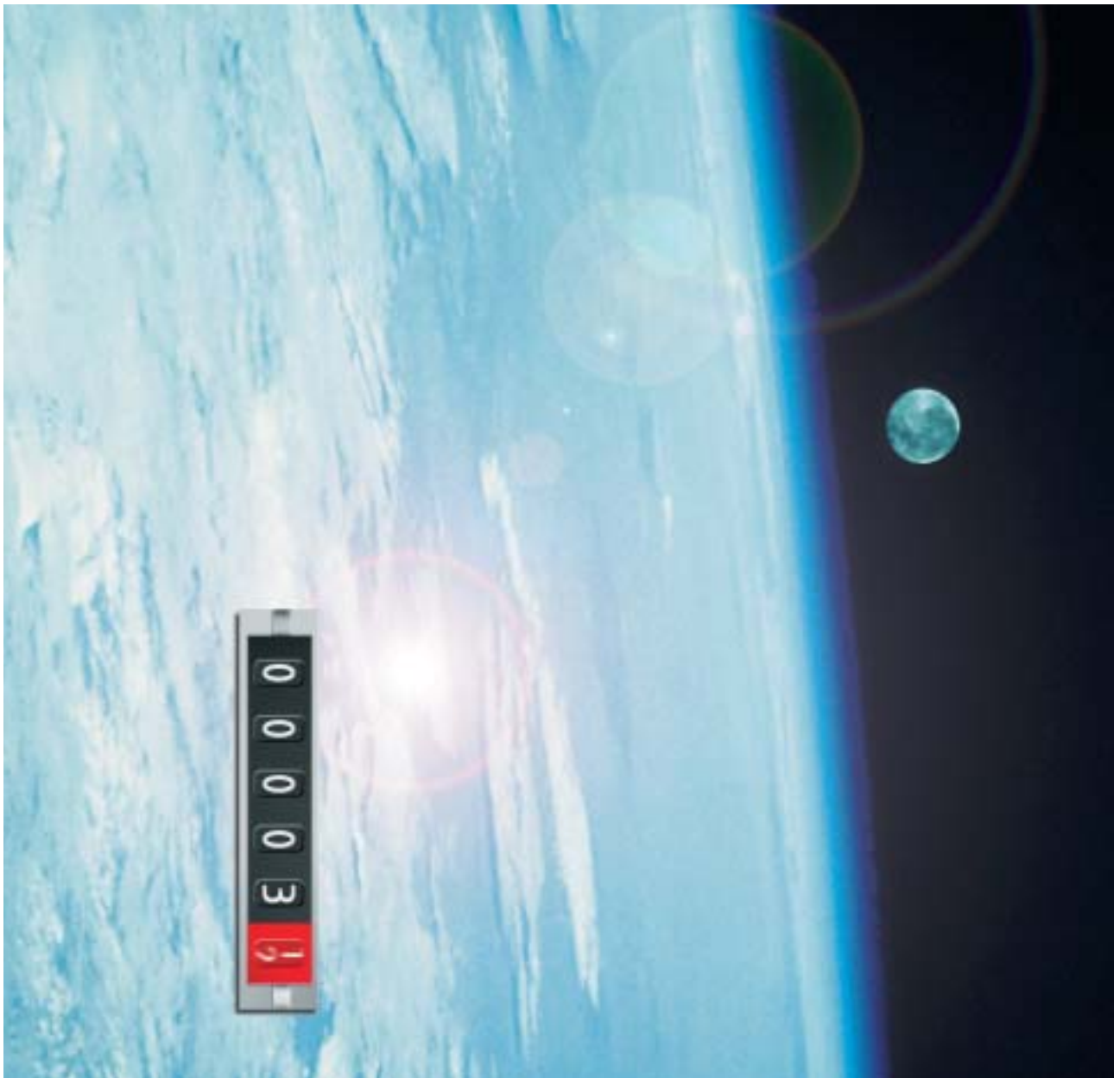
Annual Report 2002



E-CONTROL

→ **Editorial**

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Editorial responsibility: Walter Boltz, Chief Executive, Energie-Control GmbH
Contents: Energie-Control GmbH
Graphic design and layout: **[cdc]** communicationdesignconsulting, Viriotgasse 4, A-1090 Vienna
Pictures: E-Control, Getty Images and Buenos Dias
Printed by: Stiepan Druck GmbH

→ Energy liberalisation – an Austrian success story

Martin Bartenstein
Federal Minister of Economic Affairs and Labour

The complete opening of the electricity and gas markets – the latter on 1 October 2002 – has made Austria one of the frontrunners in the EU with regard to energy liberalisation. Austrian consumers are profiting from this development. Without liberalisation, the country's yearly power and gas bills would be some € 800 million (m) higher than they are today. The Austrian approach, combining regulated grid access and an efficient regulator, Energy Control GmbH, with lean settlement agencies, is an example both to countries that have formally liberalised their energy markets and to those that will not completely open them until the amended EU directive comes into force in 2007.

At the same time the Ökostromgesetz 2002 (Green Electricity Act 2002) has demonstrated that deregulation and environmental protection are not mutually self-exclusive. Austria is one of the first EU member states not just to have fully liberalised its energy markets but also to have taken effective action to comply with its obligations under the Kyoto Protocol and the EU directive on the promotion of electricity produced from renewable energy sources.

We are extending our lead in power generation from renewable energy sources. The Green Electricity Act 2002 ensures that the share of power produced from renewable sources will rise from a current 72% to 78% by 2010. The unification of subsidy systems will bring cost savings as compared to the previous provincial regimes. According to Energy Control's calculations only € 260m in support payments will be required in 2007, compared to the € 400m which would have been required.

These major changes in energy policy would not have been possible without the expertise of Energy Control. Meanwhile Energy Control GmbH has done an excellent job as a consumer watchdog that deals with inquiries and complaints relating to electricity and gas supply matters.

On behalf of many grateful energy consumers, I should like to take this opportunity of thanking the staff of E-control for the commitment they have shown to this task.

Martin Bartenstein

Walter Boltz
Chief Executive
Energie-Control GmbH

If the Austrian energy sector witnessed major developments in 2001, the changes were still greater in 2002. Since 1 October 2002 the gas market, too, has been fully liberalised. The Austrian electricity market has already been open to free competition since 1 October 2001. All final customers are thus free to choose their suppliers, regardless of whether they are industrial or private residential consumers, small businesses or farmers. A right that was previously restricted to major consumers has now been extended to all.

There was astonishment in many EU member states at Austria's success in keeping to its target of liberalising the electricity market on 1 October 2001. The timely implementation of gas market liberalisation on 1 October 2002 was doubtless again greeted with surprise. Austria has achieved the complete opening of its energy markets ahead of the schedule laid down by the EU Electricity Directive. This means that Austrian consumers are enjoying the benefits of power and gas competition in terms of prices and services sooner than many others in Europe.

This annual report is the second since the formation of E-Control, and the first to be published by us as the authority responsible for overseeing free power and gas markets.

It gives an overview of our main priorities in 2002, which included gas market liberalisation, the new Green Electricity Act, additional responsibilities such as arbitration, and the introduction of new network access tariffs. The report is an account of a year of unceasing activity. Here, it should be noted that the core adjudicatory responsibilities in respect of electricity and gas market liberalisation mostly lie with the E-Control Commission.

From the point of view E-Control GmbH, which is also the office of the E-Control Commission, co-operation with the Commission has again worked excellently this year. In particular, meeting the statutory deadlines for gas market liberalisation would have been unthinkable without the expertise and the high degree of flexibility shown by the Commission's members. In particular, meeting the statutory deadlines for gas market liberalisation would have been unthinkable without the expertise and the high degree of flexibility shown by the Commission's members. I should like to take this opportunity of thanking them.

The fact that we can look back on 2002 with satisfaction is ultimately due to the good climate of cooperation with the industry and its willingness to work with us. I should like to express my gratitude to all concerned.

Walter Boltz

Walter Barfuß
Director General of the Federal Competition Authority
Chairman of the Supervisory Board Energie-Control GmbH

Originally registered as Elektrizitäts-Control Österreichische Gesellschaft für die Regulierung in der Elektrizitätswirtschaft mit beschränkter Haftung (Vienna Commercial Court, reg. no. 206078 g), since 6/14 September 2002 the Company has been named Energy Control Österreichische Gesellschaft für die Regulierung in der Elektrizitäts- und Erdgaswirtschaft mit beschränkter Haftung. It is still called E-Control for short. By virtue of the legislation governing it and its memorandum of association E-Control is now, in a nutshell, responsible for regulating the energy sector (electricity and gas).

The applicable regulations require management to draw up an annual review of operations and financial statements for the past financial year. The financial statements must be adopted by resolution of the annual general meeting.

This annual report is the second since the formation of E-Control. It not only reflects the wide-ranging private business and public responsibilities that E-Control must fulfil, but also shows how the scope of its tasks has grown since the previous reporting period.

Following the complete opening of the Austrian natural gas market the legislation to which E-Control is subject has made it into the gas regulator, too.

In my foreword to the first annual report I remarked on the excellent job done by E-Control's management in tackling the wide-ranging tasks created by electricity liberalisation. This year I can say once more, and with still greater conviction, that management has done sterling work. The extremely swift and successful implementation of gas market liberalisation – since 1 October 2002 the Austrian gas market, has also been completely opened to competition – was a noteworthy achievement.

This year again, in the light of the information available to me in consequence of the unusually close supervision exercised by the board of which I am chairman, I can state that the Company has marked up an impressive performance. I should like to express my gratitude to all concerned.

Walter Barfuß

Contents

GAS

RESPONSIBILITIES COMMON TO ELECTRICITY AND GAS

→ From Electricity Control to Energy Control

→ Energy Control's regulatory role under the Natural Gas (Amendment) Act

Energy market liberalisation has long been a central plank of EU efforts to strengthen the European economy through competition policy. Directives 96/92/EC and 98/30/EC establish clear targets for electricity and gas market opening. Austria has met these targets ahead of the schedules provided for by the Electricity and Gas Directives, which represent minimum requirements. Following the complete opening of the electricity market, the Austrian gas market was fully liberalised as of 1 October 2002. As a result Austrian energy consumers – both residential and business – have reaped the benefits of energy market liberalisation earlier than those in many other EU member states.

Establishing Independent regulators is vital if market mechanisms are to function properly in fully liberalised systems. With the full opening of the Austrian gas market, the successful approach taken to the electricity regulator was extended to the gas industry. E-Control's powers thus now also include the monitoring, supervision and regulation of the gas industry. Although there are considerable technical and commercial differences between the power and gas industries, apart from the well-known links in terms of ownership there are strong economic and organisational parallels between them. In the balancing group system, electricity and gas share a common market model that gives rise to similar regulatory duties. It thus made sense to save money by entrusting a single authority with supervision of the energy sector. Moreover, several gas supply companies are also power utilities. While the form of organisation adopted enables synergies to be exploited, it does not prevent the differences between the power and gas industries from being taken into account.

The Natural Gas (Amendment) Act added the gas industry to the regulatory duties of Elektrizitäts-Control GmbH (Electricity Control Ltd.) and the Elektrizitäts-Control Kommission (Electricity Control Commission). This necessitated changes of name to Energy Control GmbH (Energy Control Ltd. or E-Control) and Energy Control Kommission (Energy Control Commission or E-Control Commission). E-Control assumed the following new responsibilities in respect of regulation of the gas market.

Creation of a regulatory framework by drawing up market rules

In order to provide the liberalised gas market with a regulatory structure, E-Control has drawn up market rules in conjunction with the industry. These create a body of commercial and technical regulations that will permit detailed implementation of the Natural Gas (Amendment) Act. Together they form the regulatory framework that will shape the market organisation and will ensure that the gas industry operates under a transparent, non-discriminatory cost based and competitive regime. The legally binding implementation of these rules is based in part on norms of public law contained in general statutes (acts of Parliament and orders) and in part on special legal instruments such as ministerial directions or civil law agreements.

Monitoring and supervisory functions

The monitoring and supervisory functions of E-Control include acting as a watchdog for competition and market abuse, supervising unbundling (separation of generation, grid operation and distribution), and recording gas supply agreements with terms of more than one year for the import of volumes in excess of 250m cubic metres (cm) from EU member states or third countries. E-Control's powers do not affect the competence of the Cartel Court and the other courts of law.

Public information activities

Apart from E-Control's general public information activities, these include meeting its legal obligation to prepare and publish price comparisons for consumers (natural gas statistics). The most important mode of presentation is that of a gas tariff calculator.

Energy Control Commission

The Electricity Control Commission (now the Energy Control Commission) has also been given wider powers. Like E-Control Ltd., the Commission (an independent collegial body with a judicial element in the meaning of article 133[4] Federal Constitution) has effectively been assigned the same functions in the gas industry as it exercises in the electricity sector.

The membership of the E-Control Commission is as follows:

Dr. Wolfgang Schramm, Chairman
Ditmar Wenty, member
Georg Donaubauer, member
Friedrich Jensik, substitute member
Dr. Franz Urban, substitute member
Dr. Achim Kaspar, substitute member

A total of 26 meetings of the Electricity or Energy Control Commission were held in 2002. The average length of the meeting was about four hours. In accordance with its statutory responsibilities (see section 16 Energy Regulatory Authority Act the Commission dealt with the general terms and conditions of electricity and gas distribution grids, determination of the use of system charges for electricity and gas, system access denial and arbitration of disputes between electricity and gas market participants.

The Natural Gas (Amendment) Act also transferred the powers of the Minister of Economic Affairs and Labour in respect of approval of the activities of transmission and distribution companies to the E-Control Commission.

By setting the use of system charges and control area managers fees by regulation (announced in the official journal in the Wiener Zeitung on 30 September 2002), in good time the E-Control Commission fulfilled one of the main preconditions for a successful start to gas liberalisation.

→ E-Control's competition law duties

E-Control's role in the new competition law regime

The reform of Austrian competition law as of 1 July 2002 has significantly strengthened regulators' legal position. E-Control has acquired rights to make applications to the Cartel Court under a number of sections of the Cartel Act. In addition, E-Control is free to make submissions in proceedings relating to the energy sector even when not called by the Cartel Court to give evidence.

E-Control's application rights under the new competition legislation

Text box 1

- → Application for a ruling as to whether a matter is subject to the Cartel Act;
- → Application for the prohibition of a cartel which is in principle permissible without approval if its activities do not meet the conditions for approval (e.g. are illegal, unethical or economically unjustified) until it has received definitive legal clearance;
- → Application for the revocation of approval of a cartel if one of the conditions for approval subsequently ceases to be fulfilled;
- → Application for the prohibition of a vertical distribution agreement if it is illegal, unethical or economically unjustified;
- → Application for the revocation of a non-binding recommendation from an industry association if issued in contravention of the Cartel Act or economically unjustified;
- → Application for the prevention of abuse of a dominant market position or of retaliatory measures in the event of such application;
- → Application for a ruling as to whether a business combination was formed in a prohibited manner;
- → Application for the imposition of measures to mitigate or eliminate the effects of a permissible business combination subject to notification requirements, e.g. in the event of the breach of conditions.

Apart from exercising these rights, which derive directly from the Cartel Act, E-Control will also advise and assist the competition authorities at their request. Further close cooperation between the competition authorities and the regulator is planned; this has already proved highly effective (see section entitled "The supervision of competition and market monitoring").

→ Role of E-Control as a gas and electricity arbitrator

E-Control has been accorded new arbitration powers under the amended Energy Regulatory Authority Act. This provides for market participants (customers and energy companies) to direct complaints to E-Control, e.g. about service quality or billing, without prejudice to the competence of the responsible court. E-Control is required to seek a mutually acceptable solution within six weeks. In order to fulfill these new responsibilities we established an arbitration panel which began work on 1 October 2002.

Quick, unbureaucratic solutions

The arbitration panel sets out to investigate complaints from consumers and other market participants quickly and without unnecessary red tape, and find mutually acceptable solutions that are in the interests of all concerned. This depends on close cooperation with the industry.

As the arbitration procedures are not prescribed by law, E-Control has drawn up rules which are posted on its website. These are aimed at making proceedings as unlegalistic as possible and reaching quick decisions.

Arbitration proceedings are initiated by informal applications. These may be sent to the arbitration service by post, fax or e-mail, and should state the reason for the complaint and give a brief description of the background to it; all relevant documentation should be enclosed. The procedure is free of charge for complainants.

Where disputes about invoiced amounts are concerned, payment of the latter is deferred for the duration of the proceedings. However energy companies are entitled to require immediate payment of an amount equal to the average of the last three bills.

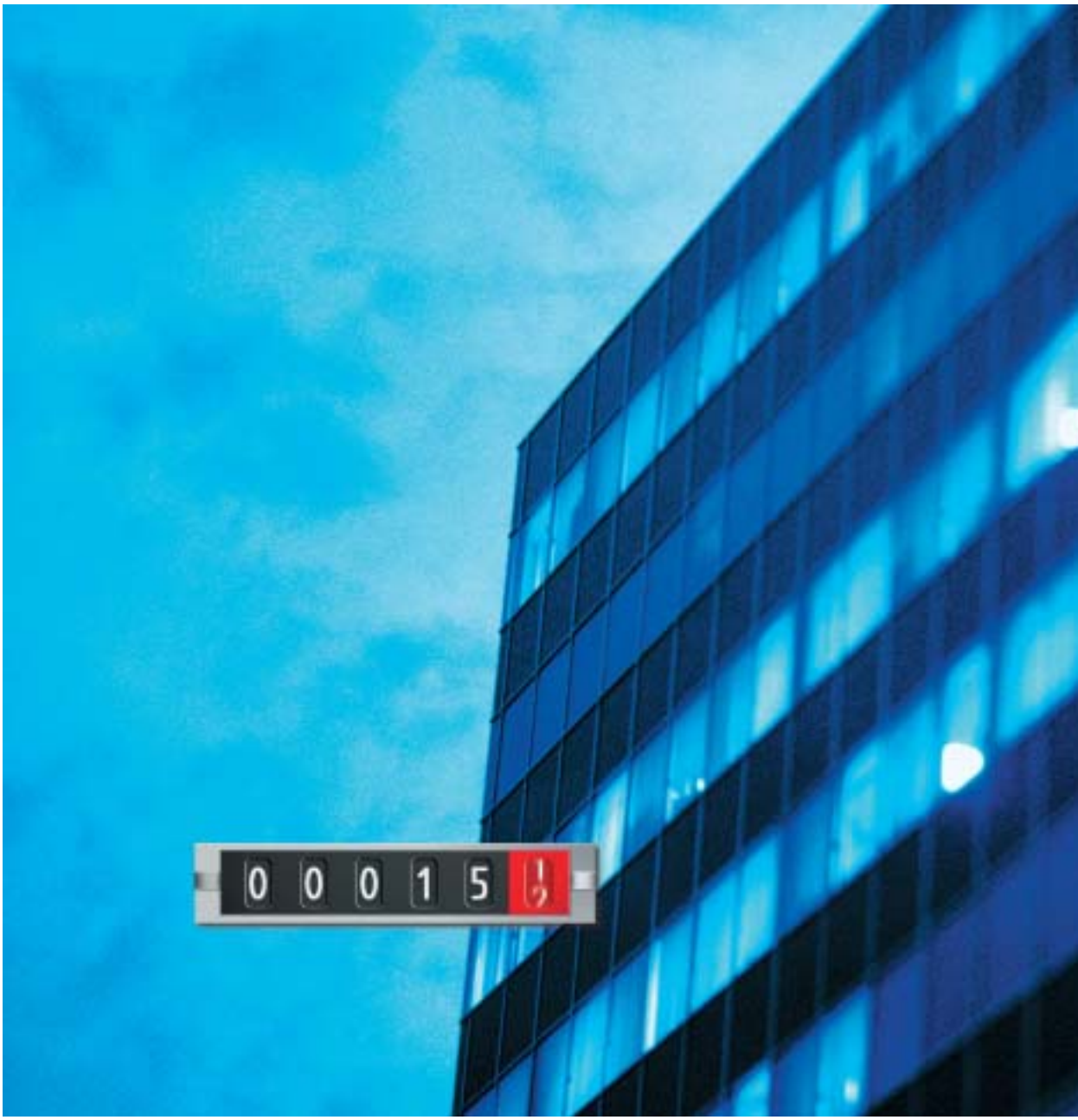
Involvement of the Federal Chamber of Labour

In arbitration cases concerning consumers in the meaning of the Consumer Protection Act, E-Control is obliged to involve the Federal Chamber of Labour in the proceedings. The Chamber receives regular reports on pending arbitration cases and the solutions proposed by the arbitration panel, and is given notice of oral and contentious proceedings.

Annual report

E-Control has a statutory obligation to publish annual reports on the activities of the arbitration panel. These reports will include a list of the electricity and gas companies involved, as well as information on compliance with procedural deadlines by the latter, acceptance of the panel's proposals and the average length of proceedings. In addition, they will be required to contain an account of the main problems revealed by the arbitration proceedings to give and any suggestions for improvements. The panel's first annual report will appear in October 2003.

Changes in the regulatory environment and institutions in 2002



→ Changes in the regulatory environment and institutions in 2002

→ EU directives

Harmonisation of energy markets in the European Union

Following the creation of the single market the gas and electricity markets of member states were progressively opened in order to enhance the competitiveness of these sectors in the interests of European consumers. The Electricity Directive (96/92/EC) was implemented in Austria by the Electricity Industry and Organisation Act 1998 (ElWOG 1998). The Gas Directive (98/30/EC) was implemented by the Natural Gas Act 2000 (GWG 2000).

The road to full energy market liberalisation

The above directives have not yet brought the desired degree of liberalisation, and so the European Union has therefore taken steps to reinforce the framework for liberalisation of the electricity and gas markets.

The modified Commission proposal for a directive amending Directives 96/92/EC and 98/30/EC provides for a package of measures aimed at the full opening up of the gas and electricity markets by 2005, and moving from 15 open national markets to a genuine European market in gas and electricity. Whereas the existing EU directives provided for phased increases in minimum levels, leading to the opening of approx. 33% of the gas and electricity markets; at its meeting of 25 November 2002 the Council of Energy Ministers reached agreement on full opening for non-household customers by 2004 and for household customers by 2007.

Other important items on which the Council reached agreement were:

- → Legal unbundling of transmission system operators by 1 June 2004 and of distribution operators by 1 June 2007 (however the agreement on the latter is not binding).
- → The establishment of one or more authorities, to be called "regulators", to ensure that markets operate in an efficient, non-discriminatory manner.
- → A requirement for electricity suppliers to disclose the energy sources from which the power supplied by them in the previous year was generated, meaning that the Austrian labelling rules – the only ones of their kind in the EU at present – will be emulated throughout Europe. A requirement to inform consumers as to the CO2 emissions and nuclear waste arisings associated with generation of the power.

Additional proposed EU legislation

A proposed regulation on cross-border exchanges in electricity will enter force on 1 June 2004 if adopted. From this time on, export charges on individual transactions will be prohibited. The network access charges borne by generators will have to be lower than those paid by consumers. The charges will have to be applied independently of the origin of the electricity as specified in the underlying commercial agreement and of the country of destination. Where appropriate, the level of the charges will be required to provide locational signals, i.e. signals or incentives for efficient network and generation investment in the right locations. The Commission will adopt detailed guidelines on this. In addition the draft regulation prescribes non-discriminatory, market based solutions to congestion management. It provides for the appointment of an independent group of experts composed of representatives of the regulatory authorities to advise the Commission on specifically regulatory matters.

Still under negotiation are proposals for a directive to promote the increased use of electricity from combined heat and power (CHP) plants, and for a directive on pan-European emission trading aimed at the creation of an EU-wide framework for trading in so-called "emission rights" from 2005 onwards. Emission trading would affect 80–120 businesses in Austria (energy utilities and large industrial companies). Emission rights would be allocated to companies free of charge during the 2005–2007 period.

A proposal for a directive amending the rules on the place of supply of electricity and gas contained in Directive 77/388/EEC was recently adopted. The purpose of this proposal is to overcome problems such as double or non-taxation and resultant competitive distortions. Electricity and natural gas in pipelines are no longer to be taxed at the place of supply, but at the place of consumption. Electricity resold by a trader will be taxed in the final consumer's country. This may result in loss of revenues for transit countries like Austria, whereas importing countries like Italy will presumably benefit from the change.

→ Legal developments in Austria

Amendments to the ElWOG 2000

At the same time as the Natural Gas (Amendment) Act a number of minor formal amendments were made to the ElWOG (Federal Law Gazette I No. 149/2002, Art. 2). A major substantive change is the new arrangement for labelling. As of 1 July 2004 the existing obligation of electricity traders under various provincial laws to itemise the shares of power supplied accounted for by different primary energy sources in their bills to final customers will be governed by uniform federal legislation.

Regulatory Authority (Amendment) Act

The Federal Act Regulating the Tasks of the Regulatory Authorities (now the Energy Regulatory Authorities Act) was also amended during the year under review (Federal Law Gazette I No. 148/2002, Art. 2).
The amendment extended the statutory enforcement duties of the regulatory authority, which had previously applied only to the electricity industry, to the gas industry in almost identical terms.
There have been substantive amendments to the provisions governing arrangements for the determination and collection of the charge to finance E-Control's activities. The system has been adjusted to E-Control's new functions.
A Gas Advisory Board, modelled on the Electricity Advisory Board, has been legislated for and established to advise on gas industry matters.

Green Electricity Act

The goal of achieving a further increase in the already high share of Austrian electricity output generated from renewable energy sources was enshrined in the ElWOG 2000. As the Federal Parliament is only empowered to enact principal legislation on electricity matters, raising the percentage of power generated by "green" capacity was hitherto a provincial responsibility. This did not appear to be justified by variations in geographical and climatic conditions in Austria. The injection tariffs for "green" power were also set at provincial level, leading to marked differences between the subsidies and charges.

