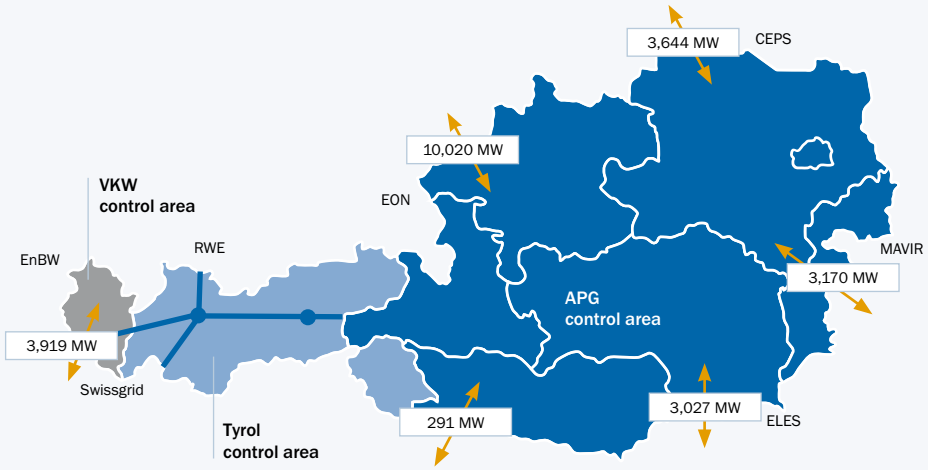


Figure 2: *Schematic representation of installed cross-border transmission capacity, 2009*
Source: E-Control

Deviations from previous publications are due to the use of updated figures from the new map of installed transmission capacity. The map includes recently installed transmission lines to the Czech Republic and Hungary, and revised figures for transmission to other countries.

There were no significant changes in the congestion on interconnectors with neighbouring markets between 2008 and 2009. The congestion at the borders with the Czech Republic, Hungary, Italy, Slovenia and Switzerland is still managed by means of explicit auctions. Capacity at all of the borders is allocated in bilaterally coordinated auctions.

Recent investments in the electricity grid

380 kV Styrian line commissioned in 2009

The recent investments in Austria aimed at improved grid reliability and closer market integration were concluded by the addition of a second 380 kV transmission system at the interconnection point with the Czech Republic in late 2008 and commissioning of the 380 kV Styrian line in June 2009. These developments mean that a long-term solution to an internal congestion situation has been found, in line with Article 1.7 of the Congestion Management Guidelines. The investments made have also increased cross-border transmission capacity, as shown by the change in reserved capacity at the border with Slovenia between 2009 and 2010: in the latter year some 350 MW of capacity (baseload products) was auctioned off, compared with 290 MW of base and peakload products in 2009.

The investment in the Styrian line was partly financed by the proceeds of the auctions of cross-border capacity, thereby complying with Article 6 Regulation (EC) No 1228/2003 regarding the use of revenues from the allocation of interconnection capacity. This provides for such revenues to be devoted to: guaranteeing the actual availability of allocated capacity (e.g. through power station redispatching); creating new capacity (e.g. by developing interconnection infrastructure); or reducing network tariffs.

Merchant lines

In 2009 an application for approval of a project for the construction of a merchant line in the meaning of Article 7 Regulation (EC) No 1228/2003 was submitted to the E-Control Commission. The new 132 kV overhead line will increase cross-border capacity between Austria and Italy. The E-Control Commission has completed the procedure up to the reporting stage and has granted exemptions from the provisions on third party access and the use of proceeds from auctions of interconnection capacity (Article 6.6 Regulation [EC] No 1228/2003). The conditions for these exemptions were established in consultation with the Italian authority responsible (the Ministry of Economic Affairs) and have been forwarded to the European Commission for final approval.

ERGEG Electricity Regional Initiatives (ERI)

Regional moves towards developing cross-border trade in electricity are of great importance to Austria due to its location at the heart of Europe. Moves towards greater European market integration under the Electricity Regional Initiatives (ERIs) launched in February 2006 have been going ahead at full steam in the past few years. Initially seven regional electricity markets were set up, and the Energy Community Treaty created an eighth, for South-East Europe, in mid-2008.

Improved cooperation essential

The third legislative package on the internal energy market, adopted in September 2009, for the first time provides for a statutory obligation on the part of regulators to cooperate at regional and supraregional levels. The Agency for the Cooperation of Energy Regulators (ACER), created by the package, is empowered to recommend improvements to cooperation between regulators. The institutionalisation of the regional initiatives is likely to grow as a result of the new legal framework.

E-Control acts as the lead regulator of the Central-East European region, which comprises Austria, the Czech Republic, Germany, Hungary, Poland, Slovakia and Slovenia. Austria also belongs to the Central-South region, along with France, Germany, Greece, Italy and Slovenia; Switzerland has observer status.

Due to the high level of market integration with Germany, Austria is inherently linked with the Central-West region, consisting of Belgium, France, Germany, Luxembourg and the Netherlands. Since 2007 the Austrian Ministry of Economics, Family and Youth, control area managers and power exchange, and E-Control have had observer status at meetings of the Pentalateral Energy Forum – an initiative of the ministries concerned. Owing to its geographical location, Austria also has close ties with the

aforementioned eighth region in South-East Europe. Though it is not a full member, Austria's status as a participant allows it to provide advisory support to the parties to the Energy Community Treaty.

Focus on market integration

Enhancing market integration is central to all of the regions. This mainly involves action to create efficient congestion management mechanisms, increase transparency for market participants, and establish, develop and integrate wholesale markets.

Following the establishment in summer 2008 of the Central Allocation Office (CAO) – an auction office which is a joint subsidiary of the regional transmission system operators (TSOs) – activities in the Central-East region have focused on developing a coordinated cross-border congestion management mechanism in the form of a load flow based capacity allocation system at all the CEE interconnection points. A joint network model has been adopted which also includes electricity flows from neighbouring transmission grids. The new capacity allocation method should bring benefits for consumers across the entire CEE region due to its increased efficiency, and reflect physical grid conditions in the region more accurately, leading in turn to increased grid reliability.

The auction office has played a key role in this process since 2009, as it is responsible for defining all of the business processes involved in the load flow based system and is thus the driving force behind the implementation of the new allocation procedure. However, during the preparatory phase and the dry-runs of the system involving market participants, it became clear that planned start-up in March 2010 was not feasible. This was due to the fact that the input parameters used by the participating TSOs led to significantly less available transmission capacity in some places than with the previous NTC calculations. The entire process was postponed, as it will not be possible to set a precise launch date until an efficiency analysis has been completed.

The latter is mainly concerned with finding ways to address the problem of low capacity at some critical network components in the CEE region. At present the results of the efficiency analysis suggest that the load flow based system is unlikely to go live before the end of 2010.

The postponement of the introduction of the load based approach meant that a transitional solution was required for annual, monthly and daily capacity allocations in 2010, and this is incorporated in the auction rules. The CEE transmission system operators therefore suggested a coordinated approach for the entire region, with TSOs calculating capacity based on network transfer capacity values. The auction office has a coordinating function, while capacity allocations to market participants are carried out over the existing auction platforms.

Another advance towards greater market integration was the development of a new, harmonised scheduling concept for the entire CEE region. This can be introduced regardless of the launch date for load flow based allocation. The new concept standardises the procedures for exchanging schedules, as well as formats and nomination timing across the region. Once an extensive trial run involving traders has been completed, the new system should enter service in autumn 2010. This initiative is a first throughout the EU and will bring major benefits for market players, including simplification of their day-to-day business (e.g. by requiring only a single software platform).

The European energy regulators have also agreed to compile interconnection reports for each regional electricity market. The main purpose of these reports is to provide a detailed evaluation of the economic efficiency of the congestion management methods currently in place. The CEE auction data for 2009 is being analysed in light of the special features of the region.

Integration the key to raising efficiency

In a further move to deepen market integration, in 2009 the Hungarian regulator HEO, the World Bank and E-Control commissioned a consortium of consultants to draw up a proposal for the establishment of a regional electricity market in the CEE region. Well integrated wholesale markets promote efficient use of existing infrastructure (generating stations and transmission networks), and help increase security of supply. The efficiency gains generated by market integration are also reflected in lower consumer prices. Integration makes it easier to respond flexibly to unplanned supply disturbances and sends clear messages about the need for investment in improvements to infrastructure.

The results of the consultants' analysis and a proposal for a market model were presented at a workshop in April 2010 and subsequently discussed with stakeholders. The participants were unanimous that, due to the region's highly meshed grid structures and its central geographical location (especially Austria and Germany), improvements to the wholesale markets in CEE should be coordinated with other initiatives across continental Europe. Initial proposals for such cooperation were discussed, and a number of national electricity exchanges in the region stated their intention to work more closely with each other. This and the involvement of other key players and interest groups should give rise to a detailed implementation plan.

In May 2010 the control area managers in the Central-South region signed a memorandum of understanding stating their intention to hold auctions jointly, via Capacity Allocating Service Company (CASC), the auction office for the Central-West region. From January 2011 on all long-term (i.e. monthly and annual) explicit auctions will be held through CASC on the basis of the current rules. The second phase of the project will see the introduction of harmonised rules for long-term auctions in the Central-South and Central-West regions in January 2012.

Interconnection report published

The Central-South region published its first interconnection report in 2009, similarly to other electricity regions. This gives an overview of the congestion management methods used at the borders within the region and their economic efficiency in 2008.

The report underlines the need to expand capacity at the region's internal borders and the persistence of significant inefficiencies due to the lack of implicit auctions. It also points out that in some cases large amounts of capacity would be available at the internal CSE borders for intraday trading, but at present this is only possible at three of the region's eight borders.

A joint study by TSOs and power exchanges in the CWE region outlined plans for a two-stage process of load flow based market coupling which will connect the trilateral market coupling linking the Belgian, Dutch and French spot markets with those in Luxembourg and Germany.

TRANSMISSION AND DISTRIBUTION

Overview of the electricity grid

At year-end 2009 the total length of the high voltage power lines in the Austrian public electricity grid was 17,546 km, of which overhead lines made up 96.2% and underground cables 3.8% *(Table 3).* Verbund-Austrian Power Grid AG (APG) owns 84% of the ultra high voltage (220 and 380 kV) power lines. In 2009 a gap in the planned 380 kV loop in eastern Austria was filled. During the year under review there were three transmission system operators (APG, TIWAG Netz AG and VKW Netz AG) and some 130 distribution system operators.

AUSTRIAN ELECTRICITY GRID					
Public grid as at 31 December 2009 (data status: August 2010)					
Route lengths (1)					
Voltage levels	**Overhead lines**		**Cables**		**Total**
	km	**% of total**	**km**	**% of total**	**km**
380 kV	1,333	0.6%	54	0.0%	**1,388**
220 kV	1,847	0.8%	3	0.0%	**1,850**
110 kV	6,064	2.6%	473	0.2%	**6,536**
1–110 kV	30,506	13.1%	33,955	14.6%	**64,461**
up to 1 kV	40,046	17.2%	118,344	50.9%	**158,389**
Total	**79,795**	**34.3%**	**152,829**	**65.7%**	**232,624**
System lengths (1)					
Voltage levels	**Overhead lines**		**Cables**		**Total**
	km	**% of total**	**km**	**% of total**	**km**
380 kV	2,668	1.1%	54	0.0%	**2,722**
220 kV	3,716	1.5%	5	0.0%	**3,720**
110 kV	10,490	4.2%	613	0.2%	**11,103**
1–110 kV	31,141	12.5%	35,338	14.2%	**66,479**
up to 1 kV	40,937	16.5%	123,235	49.7%	**164,173**
Total	**88,953**	**35.8%**	**159,246**	**64.2%**	**248,198**

Table 3: *Overview of system lengths in the Austrian transmission grid as of August 2010; (1) including high and ultra high voltage lines operated by public generators*
Source: E-Control

Regulation of the electricity grid

Electricity distribution system operators have been subject to an incentive based regulation scheme since 1 January 2006. The duration of the first regulatory period was four years, and the second, which began on 1 January 2010, will run for an identical period.

Since 1 January 2010 the incentive regulation system has taken account of general industry trends, individual firms' performance, company output trends, and changes in non-influencable costs by applying a formula based on:

- An annual frontier shift of 1.95%;
- Productivity offsets;
- An investment and operating cost factor; and
- Changes in the system operator price index.

In 2005 E-Control and the Austrian electricity industry issued a joint declaration of intent committing themselves to the introduction on 1 January 2006 of a multi-year (incentive) regulation system for DSOs' system charges to remain in place for a total of eight years. Building on the principles and parameters applied in the first regulatory period (from 1 January 2006 to 31 December 2009), the system was modernised during extensive consultations with the industry.

A "carry-over" mechanism was developed to make the transition in the cost base from the first regulatory period to the second. This reflects current operating conditions such as interest rates and current valuations of assets. In principle, the benefits of the efficiency gains achieved by system operators up to the end of the second regulation period are to be split 50:50 between themselves and their customers. However, the January 2010 tariff determination has already assigned 25% of the efficiency increases identifiable on the basis of costs in the 2008 financial year to system users.

Changes in the incentive regulation system

The most important new refinement of the regulatory system is the investment and operating cost factor, which is now calculated on the basis of the actual evolution of capital costs. In order to ensure that only investments that are genuinely necessary are promoted and create appropriate investment incentives, the investment factor may also be negative. This overcomes the vagueness associated with the previous volume-cost factor and maximises investment security for the system operators. The latter are compensated for making necessary and sensible investments, but consumers also benefit as they only bear the cost of necessary investments that are actually made.

Electricity transmission system operators are still subject to a cost-plus regulatory regime with annual cost audits and tariff reviews.

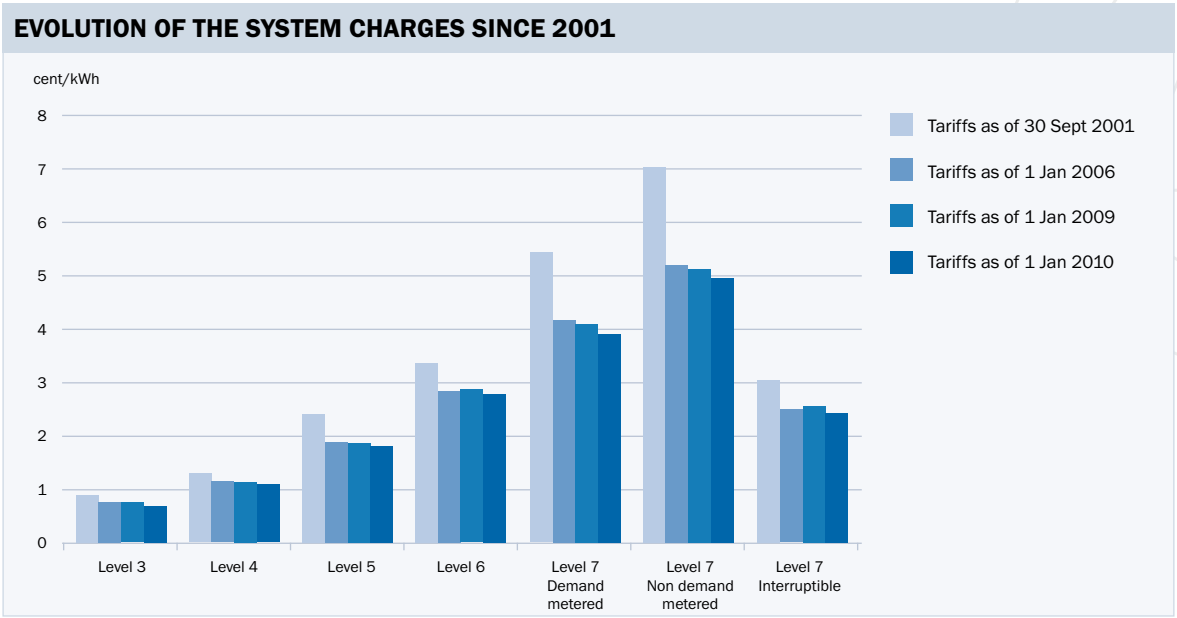


Figure 3: *Evolution of the average electricity system charges for Austria as a whole, cent/kWh*
Source: E-Control

Future cost audits and tariff reviews are likely to be strongly influenced by heavy investment in the transmission grid and the anticipated decline in supply volumes in 2009.

BALANCING POWER MARKET

In Austria electricity generation and consumption are matched by injecting and withdrawing balancing power, by means of:

- Primary control (adjustments to generation within 30 seconds);
- Secondary control (adjustments to generation within five minutes);
- Tertiary control or “minute reserve” (adjustments within 15 minutes);
- Involuntary exchanges with surrounding control areas in the ENTSO-E interconnected grid where adjustments within a control area are insufficient or impossible.

The Austrian balancing market is currently divided into three control areas. Tyrol (TIWAG Netz AG) and Vorarlberg (VKW Netz AG) both form separate control areas which belong to the German ENTSO-E control block. The rest of Austria makes up the Eastern control area (otherwise known as the APG zone) – an independent ENTSO-E control block.

TIWAG Netz AG and APG signed a partnership agreement at the end of 2009, with APG assuming the role of control area manager. The two control areas will be merged at the beginning of 2011.

In contrast to the situation in most other EU member states, balancing energy in the Austrian control areas is accounted for by independent clearing and settlement agents appointed by the control area managers. In the APG control area the agent is Austrian Power Clearing and Settlement AG (APCS), while Ausgleichsenergie- und Bilanzgruppenmanagement AG (A&B) fulfils this function in Tyrol and Vorarlberg.

Balancing power is governed by the Other Market Rules and the clearing and settlement agents' general terms and conditions (GTC). The market rules are drawn up by the regulator in consultation with market participants. The general terms and conditions of APCS and A&B are subject to approval by the regulator.

The balancing energy prices are established by the settlement agents at 15-minute intervals. They consist of the following four components:

- Minute reserve called off from the merit order list (MOL);
- Compensation for the secondary control power provided by the control area manager's automatic load frequency control;
- ENTSO-E exchanges (involuntary exchanges of electricity with neighbouring control areas);
- Market makers' fees.

Figure 4 shows the composition of the balancing power costs in the Eastern control area, i.e. the costs less the revenue, broken down by these four components. The cost components are allocated to the quarter-hourly balancing power volumes, using a predetermined price formula, and invoiced to the balancing group representatives. Suppliers must take account of balancing power costs and risk when setting their retail prices. However, none of the balancing power cost components are directly charged on to consumers.

Drop in balancing energy costs

Involuntary exchanges of electricity within the ENTSO-E interconnected grid are settled by way of a compensation scheme, run via the EXAA power exchange. Secondary control power is currently provided under bilateral contracts with power station operators and returned to the generators retroactively, also via the EXAA. Only the minute reserve market has a purely market-based tendering system in the form of a MOL. The control area manager calls off the offers as needed, in accordance with the MOL. In the case of tertiary control power there are also weekly market maker auctions which are designed to ensure that the market is sufficiently liquid.

In 2009 total balancing power costs in the Eastern control area were € 21.26m, compared to € 31.5m in 2008. The lower market prices impacted the balancing market, reducing both costs and revenue.

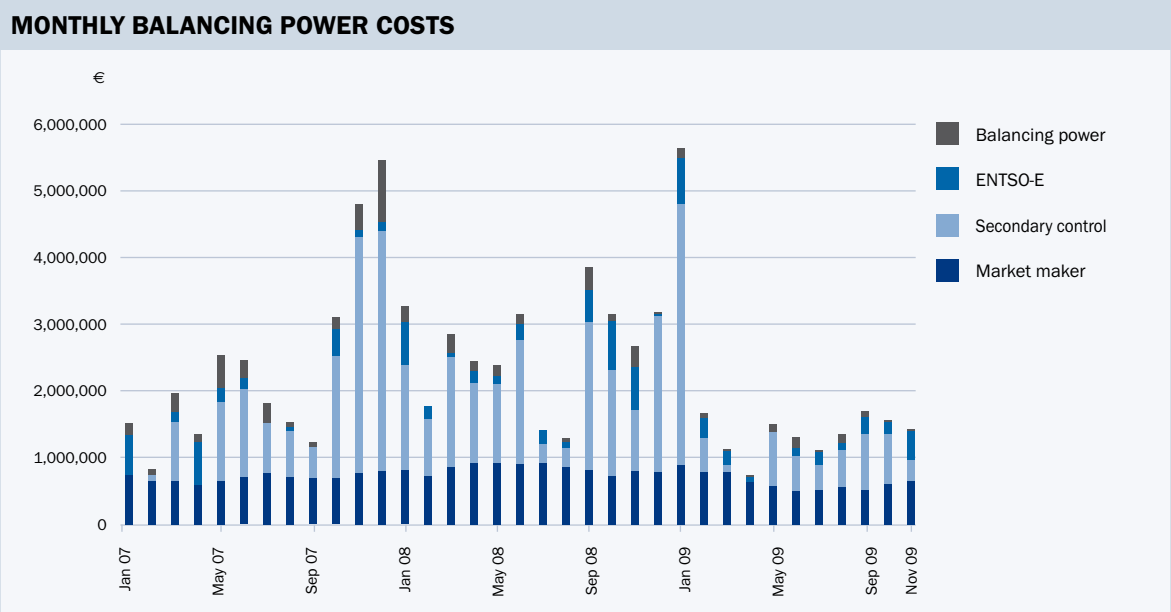


Figure 4: *Amount and composition of balancing energy costs in the APG control area*
Sources: APCS and E-Control

EFFECTIVE UNBUNDLING IN THE ELECTRICITY SECTOR

Legal basis

The provincial governments are responsible for monitoring unbundling compliance in the electricity sector (section 26[3][4] Electricity Act). The companies concerned are required to report to the provincial governments and E-Control. The provincial governments must submit annual reports to E-Control outlining the action taken by system operators under the latter's compliance programmes.

Principles for interpretation of the statutory unbundling provisions

These principles reflect E-Control's legal opinion as to the interpretation and implementation of unbundling provisions, based on the Note of DG Energy and Transport on Directives 2003/54/EC and 2003/55/EC. They are designed to provide the electricity companies with guidance. The unbundling rules provide for legal, accounting, and organisational (functional and informational) unbundling.

Legal unbundling

Companies with more than 100,000 customers must transfer responsibility for system operation activities to a separate entity. In other words, vertically integrated companies must at least set up an independent system operator, or separate system operation from generation/production and retail activities within an existing entity, so as to safeguard the independence of the system operation function.

Accounting unbundling

The requirement for the separation of accounts for internal accounting purposes is designed to enable the transparent representation of all network costs, as well as providing an objective and transparent basis for calculating system charges. Consequently this form of unbundling protects against discrimination, cross-subsidisation and distortion of competition.

Organisational unbundling

Organisational unbundling measures are needed to ensure that system operation remains independent of other electricity and gas operations within integrated companies. The aim is a strict separation of network-related and other activities.

Functional unbundling

Unbundling can only be effective if the management of the network company is not involved in the competitive aspects of an integrated undertaking's operations. Likewise, the competitive functions should not exercise any influence over the day-to-day activities of the system operator, or obtain any information which could be used to gain an advantage over competitors. Consequently, the system operator must fulfil a number of requirements, including: a separate corporate identity; access to its own financial and human resources; independent decision-making procedures; and salaries and variable remuneration components based exclusively on the performance of the network company.

Informational unbundling

The object of informational unbundling is to safeguard non-discriminatory network operation by preserving the confidentiality of commercially sensitive technical, legal and financial data. Informational unbundling should include implementing appropriate reporting structures and access rights and complying with the unbundling rules in all dealings with customers, such as call centres, new connections and re-registration, invoicing, information and advertising materials, and billing by the network company.

International studies

The guidelines of good practice prepared by the Unbundling, Reporting and Benchmarking Task Force of the Council of European Energy Regulators (CEER) also cover informational unbundling by distribution system operators. They are in line with the Austrian principles of interpretation. However, in its 2009 status report on compliance with the Guidelines, CEER identified continued shortcomings in their implementation. With regard to the confidential treatment of commercially sensitive information, standards across Europe vary widely and monitoring remains difficult. Difficulties in distinguishing between system operators and vertically integrated suppliers may also explain the paucity of customer complaints. Management independence is often a reality, but employees' roles are seldom kept separate.

Provincial governments' reports to E-Control

Some of the nine provincial governments have failed to submit their compliance reports to E-Control. The provincial governments' oversight of adherence to compliance programmes is largely restricted to ensuring that the electricity companies' compliance reports are received on time and forwarding them to E-Control. They have so far refrained from investigating the steps taken by the companies or initiating action themselves.

Allocation of resources and provision of services

According to the European Commission's note[5] and E-Control's principles for interpretation, network operators must have sufficient human and physical resources at their disposal to carry out their work independently from other parts of integrated companies. They must also have sufficient financial means to maintain and develop the network.

[5] Note of DG Energy & Transport on Directives 2003/54/EC and 2003/55/EC on the internal market in electricity and natural gas (16 January 2004)

In Austria, only a few legally unbundled system operators own the network assets they use. All the other companies must purchase the right to use the property, facilities and equipment necessary for system operation by way of leasehold and/or operating agreements. Since both the human resources and the right to use networks and operating equipment are acquired through service and leasehold contracts, the work performed by the network company's own staff is confined to management and other strategic activities.

Two cases of operational management contracts have been identified in the electricity market. E-Control has significant reservations about such management contracts, particularly with regard to organisational and accounting unbundling. The independence of the system operator is open to doubt. It does not have the necessary material, human, financial or technical resources.

Unbundling requirements specified by the third package

In light of the clarification in the third energy package whereby distribution system operators must have access to sufficient human, technical, material and financial resources, such management contracts will probably be a thing of the past when Directive 2009/72/EC comes into effect and is transposed by the Electricity Act.

Suggestions and outlook

All of the provinces have fulfilled the statutory unbundling requirements, and passed legislation to implement the unbundling provisions of the Electricity Act. The companies have for the most part used the room for interpretation of the legislation to form network subsidiaries that neither have sufficient staff of their own, nor control the physical resources necessary to provide their services. The freedom of action of the typical Austrian network company is effectively limited to formulating contracts for and billing for services provided by others under service contracts.

In our view the monitoring of unbundling in the electricity sector raises regulatory concerns since many of the problems that have emerged in the gas industry also extend to the electricity sector. These include:

- Overlapping organisational structures and personnel;
- A danger of discriminatory behaviour;
- Reciprocal service provision;
- Failure to protect commercially sensitive data;
- Inadequate data access policies; and
- Staff with dual network services and energy marketing roles.

Directive 2009/72/EC (part of the third package), which must be transposed by 3 March 2011, provides for changes in the unbundling rules for distribution system operators. While legal, organisational and accounting unbundling are retained, structural changes must also be made. The unbundling rules require DSOs to have the necessary human, technical, financial and physical resources at their disposal to fulfil their tasks (the operation, maintenance and development of the network) efficiently, i.e. exercising effective decision-making rights, independent from the integrated electricity undertaking.

DSOs' communication activities and branding policies must ensure that the retail business has a separate identity and cannot be confused with the vertically integrated undertaking. Moreover, the compliance officer must be fully independent and have access to all the information from the DSO and any affiliated undertaking needed to fulfil his/her task. Transposition of the third package into national law is ongoing.

Competition on the Austrian electricity market

ELECTRICITY SUPPLY AND DEMAND

Electricity generation

Hydropower the main energy source

Figure 5 shows the generation mix in 2009. Total output was 68,974 GWh, around 62.3% of which was accounted for by hydropower stations, i.e. run-of-river and storage power stations, and small hydro generating stations with an output of less than 10 MW. Natural gas is the second-most important primary energy source for power generation, at about 17.9% of total output. Hard coal and coal derivatives were responsible for approximately 7.3% of output.

ELECTRICITY GENERATION BY ENERGY SOURCES

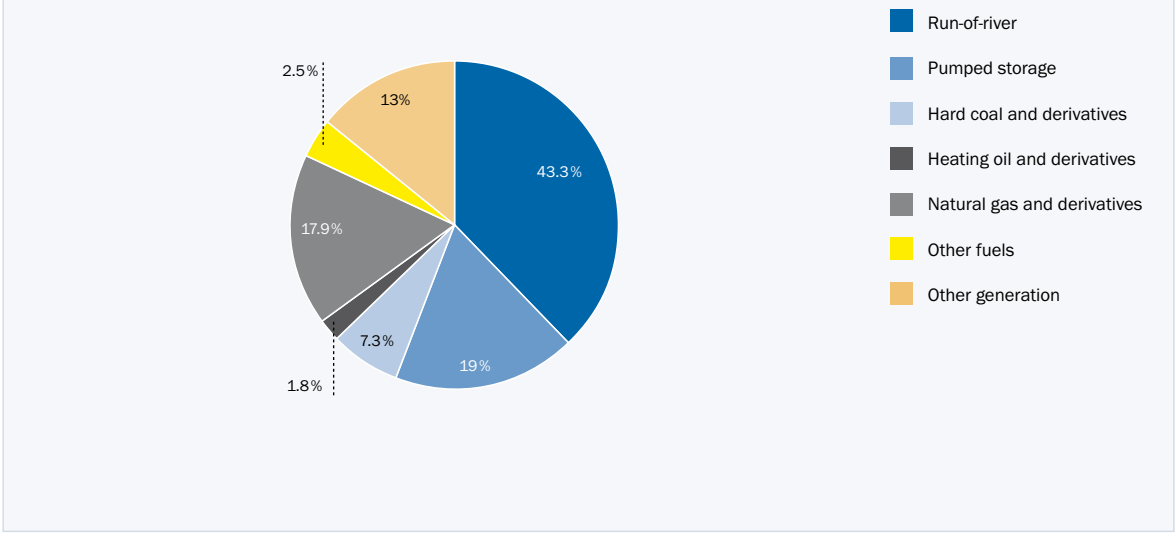


Figure 5: *Electricity generation in Austria by energy sources, 2009*
Source: E-Control

The energy capability factor for run-of-river power stations in 2009 was 1.06, which was 6% higher than an average year and the figure for 2008 (1.0).

Renewable electricity generation

The 2003–2009 period saw a sharp increase in the output of electricity from "other" renewable technologies *(Figure 6)*.

SUPPORTED GREEN POWER, 2002–2009

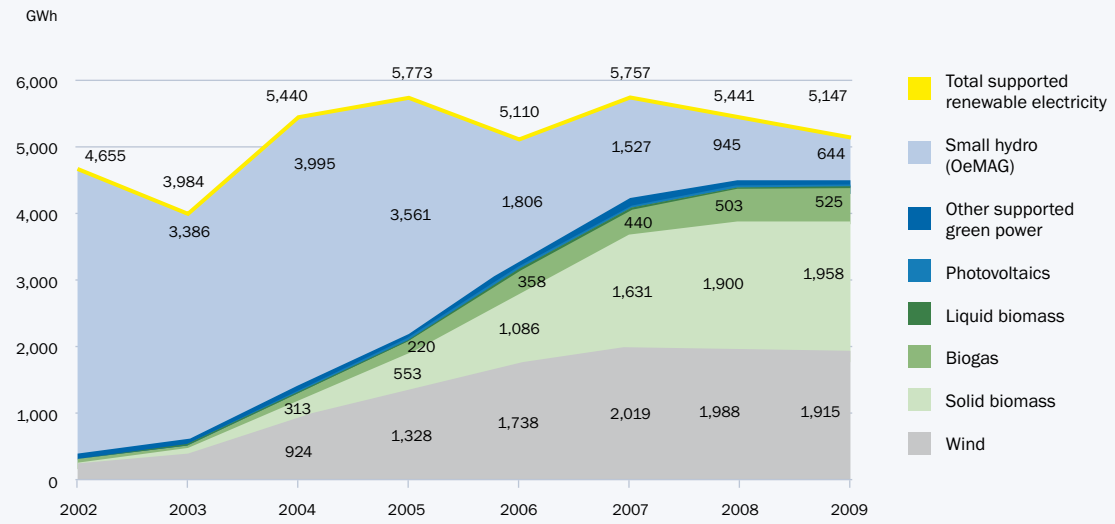


Figure 6: *Supported green power by technologies, 2002–2009*
Sources: E-Control and OeMAG

Strong growth in wind and biomass generation

The quantity of small hydropower bought by the green power settlement agent OeMAG was highly volatile. Volumes declined from 2004 to 2009 due to the fact that rising market prices prompted many small hydropower plant operators to leave the OeMAG system and sell their power on the open market and that the possibility for existing small hydropower plants to contract feed-in tariffs expired at the end of 2008.

OeMAG took a total of 5,147 GWh of supported renewable energy in 2009.

In 2009 some 644 GWh of power from supported small hydropower stations and 4,503 GWh from supported "other" renewables were infed to the Austrian grid. Purchases by OeMAG fell from 9.8% to 9.6% of total supply via the public grid. This was due to the drop in the contribution of small hydro from 1.7% to 1.2%. In contrast, the share of "other" renewables rose from 8.1% in 2008 to 8.4% in 2009.

A further increase in supply from "other" renewables is forecast for 2010, and OeMAG is expected to take 4,776 GWh of "other" renewable energy. Purchases of from small hydro are predicted to rise slightly to 656 GWh as falling market prices may prompt some plant operators to return to the support system, and generating station expansion and rehabilitation projects will boost output.

Due to weather related factors, wind generation is significantly higher in winter than in the summer months. However, biomass and biogas generation remain fairly constant throughout the year, although these plants produce heat as well as power, and higher heating usage might be expected to result in lower electricity infeed.

After rising steadily for several years, total compensation payments (the quantity of renewable electricity multiplied by the feed-in tariffs) fell year on year in 2009, to stand at € 548m, of which € 514m was accounted for by "other" renewable electricity.

This decline was due to a drop in supported small hydropower and the fact that the figures exclude the top-up payments for feedstock in 2009.[7]

Imports and exports

Continued growth in international trade

Cross-border exchanges between Austria and neighbouring countries have grown steadily since 1990 *(Figure 7)*. Before 2001 Austria usually exported more electricity than it imported, but the trade balance has been negative since then, with the widest trade gap so far recorded in 2006. Physical imports slipped by 1.3% in 2009, but exports jumped by 25.6%. Germany is the main country of origin, accounting for over 60% of all imports, and Switzerland the primary destination (more than 46% of all exports). Net imports totalled 776 GWh in 2009 – a decline of 84% on 2008 – or around 1.1% of total supply.

EVOLUTION OF ELECTRICITY IMPORTS AND EXPORTS

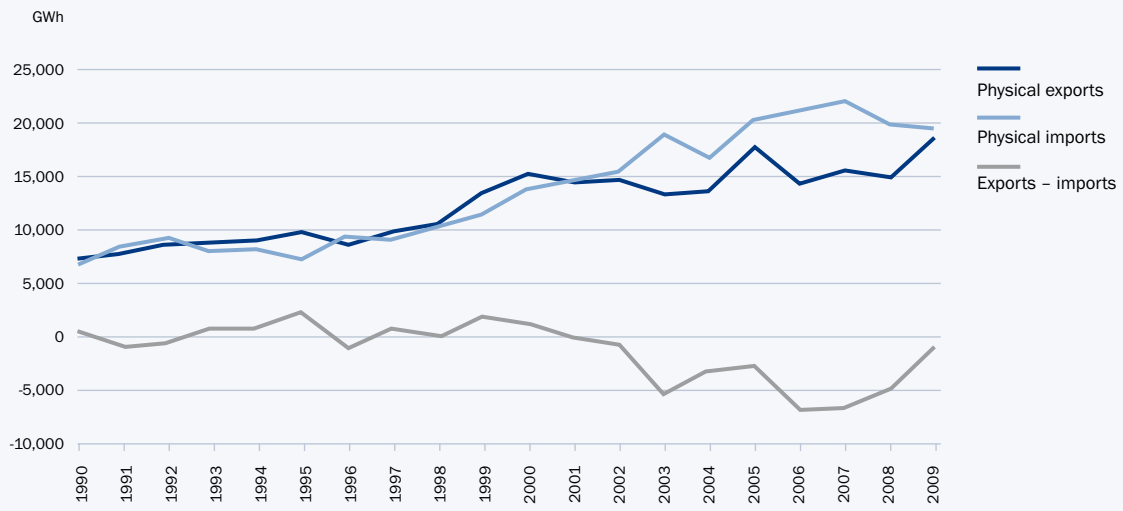


Figure 7: *Evolution of electricity imports and exports since 1990*
Source: E-Control

[7] The *Rohstoffzuschlagsverordnung* (Feedstock Compensation Order) for biogas plants, enacted on 2 February 2010, set a 2009 top-up payment of 3 cent/kWh. This will generate additional compensation payments amounting to around € 15m.

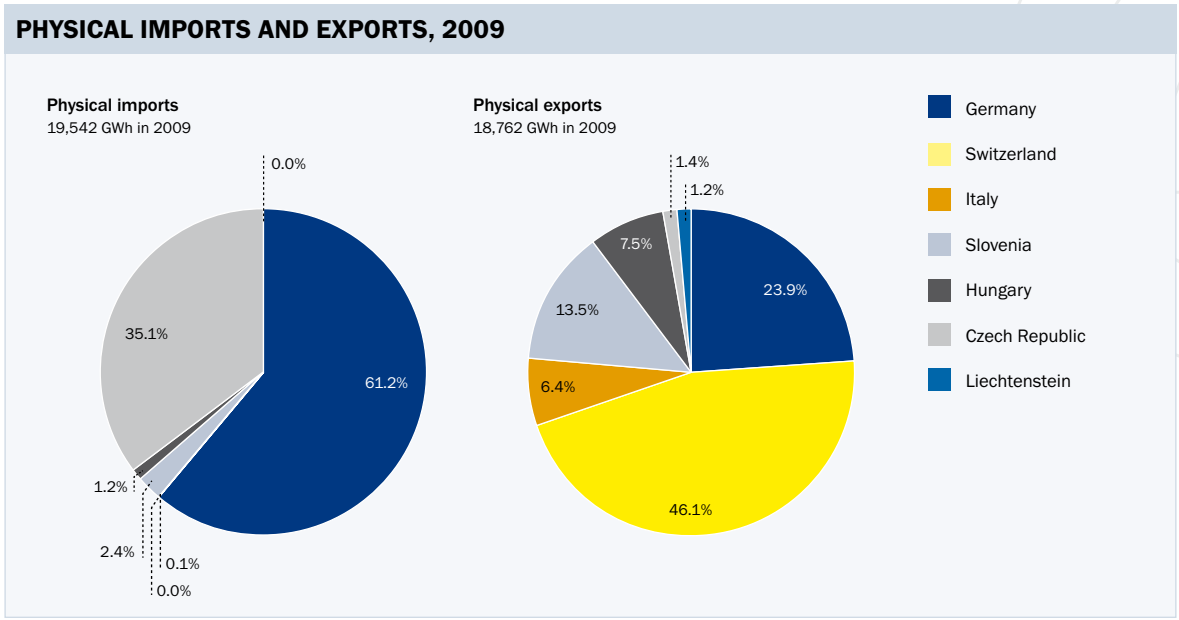


Figure 8: *Physical imports and exports, 2009*
Source: E-Control

Electricity demand

Total domestic electricity consumption (excluding pumped storage) dropped by about 3.8% year on year to 65.8 TWh in 2009.

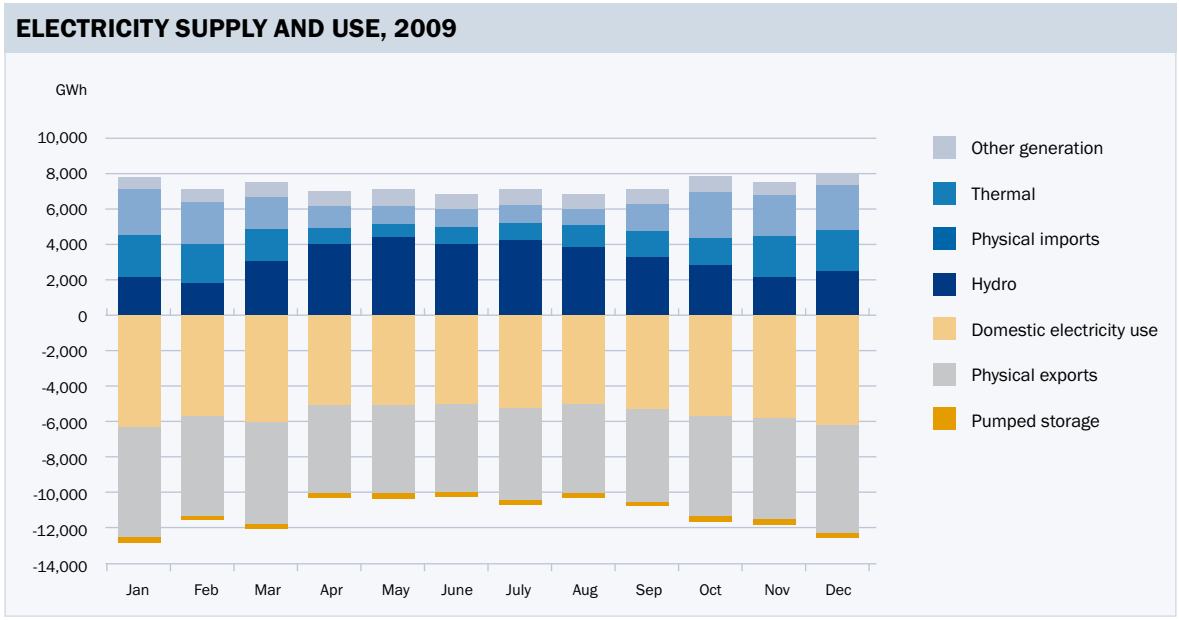


Figure 9: *Electricity supply and use, 2009*
Source: E-Control

The steepest declines were in sales to large-scale industrial consumers with an annual demand of over 20 GWh (-14%), and sales to medium-scale industrial consumers with an annual demand of 2–20 GWh also fell (-3.8%). Meanwhile the demand of all other consumer groups grew, by between 0.2% and 4.4%. Peak load on the Austrian electricity grid has risen steadily over the past few years and reached 10,821 GW in 2009.

WHOLESALE MARKET

Wholesale market primarily cross-border

The German and Austrian wholesale markets constitute an arbitrage-free price area, in both OTC and exchange trading. Electricity price reporting services usually do not provide separate price assessments for Austria. Wholesaling is primarily a cross-border activity, and Austrian generators' limited capacity means that they are not usually dominant on the Austro-German wholesale market.

Wholesaling takes the form of bilateral transactions, and trading on the EPEX Spot/EEX Derivatives and the EXAA exchanges. These offer spot products for the German-Austrian price area. One key difference is that auction trading on the EXAA closes at 10:12, while EPEX Spot auctions take place at noon. Futures contracts are also traded on the EEX Derivatives. Trading activity on the OTC market is difficult to analyse because little information on it is available.

Electricity price trends

Prices on the wholesale market were relatively stable in 2009. Spot and futures contract prices in Austria and Germany peaked in January *(Figure 10)* and were moderate thereafter. The electricity markets reflected the muted sentiment on other commodities markets. The annual average baseload price for 2009 was € 45.95/MWh, whereas the average price of the 2009 futures contract over the 2007–2008 period was € 62.87/MWh. The spread between the spot and futures contracts was thus € 20.92/MWh during the year under review. In other words, it was cheaper for a company to meet its annual electricity needs on the spot markets.

Figure 13 shows the influence of the primary energy sources and of CO_2 allowances on price formation on the wholesale electricity market. All five time series exhibit less volatility than in 2008. Noteworthy events included the collapse of CO_2 allowance prices at the beginning of 2009 and sliding gas prices over the year, both of which probably played a part in low electricity prices in 2009. These factors were also responsible for the swing into contango after the previous year's backwardation. Low spot prices meant that short-term purchasing and long-term selling strategies were the best approach for retailers and generators, respectively, in 2009.

Volume of electricity traded

Due to an increase in membership from 48 to 61 in 2009, Austria's EXAA electricity exchange recorded an increase in traded volume in 2009. The number of registered members of the CO_2 allowance market edged up from 28 in 2008 to 31 in 2009. The majority of the members of both markets are foreign companies.

Apart from hourly products, block products consisting of a number of consecutive hours are traded on the EXAA. The minimum trade and unit traded is 0.1 MWh. The products are offered for all three Austrian control areas, and the German RWE and E.ON control areas.

Spot traded volume on the EXAA was 3.47 TWh (excluding block products), or around 5.3% of total Austrian consumption; the figure including block products was 4.66 TWh – equivalent to 7.1% of Austrian electricity demand *(Figure 12)*. This represented a doubling of turnover year on year and an improvement in liquidity. The EPEX Spot Germany-Austria market did not make any notable progress in 2009, and volume was about 17% of gross consumption (excluding block products).

Role of the exchanges

EXAA membership up to 61

Although the membership of the EXAA spot market grew to 61 in 2009, the average combined monthly market share of the five largest traders (selling side) ranged from 26 to 50%. However, concentration on the selling side dropped sharply towards the end of the year. Concentration remained relatively high on the buying side. In contrast, the top five's share of the EEX spot and futures markets never reached 10% (on a daily basis). The EXAA is relatively highly concentrated for an exchange, although this does not show up in the concentration indicators each month. The monthly data does not shed any light on the possible dominance of generators in given hours.

The common Austro-German price area has resulted in a strong correlation between EXAA and EPEX spot prices. Such divergences as there are mainly relate to differences in floor limits (€ -3,000/MWh on the EPEX vs € 0.01/MWh on the EXAA) and the earlier close on the EXAA. Traders can switch to the EPEX Spot after the EXAA auction, making it less important to close positions on the EXAA, with the result that volatility is normally lower on the EXAA than on the Leipzig exchange.

WHOLESALE ELECTRICITY PRICES IN 2009

Figure 10: *Wholesale electricity prices in 2009*
Sources: EEX, EXAA and own calculations

Wholesale trading also conducted OTC

Off the exchanges, wholesale transactions are also executed bilaterally. Even in the case of the highly liquid German EEX power exchange, the OTC cleared volume is three times as high as the exchange-traded turnover.

The ability of dominant generators to keep prices up artificially by means of their buying behaviour has come in for particularly severe criticism in the past.[7] Where a trader with substantial generating capacity chiefly figures as a buyer on an exchange it is likely that it will be trading large amounts of capacity OTC, and that this will be at higher prices (assuming that the exchange serves as a means of price formation for OTC trading). If wholesale trading was primarily carried out on formalised markets, i.e. exchanges, it would be harder for dominant generators to pursue such strategies.

To enhance the transparency of the wholesale market, in autumn 2009 EPEX/EEX launched an internet platform carrying market information from the four German transmission system operators (data provided in accordance with statutory provisions). This fulfilled an important requirement of current European legislation – namely, the provision of ex ante/near realtime generation data. However, the duty of publication applies only to German generators operating generating units with capacities in excess of 100 MW.