The Green Electricity Act (Federal Act introducing new arrangements for electricity generation from renewable energy sources and combined heat and power capacity, Federal Law Gazette I No. 149/2002 of 23 August 2002), passed by the Parliament on 10 July 2002 resp. on 25 July 2002, has created a uniform nationwide system. As of 1 January 2003 the financial burden of subsidising power generated at small hydro and other "green" plants, and CHP plants has been evenly distributed across the country.

Accreditation of "green" power plants

The provincial governors are required to recognise power generation plants relying exclusively on renewable energy sources as "green" plants. "Green" plants designated by the ElWOG 2000 continue to be treated as such by the new Green Electricity Act. In accordance with Art. 5 Directive 2001/77/EC, certificates of origin are issued for power injected by capacity of this kind.

Combined heat and power generation

Until the Green Electricity Act entered into force the promotion of CHP was governed by the ElWOG 2000 and the provincial governors were free to set minimum injection tariffs as well as a CHP surcharge based on the latter.

The Green Electricity Act 2002 also introduced new, nationwide arrangements for the promotion of CHP generation.

E-Control's monitoring and reporting duties

E-Control is responsible for monitoring attainment of the statutory targets and drawing attention to developments tending to obstruct such attainment. It must submit an annual report to the Minister of Economic Affairs and Labour, which may contain proposals for improving or adjusting the incentive mechanisms and other legal arrangements. The report must also include a statement of expenditure on electricity generated from solar, geothermal and wind energy, biomass, waste with a high biological content, landfill gas, wastewater treatment gas and biogas (including multifuel plants).

Transitional arrangements

The "old" injection tariffs set by the provincial governors continue to apply to plants licensed up to 1 January 2003 (in the absence of time limits) for a period of ten years from the time of commissioning. The governors are also entitled to prescribe the "old" injection tariffs for new plants built in future years if such tariffs are higher than the new ones and to cover the resultant additional expenditure by levying a provincial surcharge.

E-Control's electricity activities

→ Arbitration and the prevention of market abuse

Market abuse proceedings (section 10 Energy Regulatory Authority Act)

E-Control's competition control responsibilities involve ensuring that market participants are given equal treatment by monopolies (grid operators). If E-Control identifies any market abuse while exercising its supervisory and monitoring role, it is required to take immediate action to restore compliance with the law.

In 2002 E-Control initiated proceedings in some 30 cases of market abuse. A total of 22 cases were discontinued, either because it became clear in the course of the proceedings that no abuse had occurred or because the malpractice immediately ceased. Most proceedings were initiated by customers' new suppliers or by customers themselves and related to problems and abuses arising in connection with changes of supplier. E-Control investigates whether grid operators are acting in accordance with the law and the Market Rules and whether customers who switch to a supplier other than the local incumbent receive equal treatment to those who continue to purchase their power from the latter. Generally such cases concern compliance with the transfer process laid down by the Other Market Rules.

All the proceedings discontinued to date led to the rapid cessation of the abuses in question and restoration of compliance with the law.

Arbitration proceedings (section 10a Energy Regulatory Authority Act)

An arbitration panel was established at E-Control on 1 October 2002. Market participants can complain to the panel about service quality or invoiced amounts that they do not understand (see section entitled "Role of E-Control as a gas and electricity arbitrator").

Record after three months' activities

Some 20 proceedings were initiated between the panel's establishment and the end of the year. Most disputes were quickly settled, within the periods provided for, and were thus concluded. The overwhelming majority of the proceedings related to complaints about electricity, gas or system use bills. In most cases the reason for higher invoiced amounts was increased consumption. The purchase of new appliances or changes in personal circumstances can lead to changed consumption behaviour of which those concerned are frequently unaware. It has also become apparent that the practice of some grid operators, whereby meters are not read every year and consumption is projected or estimated instead, often results in catch-up payments in the years when readings are taken. Customers are unable to understand these catch-up payments which result from suppliers' inaccurate estimates in the previous year. In these cases the supply companies accommodated the customers by agreeing to instalment payments. In one case it emerged that the complainant's meter had been counting the consumption of a number of flats. Here it was necessary to arrive at an agreement with the property managers and the complainant's neighbours to share the amount owed.

Many of the complaints and inquiries directed to the arbitration service were quickly dealt with on the telephone. Co-operation with the supply companies, on which the success of arbitration depends, worked well during the initial period.

System access denial proceedings (section 20[2] ElWOG)

Upon application of a party alleging that its legal right to system access has been infringed, the E-Control Commission has one month to determine whether the conditions for legal denial of access (e.g. insufficient capacity) are met. At the start of 2002 a case of this type going back to the previous year was concluded, and near the end of 2002 a further such proceeding was initiated. Both cases related to capacity matters.

→ "Green" power

The year under review was marked by major changes in the support system for "green" power, i.e. electricity generation from renewable energy sources. These were touched off by Directive 2001/77/EC, adopted in October 2001, and questioning of the economic efficiency of the system then in place for pursuing the renewable energy targets.

Austrian "green" power targets by comparison with the rest of Europe

Austria has long played a pioneering role with regard to the use of renewable energy sources. The share of energy demand met by renewables already stood at 70% in 1997. This was taken as the base level for rates of increase under Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources. Austria has committed itself to a rise in the share of gross domestic consumption accounted for by "green" electricity from 70% to 78.1%[1]. This is the highest rate in Europe, as shown by Chart 1.

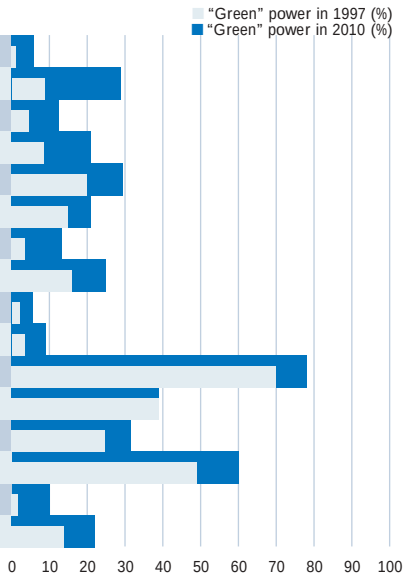
Action to implement the Directive in Austria came less than one year after its adoption, in the shape of the Green Electricity Act. The Act not only addresses the main issues raised by the Directive but also unifies the system for promoting alternative energy forms, which had hitherto been highly disparate. The Green Electricity Act is largely focused on support payments for small "green" hydro and CHP plants.

→ Power generation from renewable energy sources

% shares in

Chart 1

	1997	2010
Belgium	1.1	6.0
Denmark	8.7	29.0
Germany	4.5	12.5
Greece	8.6	20.1
Spain	19.9	29.4
France	15.0	21.0
Ireland	3.6	13.2
Italy	16.0	25.0
Luxembourg	2.1	5.7
Netherlands	3.5	9.0
Austria	**70.0**	**78.1**
Portugal	38.5	39.0
Finland	24.7	31.5
Sweden	49.1	60.0
UK	1.7	10.0
EU	13.9	22.0



Source: EU Directive 2001/77/EC

[1] Austria states that 78,1% would be a realistic figure, on the assumption that in 2010 gross national electricity consumption will be 56,1 TWh. Due to the fact that the production of electricity from renewable sources is highly dependent on hydropower and therefore on the annual rainfall, the figures for 1997 and 2010 should be calculated on a long-range model based on hydrologic and climate conditions.

Objectives of the Green Electricity Act

Apart from nationwide load balancing under section 4(1), the Act is aimed at:

- Increasing the share of "green" power from 70% (status in 1997) to 78.1% in accordance with the target named by Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market of 27 September 2001;
- Using the funds for the promotion of renewable energy sources efficiently;
- Establishing policy priorities with regard to the commercialisation of new technologies;
- Providing support payments to existing CHP plants used for public district heating in order to ensure that they can continue to operate and can be modernised;
- Raising the share of electricity output accounted for by small hydro plants with maximum electric capacities of up to 10 MW to 9% by 2008.
- Protecting investments in existing and future capacity (section 4[1]6).

The target quotas for non-hydro "green" power as a proportion of power supply to end-users from the public grid are 2% by 1 January 2004, 3% by 1 January 2006 and 4% by 2008. Electricity generated from bonemeal, sewage sludge or waste (except for waste with a high biological content) is not counted towards "green" power.

Comparison of ElWOG 2000 and the Green Electricity Act 2002

Table 1 gives an overview of the main objectives and structure of the Green Electricity Act 2002 as compared with the provisions of the ElWOG 2000 replaced by it.

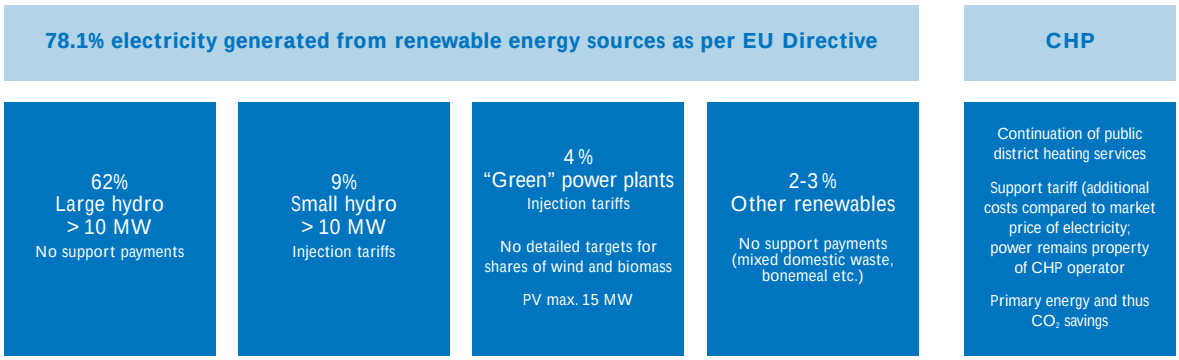
→ Comparison of ElWOG 2000 and the Green Electricity Act 2002

Chart 1

Issue/objectives (non-exhaustive list)	**ElWOG 2000**	**Green Electricity Act 2002**
a) Small hydro power	Assuring the future of existing capacity (8%)	Assuring the future of existing capacity and providing incentives for expansion (9%)
b) "Other green plants"	2% from January 2004 3% from January 2006 4% from October 2007	4% by calendar 2008
c) Other		Efficient use of support funding; EU target of 78% by 2010
System	Small hydro plant certificates; injection tariffs for "other green plants"	Uniform infeed tariff system for small hydros and "other green plants"
Responsibility for implementation	Electricity traders with regard to small hydro power Grid operators with regard to "other green power"	Obligation to attain target percentages must be taken into account when setting injection tariffs
Remits	All detailed arrangements ("green" power injection tariffs and surcharges, penalties, etc.) established by the respective province; wide variations	Uniform nationwide "green" power injection tariffs, subsidies and CHP surcharges Charges set by Ministry of Economic Affairs and Labour in consultation with the Ministry of Agriculture and Forestry, Environment and Water Management, the Ministry of Justice and the provinces
Distribution of cost burden	Final customers paid for plants in their home provinces; hence widely divergent cost burdens	Uniform distribution of costs among final customers throughout (differentiation according to grid levels possible)
Combined heat and power generation	Type and extent of CHP support widely divergent from province to province	Uniform national tariff system
Power labelling	Different systems from province to province (uniform retailer mix versus varying product mixes from a given trader)	Single retailer mix obligatory as of July 2004

→ Support mechanisms under the Green Electricity Act

Fig. 1



Source: Green Electricity Act

Injection tariffs for "green" power

Because "green" power (small hydro, wind and biomass) is usually more expensive than that generated from other energy sources it requires support mechanisms. The Green Electricity Act provides for a support scheme based on minimum injection tariffs for "other green power" and small hydro, and for support tariffs for electricity generated by CHP plants (over and above the market value of the power). In the case of small hydro power this resulted in a changeover from a certificate to an injection tariff system on 1 January 2003.

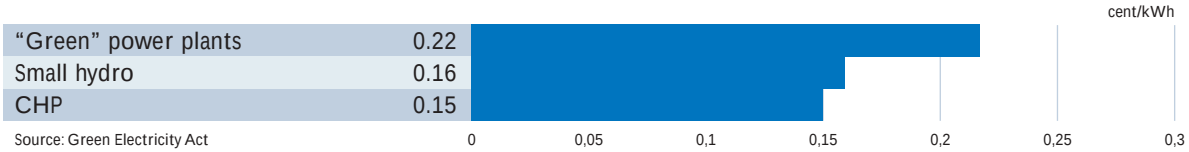
Under this support system the control area managers (APG, TIRAG and VKW) have a take or pay obligation in their role as "green" power balancing group representatives. They must allocate "green" power to the electricity traders in proportion to the latter's annual sales volume. The injection tariffs are fixed by the Minister of Economic Affairs and Labour in consultation with the Minister of Justice and the Minister of Agriculture and Forestry, Environment and Water Management, as well as the provinces. There are a number of limits to the Minister's freedom to set the injection tariffs by order, with regard both to the amount of the support extended to individual "green" plants and to the overall budget for support payments. The Green Electricity Act stipulates that the injection tariffs must be based on the generation costs of efficient plants. It also caps the maximum cost burden (see Chart 2).

The cost of the support scheme is borne by electricity traders and final consumers as follows:

- → The electricity traders must take a pro rata share of the subsidised "green" power at a price of 4.5 cent/kWh (higher than the sales price realised by them); and
- → The end-users must pay a surcharge on the network tariff averaging 0.12 cent/kWh for power from "other green plants", 0.05 cent/kWh for small hydro power and 0.15 cent/kWh for CHP power. Since 1 January 2003 the surcharge has replaced the previous provincial surcharges, which ranged from 0.05–0.08 cent/kWh and would in all events have had to be increased to maintain the viability of "green" power.

→ Maximum cost burden per kWh of final consumption

Chart 2



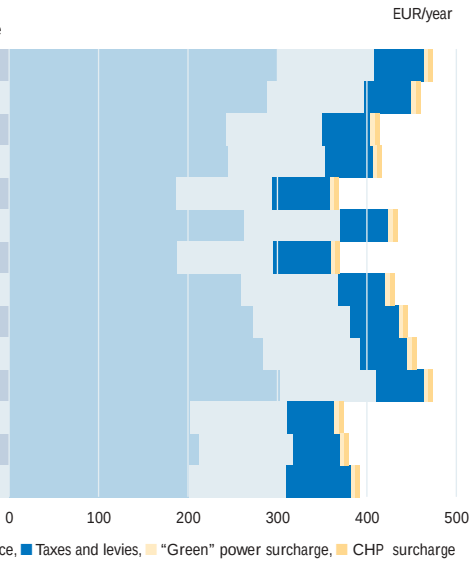
Source: Green Electricity Act

→ Share of the total electricity price accounted for by “green” and CHP power support spending

Chart 3

In Euro/year for an average household with an annual consumption of 3,500 kWh

	Grid price	Energy price	Taxes and levies	“Green” power surcharge	CHP surcharge
BEWAG	300.97	108.50	55.73	4.87	5.25
Energie AG	288.66	108.50	53.78	4.87	5.25
EVN	242.62	108.50	54.00	4.87	5.25
Grazer Stw.	245.40	108.50	53.55	4.87	5.25
IKB	186.68	108.50	64.52	4.87	5.25
Kelag	262.73	108.50	53.69	4.87	5.25
Stw. Klagenfurt AG	188.09	108.50	64.10	4.87	5.25
Linz AG	259.98	108.50	53.07	4.87	5.25
Salzburg AG	273.14	108.50	54.18	4.87	5.25
STEG	284.82	108.50	53.21	4.87	5.25
Steweag	303.02	108.50	53.58	4.87	5.25
Tiwag	203.18	108.50	53.06	4.87	5.25
VKW	213.01	104.39	53.26	4.87	5.25
Wienstrom	201.80	108.50	72.86	4.87	5.25

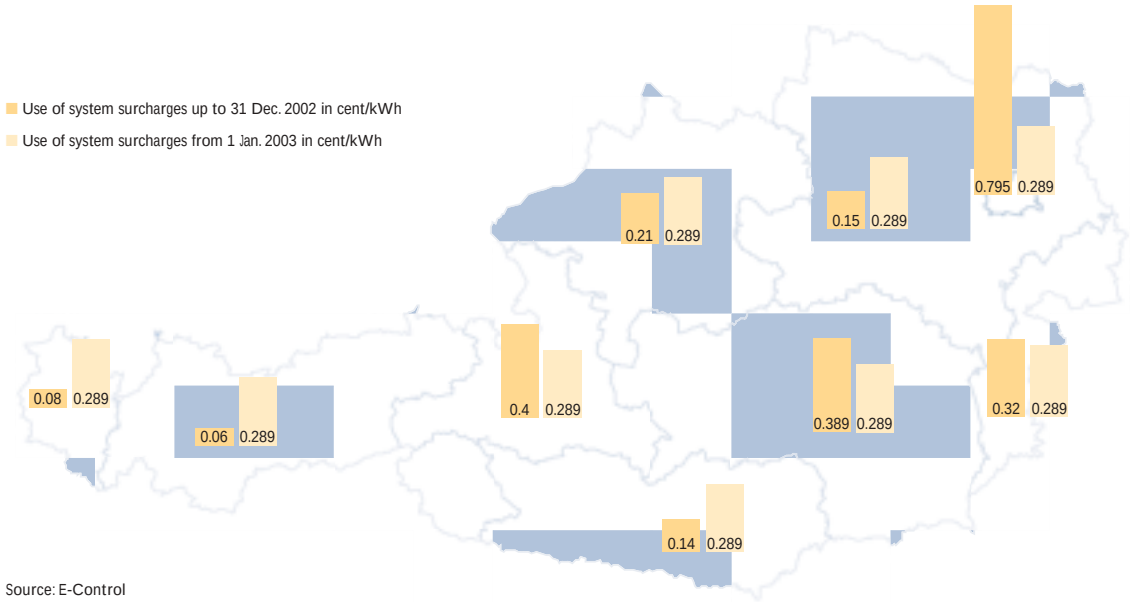


Source: E-Control

The overall cost of supporting “green” power on a federal basis is lower than that of provincial arrangements because it enables generating capacity to be used where it exists (wind power in eastern and hydro power in the western Austria). The injection tariffs paid to “green” power plant operators are the same throughout Austria.

→ Surcharges on the grid level 7 use of system charges ("green", mini hydro and CHP plants)

Chart 4



Source: E-Control

As mentioned, the nationwide injection tariffs for the various forms of "green" power were set by a Ministry of Economic Affairs and Labour order following consultation of the Ministry of Agriculture and Forestry, Environment and Water Management, the Ministry of Justice and a working group appointed by the provincial governors' conference.

This order applies to all new plant licensed up to the end 2004 and built up to June 2006, as well as existing small hydro plants. The "old" injection tariffs set by the various provinces continue to apply to other "green" generating capacity licensed before 1 January 2003.

→ Injection tariffs under the Green Electricity Order (Federal Law Gazette II No. 508/2002)

Chart 2

	cent/kWh
Wind power	7.80
Solid biomass (e.g. forest wood chips, straw)[1]	
Up to 2 MW	16.00
2 MW to 5 MW	15.00
5 MW to 10 MW	13.00
> 10 MW	10.20
Waste with a high biological content	
System use charges 17, tab. 2, bark, sawdust	minus 20%
System use charges 17, tab. 2, chipboard waste	minus 35%
Other primary energy sources, tab. 1 and 2 Green Electricity Act	2.70
Co-firing	pro rata
Firing at thermal power stations	
Solid biomass (forest wood chips, straw)	6.50
System use charges 17, tab. 2, bark, sawdust	5.00
System use charges 17, tab. 2, chipboard waste	4.00
Other primary energy sources, tab. 1 and 2 Green Electricity Act	3.00
Co-firing	pro rata
Liquid biomass	
Up to 200 kW	13.00
Over 200 kW	10.00
Agricultural biomass (e.g. corn cobs and slurry)	
Up to 100 kW	16.50
100 kW to 500 kW	14.50
500 kW to 1 MW	12.50
Over 1 MW	10.30
Biogas from waste cofermentation	minus 25%
Landfill and wastewater treatment gas	
Up to 1 MW	6.00
Over 1 MW	3.00
Geothermal	7.00
Photovoltaic power	
Up to 20 kW_p	60.00
Over 20 kW_p	47.00

[1] The portion of injection tariffs for solid biomass exceeding the 14.50 cent/kWh tariff is paid for from the provinces' technology promotion funds

Chart 3

Small hydro [2]

Existing capacity (pro rata reductions in event of budget overruns)	cent/kWh
First 1,000,000 kWh	5.68
Next 4,000,000 kWh	4.36
Next 10,000,000 kWh	3.63
Next 10,000,000 kWh	3.28
Over 25,000,000 kWh	3.15
Following investments resulting in at least 15% increase in electricity revenue	
First 1,000,000 kWh	5.96
Next 4,000,000 kWh	4.58
Next 10,000,000 kWh	3.81
Next 10,000,000 kWh	3.44
Over 25,000,000 kWh	3.31
New capacity or at least 50% increase in electricity revenue	
First 1,000,000 kWh	6.25
Next 4,000,000 kWh	5.01
Next 10,000,000 kWh	4.17
Next 10,000,000 kWh	3.94
Over 25,000,000 kWh	3.78

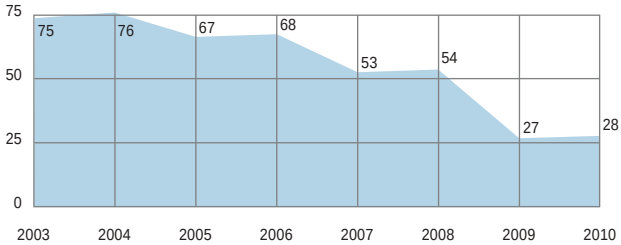
[2] Injection tariff graduated according to annual power volumes injected

Most of these injection tariffs are valid for a period of 13 years from commissioning of the plants. In order to provide adequate protection for new investments, the Green Electricity Act requires that the injection tariffs for plants built during the applicability period of the order be set for at least ten years.

Expenditure on support payments to combined heat and power plants is being stepped down in two-year stages, and support will be completely eliminated in 2008 (except in the case of modernised plants for which support payments continue until 2010). Overall support payments will already been considerably lower in 2003 than in 2002.

→ **Total support for CHP plants** Chart 5

in Mio. Euro



Source: Green Electricity Act

Organisational framework for processing of support payments

There are now only three "green" power balancing groups, the representatives of which are the respective control area managers. The "green" power balancing group representatives play a central role in processing the flows of support payments for "green" power. They take the "green" power (including that from small hydros with capacities of less than 10 MW) from the generators at the designated infeed tariff and pass it on to the electricity traders at the resale price of 4.5 cent/kWh, in volumes prorated according to the latter's sales to final customers. They also collect the small hydro and "green" power surcharges via the respective grid operators. In addition, the "green" power balancing group representatives are responsible for the accurate forecasting and scheduling of "green" power, so as to minimise balancing power requirements.

Figures 2 and 3 depict the financial flows arising from the Green Electricity Act.

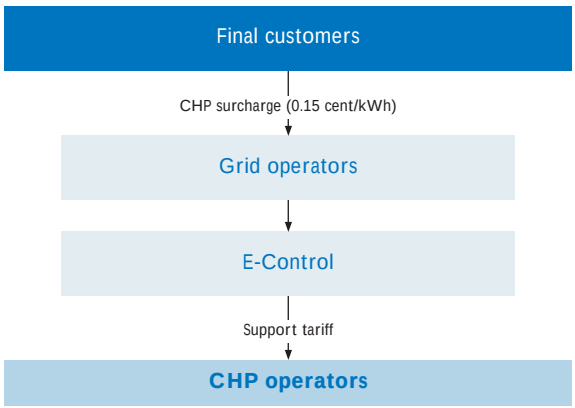
Certificates of origin

Under the EU Directive on the promotion of electricity produced from renewable energy sources every operator of a "green" power plant is entitled to the issue of a certificate of origin for its electricity. The certificates of origin are to be issued by grid operators free of charge at the request of the plant operators. Apart from the volume of electricity generated, the certificate must state the type and maximum electric capacity of the generation plant, as well as the place and period of generation, and the energy sources used. The Green Electricity Act implements these provisions, too.

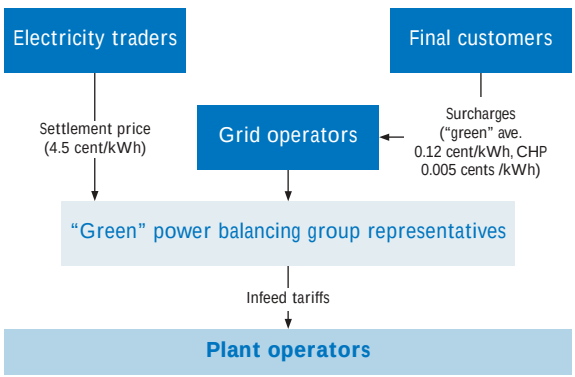
The power labelling system that governs disclosure of the energy sources used to generate electricity on bills is to be standardised on 1 July 2004 after a transitional period. From this time on every electricity trader will be required to state a uniform power mix on all the bills it issues to final customers ("single retailer mix").

There are plans for subsequent cross-border certificate trading and mutual recognition of certificates of origin in the EU.

→ CHP finance Fig. 2



→ "Green" and small hydro power finance Fig. 3



Source: E-Control

"Green" Power Reporting Order

Section 32 ElWOG 2000 (most provisions of which relating to "green" power were superseded by the Green Electricity Act) stipulated that "green" power must be used to provide a given proportion of power supplies to final consumers. This provision required grid operators to ensure that at least 1% of all electricity supplied to end-users was contributed by "green power" between October 2001 and September 2002.

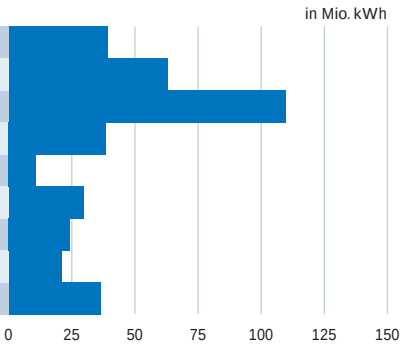
The cut-off date for auditing of compliance with "green" power quotas during the previous accounting period (1 October 2001 to 30 September 2002) was 30 November 2002. During this period distribution network operators were obliged to source at least 1% of the volume of electricity supplied to final customers from "green" power. In addition, each electricity trader was required to furnish proof in the form of certificates that power from small hydro plants represented 8% of its uptake.

Analysis of the reports received yielded the following results (broken down by the locations of the grid operators:

→ "Green" power injection volumes from 1 Oct. 2001 to 30 Sept. 2002

Chart 6

Burgenland	39,831,849
Carinthia	63,956,644
Lower Austria	110,747,331
Upper Austria	39,246,033
Salzburg	10,920,079
Styria	30,207,186
Tyrol	24,619,481
Vorarlberg	21,268,287
Vienna	37,033,938
Total	**377,830,828**

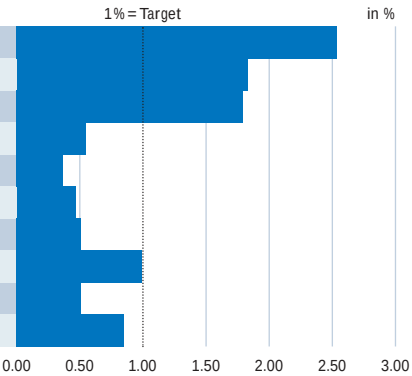


Source: E-Control

→ Compliance with "green" power quotas from 1 Oct. 2001 to 30 Sept. 2002

Chart 7

Burgenland	2.55
Carinthia	1.84
Lower Austria	1.80
Upper Austria	0.55
Salzburg	0.37
Styria	0.47
Tyrol	0.51
Vorarlberg	1.00
Vienna	0.51
Austria	**0.858**



Source: E-Control

If a distribution network operator failed to meet the 1% quota it was liable to pay an equalisation levy. The proceeds of the equalisation levy were paid into a provincial fund earmarked for support of "green" power.

Of the 135 network operators, 110 or approx 81.5% failed to fulfil the "green" power quota and only 25 or approx. 18.5% met the target as of 30 September 2002.

The provisions in the ElWOG 2000 governing "green" power uptake quota obligations were replaced by new arrangements under the Green Electricity Act.

Since 1 January 2003 there has no longer been a "green" power quota and the equalisation levy thus no longer applies.

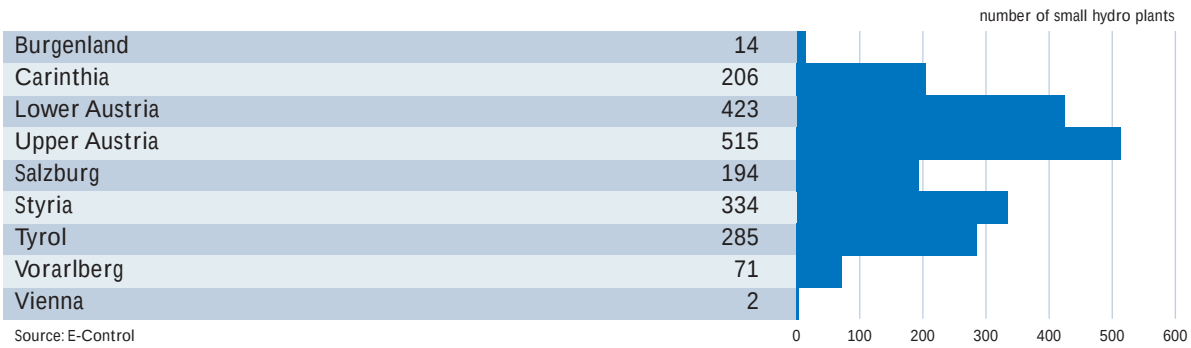
Small hydro power and certificate system from the entry into force of the ElWOG 2000 until 31 December 2002

With the entry into effect of the ElWOG 2000 the Austrian system for supporting small hydro power moved from support payments that varied from province to province to a single nationwide certificate scheme. On the entry into force of the Green Electricity Act on 1 January 2003 this was in turn replaced by a system based on uniform nationwide injection tariffs.

Austrian capacity

The introduction of the certificate system led to the accreditation of 2,034 plants as small hydros by means of notices issued by the respective provincial governments. All hydroelectric power stations with a maximum electric capacity of no more than 10 MW are classed as small hydros. In 2002 such plants injected over 3,800 GWh into the public grid.

→ Geographical distribution of small hydro plants in Austria, by provinces Chart 8



Source: E-Control

Principle of certificate trading

Under the certificate system the operator sold the power generated at its plant at market prices. Since the market price was lower than the production costs, the operator received a so-called “small hydro certificate” in addition to the kWh price of the injected power. These certificates could be sold to make good the difference between the market price and the production costs, irrespective of the amount of electricity sold. In order to ensure that plant operators could actually sell their certificates suppliers were obliged by law to furnish proof that they held certificates representing 8% of the volume of electricity sold by them to final customers.

Certificate generation

A Web based electronic certificate trading system was installed at E-Control. At the heart of the system was a central database to which all participants had access via the Internet. All the certificates were generated, managed, transferred and redeemed on this database. All certificates generated in Austria were stored on the database, but it was not a marketplace. The central database was accessible via the www.kwkw-zertifikate.at site. Access required input of a login and password and all data transfers and transactions were secure; the database itself had multiple firewalls and back-up systems.

→ The small hydro database Fig. 4

Market participants

All operators of small hydro power stations with maximum electric capacities of no more than 10 MW accredited by provincial governments were entitled to participate in the scheme. The data contained in the accreditation notices was entered in the central database, thereby enabling certificates to be generated and traded.

At the end of each month, grid operators sent online reports of the amount of electricity injected into the public grid by the respective plants. A certificate was automatically generated for each 100 kWh of power infeed, and was credited to the account of the plant operator in question. Data entry by a network operator instantly triggered the legally required validation of the amount of power injected. Operators thus had certificates credited to their accounts every month and could then sell them.

Equalisation levy

Power suppliers and electricity traders were obliged to provide proof in the form of certificates, that 8% of the electricity sold by them to final customers was derived from small hydro plants, or to purchase an appropriate number of certificates and redeem them when the quota compliance audit was undertaken. If a supplier or trader could not provide evidence of sufficient certificates, it was required to pay an equalisation levy to the provincial government in question. Electricity consumers sourcing their power directly from abroad had to present proof of possession of certificates themselves.

Plant operators without Internet access had the option of using so-called "sweep orders". The purchaser of the certificates ("sweeper") – which had to have Internet access – was responsible for entering the data. As proof of their agreement to such transactions the plant operators sent written sweep authorisations to E-Control.

Authorised users of the database required only normal Internet access and incurred no additional expenses. Thanks to the agreement of the provincial authorities to a central database and an electronic system the Austrian certificate scheme operated simply, efficiently and quickly.

E-Control provided comprehensive information on the system by way of free downloads from the www.kwkw-zertifikate.at site.

In addition, a special information hotline was set up to answer detailed queries.

Cost of installing and operating the database

An invitation to tender for installation of the small hydro certificate database was issued in 2001 and the contract for producing and operating the software awarded. Some € 200,000 were spent on building and running the database in 2001, and its operation, maintenance and modification, together with the information hotline, resulted in a further € 100,000 in expenditure in the following year.
In 2003 the cost of running the small hydro database would have fallen to around € 90,000 and some € 60,000 would have been spent on minor modifications (uniform nationwide equalisation levy and settlement period).
Use of the database for the certificates of origin required under the Green Electricity Act is possible if the necessary modifications are made.

The certificate market in retrospect

The certificate system was used to support small hydro plants in 2002. The scheme was launched on 1 January 2002 and was abolished by the Green Electricity Act, passed in July 2002, at the end of the year. Because of its short lifespan and the fact that it operated under transitional arrangements it is hard to assess its efficiency.

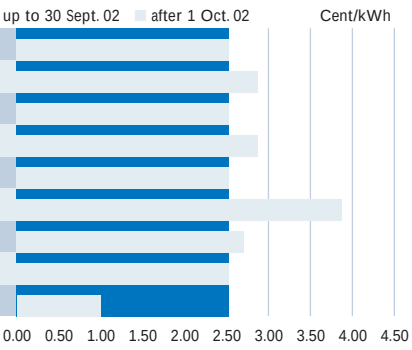
The certificate market itself was shaped by the differences between the equalisation levies in the provinces, which ultimately determined the prices of the certificates.

With the passage of the Green Electricity Act, which provided for the abolition of the certificate market on 1 January 2003, a uniform equalisation levy was prescribed for those provinces which had not set such a charge at all; Burgenland, Lower Austria, Salzburg, Vorarlberg. This applied to all provinces for the period from 1 October 2002 to 31 December 2002. Trading on the certificate market reflected the major uncertainties created by this situation. Over 98% of the freely traded certificates (those that were not already in the hands of large electricity traders due to their ownership of small hydro plants) were purchased by existing customers (mostly provincial utilities), using sweep orders. The prices were initially around € 2.20–2.50 per certificate for power generated in Burgenland, Lower Austria, Styria, Upper Austria and Vorarlberg, but were considerably lower (€ 1.20–1.50) for electricity produced in Carinthia, Salzburg and Tyrol. Depending on the terms of the contracts, the prices paid for some certificates collapsed after 30 September 2002 owing to the new Green Electricity Act.

→ Equalisation levies in the provinces

Chart 9

	up to 30 Sept. 02	after 1 Oct. 02
Burgenland	2.55	2.55
Carinthia	2.90	2.55
Lower Austria	2.55	2.55
Upper Austria	2.90	2.55
Salzburg	2.55	2.55
Styria	3.91	2.55
Tyrol	2.74	2.55
Vorarlberg	2.55	2.55
Vienna	1.01	2.55



Source: E-Control

For a long time it was also impossible to predict whether the overall supply of certificates would be greater or less than the 8% demand created by the law. Towards the end of the first period for demonstrating compliance (30 September 2002), increased secondary trading was seen mostly between electricity traders holding large numbers of certificates and others with large requirements. Due to the comparatively low equalisation levy in Vienna (between 1 January and 30 September 2002) and the expressed intention of several electricity traders to pay the levy there instead of buying certificates, a growing overhang of certificates developed. This led to a price collapse which impacted on generators' prices. Because of the continuing oversupply the higher uniform equalisation levy between 1 October and 31 December 2002 came too late to trigger a recovery, and by December 2002 certificates were being offered for € 0.20–0.40.

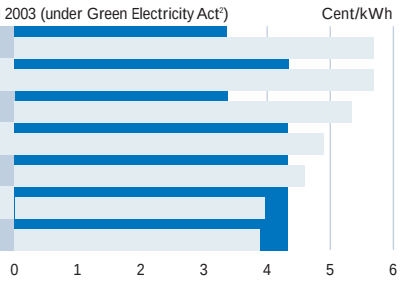
Impact on small hydro plants of the transition to the Green Electricity Act

With the entry into force of the Green Electricity Act on 1 January 2003 and the related order setting the injection tariffs issued by the Minister of Economic Affairs and Labour, most small hydro plants became more profitable than they had been in 2002 under the certificate system. For very small plants (up to a capacity of about 300 kW), revenue is generally now significantly higher than in the pre-liberalisation period while for plants with capacities of up to 1 MW it is roughly the same, though it varies according to the province concerned and injection behaviour. The revenue earned by plants with capacities upwards of 2 MW is significantly lower than before liberalisation.

→ Average revenue earned from injection of power generated by small hydro capacity prior to liberalisation and after the Green Electricity Order

Chart10

	1998 (before liberalisation[1])	2003 (under Green Electricity Act[2])
Part-injector with 75 kW	3.36	5.68
Full injector with 150 kW	4.32	5.68
Part-injector with 500 kW	3.36	5.31
Full injector with 500 kW	4.32	4.89
Full injector with 1000 kW	4.32	4.62
Full injector with 3 MW	4.32	3.96
Full injector with 5 MW	4.32	3.88



Source: E-Control and Green Electricity Regulation

[1] Also major variations according to provinces and injection behaviour. Some plants owned by utilities were significantly more profitable (opportunity cost of procurement saved – Verbund tariff)

[2] Under Min. of Economic Affairs and Labour order (Fed. Law Gazette II No. 508/2002)

Wind power

Much of the Austria's "green" electricity is wind power. Installed wind power capacity is currently approx. 100,000 kW (as of December 2002), but planned projects point to an increase to 175,000 kW in the first quarter of 2003. Not only is total wind power capacity steadily rising but the rated capacity of individual wind parks is constantly increasing. In the early days of the development of wind power only small facilities were commissioned, but now capacity averages 2 MW per wind park. Meanwhile teething troubles such as unreliability have largely been overcome.

The higher level of development attained by the technology undoubtedly helps to account for expectations of a steadily rising contribution to electricity supplies and that this form of energy will play a major part in meeting "green" power targets. Despite its advantages however, wind power has a number of drawbacks. Due to its heavy dependence on appropriate weather conditions output is subject to wide fluctuations. This means that immediately available fallback capacity using other energy sources is always required.

Biomass

Renewable energy from biomass is one of the most complex areas of "green" power. This is both because of the multiplicity of fuels – which can be categorised as solid, liquid and gaseous – and the large number of technologies that can be used for the thermal conversion of biomass into energy. The following forms of energy conversion exist:

- Combustion (steam turbine, steam engine, ORC processes and Stirling engine);
- Gasification: Low-calorie gas (gas engine, gas turbine);
- Medium-calorie gas (gas engine, gas turbine, fuel cells);
- Pyrolysis (diesel engine, gas turbine);

At present Austria has some 77,000 kW of biomass capacity in place (status as of December 2002). However this figure includes biomass co-fired at thermal power stations. The future share of biomass in the energy balance will depend on the fuel market situation and on other factors such as the possibilities for utilising waste heat for district heating.

Combined heat and power generation

In September 2002 E-Control was directed by the Ministry of Economic Affairs and Labour to prepare a report on the potential contribution of CHP and a legal interpretation, as well as an assessment of the amount of support required and of the potential impact of a cut in the support tariff. The report was submitted to the Ministry towards the end of 2002. In order to arrive at as accurate a forecast of CHP output in 2003 and subsequent years as possible, the provincial governments and the operators of the larger CHP plants (power utilities) were asked to assist with the collection of data.

CHP surcharge under ElWOG 2000 and the Green Electricity Act

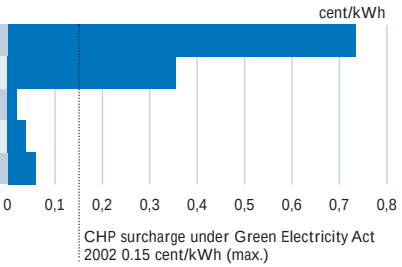
Following the introduction of CHP surcharges by order in Carinthia, Styria and Vienna in 2001, minimum injection tariffs for CHP energy were also set in Lower Austria (June) and Salzburg (September) in accordance with the ElWOG 2000 and the governors of these provinces imposed CHP surcharges. The variations in the levels of the CHP surcharges from province to province are attributable to the widely differing volumes of CHP energy generated there.

→ CHP surcharges under the ElWOG 2000, by provinces

Chart 11

and the max. CHP surcharge under the Green Electricity Act 2002

Vienna	0.7427
Styria 0.216 cent/kWh until 30 Sept. 2002; 0.36 cent/kWh from 1 Oct. 2002	0.36
Carinthia	0.02
Lower Austria	0.04
Salzburg (grid level 7)	0.06



Source: E-Control

The Green Electricity Act divides CHP plants into two categories that are eligible for support:

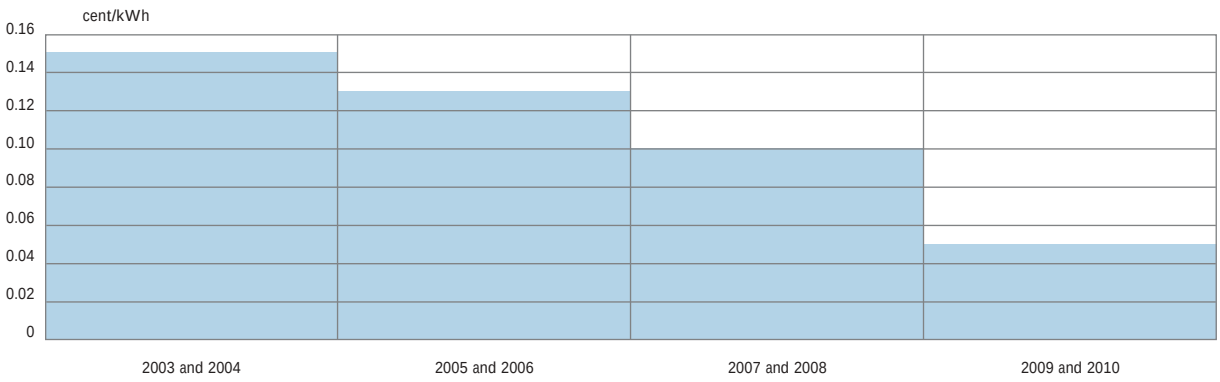
- → CHP plants that meet the efficiency standard (2/3 * heat / fuel input + electricity / fuel input > 0.55) and use more than 10% of the fuel input for district heating; and
- → CHP plants that do not meet the standard or only use 3–10% of the fuel input for district heating.

The new CHP arrangements also provide for:

- → Equal treatment of all CHP plants in Austria with regard to the setting of support tariffs;
- → Capping of the support tariff for 2003 and 2004 (section 13[3–4] Green Electricity Act) at 1.5 cent/kWh or 1.25 cent/kWh depending on conformity to the efficiency and district heating standards, and the limitation of support to the income from the CHP surcharge (section 13[10] Green Electricity Act);
- → Capping of the CHP surcharge which will decline over time (section 13[10] Green Electricity Act, see Chart 12); and
- → Extension of the support period for CHP energy until 2008, or 2010 for modernised plants.

→ Maximum amount of the surcharge over time

Chart 12



Source: E-Control

The CHP support payments are processed through an account held by E-Control, which makes payments up to a maximum of 1.5 cent/kWh to the plant operators. The support tariff is financed by a CHP surcharge, collected from final customers by the grid operators together with the use of system charge. The CHP surcharge will decline over time, and is capped at 0.15 cent/kWh for 2003 and 2004. The CHP surcharge is set by the Minister of Economic Affairs and Labour in advance, for one calendar year at a time.

Renewable Energy Certificate System (RECS)

The Renewable Energy Certificate System (RECS) is a standardised electronic certificate system for evidencing the production of electricity from renewable energy sources in Europe. The system is aimed at creating a market for renewable energy that will prompt the development of new renewable energy capacity in Europe. The members of RECS – a large number of European electricity generators – have developed a set of rules for the issue of RECS certificates, designed to ensure that the same standards and processes for the promotion of renewable energy sources apply throughout Europe. Under the agreement between the RECS members, an RECS certificate represents the entire environmental benefit of electricity from renewable energy sources as compared to electricity from non-renewable sources. Once this benefit is consumed – e.g. by transfer to a national support scheme – the certificate is deleted from the database.

A RECS certificate is issued for each 1 MWh of power generated from renewable energy sources. Thanks to the large amount of information contained in RECS certificates – including the identity of the power station, the time of issue, the installed capacity, the technology used for the production of the energy and the identity of the issuer – they can be used under different national support schemes provided that national law permits this.

Every RECS certificate is uniquely identifiable, transferable and thus tradable either separately from or together with the underlying electricity.

RECS is largely organised at national level. An issuing body is responsible for issuing the certificates. All such organisations belong to the Association of Issuing Bodies (AIB). The AIB monitors national compliance with the common rules for the issue and administration.

RECS in Austria

E-Control is the issuing body for RECS certificates in Austria. It is assisted in this by the Austrian Electrotechnical Association (ÖVE) which monitors compliance with the certification rules and audits RECS certified power plants on an ongoing basis.

The following generators are taking part in the system:

- Verbund AG (Wallnerau-Salzachstufe, Ybbs-Persenbeug and Freudenau power stations);
- Energie AG (Traun-Pucking power station);
- EEVG (15 MW fluidised bed boiler);
- E&T Energiehandelsgesellschaft mbH (Opponitz power station);
- TIWAG (Kalserbach and Brixlegg power stations); and
- Salzburg AG

About one million RECS certificates had been issued by the end of 2002.

Austria is one of only four countries that have passed the one million mark, the others being Finland with some four million, and Norway and Sweden with about two million each.

E-Control has succeeded in obtaining agreement to the conversion of small hydro certificates which can no longer be counted towards the Austrian 8% quota into RECS certificates in 2003.

For further information on RECS visit www.recs.org.

→ Tarification

The current tariff system (description of the Use of System Charges Order)

The charges for the use of the electricity grid are governed by the Use of System Charges Order (SNT-VO). The SNT-VO contains basic rules to be observed when setting the use of system charges. The E-Control Commission is responsible for enacting this order.

The use of system charges must be cost based and reflect the principle of cost transparency. It is permissible to base them on an average cost approach derived from benchmarking with a comparable, well managed company. Price setting can also be based on targets reflecting potential cost savings (productivity discounts).

For the purposes of tariff setting the grid is divided into seven grid levels which are classed by voltage levels. The grid operators' licence areas are grouped in grid zones to which the same use of system charges apply. For instance, the Upper Austria grid zone covers Energie AG and a number of other regional grid operators; a uniform tariff applies to all. Equalisation payments are sometimes necessary because the cost and demand structures within a given grid zone can vary (see section entitled "Equalisation payments"). The distribution of costs among the various grid levels is carried out by so-called "cost reallocation". This is a calculation made during tarification which serves to ensure that the costs incurred at the various grid levels are also allocated to customers connected to lower levels on a pro rata basis.

The grid admission charge is payable by all grid users (infeed suppliers and off-takers) for the grid connection. It is calculated on the basis of the expense incurred by the network operator when making the initial connection or modifying a connection as a result of an increase in the connected load. The grid admission charge is not applicable if the cost of the grid connection is borne by the grid user.

Components of the use of system charge

Text box 2

- Grid admission charge;
- Grid provision charge;
- Grid utilisation charge;
- Network loss charge;
- Service fee; and
- Metering fee

The grid provision charge compensates the grid operator for the work already performed by it on the upstream grid and prefinanced by it in order to enable the connection to be made. It is a one-time charge, graduated according to agreed grid usage measured in kW.

The grid utilisation and network loss charges are payable at regular intervals in consideration of use of the grid. These are set at fixed rates, and are related to the grid zone and level to which the customer's system is connected (point of connection tariff). The grid utilisation charge compensates the grid operator for the cost of building, expanding and operating the grid. The network loss charge is intended to cover the costs incurred by the grid operator in procuring the power required to balance network losses.

The service fee is payable by operators of power stations with an electric capacity of over 1 MW to the respective control area manager for the provision of secondary control (minute reserve). It is calculated according to power output in kWh. The metering fee has been capped by the E-Control Commission under the Use of System Charges Order which entered into effect on 1 June 2002, and varies according to the type of measurement (e.g. load profile, quarter-hourly maximum demand or AC metering). The charge compensates grid operators for the costs directly attributable to the installation and operation of metering equipment, its calibration and meter reading. It is payable both by generators and by consumers.

The components of the use of system charge must be itemised in electricity bills.

Changes within grid zones and the impact on costs

In 2001 E-Control was directed by the E-Control Commission to review the use of system charges of all 16 grid zones in Austria, pursuant to section 55 ElWOG 2000, in order to ensure that customers received the benefits of previous cost reductions and rationalisation in the form of lower use of system charges. This was the first comprehensive audit of all grid operators since the first tarification of use of system charges, performed upon the entry into force of the ElWOG on 19 February 1999.

On 1 October 2002 – a year after the transfer of responsibility from the Ministry of Economic Affairs and Labour to the E-Control Commission – this first round of tariff reviews were completed on schedule and all the procedures for investigation of the use of system charges were likewise concluded. Table 4 sets out the reductions in system charges in detail.

→ Reduction in system costs

Chart 4

Grid zone	Entry into force	Average tariff reduction	Saving in € m/y
Styria	01. 10. 2001 01. 01. 2002	-16.5%	42.0
Salzburg	01. 10. 2001 01. 09. 2002	-12.0%	20.5
Verbund – APG	01. 01. 2002	-7.5%	10.0
Burgenland	01. 04. 2002	-12.0%	8.0
Vienna	01. 04. 2002	-8.4%	31.0
Upper Austria	01. 05. 2002	-5.0%	16.0
Lower Austria	01. 06. 2002	-4.4%	12.0
Vorarlberg	01. 07. 2002	-2.2%	1.6
Carinthia	01. 10. 2002	-1.3%	0.3
Tyrol	01. 10. 2002	-3.2%	3.6
Total			**145.0**

Source: E-Control

The column headed "Average reduction in system costs and charges" shows the changes in the grid utilisation and network loss charges.

In the course of the tariff reviews both the cost structure and the tarification principles on which the grid operators' charges were based were closely scrutinised. Special attention was paid to the correction of illogical approaches which, at least before full liberalisation on 1 October 2001 had not affected customers.

For instance the revision of the charges corrected negative or very low book electricity prices, for instance those in Styria until 30 September 2001. This meant that the reductions in use of system charges were not always fully reflected in changes in the overall prices of local integrated suppliers.