TRADED VOLUME ON THE EXAA

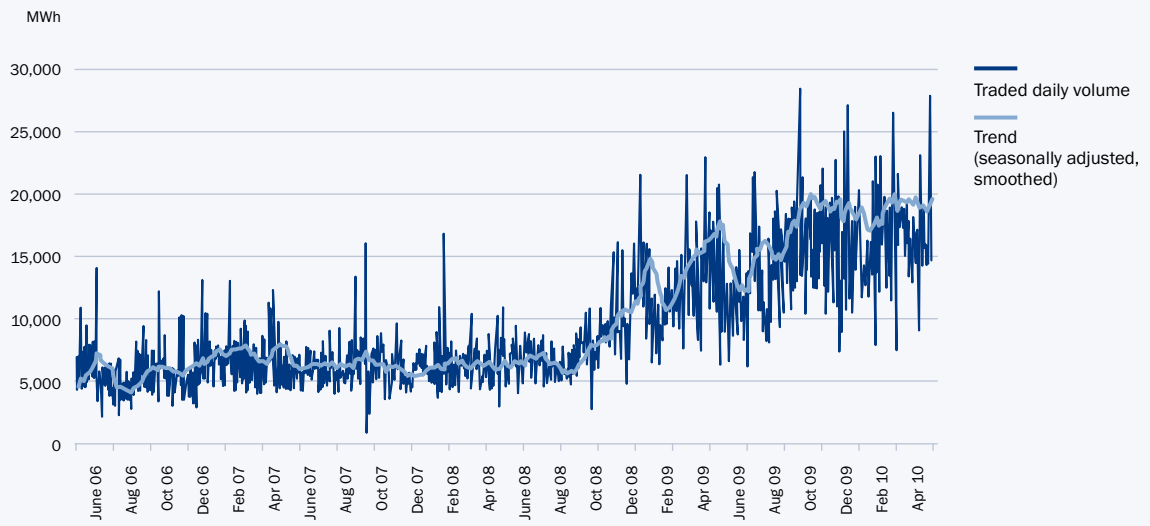


Figure 11: *Traded volume on the EXAA, MWh*
Sources: EXAA and own calculations

[7] See Structure and Performance of Six European Wholesale Electricity Markets in 2003, 2004 and 2005, DG Comp, 2007

TRADED SPOT VOLUME VS MARKET SHARES, 2009

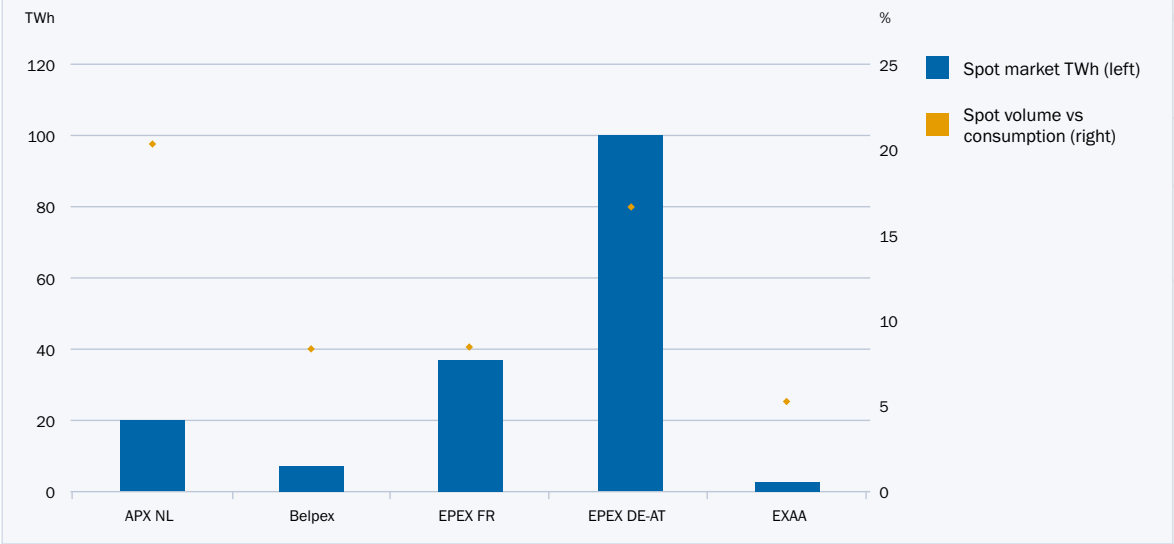


Figure 12: *Traded electricity volumes and market shares on the European power exchanges in 2009*
Sources: EPEX, EXAA, IEA, German Federal Statistical Office, E-Control, APX, Belpex and own calculations

PRICES OF PRIMARY ENERGY SOURCES, 2009

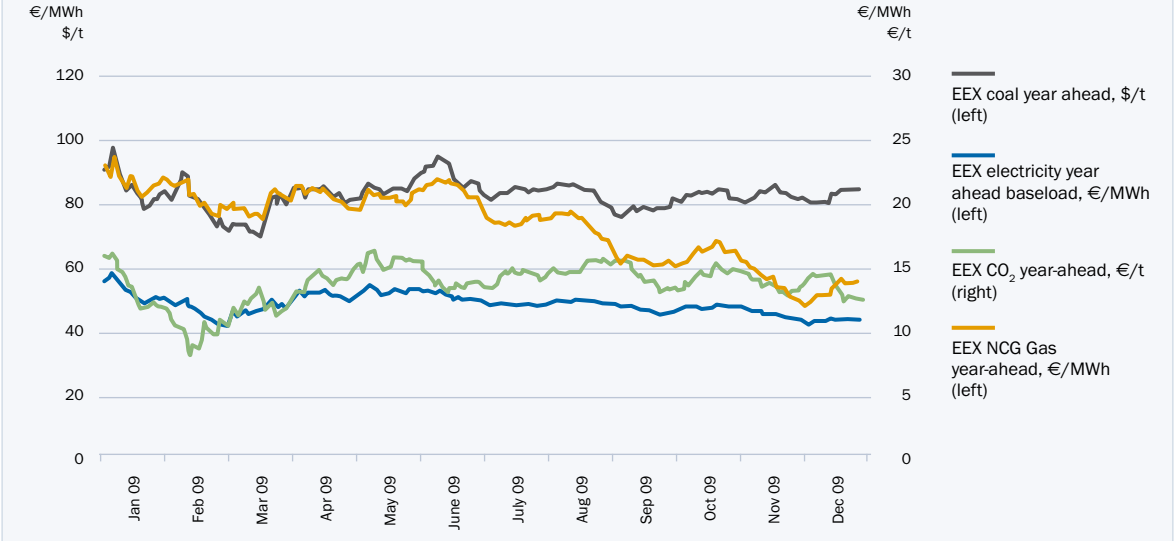


Figure 13: *Wholesale electricity prices and prices of primary energy sources, 2009*
Source: EEX

COMPETITION ON THE RETAIL MARKET

The Austrian retail market can broadly be broken down into two sub-markets with contrasting conditions:

- Small consumer market: households and small consumers, and non demand metered customers with an annual consumption of up to 100,000 kWh;
- Large consumer market: demand metered consumers with an annual consumption of over 100,000 kWh.

In 2009 electricity was supplied to a total of 5.8m metering points. Of these around 71% served household consumers, 25% other small consumers (small and medium-sized enterprises, agricultural and interruptible consumers) and 4% demand metered consumers (industrial consumers). Household consumers accounted for 24% of electricity consumption and other small consumers for 19%. Industrial consumers made up the largest market segment, with a 57% share of total demand.

Retail market structure

Supplier market structure

There are currently more than 140 suppliers on the Austrian electricity market, but not all of them operate on a nationwide basis. The former monopolists operate under the name of the incumbent in their grid area, while a number of new brand names have been introduced for nationwide marketing.

Limited number of competitors

Joint ventures have reduced the number of competitors. The sales branches of Wien Energie, EVN and BEWAG/BEGAS joined forces to set up **EnergieAllianz**, a joint retail company which initially also included Energie AG Vertrieb and Linz Strom Vertrieb. According to the partners, the principal benefit of the part-merger is the exploitation of synergies, thanks to economies of scale in their core energy sales business.[8] Marketing in EnergieAllianz's major sales markets is the responsibility of the partners' marketing subsidiaries and is not carried out under the EnergieAllianz brand. Electricity is sold under the Switch brand in the other grid areas. This joint venture has significantly increased the level of market concentration.

In 2007 Energie AG Vertrieb and Linz Strom Vertrieb GmbH pooled their marketing activities in the **Enamo** joint venture, which is 65% owned by Energie AG and 35% by Linz Strom. MyElectric, which supplies electricity throughout Austria except in the Salzburg AG and TIWAG grid areas, is a 50:50 joint venture between TIWAG and Salzburg AG.

Apart from the incumbents and their joint ventures, a number of smaller suppliers serve the small consumer market nationally or only in certain grid areas. The alternative suppliers are still largely restricted to the Eastern control area, as most of the smaller retailers regard serving consumers in other control areas as an additional burden and overall, a loss-making activity.

The supply-side structures of the small and large consumer markets differ in several respects:

- In the small consumer market EnergieAllianz and Enamo do not act as retailers, but instead sell electricity through the participating distribution companies (Wien Energie Vertrieb, EVN Vertrieb and BEWAG Vertrieb for EnergieAllianz, and Linz Strom and Energie AG in the case of Enamo). Other suppliers are Verbund (APS), VKW, MyElectric, Kelag, AAE Naturstrom, Energie Klagenfurt, Unsere Wasserkraft, Ökostrom, Naturkraft and Weizer Naturenergie. No foreign suppliers are active in the small consumer segment. Up to 13 suppliers per grid area contest the small consumer segment.[9]

[8] See www.energieallianz.at

[9] See E-Control Tariff Calculator, www.e-control.at

> EnergieAllianz and Enamo both serve the large consumer market directly. Verbund (APS), VKW, Kelag, AAE Naturstrom, Energie Klagenfurt, Unsere Wasserkraft, Ökostrom, Naturkraft and Weizer Naturenergie supply large consumers across the country. A number of foreign suppliers do operate on the large consumer market, serving customers with an annual demand of 10–20 GWh, generally on a site-specific basis.

Ownership

Most Austrian electricity suppliers are owned by provincial governments or local authorities *(Figure 14)*. Public ownership of the main companies is prescribed by legislation with constitutional status.[10] The owners of the utilities – the provincial and federal governments – can influence the legislative process. For example, the implementing legislation on unbundling is a provincial responsibility.

Besides the high level of public ownership, cross-holdings are another prominent feature. The majority of the companies hold stakes in other market participants, albeit in many cases only indirectly *(Figure 74)*.

Electricity suppliers publicly owned

PUBLIC OWNERSHIP OF AUSTRIAN ELECTRICITY UTILITIES

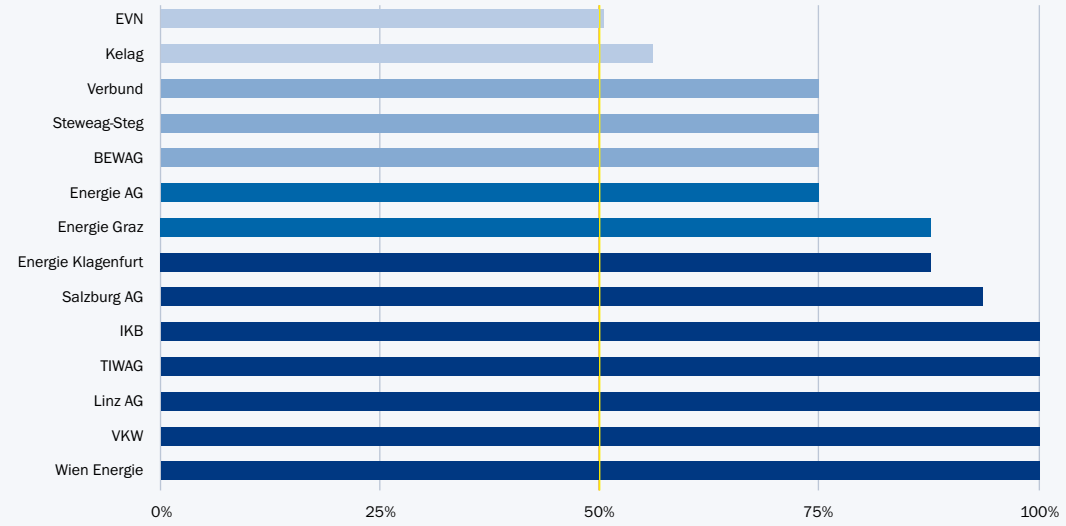


Figure 14: *Public ownership of Austrian electricity companies*
Sources: Company annual reports and own calculations

Demand structure

In 2009 electricity was supplied to a total of 5.8m metering points. Of these around 4.1m served household consumers, 1.6m other small consumers (small and medium-sized enterprises, agricultural and interruptible consumers) and 33,000 demand metered consumers (industrial consumers). Demand metered final consumers accounted for the largest share of consumption, while household consumers used around a quarter of all power.

Electricity market concentration: small consumers[11]

The market shares for suppliers of non demand metered customers have been included in the market statistics since 2008.[12]

[10] Federal Law Gazette (FLG) I No 143/1998. Amending this legislation would require a two-thirds majority in Parliament, which does not seem to be likely in the short or medium term.

[11] The data relates to non demand metered small consumers. As there is no data for shares of the demand metered consumer market the market concentration for this segment cannot be calculated.

[12] The legal basis for this is the Order of the Federal Ministry of Economic Affairs and Labour on Statistical Studies in the Area of the Electricity Industry (Statistics Order), FLG II No 284/2007.

The data shows that the market shares and HH index[13] (HHI) scores of the three largest suppliers are above the threshold values in some segments, indicating a highly concentrated market (CR3: 50%; CR5: 66.7%; HHI above 1,800).

Taking Austria as a whole, the HHI scores for the household and small and medium-sized enterprise segments were above the 1,800 threshold, at 1,872 and 1,961, respectively.

CONCENTRATION ON THE AUSTRIAN SMALL CONSUMER ELECTRICITY MARKET

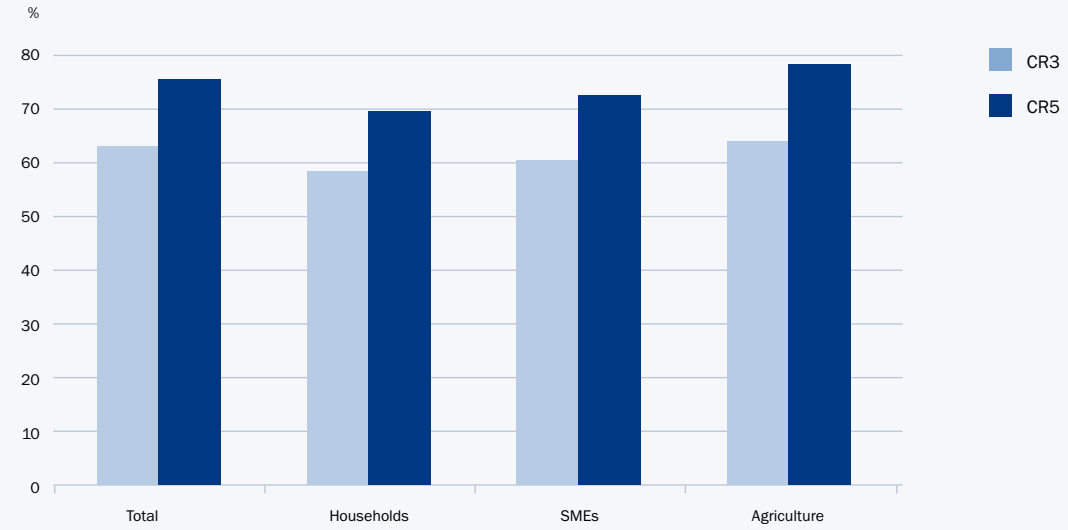


Figure 15: *Concentration on the Austrian small consumer electricity market (non demand metered customers) — CR3 and CR5[14]*
Sources: Market statistics survey questionnaire and own calculations

Market concentration remains high

The cumulative market share of the three largest suppliers of **houshold customers** in 2009 was around 60% *(Figure 15)* and that of the five largest suppliers was 70%. In other words, about two-thirds of all demand was met by the three largest suppliers. The cumulative market share of the top three suppliers of **small and medium-sized enterprises** was 60% and that of the five largest suppliers 72%. The Austrian market shares of foreign suppliers are negligible.

Owing to the low switching rates there have been no pronounced shifts in market shares in the past few years. Although new entrants have succeeded in attracting some customers, their market shares remain low, and the dominance of the firms with the largest market shares has not been eroded.

Market behaviour

Suppliers' pricing policies

Most of the electricity suppliers raised their prices in 2009, and there were few reductions.

[13] The Herfindahl-Hirschman Index (HHI) measures market concentration on a scale from zero to 10,000. A fully competitive market would have an HHI close to zero, whereas a monopoly would have an HHI of 10,000. The lower the number of market participants, the higher the index will be; the same applies if there is a small number of players with large market shares. Some studies use a rule of thumb whereby a figure of less than 1,000 indicates an unconcentrated, one of between 1,000–1,800 a moderately concentrated and one of over 1,800 a highly concentrated market.

[14] Aggregate market shares of the three and five largest suppliers.

ELECTRICITY PRICE CHANGES				
	Price change on	Change in net energy price (%)	Change in total price (%)	Remarks
Ökostrom	1/1/2009	Dependent on grid area	7.20%	
BEWAG	1/1/2009	+9.90%	4.40%	
IKB	1/2/2009	-1.49%		
BEWAG	1/2/2009	-3.50%	-1.30%	
Switch	1/3/2009	+5.30%	2.60%	
Verbund	1/5/2009	14.05%	6.07%	
TIWAG	1/8/2009	+5.10%	2.30%	
IKB	1/8/2009	+8.20%	3.70%	
Wels Strom	1/10/2009	+4.04%		
Kelag	1/11/2009	-0.70%	-0.30%	
TIWAG	1/1/2010	+3%	0%	
Energie AG	1/1/2010	+18%	8.80%	
Linz AG	1/1/2010	+19%	9.30%	
MyElectric	1/1/2010	-14%	Dependent on grid area	Applies to new customers
		+7.5%	Dependent on grid area	Applies to new customers
Wels Strom	1/1/2010	+15.7%	5.20%	
AAE Naturstrom	1/1/2010	+6%	Dependent on grid area	
Salzburg AG	1/3/2010	+8.80%	4%	
E-Werk Lechner	1/4/2010	+9.03%	4.17%	
Lichtgenossenschaft Neukirchen	1/4/2010	+9%	4.20%	
Energie Klagenfurt	1/4/2010	+5.90%	Dependent on grid area	Applies to new customers
Verbund	1/5/2010	+12.90%	Dependent on grid area	
VKW	1/7/2010	+6.40%	2.80%	Only applies to Vorarlberg
		+15.20%	Dependent on grid area	Applies nationwide
E-Werk Frastanz	1/7/2010			Increase by 0.4-0.5 cent/kWh

Table 4: *Electricity price changes*
Source: E-Control

Suppliers' product policies
In an attempt to retain want-away customers, suppliers are increasingly offering loyalty rebates if the consumer voluntarily undertakes to stay with them beyond the specified minimum term of the supply contract. Suppliers generally offer similar products, but the sizeable discounts now on offer can result in substantial price differences. New customers and those who pay by direct debit are also being offered incentives, as are consumers who recruit others or return to a supplier.

Product differentiation usually takes the form of "clean energy" – in other words renewable electricity derived from hydro, wind or solar power.

EnergieAllianz started offering floating tariffs for household consumers at the beginning of 2010. This pricing scheme passes on changes in wholesale prices via an index adjusted on a monthly basis – the "Austrian electricity price index".

International comparisons show that the choice of products is relatively limited in Austria. For example, many Scandinavian suppliers offer a wide range of products based on a variety of wholesale market scenarios, and special tariffs for vulnerable consumers and pre-paid products are common in some other countries. The comparatively conservative range of products on offer in Austria may be a sign of flaccid competition on the retail market.

Advertising activities on the electricity market

Advertising spend still low

Advertising expenditure dropped slightly year on year in 2009, to about € 28m. However, spending in the first half of 2010 was up by 15% on the like period of 2009. Most of the advertising is focused on regional print media. In 2009 more than 70% of the advertising spend went on placements in regional print media, and direct mail, newspaper supplements, and TV and radio commercials each accounted for only a small proportion of expenditure. Only a few alternative suppliers are making active efforts to win new customers. Local players mostly use advertising to enhance their image, and regaining lost customers is seldom the motive. There are isolated instances of radio commercials, primarily on the regional stations of the ORF (Austrian Broadcasting Corporation).

Demand side: switching
Since 1 October 2001 all electricity consumers have been free to switch their suppliers. By December 2009 a total of 334,000 household consumers, representing 8.3% of consumers in this segment, had done so.

Domestic consumers can make substantial savings by switching *(Figure 16).* Potential savings of up to € 111 are possible in eastern Austria, representing a reduction of as much as 16% on overall prices. However, despite the substantial savings on offer, a mere 1.2% of household consumers switched in 2009 *(Figure 17).* The combination of substantial differences between the energy prices of the cheapest provider and those of most local players and low switching rates points to the existence of switching barriers.

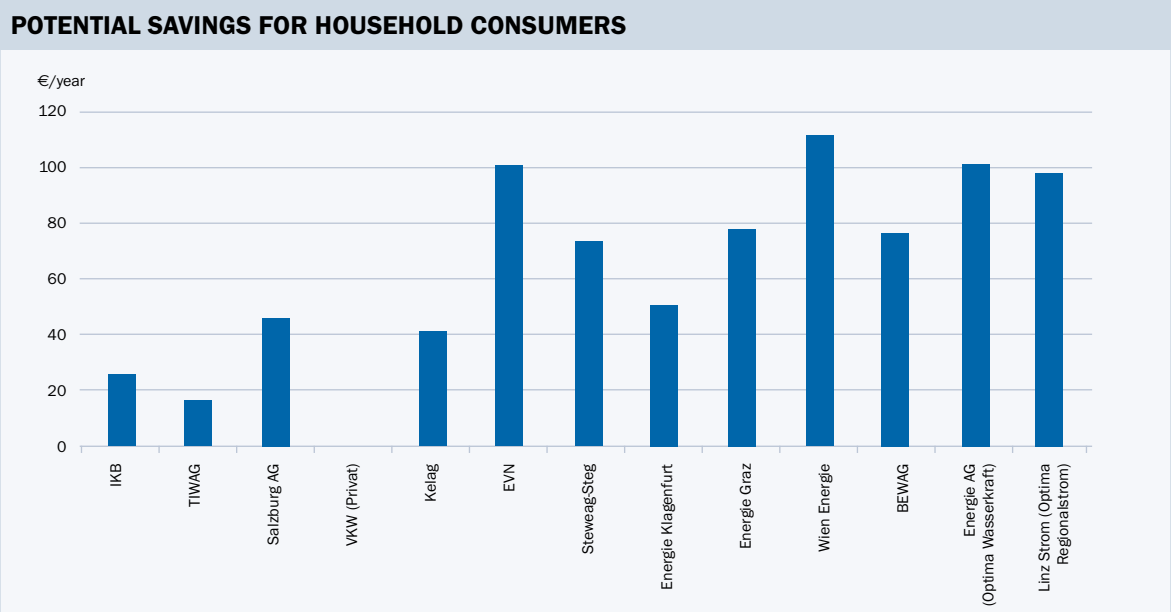


Figure 16: *Potential annual savings for household consumers (annual demand 3,500 kWh) switching to the cheapest supplier, May 2010, less general rebates offered by local players and total rebates offered by the lowest-cost supplier*
Source: E-Control

Switching rates low despite high potential savings

Following a substantial decline in 2005, switching rates among household consumers rose steadily throughout 2006 and 2007. However, they fell from 1.5% to 1.3% in 2008, and slipped again in 2009, to 1.2%. In other words, despite the more favourable wholesale price situation for new customers, 7,000 fewer households switched in 2009 – a drop of about 13%.

Some 1.7% of the other small consumers changed their electricity suppliers last year. This represents a significant decrease from the 2.4% recorded in this segment in 2008.

The demand metered consumers, which include large consumers in the industrial, agricultural and service sectors, are the most active switchers on the electricity market. The reasons for this pattern are the greater absolute savings to be made and the fact that these consumers are better informed.

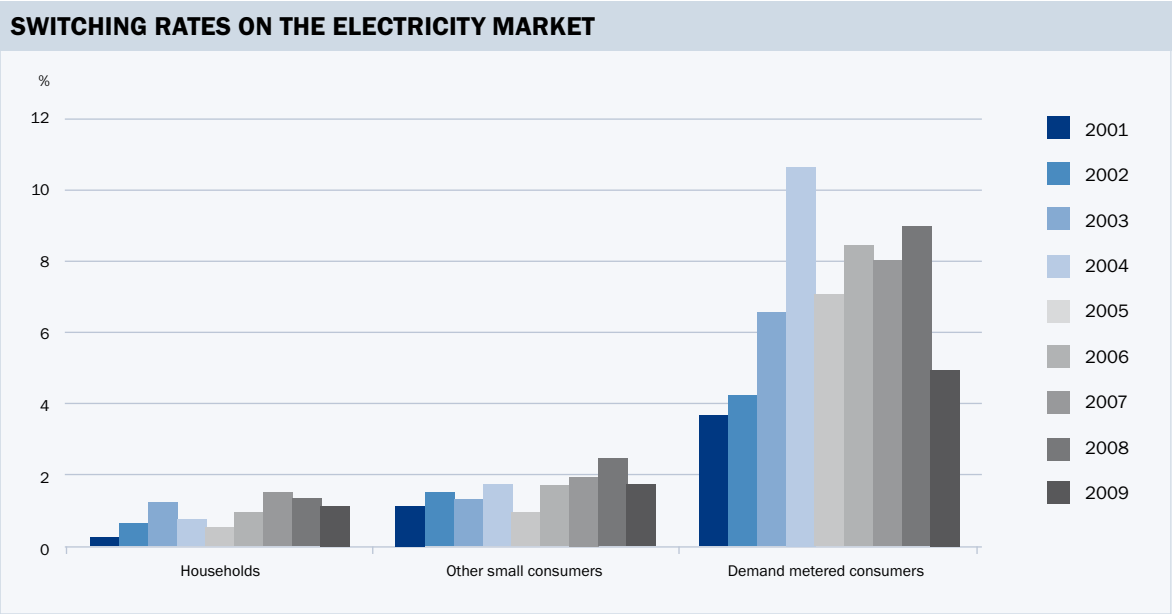


Figure 17: *Switching rates on the electricity market, switched metering points as percentages*
Source: E-Control

Switching rates among demand metered customers are well above average in the Styria and Lower Austria grid zones, while consumers with standard load profiles (household and other small consumers) in the Vienna, Lower Austria and Styria grid zones are more likely to switch than their counterparts in other regions. As shown by *Figure 16,* the potential savings are highest in Vienna and Lower Austria.

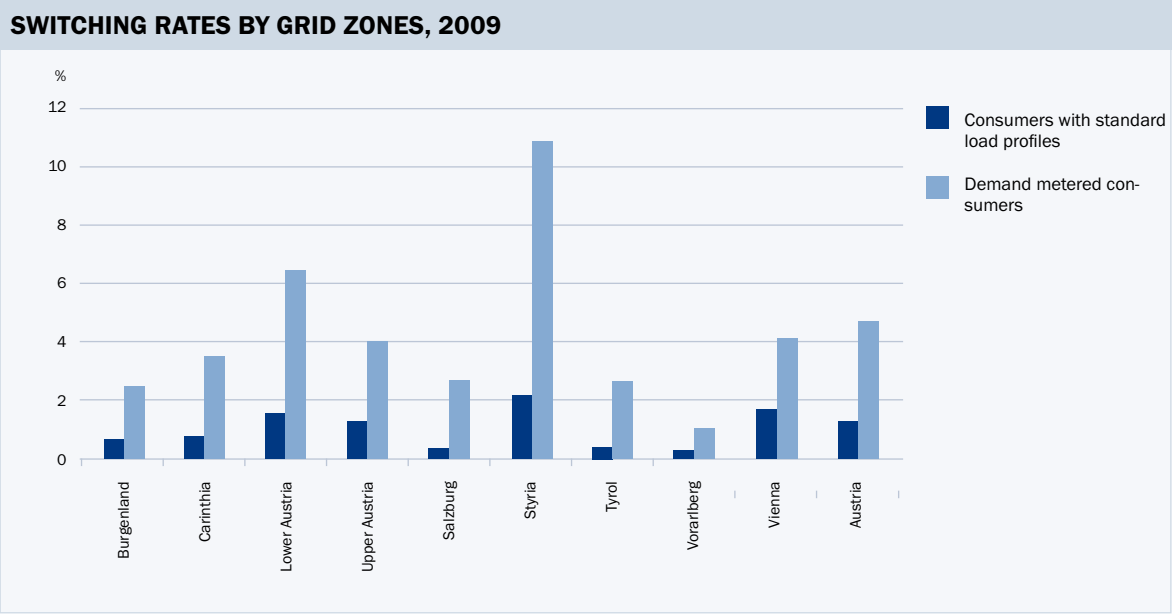


Figure 18: *Switching rates by grid zones, 2009*
Source: E-Control

Changes in retail prices

Electricity price regulation ended with market liberalisation in 2001. The system charges are set by the regulatory authority and taxes and levies by the federal and provincial governments and local authorities. With the exception of the metering charges, which are capped, all the system charges are fixed. The system operators are free to set lower metering charges, provided that they accord non-discriminatory treatment to all consumers, i.e. all customers must be charged the same price for a given type of meter.

Small consumer market

Overall trends

Figure 19 shows the evolution of overall electricity prices for household consumers. It reveals that, following a fall in the immediate aftermath of liberalisation, the overall trend has been upward since the end of 2002, except in the first half of 2005. The dip in the electricity consumer price index (CPI) in the first six months of 2005 is entirely explained by the reduction in system charges imposed by the regulatory authority.[15] Prices edged up slightly in 2009.

ELECTRICITY CPI (OCT 2001 = 100)

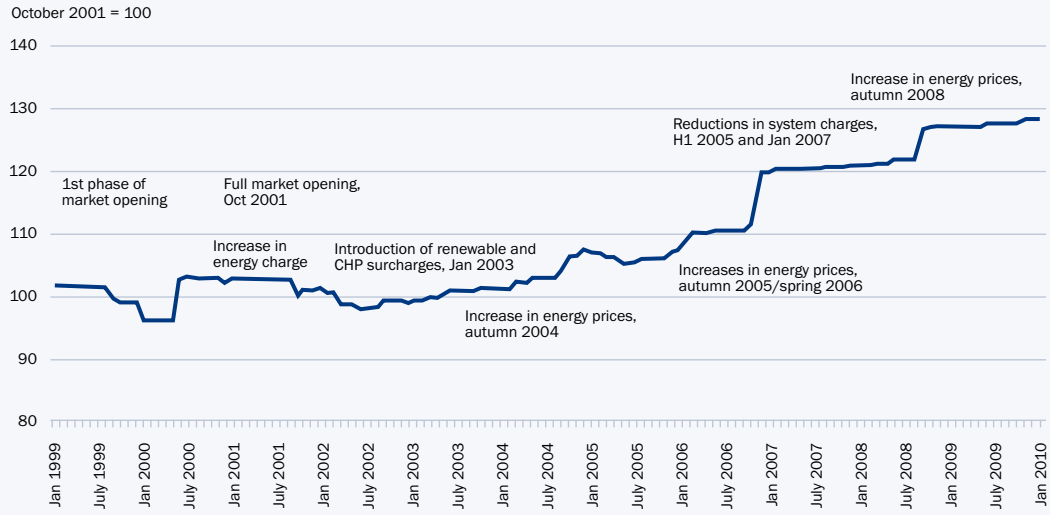


Figure 19: *Electricity CPI (overall price; Oct 2001 = 100)*
Sources: Statistics Austria and E-Control

At the start of 2010 the regulatory authority once again reduced the system charges. However, some companies responded by raising energy prices to the same extent or even beyond the drop in the system charges.

System charges reduced again at start of 2010

Prices for small consumers

As *Table 5* illustrates, prices for household consumers rose by around 3.5% year on year in 2009, and those for small and medium-sized enterprises by about 3%. Compared with the second half of 2007 (index in January 2008), household prices have jumped by 14% and prices for SMEs by 15%. Electricity prices have increased steadily since E-Control began its surveys.

[15] The consumer price index measures price trends and inflation. The start of the liberalisation process on the Austrian electricity market in October 2001 is taken as the reference value.

ELECTRICITY PRICES BY CONSUMER GROUPS			
January 2008 = 100	Household	SME	Agriculture
January 2008	100.00	100.00	100.00
July 2008	103.59	103.73	104.40
January 2009	110.20	111.98	111.04
July 2009	111.20	113.93	108.91
January 2010	113.92	114.98	111.88

Table 5: *Evolution of electricity prices by consumer groups (load profiles), January 2008 = 100; NB: January 2008 is the average price for H2 2007*
Source: E-Control market statistics

Increased prices for all small consumers

Figure 20 shows the statistical distribution of net energy prices, lagged by six months. In other words, the figure for January 2010 indicates a suppliers' average price in the second half of 2009. The distribution shows that the overall upward trend in supplier prices caused an increase in average prices in Austria. Many suppliers offer electricity at rates of 7.5–9 cent/kWh. However, it can also be seen that some suppliers' prices remained at 2008 levels, although this group has shrunk in comparison to the previous year.

Despite the wider variations in prices, potential savings are little changed. Both the cheapest and the most expensive suppliers still tend to be small, local companies.

Prices for small and medium-sized enterprises rose by around 4% in 2009.

DISTRIBUTION OF HOUSEHOLD PRICES

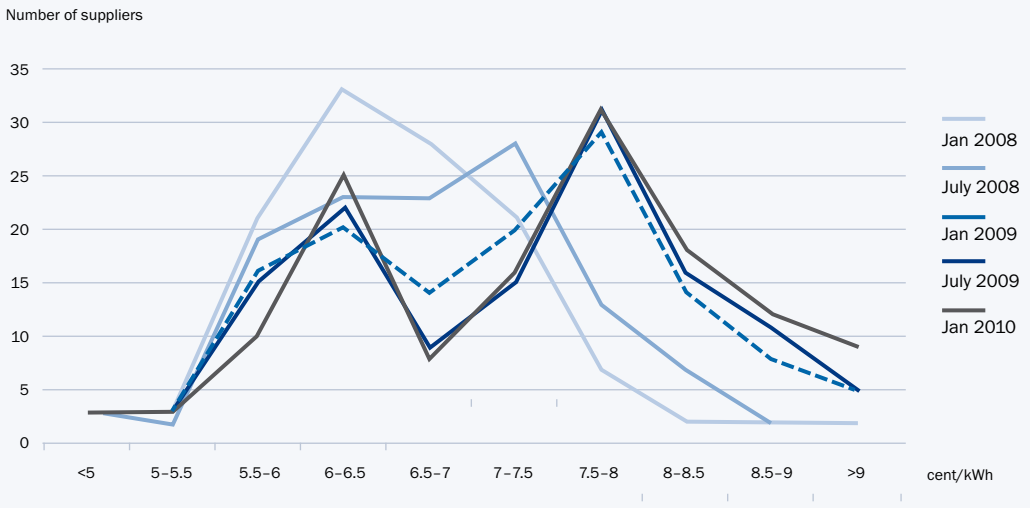


Figure 20: *Distribution of household prices, cent/kWh*
Source: E-Control market statistics

DISTRIBUTION OF SME PRICES

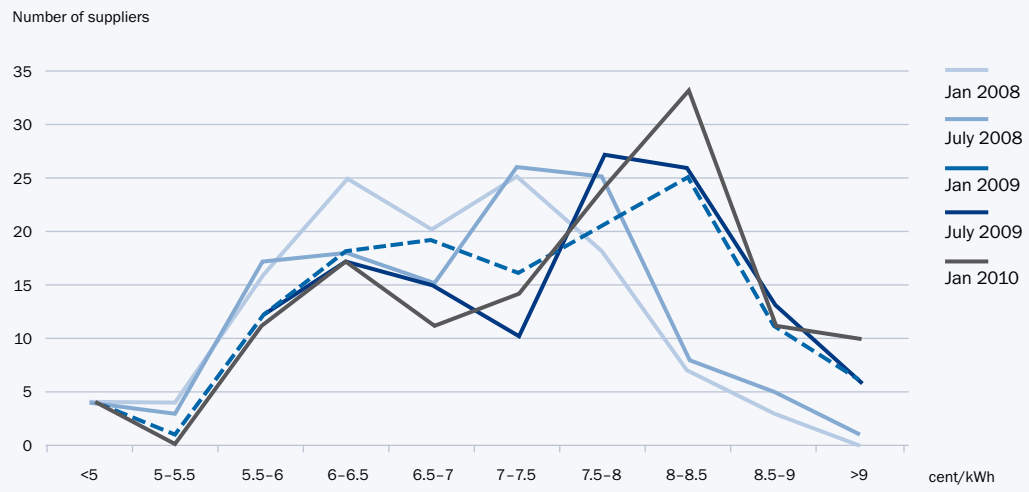


Figure 21: *Distribution of SME prices, cent/kWh*
Source: E-Control market statistics

SME prices up

Commercial prices have been registering above-average rises since January 2008 *(Table 5)*. The weighted average price increased from 7.2 cent/kWh in January 2009 to 7.3 cent/kWh in July 2009, reaching 7.4 cent/kWh in January 2010. Prices for small and medium-sized enterprises are only slightly lower than those paid by household customers.

Price differences between suppliers

Figure 22 shows the local players' energy prices and the related system charges, and taxes and levies. Energy prices vary widely between local players. The energy prices of the most expensive local players are around 42% higher than those of the cheapest incumbent supplier in the case of a household consumer with an annual consumption of 3,500 kWh. The most expensive local players' energy prices are some 46% above those of the cheapest alternative supplier. The difference between the highest and lowest overall price for an average household consumer supplied by a local player is around 21%.

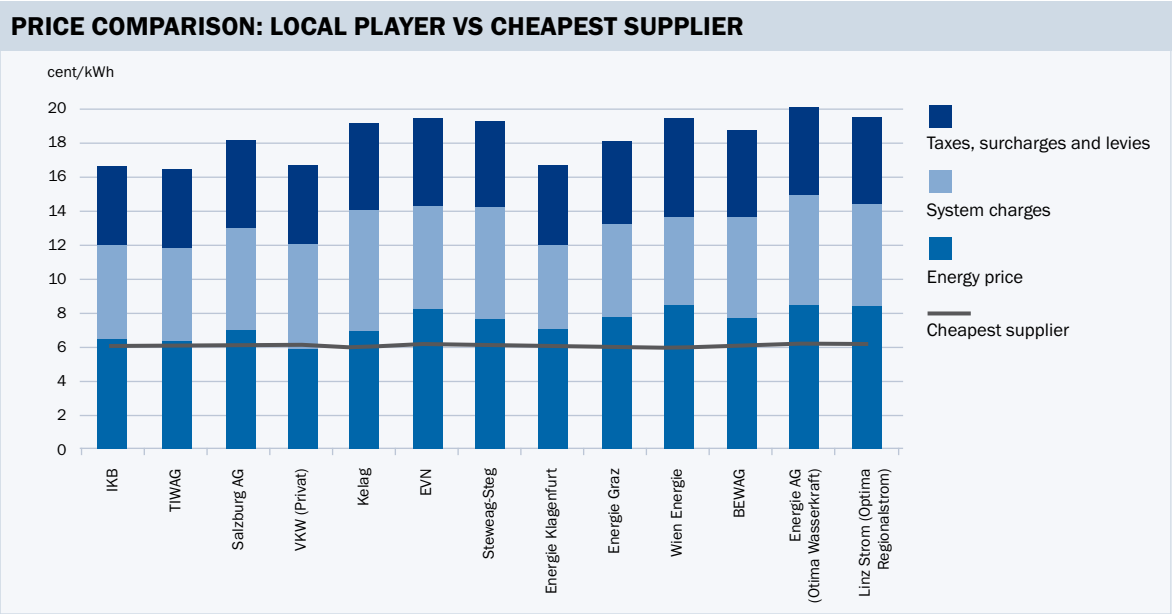


Figure 22: *Comparison of local players' prices with those of the cheapest supplier, 3,500 kWh/year, May 2010*
The calculations are based on the most widely used products offered by local power suppliers, less general rebates. In the case of the cheapest power suppliers the energy price less all discounts is applied.
Source: E-Control

High potential savings for EnergieAllianz customers

The differences between local players' energy prices mean that the potential savings from switching to the cheapest supplier can also vary greatly. The potential savings are greatest in the grid areas supplied by the EnergieAllianz partners and Energie AG, where switching can cut a consumers' electricity bill by as much as € 111 or 32% of the energy price and 16% of the overall price. However, despite the substantial savings on offer, a mere 1.2% of household consumers switched in 2009.

Mark-up for the additional cost of renewable electricity as a component of energy prices
Household electricity prices include a settlement price for renewable energy. The amounts charged by suppliers to compensate them for "additional expenses" occasioned by renewable electricity vary widely, as they depend on the purchasing prices. The difference between the purchasing price and the settlement price for the renewable energy allocated to a supplier on a pro rata basis yields the "additional expenses". This should mean that the suppliers with the highest additional expenses charge the lowest energy prices. However, a comparison of additional expenses for renewable electricity and household electricity prices does not show such a link.

Household price trends in comparison with the rest of Europe
Electricity prices charged to household consumers in Austria, including taxes and levies, are above the EU-27 average *(Figure 24)*. However, the statistical treatment of levies and surcharges is not uniform. Consequently, overall costs offer the best comparison, as they include all levies and surcharges, and as a result keep distortions to a minimum.

It should be noted that a new data collection methodology was introduced last year in an attempt to improve comparability.

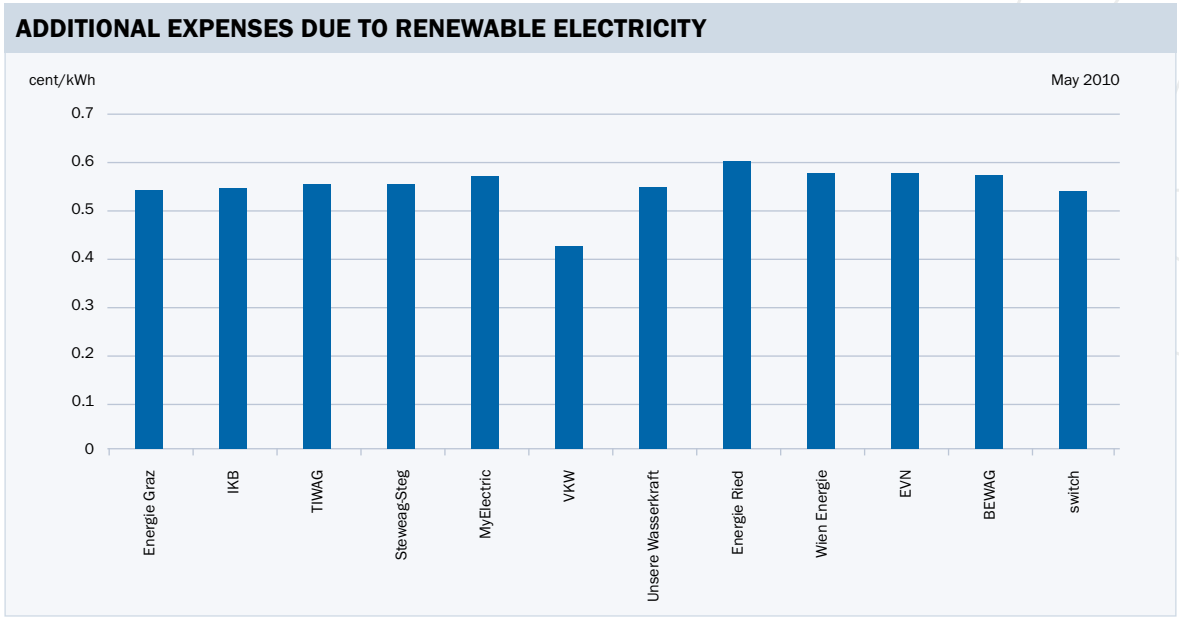


Figure 23: *Additional expenses occasioned by renewable electricity, May 2010*
Sources: Company price lists and websites

Figure 25 shows that in 2009 household electricity prices were slightly down year on year across much of the EU. In contrast, prices for Austrian consumers continued to rise sharply, and only the United Kingdom saw a larger increase over the period under review. However, British household power prices fell significantly in the second half of 2009.

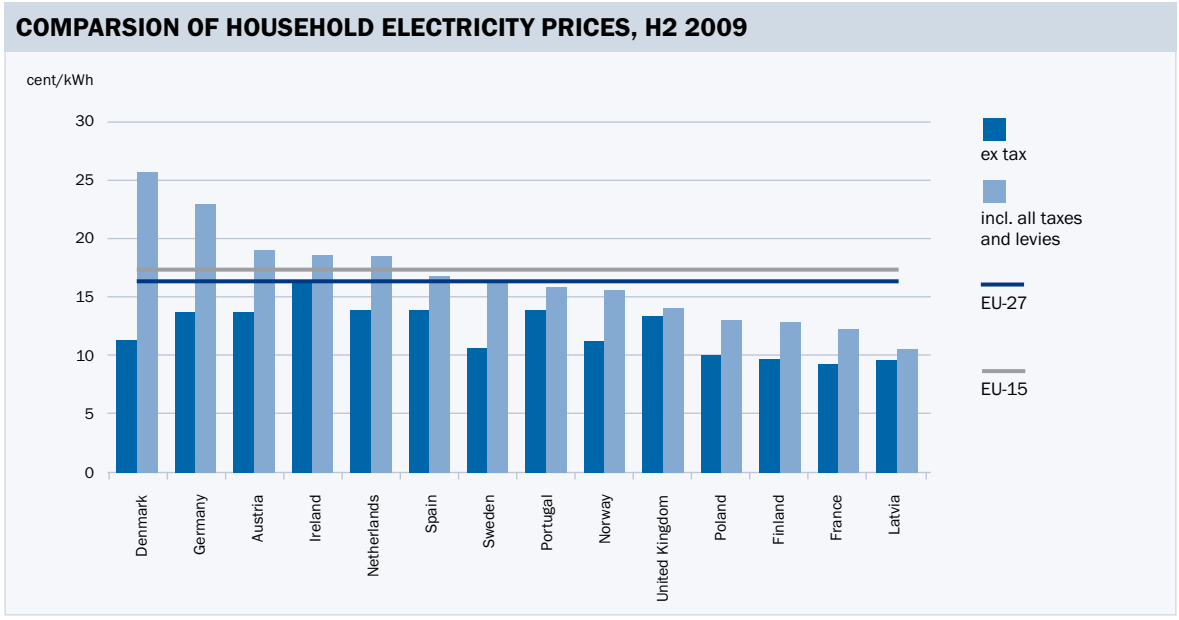


Figure 24: *Comparison of household electricity prices (energy and system charges) in Europe (2,500–5,000 kWh), H2 2009*
Source: Eurostat

DEVELOPMENT OF HOUSEHOLD ELECTRICITY PRICES IN THE EU

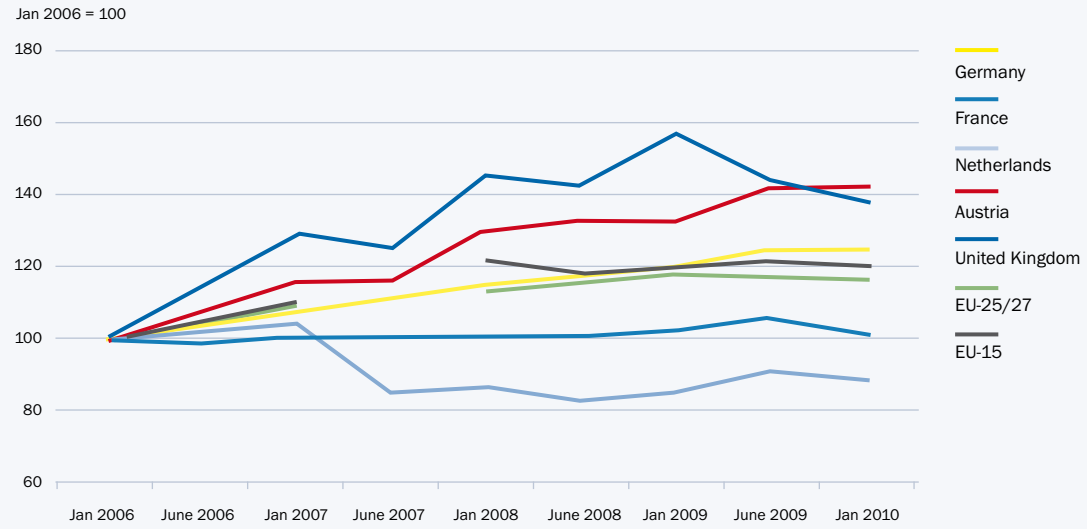


Figure 25: *Development of household electricity prices in the EU (Jan 2006 = 100)*
Source: Eurostat

The Household Energy Price Index (HEPI)[16] is designed to provide up-to-date assessments of changes in household electricity prices in selected EU capital cities *(Figure 26).*The EU-15 HEPI compiled by E-Control shows that prices have been trending upwards since June 2009 following a marked decline in the opening six months of the year. However, the HEPI for Austria (Vienna) did not reflect these price movements in either direction, and the drop in prices in January 2010 was attributable solely to a reduction in the system charges.

ELECTRICITY HEPI

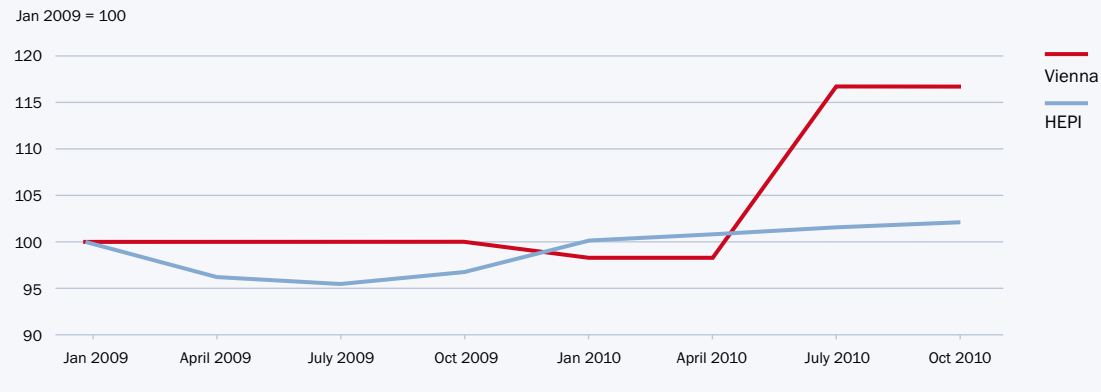


Figure 26: *Volume weighted household price index for the capital cities of the EU-15, ex tax*
Source: E-Control

[16] The Household Energy Price Index for Europe (HEPI) is compiled by E-Control in cooperation with VaasaETT Global Energy Think Tank. This weighted index shows household price trends throughout Europe. It is calculated on the basis of the electricity and gas prices of the incumbent supplier and its main competitor in each of the EU-15 capital cities. The analysis takes the tariff most widely used by consumers in each city.

Large consumer market

E-Control's survey of industrial prices has increased transparency on the large consumer market. E-Control has carried out direct online surveys of the energy prices paid by Austrian industrial consumers, on a biannual basis (January and July), since the second half of 2003. The results are posted on our website (www.e-control.at).

RESULTS OF THE INDUSTRIAL PRICE SURVEY

	Annual demand < 10 GWh	Annual demand > 10 GWh	No demand category
In cent/kWh	Arithmetic mean	Arithmetic mean	Arithmetic mean
Up to 4,500 full-load hours per year*	6.99	6.77	6.96
Changes vs 2008	–3.98%	–3.70%	–4.00%
More than 4,500 full-load hours per year*	6.93	6.55	6.75
Changes vs 2008	–2.81%	–2.96%	–2.88%
No full-load hour category	6.97	6.61	6.88
Changes vs 2008	–3.60%	–2.94	–3.23%

Table 6: *Results of the industrial electricity price survey, H1 2010, cent/kWh*
** Full-load hours = annual consumption/capacity*
Source: E-Control

For the first time since the survey was introduced, the results *(Table 6, Figure 27* and *Figure 28)* showed a year-on-year fall in prices across all consumption categories. Nevertheless, prices are still up on 2008 levels, mainly due to the fact that supply contracts have terms of two to three years. *Figures 27* and *28* depict the evolution of industrial prices for different demand categories.

INDUSTRIAL ELECTRICITY PRICES

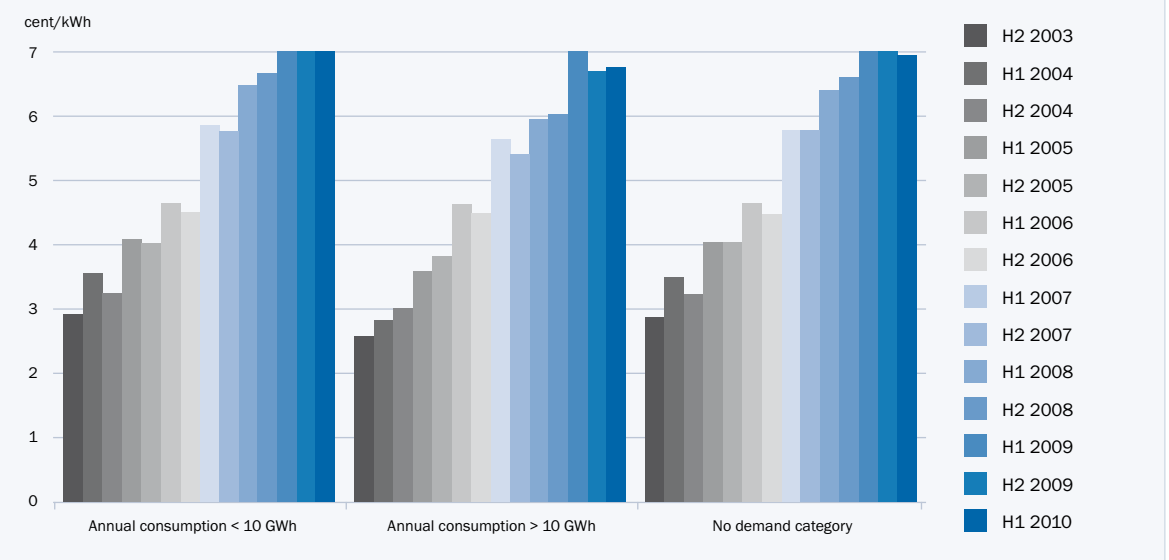


Figure 27: *Industrial electricity prices, 2003–2010, up to 4,500 full-load hours*
Source: E-Control

INDUSTRIAL ELECTRICITY PRICES

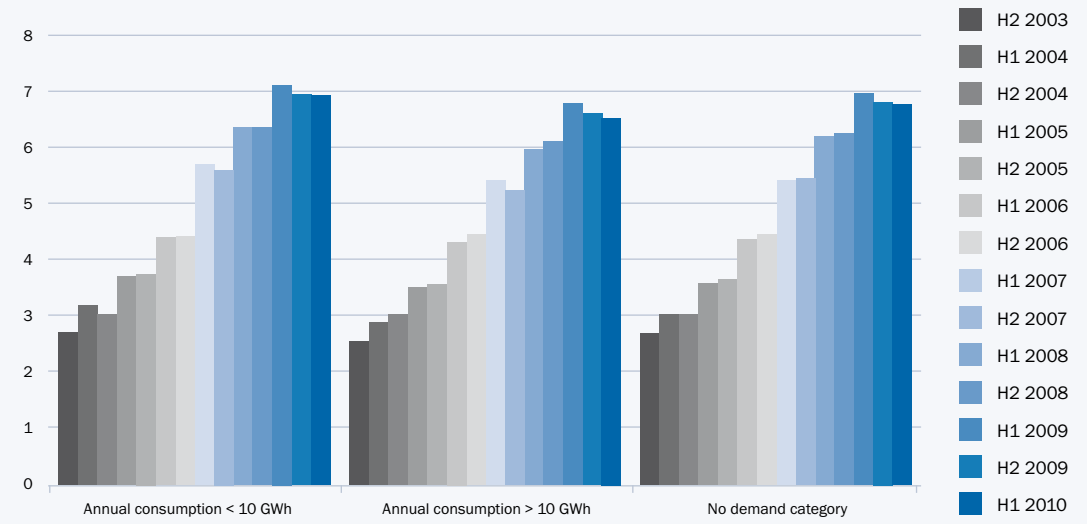


Figure 28: *Industrial electricity prices, 2003–2010, more than 4,500 full-load hours*
Source: E-Control

Price reductions for European industrial consumers

Industrial price trends in comparison with the rest of Europe

As in the previous year the prices charged to Austrian industrial consumers (including taxes and levies) with an annual consumption of 20–500 GWh *(Figure 29)* were above the EU-25/27 average in 2009, despite the price reductions during the year. Prices had been below the EU average in 2006 and 2007. Austria stopped reporting industrial prices in June 2009.

There were significant variations in industrial price trends across the EU *(Figure 30).* Prices fell in many countries in 2009, as did the EU average. Germany was the only country to record further price increases.

INDUSTRIAL ELECTRICITY PRICES IN THE EU

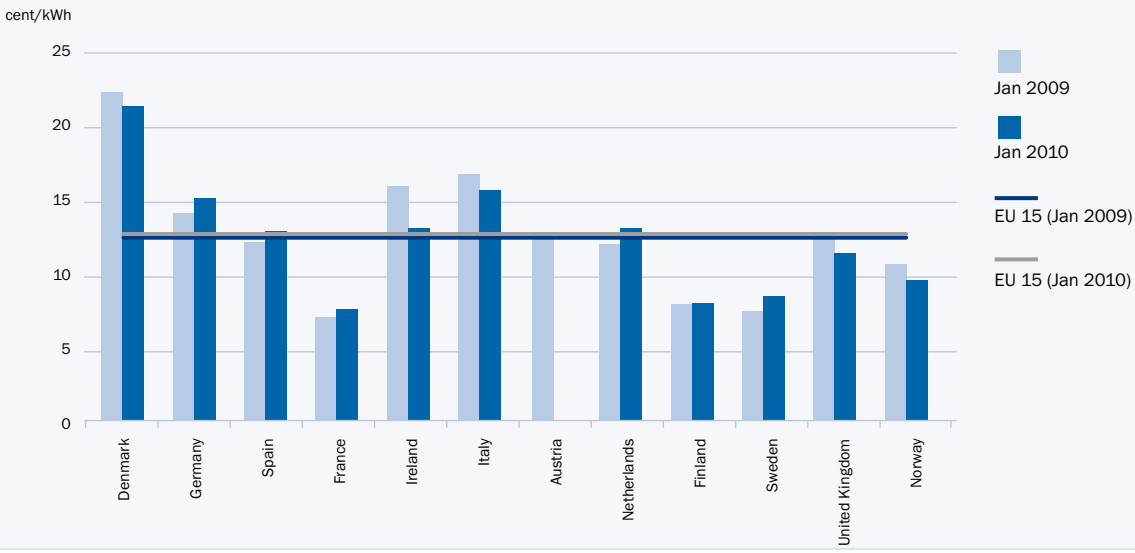


Figure 29: *Industrial electricity prices in the EU (incl. taxes and levies), annual consumption of 20–500 MWh, January 2009 and January 2010*
Source: Eurostat

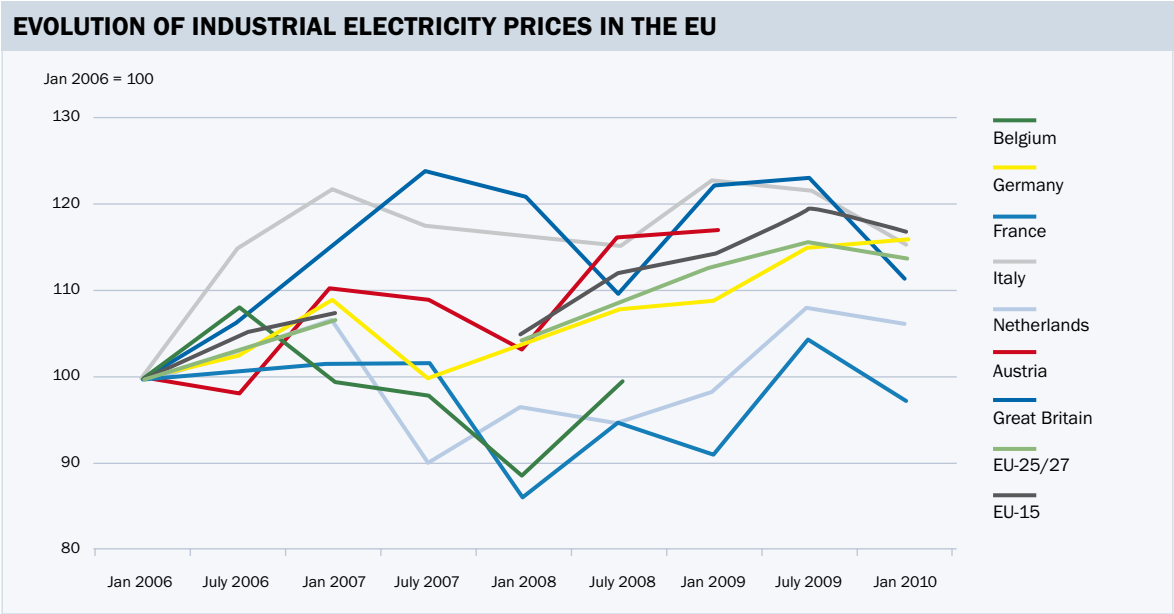


Figure 30: *Evolution of industrial electricity prices in the EU (incl. all taxes and levies), annual consumption of 20–500 MWh, Jan 2006 = 100*
Sources: Eurostat and own calculations

Retail price trends: summary
Small consumer prices continued to rise in 2009, with both household and SME consumers facing substantial increases in their energy bills.
Prices decreased in the industrial consumer segment for the first time since E-Control introduced its surveys.

ASSESSMENT OF AUSTRIAN ELECTRICITY COMPANIES' MARGINS

In 2009 E-Control collaborated with consultants Frontier Economics on a study of margins in the gas and electricity industries over time. This aimed at arriving at an assessment of the range of potential margins achievable with different procurement strategies.

Different procurement strategies according to willingness to accept risk

The costs associated with the different strategies were calculated. These strategies ranged from conservative, low-risk procurement methods based on futures products through to high-risk, short-term approaches based on spot products. The spot market is crucial to valuing generators' output (opportunity costs).

Typical procurement strategies were modelled using five scenarios, and sensitivity analyses performed for each scenario. The scenarios and levels of sensitivity vary in line with the following parameters:

- Volumes procured on the futures market: in each scenario, differing annual and quarterly quantities of electricity are purchased on the futures market
  - Long position: Futures purchases are based on the peak loads for a given period, and excess power is sold on the spot market.
  - Short position: Futures purchases are based on the minimum loads for a given period, and shortfalls are made up by spot market purchases.
  - Balanced procurement: Futures purchases are so executed that spot purchases and sales each account for approx. 50% of the hours.

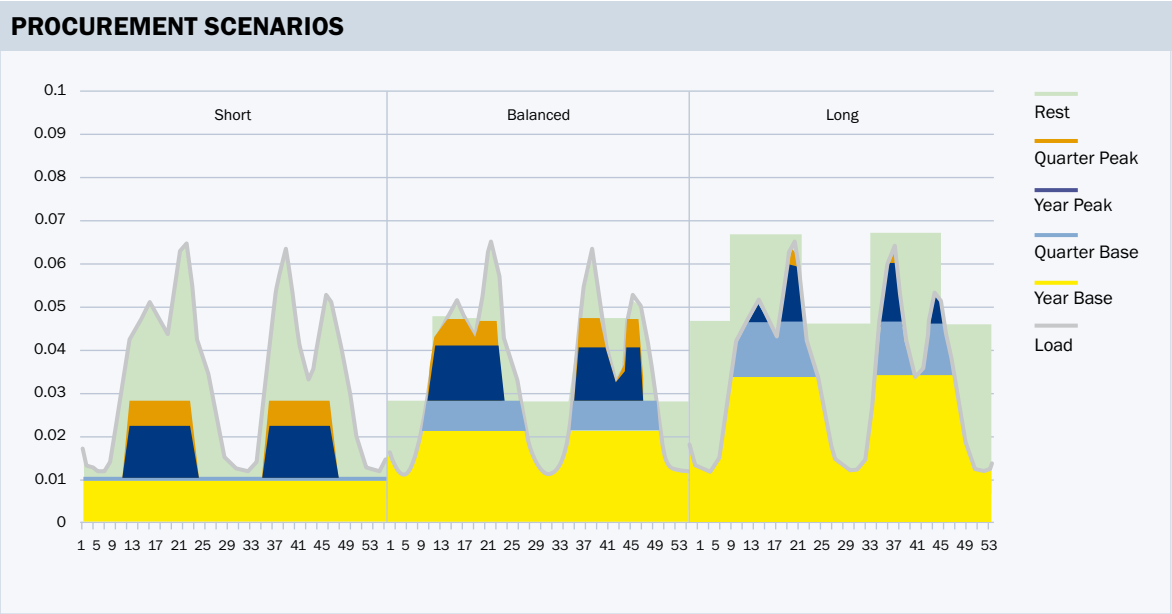


Figure 31: *Procurement scenarios*
Source: Frontier Economics

> Timing of purchases: The point in time at which annual or quarterly baseload is purchased differs between the scenarios. Procurement of futures products between six and 18 months before the call-off year or quarter was taken as a reference value. The calculation of procurement costs was based on the average exchange price over this period. In addition, sensitivities were calculated using reference periods of between 0 and 24 months.

These procurement costs were then compared with the revenue derived from providing electricity to an average household consumer with an annual consumption of 3,500 kWh in order to obtain the gross margins for Austrian suppliers. Gross margins must also cover the supplier's marketing costs.

Results

Sharp contrasts in suppliers' margins

Figure 32 depicts the imputed average gross margins of Austrian electricity suppliers in 2009 generated by each of the procurement scenarios. The imputed gross margin can vary substantially depending on the choice of strategy – the margins generated by conservative (i.e. early) and short-term procurement methods in 2009 differed by as much as € 48/MWh.

Since the procurement options were modelled in the same way for all suppliers, the differences between individual suppliers are mainly due to variations in consumer prices. However, the considerable overlap between the various bands shows that procurement strategies may explain the differences between suppliers' prices.

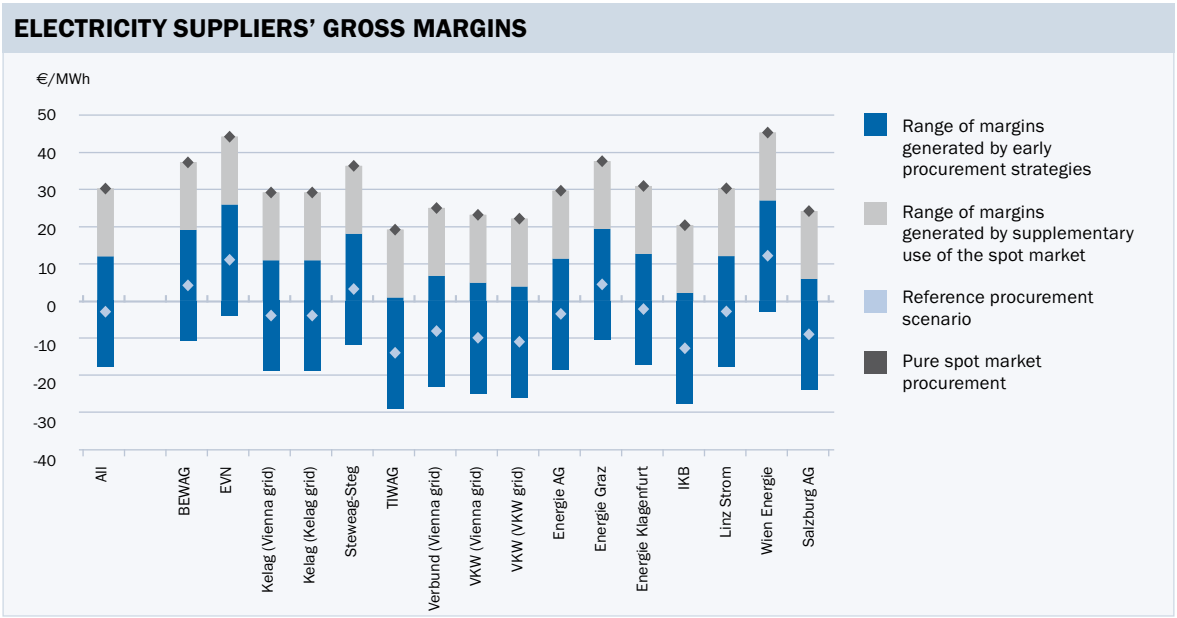


Figure 32: *Electricity suppliers' gross margins, 2009*
Sources: E-Control and Frontier Economics

Spot market procurement boosts margins

In 2009 conservative procurement approaches aimed at minimising price risks would have yielded negative gross margins for most of the companies. Those relying entirely on spot market procurement would have recorded the highest gross margins.

The spot price reflects the opportunity cost of own electricity generation. Any self-generated electricity that does not go to a company's own customers can be sold on the spot market at the market price. The gross margins of electricity suppliers with their own generating capacity, such as Verbund, EVN and Wienstrom,[17] tend to lie within the grey segments of the bands depicted in *Figure 32,* since autogeneration at spot market prices should be treated as opportunity costs.

The study demonstrates that procurement strategies which concentrate on exploiting opportunities on short-term markets give rise to positive margins, which in turn improve the prospects of price cuts for household consumers.

PROCUREMENT STRATEGIES AS A DRIVER OF FINANCIAL PERFORMANCE

Figure 33 shows the evolution of energy utilities' revenues[18] since 2001. Total revenue is now two and a half times as high. Growth was largely driven by the rapid increase in the revenue contributions of the companies' electricity businesses, while gas revenue dropped by 3% between 2008 and 2009. Revenue from "other" services jumped almost six-fold over the 2001–2009 period. District heating revenue improved by some 90% over the same period, and above-average growth was recorded in 2009.

[17] According to its annual report, autogeneration accounted for 70% of Wien Energie's electricity sales in 2008/2009; see http://www.annualreport2009.wienenergie.at/en/production-division/seite-1.html

[18] The figures include the following companies: BEGAS, BEWAG, Energie AG OÖ, Energie Graz, Energie Steiermark, EVN, Kelag, Linz AG, Salzburg AG, TIGAS, TIWAG, VEG, Verbund, VKW and Wien Energie. EconGas and EnergieAllianz were excluded as some of their revenue is recognised in their shareholders' consolidated accounts. OÖFG was excluded because it is a subsidiary of Energie AG Oberösterreich.

Energy utility revenues up

The annual revenue growth posted by Austrian electricity and gas companies ranged between -17% and +19%. Energie AG Oberösterreich returned the highest revenue gain in 2009, at about 19%. Growth was driven by the full-year consolidation of OÖ Ferngas and CMOÖ GmbH, which were previously accounted for using the equity method, the acquisition of South Bohemian water supply company 1. JVS a.s., expanded proprietary electricity trading, and proprietary gas trading activities via GuD-Timelkam GmbH, another equity method subsidiary.[19] The increase in revenue was accompanied by a drop in earnings before interest and tax (EBIT) of around 36%.

This decline reflected a non-recurring positive effect of € 25.2m in 2008 arising from the acquisition of a majority stake in OÖ. Ferngas AG as well as the impact of the economic crisis on Energie AG's operating business. As a result of the slump in industrial electricity demand, the company was also forced to resell power which it was contracted to buy for customers under its long-term procurement strategy on the futures and spot markets at unfavourable terms.[20]

The worst revenue performer was Energie Steiermark, which registered a drop of around € 218m or 17%. The company's EBIT shrank by 52% or € 53.5m. Revenue was depressed by lower gas turnover due to falls in both prices and sales volume, and lower electricity revenue. The spreads between the oil-linked gas prices locked in by long-term contracts and the gas spot and futures prices quoted on the new markets meant that the gas purchased by Energie Steiermark under its long-term contracts was virtually unmarketable.[21]

REVENUE BY AREAS OF OPERATIONS

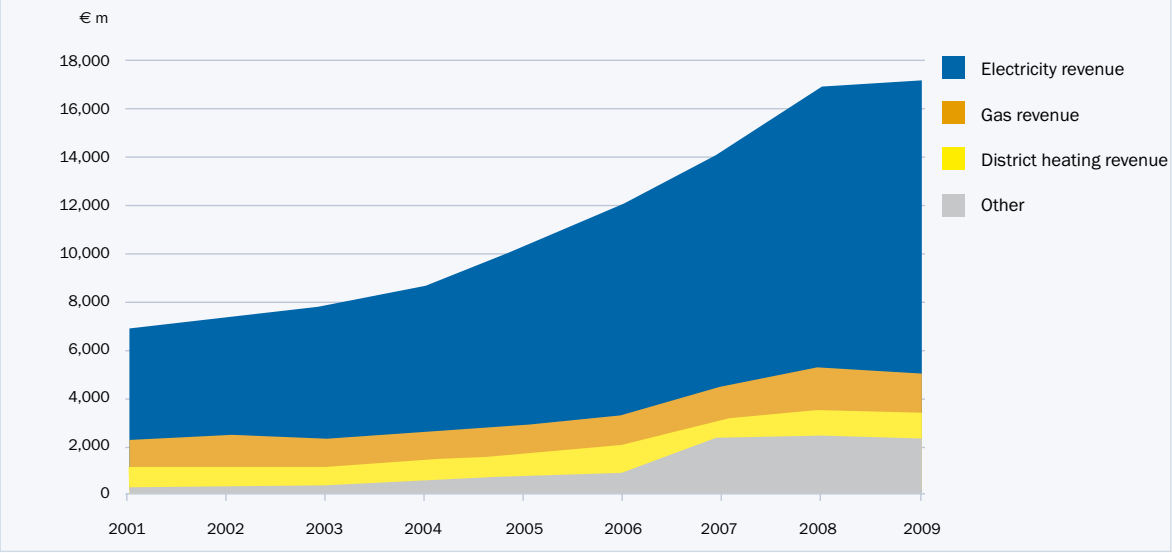


Figure 33: *Revenue growth by areas of operations, € m*
Source: E-Control

[19] Energie AG Oberösterreich, annual report 2008/09
[20] Energie AG Oberösterreich, annual report 2008/09
[21] Energie Steiermark, management report 2009

The importance for Austrian companies of "other" business operations, such as the water supply, wastewater and waste disposal businesses, as well as activities on eastern European markets, has grown in recent years *(Figure 34).* But also the important markets in eastern Europe served by Austrian utilities have been impacted by the economic crisis. Romania and Slovenia were the worst hit, with growth negative by 8% and 7.4%, respectively, in 2009. However, Hungary and Slovakia also felt the force of crisis, with GDP contracting by 6.5% and 5.8%, respectively, and the Czech economy shrank by 4.8%.[22] Waste disposal markets also felt the pinch, and the prices for recyclable materials such as waste paper and scrap metal hit record lows. Stiff competition for the declining supply of waste materials led to a fall in the price of commercial waste.[23]

Despite the rise in total revenue, the Austrian energy utilities' EBIT dropped by 12% overall in 2009, as did after-tax profits, with net finance income bouncing back after its plunge in 2008. The Oesterreichische Nationalbank (OeNB) is forecasting real economic growth of 1.6% in Austria in 2010, following a 3.4% contraction in 2009. The bank predicts average growth of 1.3%[24] in the CESEE-8[25] countries in 2010. Consequently, Austrian companies are anticipating more stable economic conditions in the year ahead.

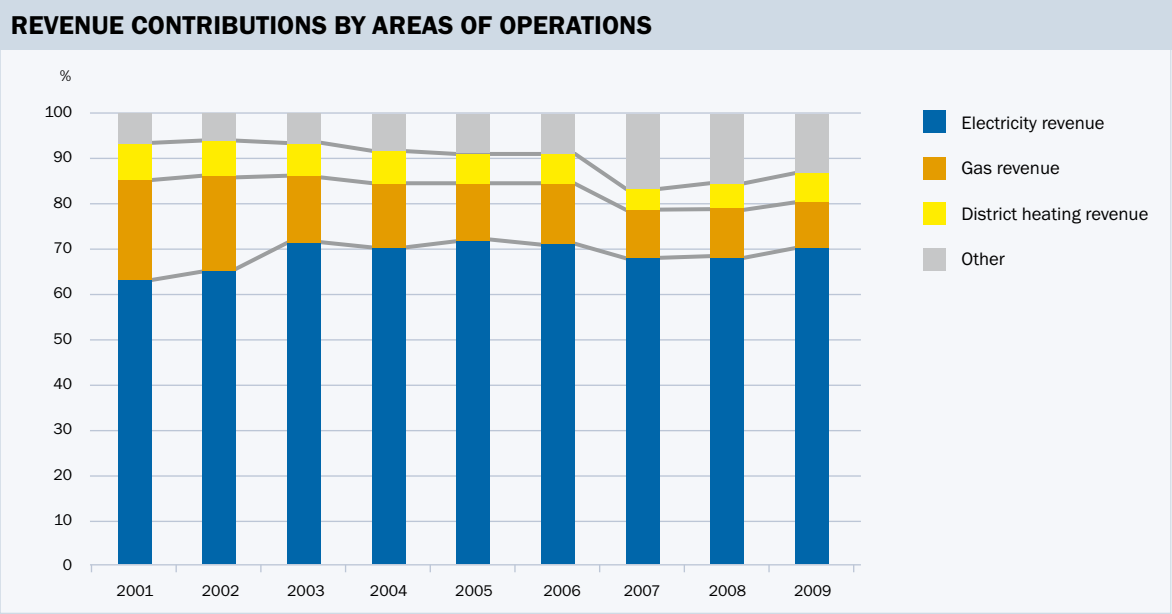


Figure 34: *Revenue contributions by areas of operations, %*
Source: E-Control

[22] Energie Steiermark, management report 2009
[23] Energie AG Oberösterreich, annual report 2008/09
[24] Oesterreichische Nationalbank, Monetary Policy and the Economy, Q2 10
[25] Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland and Romania (i.e. all of the central, east and southeast European EU member states yet to adopt the euro)

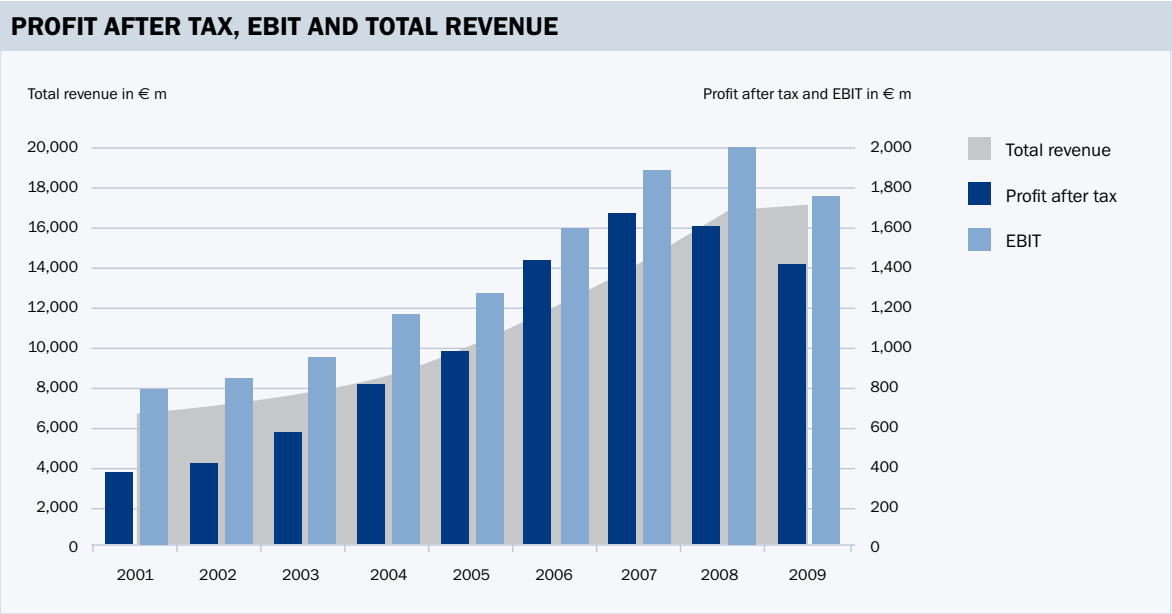


Figure 35: *Profit after tax, EBIT and total revenue*
Source: E-Control

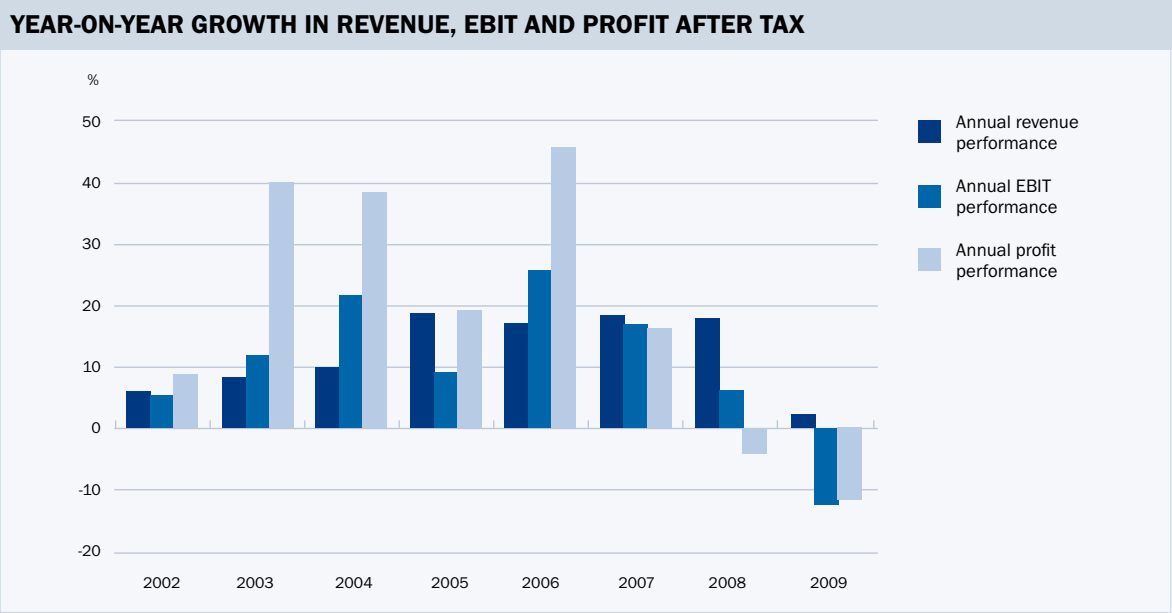


Figure 36: *Year-on-year growth in revenue, EBIT and profit after tax, %*
Source: E-Control

EBIT down

Total EBIT and profit after tax dropped by some 12% year on year in 2009. Return on sales slipped below the 9% mark for the first time since 2003.

Figure 37 shows the annual growth of revenue, profit after tax and EBIT over time. All grew steadily from 2002 to 2007, and similar or slightly improved results as compared to 2007 are expected in 2010.

Despite the declines in 2007–2008 the energy companies have enjoyed rapid revenue and earnings growth since 2001, as shown by *Figure 37.*

GROWTH IN REVENUE, EBIT AND PROFIT AFTER TAX

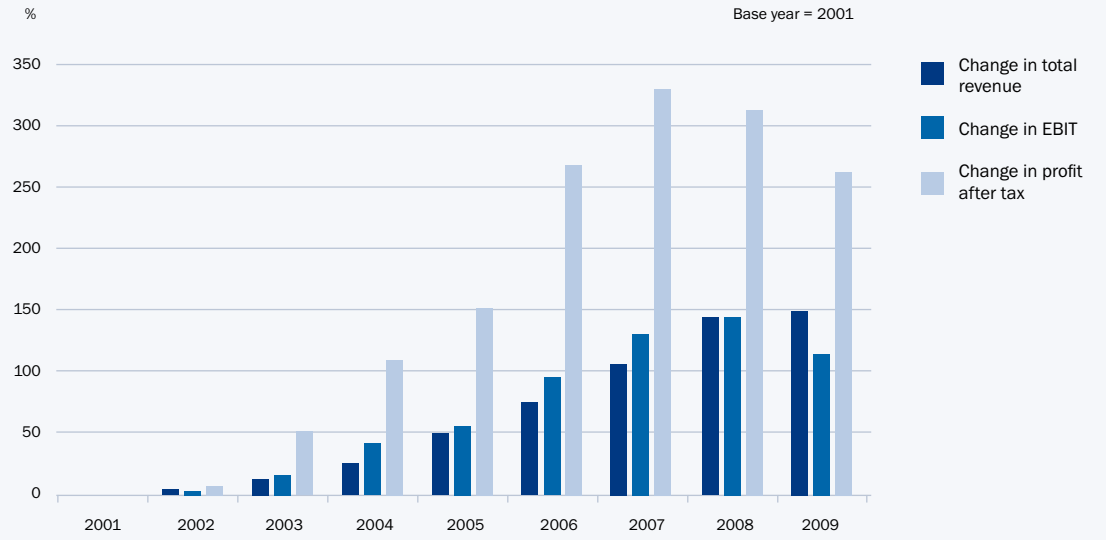


Figure 37: *Growth in revenue, EBIT and profit after tax, base year 2001, %*
Source: E-Control

The most pronounced impact of the economic crisis has been on net finance income *(Figure 38),* which was close to zero in 2008 but recovered somewhat in 2009.

NET FINANCE INCOME, 2001–2009

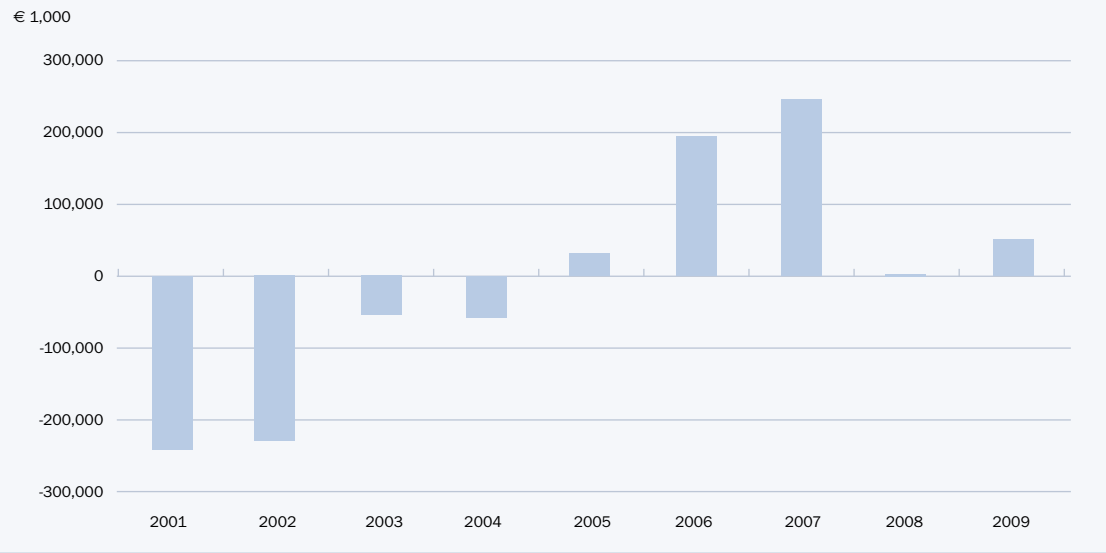


Figure 38: *Net finance income, 2001–2009, € 1,000*
Source: E-Control

Income from investments declined moderately in 2009 *(Figure 39),* mainly as a result of the economic development in Austria and southeastern Europe.

INCOME FROM INVESTMENTS, 2001–2009

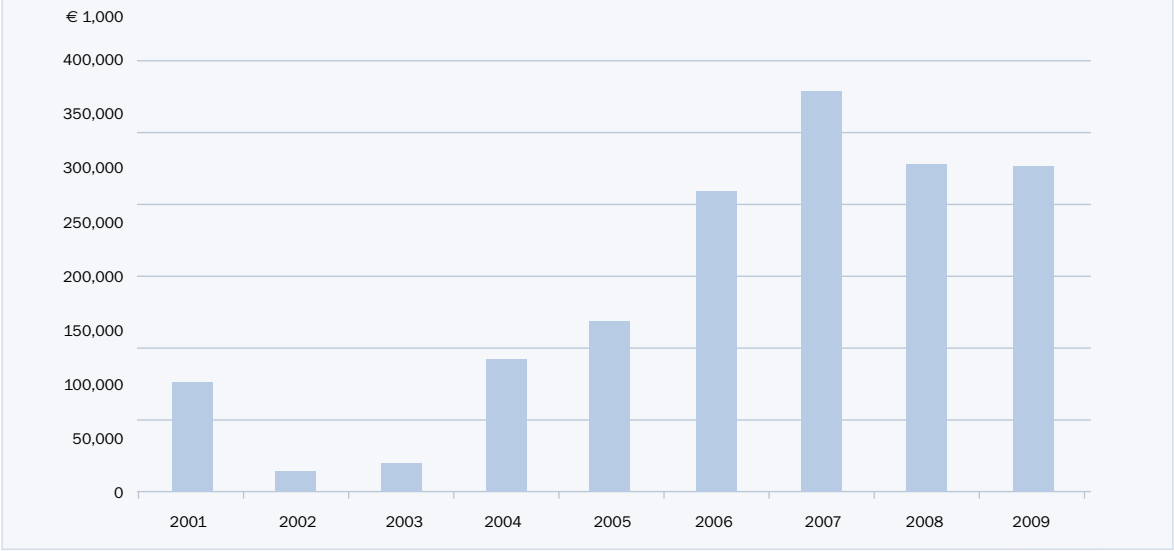


Figure 39: *Income from investments, 2001–2009, € 1,000*
Source: E-Control

DEVELOPMENTS ON THE ELECTRICITY MARKET: SUMMARY

Wholesale prices relatively stable

Wholesale electricity prices were relatively stable in 2009. Spot and futures prices in Austria and Germany peaked at the start of the year and then held at moderate levels.

Consumers did not all benefit equally from the downward trend in wholesale prices. Industrial consumers received price reductions, but small consumers saw a new round of increases.

Despite these price rises in 2009 and the substantial savings to be made by switching, switching rates declined. The high level of market concentration due to largely static market shares, the electricity suppliers' low advertising spend, lack of product innovation and low levels of retail market integration all indicate that competition remains flaccid – especially in the small consumer segment.

The former monopolists have retained their strong market positions. Neither market structures nor the activities of foreign companies in Austria testify to the existence of regional markets.

PRO-COMPETITIVE MEASURES

Market abuse proceedings

Under section 10(1)(1) *Energie-Regulierungsbehördegesetz* (Energy Regulatory Authorities Act), E-Control is responsible for competition oversight of all system operators and market participants, particularly with regard to the non-discriminatory treatment of market participants. If E-Control detects abuse it is required to take all necessary steps to restore compliance with the law without delay.

During the period under review there were fewer abuse proceedings than in previous years. Some cases of companies' abusing their market positions were resolved informally. E-Control was often able to prevail on market participants to observe the law without initiating proceedings.

Increasing market transparency – more help for consumers

New, user-friendly Tariff Calculator

The E-Control website was relaunched in 2009. The new site specifically addresses the contrasting interests of the various user groups. A version of the Tariff Calculator specially designed for smart phones was also added. The display of all the key information provided by the Tariff Calculator was optimised for the smart phone application, giving users clear price comparisons and the key information needed to switch suppliers (www.e-control.at/tk).

The Tariff Calculator was revamped again in the first half of 2010, in order to respond to consumers' wish for more detailed search results. The results page now also provides information on the potential savings or additional costs resulting from a supplier switch. The query function has also been simplified. After entering their postcode and annual consumption on the start page, users are taken directly to the results page.

Transparent billing

Minimum standards for invoices came into effect on 1 January 2007, and E-Control is responsible for enforcing compliance. Section 45c Electricity Act requires billing information to be "customer-friendly and transparent", but how invoices are to be made clear and comprehensible for recipients is a moot point.

In response to this problem E-Control developed a sample bill, based on expert advice, to help power utilities make their invoice formats consumer-friendly and transparent. This gave rise to the 3-3-3 concept. This sample bill consists of three pages: an overview, detailed price information, and a page of explanations, and each page is divided into three parts, namely energy costs, network costs, and taxes and levies.

A test with three electricity bills currently in use, conducted by an independent opinion research company, revealed that consumers favour transparent billing information and prefer the design of the E-Control sample bill. Two-thirds of those surveyed plumped for the sample bill because they found it easier to understand.