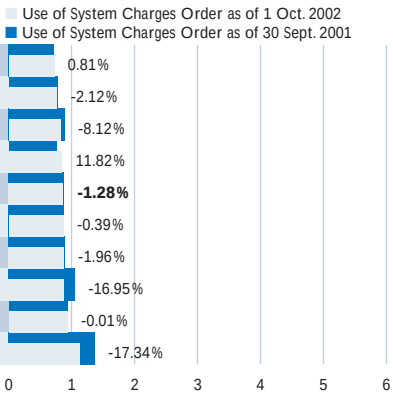
The impact of the changes on the charges for individual grid levels is shown by Charts 13–19.

→ Adjustment of the use of system charges at grid level 3

Chart 13

6,500 hours of use, cent/kWh

Use of system charge and network loss charge	2001	2002
Lower Austria	0.7217	0.7276
Vorarlberg	0.7725	0.7561
Vienna	0.8908	0.8185
Styria	0.7596	0.8494
Ave. (weighted)	**0.8766**	**0.8653**
Tyrol	0.8727	0.8693
Upper Austria	0.8929	0.8754
Salzburg	1.0570	0.8779
Carinthia	0.9348	0.9347
Burgenland	1.3658	1.1290



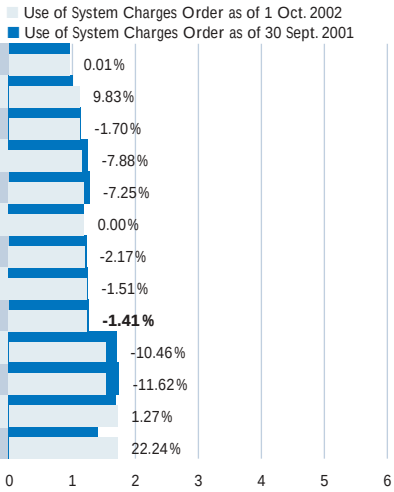
Source: E-Control

→ Adjustment of the use of system charges at grid level 4

Chart 14

5,800 hours of use, cent/kWh

Use of system charge and network loss charge	2001	2002
STEG	0.9676	0.9677
Linz	1.0222	1.1227
Upper Austria	1.1438	1.1243
Vienna	1.2589	1.1596
Lower Austria	1.2832	1.1902
Carinthia	1.1965	1.1966
Vorarlberg	1.2338	1.2070
Tyrol	1.2577	1.2387
Ave. (weighted)	**1.2651**	**1.2473**
Salzburg	1.7154	1.5360
Burgenland	1.7483	1.5452
Klagenfurt	1.7046	1.7262
Styria	1.4170	1.7322



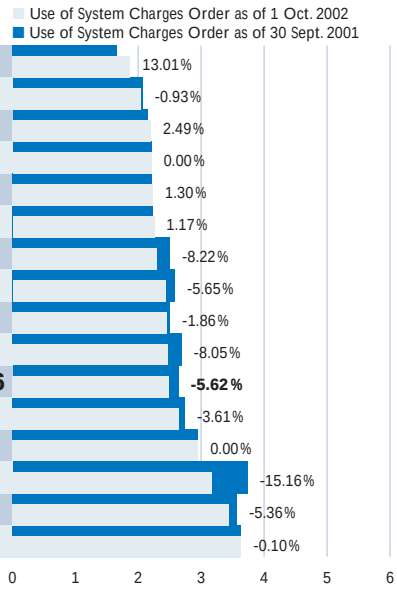
Source: E-Control

→ Adjustment of the use of system charges at grid level 5

Chart 15

3,500 hours of use, cent/kWh

Use of system charge and network loss charge	2001	2002
Innsbruck	1.6518	1.8667
Vorarlberg	2.0593	2.0400
Graz	2.1406	2.1939
Carinthia	2.2043	2.2043
Upper Austria	2.2059	2.2346
Klagenfurt	2.2247	2.2508
Vienna	2.5007	2.2951
Salzburg	2.5730	2.4275
Tyrol	2.5041	2.4575
Lower Austria	2.6871	2.4708
Ave. (weighted)	**2.6325**	**2.4846**
Linz	2.7354	2.6367
STEG	2.9421	2.9422
Burgenland	3.7288	3.1635
Styria	3.5559	3.3655
Kleinwalsertal	3.6264	3.6229



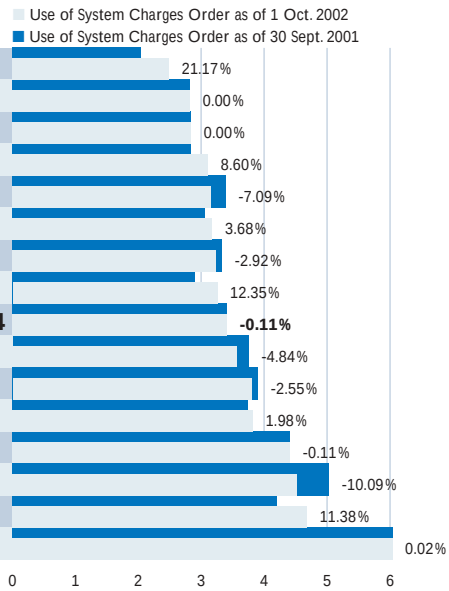
Source: E-Control

→ Adjustment of the use of system charges at grid level 6

Chart 16

3,000 hours of use, cent/kWh

Use of system charge and network loss charge	2001	2002
Innsbruck	2.0446	2.4775
STEG	2.8135	2.8134
Carinthia	2.8310	2.8309
Upper Austria	2.8291	3.0724
Vienna	3.3842	3.1444
Linz	3.0559	3.1684
Lower Austria	3.3203	3.2235
Graz	2.8948	3.2523
Ave. (weighted)	**3.4022**	**3.3984**
Tyrol	3.7461	3.5647
Vorarlberg	3.8906	3.7914
Klagenfurt	3.7363	3.8105
Salzburg	4.4081	4.4031
Burgenland	5.0169	4.5109
Styria	4.1981	4.6758
Kleinwalsertal	6.0324	6.0333



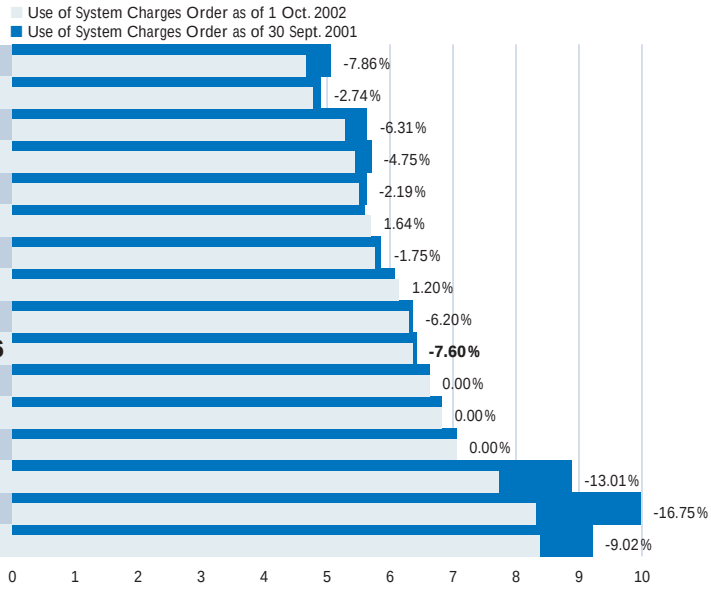
Source: E-Control

→ Adjustment of the use of system charges at grid level 7 (active metering)

Chart 17

Metered supply, 2,000 h, cent/kWh

Use of system charge and network loss charge	2001	2002
Tyrol	5.0524	4.6553
Vorarlberg	4.9026	4.7681
Vienna	5.6259	5.2708
Lower Austria	5.7015	5.4305
Klagenfurt	5.6269	5.5036
Linz	5.5981	5.6898
Innsbruck	5.8495	5.7472
Salzburg	6.0675	6.1400
Graz	6.7054	6.2899
Ave. (weighted)	**6.8728**	**6.3506**
Carinthia	6.6258	6.6259
STEG	6.8230	6.8227
Kleinwalsertal	7.0498	7.0500
Burgenland	8.8741	7.7200
Styria	9.9807	8.3090
Upper Austria	9.2073	8.3770



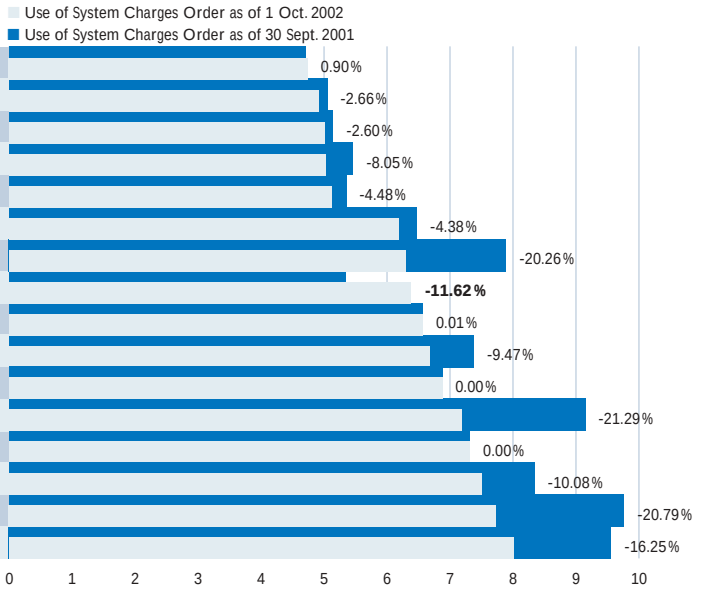
Source: E-Control

→ Adjustment of the use of system charges at grid level 7 (passive metering)

Chart 18

Non-metered supply, 3,500 kWh, cent/kWh

Use of system charge and network loss charge	2001	2002
Klagenfurt	4.7040	4.7465
Tyrol	5.0524	4.9180
Vorarlberg	5.1418	5.0083
Vienna	5.4574	5.0183
Innsbruck	5.3567	5.1170
Lower Austria	6.4678	6.1846
Graz	7.8901	6.2913
Ave. (weighted)	**7.2149**	**6.3768**
Kleinwalsertal	6.5595	6.5600
Linz	7.3793	6.6804
Carinthia	6.8800	6.8801
Salzburg	9.1462	7.1986
STEG	7.3150	7.3149
Upper Austria	8.3408	7.5000
Styria	9.7610	7.7319
Burgenland	9.5551	8.0026

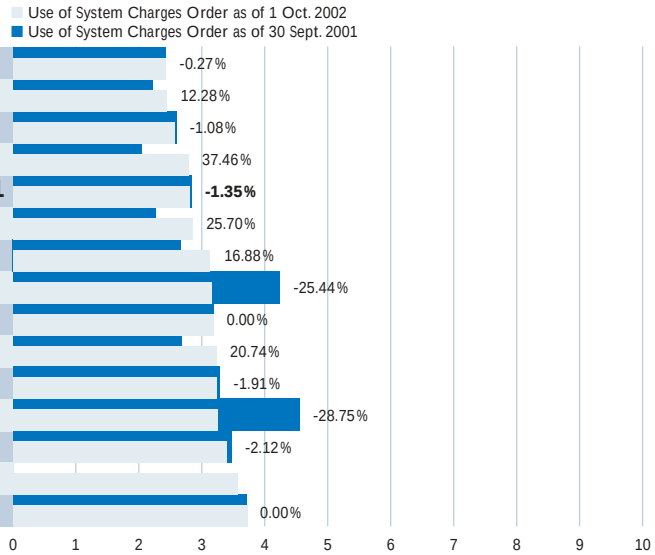


Source: E-Control

→ Adjustment of the use of system charges at grid level 7 (interruptible supplies) in cent/kWh

Chart 19

Use of system charge and network loss charge	2001	2002
Vienna	2.4265	2.4200
Linz	2.2122	2.4839
Vorarlberg	2.5872	2.5591
Klagenfurt	2.0276	2.7870
Ave. (weighted)	**2.8393**	**2.8011**
Upper Austria	2.2674	2.8500
Lower Austria	2.6778	3.1300
Graz	4.2383	3.1599
STEG	3.1831	3.1830
Burgenland	2.6751	3.2300
Innsbruck	3.2990	3.2360
Styria	4.5493	3.2412
Salzburg	3.4738	3.4000
Kleinwalsertal		3.5700
Carinthia	3.7136	3.7136



Source: E-Control

The use of system charges at the lowest voltage level, grid level 7 – at which uptake by residential consumers, small businesses and farms occurs – fell by an average of 12%. In other words, E-Control's activities in connection with use of system charges brought marked savings for these consumers. There were also sizable reductions in use of system charges and hence overall savings at the higher voltage levels at which small and medium-sized enterprises and large-scale industry source most of their power.

However these adjustments are only the first step. E-Control constantly monitors the grid operators' cost structures, and will implement selective adjustments as required. The amended Use of System Charges Order and a chronological listing of all the relevant administrative orders together with summaries of their contents is posted on the E-Control website at www.e-control.at

Equalisation payments

Section 25(7) ElWOG states that where grid zones contain interconnected networks with different operators, the costs for these zones at each grid level are to be consolidated when calculating the use of system charges. The revenue derived from system use within given grid zones and levels must be divided among the grid operators in accordance with the shares of the costs borne by them. Likewise, where networks are only supplied at the same voltage level from grids with different operators within given grid zones, but are not directly linked by transformers with higher grid levels, the costs for each grid level must be consolidated when calculating use of system charges. The revenue generated by use of these networks must be distributed and the costs shared on a pro rata basis in accordance with the amount of power supplied via them. In such cases equalisation payments between grid operators may be required.

The Equalisation Payment Order (AGZ-VO) issued by E-Control regulates the amounts of the equalisation payments and the manner in which they are processed.

In general, operators of shared grid zones handle the settlement of any equalisation payments required by mutual agreement. However if agreement is not reached, E-Control issues an assessment notice. Equalisation payments are fixed in accordance with the costs and volumes supplied on which E-Control bases the use of system charges of the grid zone concerned. The assessment notices prescribe the regular equalisation payments to be transferred by liable grid operators to an account administered by E-Control. These amounts are then paid on to the grid operators named in the notice as beneficiaries.

→ System charges review project

Initial situation and objectives

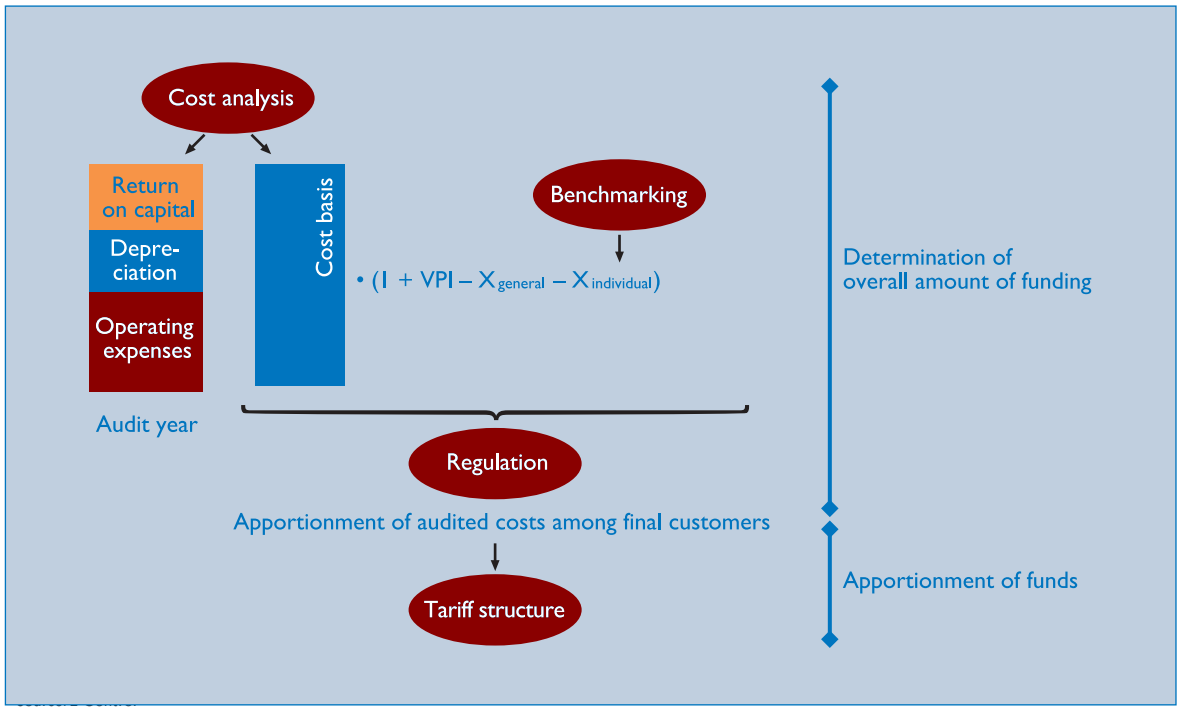
Practical experience with unbundling has revealed wide variations in electricity companies' treatment of cost analysis and allocation and in the steps taken to improve productivity. In addition, there are big differences in the structure of grid operators' charges. E-Control responded to this problem by launching its system charges review project in January 2002. The aim is to take strategic decisions that consolidate the gains liberalisation has already brought for consumers and to give the electricity companies a reliable planning framework, whilst establishing fair and transparent rules.

Objectives of the system charges review project Text box 3

- → Make cost analysis and tarification as simple and transparent as possible.
- → Arrive at a tariff structure that creates a level playing field for market participants and promotes competition.
- → Give grid operators a sufficiently reliable planning framework (e.g. for investment and return on equity).
- → Promote increased exploitation of synergies by grid operators.
- → Achieve positive economic effects by regulating incentives through further adjustments of system charges.
- → Provide for sufficient investment and security of supply.
- → Win the support of grid operators following a broad-based debate.

→ Interactions between sub-projects

Fig. 5



Sub-projects and project outcomes

The system charges review project consists of four sub-projects

- → Benchmarking
- → Cost analysis
- → Regulation and
- → Tariff structure

Benchmarking

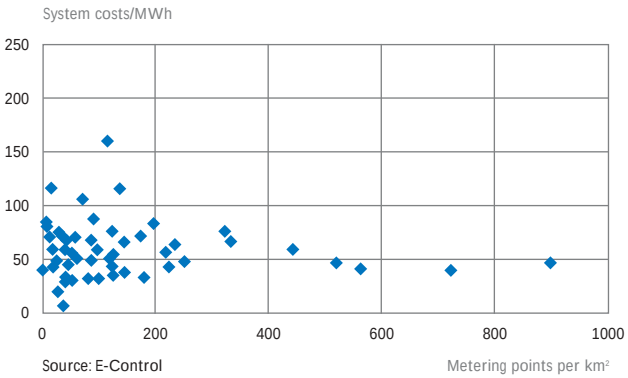
The object of the benchmarking sub-project is to assess the scope for productivity improvements at Austrian distribution network operators. The study will apply objective metrics, and will take account of the structural characteristics of distribution network operators and of international experience. The potential productivity increases are to be spread over an appropriate period of time.

At the outset of the sub-project in May 2002 a detailed questionnaire was sent to 143 grid operators. The survey questionnaire covered a variety of technical data, e.g. power supply, network length and number of metering points, also a wide range of financial information including items from the profit and loss account and balance sheet, as well as investment ratios.

Preliminary results of analysis of the responses:

→ System costs per MWh and metering points per km² Supply area

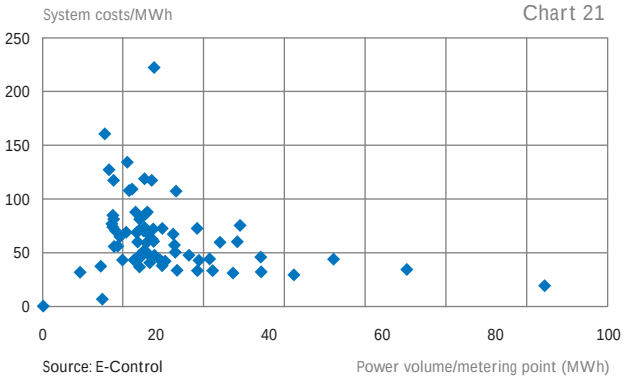
Chart 20



Large numbers of metering points per square kilometre may be an indication of high population density, which in turn could mean shorter journeys for any maintenance work, but would also point to more complex distribution networks.

→ System costs per MWh and power volume per metering point

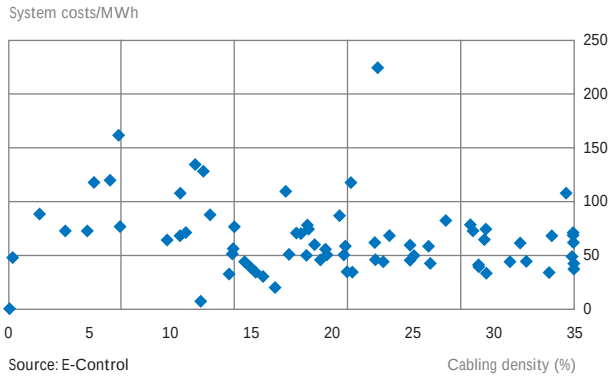
Chart 21



High power volumes per metering point may be a sign of a high proportion of industrial consumers, and hence lower costs, while the converse points to a large number of small-scale consumers.

→ System costs per MWh and cabling density

Chart 22



High cabling density may be indicative of a high degree of urbanisation, hence heavy investment costs, but also of low maintenance costs.

In order to make a considered choice of benchmarking methodology, E-Control has commissioned a report outlining the various methodologies in existence and their respective pros and cons. The terms of reference require the consultants to recommend a methodology and specify potential input and output variables for its application. The report is intended to serve as basis for selecting a main method and a control method for calculating Austrian distribution network operators' scope for increased efficiency.

Cost analysis

The object of this sub-project is to introduce adjusted analysis of grid operators' costs leading to increased cost base transparency, harmonisation of operators' cost analysis procedures and overall simplification of financial reporting. Adjusting the figures should facilitate regulation and provide a uniform cost basis for benchmarking.

In the interests of facilitating the workable and uniform implementation of the statutory provisions for unbundling, E-Control has prepared an unbundling manual. The manual draws on international experience, the relevant legal framework and the insights gained during the first tariff reviews. The manual is also designed to assist with the implementation of organisational and ownership unbundling.

Topics dealt with by the unbundling manual

Text box 4

- Core network activities:
  Analysis of network activities
- Cost analysis and allocation:
  Analysis of the cost allocation methods applied
- Financing costs:
  Modernisation – WACC approach
- Unbundling reporting:
  Changed formal requirements; publication by E-Control
- Definition of grid levels:
  Clear definitions
- Cost reallocation:
  Standardisation – grid level reallocation

Regulation

The object of the regulation sub-project is to develop a price cap regulation system for all Austrian grid operators with the following components:

Components of price cap regulation

Text box 5

- General and operator specific efficiency factors (X factor);
- Inflation adjustment;
- Reasonable regulation periods;
- Reasonable rate of return;
- Adequate incentives for necessary investments;
- Due attention to security of supply and service quality; and
- Adequate rewards for grid operators for improvements in efficiency.

Method of inflation adjustment

Inflation adjustment is necessary in order to take account of the annual increases in grid operators' costs due to higher purchasing prices. The consumer price index (CPI) was used for this purpose.

Determining the general efficiency factor

As even grid operators that are already relatively efficient may have room for further improvement, e.g. as a result of technological developments or volume growth, a general efficiency factor is to be introduced. This will be a productivity discount which is equal for all grid operators. The general X factor, to be related to the amount of the operator specific X factor, will be determined in the light of international experience and of indicators such as input prices and productivity changes in the industry.

Period for identification of operator-specific productivity potential

The productivity potential of individual operators will be established by benchmarking all of them. A variety of cost classifications were made into order to determine the time horizon for realisation of operator specific productivity potential.

Cost classification

The costs that cannot be influenced are typically those generated in the upstream third-party owned grid, as well as taxes. These are not subject to annual inflation and X factor adjustment. The other costs can be influenced in the short or long term, i.e. within one or more regulatory periods.

Security of supply

Because of the pressure to cut costs there may be a danger that companies will reduce their long-term investment and maintenance spending so heavily that security of supply is at risk. A number of models that build counter-incentives into the regulatory system are being developed.

Tariff structure

This sub-project involves revising the existing tariff components with the aim of establishing principles, definitiions, frameworks and detailed rules for a new tariff structure based on accurate cost allocation. This ensures that all grid users receive non-discriminatory treatment whilst sending them price signals that will encourage efficient grid use. At the same time, harmonising the tariff structure will make individual tariff groups more comparable, thereby enhancing market transparency.

In the course of the project it became clear that new frameworks, principles and definitions designed to simplify tariff structure cannot be implemented in one step. Initial progress will be made with the new general terms and conditions of business for distribution network operators, which are awaiting approval. However many of the envisaged changes will require transitional arrangements, and can thus only be implemented in the medium to long term.

→ Supervision of competition and market monitoring

Market monitoring and structural analysis tool project

In 2002 E-Control was granted a number of new powers, resulting among other things in new functions relating to competition law (see Text box 1). The market monitoring project was launched in order to enable us to fulfil these new responsibilities. The aim of the project is to create an analytical system that will quickly put us in a position to perform standardised observation of the competitive situation on the domestic electricity and gas markets.

Central to establishing a theoretical basis for competition monitoring was the identification of appropriate methods and criteria for localising sub-markets and their geographical boundaries. It was also essential to select indicators for assessment of the competitive situation in the various sub-markets. When segmenting markets and picking competition indicators attention was paid not just to existing theoretical approaches but also to legal precedents in the EU and member states.

The knowledge gained provided a starting point for determining the market information required, which includes both statistical data and details of regulatory rules. The reliability of the various potential competition indicators for assessment of the Austrian power and gas markets was evaluated by comparing them with those used in other EU member states. Apart from analysing market data, efforts were made to profit from the experience of a wide range of market participants in assessing markets and identifying barriers to entry. Apart from ongoing maintenance and expansion of our stock of market data, an important area of marketing monitoring activities in 2003 will be the continued development of the analytical tools used for this purpose.

The analytical system being created will enable us to form rapid judgments on structural changes in markets, such as those caused by mergers. This will ensure that E-Control is equal to its new rights and duties with regard to competition law.

Merger proceedings concerning the Austrian electricity sector

The authorities concerned (the Federal Competition Authority and Federal Cartel Prosecutor) have already requested E-Control's assistance with a number of merger proceedings.

In the proceedings relating to the takeover of IKB by TIWAG, E-Control collaborated with the notifying companies on the formulation of commitments at the request of the official parties and the discussions led to changes in the notification. As a result of this, the applications to investigate the transaction were withdrawn by the competition authorities.

In the subsequent fast-track merger proceedings E-Control submitted opinions to the Federal Competition Authority and the Federal Cartel Prosecutor. E-Control took the view that the market positions of the merger parties were not strong enough to warrant an application for an investigation.

Further information on merger and takeover proceedings is available on the website of the Federal Competition Authority, at www.bwb.gv.at.

→ Market Rules II

E-Control initiated the Market Rules II project in order to assess the previous year's experience with the Market Rules. Discussions were held with the industry on congestion management, balancing power, customer switching management, market processes and data exchange, and also contract management.

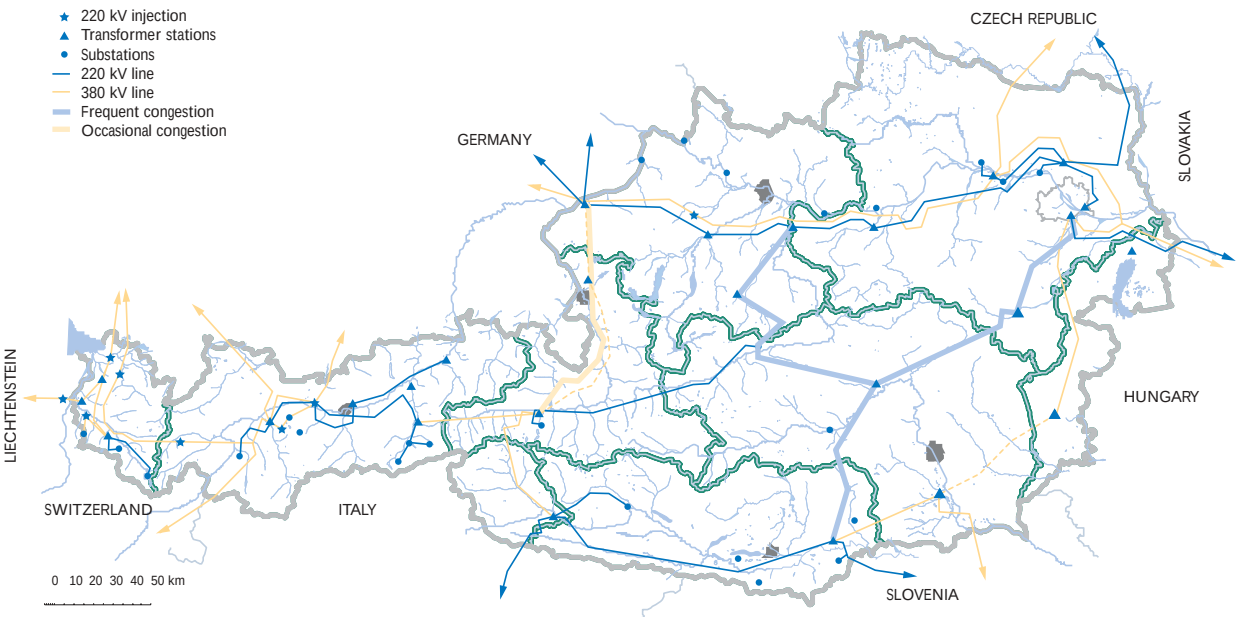
Congestion management

Among other issues, efficient grid operation involves making maximum use of existing system capacity whilst observing all the technical requirements such as the n-1 security criteria. N-1 security criteria means that an outage of a single item of equipment (e.g. a transmission circuit or transformer) will not lead to an interruption in supply, to violations of operating limits or to cascade tripping. Grid congestion occurs when the power demand in a system cannot be met while observing technical operating limits without taking grid management measures, intervening in power station dispatching or curtailing customers' consumption.

→ The Austrian high voltage grid

Fig. 6

380 kV and 220 kV lines (status on 1 Jan. 2002)



Source: E-Control

The liberalisation of the Austrian electricity market has transformed the position with regard to access to power stations, and critical situations can no longer automatically be overcome by dispatching local capacity. Power station scheduling is now governed by contracts between generators and customers. This means that a "local balance" between generation and consumption is no longer a matter of course. In the course of the Market Rules II project a start was made, in cooperation with market participants, with developing a congestion management system capable of striking a balance between the new conditions created by the liberalised market and the technical requirements for stable grid operation.
The project is aimed at creating a congestion management system that will establish clear rules for responding to congestion.
Figure 6 shows the parts of the high voltage grid that have reached the limits of their capacity and therefore need to be upgraded or augmented by additional lines.

Balancing power

The objectives of this area of the project were derived from the results of the market study; the main focus was on pricing in the APG control area. This largely reflects the prices of the market maker – a market party that undertakes to offer given amounts of balancing power – leading to highly volatile clearing prices for balancing power which are at times out of line with the rest of the market. Approaches to this problem therefore target revision of the clearing formula. Consideration is currently being given to a form of "socialisation" of the costs arising from the market maker's activities, taking balancing group final consumption volumes as a basis. This should result in more stable and predictable clearing prices, and an overall improvement in balancing power management in the control area. In addition, work is progressing on measures aimed at increased market transparency and hence equal access to information for all market participants.

Customer switching management

Smooth changes of supplier are a key success factor for liberalisation. Problems encountered when changing suppliers not only result in a heavy workload for the staff involved but also frequently annoy consumers.
Because of this E-Control has worked with representatives of the grid operators and suppliers to simplify the procedures for supplier changes, updating transfer lists, and dealing with removals and new connections. The new regulations were incorporated in the Market Rules and entered into force on 1 October 2002.

Updating of transfer registers and notice periods for changes of supplier

Automation of the switching process depends on standardised data transfers. Standard Excel forms – so-called "transfer registers" – are therefore used to e-mail all the information that needs to be exchanged between grid operators and suppliers. The new format chosen for the transfer registers ensures that they are quick and easy for small grid operators to handle whilst also permitting automated data processing by large companies.
The notice periods for switching suppliers, during which information must be forwarded and updated, were more precisely defined, and former suppliers given a chance to object to changes.
Since 1 October 2002 it has been possible to change suppliers in five weeks.

Cancellations and registration of new connections

Previously, the Market Rules did not contain a procedure to enable consumers to make new connections with the supplier of their choice. There were also no regulations for removals (cancellation and registration) by customers wishing to start with the supplier of their choice at their new address. Regulations were drawn up to address these issues, and were included in the Market Rules. As with supplier changes, these processes use Excel forms for information exchanges between grid operators and suppliers.

Market processes and data exchanges

During the year under review the Market Processes Working Group continued developing rules for the use of standardised load profiles, the first and second clearing processes, data aggregation by grid operators and the use of the MSCONS format for data transfer. The working group was attended by representatives of the grid operators and supply companies, as well as the balancing groups and the two settlement agents. As market processes are intimately connected with data processing and transfer issues, the group collaborated with the IT & Data Exchange Working Group.

The activities of the Market Processes Working Group were largely concerned with the contents of section 6 of the Specific Market Rules, Metered volumes, data formats and standardised load profiles and section 10, Information transfers from grid operators to other market participants; principles of first and second clearing.

When the Specific Market Rules were drawn up in 2001 transitional arrangements were made for standardised load profiles for interruptible supplies. Building on this temporary system, which only provided two standardised load profiles for interruptable supplies, the working group developed a permanent solution. There are now six load profiles which are applicable to water and storage heating and hybrid systems, with and without night storage. It was decided that the standardised load profile for the base load should be used for those systems with interruptable supplies for which no load profiles could be generated because of the small numbers involved and the wide variations in consumption behaviour. To facilitate volume clearing by the settlement agencies, the working group drew up uniform nationwide rules for the second clearing process.

The second clearing process includes actual metered customer loads and any volume reconciliations outstanding from the initial clearing. It was decided that the second clearing would be performed on a monthly basis from January 2003 onwards, and would be retrospective to the month 14 months before, whilst also taking account of ongoing meter readings by the grid operators. The settlement agencies will use the same procedure to determine the amount of balancing power at the initial and second clearing stages. Compensation for accrued balancing power is calculated on the basis of the balancing power price established by the initial clearing.

The new rules for the second clearing stage form part of section 10 of the Specific Market Rules. Section 10 also contains the principles for data aggregation by grid operators. Among other things, these concern the calculation of annual consumption, which may be performed either using synthesis factors from the respective standard load profiles or on a pro rata basis. In addition, section 10 sets out in greater detail than before the methods open to grid operators for aggregation of supplier and balancing group data.

The descriptions of the MSCONS data format in section 6 of the Specific Market Rules were updated. This format is used by grid operators to transfer grid users' metered data to the balancing group representatives and suppliers, also to transfer aggregated metered data to the settlement agencies.

Contract management

All the decisions issued by E-Control GmbH and the E-Control Commission approving the General Terms and Conditions for Market Opening on 1 October 2001 bear expiry dates of 31 December 2002. As amendments to the terms and conditions take several months to prepare, E-Control's proposals for general terms and conditions for distribution and transmission grid access, for balancing group representatives and for settlement agents were revised in the course of the Market Rules II project. Account was taken of the lessons of the initial period of market opening and the first half of 2002 when seeking to improve the market system. Due to the amendments desired by the companies and interest groups represented on the working group additional meetings were scheduled, resulting in further improvements. Because of this it was necessary to adopt transitional arrangements whereby the companies were given the option of extending approvals for three months, i.e. up to 31 March 2003.

The working group succeeded in adapting the recommended contractual terms to today's changed circumstances. These sample contracts will serve as a basis for the drafts to be submitted by companies, thus ensuring that the harmonisation within given control areas required by the law takes place. New sample contracts for data exchanges between grid operators and suppliers, and grid operators and balancing group representatives were drawn up. Here, too, improvements and standardisation were achieved. The working group was also involved in the drafting of the general terms and conditions for "green" power balancing group representatives.

→ Security and quality of supply

Within the opening of the electricity market and the growing calls for market based reform of the energy sector in order to increase its economic efficiency, security and quality of supply remain central concerns. All market participants regard high levels of quality and security of supply as essential to the proper functioning of the market. This applies both, to operational security in the sense of the ability of the electricity supply system to cope with unexpected events and deliver uninterrupted supply, and to the long-term adequacy of grid and generation capacity. Security and quality of supply are thus a major focus of E-Control's activities. On the basis of the powers and responsibilities conferred on it by the ElWOG 2000 and the Energy Emergency Powers (Amendment) Act, in October 2001 E-Control launched a broad-based programme entitled "Security and quality of supply in the liberalised Austrian electricity market". The programme addresses a wide spectrum of issues, including short-term (operational) and long-term aspects of security and quality of supply. The main elements are as follows.

Study of security and quality of supply in the liberalised Austrian electricity market

In May 2002 E-Control started work on the preparation of a study on security and quality of supply, undertaken in co-operation with the Austrian grid operators, focusing on operational and planning criteria. The preliminary findings, available towards the end of 2002, present a very good overall picture of security of supply in Austria. The only project in need of urgent implementation in order to safeguard security of supply is upgrading of the North-South link forming part of the high voltage loop, and particularly of the 380 kV line in Styria.
The full study, which is expected to be completed in 2003 will lay the basis for E-Control activities and projects relating to security of supply in the following years.

Security and quality of supply metrics

As part of the preparations for the first tariff regulation period, starting in 2003, during the year under review the metrics for objective assessment of, and reporting on reliability and quality developments in the Austrian distribution grids were defined. With a view to the efficient use of these metrics, prior to the first regulation period independent experts submitted opinions on them and they were discussed with the Austrian grid operators.

Security of Supply Advisory Board

In 2002 the Security of Supply Advisory Board, a body consisting of Austrian and foreign experts, was established on the initiative of E-Control.

The Board's members are:

Austrian experts

Günther Brauner,
Institute of Power Systems and Energy Economics, Vienna University of Technology
Lothar Fickert,
Institute of Electrical Power Systems and High Voltage Engineering, Technical University Graz
Heinz Stigler,
Institute of Electrical Power Systems and High Voltage Engineering, Technical University Graz
Kurt Kratena,
Austrian Institute of Economic Research in Vienna

Foreign experts

Wolfgang Fritz, CEO,
Consentec GmbH, Germany
Jorge Vasconcelos,
Chairman of CEER and ERSE, Portugal
Callum McCarthy,
Chairman of Ofgem, UK
Jan Moen,
Chairman of NVE, Norway

The Board is an independent body which serves as a forum for objective discussion of all matters relating to security and quality of supply in Austria. The Board met three times in 2002. It discussed the security and quality of supply delivered by the Austrian distribution and transmission grids, projects required to expand the 380 kV network, and congestion management measures in Austria and on international interconnectors.

In addition, the Board's opinion was sought on market modelling, and strategy for renewables and decentralised power generation. Studies on these subjects were commissioned.

CEER[1] Task Force on Security of Supply

In the European internal energy market security of supply is no longer merely a national problem but requires the cooperation of all the stakeholders throughout the EU.
The CEER Task Force on Security of Supply, chaired by the CEO of the Austrian regulator, Walter Boltz and his Norwegian counterpart, Jan Moen, was established in December 2001. The group successfully completed a large number of activities in 2002 and drew up a comprehensive work programme for 2003.

Milestones in 2002

- → Agreed definition of the term "security of supply". "Security of supply means that customers have access to electric energy at the time they need it with measurable quality and with the market price they can afford to pay."
- → Regulatory guidelines for security of supply developed in conjunction with 14 other members of the CEER, which will serve as a basis for detailed operating rules.
  A summary presentation on the guidelines and rules based on them was given during the Florence Forum meeting in Rome, in October 2002.
- → A survey of the security of supply situation in CEER member countries. After completion of the first such survey in July 2002 CEER initiated a detailed analysis of security of supply in EU member states. The preliminary results of the study were available in December 2002.
  These activities were warmly welcomed by the European Commission. In 2003 the full findings of the study will be used to formulate a common CEER platform, and will be taken into account when planning joint cross-border and long-term regulatory activities.
- → Design of three major projects relating to security of supply and preparations for their implementation in 2003.

• Unification of operational security standards, based on the outcomes of the discussions between the CEER and the UCTE on the new UCTE operational handbook which is currently being prepared.
• Summary of the grid expansion plans of CEER member countries for the next ten years.
• Joint monitoring with the UCTE of the latter's power balances for 2003.

The object of this CEER Task Force is to analyse the security of supply situation on an ongoing basis and to create a long-term regulatory framework conducive to the sustainable safeguarding and enhancement of security of supply in Europe.

[1] Council of European Energy Regulators

→ Emergency measures

New powers

The Energy Emergency Powers (Amendment) Act entered into force on 1 January 2002. The Act contains the necessary adjustments to the new circumstances created by liberalisation of the electricity market. Most of the changes relate to the legal powers of the bodies concerned.

Thus the authorities with emergency powers have been realigned to reflect the new structures created by the Energy Liberalisation Act. The previous duties of the federal system operator are assigned to E-Control, while those of the provincial system operators pass to the provincial governors who are empowered to direct the control area managers and the grid operators, settlement agents, balancing group representatives and electricity traders active in their provinces to implement emergency measures. The new arrangements have created a uniform national crisis planning and management system, involving all the institutions created by the ElWOG 2000 to run the liberalised electricity market according to the means at their disposal.

E-Control is responsible for the preparation and coordination of emergency measures aimed at safeguarding the security of electricity supply. It is empowered to ration supply to large-scale customers with a demand of over 500,000 kWh. E-Control is also empowered to issue orders and to establish an economic, legal, technical and organisational framework for crisis planning and management. A variety of surveys of market participants are necessary in order to draw up emergency measures. E-Control has issued an order for this purpose (see section on the Energy Emergency Data Order).
Apart from reassigning statutory powers, the Act streamlines the system of advisory councils and consultation, which was not created with a liberalised electricity market in mind. The Electricity Advisory Board, which was established under the Regulatory Authority Act, is now responsible for the consultative arrangements provided for by the Energy Emergency Powers (Amendment) Act. There are no longer any other advisory boards responsible for matters regulated by the Act.

Energy Emergency Data Order

With the amendment of the Energy Emergency Powers Act 1982 it also became necessary to reshape the system for collection of the data required to plan and implement emergency measures for the electricity sector. Section 11(2) of the Act empowers E-Control to order periodic reporting of data for this purpose. Following consultation of the market participants concerned, the draft Energy Emergency Data Order entered into force on 1 May 2002.

The order for the first time established a clear distinction between data collection for crisis planning purposes under the Energy Emergency Powers Act and that for statistical purposes under the Statistics Order 2001 enacted by the Ministry of Economic Affairs and Labour. As E-Control is responsible for data collection under both orders, double collection and duplication of effort are avoided, thereby enhancing administrative efficiency.

Among other things the order:

- Designates undertakings with reporting duties (settlement agents, transmission and distribution grid operators, public generators and autoproducers);
- Establishes the data reporting requirements (quarter hour, monthly, annual and third Wednesday metered data) and
- States the reporting deadlines.

The provincial governors, who are responsible for crisis planning and management at provincial level, also require data to set regional rationing quotas. Quarterly reports on monthly power supplies to final consumers, broken down by grid operators are sent to the provincial governors in electronic form, using standardised formats.

Security of supply forecasts

As part of its duties under the Energy Emergency Powers (Amendment) Act, E-Control has prepared medium and long-term (up to 2010) electricity supply and demand forecasts in cooperation with the Austrian Institute of Economic Research and the Vienna University of Technology. The demand forecasts are broken down into maximum load and total consumption projections, while the supply side forecast is for maximum load.

Total consumption forecast

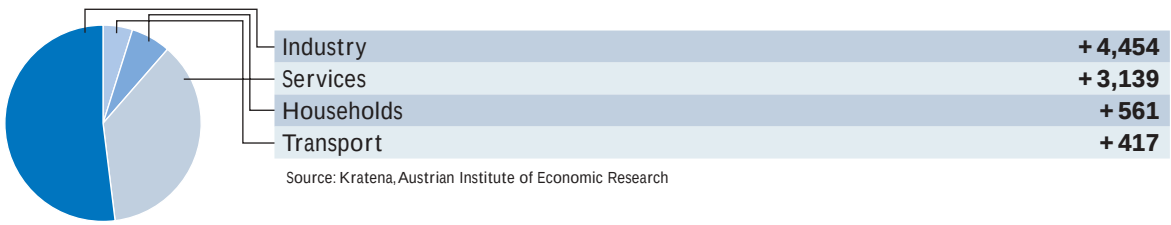
An Austrian Institute of Economic Research study by Kurt Kratena and Michael Wüger, entitled "Electricity demand up to 2010" presents a baseline scenario for the period generated by an expanded version of the Institute's DAEDALUS model. The scenario is based on assumptions about crude oil prices, population and economic growth. The study pays special attention to the impact of full liberalisation on the electricity and gas markets. The Institute has already attempted to model the price effects of Austrian electricity and gas market liberalisation in its energy scenarios up to 2020 (Kraterna and Schleicher, 2001). It has since made ex post calculations of the impact of liberalisation on electricity prices charged to industrial and residential consumers between 1998–2001.

The Institute of Economic Research study sees industrial electricity consumption by growing by some 4,450 GWh or 560 GWh/year from 2002–2010. It projects the growth of demand from the tertiary sector and residential consumers at some 4,120 GWh or 400 GWH/year over the period, of which only approx. 400 GWh is accounted for by transport and 500 GWh by households.

The total projected growth in electricity consumption for the period is thus about 8,570 GWh or 1,070 GWH/year.

→ **Absolute increase in electricity consumption, 2002–2010** Chart 23

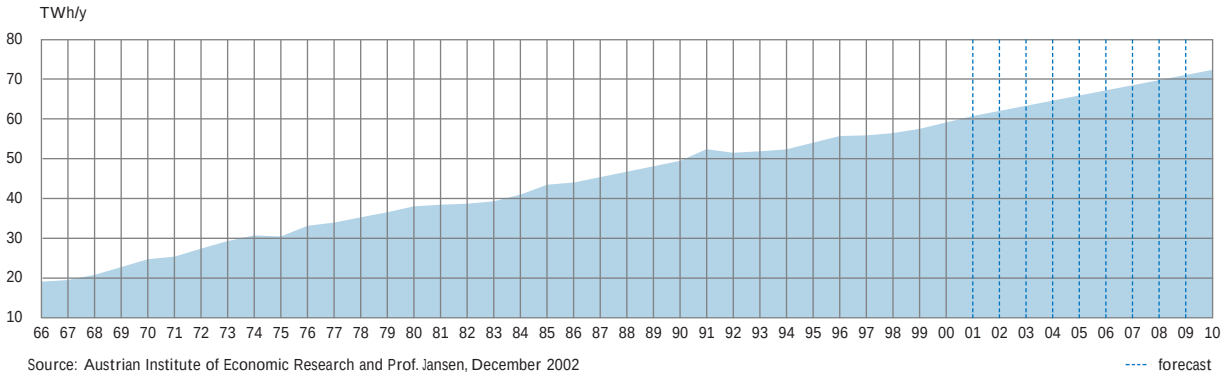
in GWh



Source: Kratena, Austrian Institute of Economic Research

→ Domestic electricity consumption up to 2010 on the assumption of annual increases of 1,070 GWh

Chart 24



Source: Austrian Institute of Economic Research and Prof. Jansen, December 2002

Electricity demand (peak load) forecast

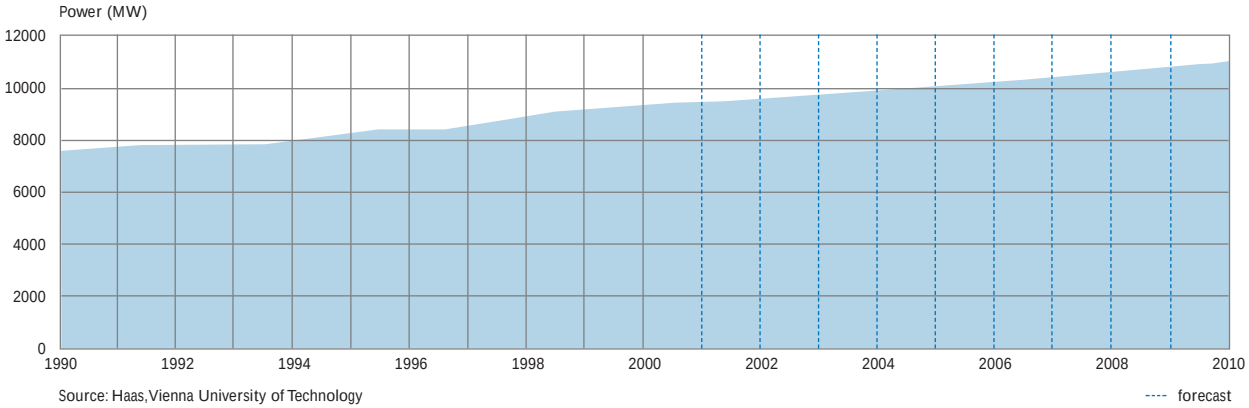
A study by the Vienna University of Technology[1] presents a forecast of peak demand (annual peak load) up to 2010 and analyses the influence of the main parameters assuming liberalised electricity markets. By agreement with the Institute of Economic Research, the influence on demand of prices, incomes, structural changes and weather conditions was modelled.

Analysis of historical time series data shows gross domestic product (GDP), weather data and prices to correlate most strongly with demand. The authors found GDP to be the factor with by far the strongest influence on power consumption, meaning that close attention must be paid to it when forecasting demand. Mean temperatures in the Austrian provincial capitals were used to relate weather to power demand.

[1] Forecast Trends in Peak Electricity Demand in Austria – Haas, Stadler and Auer

→ Evolution of peak load (MW), 1990–2010

Chart 25



Results of the peak load forecast

According to the forecast the total peak load in Austria, which stood at 9.3 GW in 2000, will rise to 11 GW in 2010.

The chart shows the 10 GW mark being passed in 2006 and the 11 GW mark almost being reached in 2010. Due to slow projected economic growth the annual peak load rises less rapidly between 2001–2005 than in the second half of the forecasting period. A forecast based on projected electricity consumption shows a 4% increase in peak load (Jansen, 2002) – similar to the result arrived at by a GDP based study which includes the 1980s (Haas, 2002).

Pre-liberalisation view of security of supply

The traditional approach to security of electricity supply was based on the assumption of virtually complete national autarchy. This implied the requirement, for instance, that Austria should continue to be supplied with electricity from so-called "island operation" in the event of worst case scenarios with regard to all the factors influencing electricity supply and demand – e.g. very low water levels, an economic boom, low temperatures, and outages of thermal and storage power stations.

Taking this traditional, very exacting definition of security of supply as a yardstick, under-supply passes the 2 GW mark in 2008. This situation could be prevented by building power stations, concluding import or outage assistance agreements for equivalent volumes, or scaling back export agreements tied to performance guarantees.