A special "toolbook" was also compiled in the course of the project to help power companies ensure that their bills are customer-friendly and comply with the legal requirements. The manual outlines the key findings of the independent survey and provides guidelines for handling the main legal issues and special cases related to billing.

Additional expenses occasioned by renewable energy: investigation by the Federal Competition Authority

Additional expenses due to renewable electricity higher than necessary

As part of its oversight activities, over the past three years E-Control has been monitoring the additional expenses due to renewable electricity which suppliers charge on to end users. Our investigations have revealed that suppliers have been heavily overcharging customers for their renewable energy expenses. E-Control has calculated that the actual cost burden incurred by electricity companies as a result of supported green electricity was between 0.36 cent/kWh and 0.46 cent/kWh in the 2007–2009 period (2009 estimated). However, suppliers charged on an average of between 0.51 cent/kWh and 0.60 cent/kWh during the years in question. In our opinion such overcharging constitutes abuse of a dominant market position.

The Federal Competition Authority (FCA) has carried out a detailed investigation into the way consumers are charged for renewable electricity expenses.[26] The FCA's report came to the following conclusions and recommendations:

In the past, power utilities have specified amounts as additional expenses arising from renewable electricity that were higher than the actual costs incurred due to the allocation of green power. However, the FCA was unable to determine conclusively the precise extent of the surcharge that was not covered by the utilities' costs. However, it is likely to be well below the € 77m raised during the debate on the issue.

FCA report

In view of the lack of evidence of a breach of the law, no action can be taken to rectify this state of affairs – at least with the legal instruments at the FCA's disposal. The current support system for renewable electricity is largely to blame for this problem. At the time when they set their prices for consumers the utilities are unaware of a number of key factors that influence the procurement cost of renewable electricity and are forced to rely on forecasts. There is little possibility of issuing catch-up payment demands to consumers (in particular household consumers) in the meaning of the *Konsumentenschutzgesetz* (Consumer Protection Act) who have been undercharged for a utility's renewable electricity expenses. As a result, in order to ensure that their costs are fully covered, suppliers tend to take a conservative approach in their calculations. In the opinion of the FCA, follow-up corrections for the actual costs incurred in the mass retail segment do not appear to be appropriate, given the relatively high administrative expenses that would be involved.

In order to make the actual cost of renewable electricity support more transparent, the Federal Competition Authority believes that consideration should be given to reforming the current support system. The main features of an improved system would be a consumption based charge to raise the necessary support funding and valuation of renewable energy at market prices or direct sales on the market. Identifying an acceptable solution will require a broad-based discussion process involving all of the major stakeholders as well as the EU Commission.

[26] http://www.bwb.gv.at/BWB/Aktuell/oekostrombericht_01062010.htm (German only)

Regulation and performance of the gas market

Regulatory framework of the Austrian gas market

The network regulation provisions of the Austrian *Gaswirtschaftsgesetz* (Natural Gas Act) differentiate between third party access for domestic customers and for cross-border natural gas transportation. Because of the high proportion of natural gas entering Austria that is transited, this legal distinction has major practical implications.

REGULATION OF TRANSIT PIPELINES

In 2009 about 80% of all physical gas imports were re-exported. Of the physical imports of some 37.9 billion normal cubic metres (bn N cu m), only about 8bn N cu m were destined for the Austrian market. The lion's share of the physical exports – about 21.7bn N cu m in 2009 – went to Italy *(Figure 40).*

Different treatment of domestic transportation and transit

The transmission systems, which are largely used for cross-border shipments, have a total length of 792 km. OMV Gas GmbH operates all of the Austrian transit pipelines and markets the capacity on the Penta West, Hungaria-Austria pipeline (HAG) and Süd-Ost pipeline (SOL), the March-Baumgarten pipeline (MAB) and the Kittsee-Petržalka pipeline (KIP). The capacity on the West-Austria pipeline (WAG) is marketed by Baumgarten-Oberkappel Gasleitungs GmbH (BOG), and that on the Trans-Austria pipeline (TAG) by Trans Austria Gasleitung GmbH (TAG).

Tarification

The tariff determination methods approved by the E-Control Commission in 2007 are applied to the transmission networks. These remained unchanged in 2009.

PHYSICAL GAS FLOWS ON TRANSMISSION SYSTEMS IN 2009

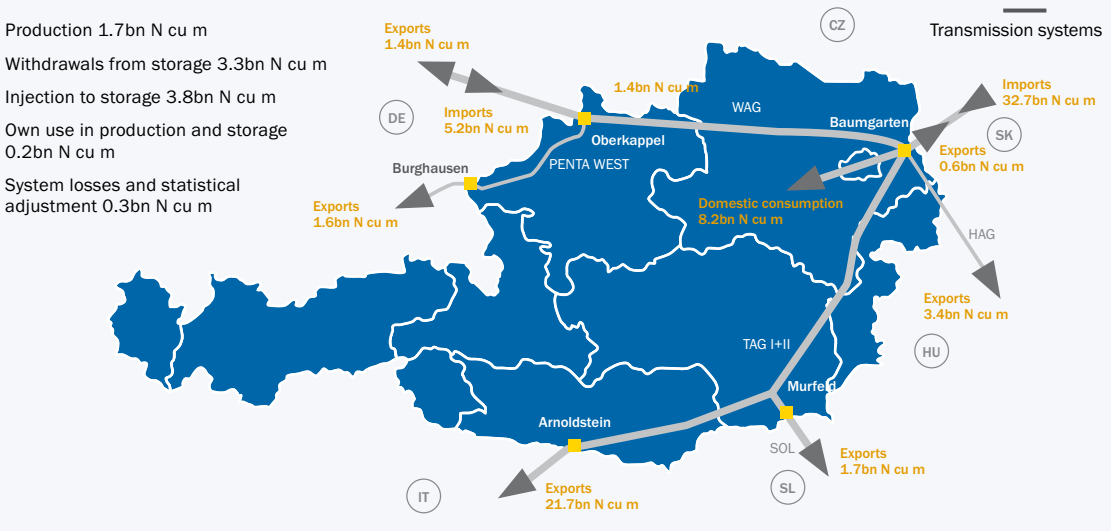


Figure 40: *Physical gas flows in 2009*
Source: E-Control

Contractual congestion

Situations in which the demand for firm transportation capacity exceeds its availability are known as "contractual congestion". Contractual congestion is an obstacle to short-term gas trading between trading points and consequently prevents wholesale prices from converging, sometimes resulting in marked differentials. This ultimately puts up the gas prices that consumers are obliged to pay. The transmission system operators (TSOs) manage congestion by offering capacity on an interruptible basis. However, this does not enable shippers to exploit arbitrage because there are actual interruptions that prevent the gas flows from taking place *(Figure 41)*.

Price differentials due to network congestion

The spread between the Heren NetConnect Germany (NCG) and Central European Gas Hub (CEGH) indexes reveals the impact of congestion on spot prices. In April 2010 the spread averaged € 1.51/MWh, but after interruptions at the Oberkappel interconnection point it climbed to € 3.02/MWh *(Figure 41)*. In summer 2009, too, there were daily interruptions due to shortages of network capacity at the Oberkappel interconnection point, and this meant that OTC prices on the CEGH market were at a significant premium over those at the German NCG and Gaspool trading points.

DAY AHEAD OTC PRICES ON THE CEGH AND NCG MARKETS, H1 2010

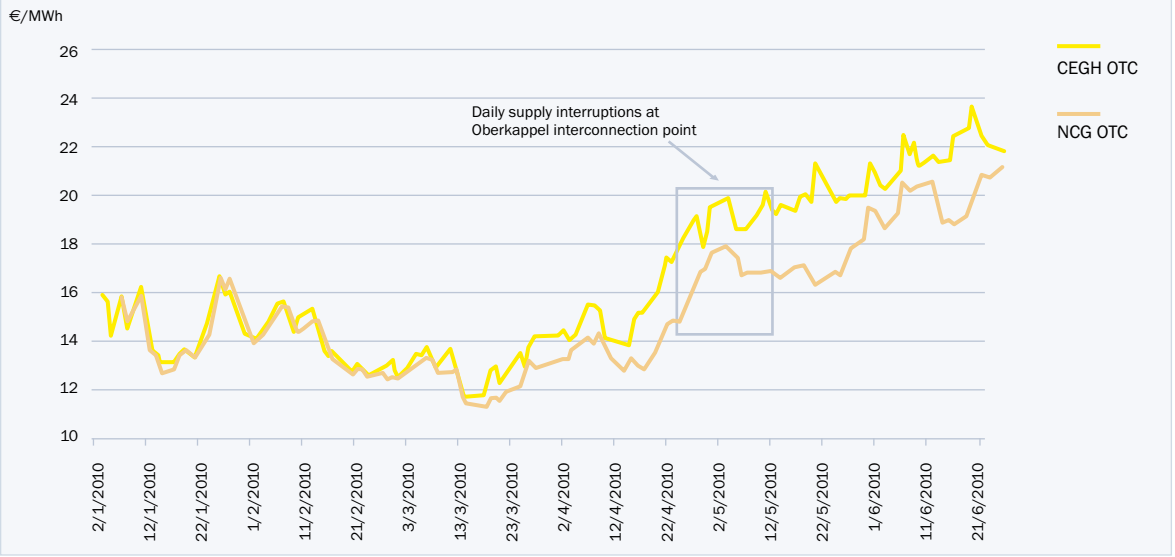


Figure 41: *Comparison of CEGH and German OTC price movements*
Sources: CEGH and ICIS Heren

The number of shippers at Oberkappel began to rise sharply in April 2009, when CEGH OTC prices cut free from NCG and Gaspool levels. These shippers are looking to arbitrage the lower spot prices in Germany by importing gas procured there into Austria. However, most of them have only been able to book transportation capacity on an interruptible basis.

Physical congestion

The severe physical congestion on the **TAG** in the past few years appears to be easing *(Figure 42)*. Capacity has been progressively expanded by increasing the number of compressor stations. In autumn 2009 a new LNG terminal entered service near Venice in northern Italy (the Adriatic LNG Terminal in Rovigo), and this, in conjunction with the economic downturn, has somewhat reduced capacity utilisation on the TAG.

TAG CAPACITY UTILISATION AT THE EXIT POINT ON THE AUSTRO-ITALIAN BORDER

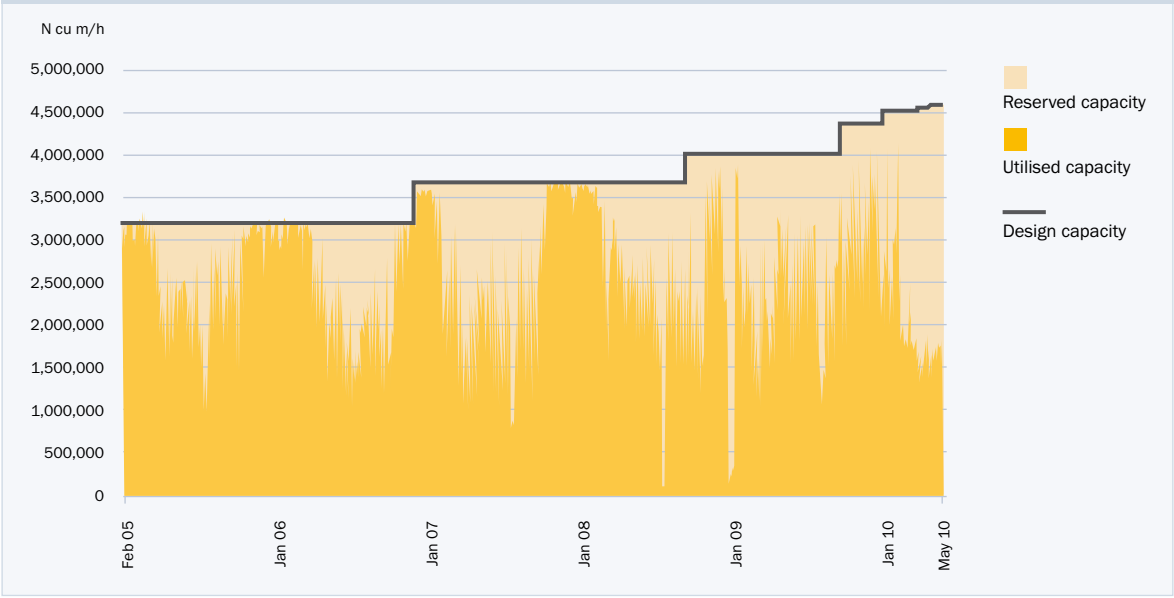


Figure 42: *TAG capacity utilisation at the Arnoldstein/Tarvisio exit point*
Source: TAG GmbH

Transport situation key to price formation on the CEGH market

As can be seen from *Figure 43,* use of interruptible transportation capacity on the **HAG** jumped on 1 July 2009. The reason was an amendment to the Hungarian network code, permitting Hungarian suppliers to deliver all of their customers' gas via entry points in western Hungary, that came into force on that day. Suppliers had previously been required to source at least 80% of their gas from Ukraine in the east and no more than 20% from the west. The change has led to Hungarian traders making increased use of the CEGH market and the HAG. Since all of the firm capacity on the HAG had already been booked under long-term contracts – though in the past it had not been fully used – new shippers could only conclude interruptible contracts. The increased utilisation of the pipeline's design capacity means that the exposure of these transportation customers to the risk of supply interruptions has increased considerably.

UTILISATION OF THE CAPACITY OF THE HAG PIPELINE

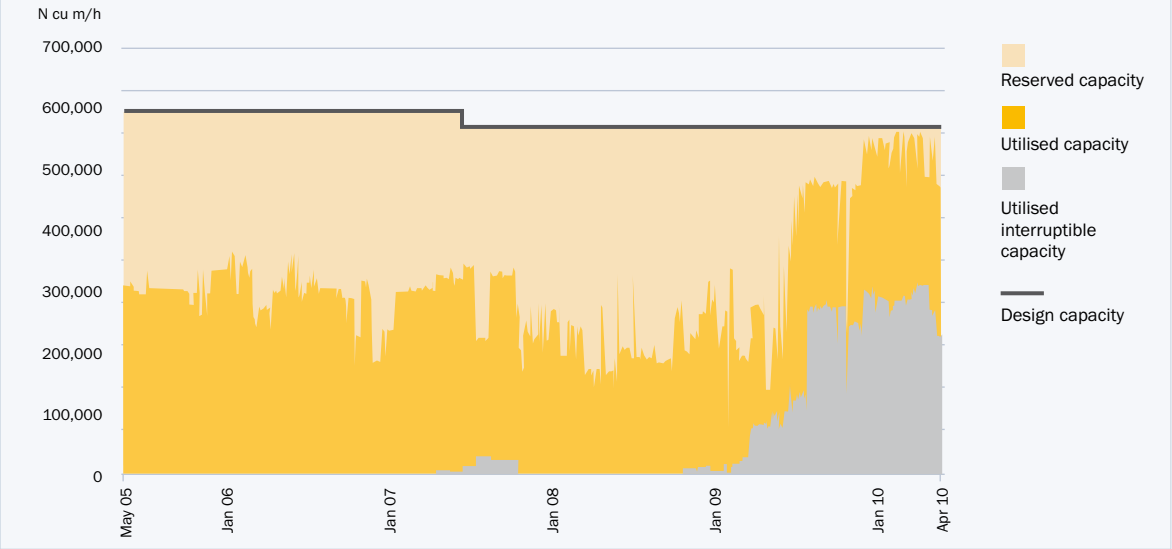


Figure 43: *Utilisation of capacity of the HAG system over time*
Source: OMV Gas GmbH, Online Capacity Booking System

Effective congestion management procedures are the key to more efficient short-term gas trading and avoidance of contractual congestion at interconnection points. ERGEG, the European Regulators' Group for Electricity and Gas, has responded to this problem by drawing up a proposal for binding EU congestion management guidelines.[27] The German regulator has opened determination proceedings on new capacity management arrangements based on the ERGEG proposals. Congestion management procedures that make it possible to offer firm day-ahead capacity should also be introduced in Austria. However, the Austrian regulator lacks the legal powers to push such changes through.

Wholesale market integration — SSE Gas Regional Initiative (GRI)

Progress towards regional markets

The Gas Regional Initiative (GRI) was established in 2006 in order to drive progress towards the single European energy market via the interim step of regional markets.[28] To this end it was decided to create three gas regions — North-West, South and South-South East (SSE). The membership of the SEE region consists of the following EU member states: Austria, Bulgaria, the Czech Republic, Greece, Hungary, Italy, Poland, Romania, Slovakia and Slovenia.

Following last year's conclusion of an interconnection point agreement (IPA) for the Baumgarten gas hub, in 2010 a further step in the direction of market integration was taken when E-Control, the Italian regulator Autorità per l'energia elettrica e il gas and TSOs TAG GmbH and Snam Rete Gas launched a similar project for the Arnoldstein-Tarvisio interconnection point.

The implementation of an operational balancing account at the Arnoldstein-Tarvisio interconnection point would benefit shippers and traders active on the Austrian gas exchange established in December 2009 and at the CEGH and PSV gas hubs. It would also help members of the new Italian P-Gas exchange, run by Italian power exchange operator GME, which will open on 1 October 2010. The finalisation of a balancing account, on which the TSOs offset measurement differences on an ongoing basis, using a kind of current account, will relieve the shippers of the risk of errors and facilitate gas transportation between the Austrian and Italian markets. If this project is successful it could also serve as a model for other countries participating in the SSE GRI.

[27] ERGEG, Congestion management on European Gas Transmission Networks, Recommendations for Guidelines to be Adopted via a Comitology Procedure, E09-GNM-10-07, 10 December 2009, http://www.energy-regulators.eu

[28] The legal foundations of these activities are: (i) the duty to maintain security of supply under the Gas Security of Supply Directive (2004/67/EC); and (ii) the duty to create cross-border competition under Directive 2003/55/EC

Security of supply and regional solidarity

Due to the gas crisis at the start of 2009, one of the main priorities of the SEE market's two-year work programme is security of supply, including minimising the negative impact of further supply interruptions. The last meeting in 2010 will be devoted to the new EU Gas Security of Supply Regulation and increased involvement of member states in improving regional solidarity.

Focus on security of supply

Investment in new infrastructure

Slovak TSO eustream and its Hungarian counterpart FGSZ have unveiled plans to build a 120 km pipeline link between the two countries at a cost of about € 100m. Since this pipeline will be designed for bidirectional flow from the outset, it will significantly enhance the security of supply of Slovakia, Hungary and neighbouring countries in the event of supply outages. Some 10% of the capacity of the pipeline, which will run from Velké Zlievce in Slovakia to Vecsés in Hungary, will be allocated on a short-term basis (periods of less than one year). The initial, non-binding phase of the open season tender has already been completed, but the binding stage has not yet begun. The promoters of the project envisage linking the pipeline to the planned Nabucco or the South Stream system, both of which will transport gas from the Caspian to Europe.

Austrian TSO TAG GmbH has also announced expansion plans. After securing a commitment from the European Economic Recovery Fund to co-finance 50% of the project costs, TAG offered reverse flow capacity in an open season procedure. The company received bids for 193,000 cu m per hour, and allocated 50,000 cu m/hour on a binding basis.

Both infrastructure projects will strengthen the links between networks in central and eastern Europe, and increase Austria's security of supply as a result.

Interoperability and hub development

Following the implementation of the IPA at the Baumgarten gas hub, Central European Gas Hub AG was able to roll out the Integrated Trading Area Baumgarten (ITAB), which permits flexible trading between the systems that converge on Baumgarten, including those operated by eustream, TAG, BOG and OMV Gas. The project at the Arnoldstein-Tarvisio interconnection point is aimed at opening the way for similar arrangements.

Following the successful launch of a gas exchange in cooperation with Vienna Stock Exchange operator Wiener Börse AG, CEGH AG plans to introduce a futures market before the end of 2010. This and the establishment of the P-Gas exchange in Italy should ease access to the Austrian and Italian markets.

Transparency

The members of the GRI SEE monitor TSOs' participation in the Gas Infrastructure Europe transparency platform.[29] The 7th SEE Implementation Group meeting held in March 2010 was informed that Slovenia's Geoplin and Hungary's FGSZ had joined the scheme. Data from Austrian TSOs TAG GmbH and BOG GmbH, which are currently at the trial operation stage, will soon also be posted on the transparency database website.

Increased transparency

Outlook

The 2010–2011 GRI SEE work programme is aimed at promoting regional market integration, strengthening wholesale trading in the region and increasing security of supply.

Following the last SEE Stakeholder Group Meeting towards the end of 2010, the focus in 2011 will increasingly be on regional solidarity among regulators and ministries, and harmonisation of regulatory frameworks so as to remove impediments to market integration.

[29] www.gie.eu.com

DOMESTIC GRID

In 2009 the total length of the Austrian gas grid was 38,612 km, of which transmission lines *(Figure 44)* accounted for 2,876 km, grid level 2 distribution lines 3,556 km and local grid level 3 distribution lines 32,079 km.

AUSTRIAN GAS GRID – EASTERN CONTROL AREA

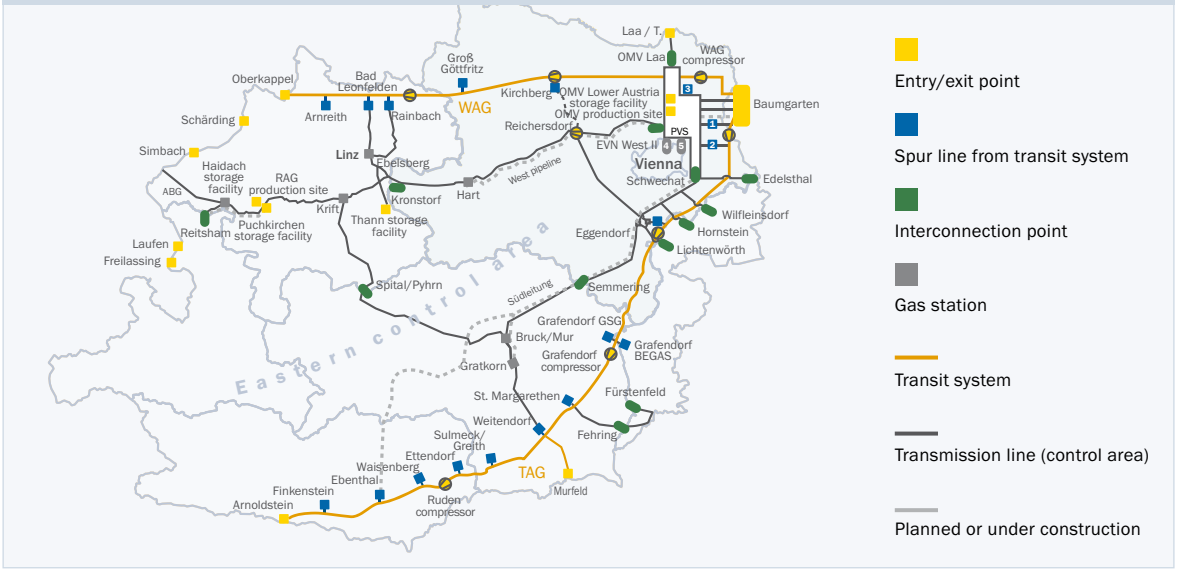


Figure 44: *The Austrian transmission grid (transit systems and Eastern control area)*
Sources: AGGM and E-Control

Tarification

Increased supply security thanks to network development

On 1 January 2010 the system charges were redetermined by amendments to the *Gas-Systemnutzungstarife-Verordnung* (2008 Gas System Charges [Amendment] Order 2010). The adjustments were largely occasioned by high inflation, heavy fuel costs, additional transmission network capacity and investment in the southern trunk line.

The investment and operating cost factor established by the 2008 Gas System Charges (Amendment) Order 2009 remained in place. It takes account of investments in network development by recognising depreciation and capital costs. Network development investment comprises expansion of the network, as well as major investments in security of supply such as spending on pipelines across the Danube, and on the rehabilitation of PVC and cast iron gas mains.

Increased capital costs are only recognised if companies submit evidence that they have actually been incurred.

In the case of selected projects involving grid level 1 (development of the southern trunk line), reasonable interest on borrowings has been included in the calculations of actual finance costs related to known payment flows and thus influences tariff determination. The recognition of interest expense reduces the risk borne by system operators and ensures that they are capable of prefinancing projects.

The gas industry was confronted with extremely unfavourable operating conditions in 2009. Inflation was unusually high at 3.1395%. Fuel costs rose sharply, as did upstream network costs, due to the long-term plan, which is predicated on the need for additional transmission network capacity. The most notable effect was that of the first investment spending on the southern trunk line, which cost some € 14m. These expenses were not offset by any additional sales volumes yet.

Apart from the adverse operating environment confronting the gas companies, the regulatory authority was obliged to take account of a 2.1% volume decline. Despite recognition of the investment and operating cost factor, the E-Control Commission succeeded in keeping the average tariff increase to 4.7%.

In spite of this year's increases, the regulatory authority can point to a decline of over 9% in system charges since liberalisation, resulting in a total reduction in consumers' gas bills of over € 50m.

9% reduction in system charges since 2002

Thanks to the adoption of a new cost evaluation system based on the performance of the most efficient system operators, further savings are likely in future, while the introduction of the investment and operating cost factor will ensure that security of supply is maintained. The least efficient firms are to be brought up to the level of the most efficient within two regulatory periods, i.e. over the ten years up to and including 2017. There will be a tariff review after five years, but there will be annual adjustments to the gas system charges.

GAS STORAGE

Regulatory regime governing the Austrian storage market

The Austrian gas storage facilities are all located in the Eastern control area, in the concession areas of the two oil and gas producers, OMV and RAG. They are depleted gas fields (pore storage facilities) which have been converted for storage operation.

The legal basis for the storage of hydrocarbons and the **construction of gas storage facilities** is the *Mineralrohstoffgesetz* (Mineral Resources Act). The right to store gas in hydrocarbon (natural gas) bearing geological structures is linked with the production rights. The owner of the hydrocarbon-bearing structures is the federal government. However, it does not make use of its production and storage rights itself, but assigns their exercise in given areas to oil and gas companies, under exploration, production and storage agreements.[30] The Ministry of Economy, Family and Youth is responsible for awarding these storage licences. The companies pay storage royalties for the licences. The natural gas producers are OMV Exploration & Production GmbH and RAG, and as a result these companies have exploration, production and storage agreements with the federal government. This means it is not possible to redevelop depleted gas fields into storage facilities without the cooperation of OMV or RAG.

The legal basis for the regulation of the **use of storage facilities** is provided by the Natural Gas (Amendment) Act 2006 (chiefly sections 39 and 39a–39b) and the EU Acceleration Directive. Article 19 of the existing Directive 2003/55/EC provided for a choice of approaches to the regulation of access to the storage market: negotiated or regulated access.[31] In Austria the Natural Gas (Amendment) Act 2006[32] introduced negotiated access, but restricted the leeway for negotiations by including provisions (section 39 et seq) regarding storage charges and transparent and non-discriminatory access. The regulatory authority is not empowered to intervene directly in the storage operators' capacity allocation procedures and congestion management activities, but is required to monitor access to ensure that it is non-discriminatory and transparent.

[30] See Karin Aust, Dept. IV/6 (Mining – Legal Matters) Ministry of Economics and Labour, presentation to the ÖGEW (Austrian Society of Petroleum Engineering) autumn meeting in Salzburg in 2007, on the approval procedures for gas storage facilities in Austria, as illustrated by the example of the Haidach storage facility

[31] Article 19, Directive 2003/55/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in natural gas and repealing Directive 98/30/EC

[32] Natural Gas Act as amended by FLG I No 106/2006 of 26 June 2006

Non-discriminatory access at European level is underpinned by the Guidelines for Good Practice for Storage System Operators (GGPSSO),[33] which were adopted at a Madrid Mini Forum held in Brussels in March 2005 and entered into force on 1 April 2005. The guidelines[34] are a voluntary agreement between the storage companies, represented by GSE,[35] and the regulators. Wingas, OMV and RAG belong to GSE.

Importance of storage highlighted by the gas crisis

Four storage undertakings in the meaning of the Natural Gas Act operate underground storage facilities in Austria (in the Eastern control area). Two have only served the German market to date. The Haidach storage facility is normally used to make deliveries to Germany and not to supply the Eastern control area in Austria. Use for the Eastern control area was only possible exceptionally, to maintain security of supply. During the halt to deliveries as a result of the gas dispute[36] between Russia and Ukraine in January 2009, the Penta West pipeline was temporarily switched to reverse flow operation, and Austria was supplied from Haidach. The planned introduction of reverse flow on the Penta West in 2011 will make it possible to use the Haidach storage facility to serve the Eastern control area.

STORAGE CAPACITY IN AUSTRIA

Storage facility	Injection capacity in cu m/h	% of total capacity	Withdrawal capacity in cu m/h	% of total capacity	Working gas volume in mcm	% of total working gas volume
OMV-Schönkirchen	650,000	34%	960,000	42%	1,680	37%
OMV-Tallesbrunn	125,000	6%	160,000	7%	400	9%
OMV-Thann	115,000	6%	130,000	6%	250	6%
Total OMV capacity	890,000	46%	1,250,000	55%	2,330	51%
RAG-Puchkirchen	520,000	27%	520,000	23%	1,000	22%
RAG-Haidach 5	20,000	1%	20,000	1%	14	0%
Total RAG capacity	540,000	28%	540,000	24%	1,014	22%
Wingas Haidach	167,000	9%	167,000	7%	400	9%
Gazprom Haidach	333,000	17%	333,000	15%	800	18%
Total	1,930,000	100%	2,290,000	100%	4,544	100%

Table 7: *Storage capacity in Austria, 2009*
Sources: www.omv.com, www.rohoel.at, www.wingas.de and www.gazpromexport.ru

[33] Posted on www.energy-regulators.eu

[34] The central provisions relate to the unbundling of storage operations from other parts of the business, the offer of certain storage services (unbundled and bundled), capacity allocation and congestion management, transparency requirements and secondary market rules. GSE encourages its members to comply with the guidelines.

[35] Gas Storage Europe (GSE) represents 33 storage companies in 16 European member states (www.gie.eu.com/gse).

[36] See energate, 6 January 2009, Erhebliche Lieferkürzungen im russisch-ukrainischen Gasstreit (Russia-Ukraine dispute causes significant cuts in gas deliveries)

Ownership

The storage undertakings in the meaning of the Natural Gas Act, i.e. companies offering storage contracts to third parties, are OMV Gas GmbH, RAG, Wingas GmbH & Co KG and ZMB GmbH (Gazprom Export).

- OMV Gas GmbH is a wholly owned subsidiary of OMV AG. The latter also produces natural gas (80% of domestic output) and operates transmission pipelines, as well as owning interests in transit pipelines and engaging in gas retailing and trading through its 59.26% holding in EconGas GmbH (via OMV Gas & Power and EGBV Beteiligungsverwaltung GmbH).
- RAG is wholly owned by RAG-Beteiligungsgesellschaft.[37] Its (indirect) owners, EVN AG, Salzburg AG and Steirische Gas-Wärme, are active on the Austrian gas market as retailers.
- The partners in Wingas GmbH & Co KG are Gazprom Germania GmbH (49.98%) and the German oil and gas producer Wintershall Holding AG (50.02%). Wingas is mainly active in Germany, but also operates in other European markets as a shipper, storage operator and gas trader.
- Gazprom Germania GmbH owns 66.67% of ZMB Gasspeicher Holding GmbH, and the other 33.33% is held by Centrex Europe Energy & Gas AG. The company's storage capacity is directly marketed by Gazprom Export.

Vertical integration of storage, wholesale and retail operations

OMV Gas & Power GmbH is the principal shareholder of EconGas GmbH with a 59.26% stake (held directly and indirectly). EconGas is the dominant supplier of gas distributors (e.g. Wien Energie and EVN), large industrial consumers and power stations. According to the company it is also Austria's largest storage user.

Cross-holdings between storage operators and customers

RAG's storage business is also integrated with wholesale and retail operations along the supply chain. Owners EVN AG, Salzburg AG and Steirische Gas-Wärme are active on the Austrian gas market as wholesalers and retailers, and two companies use RAG's storage capacity. Moreover, RAG acts as a balancing group representative. RAG's majority shareholder, EVN AG, also has a stake (16.5%) in wholesaler/retailer EconGas. RAG thus has indirect ownership links with one of its main customers.

Wingas and Gazprom Export are likewise involved in gas wholesaling.

This vertical integration raises questions as to whether the wholesale and retail activities of parent companies that are also storage users can be effectively unbundled from the business of storage operators owned by the same parents.

Market structure

Supply side concentration

On the assumption that Austria constitutes the relevant geographical market, then at 3,520 the HHI on the supply side, relative to the quantity of working gas marketed, is currently twice as high as the critical 1,800 threshold that is the rule of thumb for a concentrated market. This represents a slight increase on 2008, which reflects an expansion in OMV Gas GmbH's storage capacity. If the calculation is based

[37] See www.rohoel.at; the owners of RAG-Beteiligungsgesellschaft are E.ON Ruhrgas E&P GmbH, Germany (29.9750%), EBV-Energie Beteiligungsverwaltungs-GmbH (2.5%), EVN AG (37.5375%), Salzburg AG für Energie, Verkehr und Telekommunikation (7.5%), Steirische Gas-Wärme GmbH (10%) and UTILITAS Dienstleistungs- und Beteiligungs -Gesellschaft m.b.H. (12.4875%).

on the withdrawal rates offered, the HHI is somewhat higher at 3,800. If the market is taken to be the Eastern control area (excluding the Haidach storage facility), then the supply market concentration is higher still (5,770 in 2009).

The HHI readings are hence above the critical concentration threshold both if the market is defined as Austria as a whole and if a narrower definition, confining it to the Eastern control area, is taken.

Demand side concentration
Since by its own account EconGas is the largest storage user, at approx. 2.2 Bcm of reserved working gas volume[38] in 2009, for a market share of 65% in the Eastern control area and 48% in Austria as a whole, the demand side HHI, based on the market shares of storage buyers, would also be above the critical threshold of 1,800.

Outlook for market concentration
> *Reduction in market concentration due to expanded storage capacity?*
In view of the opportunities for gas storage at depleted gas reservoirs and the more difficult geology and higher development costs of aquifers and salt caverns, depleted gas fields would appear to be the most economic option for the development of additional storage capacity.[39] RAG and OMV hold the licences required to develop this type of storage facility. They plan to develop additional capacity. For example, RAG intends to construct the 7Fields facility on its concession.

Lack of competition on the gas storage market

The vertical integration of storage operators and producers means that new entrants have little chance of developing new, economically viable storage facilities. The Haidach storage is an example of a new approach. Previously the same company had always operated a facility and marketed its capacity. However, under this new business model, different companies are responsible for operation and administration of the capacity (RAG operates Haidach, and Wingas and Gazprom Export[40] sell the capacity). The 7Fields development, due to enter service soon, is based on the same model, with RAG as the operator and E.ON Gas Storage as the marketer.

There is little scope for a marked improvement in the competitiveness of the Austrian storage market. New facilities will reduce the concentration of ownership to some extent, but the number of companies offering storage will remain small. Certainly, the doubling of the number of storage undertakings in recent years through the entry of Wingas and Gazprom Export to the market has not led to an increase in the intensity of competition.

A dual business model, with different firms responsible for operation and marketing, could create opportunities for new players. However, it should be noted that new entrants would be obliged to cooperate with storage businesses that they would be competing against.

> *Demand side barriers to entry*
Due to the long-term capacity reservations currently in place, there is little likelihood of a significant decrease in market concentration on the demand side unless effective congestion management rules are introduced.

[38] See APA/OTS, 7 January 2009, OMV/Econgas: aktuell keine Anlieferung russischen Erdgases nach Österreich (OMV/EconGas: no Russian natural gas deliveries to Austria at present)

[39] The possibility of using an aquifer in eastern Styria was investigated in 1985, but so far none has been developed. See Fritz Ebner, Franz Erhart-Schippek and Georg Walach, Erdgasspeicher Oststeiermark – Geologische Gebietsauswahl (Natural gas storage facility in eastern Styria – choice of geological area) in Archiv für Lagerstättenforschung Geol. B.A., Vol. 7, pp. 5–17, August 1986.

[40] At present the Haidach storage facility is not directly interconnected with the Austrian Eastern control area, though there are plans to create such a link in 2011. Because of this Wingas and Gazprom Export, which market the storage capacity at Haidach, do not currently compete head to head with RAG's Puchkirchen facility, which is located within the Eastern control area.

Market behaviour

For some years now, the Austrian storage companies have been posting the prices of standard products, featuring fixed ratios of working gas volume to injection and/or withdrawal capacity. However, the rates under old contracts are not disclosed. These prices are the yardstick for the storage costs of new entrants (i.e. storage users with contracts concluded since 2002). Only Wingas has increased its storage prices this year, and RAG has slightly reduced its rates.

Not all Austrian storage prices transparent

Few operators post prices under multi-year contracts, but three operators – OMV Gas, E.ON Gas Storage (EGS)[41] and Wingas – offer contracts with terms of ten years or more. OMV Gas and EGS are offering posted discounts for contracts with terms of ten and over six years, respectively.

OMV Gas' posted storage prices are below average for Europe, but those of the other Austrian storage companies are above average.

STORAGE TARIFFS FOR ONE-YEAR CONTRACTS, BUNDLED SERVICES, FIRM

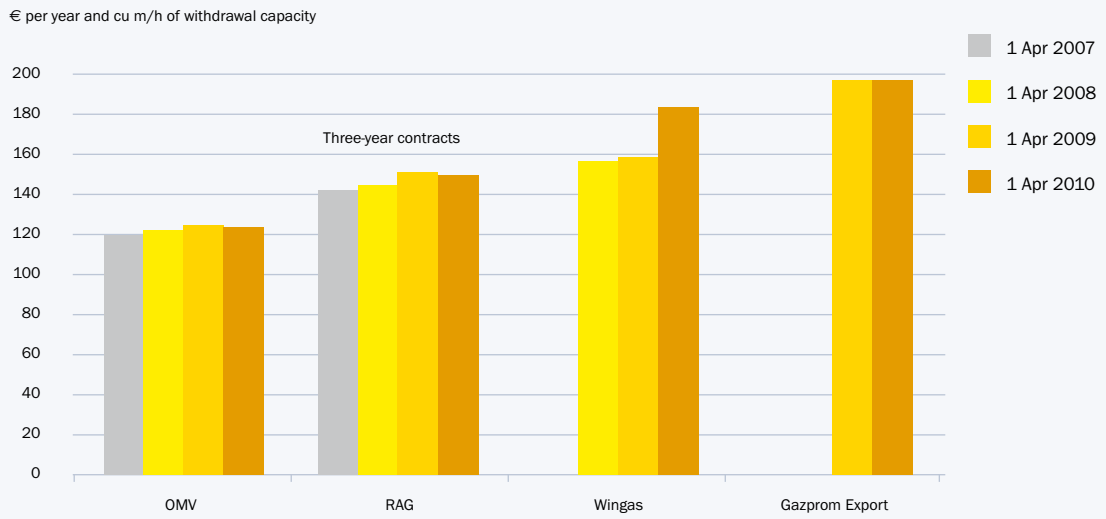


Figure 45: *Posted storage prices, standard bundled units and one-year contracts, status May 2010*
Sources: Corporate websites (www.omv.com, www.rohoel.at, www.wingas.de and www.gazpromexport.ru)
RAG: Three-year contract

Comparison of unbundled storage services

Several storage companies offer unbundled services, but the prices are often negotiated and are not disclosed. Only OMV Gas and Wingas post fixed prices for unbundled services. Here, too, OMV Gas' prices are lower.

To sum up, the prices offered by the Austrian storage companies are reasonable in comparison to those for similar services elsewhere in Europe, but this mainly benefits the incumbents. The latter hold their storage capacity under long-term contracts, some of which go back to the pre-liberalisation era. As a result little capacity is available to new customers.

[41] Operations due to commence in 2012.

Storage products

The storage companies' standard products may be substitutable – particularly where unbundled products make it possible to provide clients with customised packages of services. Only OMV Gas and Wingas price their unbundled products transparently.

Substitutability is also limited by the varying transportation costs involved in using the storage facilities and the different technical rules governing storage in given control areas and geographical markets. Use of the Austrian storage facilities to supply the Eastern control area is associated with differing transportation costs (the OMV Gas and RAG facilities) or involves crossing the boundaries between two control areas or markets (the Wingas and Gazprom Export facilities). The planned introduction of an entry/exit regime would result in equal treatment with regard to transportation costs.

The storage companies' bundled products compete to a limited degree. However, since there is virtually no competition between the short-term storage products, market concentration may be still greater than indicated by the aforementioned HHI scores.

Storage capacity allocation rules

FCFS economically inefficient when supply is tight

The capacity allocation mechanism is crucial to fair third party access to storage. In Austria the storage companies allocate capacity on a first come, first served (FCFS) basis, meaning that customer inquiries are responded to in the order they arrive. As long as there is sufficient capacity this procedure has advantages, mainly because it is easy to handle.

In Austria long-term reservations are high in relation to overall capacity, and the overall proportion for all storage facilities is almost 98%. Long-term capacity was in extremely short supply at the start of the 2010 storage year. The figures posted on the storage companies' websites[42] show that new entrants would be able to book very little firm capacity within the next five years (less than 1% of the total). The picture is as follows:

a) On its online capacity booking platform, OMV Gas indicates that no capacity will be available before May 2018 and posts the capacity reserved up to 2015. However, limited amounts of withdrawal capacity are available, typically between May and September.

b) RAG only posts available capacity for the coming two years. Availabilities in 2010 are very limited (less than 2% of total capacity) and free capacity in 2011 amounts to only 6% of the total.

c) Wingas has no free capacity before 2012, and availabilities are only about 1% of total capacity through to 2018, at which point they rise to 3%.

Where demand exceeds supply, meaning that capacity is tight, storage is allocated on a first come, first served basis. The allocation mechanism is inefficient, since the capacity is awarded not to the customer that is prepared to pay most but to the client with an information lead. The use of FCFS risks opening the door to discrimination – particularly in situations where there is no standard online booking procedure.

In comparison with other allocation mechanisms such as annual tenders (e.g. annual auctions), FCFS is more prone to the danger that major players, and especially incumbents, which generally enjoy more or earlier information on availabilities than competitors due to their membership of groups of companies, will be at an advantage.

[42] Status as of May 2010.

The allocation rules applied by the Austrian storage companies to date have not assured new entrants of efficient access to storage capacity as required by the EU Regulation due to enter into force in March 2011. However, E-Control is not empowered to play a part in formulating these rules, and its only means of influencing them is that of initiating abuse proceedings and forcing changes in the event of a suspicion of discriminatory behaviour.

No power to influence the allocation rules

Action to prevent capacity hoarding and introduce congestion management mechanisms

Disclosure by the storage companies of the extent to which use is actually made of storage capacity reserved under long-term contracts is neither transparent nor frequent.

The only available usage data, published by OMV Gas, testifies to low storage capacity utilisation over the past two years. This data is published with a one-month lag.

According to the data posted on the OMV Gas website, 50% of the working gas remained in storage in 2007, but this fell to 40% in 2008 and 30% in 2009.[43] The decline is explained by cold weather and the interruption to Russian supplies via Ukraine.

An annual 40–50% of storage capacity (working gas volume) at OMV Gas facilities appears to be unused as a rule. Admittedly, there is no mandatory target level of capacity utilisation, and it is not necessarily to be expected that storage facilities will be empty at the end of the storage year, since some gas needs to be held in reserve for unforeseen eventualities. However, the observed capacity utilisation – some 50–60% – is below the levels typical for other European markets, which range from 60 to 70%.[44] This could point to peculiarities of the Austrian market or to hoarding of storage capacity. It is certainly worth asking why the portion of storage capacity that is not utilised over the medium term is not made available to other market participants in a transparent manner.

Large amounts of unused storage capacity

The "use it or lose it" (UIOLI) principle is under discussion at European level as a means of preventing capacity hoarding. According to this approach, storage capacity that is unused (unnominated) is taken back from customers and offered to third parties, mostly on an interruptible, day ahead basis. Such procedures are more widely employed in the transmission segment, with system operators recycling capacity that customers leave unused for a given period to the market. Some European storage operators, including Centrica Storage Limited, have already introduced UIOLI.

As their general terms and conditions of business make clear, both OMV Gas and RAG refrain from imposing UIOLI clauses on their customers, either on a firm or an interruptible basis. Wingas and Gazprom Export have UIOLI rules, but these are too vague to be applicable in practice.

The introduction of the UIOLI principle in the storage business presents major challenges. Effective UIOLI rules that make unused storage capacity available on a firm basis promote competition by providing fair and transparent access to that capacity. However, in view of the fact that the storage facilities act as a kind of insurance against fluctuations in supply and demand, an excessively severe clamp-down on capacity retention would lead to a loss of flexibility and limit one of the key functions of storage.

In the interests of fair access, thought should be given to incentives for storage clients to make unused capacity available on a firm basis. This would be particularly desirable in cases where failure to use reserved capacity for several years in succession results in systematic under-utilisation.

Need to recycle unused storage capacity to the market

[43] RAG does not publish any capacity utilisation data.

[44] The capacity utilisation estimates posted on the Gas Infrastructure Europe website exhibit marked fluctuations from year to year which are connected with weather and market conditions. The information compiled since October 2007 shows that only Spain has a higher average "minimum" summer storage level and that the inventory level in Germany is similar. Storage patterns in 2009 may have been somewhat unusual due to the cold winter and the interruption of supplies via Ukraine.

More effective UIOLI rules and improved capacity management through other allocation procedures (pro rata allocation and a reasonable balance between long-term and short-term contracts) should be employed if there are indications that significant amounts of reserved capacity are unused for extended periods. There appears to be a need for the introduction of congestion management mechanisms as the capacity statistics published by the operators show that little firm capacity will be available for the next five to ten years.

Market outcomes

Low liquidity

The largest Austrian storage company, OMV Gas, has lower posted prices than other European operators, whereas RAG and Gazprom Export offer new contracts at rates well above the European average.

The opportunities for new entrants to gain access to capacity are limited. As a result, the incumbents which have reserved storage capacity on a first come, first served basis in past years are the main beneficiaries of the low prices.

For example, at the start of the 2010 storage year there was little free capacity. The figures posted on the storage companies' websites show that new entrants would be able to book very little firm capacity within the next five years (less than 1% of the total). OMV Gas, which is the only storage company publishing data in tabular form, has no free storage capacity in its online booking system before 2018.

Different prices for new and existing customers

The Austrian storage companies publish their storage prices for new contracts in a transparent manner. New customers pay the same prices for the same products. However, these posted prices currently apply to only a small proportion of the storage contracts in place.