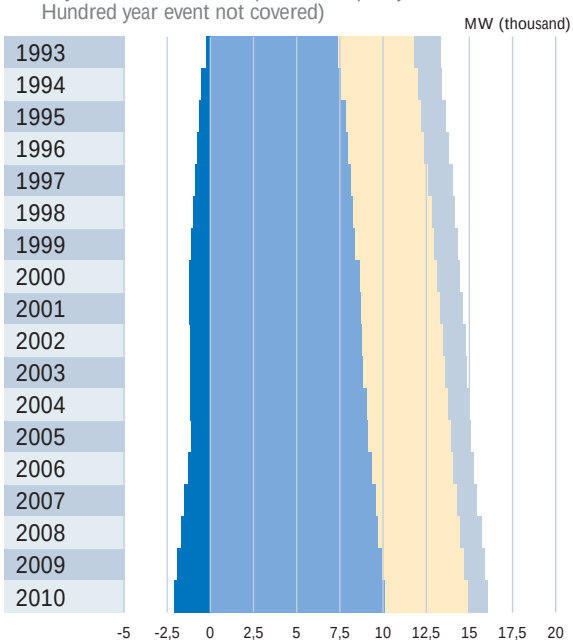
Redefinition of security of supply in the light of liberalisation

In a liberalised electricity market short-term procurement of power does not stop at national borders. The received view of security of supply – independent supply of nation states, acting as "islands" – may thus be open to question. The European Union is attempting to view individual security of supply issues, including grid infrastructure, as part of a pan-European whole, and to coordinate national policies. The first proposed actions are to be found in the Green Paper Towards a European Strategy for Security of Energy Supply. This argues that security of supply has become a common concern of all member states.

Viewing the problem from this new perspective – namely Austria's ability to obtain energy supplies from neighbouring countries at any time – a forecast was made on the basis of less strict assumptions regarding coverage of all extreme events from domestic reserve capacity. This is realistic, because the geographical framework for assessing security of supply needs to be widened from a national perspective to one that at least includes some neighbouring countries.

→ **Power balance according to the traditional definition of security of supply** Chart 26

Adjusted to exclude autoproducer capacity
Hundred year event not covered)



Source: Jansen, 2002

- demand-supply balance
- average peak load value (public)
- reserve capacity
- long-term contracts balance

Security of supply: definition 1
Security of supply in event of low water, economic boom, low temperatures and power station outages (thermal and storage stations) in accordance with the UCTE rules (hundred year event not covered).

Taking the new definition of security of supply, existing Austrian capacity is sufficient to cope with the improbable scenario of simultaneous low water, rapid economic growth, low temperatures and power station outages for all but one day in three years, given that all export, import and outage assistance agreements remain in place. Applying the new definition, in the absence of additional measures, slight under-supply emerges in 2006 and the gap widens to 1 GW by 2010.

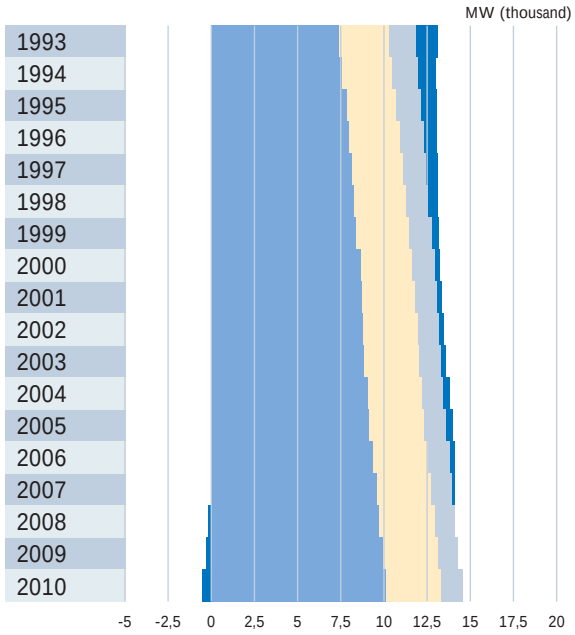
It should be noted that in both scenarios Austria remains contractually committed to exporting power. Were this not so, there would be sufficient physical capacity to meet the country's needs. However existing long-term outage assistance agreements must naturally be respected.

The question as to the domestic supply cushion that Austria is willing and able to pay for can only be resolved by public debate.

→Power balance according to the new definition of security of supply

Chart 27

(Supply in insecure for one day in three years)



Source: Jansen, 2002

- demand-supply balance
- average peak load value (public)
- reserve capacity
- long-term contracts balance

Security of supply: definition II
Security of supply in event of low water, economic boom, low temperatures and power station outages (short-term foreign assistance needed for one day in three years).

→ Stranded Costs

Notices under the old and new orders

Under the Regulatory Authority Act E-Control is responsible for implementing the regulations on stranded costs. It must issue demands for outstanding contributions to stranded costs under the initial order (Federal Law Gazette II No. 52/1999) from the grid operators or issue notices prescribing future instalment payments, and must collect such contributions under the new order (Federal Law Gazette II No. 354/2001). Under the latter order proceedings were initiated against all grid operators which had failed to make all or any of the payments due. Of the 121 such proceedings, 48 have been completed, and appeals to the second instance (the E-Control Commission) are pending. To date 128 proceedings have been instituted under the new order (between the fourth quarters of 2001 and 2002). In all but two cases in which notices have already been issued, and 48 in which payment is still outstanding, proceedings were immediately completed due to receipt of payment. A total of € 43,220 in administrative expenses were charged pursuant to section 69(7) ElWOG 2000.

Administration of funds by E-Control

It should be noted that considerable contributions to stranded costs, itemised by grid operators in their bills, have not yet been paid on to E-Control.

→ Stranded costs

Table 5

Up to 31 Dec. 2001, under the "old" order (Fed. Law Gazette II No. 52/1999)		17.51	Mio. EUR
In 2002, under the "old" order (Fed. Law Gazette II No. 52/1999)		0.54	Mio. EUR
In 2002, under the "new" order (Fed. Law Gazette II No. 354/2001)		15.52	Mio. EUR
Total payments received		**33.57**	Mio. EUR
Disbursements to beneficiaries in 2001		17.50	Mio. EUR
Disbursements to beneficiaries in 2002		16.07	Mio. EUR
Outstanding contributions under the "old" order	approx.	28.70	Mio. EUR
Outstanding contributions under the "new" order	approx.	2.75	Mio. EUR

Source: E-Control

→ Data collection and statistics

Legal framework

While the Electricity Statistics Order 1975 met a wide range of needs – section 3 provided for the use of data for planning, crisis management, price monitoring and regulation, among other things – the scope of the surveys for the three main areas for which electricity industry data is collected is now governed by separate legal instruments:

- → The new Statistics Order of 28 December 2001 (Federal Law Gazette II No. 486/2001) issued by the Federal Ministry of Economic Affairs and Labour, adding detail to the relatively general formulation of E-Control's statistical duties contained in section 52 ElWOG 2000;
- → The Energy Emergency Data Order published by E-Control on 22 April 2002, implementing the right conferred by section 11 Energy Emergency Powers Act to order periodic data reporting for emergency planning purposes;
- → E-Control orders such as that of 4 July 2002 on "green" power and small hydro data reporting, governing the collection of data for other functions of E-Control or the E-Control Commission.

Comparison of the "old" and "new" reporting systems

Broadly speaking, the statistics generated on the basis of the Statistics Order 1975 were "generator statistics". Energy flows were followed from the power stations' monthly gross generation figures through to the annual supply figures. By contrast, the new surveys are chiefly based on data provided by grid operators – quarter hour figures for volumes injected into the public grid and for supplies from the latter – though additional information is drawn from generators. The new surveys can thus be described as "grid statistics".

From a surveying point of view, the main difference lies in the changed reporting duties, and thus in responsibilities for providing data. Under the Statistics Order 1975 the reporting structure was vertical, whereas today it is horizontal. Previously, utilities and autoproducers were responsible for all their data, from power generation through to delivery to final consumers. Today, it is settlement agents that are responsible supplying aggregated data such as injection and supply figures for each grid operator and control area, whereas grid operators are responsible for reporting grid data such as the infeed from relevant power stations, as well as electricity exchanges with other control areas and foreign grids. Generators' reporting duties largely concern statistically relevant power stations, which are not necessarily available to the respective grid operator.

In terms of the systems involved, perhaps the most important difference between the two approaches lies in the significance accorded to own use. Generator statistics are based on generation. Own use and step-up transformer losses are included in full in the balance, even when met from the production of the power station in question. The new survey method only counts injection on the supply side, and electricity drawn from the public grid for power stations' own use on the demand side. Own use and step-up transformer losses are not included in domestic supply if met from own production.

The definition of the "public" area of electricity supply also differs greatly. Since October 2002 the term "public electricity supply" has been replaced by "public 50 Hz grid". Electricity exchanges with the railway grid via transformer stations are treated as supplies to final consumers or as power injection, but generation at 16 2/3 Hz power stations is disregarded.

Data collection

Austrian electricity data collection, both for statistical and for emergency planning purposes, is generally based on physical energy flows between sources and sinks metered at quarter hour intervals. However E-Control does record all of these flows, and the responsibility for continuous monitoring of load flows lies with grid operators.

Energy flows are only recorded for statistical or emergency planning purpose where information on individual components is required to perform given tasks. Relevant components, for these ends, include the injection points at large power stations and interconnection points with other domestic control areas or foreign systems. Information on other components, such as the injection points of small or medium sized power stations or points of delivery to final consumers, does not require the same degree of detail. This data can be more highly aggregated, for instance as summations for grid operators, or as monthly or even annual totals. Here, the measurement of actual energy flows is replaced by simplified summation or balance models.

This results in a hierarchy of software applications.

Daily data

Both for emergency planning and for statistical purposes, grid operators and settlement agents are required to report all usable power injection into the public 50 Hz grid, injection by large power stations, procurement from other domestic and foreign control areas or control blocks, and all quarter hour metered supply to final customers (meter reading differences).

These data collection activities, applications and analyses form part of the "daily data" project. The application used can model both the actual energy flows and a wide range of summations and balances. The shortest time interval that can be represented is a quarter of an hour and the longest a calendar year.
Data collected on a quarter hourly basis is aggregated, inter alia, into monthly totals used to compile monthly reports.

Monthly and annual data

Apart from the monthly summations for total infeed and injection by relevant power stations, aggregated from quarter hour data, additional information is collected from generators, namely gross output broken down by the primary energy sources used and fuel inventories. The extended reporting requirements have permitted a considerable increase in the degree of detail of generation and injection data: over 80% of infeed to the grid can now be assigned to the primary energy sources used.

Additional information from the grid operators with regard to physical power imports and exports across the medium and low voltage grids complete the picture.

Beyond this, autoproducers exceeding capacity threshold levels are required to report the composition of their power supply and use. However, due to the strict data protection regulations monthly publication of this information is not possible. Consideration is currently being given to whether quarterly figures would conform to the data protection requirements.

The annual statistics go into greater detail. Here, reporting is mandatory for small-scale generators, both public and industrial, with capacity from 1 MW upwards. Despite a significant reduction in the number of generators and grid operators included in the annual operational statistics (formerly approx. 750) and in the five-year statistics (formerly approx. 1,200) to a present total of about 300 companies, the quality of the annual surveys is not likely to be significantly affected. Previously, the output of many small generators had to be estimated during the year. The annual reporting by small generators was likewise often substandard.

The new data collection system captures the total volume of power injected into the public grid, and this is broken down by primary energy sources in varying degrees of detail according to the frequency of reporting. Total supply to final customers is now a metered amount, while under the old system it was merely an estimate.

Final customers

Both the annual operational statistics and the five-year statistics for supply to final consumer were previously broken down by economic activities. The electricity supply companies were required to report this information. However there were difficulties in assigning both customers with special agreements and, increasingly, tariff customers to industries.

In the transitional year, 2001, classification by economic activities had to be dropped for the first time. The new Ministry of Economic Affairs and Labour Statistics Order no longer provides for classification of final consumption by industries.

However, for energy emergency planning purpose, at the least a knowledge of the main economic activities of the largest consumers is necessary. Because of this grid operators are obliged to report monthly supply to major final consumers (average demand of at least 100,000 kWh or connected load of at least 500 kW). Apart from consumption data from large-scale consumers, it is essential for the provincial governors to have information on seasonal consumption fluctuations, particularly for small consumers without load profile meters, in order to determine provincial consumption quotas in emergencies.

Both the disaggregated data for major consumers and the consumption data for minor consumers is collected only in connection with the emergency planning system, and is not analysed for other purposes.

EUROSTAT- survey on the effects of liberalisation

As part of a statistical survey of consumer switching behaviour in the liberalised European electricity market initiated by Eurostat, E-Control investigated the impact of liberalisation in Austria in the three quarters before and the four quarters after 1 October 2001 in cooperation with the Austrian Energy Consumers Association.

A total of 152 grid operators and 132 suppliers were polled on final customers' switching behaviour (actual changes and renegotiated contracts). In addition a random sample survey on the same subject was conducted among customers with an annual consumption of over 100,000 kWh (hereafter referred to as special agreement customers). The 2001 survey captured some 46,600 GWh or well over 95% of total supply to final customers, and was thus representative in terms both of the number of consumers and of the amount of final demand covered.

The results of the survey of customer migration in the year up to 1 October 2002 show the following picture:

→ Switching behaviour by consumer groups, 1 October 2001 to 1 October 2002

Table 6

Consumer group	Number of switching customers	Annual power demand affected by switching in GWh	Annual power demand affected by switching in %
Households	25,993	87	0.8 %
Other tariff customers*	37,840	299	3 %
Special agreement customers	1,987	3,491	13 %
Total	65,20	3,877	8 %

Source: E-Control

* Agriculture and SMEs

Both the full survey by E-Control and the random sample survey showed wide variations between the switching behaviour of different consumer groups. Households changed suppliers less often than other tariff customers, and the latter less frequently than special agreement customers which are actively metered.
The behaviour of the latter also varied according to the volume of their annual procurement and consumption. Small customers switched far less often, and were also less able to negotiate changes in the terms of their agreements than medium or large-scale consumers.

In all, some 26,000 households or 0.8% of the total voluntarily switched suppliers in the year up to 1 October 2002, as well as some 38,000 passively metered final customers or 3.2% of the total. It is striking that few consumers in either tariff group voluntarily renegotiated their contracts. However they enjoyed general price reductions, which particularly benefited customers who had previously paid "business rates" but also affected residential consumers.
At least 13% of the special agreement customers switched suppliers, and almost 60% voluntarily renegotiated their contracts. At least three-quarters of all special agreement customers succeeded in changing their electricity contracts.

While few residential consumers have been prepared to switch suppliers since full liberalisation, the trend has been slightly upwards over the seven quarters of the survey period.
No such trend has yet emerged in the case of the other passively metered final customers.

However there was an increased willingness to switch in the early months of full liberalisation which persisted, though it receded somewhat in the following two quarters. Over 2% of the actively metered final customers had already made use of their freedom to switch suppliers before 1 October 2001, and in both of the first two quarters of full liberalisation a further 5% followed suit. In the following two quarters the share of consumers switching suppliers declined to somewhat more than half a percent. Here, it should be noted both that many companies – 58% before 1 October 2001 and some 20% thereafter – were able to renegotiate their contracts, and that the new contracts (after renegotiation or a change of supplier) greatly reduced the possibilities for switching because of their long terms.

→ European cooperation on electricity

The Florence Process

Members of the Council of European Energy Regulators (CEER), and industry and Commission representatives attend biannual meetings of the Florence Process (also known as the "Florence Forum") initiated by the European Commission in 1999.

The two meetings held in 2002 centred on the complex of issues relating to cross-border tarification. At the meeting in February 2002 agreement was reached on a transitional regime for cross-border electricity supplies to be operated until 31 December 2002. The meeting in October 2002 focused on designing a new tarification system to remain in force for a longer period of time. Under this long-term mechanism the export charge, originally set at € 1 per MWh in 2001, would be reduced to € 0.50 per MWh. Apart from delegates from EU candidate countries, this meeting was the first to be attended by Russian representatives. Issues relating to capacity allocation, congestion management, security of supply, infrastructure and electricity trade with third countries were also discussed.

Athens Process

Parallel to the Florence Process, at a conference in Athens in 2002 the European Commission launched an initiative aimed at integrating the energy markets of South East Europe in the internal electricity market by 1 January 2005. By this time the countries adhering to the Athens memorandum will be expected to have incorporated in their national law all the legislative provisions necessary for the opening of their energy markets and already in place in the EU.

At the invitation of the European Commission, the CEER has formed a four-strong task force (including a representative of E-Control) to support this process and to prepare for the first Athens Forum meeting in March 2003.

The CEER and the CEER working groups

The CEER was constituted in March 2000. The Council has established working groups to deal with issues related to European energy market liberalisation and the regulatory authorities required by it. The object of the CEER is the discussion and preparation of joint positions on energy liberalisation matters. While the organisation initially focused on the electricity market, with the progress of gas market liberalisation it has also paid increasing attention to the latter. Because of this the working groups were restructured in August 2002, and there are now bodies responsible for electricity, gas and cross-sectoral issues.

CEER electricity working groups

Text box 6

- Cross-border trade
- Congestion management
- Tariff harmonisation
- Peak load and balancing energy
- Electricity infrastructure
- Security of supply
- Quality of supply

E-Control plays an active part in the CEER working groups, and chairs the peak loads and balancing energy working, as well as co-chairing the security of supply group in conjunction with Norway.

Working groups dealing with electricity and gas issues

Text box 7

- Taxation and environment
- International energy price comparisons
- Candidate countries

E-Control is coordinating the activities of the candidate countries working group, and held a joint meeting in Vienna with regulators from all CEER candidate countries in June 2002. This enabled contacts with regulators from candidate countries to be intensified and discussions to be held on cross-border congestion management which is an important issue for Austria.

For further information on the CEER gas task forces, see the section entitled “European gas cooperation”.

In order to optimise cooperation with the European Commission the CEER opened an office in Brussels in September 2002.

→ Council Working Group on Energy

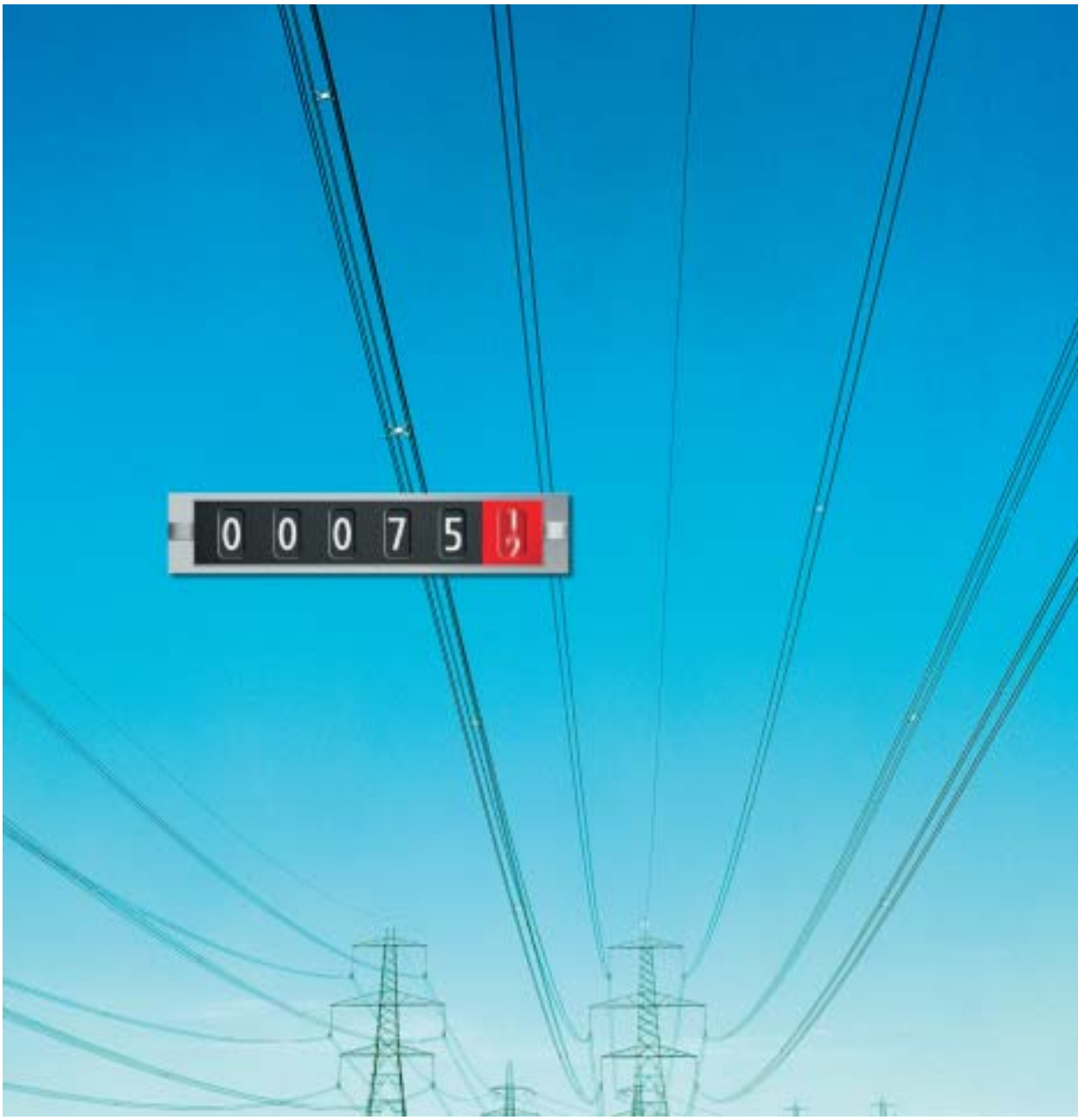
Council of European Energy Regulators

Council Working Group on Energy

E-Control regularly submits opinions on the working papers of the Council Working Group on Energy, thereby sharing the experience gained from its supervisory and regulatory activities, and ongoing monitoring of the Austrian energy market.

These position papers on draft EU legislation have the ultimate goal of accelerating energy market liberalisation – in which Austria has played a pioneering role by fully opening its energy markets on 1 October 2002 and implementing the Renewable Energy Directive (2001/77/EC) – in all member states.

The Austrian electricity market



→ Developments in 2001 and outlook for 2002

Austrian electricity consumption totalled 60.3 TWh in calendar 2001 – an increase of 3.1% or 1.8 TWh. During the year total public electricity supply to end-users rose by 4.0% or 2 TWh, to stand at 52.7 TWh. The trends in total consumption and electricity withdrawal from the public grid were similar, but diverged in 2002.

The seasonal shifts in the two winter quarters varied greatly. Demand growth was slow in the first quarter, but was above average in the fourth as a result of cold weather. There was little difference between the trends in the summer quarters.

With water supply in 2002 below the previous year's levels (an energy capability factor of 1.11 compared to 1.17 in calendar 2001), the share of domestic electricity output accounted for by hydro power declined from 70% to 67%. The contribution of thermal power stations to output thus rose to 33%, the increase coming from fossil fuels – especially solid fuels.

The aggregated statistics for 2002 will not be available until April 2003. Preliminary statistics reveal a clear shift towards increased withdrawal from the grid.

→ Price trends

Changes in system charges

When full liberalisation of the Austrian electricity market entered into effect E-Control began monitoring the price behaviour of the monopolistic grid operators and setting use of system charges.

Since October 2001 average system charges have fallen by as much as 17% in some grid zones. The main factor taken into account when establishing system charges is grid operators potential for productivity increases. In all, the tariff reductions brought Austrian electricity consumers annual savings of some € 145m.

On closer inspection it is seen that average tariff reductions hide variations between grid levels. For instance, while it was mainly domestic consumers who benefited in Styria, in Burgenland industrial consumers enjoyed lower use of system charges (see section entitled "Tarification"). The absolute levels of use of system charges differ from one grid zone to another. Average charges are lower in Vienna, Lower Austria and the western provinces than in other grid zones.

A nationwide comparison of average tariff reductions shows that the most pronounced savings were enjoyed by customers at grid levels 7 and 5, while the changes at other grid levels were modest, ranging from 0.1–2%.

Industrial electricity prices

Following decades of continuous increases, the electricity prices charged to large industrial companies have fallen in the wake of market opening. At the end of 2002 the prices paid by some large-scale industrial consumers for electricity alone were below wholesale levels. The prices paid by medium-sized industrial companies for electricity alone (net of system use charges, taxes and levies) are currently in the order of € 20–25/MWh, while smaller firms and large commercial businesses are paying € 25–29/MWh.

Residential electricity prices

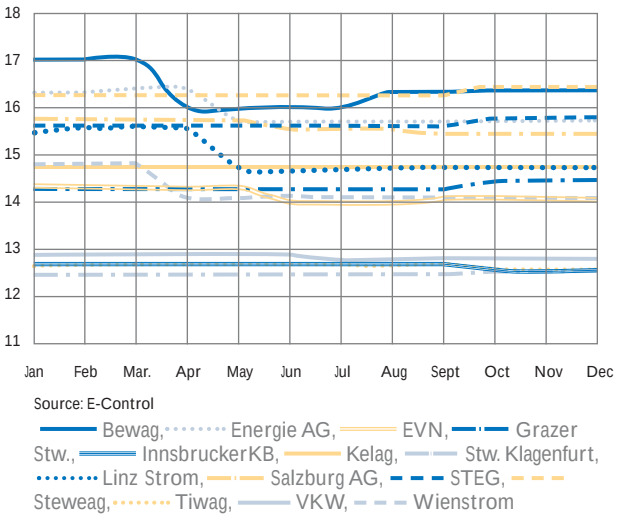
Residential consumers enjoyed scattered price reductions in the run-up to liberalisation, and the price cuts multiplied as liberalisation progressed. However, the doubling of electricity tax in 2000, and other levies and taxes (e.g. the stranded costs charge, CHP surcharge and "green" power levy) cut into the savings.