It can be assumed that existing customers, with pre-liberalisation contracts, pay different rates to the posted prices offered to newcomers. The existing customers include the incumbents, which with few exceptions have ownership links with the storage operators. There is no transparency as to the prices they pay. As a result access to storage capacity is not offered on equal terms for all customers.

Summary

The Austrian market has some sources of flexibility (production, import contracts and storage), but access to them is limited, and the markets in question are highly concentrated on both the supply and demand sides. Market players are largely dependent on access to storage capacity if they are to achieve short and long-term flexibility at affordable cost.

The "flexibility market" is effectively based on the services of the storage operators, since they are the providers of swing capacity with the highest market shares. Third party access to storage capacity is thus of crucial importance.

The substitutability of the storage operators' products is limited. Only OMV Gas and Wingas offer optimisation of their storage products in a transparent manner. The varying transportation costs involved in using storage facilities and the different technical rules governing storage in given control areas and geographical markets further reduce the scope for substitution. As a result there is little product competition.

The prices offered by the Austrian storage operators are in part reasonable in comparison to those of similar services elsewhere in Europe. However, this mainly benefits the incumbents which hold long-term capacity reservations – some going back to pre-liberalisation days – since there is little capacity available for new entrants.

Little competition on the Austrian storage market

Although Austrian storage capacity is booked out a long way ahead and the data point to comparatively low capacity utilisation, there is a lack of appropriate and transparent congestion management mechanisms to make unused capacity available to third parties.

Analysis of the Austrian storage market reveals a very low level of competition, which has not increased in spite of the arrival of new capacity and will not be significantly improved by better links with storage facilities in neighbouring countries.

Outlook

Article 33(1) Directive 2009/73/EC,[45] which forms part of the third package, gives member states a choice between negotiated and regulated access. The Directive requires member states/regulators to establish criteria for the decision on regulated or negotiated third party access (TPA) and to decide whether access to new storage facilities is technically or economically necessary.

The Directive does not directly oblige member states/regulators to make new decisions on the TPA regime, but does require regular reviews of access conditions and increased transparency regarding the manner in which decisions are taken on the selection of access regimes.

In an Interpretative Note[46] the European Commission expands on Article 33 Directive 2009/73/EC and the criteria for determining access regimes, namely:

> The existence of a flexibility market: Does effective competition exist between facilities or between facilities and other flexibility services? Is there sufficient competitive pressure with regard to tariffs, products, product variety and access to services?
> Effective access to storage: Is there a high proportion of storage capacity booked long term without having previously been allocated in a non-discriminatory manner, and is only a comparatively small amount of capacity offered to the market each year?
> Degree of dispersion of storage clients: Is capacity largely booked by one or very few large undertakings? Are storage pricing and the access regime distorted by such concentrated interest?

The Commission proposes an investigation into technical, administrative or economic barriers to market entry as a further relevant criterion.

Need for new rules to improve access to storage capacity

In E-Control's opinion the competition indicators point to low competitive intensity on the Austrian storage market. Access to storage capacity (capacity allocation and congestion management) should therefore be improved by making clear, binding rules. Since the prices of storage products are mostly competitive but access to storage capacity is inadequate, regulation should focus on the access and allocation rules and the congestion management mechanisms.

[45] Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC
[46] Interpretative Note on Directive 2009/73/EC concerning common rules for the internal market in natural gas, third-party access to storage facilities, Brussels, 22 Jan. 2010; p. 12

BALANCING ENERGY

The balancing mechanism[47]

Gas market liberalisation in October 2002 led to the introduction of an hourly balancing system (balancing market). The balancing market in the Eastern control area is organised and managed by the clearing and settlement agent, AGCS. The arrangements for the balancing market are laid down in the general terms and conditions (GTC) of the clearing and settlement agent, which are subject to approval by E-Control.[48] To become eligible bidders on the balancing market, prospective participants must be balancing group members, be registered with AGCS as balancing energy suppliers, be metered online, and have a data line to the control area manager. Other conditions are appropriate flexibility tools (storage contracts, swing contracts with customers and flexible supply contracts) that enable compliance with the 30 minutes' notice period for the call-off of balancing energy bids by the control area manager. Bidders also require the consent of their balancing group representative.[49]

AGCS ranks the bids by price and sends them to the control area manager AGGM every day, in the form of a merit order list.

The control area manager is normally obliged to observe the merit order list when calling off balancing energy.

The balancing energy suppliers receive the price offered by them for withdrawing gas from or injecting it into the control area network.

The prices paid on the balancing market yield an hourly clearing price which is billed to the commercial balancing groups by the clearing and settlement agent for each hour of accrued balancing energy. The hourly clearing price is the average price, weighted for volume, of the physical balancing energy bought or sold during the hour in question. The clearing price for hours during which the control area manager calls off no physical balancing energy is the average of the last seven hours when physical balancing energy was bought or sold in the control area. Whether the last seven purchasing or selling prices are applied to a given hour depends on the aggregate delta of the system losses balancing groups, which capture linepack changes. If the control area is long during the hour in question, i.e. on aggregate the system losses balancing groups inject gas into their networks, or "buy" it in a similar fashion to a balancing energy supplier, the (lower) purchasing price on the balancing energy market forms part of the calculation, and vice versa. There is only one clearing price for each hour for which the balancing group representative must pay for procured accrued balancing energy if the balancing group is short, or be paid for supplied accrued energy if it is long.

Congestion management measures have gradually been built into the balancing market rules.[50] These were employed for the first time during the complete halt to Russian export deliveries to Baumgarten in January 2009, when faxed balancing energy bids were used to provide additional balancing energy.

[47] The Tyrol and Vorarlberg control areas, which are linked neither to the Eastern control area nor to each other and are supplied with gas via Germany, are a special case in terms of balancing energy procurement, and the following discussion therefore applies only to the Eastern control area.
[48] Annex to the GTC on balancing energy management, www.e-control.at and www.agcs.at
[49] General Terms and Conditions (GTC) of balancing group representatives, www.e-control.at
[50] See sections 3.2–3.4 annex to the GTC of the clearing and settlement agent on balancing energy management, www.e-control.at and www.agcs.at

Market structure

Supply structure

The requirements for balancing energy suppliers outlined above significantly narrow the field of potential bidders among the registered balancing group members (Austrian market participants). While 39 gas suppliers (balancing group members) are registered with the balancing group system in the Eastern control area,[51] at year-end 2009 there were only 14 registered balancing energy suppliers, of which eleven actively offered balancing energy. Nevertheless, this represented an increase of one balancing energy supplier as compared to the position at the end of 2008.

Increased number of balancing energy suppliers

The active suppliers in the Eastern control area at the end of 2009 were: CE Gas Marketing & Trading AG; EconGas; ENOI S.p.A.; ENLOGS; Kelag; RAG; RWE Supply and Trading; Salzburg AG; Steirische Gas-Wärme; Terragas; and Vitol. Apart from EconGas, CEMAG, Kelag, RAG, Steirische Gas-Wärme, Terragas, and Vitol have also become major balancing energy suppliers. Several of the new players on the Austrian gas market are balancing energy suppliers and hold significant shares of the balancing market.

Demand structure

Although the control area manager is responsible for calling off physical balancing energy, the demand for it comes from the balancing groups. Despite the fact that the control area manager uses linepack to manage gas flows on the transmission network for many hours of the year and thus does not need to call off **physical balancing energy,** in the course of any hour there are deviations between the schedules submitted by a balancing group representative, and the balancing groups' actual demand and gas flows; these differences are referred to as **accrued balancing energy.** The accrued balancing energy arising in each hour is calculated by the clearing and settlement agent, AGCS, and invoiced to the commercial balancing groups.

In 2009 total accrued balancing energy (the aggregate absolute quantities by which commercial balancing groups were long or short) was equal to 4.5% of total gas consumption in the Eastern control area — up from 3.8% in 2008. The EconGas commercial balancing group is the largest in terms of both demand and absolute accrued balancing energy volume.

The other commercial balancing group representatives operating in the Eastern control area in 2009 were: CE Gas Marketing & Trading AG; Centrex Europe Energy & Gas AG; EHA Energie-Handels-GmbH & Co. KG; EnergieAllianz Austria GmbH; Energie AG Oberösterreich Trading GmbH; Energy Logistics and Services GmbH; Energie Ried; GDF Suez; Kelag; Linz Strom; Merrill Lynch Commodities (Europe) Ltd; MOL; RAG; Salzburg AG; Shell Austria GmbH; Stadtwerke Steyr; Steirische Gas-Wärme; and Terragas.

The wholesale balancing groups — groups not directly serving consumers — registered in the Eastern control area at year-end 2009 were: Central European Gas Hub GmbH; ENOI S.p.A.; Luminus Gas; RWE Supply and Trading; and Verbund. In 2009 six new balancing groups were established in the Eastern control area and one was closed down, for a total of 24 registered balancing groups.

Market concentration

Due to the circumstances discussed above, the balancing market is confined to the Eastern control area. The market shares of the balancing energy suppliers vary between the buying and selling sides of the market.

[51] AGCS: list of registered suppliers, status as of 1 December 2009, www.agcs.at

Concentration of the balancing market different for purchases and sales

In 2009 the HHI for purchases of balancing energy by balancing energy suppliers was 3,432 (2008: 2,609), while that for their sales of balancing energy was 1,684 (2008: 1,599). The combined market share of the three largest suppliers was 76.8% (2008: 74.5%) as measured by purchases of balancing energy and 59.8% (2008: 57.0%) in terms of sales. In contrast to 2008, during the year under review the three largest buyers and sellers of balancing energy were not identical.

Supply substitutability is severely limited by the existing storage contracts and the capacity available under them. It is safe to assume that the balancing energy provided by the leading supplier cannot largely or entirely be substituted by the other suppliers. The exit of the largest supplier from the market would therefore have a significant impact on prices.

Market outcomes: balancing energy prices and quantities

After peaking in October 2008, balancing energy prices fell heavily over the last two months of the year and the first four months of 2009. The slide was only interrupted by a spike in purchasing prices in January 2009 due to the halt to supplies to Baumgarten. Prices went sideways for most of the year from May on, but edged up towards the end of 2009 *(Figure 46).*

As in previous years, balancing energy prices tracked the gas import price trend, but from April 2009 onwards even the purchasing prices were below import price levels. The average buying price for balancing energy imported into the Eastern control area declined from 3.22 cent/kWh in 2008 to 2.47 cent/kWh in 2009, while the average selling price for balancing gas exported out of the control area dropped from 2.30 cent/kWh to 1.23 cent/kWh.

Price volatility on the balancing energy market often reflects external factors, as was the case with the supply interruption in Baumgarten in January 2009. Apart from cuts in deliveries, technical problems at the storage facilities used by balancing energy suppliers can also have a short-term impact on price formation.

MONTHLY BALANCING ENERGY PRICES SINCE JANUARY 2007

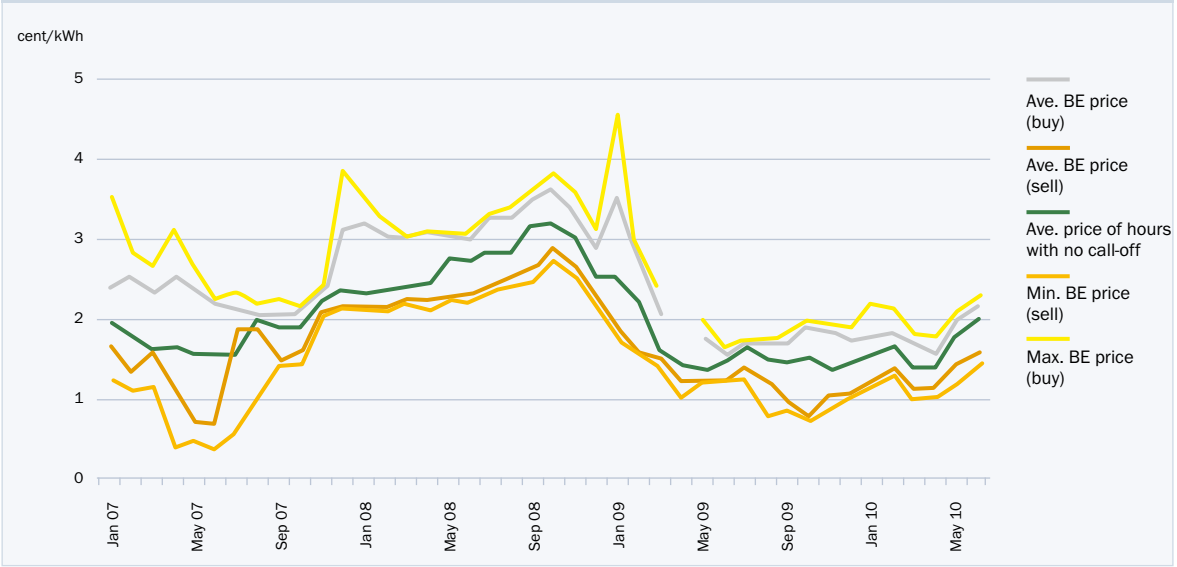


Figure 46: *Balancing energy prices over time (no purchases of balancing energy in April 2009, hence no purchasing prices), cent/kWh*
Source: AGCS

In 2009 a total of 749,610 MWh of physical balancing energy was purchased for the control area, i.e. injected into the system by balancing energy suppliers, and 677,910 MWh was sold, i.e. withdrawn by them. This corresponded to 1.66% of total gas demand in the Eastern control area. Balancing energy was purchased in 15.9% of all hours during the year and was sold in 18.4% of them. During most of the hours (65.7%) the control area manager relied entirely on linepack in the transmission grid for gas flow management, and was not obliged to call off physical balancing energy.

Major role played by linepack

Figure 47 shows the monthly call-off of physical balancing energy in 2008 and 2009. In contrast to previous years, the balancing market in the Eastern control area was not predominantly long in 2009. Particularly in the latter months of 2009 (the initial months were a special case because of the supply disruption), the control area was significantly undersupplied – a trend that continued in 2010, and was presumably due to the low balancing energy prices. The quantity of balancing energy purchased in 2009 almost doubled as compared to 2008, while sales were almost unchanged.

MONTHLY BALANCING ENERGY VOLUMES

Figure 47: *Balancing energy volumes, 2008 and 2009, GWh*
Source: AGCS

EFFECTIVE UNBUNDLING IN THE GAS SECTOR

Section 7 Natural Gas Act requires both system operators and – since 2007 – transportation rights holders to draw up compliance programmes. Apart from specifying employees' responsibilities with regard to unbundling, these programmes must contain measures aimed at eliminating discriminatory behaviour. The compliance officers notified to E-Control are responsible for preparing the compliance programmes, monitoring adherence to them and submitting annual reports to E-Control on the action taken.

Interpretation of the statutory unbundling provisions

The principles underlying interpretation and implementation of the statutory unbundling provisions are established by E-Control's legal opinions, arrived at on the basis of the note of DG Energy and Transport on Directives 2003/54/EC and 2003/55/EC, and are intended to serve as guidance for the companies concerned.

The unbundling rules provide for legal, accounting and organisational (functional and informational) unbundling. They are the same for electricity and gas companies (see section on effective unbundling in the electricity sector).

E-Control compliance report

Annual E-Control compliance report

The E-Control compliance report for the 2008 reporting period focused on:

- The non-discriminatory provision of services and shared services[52] within integrated groups of companies;
- Organisational procedures for protecting commercially sensitive information during the supplier switching process, answering of inquiries by call centres, etc.
- System operators' and transportation rights holders' communications and corporate images; and
- Corporate structures.

[52] Shared service units: central units which deliver service processes to a variety of operations within a company, e.g. human resources management, legal, financial control, fleet, PR or IT services.

In 2009 system operators' and transportation rights holders' individual annual compliance reports were for the first time posted on the E-Control website (www.e-control.at) pursuant to section 7(3)(d) Natural Gas Act, and recent developments summarised in an overall E-Control report and assessed in the light of the interpretation of the unbundling legislation. The report includes a critical examination of satisfactorily concluded and pending measures in the light of inadequate unbundling, particularly with a view to structural aspects.

A positive development during the period was the restructuring of some companies following the initiation of proceedings by E-Control, with the result that the system operation activities are now carried out by separate subsidiaries and no longer come under the marketing subsidiary. Such changes in corporate structure reduce the risk of discriminatory behaviour.

E-Control dropped proceedings relating to all-inclusive contracts, initiated due a suspicion of cross-subsidisation in the meaning of section 7(1) in conjunction with section 4 Natural Gas Act, when the agreements in question were changed.

In response to proceedings brought by E-Control relating to the interpretation of the de minimis rules in respect of the obligation to carry out organisational unbundling, the company concerned took the case to the Administrative Court of Appeal. The latter must now rule on the interpretation of the de minimis rule established by section 7(4) Natural Gas Act.

E-Control has severe misgivings about operational management contracts – especially as regards organisational and accounting unbundling. It is doubtful whether a system operator can be independent under such circumstances. Accounting unbundling also appears to be problematic, since a system operator like this will be devoid of all financial, technical, physical and human resources.

Unbundling rules laid down by the third package

The third energy package has clarified this issue by stating that distribution system operators must have the necessary human, technical, financial and physical resources at their disposal to carry out their tasks, and as a result such management contracts will become a thing of the past when Directive 2009/73/EC (Directive 2009/72/EC in the case of the electricity sector) comes into force and is transposed by the Natural Gas Act (or, in the case of electricity, the Electricity Act).

We also regard unbundling measures that provide system operators with scant physical and financial resources as questionable. Here, too, the independence of the companies concerned is highly suspect. Often, both the human resources and the right to use networks and operating equipment are acquired under service and leasehold contracts. This approach does at least mean that the revenue goes directly to the system operator, but the services performed by the network company's own staff are confined to management and other strategic activities. The extent to which a system operator in this position has sufficient staff of its own to assess adherence to its service contracts is certainly worthy of examination in future reports.

Outlook: the third package

The third energy package, which must be transposed by 3 March 2011, introduces stricter unbundling rules for transmission system operators (Article 9 et seq Directive 2009/73/EC). Apart from ownership unbundling, member states have the option of designating an independent transmission system operator (ITO) or an independent system operator (ISO) by 3 March 2012. Ownership unbundling is mandatory for all transmission system operators that commenced their activities after 3 September 2009.

Unbundling also mandatory for distribution system operators

Distribution system operators will also have to restructure, despite the fact that legal, organisational and accounting unbundling remain sufficient as such (Article 26 et seq Directive 2009/73/EC). The unbundling rules require them to have the necessary human, technical, financial and physical resources at their disposal to fulfil their tasks (the operation, maintenance and development of the network) efficiently, i.e. to exercise effective decision-making rights, independent from the integrated natural gas undertaking.

In addition, Article 26(3) Directive 2009/73/EC prohibits vertically integrated distribution system operators' communications and branding from creating confusion as to the separate identity of the supply branch of the vertically integrated undertaking. Moreover, the compliance officer must be fully independent and have access to all the information from the distribution system operator and any affiliated undertaking needed to fulfil his/her task. Member states are currently in the process of transposing the third package.

Competition on the Austrian gas market

SUPPLY AND DEMAND

Table 8 shows key indicators for the Austrian natural gas market in 2009.

GAS SUPPLY AND DEMAND BALANCE

	mcm (2009)	GWh (2009)	Change vs 2008
Imports	37,946	422,722	-3.0%
Production	1,667	18,569	+9.1%
Withdrawals from storage	3,346	37,277	+22.5%
Exports	30,383	338,467	-2.7%
Injection into storage	3,774	42,045	+19.8%
Own use, losses and system losses; statistical adjustments	585	6,514	–
Supply to end users	8,217	91,542	-1.8%
Max. daily consumption	45.9	511,8	+17.7%
Min. daily consumption	7.8	86,9	-11.1%

Table 8: *Gas supply and demand balance, 2009*
Source: E-Control

Natural gas supply and demand in Austria in 2009

On the demand side (the negative balance) the variation in consumption between summer and winter is clearly apparent, as is the seasonal use of gas storage facilities. On the supply side (the positive balance) these shifts in consumption are compensated for by adjustments to imports and withdrawals from storage. Domestic production of natural gas was relatively constant throughout the year. *Figure 48* underlines the importance of storage as a source of seasonal flexibility.

GAS SUPPLY AND USE, 2009

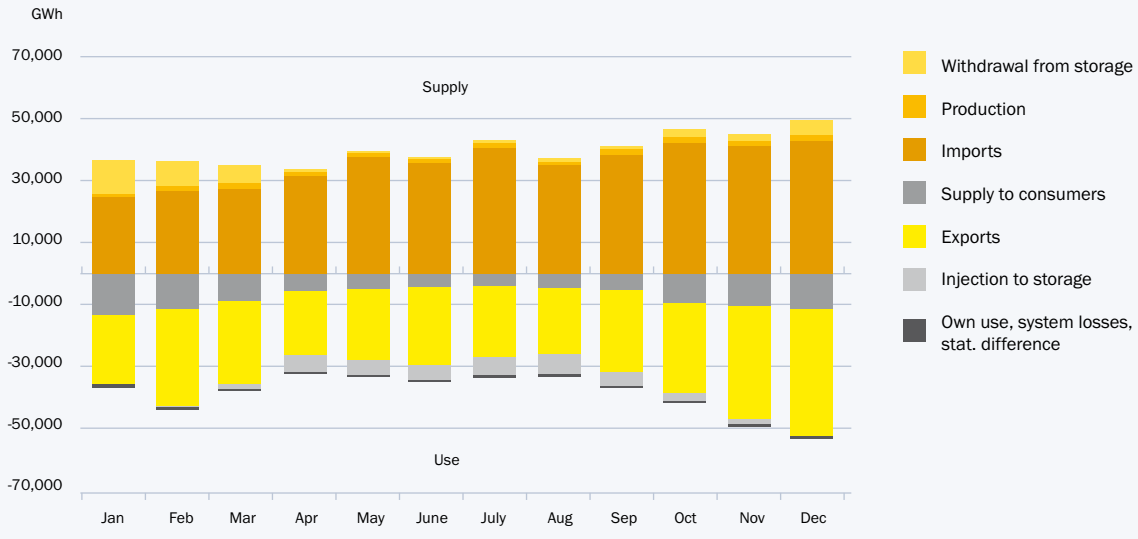


Figure 48: *Gas supply and use in Austria, 2009*
Source: E-Control

Domestic gas production

Austria has two domestic gas producers – OMV Austria Exploration & Production GmbH and Rohöl-Aufsuchungs AG (RAG). In 2009 total domestic natural gas[53] output[54] edged up by 2.4% to about 1.6bn N cu m. OMV's share of production rose to around 85% *(see Table 9).*

Proven and probable reserves were more than 26.3 Bcm at year-end 2009. The reserves are sufficient for about 17 years (ratio of reserves to annual output).

NATURAL GAS PRODUCTION

	m N cu m	in %	% change vs 2008
OMV Austria Exploration & Production	1,341	84.9	+9.6
Rohöl-Aufsuchungs AG	239	15.1	-25.4
Total	1,580	100.0	+2.4

Table 9: *Natural gas production in Austria, 2009*
Source: Geologische Bundesanstalt (Geological Survey of Austria), http://www.geologie.ac.at

[53] Including associated gas
[54] See http://www.geologie.ac.at/pdf/Erdoelreferat/erdoelref2010.pdf

WHOLESALE MARKET

Gas procurement for the Austrian market takes place largely:
(1) On a bilateral basis, under long-term contracts between producers and wholesalers; or
(2) Under short-term contracts, concluded on markets (hubs).

Short-term trading is both over the counter (OTC) and on exchanges. OTC trading can be conducted with the assistance of brokers or on a bilateral basis. There is no information on the prices or quantities of gas traded bilaterally.

Wholesale trading based on long-term contracts

Austrian gas imports from Russia began in 1968, and imports from Norway followed later. The long-term gas procurement market is characterised by heavy dependence on one dominant supplier, Gazexport. Due to its geographical location, Austria has no direct access to LNG shipments. The transmission pipelines (the WAG and TAG systems) that provide access to western European and northern African (Algerian) supplies suffer from chronic congestion. The regulator's ability to intervene to improve the transport situation is limited, as there are separate regulatory systems for domestic transportation and transits, and the latter regime is far weaker.

Partnerships based on long-term contracts

Long-term contracts are the traditional procurement channel for the gas industry. The parties are the gas producers and former companies for the long-distance transport of gas. Large contractual quantities and handover at the border are typical of these agreements, and pricing is governed by price escalation clauses. The contracts make little provision for offtake flexibility due to the long distances over which the gas is transported. Agreements are individually negotiated rather than standardised.

Relevant geographic market

The cessation of gas deliveries at the start of January 2009 demonstrated that the countries along the Russia-Ukraine-Slovakia transport link were only able to substitute a small segment of Russian supplies. Withdrawals from storage should also be regarded as supplies of Russian gas, stored during the summer months. During the disruption, countries like Italy, which have access to liquid markets and alternative gas producers, were able to replace some, but not all of the missing gas. The relevant geographic market thus comprises, at the least, Austria, Bulgaria, Hungary, northern Italy, Moldova, Romania, Slovakia and Ukraine, i.e. the countries along the transmission pipelines between Russia and Austria.

Russian gas supplies to Austria can only partly be physically substituted. The capacity reserved for the Eastern control area at the Oberkappel entry point, via which additional imports from Germany would be possible, is 400,000 cu m/hour. Given full capacity utilisation during 8,760 hours, this is equal to about 40% of total supply in the control area. As a consequence, full substitution of the Russian gas deliveries is impossible. The other countries that stopped receiving Russian gas after the cessation of deliveries were also unable to replace all of these supplies. It is therefore safe to assume that these countries' wholesale markets are confined to their national borders.

Structure of the market for long-term products
The Austrian wholesale market is supplied by:
> A Russian gas producer (Gazexport);
> Norwegian producers (Statoil, Shell, etc.);
> Domestic producers (OMV and RAG).

Supply structure
The structure of the supplier market has not changed for some time. Russian gas procured from Gazexport/GWH accounts for 68% of all imports, and Norwegian and German suppliers for the other 32% (gas flows on a contractual basis). However, Russian gas accounts for over 90% of the physical flows.

Supply structure unchanged

In addition to these imports, 1.6 Bcm of gas *(see Table 9)* was produced in Austria by OMV AG and RAG AG and sold in the Eastern control area, partly under long-term contracts. The total sales of the two domestic producers rose slightly in 2009.

The supply side of the wholesale market is highly concentrated, as shown by an HHI score well above the 1,800 threshold and which has not changed significantly in recent years.

MARKET SHARES OF GAS EXPORTERS TO AUSTRIA

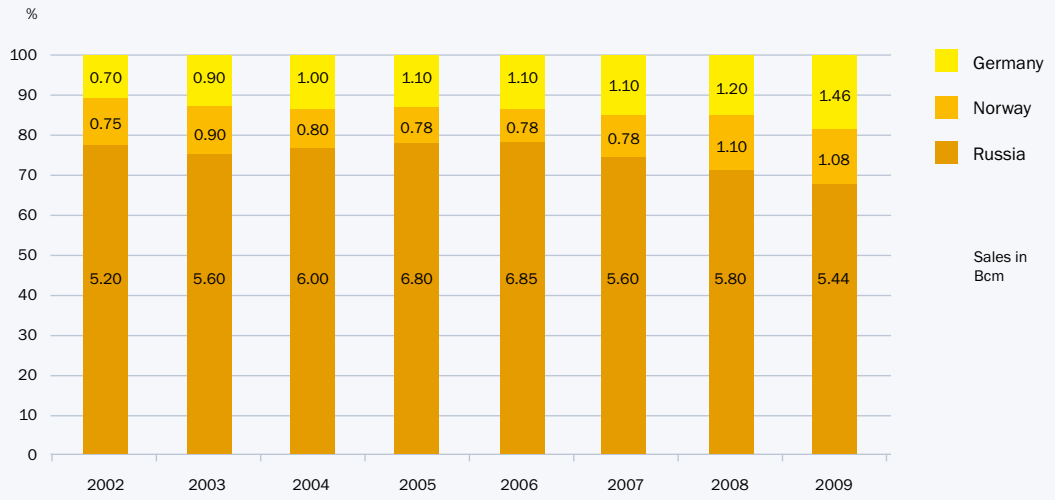


Figure 49: *Market shares of gas exporters to Austria, 2002–2009*
Source: BP Statistical Review of World Energy 2010, pp. 31–32; gas trade on the basis of contractual flows, which are not necessarily identical with the physical flows

Demand structure
In 2006 EconGas, GWH Gas- und Warenhandels GmbH and Centrex concluded long-term Russian gas import contracts with Gazexport[55] which replaced the agreements previously in place. GWH Gas- und Warenhandels GmbH, a joint venture between Gazprom and Centrex, acts as a middleman. OMV withdrew from GWH in 2008. GWH has contracts to supply STGW, Salzburg AG (EIS) and Kelag with Russian gas until 2027.

The Norwegian imports also take place under long-term contracts. Austrian gas suppliers EconGas, STGW, EIS and Kelag have long-term supply contracts with Norwegian producers, but OMV Gas currently acts as an intermediary under these agreements.

EconGas, STGW, Salzburg AG (EIS) and Kelag also have long-term contracts with OMV E&P. EconGas has the exclusive right to market any additional volumes produced by OMV. RAG markets its output on a more short-term basis than OMV.

The Austrian market is also heavily concentrated on the demand side, and the HHI is above the critical 1,800 level.

Market outcomes: long-term contracts
Price trends
Statistics Austria calculates average gas import prices based on the Russian, Norwegian and German import prices. These include the prices of gas imports purchased at trading hubs in Germany and the Netherlands. The proportion of total supply that these imports represent is unknown.

Import prices influenced by oil

Average import prices advanced strongly from the start of 2008 through to September and fell sharply thereafter. Prices have been rising since June 2009 and are expected to return to the level last reached in February 2009.

Oil prices have a significant influence on import price trends. Import prices under long-term contracts are linked to oil product prices, but the adjustments are lagged by three to six months, and the oil price movements are smoothed out by averaging them over three or six-month periods. The oil price linkage goes back to the early days of the development of the natural gas industry when natural was often a by-product of oil production and could only compete with petroleum products if it tracked their prices. Oil price indexation, which is the rule in continental Europe, results in similar import price trends in western European countries.

[55] See OMV press release dated 29 September 2006 on www.omv.com

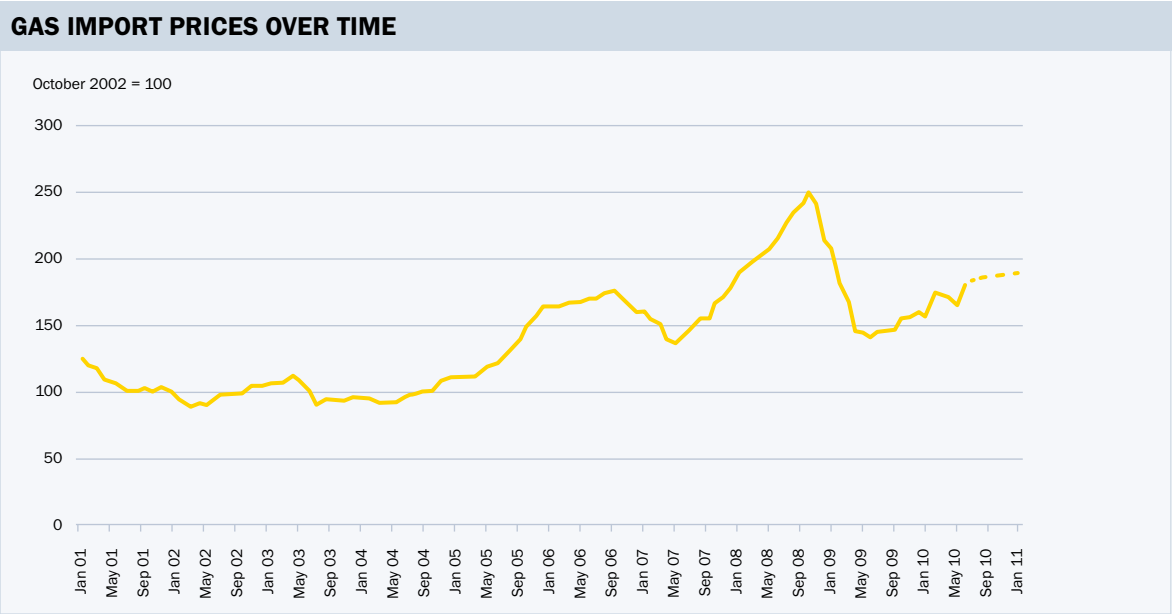


Figure 50: *Natural gas import prices over time (broken line: E-Control forecasts)*
Sources: Statistics Austria and E-Control

Import volume
Net imports fell by 3.2% year on year in 2009, to just below 8 Bcm. Imports have hovered at around 80% of total gas supply since 2003; the import share was up year on year in 2009. In addition to imports, 1.6 Bcm of gas was produced in Austria by OMV AG and RAG AG and sold in the Eastern control area, partly under long-term contracts.

Market in traded short-term contracts
Western European gas hubs
In Europe short-term gas trading takes places at trading hubs. A trading hub is a trading point on a transport network or at the interconnection point between a number of networks. Examples of trading hubs on single transportation networks are the British National Balancing Point (NBP), the Dutch TTF, and the German Gaspool and NCG *(Figure 51)*. The Belgian Zeebrugge hub and Austria's Central European Gas Hub are hubs at interconnection points.

Growing importance of gas hubs

Gas trading on these markets is conducted **over the counter** (by telephone) or on an **exchange.** The products concerned are spot contracts (e.g. intraday, day ahead or weekend contracts) and forwards or futures (e.g. month ahead, quarter ahead or year ahead).

The oldest trading hub in western Europe, and the one with the highest turnover, is Britain's National Balancing Point (NBP). The NBP is the delivery point for the UK gas and balancing markets. Turnover at the Dutch TTF and German NCG (created by linking up a number of market areas) has also grown to high levels.

GAS MARKETS IN EUROPE

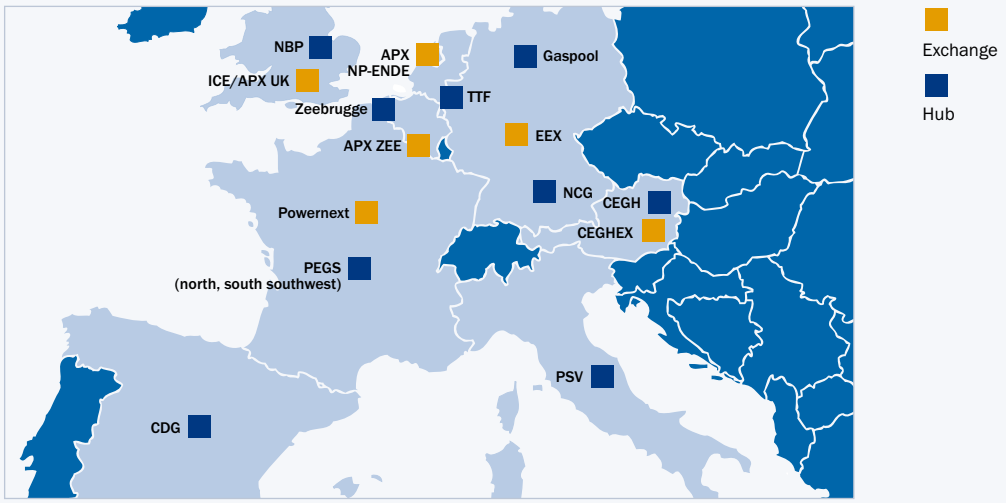


Figure 51: *Gas market venues (OTC and exchanges) in western Europe*
Source: E-Control

The Austrian trading hub

The Central European Gas Hub (CEGH) is located at the intersection of several transmission pipelines (the HAG, MAB, TAG and WAG, and the OMV network). The owners of the operating company, CEGH AG, are OMV Gas & Power GmbH (80%) and Wiener Börse AG (20%).

Role of the CEGH as a trading point

Trading (title transfers) is possible at the Baumgarten, Murfeld, Oberkappel, Überackern and Weitendorf trading points and on the Hungarian border. Baumgarten is the meeting point of a number of transport systems: the eustream, TAG, WAG, HAB and MAB, and the links with OMV's storage facilities and the Eastern control area. The complex task of setting up and managing the data flows between system operators at CEGH is not, as at most other hubs, handled by **one** system operator.

CEGH provides some services usually performed by system operators, such as matching and allocation, as well as typical hub services like title transfers. The hub's services are not subject to any special regulatory oversight.

Following the implementation of an IPA at the Baumgarten gas hub, CEGH AG was able to roll out the Integrated Trading Area Baumgarten (ITAB), which permits flexible trading between the systems that converge on Baumgarten, namely those operated by TAG, BOG and OMV Gas.

CEGH TRADING POINTS

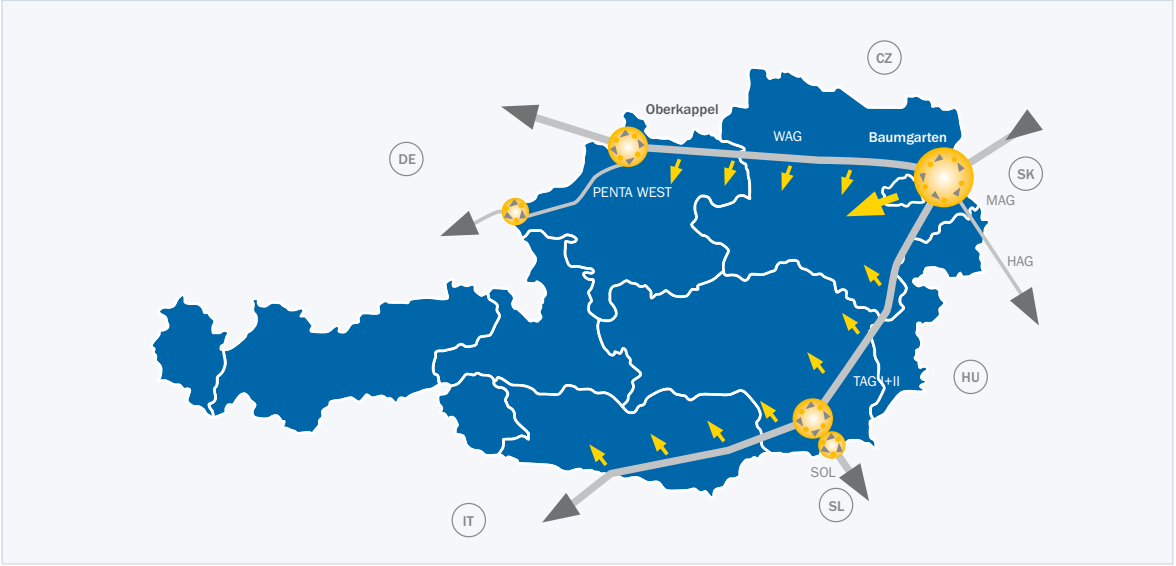


Figure 52: *Title transfer points available for trades via CEGH*
Source: CEGH

Launch of the Austrian gas exchange

Spot trading on the new CEGH gas exchange began on 11 December 2009. Futures trading is due to begin in the second half of 2010. The exchange runs on the Vienna Stock Exchange's electronic trading platform. Stock exchange operator Wiener Börse AG is partnering CEGH AG and Leipzig EEX clearing subsidiary European Commodity Clearing AG (ECC) in the venture. ECC is in charge of clearing, acting as the central counterparty.

Planned ownership changes at CEGH AG

CEGH AG is responsible for physical settlement; at present this is only possible at the Baumgarten and Oberkappel interconnection points. The current owners of CEGH AG are OMV Gas & Power GmbH (80%) and Wiener Börse AG (20%), but it is to be converted into a joint venture between OMV Gas & Power GmbH (30%), Gazprom Germania GmbH (30%), Centrex Europe Energy & Gas (20%) and Wiener Börse AG (20%), subject to approval from the European Commission. E-Control takes the view that the exchange raises some competition concerns as the shareholders exercise a considerable influence over the wholesale gas market.

Companies wishing to take part in spot trading must apply in writing to CEGH AG for membership of the market. This is possible for members include energy companies, business consumers, members of foreign energy exchanges, Austrian clearing and settlement agents, and banks.

The membership conditions include:

> Membership of the Vienna Stock Exchange;
> An operating licence conferring eligibility to trade on a spot market (e.g. a business trading or banking licence);
> A contract with a clearing and settlement agent;
> Evidence that securities have been furnished in accordance with the ECC clearing rules;
> A confirmation by ECC of the recognition as trader for each product to be traded;
> A hub contract with CEGH AG for physical settlement.

E-Control has no regulatory responsibilities beyond its general gas oversight of natural gas undertakings. CEGH AG has adopted a voluntary code of conduct.

In the interests of increased price transparency, towards the end of 2009 CEGH began publishing three reference prices. The Baumgarten day ahead reference price (BDARP) for the OTC market is the arithmetic mean of the daily OTC price assessments by the ICIS Heren and Argus Mediamarket information services, and the London Energy Brokers' Association. The CEGH Gas Exchange of Wiener Börse posts current and historical spot prices at the Baumgarten and Oberkappel trading points – the Baumgarten Natural Gas Index (BGX) und Oberkappel Natural Gas Index (OGX) – on its website (www.ceghex.com). These prices are volume weighted and updated every 15 minutes.

Relevant product market
Short-term trading may be conducted on an:
> OTC; or
> Exchange basis.

Differing advantages of different forms of trading

OTC trading
The contracts traded on OTC markets may be standardised or individually structured by the parties to them. Trading may be facilitated by a framework contract (e.g. the EFET master agreement).

Short-term contracts with intraday, day ahead, month ahead, first quarter, gas year or longer maturities are traded on the gas markets. The prices are fixed. Load profiles are not traded as to date baseload products have been the rule. Trading is on the basis of standardised contracts. A distinction is drawn between:
> The spot market (intraday and day ahead); and
> The forward market (month ahead, gas year, year ahead, etc.).

The main difference is physical settlement, which is always the case on the spot market but is not necessarily so on the forward market. As a result the participants in these markets differ: pure traders, e.g. banks, are seldom involved in spot trading.

While some transactions are concluded directly there are also brokers who act as intermediaries and charge brokerage fees for this service. When transactions are concluded the brokers check whether master agreements between the parties are in place, and whether they are creditworthy. However, unlike an exchange operator they do not take any positions on own account. There can be several brokers at a trading venue.

Exchange trading
Only standardised products are traded on an exchange. The traders do not contact each other, and the trading is anonymous. Clearing and settlement is the responsibility of the exchange, which is a party to every transaction.

Are OTC and exchange-traded products substitutes?
OTC products are much more open to customisation than exchange traded ones. As a result the substitutability of OTC by exchange-traded products is limited, whereas that of exchange-traded by OTC products certainly exists. Exchange and OTC trading are associated with different transaction costs. Nevertheless they can partly be viewed as substitutes. The strong price correlation is evidence that they both belong to the same market.

Relevant geographic market

The traders registered with CEGH largely transport gas to Germany, Hungary and Italy. Swap transactions within Europe are possible, but it is not known whether the quantities involved are significant. Price formation at the various hubs is partly influenced by developments affecting individual countries' transmission and storage systems. For example, changes in supplies from the North Sea gas fields or in LNG shipments have a marked effect on prices at the NBP. Price movements at Henry Hub in the USA have an effect on prices at the NBP. Although price movements at the NBP undoubtedly influence those at the continental hubs, they have little impact on CEGH. Particularly in the summer months, prices at CEGH are partly decoupled from those at the neighbouring NCG hub, as shown in *Figure 41.* They are determined by other factors, namely, demand in Hungary and Italy, storage movements at Baumgarten, maintenance periods and interruptions to the operation of transmission pipelines.

Markets circumscribed by transmission network congestion

It is questionable whether the market definition should include the other European hubs, since the possibilities for physical exchanges are limited by a lack of free transportation capacity, and price formation is influenced by different factors. Swaps, which obviate the need for transportation capacity, depend on whether a range of products are sufficiently liquid at the various trading points.

In view of the above arguments we regard the relevant market for short-term OTC and exchange trading as the CEGH, comprising the Oberkappel and Baumgarten trading points.

Since financial settlement is also possible on the forward market, the question is whether the market for financially settled products is pan-European.

Market structure

The market shares point to a low concentration of market power in the hands of one or more traders *(Figure 53).* However, the disaggregated data for the buy and sell sides, the various types of contracts and the trading times that would be needed for a more precise analysis are not available. It is not known who supplies the physical volumes involved in the transactions.

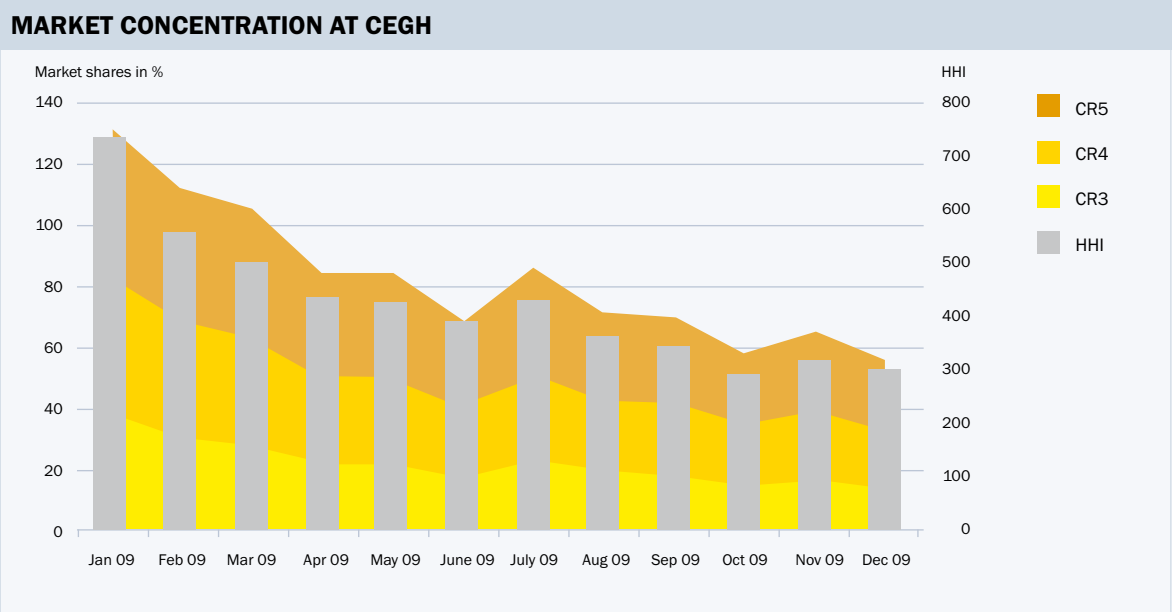


Figure 53: *Market concentration at CEGH*
Source: E-Control

Traders at the CEGH
To date only traders (from 16 different countries), and no banks, have been active at CEGH, i.e. used services there. Most of the gas traders are from Austria and Italy.

Traders on the gas exchange
The exchange had 16 non-clearing members and six clearing members as of July 2010; there are also two market makers.

Market outcomes: short-term contracts
Price trends
Prices on both the short-term OTC markets and the gas exchanges came off sharply in the course of 2009 *(Figure 54)*. Starting from a price level even above that of long-term contracts, prices slid from November 2008 until mid-March 2010 *(Figures 55* and *56)*.

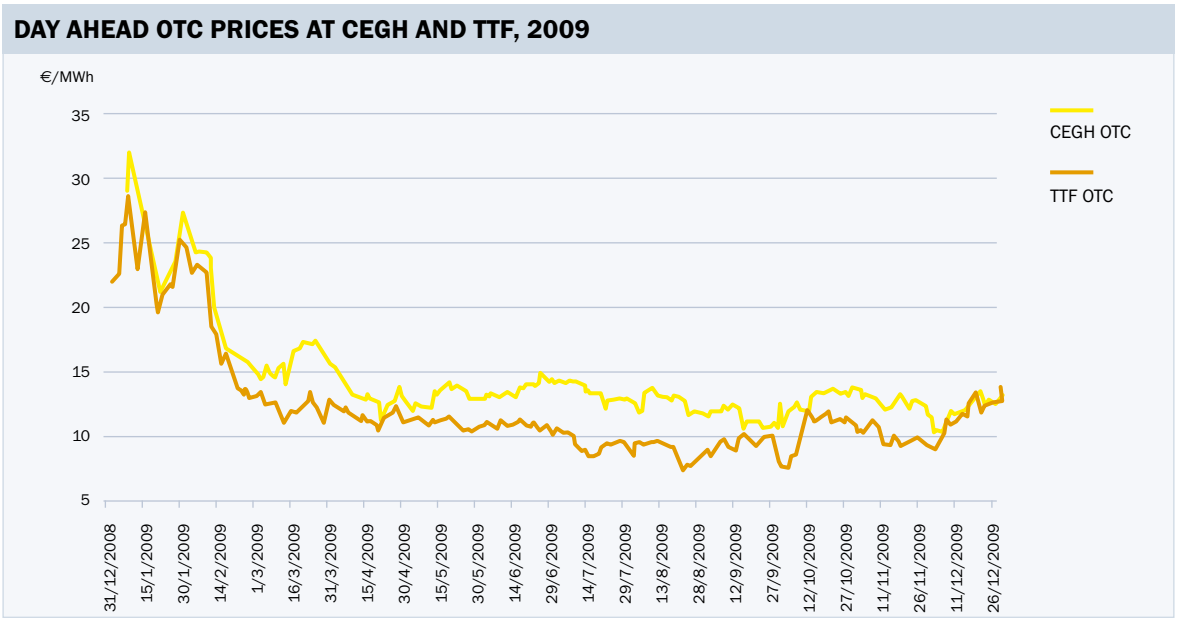


Figure 54: *OTC day ahead prices at CEGH and the Dutch TTF, 2009*
Source: Energate

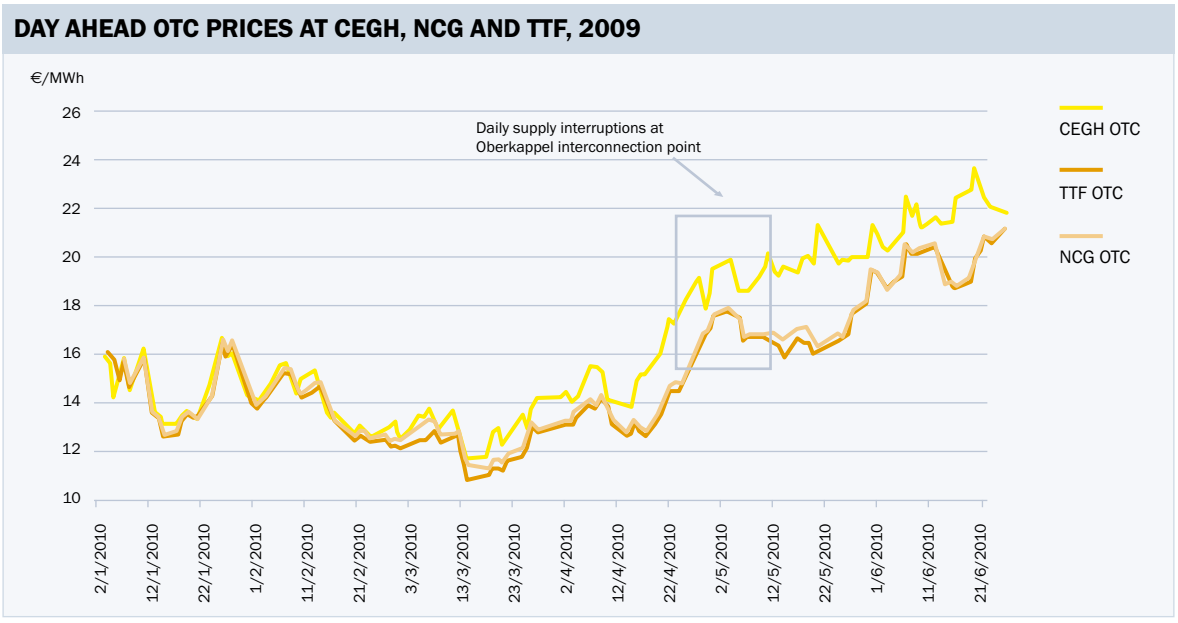


Figure 55: *OTC day ahead prices at CEGH, NCG and TTF, H1 2010*
Source: Energate

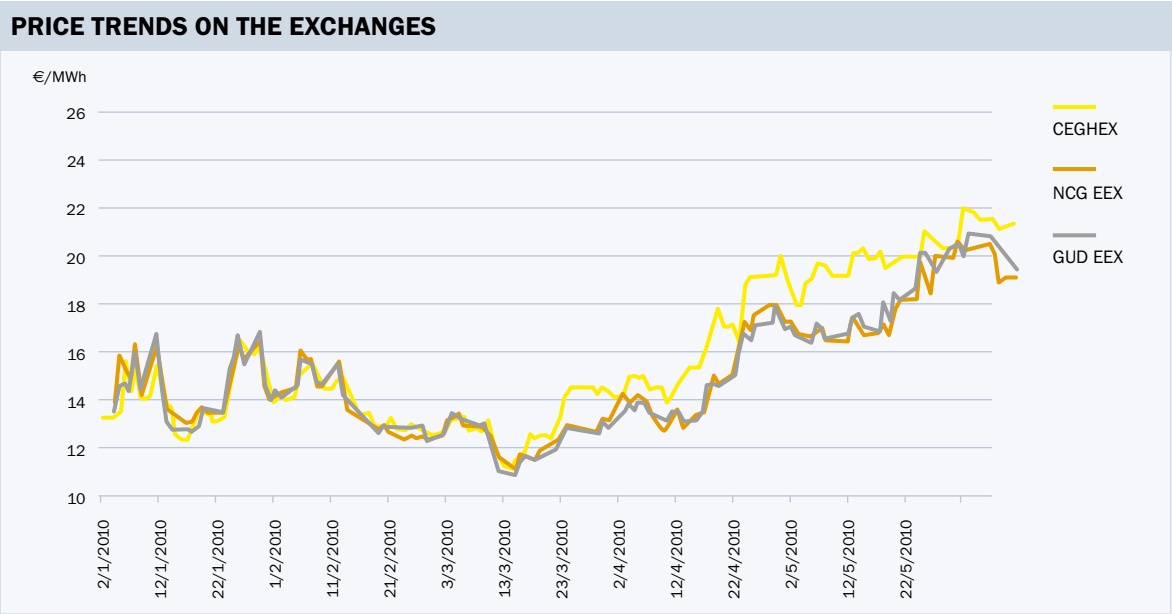


Figure 56: *Price trends on gas exchanges, H1 2010*
Sources: CEGHEX, EEX, Energate

Prices at CEGH have shown considerable premiums over other European spot markets since the start of April 2010. In the case of day ahead contracts, some of the spreads vis-à-vis European hubs such as the TTF, Zeebrugge, the NCG, Gaspool and the PEG Sud/Nord were upwards of € 3/MWh. The spreads even widened in May 2010 *(Figure 55)*. There was a similar trend in 2009 *(Figure 54)*. On the gas exchanges, too, there have been wide spreads between Austrian and German day ahead prices since the start of April *(Figure 56)*.

Diverging price trends due to differing market structures

Although the spot prices at the European hubs sometimes move in step – at least in the medium term – there are varying influences on short-term price movements on functioning markets which mainly have to do with physical availabilities. Disruptions and interruptions to shipments via transmission pipelines, outages at storage facilities and other technical difficulties affect prices. Weather conditions at the various trading and delivery points can also be different.

Possible causes of the premiums at CEGH

> Dominance of oil price indexed gas at the Baumgarten trading point

The gas traded at the Baumgarten trading point almost entirely comes from oil price indexed long-term contracts with Gazprom Export. This characteristic of the supply side and the congestion referred to below lead to considerable premiums compared to prices at the northwest European trading points, which rise and fall in line with the severity of the congestion at the border between Austria and Germany. Other European trading points offer more diversified supplies, partly because they are located at virtual points within market areas and not between market areas like the trading points operated by CEGH (i.e. physical trading points).

> Physical congestion between Austria and Germany

One of the main reasons for the spreads between Austrian and German prices is the congestion at the Oberkappel border interconnection point. In winter the West-Austria pipeline (WAG) and the MEGAL Süd pipelines are chiefly used to convey Russian gas from Baumgarten to Germany, and on to France; in other words, the direction of flow is from east to west. Since this route can also be used for shipments in the other direction, supply interruptions are unlikely. Outside the heating season the flow tails off markedly, and with it the opportunities for counterflow shipments from west to east, meaning that the risk of supply interruptions grows.

There were supply interruptions at Oberkappel from 2 to 7 May and on 15 May. The spread between the Heren NCG and CEGH indexes, which averaged € 1.51/MWh in April, jumped to € 3.02/MWh after the interruptions, i.e. between 16 and 31 May. There were daily interruptions during the summer of 2009.

> Lack of liquidity at CEGH

Another reason for the higher price level at CEGH may be low liquidity in comparison to other hubs. While gas from a number of sources is offered at other hubs, Russian gas is the dominant source at CEGH. The Nabucco pipeline construction project would widen the supply options, thus marking an important advance towards increasing the liquidity of the Baumgarten trading point.

An unusual feature of the Austrian gas transportation system is the fact that the transit system is separate from domestic transport in that they are run by different operators, according to different rules, e.g. with regard to the gas day, nominations and the balancing system.

End to separation of transit and domestic transportation would increase liquidity

CEGH interconnects the Slovak and Austrian transit systems and is upstream from the Austrian domestic grid. Technical regulations prevent the domestic balancing market from turning to suppliers from the transit system, meaning that traders operating at CEGH cannot place bids on the Austrian balancing market. The balancing market has a higher price level than CEGH but is an intra-day market. Abolishing the separation between transit and domestic transportation and creating a virtual trading point would significantly increase the liquidity of balancing energy and gas trading.

Concerning storage, only gas from the OMV facilities, which are close to Baumgarten, is competitive on the CEGH market at present, as the cost of transportation from other storage facilities is too high. Since the OMV storage facilities are booked out for a long time to come, there is little leeway for short-term trading of gas in storage.

> Increased demand from Hungarian traders

An amendment to the Hungarian network code that came into force on 1 July 2009 permits Hungarian suppliers to route gas to their customers via the entry points in western Hungary. Suppliers had previously been required to source at least 80% of their gas from Ukraine in the east and no more than 20% from the west. This change has resulted in Hungarian traders making increased use of the trading opportunities at CEGH.

Published data on the HAG pipeline reveal greater use of interruptible capacity since last year. Utilisation has almost reached the system's design capacity this year. The growth in demand from Hungarian traders has raised prices.

> The TAG and Italian demand

Price levels are higher at the Italian PSV trading point than at CEGH and the other European trading points. Part of the reason is network congestion, but the factors responsible are highly complex as they are also connected with the regulatory regime. Due to the higher prices in Italy, traders there are making use of the opportunities offered by CEGH, and this increases demand at times – particularly during the periods when mandatory injection of gas into Italian storage facilities takes place.

Traded volume

Increased turnover on the CEGH

In 2009 a total of 253,319 GWh of gas was traded at CEGH, and physical throughput was 84,415 GWh.[56] The latter figure represented almost 20% of total imports via Baumgarten and Oberkappel (2008: 14%) during the year. Since both traded volume and physical throughput increased year on year in 2009, the churn rate did not rise significantly and remained at about 3.

Figure 58 shows that there was a jump in the quantities of gas traded on the TTF, NCG and Gaspool hubs in the fourth quarter of 2009 and that the increase carried through into the first quarter of 2010. Volume also rose at CEGH, but by considerably less than on NCG and Gaspool. Meanwhile turnover at the physical trading points operated by the CEGH and the Zeebrugge hubs went sideways.

DEVELOPMENT OF THE BAUMGARTEN HUB, 2009–2010

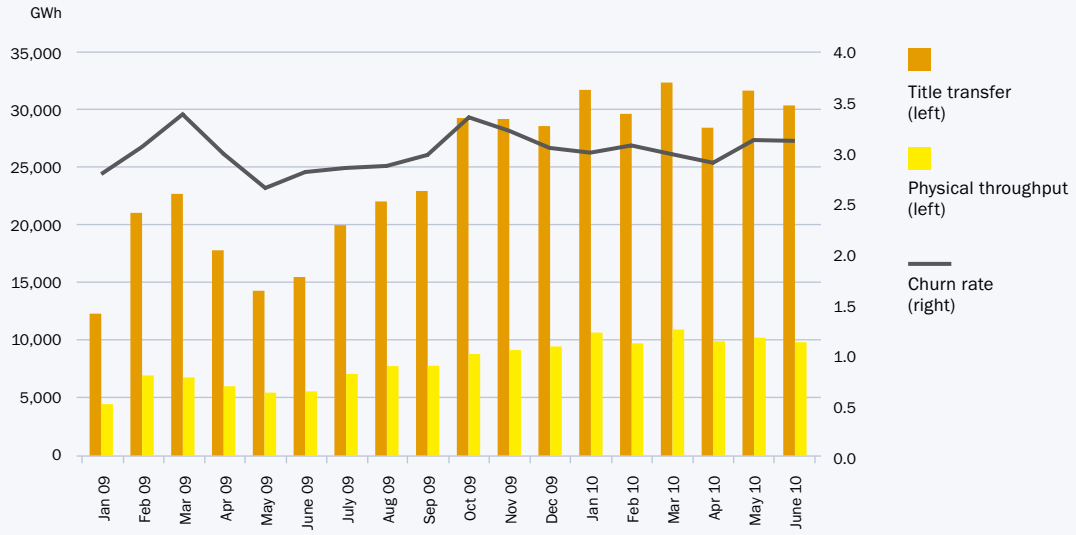


Figure 57: *Development of the Baumgarten hub, 2009–2010*
Source: CEGH

[56] See CEGH, CEGH Monthly Title Tracking Volume, www.gashub.at

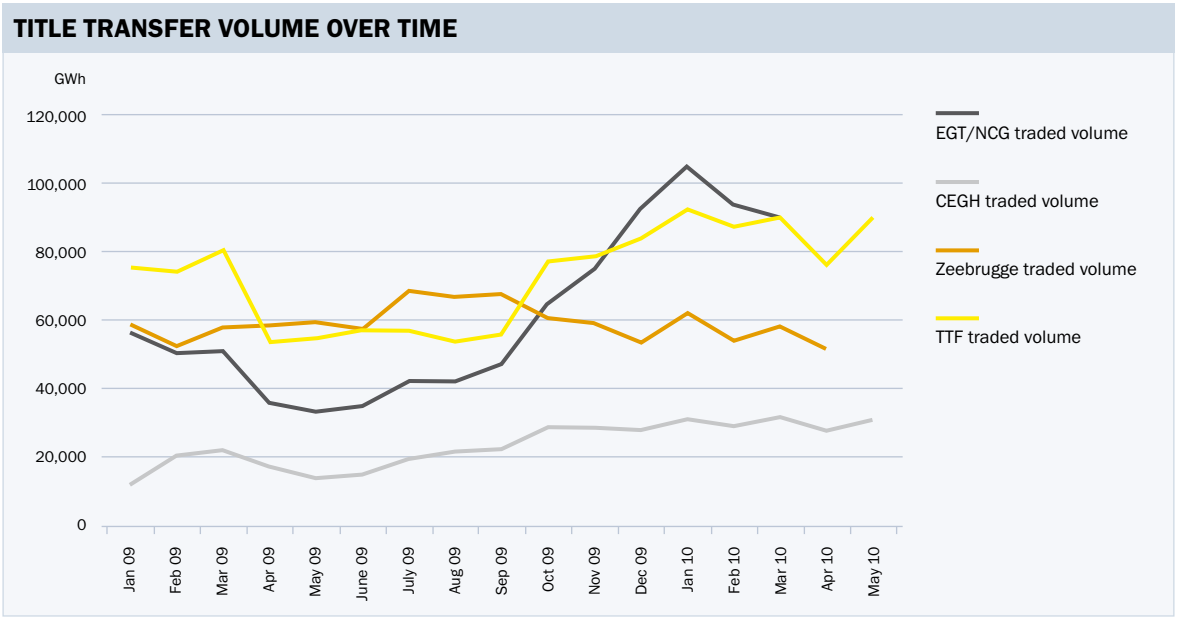


Figure 58: *Title transfer volume on the TTF, NCG, Zeebrugge and CEGH trading venues, 2009 and Q1 2010*
Source: Corporate websites

Exchange traded volume still low

Nothing is known of OTC turnover. The title tracking volume statistics published by CEGH include the net exchange-traded positions as well as the OTC volumes. Between its opening in December 2009 and the end of June 2010 a total of 868.2 GWh was traded on the gas exchange – well under the volume traded on the OTC market in any single month. It is hence safe to assume that the OTC trade has a far greater influence on the market than exchange trading.

Developments at the gas exchange

The CEGHEX gas exchange began trading on 11 December 2009. At present there is only one standard contract – day-ahead baseload. The minimum trade size was reduced from 30 MW to 10 MW on 28 June 2010.

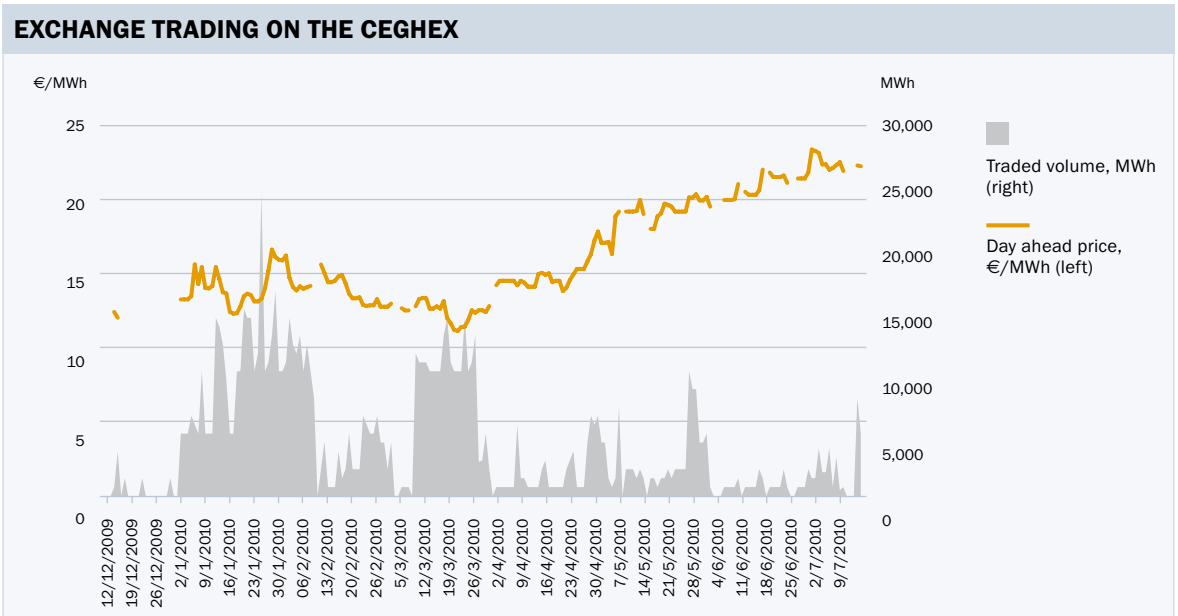


Figure 59: *Exchange trading on the CEGHEX during the first eight months of trading*
Source: CEGH, www.ceghex.at

After a slow start in December 2009 volume picked up strongly in January and March 2010, only to tumble thereafter.

Growth in exchange-based trading in Germany due to cut in the number of market areas

The NCG and TTF also saw a decline in traded volume over the first eight months. On 1 October 2009 the number of market areas in Germany was reduced from 15 to six. The market areas of Net Connect Germany and Gaspool were significantly expanded. This, together with the introduction of trading in balancing energy, has resulted in a marked upturn in both exchange-based and OTC-traded volume.

Traded volume on the CEGHEX was at times comparable to that on the TTF exchange in the first half of 2010. However, there is no mistaking the decrease in turnover on the CEGH since March 2010. Turnover on the exchanges attached to the continental European hubs is still minimal in comparison to the OTC-traded volumes. It corresponds to well under 1% of total title tracking volume at the hubs.

PROPORTION OF EXCHANGE-TRADED IN TOTAL VOLUMES AT HUBS

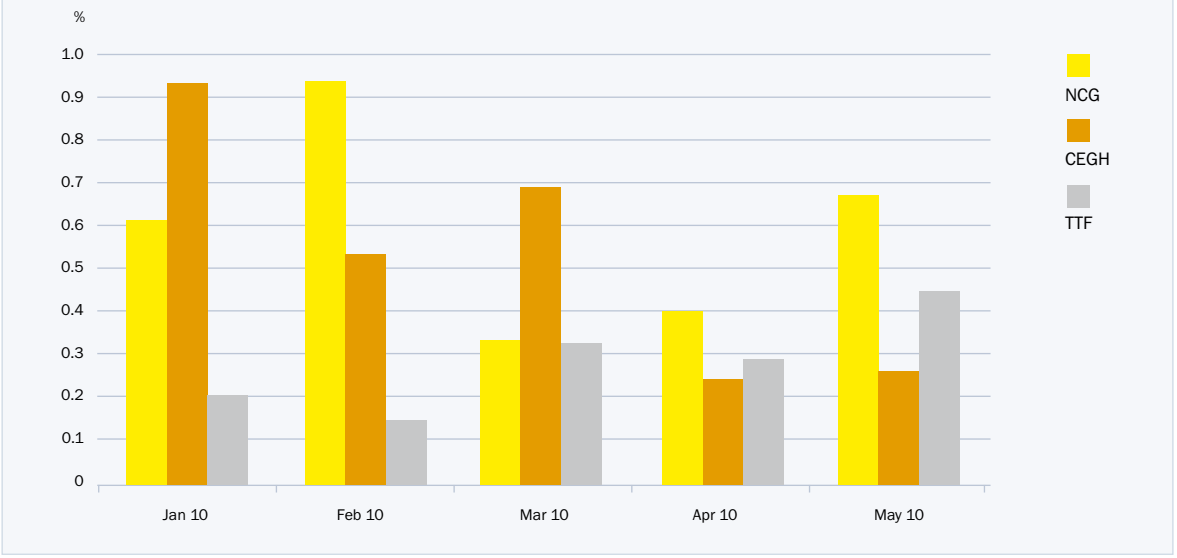


Figure 60: *Exchange traded day ahead contracts as a proportion of total volume at hubs*
Sources: www.ceghex.at, www.eex.com, www.apx.com and www.energate.de

Liquidity at CEGH

A number of indicators can be used to gauge the liquidity of a trading hub:[57]
(1) Churn rate;
(2) Bid-offer spread;
(3) Range of traded products;
(4) Number of trades;
(5) Scale of forward trading;
(6) Number of market members.

[57] See Ofgem, Discussion Paper Ref. 62/09, Liquidity in Wholesale Markets, June 2009, pp. 14 ff.

(1) Churn rate

The churn rate at CEGH ranges between 2 and 3 *(Figure 57),* which is in line with other continental European hubs.[58] Traded volume is still lower than at the other hubs *(Figure 58)*.

(2) Bid-offer spread

The bid-offer spread was calculated as the percentage of the difference between the average market OTC bid and offer prices for day-ahead deliveries in the average market price. *Figure 61* shows that the spread at CEGH was still considerably higher than on TTF and NCG at the end of 2009, but has since narrowed and stood at 2% in May and June 2010.

BID-OFFER SPREADS AT CEGH, TTF AND NCG

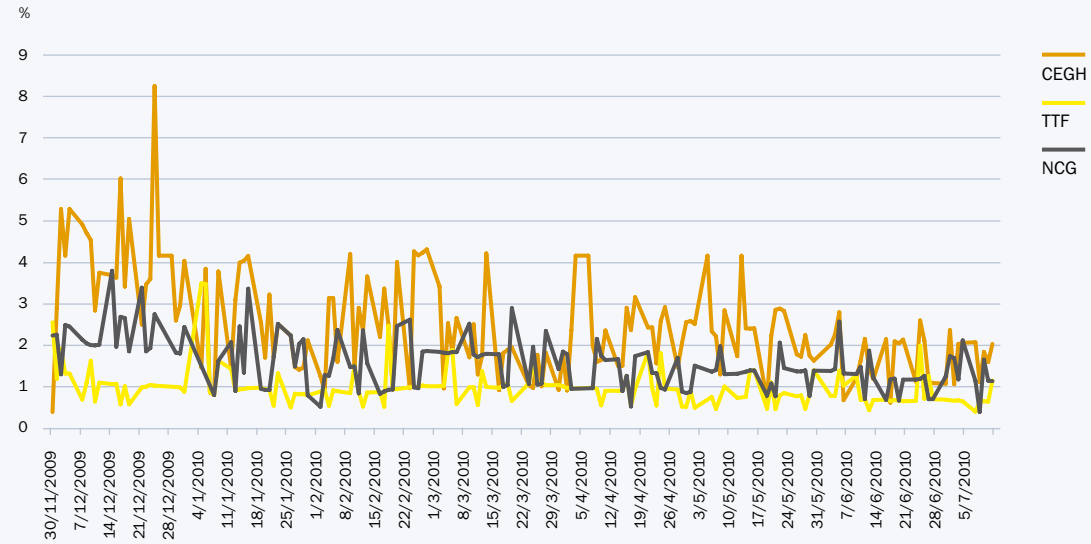


Figure 61: *Evolution of the bid-offer spread (OTC, day ahead) at CEGH, TTF and NCG*
Sources: ICIS Heren and E-Control calculations

(3) Range of traded products

On both the CEGH OTC market and the CEGHEX exchange the products traded are mainly day-ahead contracts, although on the OTC market there are also instances of weekend and month-ahead contracts. The introduction of futures on the exchange is planned for autumn 2010. The range of products is considerably wider at other hubs. For example, within day, day ahead, two days ahead, weekend and year ahead contracts are among the products traded at NCG.

(4) Number of trades

In 2009 a total of 253,319 GWh of gas was traded at CEGH; physical deliveries were 84,415 GWh. This is equal to almost 20% (2008: 14%) of the total quantity of gas imported via Baumgarten and Oberkappel in 2009. Both traded volume and physical throughput increased year on year in 2009. Growth has slowed since September 2009. There are no precise statistics for OTC turnover. Between its opening in December 2009 and the end of June 2010 a total of 869.6 GWh was traded on the gas exchange – well below the volume traded on the CEGH market in any single month. It is safe to assume that OTC trade has a far greater influence on the market than exchange trading.

[58] See ICIS Heren, European Gas Hub Report, Quarter 1/2010

Figure 58 shows that there was a jump in the quantities of gas traded on the TTF, NCG and Gaspool markets in the fourth quarter of 2009 and that the increase carried through into the first quarter of 2010. Volume also rose at CEGH, but by considerably less than at NCG and Gaspool. Meanwhile turnover at the CEGH and Zeebrugge physical trading points went sideways.

(5) Scale of forward trading

There is no transparent information about forward transactions. The reported OTC transactions are on a small scale; no information is available on other bilateral transactions.

(6) Number of market members

As of June 2010 the CEGH market had 86 members, and the number has crept up only slightly in the past few months. The number of active traders has grown by 15 since the start of 2009.

Membership of the NCG market has risen considerably, from 116 to 156 (high gas trading) on 1 October 2009. Since then NCG's market area has been expanded to include the bayernets GmbH, Eni Gas Transport Deutschland S.p.A., E.ON Gastransport GmbH, GRTgaz Deutschland GmbH, and GVS Netz GmbH networks.

The number of active traders at TTF has risen by about ten since September 2009.

To date only traders (from 16 different countries), and no banks, have been active at CEGH, i.e. used hub services there. Most of the gas traders are from Austria and Italy.

Recent developments on the CEGH market

Key changes such as the conclusion of the OBAs, implementation of the ITAB and the opening of the gas exchange had a positive impact on the CEGH market in 2009. The launch of an organised spot market (exchange) in September 2009 brought a big improvement in the market's transparency. CEGH publishes average OTC prices and exchange prices.

CEGH market more liquid and transparent

The liquidity of the CEGH day-ahead market increased in 2009, but the range of traded products is still narrower than at other hubs and the bid-offer spread (as a percentage of the market price) higher.

The liquidity of the other European trading hubs – particularly the NCG, Gaspool and TTF virtual trading points – increased markedly in 2009. At the NGC this trend has been reinforced by the expansion of the original market area (with an entry-exit system) following the admission of additional transmission networks and the commencement of within-day trading in balancing energy for those networks.

The virtual trading points are taking on an increasingly important role as a means of optimising procurement portfolios. Analyses of gas suppliers' margins show that the combination of long and short-term procurement options would have improved margins – i.e. enabled suppliers to reduce the prices they charge to consumers.

The growing importance of the spot markets has also been reflected in changes to the long-term contracts. Part-indexation to spot gas prices, agreed by long-standing trading partners E.ON Ruhrgas and Gazprom Export for the first time in February 2010, and growing offtake flexibility mark major advances in the direction of a competitive gas market.

SUPPLY OF DISTRIBUTORS

There are usually intermediaries between the wholesale and retail stages (especially retailers serving small consumers). First-level gas wholesalers, which have long-term contracts with producers and trade on the European markets, normally supply second-level wholesalers and distributors (e.g. municipal utilities) on the basis of variable load contracts. This depends on the wholesalers providing contractually assured access to flexibility products (gas storage); they also provide other services such as balancing group management.

EconGas, Steirische Gas-Wärme, Kelag and Salzburg AG are continuing to supply distributors, EconGas being the market leader. The EnergieAllianz partners, Erdgas Oberösterreich, Linz Gas and other municipal utilities account for most of the demand. We are not aware of any changes in the supply relationships in this sub-market.

Long-term contracts an obstacle to competition

The long-term contracts that lock in some 80% of total supply are a major obstacle to competition on this market.[59]

The German market for the supply of distributors was opened in 2006 when the Federal Cartel Office prohibited long-term contracts. Since then the distributors and municipal utilities have had a considerably wider range of procurement options and strategies at their disposal, creating opportunities to cut costs for their customers. Similar efforts by distributors in Austria are not known to us.

COMPETITION ON THE RETAIL MARKET

The retail market can broadly be broken down into two sub-markets with contrasting conditions:

- Small consumer market:
  Households, other small consumers and non demand metered consumers with an annual consumption of less than 100,000 cu m.
- Large consumer market:
  a) Demand metered consumers with an annual consumption of over 100,000 cu m; and
  b) Large consumers with an annual consumption of over 500,000 cu m.

Slight fall in gas demand

Total retail gas sales fell by 1.8% year on year, to 91,542 GWh in 2009. Gas was supplied to a total of 1.35m metering points during the 2009 calendar year. Of these around 1.28m served household consumers, 72,000 other small consumers (small and medium-sized enterprises, agricultural and interruptible consumers) and 4,000 demand metered consumers (industrial consumers).

Household consumers account for 21% and other small consumers for 6% of overall gas consumption. The consumer group with the heaviest demand is industry, at 73% of the total. The gas consumption of households and small consumers rose by 0.5% and 1.1%, respectively, in 2009, while gas sales to industry (demand metered consumers) fell by 3%.

Market structure

As with the electricity market, the structure of the Austrian gas market stands out for the high level of provincial and local government ownership *(Figure 62).* Some of the suppliers are also active in the electricity market (e.g. EnergieAllianz); this is particularly prevalent in the small consumer market. Widespread cross-holdings represent another similarity to the electricity market *(Figure 74).*

[59] For a detailed discussion of this problem see Federal Competition Authority, Allgemeine Untersuchung der österreichischen Gaswirtschaft, Endbericht (General Investigation of the Austrian Gas Industry, Final Report), 2006

PUBLIC OWNERSHIP OF AUSTRIAN GAS COMPANIES

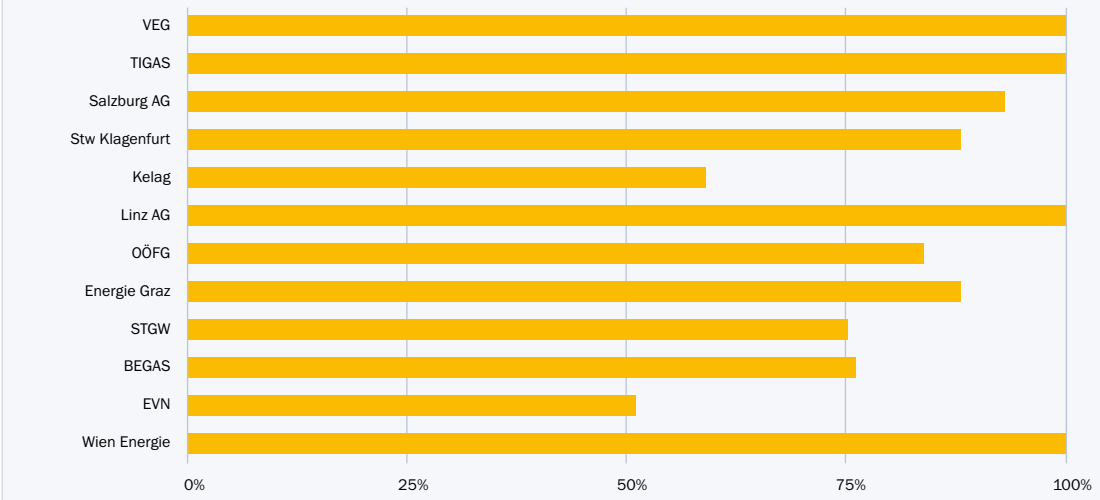


Figure 62: *Public ownership of Austrian gas companies*
Sources: Company annual reports and websites, and calculations by E-Control

Small consumer market

Household and other small consumers normally have short-term contracts without minimum offtake obligations and without explicit escalation clauses tied to oil product prices. Instead, step-fixed pricing is used, where the gas price is adjusted at irregular intervals determined by the supplier. This means that the impact of a fall or rise in petroleum product prices – and hence in the gas companies' purchasing prices – on the prices paid by consumers is generally lagged.

Price information provided by the Tariff Calculator

These customers enjoy mandatory price transparency. The suppliers must publish their prices. The rates can be compared using the E-Control Tariff Calculator, and price information is also available on most of the suppliers' websites.

The suppliers in this market segment are the incumbents, namely: the EnergieAllianz partners (via Wien Energie, EVN, BEGAS and Switch), Erdgas Oberösterreich, Steirische Gas-Wärme, Kelag, Linz Gas, Salzburg AG, TIGAS and VEG, as well as municipal utilities (e.g. Stadtwerke Steyr, Stadtwerke Kapfenberg), some of which do not market nationwide. These suppliers also operate through subsidiaries on the gas retail market. The incumbents have launched new brands for their nationwide marketing. Examples include EnergieAllianz's Switch, Salzburg AG and TIWAG's MyElectric and the Unsere Wasserkraft brand of Steirische Gas-Wärme.

The terms offered to **small and medium-sized enterprises,** and small industrial (demand metered) customers with an annual demand of 100,000–500,000 cu m, are individually negotiable. The suppliers are the same as in the household consumer market. No information is available on their pricing and product strategies.

Market concentration: small consumer market
The Austrian **small consumer market** (non demand metered consumers) is highly concentrated with an HHI score of 3,983 – well above the critical level of 1,800.[60] The cumulative market share of the three largest suppliers in 2009 was around 79%, and that of the five largest suppliers 89%. The top ten suppliers serve 97% of small consumers.

EnergieAllianz has the highest market share in this segment, at over 60%, through its sales companies Wien Energie, EVN and BEGAS.[61] No foreign suppliers are present on the Austrian small consumer market.

Large consumers (industrial consumers) with annual consumption of over 500,000 cu m
Upwards of an annual consumption of 500,000 cu m, the retail market has a different supply structure. EconGas, Steirische Gas-Wärme, Terragas, Wingas and Kelag are active in this segment. In 2008 Shell Austria, GDF Suez and Enlogs also entered the market. All of these companies market across the entire Eastern control area.

Market concentration: large consumer market
The Austrian suppliers active in this market focus almost exclusively on industrial consumers (i.e. large consumers).

No information is available on the market shares held by suppliers of demand metered consumers (which include the large consumers).

Market behaviour
Suppliers' activities: product design and marketing
Small consumer market
Product design is largely a matter of offering discounts – mainly to customers paying by direct debit and new customers – and there is little variety in the products offered on the retail market. With few exceptions (e.g. online products and products sold in cooperation with supermarket chains), the products are standard, though heavy discounting can result in significant price differences. A growing number of suppliers are offering loyalty rebates if customers voluntarily undertake to stay with them beyond the specified minimum term of the supply contract. Suppliers also offer rebates to customers who refer other customers to them. Returning customer rebates also increasingly being used to win back lost customers.

Little consumer advertising

Large-scale consumer advertising campaigns are still rare on the gas market. The incumbents largely use advertising for image maintenance purposes, so as to cement customer loyalty, rather than to launch new products. Most advertising appears in regional titles published in the incumbents' catchment areas, and there are no nationwide campaigns.

Towards the end of 2008 and in 2009 the Austrian gas suppliers introduced some price changes. Several suppliers raised their prices during the last quarter of 2008 – in some cases substantially – and this was reflected in higher switching rates in 2009. Most suppliers reduced their prices during the first half of 2009. Most of the price changes in January 2010 were induced by the reduction in the system charges, and were not originated by the suppliers themselves. In all, the gas suppliers made many more changes to their prices than the electricity retailers during the period under review. This and the sharp price increases in late 2008 may be the reason for the diverging trends in switching rates *(Figures 17* and *63)*.

[60] Source: Market statistics survey questionnaire and E-Control calculations
[61] See information on the EnergieAllianz website (www.energieallianz.at)

CHANGES IN AUSTRIAN HOUSEHOLD GAS PRICES			
	Price change on	Net % change in energy price	Gross % change in energy price + system charges
Wien Energie	1 January 2009	0%	1.94%
	1 February 2009	–19.52%	–12.61%
	1 December 2009	–4.82%	–2.87%
	1 January 2010	0%	0.65%
EVN	1 January 2009	0%	1.29%
	15 January 2009	–10.42%	–7.14%
	15 March 2009	–10.08%	–6.66%
BEGAS	1 January 2009	0%	1.86%
	1 April 2009	–20.47%	–13.09%
	1 January 2010	0%	1.61%
Erdgas OÖ	1 January 2009	0%	1.69%
	16 January 2009	–13.84%	–8.95%
	1 April 2009	–11.76%	–7.20%
	1 January 2010	0%	2.61%
Linz AG	1 January 2009	0%	–8.02%
	15 January 2009	–12.49%	–8.02%
	1 April 2009	–11.87%	–7.25%
	1 January 2010	10%	2.60%
EW Wels	1 November 2008	+36.4%	21.5%
	1 January 2009	0%	1.38%
	15 January 2009	–7.90%	5.18%
	1 January 2010	0%	2.64%
Stw Steyer	1 November 2008	+18.20%	10.60%
	1 January 2009	–2.97%	–0.31%
	1 March 2009	–21.87%	–13.20%
	1 January 2010	+4.50%	5.40%
	1 July 2010	+7.30%	3.80%
Energie Ried	1 January 2009	+7.14%	6.11%
	1 January 2010	0%	2.52%

Table 10: *Changes in Austrian gas suppliers' prices for household consumers, 2009*
Source: E-Control

CHANGES IN AUSTRIAN HOUSEHOLD GAS PRICES			
	Price change on	Net % change in energy price	Gross % change in energy price + system charges
STGW	15 November 2008	+47.60%	26.30%
	1 January 2009	0%	–0.70%
	1 February 2009	–9.63%	–6.69%
	1 May 2009	–12.52%	–7.88%
	1 February 2010	0%	0.81%
Energie Graz	15 November 2009	+29.50%	17.30%
	1 January 2009	0%	–0.58%
	1 February 2009	–9.69%	–6.29%
	1 May 2009	–11.80%	–7.39%
	1 January 2010	0%	1.20%
Stw Leoben	15 November 2008	+29.00%	16.80%
	1 January 2009	0%	–0.73%
	1 February 2009	–9.81%	–6.33%
	1 December 2009	–12.42%	–7.72%
	1 January 2010	0%	0.91%
Stw Kapfenberg	15 November 2008	+7.53%	4.03%
	1 January 2009	0%	–0.53%
	1 January 2010	0%	0.80%
Kelag	15 December 2008	+20.55%	10.48%
	1 January 2009	0%	1.69%
	1 January 2010	0%	2.35%
Stw Klagenfurt	1 January 2009	+6.43%	4.51%
	1 January 2010	0%	2.61%
Salzburg AG	1 October 2008	+14.50%	7.60%
	1 January 2009	0%	–0.33%
	1 January 2010	0%	0.55%
	1 February 2010	–5.05%	–2.83%
TIGAS	1 January 2009	+22.64%	7.88%
VEG	1 January 2009	+24.22%	15.95%

Table 10: *Changes in Austrian gas suppliers' prices for household consumers, 2009*
Source: E-Control

Large consumer market

Large consumers are offered a wider range of products than the other consumer groups. For instance, market leader EconGas offers fixed prices, floating price contracts with formulas based on "market price movements" (e.g. oil prices), and a pricing scheme featuring a variable price with the option of conversion into a fixed one for a given period of time.

Switching behaviour
In 2009 some 12,100 consumers or 0.9% of all Austrian gas consumers changed their gas suppliers. A cumulative total of about 5% of all consumers have switched since market opening.

Industrial consumers more willing to switch

The switching rate for industrial (demand metered) consumers is much higher than that for household consumers, which has declined since the initial post-liberalisation phase. In 2009 some 6.7% of all demand metered consumers changed suppliers, compared with just 0.8% of household consumers and 3.1% of other small consumers.

Sharp increases in household gas prices at the start of the 2008/2009 heating season and relatively modest reductions in the course of the following year increased consumer interest in switching. The number of switchers grew markedly in 2009, albeit from a very low base *(Figure 63).*

SWITCHING ON THE GAS MARKET

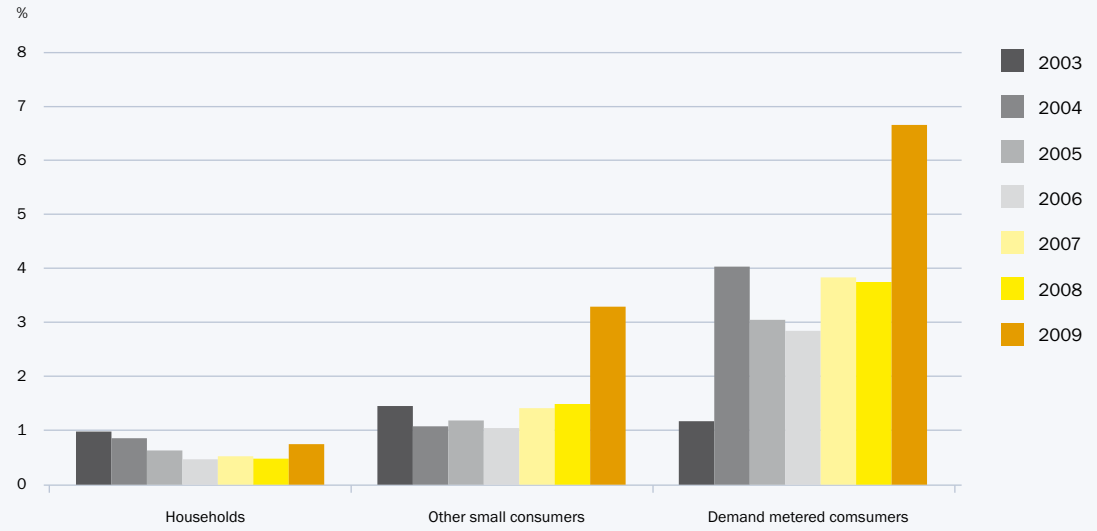


Figure 63: *Switching on the gas market, switched metering points as percentages, 2003-2009*
Source: E-Control

Analysis by grid zones shows that the switching rates for demand metered gas consumers were unusually high in Burgenland, Styria and Upper Austria. The switching rates for consumers with standardised load profiles (households and other small consumers) were above average in Lower Austria, Styria and Upper Austria. As *Figure 66* demonstrates, household consumers who switch can achieve the greatest savings in these grid zones.

Household and SME prices over time
Figure 65 depicts the evolution of overall gas prices charged to household consumers. The prices charged to household consumers rose steadily from 2002 until January 2009. Gas import prices have fallen markedly since February 2009.