Price changes (mostly reductions) occurred in 2002, the amounts varying between grid levels. These adjustments had less to do with falls in suppliers' electricity prices than with the changes in grid operators' charges imposed by the E-Control Commission.

→ Residential electricity prices (3,500 kWh) by grid zones

Chart 28

January to December 2002, cent/kWh inc. taxes and levies



Source: E-Control

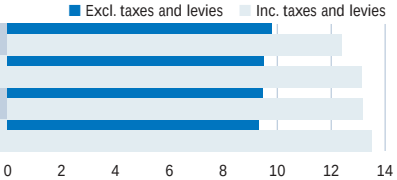
Bewag, Energie AG, EVN, Grazer Stw., InnsbruckerKB, Kelag, Stw. Klagenfurt, Linz Strom, Salzburg AG, STEG, Steweag, Tiwag, VKW, Wienstrom

→ Residential electricity prices in Austria, 1999–2002

Chart 29

System and electricity charges, annual consumption of 3,500 kWh; day

	cent/kWh	
	Excl. taxes and levies	Inc. taxes and levies
01.01.1999	9.79	12.62
01.01.2000	9.52	13.23
01.01.2001	9.47	13.25
01.01.2002	9.32	13.39



Source: Eurostat

Austrian electricity prices by comparison with international levels

Austrian residential electricity prices are placed mid-table in an international comparison (see Fig. 30). While prices have risen in some countries in recent years, in Austria they have decreased as a result of liberalisation. Austrian residential prices were still slightly above the European average in 1999, but were below it by the start of 2002. Austria has thus run counter to the overall European trend.

Changes in levies

Since the amendment of the ElWOG tariff customers' electricity prices have been broken down into separate components. This has led to some changes in the system of levies and support payments.

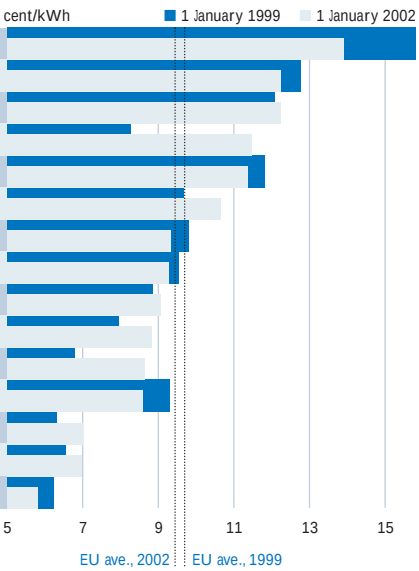
Fig. 31 gives an overview of the amounts of the levies and surcharges in the various supply areas. The differences between grid zones mainly arise from those between the consumption levies (governed by provincial legislation), the CHP surcharges and the "green" power surcharges (phased out at the end of 2002).

→ Comparison of European residential electricity prices

Chart 30

(3,500 kWh/year, excluding taxes and levies)

	1 January 1999	1 January 2002
Italy	15.81	13.90
Germany	12.76	12.24
Portugal	12.07	12.23
Luxembourg	8.28	11.48
Belgium	11.82	11.37
UK	9.66	10.64
Austria	**9.79**	**9.32**
France	9.46	9.23
Netherlands	8.84	9.07
Ireland	7.95	8.83
Denmark	6.79	8.65
Spain	9.29	8.59
Sweden	6.30	7.01
Finland	6.55	6.97
Greece	6.23	5.80



Source: Eurostat

Apart from support payments to CHP plants, the ElWOG 2000 provides for the subsidisation of "green" power plants (e.g. wind, PV and biomass). Since 1 October 2001 the provincial governors have been gradually issuing orders setting minimum injection tariffs for "green" and CHP plants, as well as surcharges on the use of system charges for such capacity. Use of the option provided by the law of graduating charges according to grid levels has only been made by Upper Austria ("green" power surcharge) and Salzburg (CHP surcharge). This approach indirectly leads to differentials between categories of end-users as it affects the amounts they pay for given supply volumes and voltages.

Under an order of the Minister of Economic Affairs and Labour, the grid operators will continue to collect compensation for the stranded costs related to the closure of the Voitsberg 3 power station until 30 June 2006; they pay these contributions on to E-Control (legal maximum a total of € 132.61m).

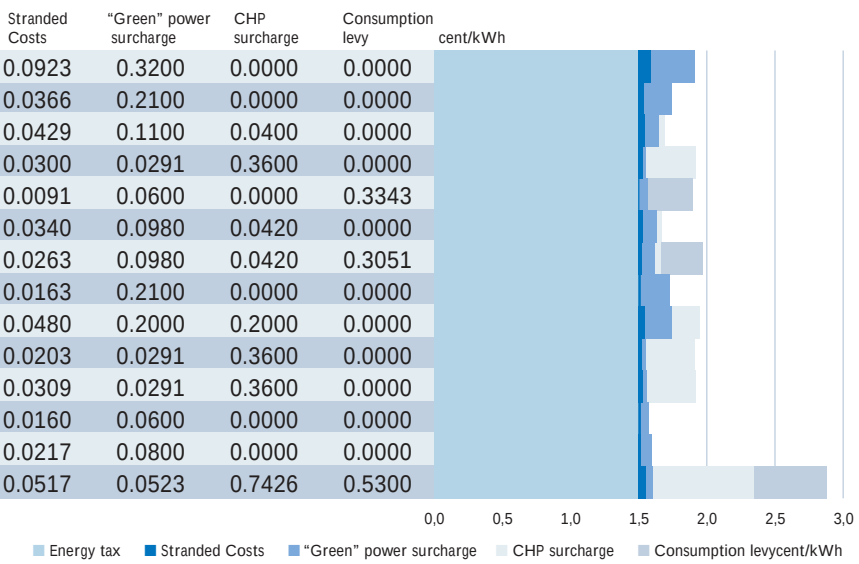
Since 1996 network based energy forms – oil, gas and electricity – have been subject to energy tax. In mid-2000 the Minister of Finance increased the energy tax on electricity from 0.75 cent/kWh to 1.5 cent/kWh.

→ Levies and surcharges by grid zones

Chart 31

3,500 kWh Status as of 1 October 2002

	Energy tax	Stranded Costs	"Green" power surcharge	CHP surcharge	Consumption levy
BEWAG	1.5	0.0923	0.3200	0.0000	0.0000
Energie AG	1.5	0.0366	0.2100	0.0000	0.0000
EVN	1.5	0.0429	0.1100	0.0400	0.0000
Grazer Stw.	1.5	0.0300	0.0291	0.3600	0.0000
IKB	1.5	0.0091	0.0600	0.0000	0.3343
Kelag	1.5	0.0340	0.0980	0.0420	0.0000
Stw. Klagenfurt AG	1.5	0.0263	0.0980	0.0420	0.3051
Linz AG	1.5	0.0163	0.2100	0.0000	0.0000
Salzburg AG	1.5	0.0480	0.2000	0.2000	0.0000
STEG	1.5	0.0203	0.0291	0.3600	0.0000
Steweag	1.5	0.0309	0.0291	0.3600	0.0000
Tiwag	1.5	0.0160	0.0600	0.0000	0.0000
VKW	1.5	0.0217	0.0800	0.0000	0.0000
Wienstrom	1.5	0.0517	0.0523	0.7426	0.5300



Source: E-Control

→ Market developments

Wholesale market

During the year under review the Austrian wholesale electricity market witnessed two major developments: the aftermath of the sharp price increases at the end of 2001 and the opening of the Graz based Energy Exchange Austria (EXAA).

Volatile start to 2002

In mid-December 2001 – and particularly on 17 and 18 December – some of the steepest price rises yet seen on European wholesale electricity markets occurred. Wholesale prices briefly leapt to 15 or 20 times their normal level. On the bilateral market some megawatt hours were even traded at € 1,000–2,000. The reason for the price spike was temporary tightness in supply across Europe, resulting from exceptionally cold weather in large parts of the continent accompanied by major power station outages in France. In Spain record demand led to the intermittent interruption of services to industrial consumers with connected loads of 500 MW or more.

Trading came to a virtual standstill as a result of the high prices, placing market participants in need of additional power to cover their requirements in a difficult situation. The disappearance of the world's largest electricity trader Enron also undoubtedly played a part in the shallowness of the market. As the price run-up did not reflect mid to long-term fundamentals, the market adjusted relatively quickly, and by 20 December 2001 prices had almost returned to normal.

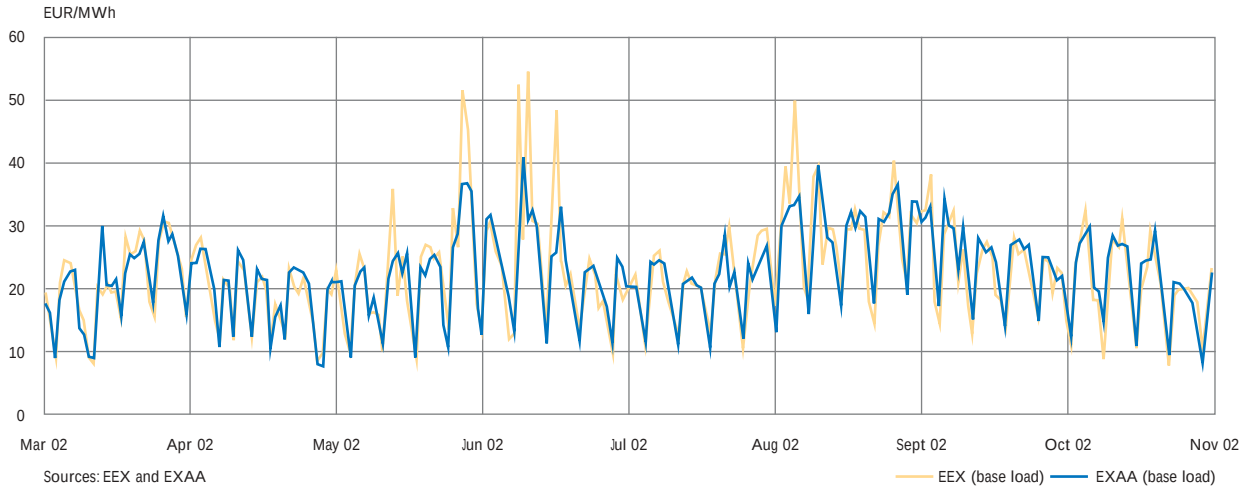
Opening of Energy Exchange Austria

The Graz power exchange, launched on 21 March 2002, is a platform for spot trading of hourly and block contracts. By the end of September 2002 turnover had reached a daily average of some 1,700 MWh, representing a market share of 1.2% (relative to the total Austrian power supply). The exchange has helped the increase price transparency and market liquidity.

With the exception of a few discounts there has been a strong convergence of Central European wholesale prices, such that Austria, Germany and Switzerland now effectively form a single pricing area due to the absence of any notable transmission problems.

→ **Price trends on the European Energy Exchange (EEX) in Germany and the EXAA in Austria**

Chart 32



Sources: EEX and EXAA

Balancing market

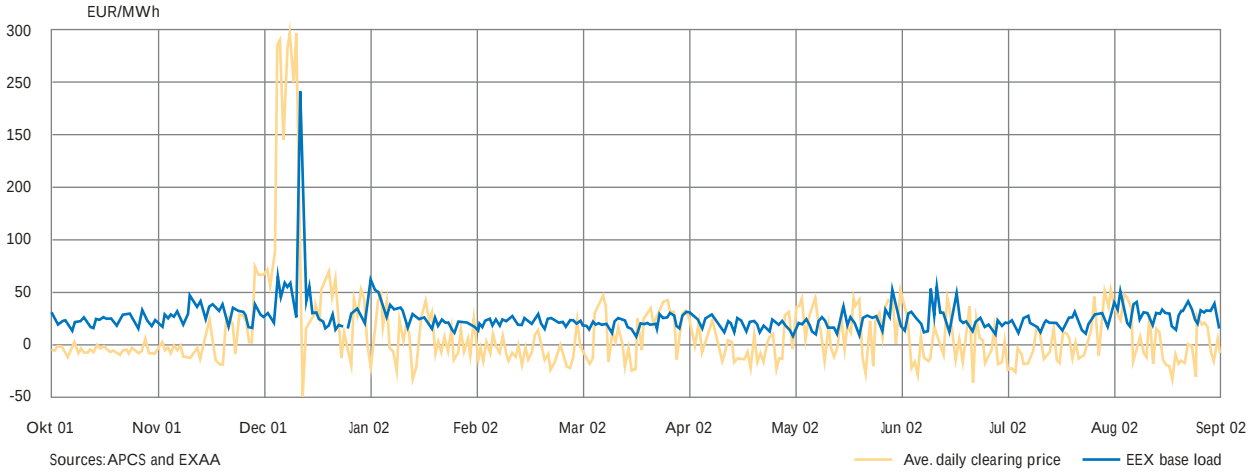
In order to create a level playing field for all market participants, a competitive market in minute reserves was opened on 1 October 2001.

From October to December 2001 the market tended to be oversupplied, i.e. there was generally more power available in balancing groups than could be consumed. This meant that the balancing power flowed to balancing groups that were able to constrain off generation capacity or pump water into storage at short notice. At the turn of 2001–2002 supply was tight because of cold weather and exceptionally high market prices, i.e. internal generation was insufficient for balancing groups' needs. Volatility has subsided in recent months; balancing groups have tended to be oversupplied.

Due to the supply overhang and the nature of the settlement formula used, the so-called "clearing prices" have frequently been negative. In other words, balancing groups that are prepared to withdraw energy from the balancing system at short notice pay nothing and are actually rewarded for doing so. Prices often fluctuate widely within a day's trading. As part of the Market Rules II project, we have been consulting market participants regularly on possible changes in the regulations governing the market.

→ Balancing power price trends in the APG control area

Chart 33



Sources: APCS and EXAA

Balancing power accounts for a relatively small portion of actual electricity costs. In 2002 balancing power costs amounted to some 1.5% of the average net residential electricity price (excluding system charges, taxes and levies) of approx. 3.5 cent/kWh.

Companies' responses

European electricity liberalisation has not only led to the emergence of new marketplaces but has also brought major structural changes in the sector.

The Austrian electricity sector was previously characterised by territorial monopolies, high levels of public ownership and a tendency for public interest considerations to be given almost equal weight to business objectives.

Electricity prices were capped by the Minister of Economic Affairs and Labour, but were normally more than sufficient to cover utilities' costs.

By introducing competition, electricity market liberalisation aims to leverage gains in overall economic efficiency (lower energy prices and hence increased competitiveness for other sectors, etc.) through productivity growth at electricity companies. Since regional and municipal monopolies now belong to history, customers are free to make their purchasing decisions on the basis of price and quality.

Austrian electricity companies have responded to these changed market conditions not just with cost management and rationalisation programmes (by shedding labour, optimising investment, restructuring, etc.) but also with mergers and alliances. Such consolidation moves are taking place across the entire European energy sector, leading to a reduction in the number of suppliers – especially smaller companies.

In Austria, mergers and alliances have so far chiefly been confined to the regional level. Thus, ahead of full liberalisation, the Salzburg regional supply company SAFE merged with the municipal utility in the provincial capital to form Salzburg AG. Likewise, other municipal utilities have sought larger partners in an effort to strengthen their competitive positions and exploit potential synergies. Thus Stadtwerke Kapfenberg lined up with the Carinthian provincial supply company Kelag (35% Kelag interest in Stadtwerke Kapfenberg), Grazer Stadtwerke with Estag (49% Estag holding) and Innsbrucker Kommunalbetriebe with TIWAG (25% TIWAG stake). In April 2002 Styria's Steg and Steweag merged their retail, transmission and distribution operations to form Steweag-Steg GmbH.

A super-regional alliance came into being in autumn 2001 when the provincial supply companies EVN, Wienstrom, Energie AG and Bewag, and the municipal utility Stadtwerk Linz AG brought their retail and wholesale activities into a joint venture, EnergieAllianz. This meant that by 2002 there were only a small number of competitors left, as these companies' sole market presence was through a new brand – switch – except when serving existing previous end-users.

Meanwhile, the hydro and thermal power generation operations of Steg, Steweag and Verbund have been merged into AHP and ATP, respectively.

The planned merger of the marketing and wholesaling operations of EnergieAllianz and Verbund – known under the working title of "Österreichische Stromlösung" (Austrian power solution) – under which EnergieAllianz would have exclusive procurement rights to power generated at Verbund stations, would mark a significant increase in vertical integration. The planned merger of the groups' marketing and wholesaling businesses would result in a major increase in market concentration in these areas. Moreover, the companies involved in the deal also own interests in potential competitors.

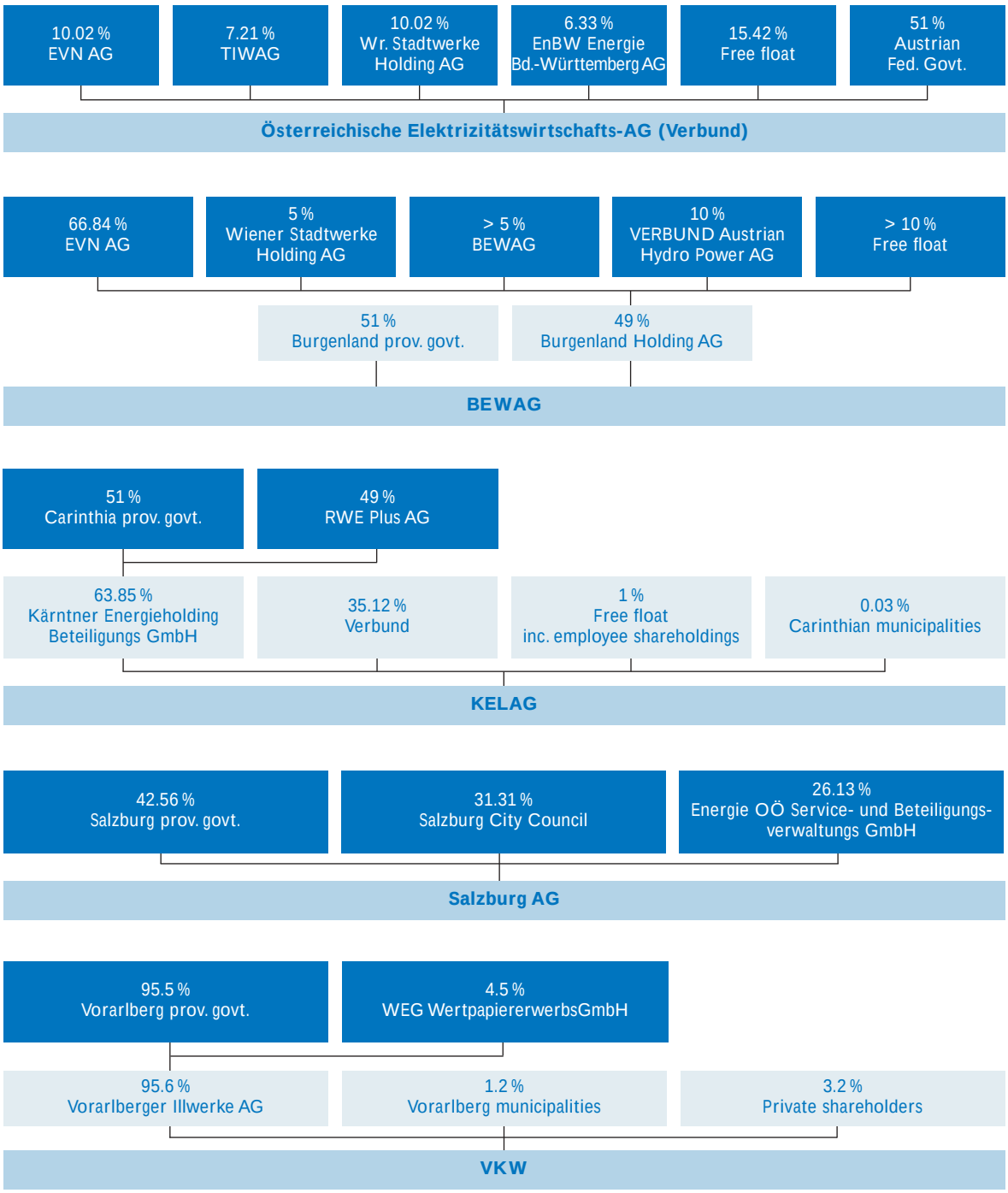
Since the advent of full liberalisation new domestic players have been attempting to gain a foothold on the market. Apart from the recently founded subsidiaries of some provincial utilities (e.g. switch and MyElectric), some independents (e.g. oekostrom AG and Alpen Adria Energie AG) – mostly offering "green" power – have been launched.

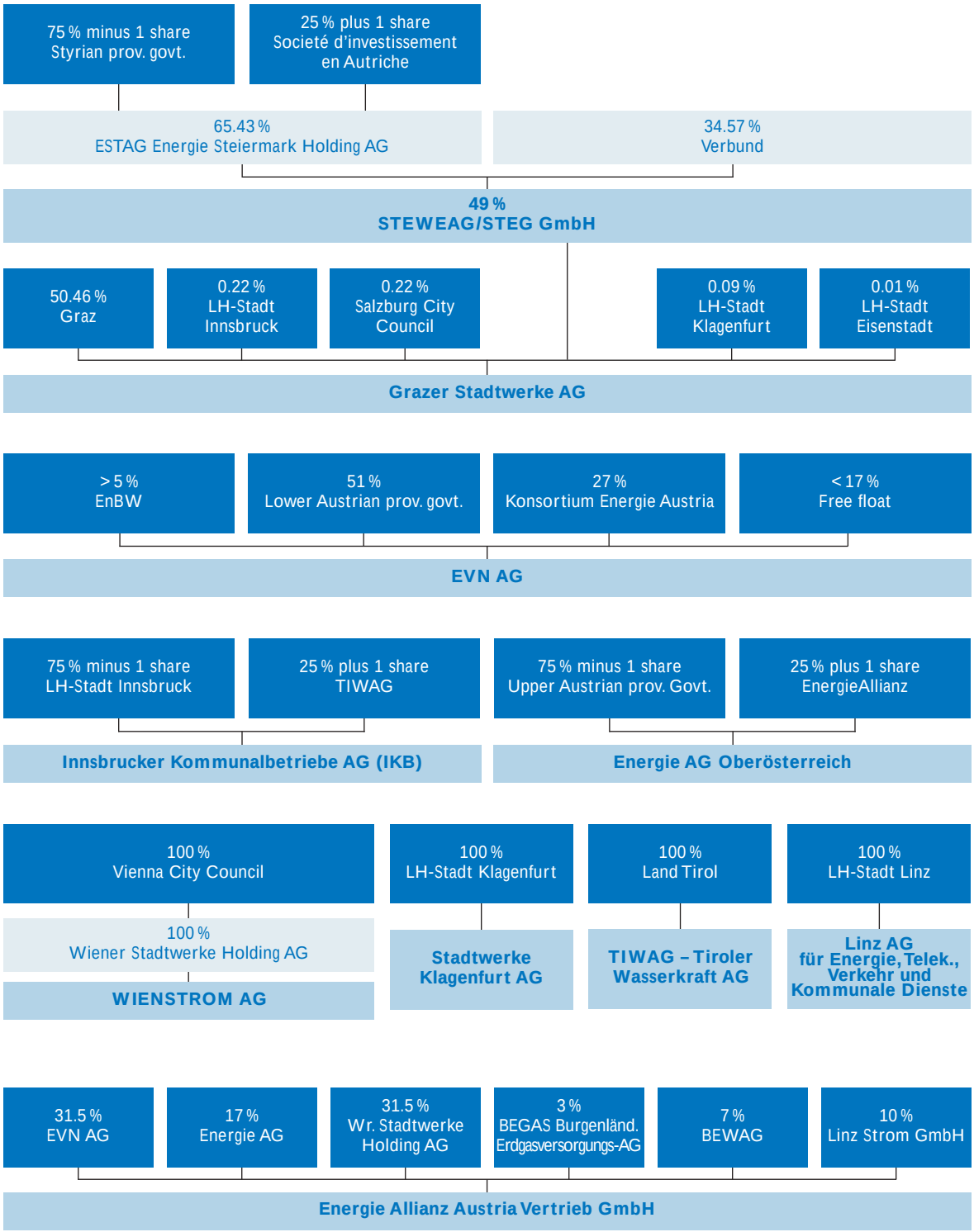
To date, the most successful new suppliers have been Raiffeisen Ware Wasserkraft – a joint venture between Verbund and Raiffeisen Ware Austria AG – with 22,500 new customers by the end of 2002, followed by MyElectric (19,200 customers) and switch (16,000 customers).

→ Ownership of Austrian electricity companies

Fig. 8

As of 31 December 2002




75 % minus 1 share
Styrian prov. govt.
25 % plus 1 share
Société d'investissement
en Autriche
65.43 %
ESTAG Energie Steiermark Holding AG
34.57 %
Verbund
49 %
STEWEAG/STEG GmbH
50.46 %
Graz
0.22 %
LH-Stadt
Innsbruck
0.22 %
Salzburg City
Council
0.09 %
LH-Stadt
Klagenfurt
0.01 %
LH-Stadt
Eisenstadt
Grazer Stadtwerke AG
> 5 %
EnBW
51 %
Lower Austrian prov. govt.
27 %
Konsortium Energie Austria
< 17 %
Free float
EVN AG
75 % minus 1 share
LH-Stadt Innsbruck
25 % plus 1 share
TIWAG
75 % minus 1 share
Upper Austrian prov. Govt.
25 % plus 1 share
EnergieAllianz
Innsbrucker Kommunalbetriebe AG (IKB)
Energie AG Oberösterreich
100 %
Vienna City Council
100 %
LH-Stadt Klagenfurt
100 %
Land Tirol
100 %
LH-Stadt Linz
100 %
Wiener Stadtwerke Holding AG
WIENSTROM AG
Stadtwerke
Klagenfurt AG
TIWAG – Tiroler
Wasserkraft AG
Linz AG
für Energie, Telek.,
Verkehr und
Kommunale Dienste
31.5 %
EVN AG
17 %
Energie AG
31.5 %
Wr. Stadtwerke
Holding AG
3 %
BEGAS Burgenländ.
Erdgasversorgungs-AG
7 %
BEWAG
10 %
Linz Strom GmbH
Energie Allianz Austria Vertrieb GmbH

Regulatory environment and institutions in the gas sector

→ Liberalisation programme of the European Union

The European Union has long regarded the liberalisation of European energy markets as a core element of its competition policies. It is believed that increased competition on energy markets as a result of liberalisation will cut industrial consumers' costs and thereby strengthen the competitiveness of the European economy.