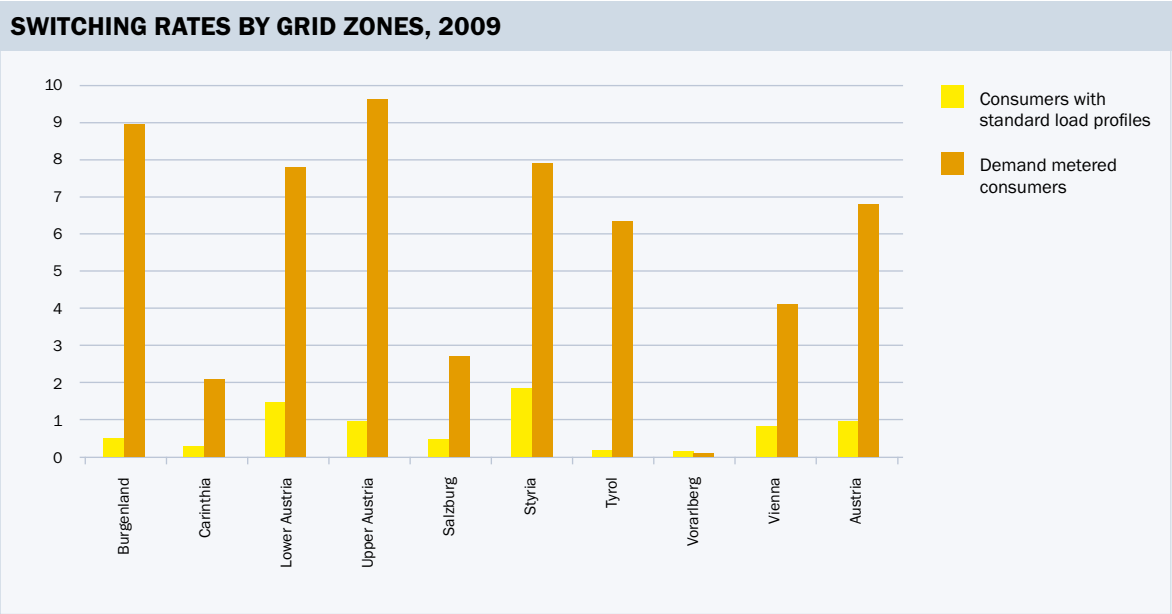


Figure 64: *Switching rates by grid zones, 2009*
Source: E-Control

Most of the gas companies reacted to higher procurement costs by raising their prices – the highest increase was by 47% of the net energy component – at the start of the 2008/2009 heating season. By contrast, the pronounced decline in procurement costs through to mid-July 2009 prompted relatively modest reductions in gas prices. There were further price increases in January 2009 and moderate falls over the rest of the year.

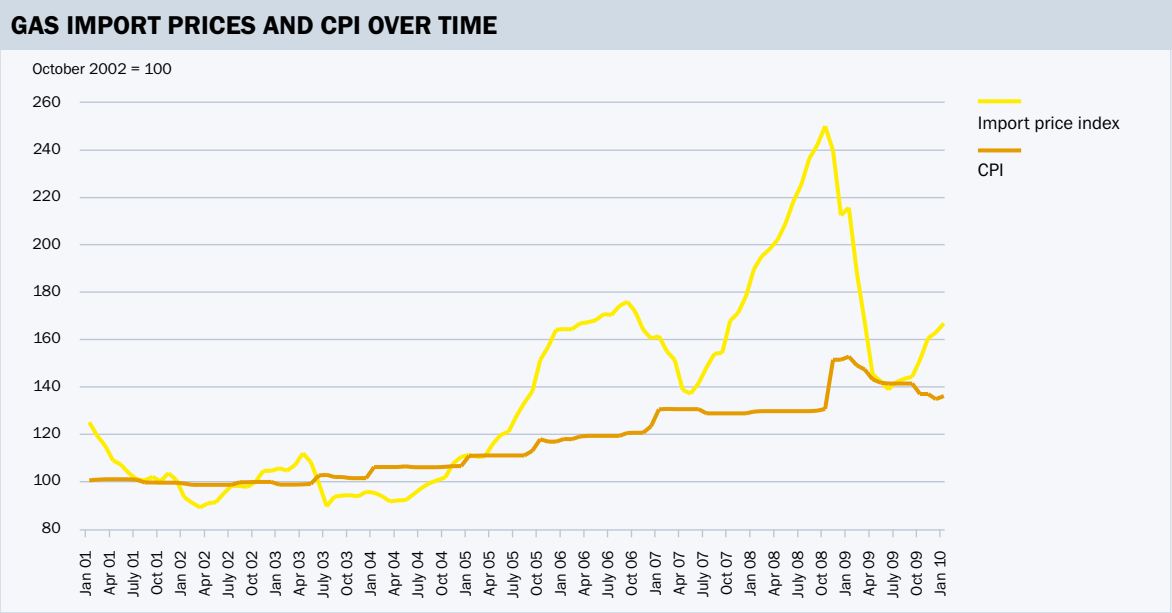


Figure 65: *Natural gas import price and gas CPI over time (overall price; October 2002 = 100)*
Sources: Statistics Austria and E-Control

E-Control's market statistics have included the average energy prices charged to demand metered small consumers since 2008. Non demand metered customers are categorised according to standard load profiles. *Table 11* shows the evolution of the heating gas prices charged to households, and small and medium enterprise consumers. There was a further rise in the average prices in the first half of 2009, followed by reductions of 2–5%.

EVOLUTION OF GAS PRICES FOR NON DEMAND METERED CONSUMERS

July 2008 = 100	Households, detached houses, heating	Household, multiple occupancy houses, heating	Small and medium-sized business customers, heating
July 2008	100.0%	100.0%	100.0%
January 2009	106.7%	110.6%	109.7%
July 2009	121.9%	117.2%	117.9%
January 2010	119.7%	111.8%	113.7%

Table 11: *Evolution of gas prices charged to non demand metered gas consumers, July 2008 to January 2010; NB: July 2008 price is the average price for H1 2008*
Source: E-Control

COMPARISON OF LOCAL PLAYERS AND CHEAPEST SUPPLIER

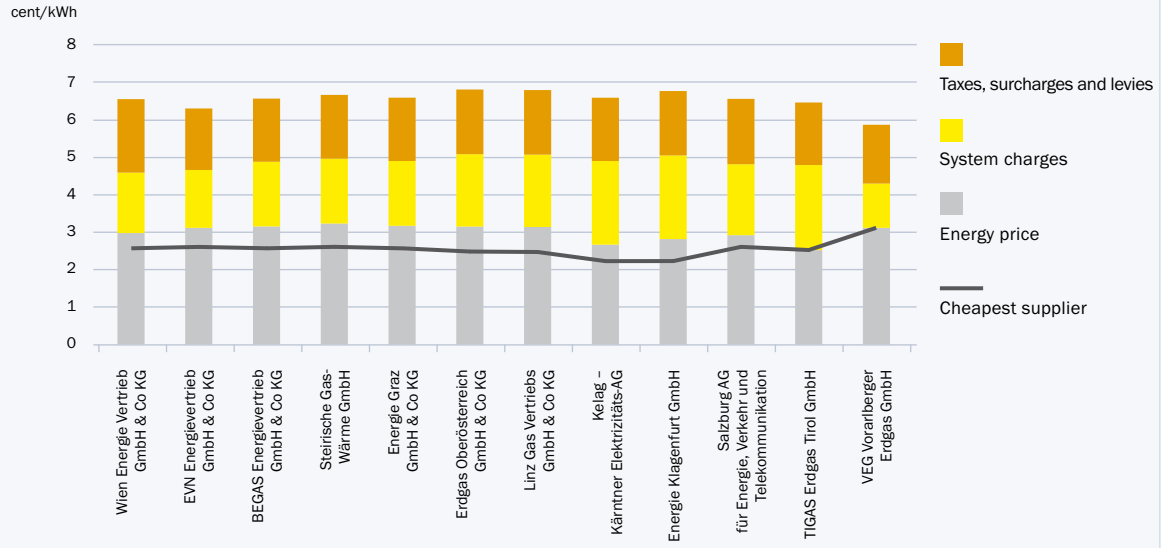


Figure 66: *Comparison of the local player's price with that of cheapest supplier, 15,000 kWh, May 2010*
Source: E-Control

Figure 66 shows the local players' energy prices and the related system charges taxes and levies.

In all the grid areas in the Eastern control area there are potential savings from switching suppliers. The maximum annual cost reduction is € 119 (when switching from Erdgas Oberösterreich to the cheapest supplier) *(Figure 67).*

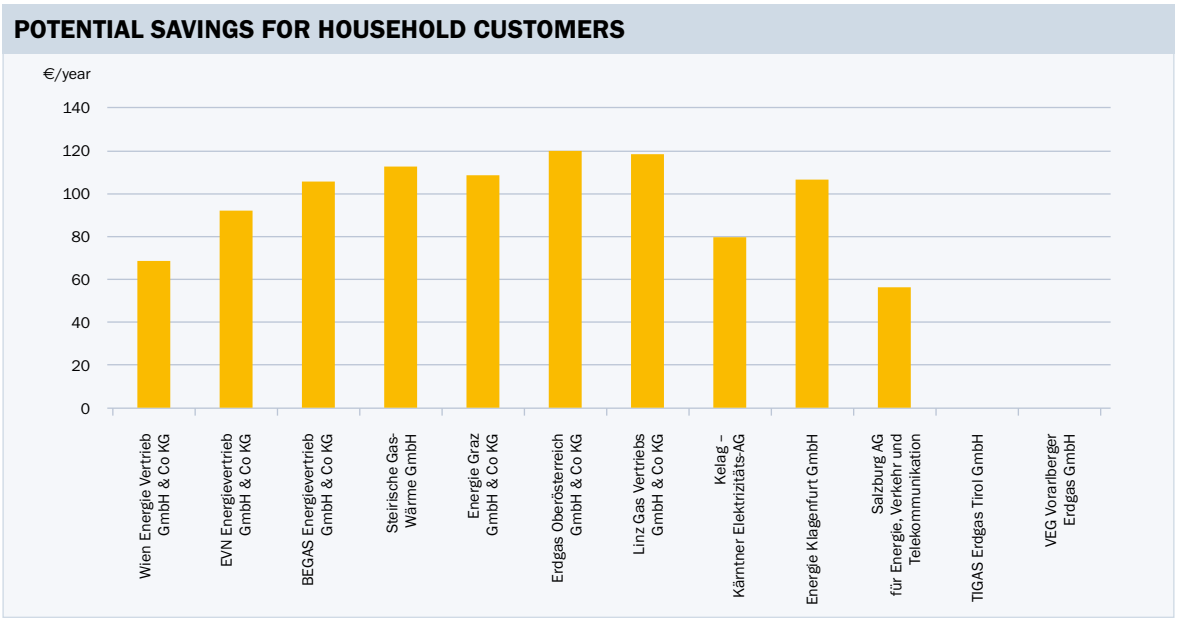


Figure 67: *Potential annual savings in euro for household consumers (annual demand 15,000 kWh) switching to the cheapest supplier, May 2010, less general rebates offered by local players and total rebates offered by the lowest-cost supplier*
Source: E-Control

International comparison of household prices
A European comparison reveals that overall prices including taxes and levies are close to the EU average *(Figure 68)*. Overall household prices in Austria are 0.44 cent/kWh above the EU-27 average.

Figure 69 shows that household gas prices tended to fall across the EU in the second half of 2009. There were sharp reductions in Germany and the Netherlands. The price cuts in Austria were small in comparison with most other European countries.

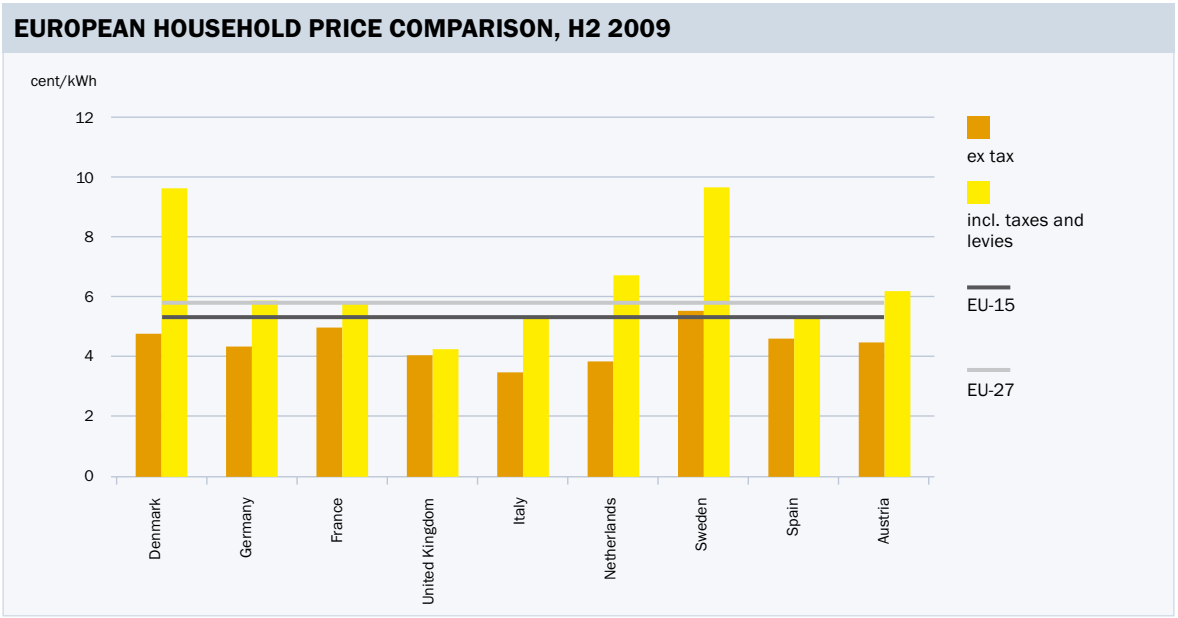


Figure 68: *Household gas prices (energy and system charges) in Europe (cent/kWh), H2 2009*
Source: Eurostat

EUROPEAN HOUSEHOLD PRICES OVER TIME

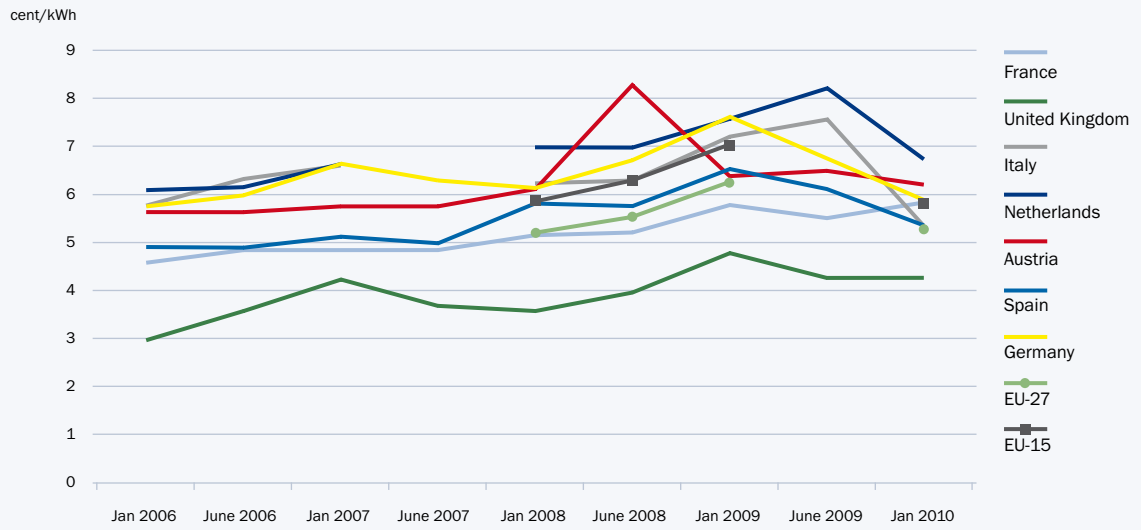


Figure 69: *Household gas prices in selected EU member states and EU average prices, incl. taxes and levies (cent/kWh)*
Source: Eurostat

Household Energy Price Index for Europe (HEPI)

The E-Control Household Energy Price Index (HEPI) for the EU-15[62] *(Figure 70)* shows a steep downward trend in European household gas prices. Prices have been rising again since the start of 2010. The Austrian household gas prices included in the index have remained largely stable following a slight reduction in January 2010 due to cuts in the system charges and a more pronounced fall in February 2009 *(Table 10)*.

GAS HEPI

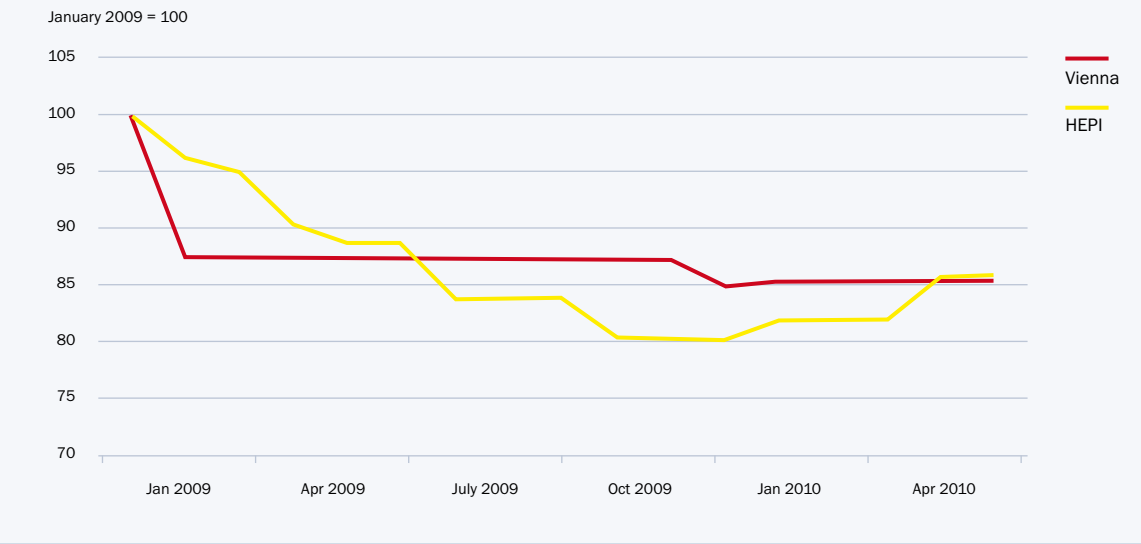


Figure 70: *Volume weighted household price index for the capital cities of the EU-15, ex tax*
Source: E-Control

[62] The Household Energy Price Index for Europe (HEPI) is compiled by E-Control in cooperation with VaasaETT Global Energy Think Tank. This weighted index shows household price trends throughout Europe. It is calculated on the basis of the electricity and gas prices of the incumbent supplier and its main competitor in each of the EU-15 capital cities. The analysis applies the tariffs most widely used by consumers in each city.

Austrian household consumers continue to derive little benefit from the changes on the wholesale market. A comparison of household prices in Austria (Vienna), Germany (Berlin) and the Netherlands (Amsterdam) suggests that household consumers whose gas comes from a liquid wholesale market profit more from falling prices. Household consumers in Berlin and Amsterdam enjoyed marked price reductions in 2009, whereas those accorded to such consumers in Vienna were only moderate *(Figure 71).*

HEPI IN AMSTERDAM, BERLIN AND VIENNA

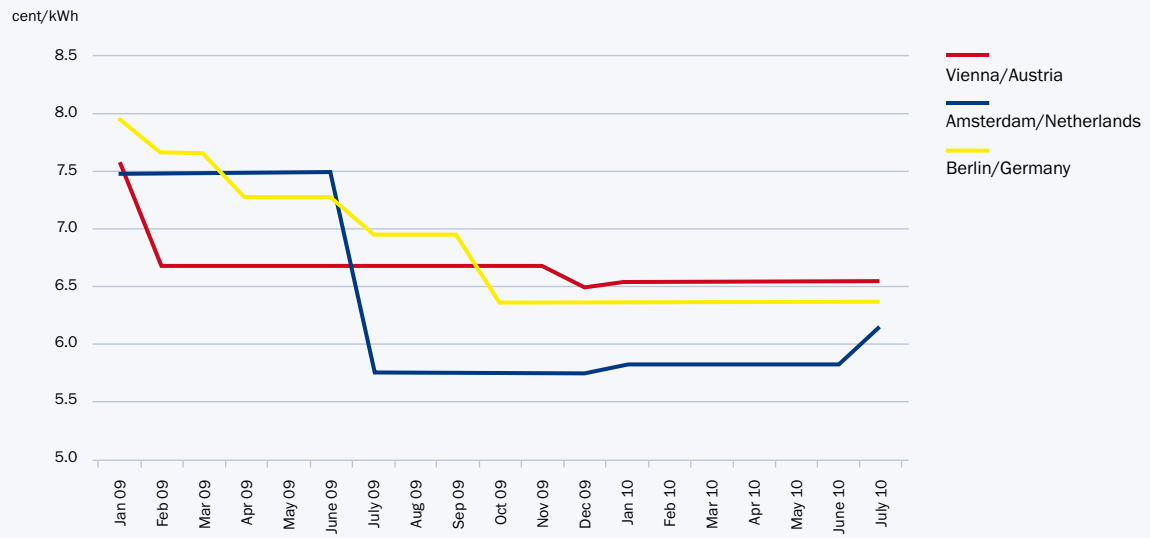


Figure 71: *Household price indexes for Vienna, Amsterdam and Berlin (based on the data used for the HEPI calculations)*
Source: E-Control

Prices for industrial customers

E-Control surveys the energy prices paid by Austrian industrial consumers at source, on a biannual basis (January and July). The results are posted on the E-Control website (www.e-control.at). The industrial consumers surveyed are broken down into three categories: companies with an annual demand of 100m kWh or more (category A), those consuming 10–100m kWh per year, and those with an annual consumption of less than 10m kWh.

The responses to the January 2010 survey *(Table 12)* show falls in the prices paid by all three categories compared with a year earlier.

EVOLUTION OF PRICES FOR INDUSTRIAL CONSUMERS			
Demand category	**Jan 09**	**Jan 10**	**2010/2009**
>100 GWh	2.64	2.40	-9.09%
10-100 GWh	2.91	2.60	-10.65%
<10 GWh	3.10	2.70	-12.90%
Total	2.94	2.62	-10.88%

Table 12: *Evolution of prices for industrial consumers, 2009–2010*
Source: E-Control industrial price survey

Table 13 presents the results of the industrial gas price survey in detail. It is noticeable that the standard deviation has fallen compared to the 2009 survey. The sharpest decline was in category C – from 0.47 cent/kWh to 0.35 cent/kWh. The import price is down by 21% in comparison to 2009. The prices for categories A and B have only fallen by 9% and 13%, respectively. Large new contracts are concluded for extended periods, as seen from the figures for category B as well as category A.

ENERGY PRICES AND AVERAGE CONTRACT DURATIONS				
	Metric	**Jan 2010 cent/kWh**	**July 2009 cent/kWh**	**Jan 2009 cent/kWh**
Category A Annual consumption > 100,000,000 kWh	Arithmetic mean	2.40	2.48	2.64
	Standard deviation	0.30	0.74	0.32
	No of companies	28	28	31
	Ave. contract term	30 months	–	27 months
Category B Annual consumption > 100,000,000 kWh < 100,000,000 kWh	Arithmetic mean	2.60	2.58	2.91
	Standard deviation	0.42	0.58	0.52
	No of companies	84	73	76
	Ave. contract term	28 months	–	22 months
Category C Annual consumption < 100,000,000 kWh	Arithmetic mean	2.70	2.67	3.10
	Standard deviation	0.35	0.56	0.57
	No of companies	92	99	77
	Ave. contract term	19 months	–	19 months
Total	Arithmetic mean	2.62	2.61	2.94
	Standard deviation	0.39	0.60	0.54
	Median	2.55	2.42	2.79
	First quartile	2.36	2.18	2.52
	Third quartile	2.82	2.94	3.34
	No of companies	204	200	184
	Ave. contract term	25 months	–	22 months

Table 13: *Energy prices and average contract durations*
Source: E-Control

Figure 72 depicts the net energy prices (excluding system charges, taxes and levies) identified by the industrial price surveys carried out since the first survey in January 2004.

IMPORT PRICES AND INDUSTRIAL PRICES

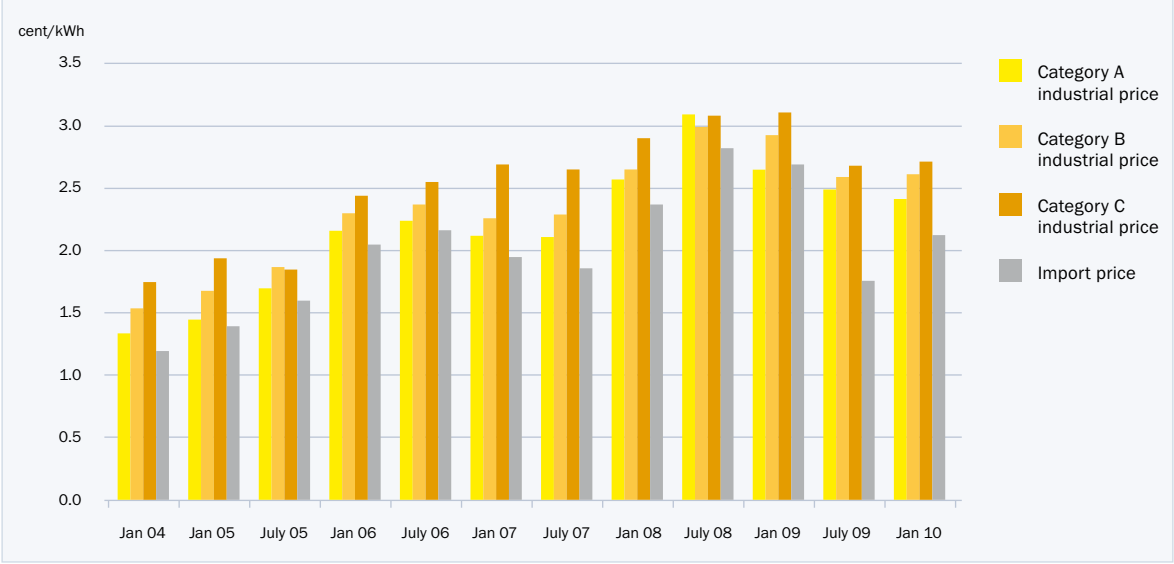


Figure 72: *Import and industrial prices on selected reporting dates*
Sources: E-Control and Statistics Austria

An international comparison of industrial gas prices is not possible during the current reporting year as Austria has not provided Eurostat with the required price data.[63]

ASSESSMENT OF AUSTRIAN GAS COMPANIES' MARGINS

As with regard to the electricity market, in 2009 E-Control collaborated with consultants Frontier Economics on a study of margins in the gas industry over time. This was aimed at arriving at an assessment of the range of potential margins achievable with different procurement strategies. When modelling a variety of procurement strategies a purely conservative strategy employing long-term contracts was first taken as a base scenario. Procurement exclusively on spot markets was also taken as a reference scenario. This is still a hypothetical procurement strategy in the case of the gas market, as the liquidity of the products traded on the markets is not yet regarded as sufficient to permit the replacement of long-term contracts.

Three scenarios were used to model the typical procurement strategies, and sensitivity analyses were performed on each scenario.

Procurement strategies modelled

Scenario 1: conventional procurement
Procurement is entirely via conventional supply chains. Domestic producers and exporters sell to importers or companies for the long-distance transport of gas on the basis of long-term supply contracts and oil price formulas. The latter pass on their purchasing terms to the distributors. A central task of the importers is that of adjusting their relatively rigid procurement portfolios to the volatile conditions on their sales markets. According to the traditional approach they have two instruments at their disposal:

> Flexibility under supply contracts

It was assumed that a degree of flexibility is built into the quantities of gas procured. Since Austrian gas imports largely rely on Russian gas there is little contractual flexibility. However, it was assumed that in winter the contractual procurement volumes can be up to 10% higher than the annual average (given baseload contracts). Accordingly, it was likewise assumed that procurement in summer can be scaled down by as much as 10%.

[63] Austrian transposition of the new annexes to Directive 90/377/EEC has not yet been completed. In the absence of a legal basis it has not been possible to collect and process the data in accordance with the new methodology.

> Storage

During the summer, quantities in excess of consumption are injected into storage for withdrawal in the coming winter. The assumed contractual swing reduces the quantity of gas that needs to be stored and hence also average procurement costs. The volumes withdrawn from storage in winter were valued at the average summer procurement price.

Scenario 2: partly market-based procurement

As with scenario 1, flexible procurement is assumed. Account is taken of the emerging procurement opportunities on international markets. The adoption of structured procurement (i.e. the optimisation of procurement portfolios by adding a number of components) takes place by including some gas procured on the market in the mix. Scenario 2 assumes that contractual procurement is supplemented by additional baseload contracts that meet 20% of annual requirements.

Scenario 3: market-based procurement

This scenario is entirely based on the day ahead prices at the TTF. In view of the current workings and illiquidity of short-term gas markets (e.g. in Austria), this is a reference scenario and should not be regarded as a realistic procurement strategy but as a potential future option, e.g. if liquidity at the CEGH increases.

Selected gas suppliers' monthly gross margins resulting from these procurement strategies were calculated. The gross margin is revenue less procurement costs (for each strategy) and flexibility costs (storage and balancing energy costs). This means that the gross margin also covers marketing costs and the second-level wholesalers' margins where applicable. The revenue was calculated by taking the energy prices charged by the companies to an average household consumer (15,000 kWh/year), less the general discounts received by all customers.

Results

With one exception, the average imputed gross margins were positive in 2009. On the basis of the "conventional procurement" scenario, the observed gross margins range between zero and € 13 per MWh.

Narrower range of gross margins than on the electricity market

Since the modelling of procurement options differs from supplier to supplier, if only because of the varying seasonal demand profiles, the differences in the margins largely reflect those in suppliers' retail prices. It is striking that the suppliers' ranges of margins only partly overlap, and it would appear that the differences in the suppliers' gross margins are not entirely explained by varying procurement strategies.

According to the calculations, in 2009 a conservative procurement strategy (exclusively based on long-term contracts) led to higher gross margins than one including the purchase of futures contracts (six to 18 months ahead), as the slump in spot prices did not occur until late 2008. A very short-term approach to procurement, entirely based on spot buying, yielded the highest margins in 2009.

Procurement portfolio optimisation using the short-term markets (e.g. month ahead contracts) would probably have resulted in rising margins in 2009, due to the price trend at the European trading hubs. However, such a strategy would not be realistic in Austria at present because of the illiquidity of the spot markets.

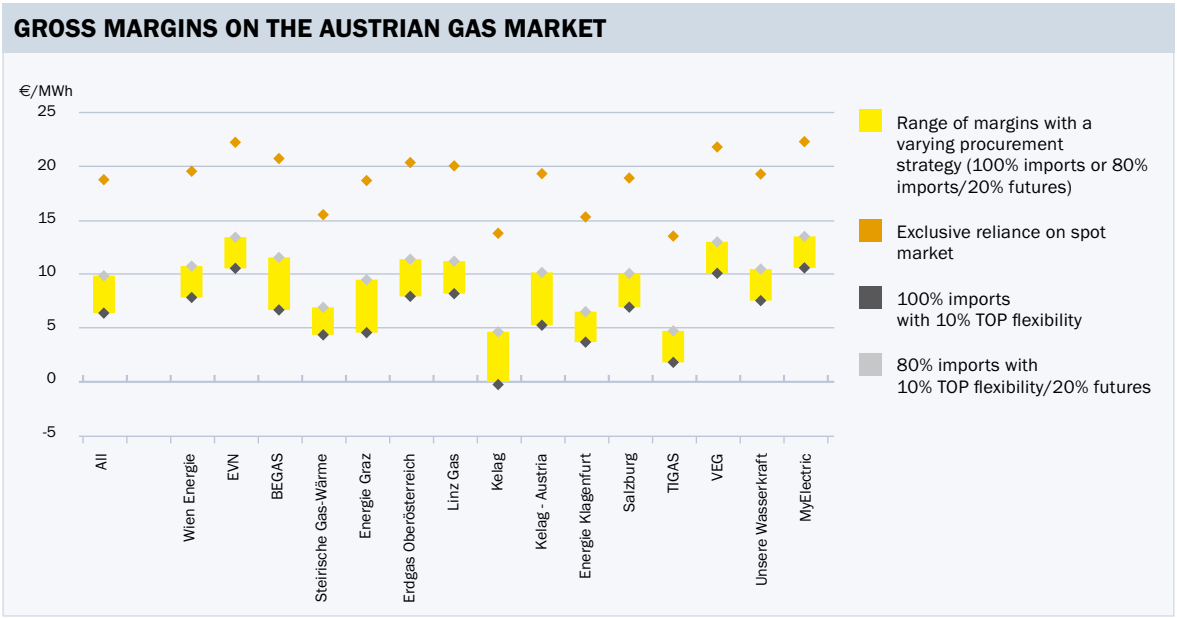


Figure 73: *Evolution of gross margins in the gas industry*
Sources: E-Control and Frontier Economics

SUMMARY OF GAS MARKET DEVELOPMENTS

Following a strong run-up during the year to August 2008, the average gas import price fell heavily before rebounding in June 2009.

The wholesale gas markets are undergoing major changes. Due to declining gas demand in Europe, climbing shale gas production in the USA, causing a reduction of European exports to the US, and the linkage of the two markets via the LNG trade, a gas glut has emerged at the European hubs — especially the NBP — and prices have come under pressure as a result. These factors have led to the following key developments:

Wholesale gas markets in transition

- The delinking of price trends on the gas spot markets from oil price movements;
- Significantly lower prices on the short-term markets than those established by long-term contracts;
- In consequence, some changes to price indexation clauses and the offtake flexibility built into long-term contracts.

The extent to which Austrian gas consumers benefitted from these changes on the procurement markets varied. Industrial consumers have been accorded considerably larger price reductions than small consumers. Indicators such as switching rates suggest that competition has intensified in the industrial segment.

Austrian household and other small consumers continue to derive little benefit from the changes on the wholesale market. Lack of product innovation, low switching rates despite sharp prices increases in 2008 and high potential savings indicate that competitive intensity has not increased in the small consumer segment.

Due to its geographical location Austria has a weaker hand than, for example, Germany and the Netherlands with regard to procurement diversification. New transport corridors like Nabucco, action to overcome congestion, and increased connections in the European transport grid would open up additional procurement markets and stimulate competition. Western Europe already has liquid trading points, and it would be possible to make greater use of these to supply Austrian consumers. This depends on overcoming contractual congestion by introducing better congestion management methods and on eliminating physical congestion by implementing network development projects.

Need to strengthen CEGH

CEGH also needs to be strengthened. Developments in other member states such as Germany and the Netherlands have shown that using all additional gas procurement sources increases liquidity at the trading points. This involves drawing on transit and domestic production as well as balancing energy. The Austrian separation of transits from domestic transports greatly reduces trading options.

PRO-COMPETITIVE MEASURES

Market abuse proceedings

Under section 10(1)(1) Energy Regulatory Authorities Act E-Control is responsible for competition oversight of all market participants including system operators, particularly with regard to non-discriminatory treatment. If E-Control detects abuse it is required to take all necessary steps to restore compliance with the law without delay.

During the period under review there were fewer abuse proceedings than in previous years. Some cases of companies' abusing their market positions were resolved informally. We were often able to prevail on market participants to observe the law without initiating proceedings.

In the gas industry — in contrast to the electricity sector — section 10(1)(2) Energy Regulatory Authorities Act makes E-Control responsible for the oversight of unbundling. We initiate abuse proceedings in cases of breaches of the unbundling rules.

There were three abuse proceedings related to companies' corporate structures during the period under review. Articles 9(1), 13(1) and 15(1) Directive 2003/55/EC (Gas Directive) establish the following requirements: where the transmission or distribution system operator is part of a vertically integrated undertaking, it must be independent at least in terms of its legal form, organisation and decision making from other activities not relating to transmission or distribution. The Note of DG Energy & Transport on Directives 2003/54/EC and 2003/55/EC on the internal market in electricity and natural gas takes the view that it is impermissible for a system operator to control the related supply/generation company. As section 2.1 of the Note puts it: "A situation where the network company maintains 'control' of the related supply/generation company is incompatible with functional unbundling and, therefore, not permissible under the new directive…" "The company involved in the network business shall not be allowed to hold shares of the related supply, production or holding company. If the network company holds such shares, it has a direct financial interest in the performance of the related supply branch and, as a consequence, its management is no longer capable of 'acting independently'." The corporate structure of the three companies against which proceedings were instituted now complies with the law, and in consequence the proceedings were dropped.

Gas competition initiative

The gas competition initiative was designed to dismantle barriers to entry to the wholesale and retail markets and to improve information and transparency for consumers.

Improvements to procurement still insufficient

The biggest hurdle to functioning competition on the gas market is lack of access to a sufficiently liquid wholesale market. Congestion at all the interconnection points into Austria is still a major obstacle for new entrants to the retail market. This fundamental problem remains unresolved despite the many abuse proceedings initiated in order to force the allocation of unused pipeline capacity and the creation of the technical conditions for the establishment of a gas exchange. Access to border interconnection points is still blocked by contractual congestion while physical pipeline capacity often remains unused.

Legislation under the third package is required to improve the legal framework for the wholesale market. Without a virtual trading point and more efficient management of transmission system capacity, the CEGH gas exchange will find it difficult to keep up with developments on other European markets. Since gas is considerably cheaper on north European spot markets than supplies under long-term, oil price linked contracts, many Austrian gas consumers would benefit if it were possible to transport gas to Austria from the low price regions on a firm basis.

The issue of OMV and import contracts is also unresolved. OMV's pledge to withdraw from all its import contracts has still only partly been fulfilled.

Few commitments from the industry to improve the treatment of consumers

There is still little sign of a level playing field in the retail market. With the unbundling of incumbents' operations only fulfilling the letter but not the spirit of the law, incumbents still have plenty of leeway to discriminate in favour of fellow group companies. Although compliance programmes are in place, they have not put a stop to such practices on account of their vague wording.

Simple improvements rejected

Proposed code of conduct rejected

To address this problem, E-Control and the Federal Competition Authority proposed codes of conduct for gas system operators and suppliers, setting out clear rules for the treatment of consumers. Unfortunately, even after extended negotiations it was not possible to persuade the gas companies to accept such a code for system operators, despite the clear benefits that this would have brought consumers.

Annual information sheet for consumers

Nevertheless, the gas system operators did agree to send consumers annual factsheets alerting them to the possibility of switching suppliers.

The authorities also suggested basing the design of gas bills on the sample format developed by E-Control. The Natural Gas and District Heat Association responded with a proposal based in part on the E-Control sample bill — a move which was welcomed by the Federal Competition Authority and E-Control. Whether this results in actual improvements for gas consumers will depend on how the template bill is implemented in practice.

It is highly regrettable that the gas companies cannot be persuaded to make more voluntary improvements for Austrian consumers. This shows that improvements to the legal environment are the only way to make such progress. The implementation of the third package is an opportunity for this.

HOLDINGS IN THE AUSTRIAN ELECTRICITY AND GAS INDUSTRIES

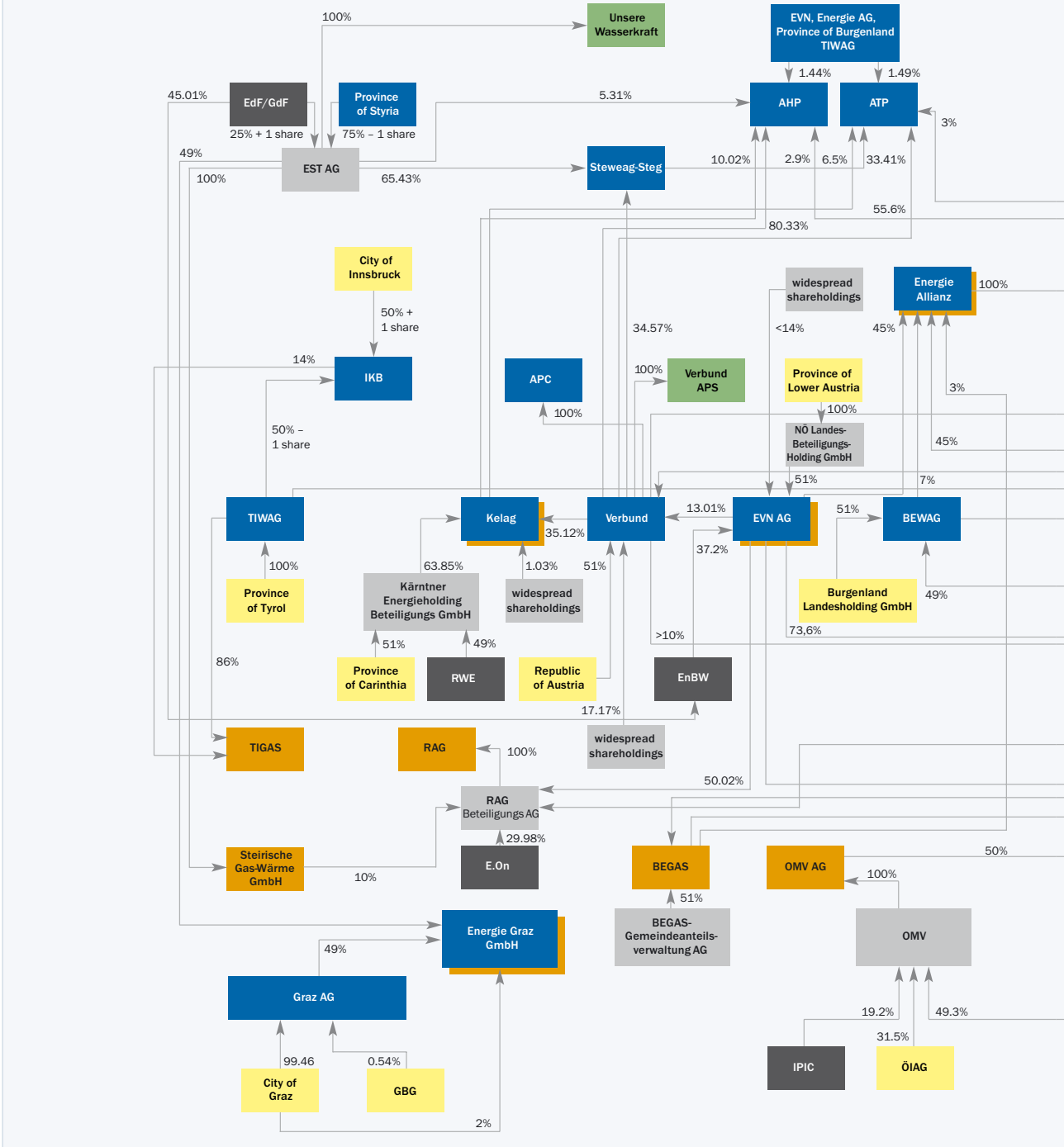
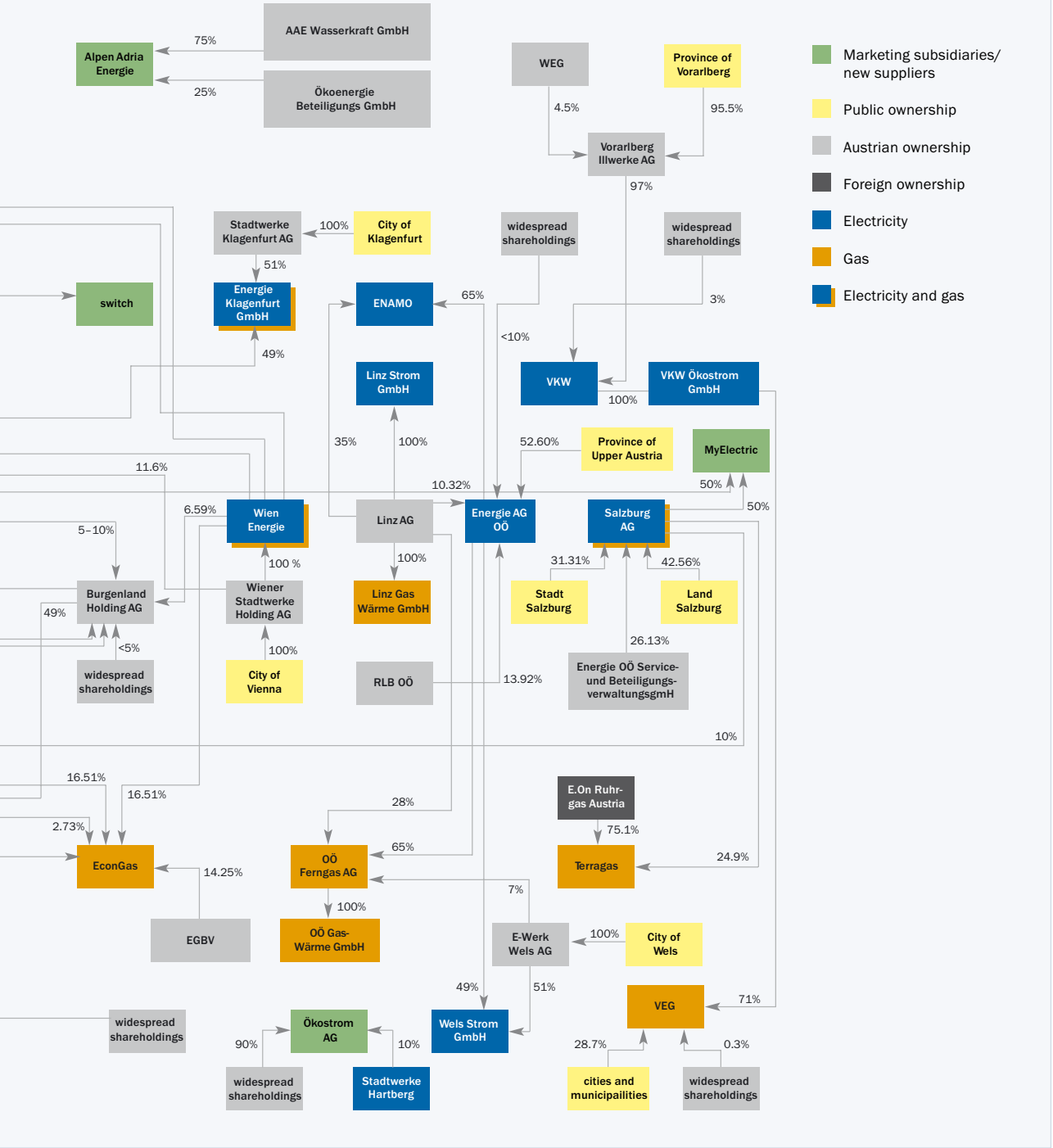


Figure 74: *Holdings in the Austrian electricity and gas industries*
Source: E-Control


AAE Wasserkraft GmbH
75%
Alpen Adria Energie
25%
Ökoenergie Beteiligungs GmbH
WEG
Province of Vorarlberg
4.5%
95.5%
Vorarlberg Illwerke AG
97%
Stadtwerke Klagenfurt AG
100%
City of Klagenfurt
51%
widespread shareholdings
widespread shareholdings
switch
Energie Klagenfurt GmbH
ENAMO
65%
3%
<10%
49%
Linz Strom GmbH
VKW
VKW Ökostrom GmbH
100%
35%
100%
52.60%
Province of Upper Austria
MyElectric
11.6%
10.32%
50%
50%
6.59%
Wien Energie
Linz AG
Energie AG OÖ
Salzburg AG
5–10%
100 %
100%
31.31%
42.56%
Burgenland Holding AG
Wiener Stadtwerke Holding AG
Linz Gas Wärme GmbH
Stadt Salzburg
Land Salzburg
49%
<5%
100%
26.13%
widespread shareholdings
City of Vienna
RLB OÖ
13.92%
Energie OÖ Service- und Beteiligungs-verwaltungsgmH
10%
16.51%
16.51%
28%
E.On Ruhr-gas Austria
2.73%
75.1%
EconGas
14.25%
OÖ Ferngas AG
65%
Terragas
24.9%
7%
100%
EGBV
OÖ Gas-Wärme GmbH
E-Werk Wels AG
100%
City of Wels
49%
51%
VEG
71%
widespread shareholdings
Ökostrom AG
Wels Strom GmbH
90%
10%
28.7%
0.3%
widespread shareholdings
Stadtwerke Hartberg
cities and municipailities
widespread shareholdings
Marketing subsidiaries/ new suppliers
Public ownership
Austrian ownership
Foreign ownership
Electricity
Gas
Electricity and gas

Security of supply: electricity

Section 20i(1) *Energielenkungsgesetz 1982* (Energy Intervention Powers Act 1982), as amended by FLG I No 106/2006 charges E-Control with monitoring the security of electricity supply with a view to preparing intervention measures. The information yielded by these monitoring activities may be used for long-term planning and the compilation of a report pursuant to section 14a Energy Intervention Powers Act.

The legal basis of the monitoring of security of supply is Article 4 Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003, which reads as follows:

"Member States shall ensure the monitoring of security of supply issues. Where Member States consider it appropriate they may delegate this task to the regulatory authorities referred to in Article 23(1). This monitoring shall, in particular, cover the supply/demand balance on the national market, the level of expected future demand and envisaged additional capacity being planned or under construction, and the quality and level of maintenance of the networks, as well as measures to cover peak demand and to deal with shortfalls of one or more suppliers."

In fulfilment of its duties under section 14a Energy Regulatory Authorities Act, FLG I No 106/2006, E-Control is obliged to prepare a report on the results of its monitoring activities under Article 4 Directive 2003/54/EC, and to publish it in an appropriate manner. The report may be compiled based on the activities pursuant to section 201 Energy Intervention Powers Act. It should be noted that the surveys conducted by E-Control must also be coordinated at European level and conducted by the various regulatory authorities, so as to enable forecasts of current and longer-term security of supply to be made. These national and European reports could thus lay the groundwork for further concerted action to safeguard supply security.

Electricity consumption and generation

Electricity demand up again

The growth in Austrian electricity demand lost steam in 2008. Longer-term growth has also slowed significantly. While final energy consumption increased by an annual average of 2.8% in the 1980s it has dropped to 2.01% and 1.7% per year, respectively, in the past two decades. Final electricity consumption (including the electricity consumption of the non-electrical energy sector) was 58,724 TWh (211,405 TJ) in 2008, and total domestic electricity consumption (excluding pumped storage) was 68.430 TWh. This trend reflected the close link between electricity demand and gross domestic product.

As of the end of 2008 Austria's total installed generating capacity stood at 20.7 GW, 59.7% of which was accounted for by hydropower, 35.4% by thermal power stations and 4.9% by "other" renewable generating stations such as wind farms and photovoltaic arrays *(Figure 75)*. As shown in *Table 14,* around 5,276 MW of the 7,348 MW of thermal generating capacity in place was at combined heat and power plants. Gross electricity generation at all plants totalled 68,645 GWh. Reasons for the fluctuations in generation include precipitation, which affects hydropower generation.

This compared with total domestic electricity consumption (excluding pumped storage) of 68,430 GWh in 2008. The difference between demand and generation was met by imports. Total physical imports amounted to 19,795 GWh — a year-on-year decline of 9.1% — while exports fell by 5.3% compared with 2006, to 14,934 GWh.[64]

[64] The balance of generation, consumption, imports and exports is influenced by generating efficiency (e.g. pumped storage stations) and system losses.

GENERATING CAPACITY AND OUTPUT IN AUSTRIA

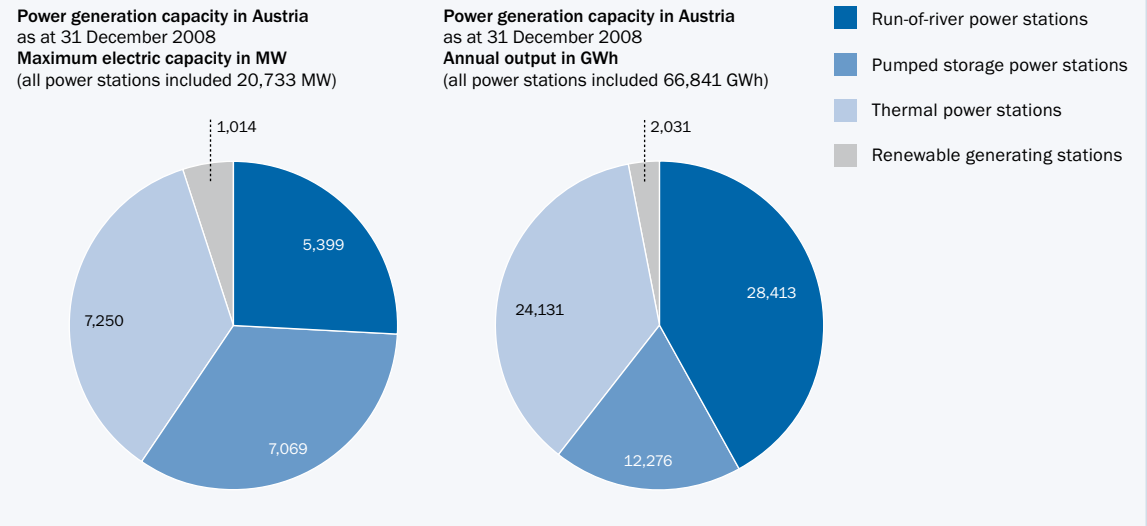


Figure 75: *Installed capacity in Austria: maximum capacity and generation*
Source: E-Control

CAPACITY OF THERMAL POWER STATIONS WITH/WITHOUT COMBINED HEAT AND POWER

	Thermal power stations with CHP		Thermal power stations without CHP
	Thermal capacity MW	Maximum electric capacity MW	Maximum electric capacity MW
Total	8,667	5,215	2,032

Table 14: *Capacity of thermal power stations with/without combined heat and power, 2008 calendar year*
Source: E-Control

In 2009 the annual peak load, measured by peak capacity on the third Wednesday of each month (excluding pumped storage), was 10,821 MW. *Figure 76* shows the evolution of annual peak load over time.

EVOLUTION OF ANNUAL PEAK LOAD (CONSUMPTION) IN AUSTRIA

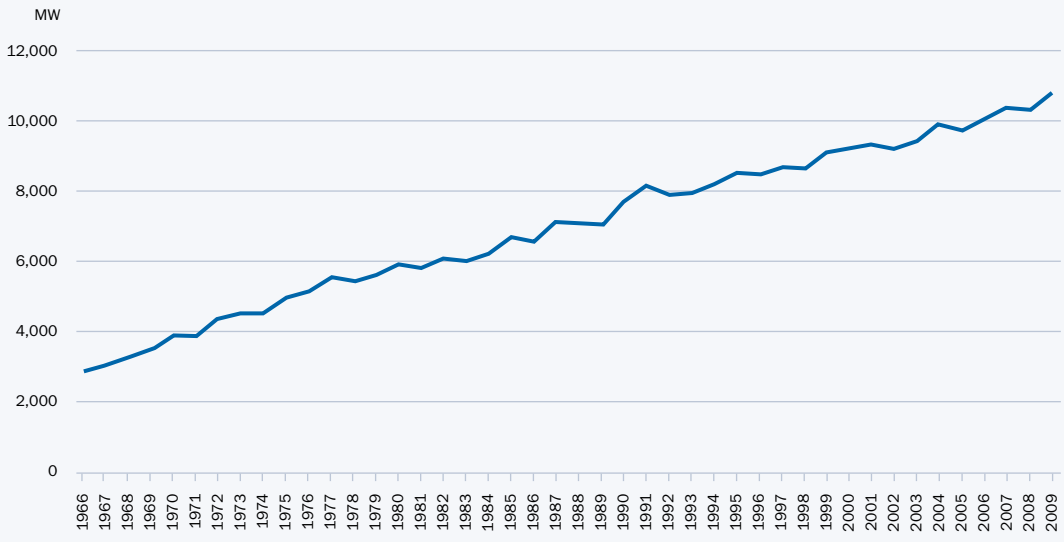


Figure 76: *Evolution of annual peak load (peak capacity on the third Wednesday of each month, excluding pumped storage) in Austria*
Source: E-Control

Forecast to 2018

Electricity consumption in Austria is forecast to grow by an annual average of 1.4% up to 2018, resulting in an increase of around 168 MW in the annual average peak load.

To judge security of supply in Austria up to 2018, it is necessary to compare future available generating capacity and peak loads.

Electricity generation is influenced by a variety of exogenous factors (e.g. temperatures, precipitation and water supply) and the market. This is reflected in inventories of fuel for thermal power stations and stored water at pumped storage generating stations. It is also necessary to take account of available generating capacity, which is lower than installed capacity due to factors such as maintenance turnarounds, shutdowns, failures and inventories.

EVOLUTION OF ANNUAL PEAK LOAD (GENERATION) IN AUSTRIA

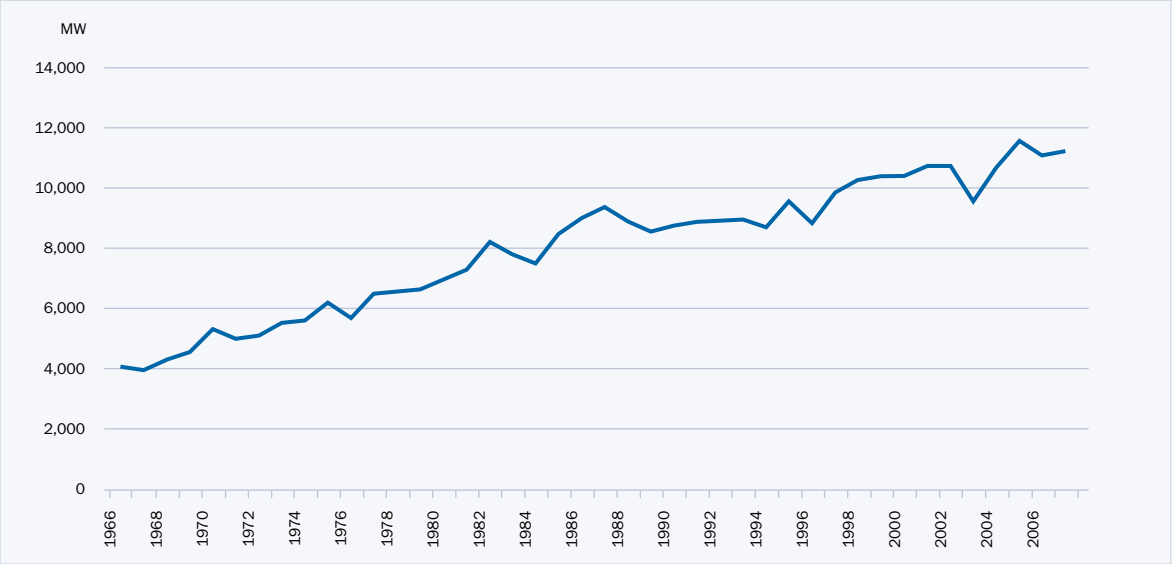


Figure 77: *Evolution of annual peak load in the Austrian generating industry*
Source: E-Control

Figure 78 captures the power station projects with a maximum installed capacity of at least 25 MW identified by the surveys. Unlike the 2006 monitoring report these studies were for the first time compiled fully under section 20i(1) Energy Intervention Powers Act. New capacity due for commissioning by 2018 amounts to some 5,347 MW, of which hydro generating stations account for 2,296 MW and thermal power stations for 3,050 MW. The forecasts do not include generating stations with capacities of less than 25 MW (apart from renewable generating stations).

Installed capacity is thus likely to expand by some 6,490 MW (including planned and forecast expansions, in particular at renewable generating stations) by 2018.

Heavy investment in power stations

To provide a comprehensive view, any capacity survey must also consider power station decommissioning. In general, the decision to decommission is based on whether a power station will cover marginal costs in the long run.[65] Changes in wholesale prices are the key factor here.

In the light of the forecast price trend in continental Europe, E-Control does not expect any major closures or mothballing of power stations up to 2017 due to market or other developments. This corresponds with the findings of a survey, conducted in connection with the *Energielenkungs-Datenverordnung* (Energy Intervention Data Order), for the period up to 2018 (excluding renewable generating stations). Hydropower is still subject to uncertainties due to the Water Framework Directive (2000/60/EC).

The analyses performed yield a forecast peak load of 12,015 MW in 2018, while the maximum output of the available power stations is seen at 15,830 MW.

[65] Power stations that no longer cover their marginal costs are held as reserve capacity in the short term and can be brought back into operation if required. Installed standby capacity in Austria currently totals 850 MW.

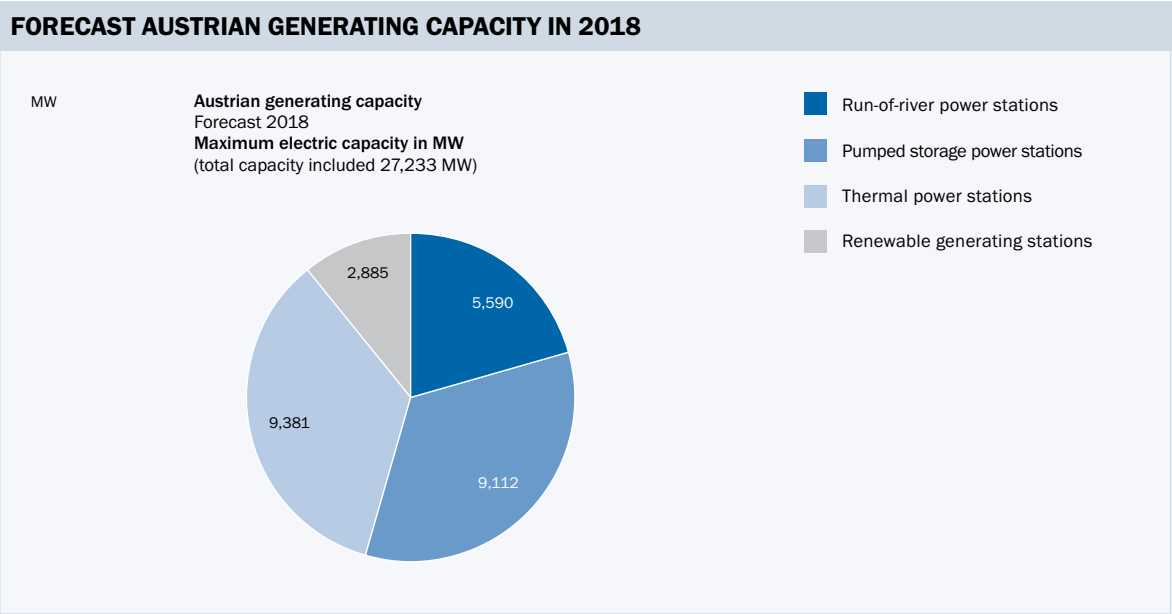


Figure 78: *Forecast generating capacity in Austria in 2018*[66]
Source: E-Control

Electricity supply security in ENTSO-E interconnected system until 2013

As Austria is part of the ENTSO-E system, domestic capacity is only part of the picture as regards security of supply. Generating capacity in the other ENTSO-E countries also has to be taken into account. The UCTE System Adequacy Forecast 2008–2020 indicates that electricity supply in the ENTSO-E area is secure until 2013, as available capacity exceeds the safety margin assumed to be adequate by 38.3 GW under scenario A and by 48.4 GW under scenario B.

Electricity networks

The interconnected high (110 kV) and ultra-high voltage (220/380 kV) networks, to which the large generating stations are linked, are the basis of the power supply system. The functions of the 220/380 kV networks include supraregional electricity transmission, balancing, contributing to overall grid reliability and maintaining an uninterrupted supply of electricity to connected consumers and the downstream 110 kV networks. The 220/380 kV networks are thus the backbone of the 110 kV systems.

The Austrian ultra-high voltage network is well integrated with the European interconnected grid. Within Austria, it forms the link between the various 110 kV grids, which are mostly galvanically and electrically isolated from each other (by transformer substations) for technical and operational reasons. This is particularly important in situations where mutual assistance is required.

[66] With regard to the power station projects included in the forecast, it should be noted that the probability of all the projects identified being implemented was assumed to be 100%.

The international links between the ultra-high voltage networks underpin security of supply and the functioning of a supraregional market. The long-term availability of sufficient cross-border transmission lines is thus of great importance, and attention must constantly be paid to their maintenance and expansion.

The key parameter when determining network capacity needs – given n-1 security – is rated transmission capacity, measured in MVA. Another fundamental principle of network planning is that of taking all the known exogenous variables into account – not least, because of the large amount of capital expenditure involved. The future development of the transmission networks will be driven by the steady increases in loads, infeed from power stations, changes in standby capacity (due to the construction of new generating stations and decommissioning of capacity), the growth of cross-border electricity trading and the need to maintain security of supply in Austria, as well as the above-average growth of electricity demand in urban areas. Network planning needs to be a dynamic process which adjusts to the constant changes in these variables.

The surveys pursuant to section 20i(1) Energy Intervention Powers Act resulted in only minor changes to the detailed descriptions of the 116 network development projects in the 2006 monitoring report; the VEÖ coordinated reporting on the projects in 2007. By steadily upgrading their networks, Austrian system operators are aiming to create infrastructure that meets the country's needs and is equal to the demands of a liberalised electricity market. The summary of projects and their status largely corresponds to the tables in the 2006 monitoring report.

The surveys confirm the previous findings, according to which the national high and ultra-high voltage grids will require constant maintenance and expansion over the next few years. Attention needs to be paid to the fact that rapid completion of the necessary approval processes – especially those relating to expansion of the ultra-high voltage grid – is critical to timely project execution.

Given implementation of all the planned infrastructure projects (power stations and lines), security of supply will be assured during the period under review (up to 2018).

Security of supply: gas

Supply/demand balance on the national market

Around 80% of supply comes from imports. Previously, import levels were usually comparatively constant, except in summer when additional volumes are required to refill the storage facilities. This pattern is increasingly giving way to more pronounced seasonal variations, with a tendency for imports to fall in winter and rise in summer. The imports pass through the Baumgarten and Oberkappel entry points, with the former handling around 80% of the total. Lower imports in winter are compensated for by additional storage capacity *(Figure 79)*.

AUSTRIAN NATURAL GAS SUPPLY AND DEMAND BALANCE

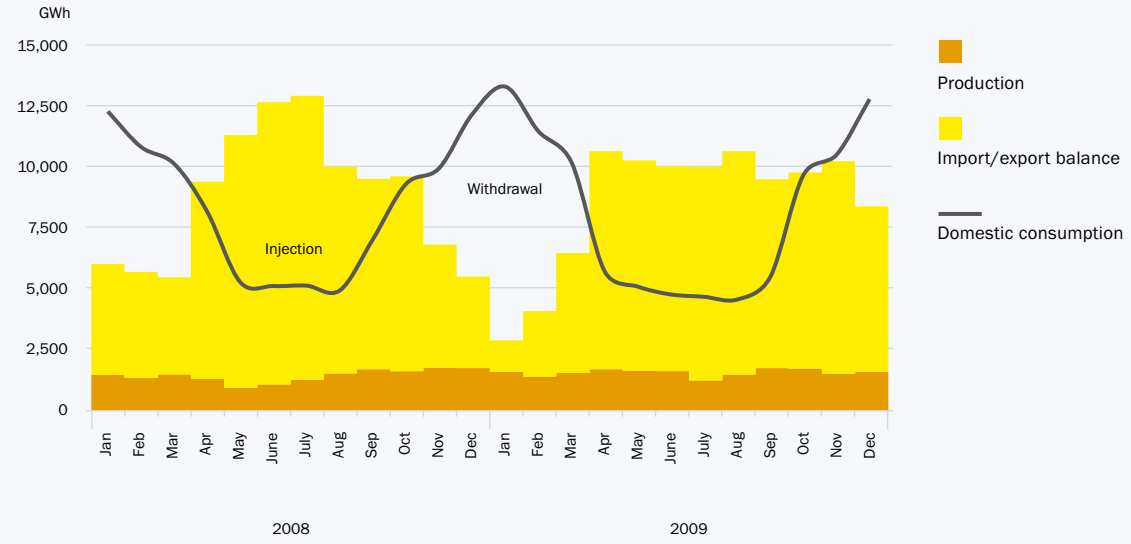


Figure 79: *Natural gas supply and demand in Austria, 2008 and 2009*
Source: E-Control

Austria has two domestic gas producers – OMV Austria Exploration & Production GmbH and Rohöl-Aufsuchungs AG (RAG). Some 1.6bn N cu m of natural gas[67] were produced in 2009 – equal to about 20% of domestic consumption. OMV Austria Exploration & Production contributed about 85% of total output *(Table 15)*. As at 1 January 2009 the two companies' combined proven and probable reserves totalled 27.9bn N cu m.

[67] Including associated gas

NATURAL GAS PRODUCTION IN AUSTRIA			
	m N cu m	%	% change vs 2008
OMV Austria Exploration & Production	1,341	84.9	9.6
Rohöl-Aufsuchungs AG	239	15.1	-25.4
Total	1,580	100.0	2.4

Table 15: *Austrian natural gas production in 2009*
Source: Geologische Bundesanstalt (Geological Survey of Austria), http://www.geologie.ac.at

Shifts in gas demand are mainly driven by outdoor temperatures and power station use, while industrial demand provides a relatively steady baseload. Supplies to households, small and medium-sized enterprises and large-scale industry are always sufficient, so all in all supply and demand are well balanced.

In 2009 about 80% of all physical gas imports were re-exported. Of the physical imports of some 37.9bn N cu m, only about 8.2bn N cu m were destined for the Austrian market. The lion's share of the physical exports – about 21.7bn N cu m in 2009 – went to Italy *(Table 16).*

PHYSICAL IMPORTS AND EXPORTS				
	Imports		Exports	
	in GWh	in m cu m	in GWh	in m cu m
Germany	57,793	5,183	34,008	3,053
Switzerland	–	–	678	61
Italy	–	–	241,388	21,669
Slovenia	–	–	18,503	1,661
Hungary	–	–	37,700	3,384
Slovakia	364,672	32,735	6,190	556
Czech Republic	311	28	–	–
Total	422,722	37,946	338,467	30,383

Table 16: *Physical imports and exports, 2009*
Source: E-Control

Forecast demand and available supplies
The demand projections shown in *Figure 80* are derived from a forecast by the control area manager AGGM. The estimates are based on demand growth forecasts for small consumers and on specific projects. The results of a survey of balancing group representatives suggest that in the long run, supply will not be sufficient to meet demand growth. However, it can be taken that supply will be expanded as soon as the size of the shortfall has been determined. New suppliers or sources of supply may be called on, so network flexibility, especially regarding entry points, will need to be borne in mind when planning infrastructure developments.

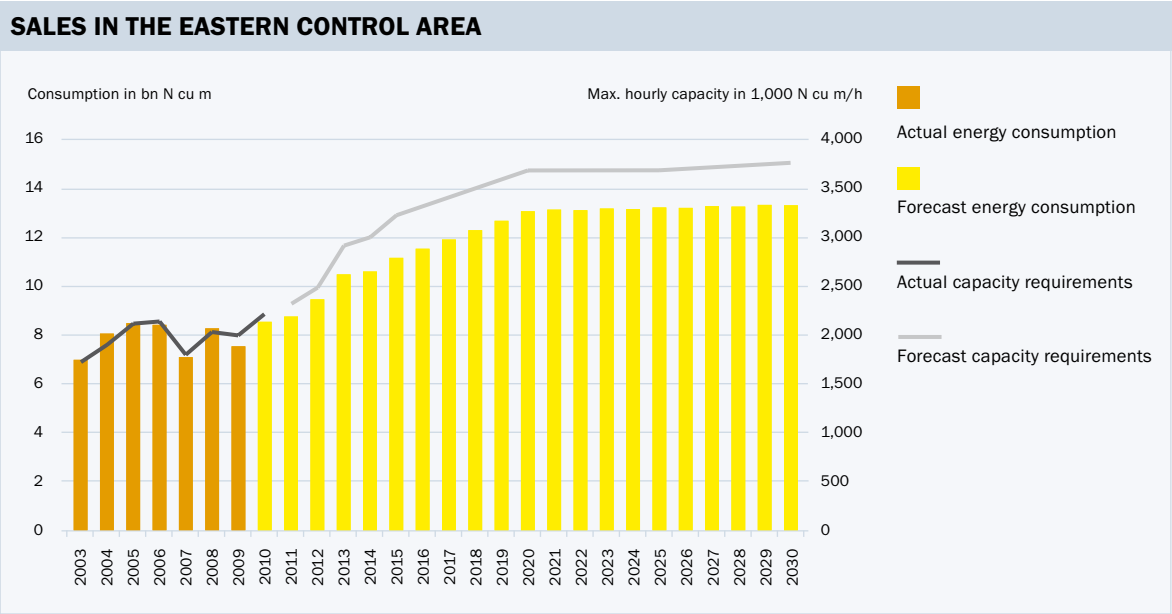


Figure 80: *Forecast maximum hourly capacity and demand in the Eastern control area*
Source: AGGM/NK-K, May 2010

Additional capacity planned or under construction

New infrastructure developments must form part of the AGGM long-term plan, which has the following goals:

- Coverage of the demand for transportation capacity to supply end users, and preparedness for emergency scenarios;
- A high level of transportation capacity availability (adequate infrastructure to maintain security of supply);
- Sufficient transportation capacity for “other shipments”.

The following pipeline projects are currently at the planning or construction stages

- On schedule
  - Expansion of the primary distribution system and additional compressor stations
  - *Südleitung* (southern line)
  - G00 122 (Schwechat-Mannswörth)
- Delayed
  - *Westleitung* (western line) (delayed by four months)
- No capacity expansion or network development contracts
  - Carinthian line
  - HDL 100 (Puchkirchen-Friedburg)
  - Gratkorn-Werndorf

The halt to Russian gas supplies via Ukraine in January 2009 highlighted the need for the European transmission grid to be capable of transporting gas in the reverse direction to the normal flow. Prompted by the need to increase the resilience of the European gas grid and for economic stimulus (European Energy Programme for Recovery), GTE+ drew up a report on the main potential reverse flow projects. The following projects of this type are being implemented in Austria *(Figure 81):*

> New WAG compressor and metering station in Baumgarten;
> Expansion of the OMV Gas primary distribution system and interconnection with the TAG;
> Upgrading of the Überackern metering station;
> Upgrading of the TAG compressor and metering stations.

REVERSE FLOW PROJECTS

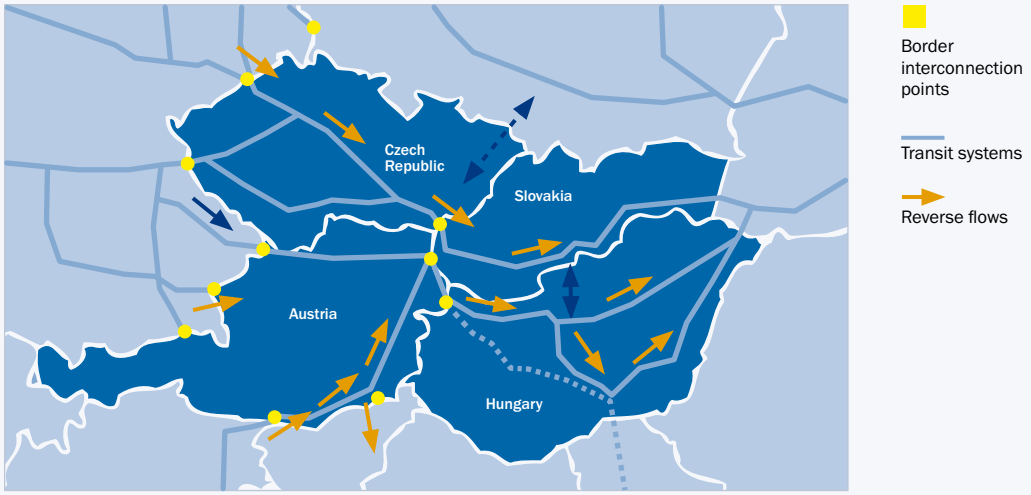


Figure 81: *Reverse flow projects in central Europe*
Source: GTE+

Quality and level of network maintenance

When operating and maintaining their networks, system operators are required to comply with the relevant technical rules (the ÖNORM and ÖVGW standards). A study[68] commissioned by E-Control gives a comprehensive account of the minimum requirements for safe and reliable gas network operation.

The technical quality of network services largely depends on that of the operation and maintenance of the networks concerned. Key aspects are supply reliability, gas quality and operational security of supply (network operation, maintenance and dispatching). The aim is to ensure that the right quantity of natural gas of adequate quality, and at the specified operating pressure, is delivered to customer installations without interruption.

In fulfilment of its duty to monitor the quality of the network services provided by Austrian gas distribution system operators, E-Control surveys indicators of technical quality. Chapter XII(3) of the general terms and conditions of distribution system operators requires system operators to publish such indicators for the preceding calendar year annually, on 1 March.

Only a small minority of system operators had significant supply interruptions during the year under review. In some cases small system operators with only a few metering points at grid level 3 recorded higher outage levels, as here even a very low absolute number of supply interruptions – which may not be fully statistically representative – can lead to high relative figures.

[68] G. Kiesselbach, TÜV Austria, Zusammenstellung von allgemein gültigen Mindestanforderungen an einen sicheren und zuverlässigen Gasnetzbetrieb entsprechend den gesetzlichen und technischen Rahmenbedingungen in Österreich (Survey of general minimum requirements for safe and reliable gas system operation according to the legal and technical conditions in Austria), December 2005. German only. Download at http://www.e-control.at/de/publikationen/publikationen-gas/studien/gasnetzbetrieb

Leaving aside a statistical outlier, the proportion of metering points affected by unplanned supply interruptions was about 1% at some system operators, but well below this level at most others.

Action to meet demand peaks and to deal with outages of one or more suppliers

Due to the hourly schedule processing system in Austria, every supplier is obliged to meet its end users' hourly peak demand precisely. There is also a well-functioning balancing system, capable of correcting imbalances – which are not always avoidable – efficiently.

In principle, all consumers have equal priority, but it can be assumed that at peak times there would not be enough gas and transportation capacity to supply all customers simultaneously — especially when all the gas-fired power stations were operating at full load. As the supply options are limited, congestion management is performed by adjusting shipments to power stations. The demand peaks of households, small and medium-sized enterprises and industry can always be accommodated.

Raft of measures to maintain security of supply

The routine balancing system is only capable of compensating for a small part of any shortfalls caused by supplier outages, and in such cases there is provision for a range of congestion management measures, selected according to the extent and duration of under-supply. Section 12g Natural Gas Act requires the control area manager to prepare and implement an action plan in consultation with the affected transmission system operators, transportation rights holders, balancing group representatives, suppliers, clearing and settlement agents, and operators of storage facilities and production systems in the event of a short or medium-term supply shortfall.

Provision is made for statutory intervention if it is not possible to overcome a supply shortfall by means of market-based measures. To permit ongoing assessment of the supply situation and plan emergency intervention measures, since 2007 E-Control has been carrying out periodical comprehensive data surveys; the data is processed by ourselves and the control area manager.

Levels of storage capacity (gas storage)

The five gas storage facilities that are directly available to meet variations in the demand of Austrian consumers have a combined working gas volume of 4.54 Bcm and a total withdrawal capacity of 2.29m cu m/h *(Table 7).* Companies operating on the Austrian market can also use the Pozagas Lab 4 facility in Slovakia (620m cu m; 6.9m cu m/day).

Long-term gas supply contracts

The long-term contracts currently in place provide for:

> Approx. 7 Bcm/year of Russian gas from Gazprom Export;[69]
> Approx. 1.2 Bcm/year of Norwegian gas;[70]
> Smaller quantities from German suppliers.

As announced in press releases[71] in 2006, new Russian gas import contracts to run until 2027 were concluded by Gazprom Export, and EconGas, GWH Gashandel GmbH and Centrex. GWH Gashandel GmbH is a pure wholesaler and sells the gas, under the same flexibility conditions, to Kelag, Steirische Gas-Wärme GmbH and Erdgas Import Salzburg AG. The same market players have import contracts with Norwegian suppliers. We have no knowledge of other import contracts.

[69] See APA ots news, 29 September, 2006
[70] See Norwegian Petroleum Directorate, http://www.npd.no/en/Publications/Facts/Facts-2009/; Chapter 6, Norwegian gas exports, p. 49
[71] See OMV press release dated 29 September 2006 on www.omv.com

Regulatory frameworks designed to provide adequate incentives for investment

Section 19a(2) Natural Gas Act creates an incentive to invest in transportation infrastructure by providing for network development contracts. These are reciprocal obligations on the part of system users and operators in the interests of increased planning certainty for transmission pipelines and other investments. Investment security also depends on the approval of the projects concerned by the E-Control Commission as part of the long-term plan which section 12b Natural Gas Act requires the control area manager to draw up. This procedure assures system operators of regulated tariffs adequate to finance their investments and means that system operators and consumers can rely on projects' being implemented.

Russian supply cut-off

Market-based measures sufficient to cope with the crisis

This section looks at the impact of the interruption of Russian gas supplies in January 2009 and the action taken in response to it. On 6 January 2009 imports of Russian gas arriving in Baumgarten fell sharply, and only about 10% of the usual quantity was received. This affected supplies to the Eastern control area and all downstream transmission systems running through Austria (e.g. the TAG pipeline to Italy, the WAG and Penta West to Germany, and the HAG to Hungary).

There was a complete halt to Russian gas imports into Baumgarten from 00:00 on 7 January 2009 until 17:00 on 20 January. The entire 60–70m cu m per day of natural gas that travels via Baumgarten to Germany, Hungary, Italy and Slovenia was also hit by the shutdown, with all of the deliveries suspended.

Full deliveries resumed at about 19:00 on 20 January. Imports from Germany to the Oberkappel, Tyrol and Vorarlberg entry points were not affected.

Throughout the critical period, demand in the Eastern control area was met by market-based measures. Peak demand was almost 2.1m cu m/hour on 13 January 2009.

SUPPLY REDUCTIONS AT ENTRY POINTS AND DAILY PEAK DEMAND			
	% import curtailment, Oberkappel/Baumgarten	Peak demand in m cu m/h	Emergency response measures
06/01/, 16:00	0/33		Activation of crisis management
07/01/	0/100	1.85	
08/01/	0/100	1.90	Market based measures
09/01/	0/100	1.93	
10/01/	0/100	1.74	
11/01/	0/100	1.74	Mobilisation of additional balancing energy and storage capacity at Haidach
12/01/	0/100	2.03	
13/01/	0/100	2.06	
14/01/	0/100	2.01	Increase in imports from Germany
15/01/	0/100	1.85	
16/01/	0/100	1.77	
17/01/	0/100	1.58	
18/01/	0/100	1.47	
19/01/	0/100	1.74	
20/01/	0/0	1.66	

Table 17: *Reductions in supplies to entry points and peak daily demand in the Eastern control area during the outage*
Sources: OMV Gas and AGGM

Impact of the outage on gas supplies

The two-week halt to Russian gas imports into Baumgarten demonstrated that Austria can cope with a situation like this without resorting to emergency intervention measures and curtailing supplies to consumers in the Eastern control area, provided that full use is made of all available market mechanisms. Austrian consumers' supplies were not cut off at any time. The gas supply options that enabled maintaining security of supply in Austria at all times by way of market based measures are discussed in more detail below.

Importation of gas from the Haidach storage facility: Unused storage capacity held by Gazprom Export at the Haidach gas storage facility – which is located in Austria but is not connected to the domestic gas grid – was made available to the Eastern control area at short notice by importing gas via the German grid. The storage capacity was provided as a replacement for the deliveries from Gazprom Export that were held up by the supply disruption.

Increased imports from Germany via Oberkappel: All the suppliers imported additional quantities, purchased on the German markets, via the Oberkappel entry point. The imports via Oberkappel were handled using feed-in capacity reserved before the crisis.

The following demand side measures helped manage the supply outage:

Switching to substitute fuels by gas-fired power stations: Power station operators made arrangements to switch gas-fired generating untits to substitute fuels (oil and coal) wherever possible.

District heating fuel substitution: The Vienna district heating system took broad-based voluntary action to substitute gas by other fuels.

Coordination of domestic gas flows by the control area manager: The control area manager of the Eastern control area, AGGM, played a key role in coordinating domestic gas flows and in maintaining network stability by calling off balancing energy. AGGM based its activities on the survey data collected and analysed under the *Erdgas-Energielenkungsdaten-Verordnung 2006* (Natural Gas Intervention Data Order 2006). Additional information exchanges were carried out at short notice, in close cooperation between government bodies, the regulator, market participants and AGGM.

Gas market operational during the crisis

The Austrian balancing group system and balancing market remained fully operational throughout the crisis. The difficulties faced by some balancing groups in procuring gas supplies as a result of the import constraints were overcome by mobilising additional balancing energy. The balancing energy suppliers increased their offers under the merit order list system, especially during the low load hours. In addition, balancing energy was offered – and requested when the need arose – by fax. It is interesting that the situation eased considerably after the "critical" 12 January, when AGGM called off all the balancing energy offers for much of the day. The balancing groups were able to mobilise additional quantities of gas after that, meaning that they met more of their customers' needs themselves, and less physical balancing energy was required during the second week (14–20 January) *(Figure 82).*

PHYSICAL BALANCING ENERGY OFFERS

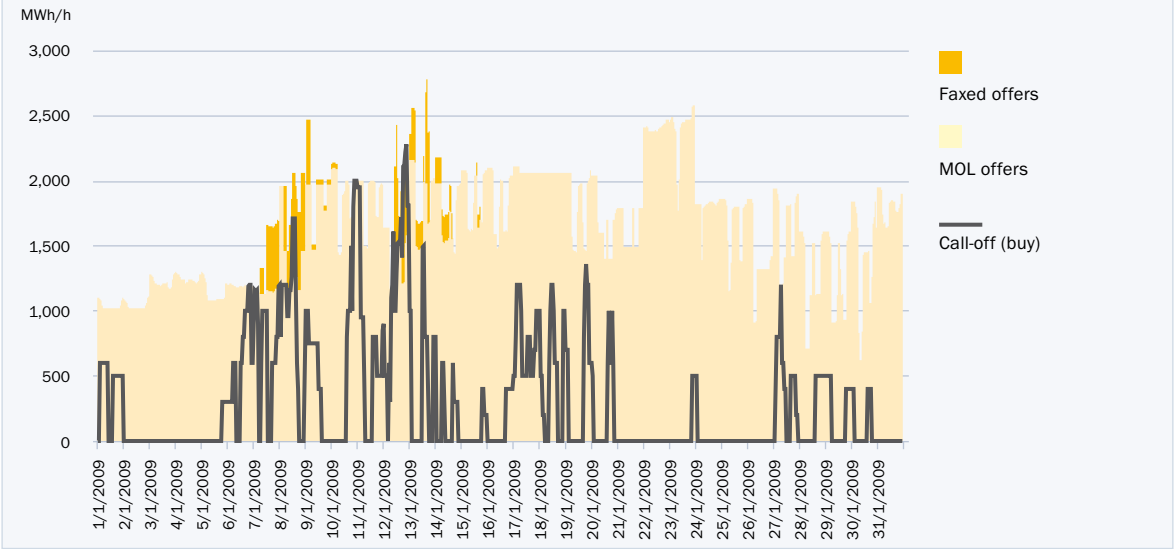


Figure 82: *Physical balancing energy offers: offers vs call-offs by the control area manager*
Source: AGCS

Action by E-Control to improve emergency preparedness

In 2009 E-Control continued to prepare for potential energy emergencies and monitor the supply situation closely. The gas supply cutbacks in January 2009 highlighted the importance of these activities.

Extended forecasting and monitoring powers required

The experience gained in January 2009 revealed a need to expand our forecasting and market monitoring activities, and E-Control therefore amended the Natural Gas Intervention Data Order 2006 with effect from 1 July 2009. The main purpose of the amendments was to permit the imposition of extended reporting duties as soon as a significant gas import curtailment is identified; previously, the prior enactment of an emergency intervention order had been required. In the event of an import cutback of over 40%, E-Control can now impose extended reporting duties on transmission companies, large consumers, operators of gas-fired power stations, and balancing group representatives. Trial data transfers were successfully carried out on 18 November 2009.

In the interests of increased transparency, a gas industry emergency response manual has been compiled outlining the principles and organisational procedures to be observed by the government authorities and market players entrusted with the formulation, coordination and operational implementation of intervention measures under the Energy Intervention Powers Act. The concrete procedures for curtailing gas use by large consumers (power stations and industrial consumers) in the event of an outright gas crisis were discussed with the companies concerned and revised in the light of the experience acquired in January 2009 and improved monitoring by E-Control.

On 3 November 2009 we held an event for large consumers at which they were informed about the emergency procedures and the related tasks and duties.

We carried out another emergency response exercise during the year. The exercise, which took place on 1 December 2009, focused on simulating reductions in gas use by large consumers (two industrial companies and three power station operators) in a crisis scenario; AGGM and the system operators concerned took part.

Thanks to the extensive preparations undertaken and the refinements made to the system, Austria will be even better placed to cope with future gas shortages.

Public service issues

Licences and GTC

The operation of a distribution network is a licensed activity. Where a distribution system operator is part of a vertically integrated undertaking and over 100,000 consumers are connected to its network, it must be independent, at least in terms of its legal form, organisation and decision making, from other activities not related to distribution.

All amendments to DSOs' general terms and conditions (GTC) are subject to the approval of the E-Control Commission. DSOs must amend their GTC at the Commission's request where this is necessary to achieve a competitive market. The Commission may attach conditions to the approval of GTC.

Suppliers of consumers are obliged to join a balancing group and to conclude data exchange agreements with the representative of the balancing group whose members they supply, system operators whose networks their customers are connected to, and the clearing and settlement agent responsible.

The GTC for electricity or gas supply must be submitted to the regulator before they come into effect and before any amendments are made. The use of unethical or illegal terms and conditions may be prohibited.

Labelling

Details of the mix of fuels used to produce the electricity supplied to consumers must be given in percentages on electricity bills. This power labelling information must be presented in a clearly legible manner.

It must include information as to the primary energy sources used to generate the electricity, the time and place of generation, and the name and address of the generator. The evidence supporting these disclosures must be independently audited.

Annex A

If information is given on the electricity or gas energy price together with the system charges, electricity and gas are advertised together, contracts are offered for both, or both are to be jointly invoiced, then the components of the system charges, surcharges for taxes and levies, and energy price must be itemised in a transparent manner.

The energy price payable for a kilowatt-hour of electricity or gas must be stated on bills, in suppliers' GTC, and in contracts.

Price changes and amendments to GTC must always be notified to customers in writing, in a timely manner. If a customer objects to a notified contractual amendment the contract may not terminate until after a notice period of three months from the last day of the operative month. This ensures that the customer has sufficient time to look for a new supplier. The customer must be served at the existing prices until the switch takes place.

The GTC for the supply of gas or electricity must, as a minimum, state the following:
> The name and address of the supplier;
> The services rendered and the service level offered;
> The expected time of the commencement of deliveries;
> The energy price in cent per kWh, including any surcharges and levies;
> The duration of the contract, the conditions for extending or terminating the services and the contract;
> The existence of a right to terminate the contract;
> Any arrangements for compensation or reimbursement in the event of non-conformity with the contractually agreed service level;
> Information on complaints procedures;
> The terms on which last resort supply (basic supply) is provided.

In the interests of transparency, the following information must be given on invoices:
> The meter readings applied to settlement of the account;
> The means of determining consumption (reading by the system operator, self-reading or statistical calculation);
> Energy consumption during the settlement period, itemised by tariff periods;
> The metering point administration number;
> The grid level to which the customer installations are assigned;
> The agreed or acquired extent of system use, stated in kilowatts (electricity) or kilowatt-hours (gas).

Electricity suppliers and system operators must inform customers of important contractual terms before concluding contracts. To this end information leaflets must be issued to customers.

As part of the gas competition initiative, the industry's agreement was obtained for sending consumers annual information sheets, introducing them to the relevant contractual structures and the option of switching suppliers.

Supplier of last resort

The *Energie-Versorgungssicherheitsgesetz 2006* (Energy Security of Supply Act 2006) is the first Austrian legislation to provide for a supplier of last resort, which assumes responsibility for ensuring that household consumers receive basic electricity supply.

A noteworthy aspect of the Act is the fact that every electricity retailer is deemed to be a supplier of last resort and must serve prospective customers in accordance with its valid general terms and conditions, and published rates.

The detailed arrangements with regard to the reasonableness of the basic supply obligation for suppliers and the rates must be established by implementing legislation at provincial level. All the provinces had implemented this provision of the Electricity Act by May 2009.

Some of the implementing legislation allows surcharges on the energy price to compensate suppliers for the "additional administrative burden" involved in serving such customers.

To the best of our knowledge no suppliers have yet made use of this possibility. In addition, customers wishing to take advantage of supplier of last resort service can be required to make deposits or prepayments. It is also possible to disconnect customers who are in default of payment despite reminders.

We have no information as to the number of consumers who are making use of supplier of last resort services, but it is safe to assume that very few are doing so.

Vulnerable customers

There are no regulated energy prices in Austria. However, there are some non-price-related forms of assistance targeted at various consumer groups, for which the federal and provincial governments are solely responsible.

A fundamental principle of the Austrian welfare state is that assistance must be carefully targeted and efficient and that support must go to those who need it while abuse of the system is prevented.

Disconnections

The systems designed to protect Austrian consumers from disconnections include both mandatory mechanisms established by legislative provisions and a variety of voluntary commitments made by suppliers.

The general terms and conditions of network access, which must be approved by the E-Control Commission, require at least a written reminder and notice of disconnection before a consumer can be disconnected for any reason whatsoever.

Another measure taken to protect vulnerable customers against disconnection is the option of agreeing instalment payments. To the best of our knowledge all the energy suppliers offer such payment methods to customers who are in arrears or are in danger of being so. In addition, a number of companies offer the installation of a prepayment meter. The System Charges Order 2010 for the first time introduced clear arrangements for the incidental expenses occasioned by prepayment meters.

We have no information on the number of disconnections for any reason whatsoever.

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Editorial

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