Gas market liberalisation completes the energy component of the 1992 single market programme. The Gas Directive (98/30/EC) which came into force in 1998 is aimed at establishing a transparent, non-discriminatory European gas market. The Directive relies mainly on the regulation of unbundling, system access for eligible customers and take-or-pay contracts to achieve these objectives.

In the light of the experience gained since 1998 and in response to calls from the European Council and the Council of Energy Ministers for the rapid completion of the internal energy market, in March 2001 the European Commission presented a proposal for a Directive amending Directive 98/30/EC.

The Commission adopted an amended proposal for a Directive amending the Electricity and Gas Directives on 7 June 2002. In November 2002 the Council of Energy Ministers reached agreement on full opening of the European gas and electricity markets for non-household customers by 2004 and for household customers by 2007.

With full market opening on the way there is a need to reinforce the industry's public service objectives. The protection of vulnerable consumers and of the right of final customers to supplies at reasonable prices, to environmental protection and to security of supply must not be affected by progress towards full market opening.

→ Austrian gas market liberalisation programme

The government programme of 3 February 2000 devoted considerable space to the full opening of Austria's energy markets. The Federal Act Concerning the Gradual Transition to the Market Organisation Provided for by the Natural Gas Act (Art. 2 Energy Liberalisation Act, Federal Law Gazette I No. 121/2000) set the date for full liberalisation of the Austrian gas market as 1 October 2002.

The Natural Gas (Amendment) Act (Federal Law Gazette I No. 148/2002) fulfilled the goal of full opening of the Austrian gas market, thus completing the phased plan provided for by the GWG 2000. Full gas market liberalisation has taken place well in advance both of the schedule established as a minimum requirement by the original EU Gas Directive and also of that contained in the Commission proposal for an amended Directive.

Since 1 October 2002 all Austrian final customers have been free to choose their gas suppliers and to switch suppliers. Full market opening thus means that all customers are operating in a competitive market and can benefit from gas-to-gas competition. The downward pressure on prices that is likely to result from stiffer competition will put money in consumers' pockets, and will enhance the domestic and international competitiveness of Austrian businesses.

A peculiarity of Austrian gas market opening is the fact that, while price formation is subject to the law of the marketplace, the free market runs into its limits at the point where gas is transported from the supplier to the final customer, owing to the fact that the transmission grid is a natural monopoly. Creating a genuinely competitive situation on the Austrian gas market thus comes down to ensuring that all potential market participants are offered non-discriminatory grid access. Experience in Austria and elsewhere in the EU suggests that it is easiest to achieve gas market competition when grid access is regulated and tariffs are published, non-discriminatory and cost reflective.

Natural Gas Act

The Gas Directive was initially implemented in Austria by the Natural Gas Act 2000 (GWG I), which was passed in July 2000 and – because publication was delayed until December 2000 – was retroactive to 10 August 2000. The Act was designed to harmonise Austrian gas legislation with EU law on the basis of the existing constitutional provisions regarding the division of powers. It was aimed at creating a modern legal framework for phased market opening leading to full liberalisation, thereby enhancing the international competitiveness of the Austrian economy. The Act was taken as an opportunity to tidy up what had hitherto been a fragmented area of federal law and collect all the relevant provisions in a single statute.

The GWG went beyond the requirements of the Gas Directive which prescribed an initial minimum of 20% market opening upon its entry into force. In accordance with the Directive, the transitional provisions of the GWG I ("Transition Act") defined customers eligible for access to the grid as all gas fired power generators regardless of consumption, and as final consumers consuming more than 25m³ of gas per year on a consumption site basis. This corresponded to opening of about 50% of the market. The Transition Act, which entered into force at the same time as the GWG I and was limited in its term until 30 September 2002, also provided for all final consumers to become eligible customers with a choice of gas suppliers as of 1 October 2002. The GWG I provided for negotiated access to the grid under the supervision of the Minister of Economic Affairs and Labour.

Natural Gas (Amendment) Act

The Natural Gas (Amendment) Act (GWG II) – most of which came into force on 1 October 2002 though some provisions entered into effect on 24 August 2002 – resulted in the full opening of the Austrian gas market. The Act also created new authorities to regulate the gas market. Since 1 October 2002 all gas customers have been entitled to choose their suppliers. This goes well beyond the targets set by the current Gas Directive, which provides for 33% market opening by 2008, and by the draft Directive requiring full market opening from 1 January 2007 onwards. One of the reasons for amending the GWG I relatively soon after its passage was the fact that negotiated access, though in principle of equal value to regulated access, was in practice failing to provide equal treatment and reasonable prices for all market participants. There were virtually no cases of eligible customers' actually succeeding in using the mechanisms created by the GWG I to switch gas suppliers. The system of regulated access under general terms and conditions of grid access and at prices subject to regulatory approval, introduced by the GWG II, makes applications for grid access and legal enforcement of the right to it easier.

The legal position established by the Natural Gas (Amendment) Act is as follows.

Grid operation

Since the gas grids remain monopolies their operation is subject to particularly close supervision. The general terms and conditions for access to distribution grids require regulatory approval and the use of system charges are set by the regulator. The unbundling provisions require certain companies to divide grid operation from all their other activities, and to demerge it into separate companies.

Balancing groups and control areas

Full market opening has also required a change in the structure of the Austrian gas supply industry. The former system of closed supply areas in which regional grid operators had a – limited – duty to supply customers was replaced by the balancing group system first introduced in the electricity sector by the ElWOG 2000. A balancing group consolidates suppliers and customers into a virtual group, within which gas supply and demand are balanced. The various balancing groups are formed by balancing group representatives within a given control area. Austria is divided into East (Burgenland, Carinthia, Lower Austria, Salzburg, Styria Upper Austria and Vienna), Tyrol and Vorarlberg control areas (see section entitled "Institutional structure of the liberalised gas market").

Storage

Unlike the GWG I, the GWG II also deals with gas storage facilities. Producers, suppliers and traders are entitled to access to these. As such, access is negotiated, but the Act stipulates that the storage charges agreed must be non-discriminatory and cost reflective and that storage companies must provide eligible customers with access to their facilities on a non-discriminatory basis, at transparent terms and conditions.

Institutional structure of the liberalised gas market

The balancing group system has brought with it new institutions in the shape of balancing group representatives, settlement agents (balancing group coordinators) and control area managers.

Balancing group representatives

Under the GWG II every grid user is required either to join a balancing group or to form its own balancing group. A balancing group is established by the balancing group representatives which represent members' interests. Balancing group representatives' responsibilities also include the procurement of balancing energy (the difference between supply and demand in a balancing group within a defined measurement period).

Balancing group coordinators

The responsibilities of balancing group coordinators include registering the balancing group representatives after performing creditworthiness checks, collecting balancing energy bids and preparing a merit order list ranking bids by price. They also calculate, allocate and settle balancing energy trades between balancing groups.

Control area managers

The control area managers are nominated to E-Control by OMV Erdgas GmbH in the East control area and by the respective provincial supply companies in the Tyrol and Vorarlberg control areas.

Duties of control area managers Text box 8

- Providing the so-called "system services" (volume and pressure regulation, and maintenance of grid pressure);
- Control of remote controlled plant;
- Procuring gas to meet balancing needs in accordance with the balancing group coordinator's merit order list;
- Dealing with applications for grid access and allocating upstream transmission capacity accordingly;
- Managing transmission grid capacity;
- Publishing grid capacity utilisation statistics;
- Performing responsibilities on behalf of the regulatory authorities.

→ Duties of control area managers

The GWG II and the related Energy Regulatory Authority (Amendment) Act (E-RBG) transferred wide-ranging gas regulation responsibilities to the electricity regulators, E-Control GmbH and the E-Control Commission. These authorities have the following responsibilities under the amended E-RBG.

Balancing groups and control areas

Many of the regulators' new powers are directly connected with the introduction of the balancing group system and three control areas. E-Control is charged with approving balancing group representatives, the general terms and conditions for grid access, supervision of balancing group representatives and the allocation to balancing groups of grid users that have not yet joined or formed one.
The Minister of Economic Affairs and Labour is responsible for awarding licences to settlement agents (balancing group coordinators), but ongoing supervision of the latter is the task of E-Control. The latter must also approve the pricing model for balancing energy proposed by the settlement agents and set the latter's clearing fee by order.

E-Control is also responsible for supervising the control area managers. It approves control area managers' methodologies for distinguishing between control energy (energy, including linepack, used to compensate short-term pressure changes) and balancing energy and models for calculating available pipeline capacity within control areas. The E-Control Commission sets the control area managers' charges by order.

Regulation of grid access

The E-Control Commission is responsible for setting the use of system charges for transmission and distribution pipelines by order and for issuing approval notices for the general terms and conditions for use of distribution grids. In addition, the Commission is empowered to add to the transmission pipeline capacity and the number of gas companies subject to tarification under the GWG II by order, in response to changed circumstances (e.g. the construction of a new transmission line). In the event of non-compliance by a grid operator with its statutory duties under the GWG II the E-Control Commission has a duty to take steps to maintain security of supply, which may go as far as transferring control of the grid to a third party.
E-Control is responsible for processing equalisation payments between grid operators whose systems are in grid zones (areas of the grid with the same tariffs). It must also conduct pricing review procedures when setting use of system charges and must issue orders governing standardised load profiles and changes of suppliers and balancing groups.

Third-party access refusal hearings

Under section 19(4) GWG II upon application of a party alleging that its legal right to grid access has been infringed, the E-Control Commission has one month to determine whether the conditions for legal denial of access (e.g. insufficient capacity) are met.
To date, the Commission has taken up three such proceedings, all of were pending cases transferred from the Minister of Economic Affairs and Labour and related to the legal position under the GWG I. One proceeding was discontinued due to withdrawal of the application. The cases chiefly concern capacity matters.

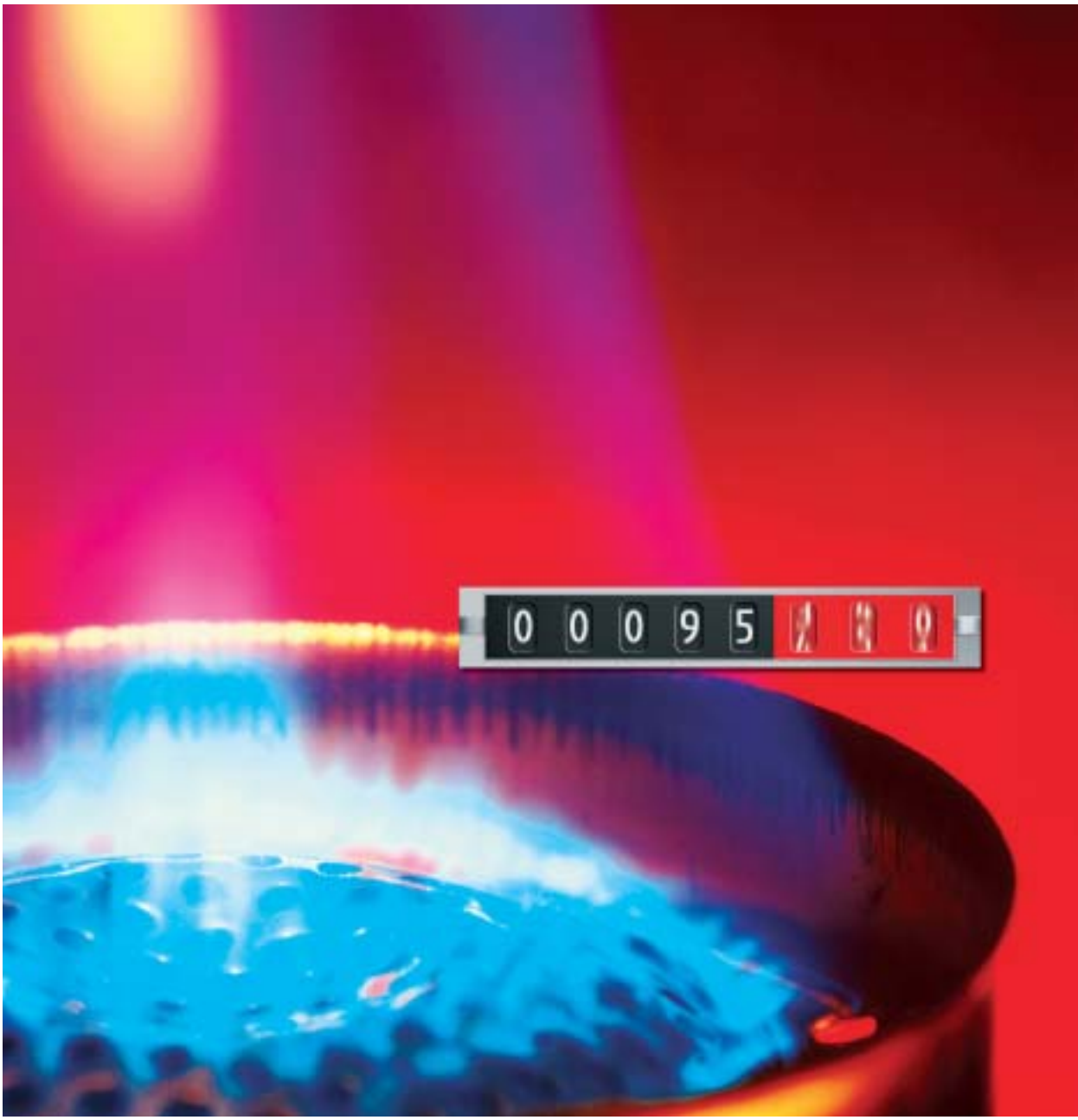
Arbitration proceedings

Under section 21(1) GWG II, E-Control is responsible for arbitrating between grid operators and consumers in the meaning of the Consumer Protection Act. This includes case involving obligations arising from the contractual relationships between grid operators and eligible customers, with the exception of third-party access disputes in the meaning of section 19(1) GWG II and of cases adjudicated by the Cartel Court. The competence of the courts of law is not affected by this function. Under section 10a (1) E-RBG disputes and complaints may be submitted for arbitration by E-Control provided that they are not subject to adjudication by the E-Control Commission. The competence of the courts of law is not affected. The Federal Chamber of Labour must be consulted on arbitration cases concerning consumers (see section entitled "Role of E-Control as a gas and electricity arbitrator").

Monitoring of competition and market abuse

E-Control's competition control responsibilities involve ensuring that market participants are given equal treatment, e.g. by grid operators. If E-Control identifies an abuse it is obliged to enjoin the market participant which has engaged in illegal behaviour to comply with the law. If the market participant in question fails to do so within a notice period specified by E-Control the latter must issue a notice ordering compliance. E-Control has not yet initiated any market abuse proceedings involving the gas sector. E-Control's duties also include monitoring compliance with the unbundling regulations.

E-Control's gas activities



→ Market Rules

The legal framework

The GWG II defines the Market Rules as the totality of the legal and contractual rules and regulations that participants must observe in order to ensure that the natural gas market operates in an orderly fashion.

Components of the Market Rules Text box 9

- → General terms and conditions of distribution grid access under section 26 Natural Gas (Amendment) Act 2002;
- → General terms and conditions of balancing group co-ordinators under section 33d Natural Gas (Amendment) Act 2002;
- → General terms and conditions of balancing group representatives under section 42b Natural Gas (Amendment) Act 2002;
- → E-Control order on supplier and balancing group transfers (Transfer Order) under section 42e (2) Natural Gas (Amendment) Act;
- → E-Control order concerning the assignment, preparation and adjustment of standardised load profiles (Load Profile Order) under section 28 (1) Natural Gas (Amendment) Act; and
- → Other Market Rules.

Implementation of the binding legal framework for the general terms and conditions of grid operators was by way of the approval procedure under section 26 GWG II. By December 2002 the general terms and conditions of all the 21 distribution grid operators had been submitted for approval. The E-Control Commission instructed some applicants to make improvements, and the grid operators in question did so. Only two grid operators' applications were rejected in part. The Commission also licensed eight balancing group representatives and approved the general terms and conditions of five balancing group representatives, as well as those of the two settlement agencies.

General terms and conditions

The general terms and conditions of distribution grid access, of balancing group coordinators and of balancing group representatives together form the binding, contractual basis for the functioning of the market and prevention of discrimination against market participants.

Section 26(1) GWG 2002 states that the general terms and conditions of distribution grid access must be approved by the E-Control Commission and that the distribution companies must publish them in the official gazette supplement of the Wiener Zeitung and post them on the Internet. The general terms and conditions of settlement agents and balancing group representatives likewise require the approval of E-Control.

Orders

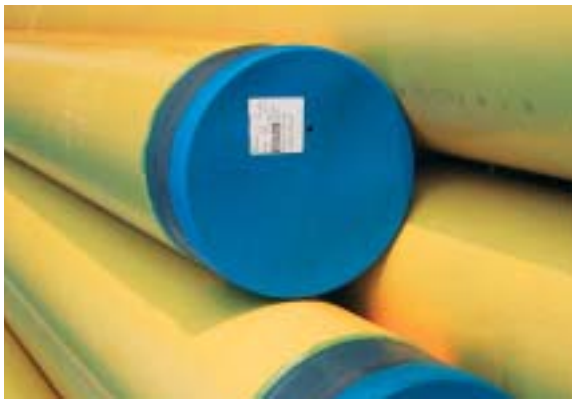
The GWG II empowers E-Control to issue an order laying down the procedure for switching suppliers or balancing groups. E-Control accordingly published the Transfer Order on 28 August 2002. The processes set out in the order are modelled on those of the electricity industry, whilst taking account of the special features of the gas industry. They were drawn up in close consultation with market participants.

The Load Profile Order was also published on 28 August 2002. This requires distribution companies to prepare standardised load profiles for grid users, which must fulfil certain criteria. The preparation of load profiles for small-scale consumers was a particularly challenging task for grid operators because of the many factors that influence gas consumption (weather, daily consumption patterns, seasonal factors, type of construction and settlement, etc.). Unlike the electricity sector, the gas industry had not yet developed any load profiles that could be taken as a starting point. Nevertheless, a number of load profiles were rapidly developed in consultation with E-Control, and were submitted to on time.

Other Market Rules

Under section 9 (1)(1) E-RBG, E-Control is obliged to draw up Other Market Rules in cooperation with market participants and to publish them in an appropriate manner. The Other Market Rules deal with many of the technical and organisational details that need to be regulated to implement the market model described by the GWG 2002. They derive their legal force from the general terms and conditions.

The Other Market Rules for the gas industry draw on those for the electricity sector.



Starting with a set of definitions to prevent misunderstandings, they provide a formal description of the roles of all market participants and their interaction. On the basis of these contractual relationships, a detailed account is given of the operational and IT processes required for secure information transfers and communication between market participants. Particular attention is paid to schedule management and load profiles. The rules also contain related definitions of data formats and time limits for certain processes, in order to permit coordinated action by market participants where necessary. As European harmonisation efforts in the gas industry are still at an early stage and uniform standards do not yet exist, data formats were borrowed from the electricity sector and adapted. This will ensure that post-harmonisation conversion does not result in costly stranded investments.

In March 2003 work began on revising and extending the Other Market Rules to reflect initial experience with them and market needs.

Development of the Market Rules

Setting out from the Market Rules for the electricity industry, E-Control began drafting rules for the gas market at the start of 2002. In April 2002 – still in the absence of supporting legislation and formal powers – talks began on the rules. These were marked by a spirit of constructive co-operation by all concerned, particularly the Austrian gas industry. The Market Rules were refined in the course of these negotiations, taking the greatest possible account of the interests of market participants, as well as the social partners' comments.

Numerous opinions were received from market participants and interest groups during the consultation process, and wherever possible these were taken into account when revising the drafts. A particularly critical issue was found to be the provisions in the balancing group co-ordinators' general terms and conditions concerning the management of balancing energy and the related balancing periods, because of the possibility of high balancing energy costs. After weighing up the arguments, E-Control decided to accept one-hour balancing periods for a half-year observation period under certain conditions. When this trial period has been completed the system will be reviewed in the light of experience, the model selected which results in the lowest overall costs.

The negotiations on the Market Rules were concluded at the end of August 2002. The documents were posted on the Internet, and were made available to market participants as model terms and conditions. In September 2002 the first applications for approval of terms and conditions reached E-Control or the E-Control Commission, respectively, depending on which was responsible for them.

→ Use of system charges

The E-Control Commission order on grid tariffs (Gas Use of System Charges Order [GSNT-VO]) was published in the official gazette supplement of the Wiener Zeitung on 30 September 2002. The grid tariffs were set for levels 2 and 3. The charges are standardised within grid zones.

Approval of the use of system tariffs was based on the rates submitted by the various transmission and distribution grid operators, and on an expert report by Christoph and Bogner, commissioned by the Ministry of Economic Affairs and Labour. The system use charges embedded in existing all-inclusive prices were stripped out. E-Control's investigation of the audited costs led to an overall cost reduction of € 50m even before the GSNT-VO was issued. The next step was the initiation of three tariff review proceedings under which financial and technical examinations of the nature and amount of grid operators' estimated costs were carried out. The tariffs for grid levels 2 and 3 are graduated in zones and tiers and these rates are multiplied by the number of kilowatt-hours consumed. The first seven of a total of 11 zones and tiers are applied to passively metered final customers, and the other four to actively metered final customers with an annual consumption of over 100,000 cu m.

The division of customers into zones and tiers, arrived at in consultation with the industry, enables grid operators to tailor their tariffs to the demand structures of their zones.

Examples of the calculations are shown in Tables 7 and 8 below. The price tiers are demand ranges within which the entire volume of energy consumed is billed at a given rate.

Transport price for residential customers

Calculation of the transport price follows the same principle as income tax bands. The tariff in zone 1 is applied to the first 8,000 kWh, that in zone 2 to the next 7,000 kWh, that in zone 3 to the next 25,000 kWh, and so on. Upwards of a consumption equal to 1,107,001 kWh, section 3a Load Profile Order requires the installation of a load profile meter.

Flat rate for residential customers

A base rate is charged in zones 1–7 to cover cost components which do not vary with consumption, i.e. administration, billing, repair services and routine grid maintenance.

→ Example: price calculation for a residential customer

Table 7

Small-scale consumer (residential customer), excluding metering and grid provision charges:

Grid operator X

KWh		Transport price cent/kWh		Base rate cent/month
0–8,000	Zone 1	1.300	Tier 1	200
8,001–15,000	Zone 2	1.100	Tier 2	200
15,001–40,000	Zone 3	1.000	Tier 3	200
...	Zone 4	0.900	Tier 4	200

CUSTOMER Y Annual consumption 10.000 kWh

kWh/y	Nm^3/y	Transport price cent/year	Base rate cent/year	TOTAL cent/year
8,000	722	10,400		
2,000	180	2,200		
10,000	903	12,600	2,400	**15,000**
				1.5 cent/kWh
				16.6 cent/m^3y

Calculation of the capacity price for large-scale consumers

Upwards of an annual consumption of 1,107,000 kWh a load profile meter must be used. The demand related component of the use of system charge must normally be based on a one-year period, and may not exceed 80% of the total use of system charge for each grid level.

The arithmetical average of the peak average hourly loads measured in each month over the billing period must be used as the basis for calculation of the demand related component of the use of system charge. The average of the 12 monthly peaks is multiplied by the rate for the corresponding tier and is billed at monthly intervals.

Calculation of the transport price for large-scale consumers

Consumption is metered and assigned to zones. The tariff for zone 1 is billed for the first 8,000 kWh, that for zone B for the next 7,000 kWh, and so on. From 1,107,000 kWh upwards, the zoning recommences, and the entire volume up to 5,000,000 kWh is billed at the zone A rate, the amount between 5,000,000 and 10,000,000 kWh at the zone B rate and so on.

→ Example: price calculation for an industrial consumer

Table 8

Large-scale consumer (industrial customer), excluding metering and grid provision charges:

Grid operator X

KWh		Transport price cent/kWh		Capacity price cent/kWh
0–5,000,000	Zone A	0.1	Tier A	400
5,000,001–10,000,000	Zone B	0.08	Tier B	400
10,000,001–100,000,000	Zone C	0.05	Tier C	400
ab 100,000,000	Zone D	0.04	Tier D	400

CUSTOMERY Annual consumption 30,000,000 Nm³, 332,100,000 kWh, Hourly peak 8,000 Nm³, 88,560 kWh

kWh/y	kWh/h	Transport price €/year	Capacity price €/Jahr	TOTAL €/year
5,000,000		5,000		
5,000,000		4,000		
90,000,000		45,000		
232,100,000		92,840		
332,100,000	88,560	146,840	354,240	**501,080**
				0.15 cent/kWh
				1.6 cent/m³y

→ Gas statistics

Legal framework

The Natural Gas (Amendment) Act 2002 transferred the task of performing statistical and other surveys on the gas industry to E-Control. Section 59 GWG II explicitly empowers E-Control to issue orders regarding this function and E-Control accordingly published a statistics order on 20 December 2002.

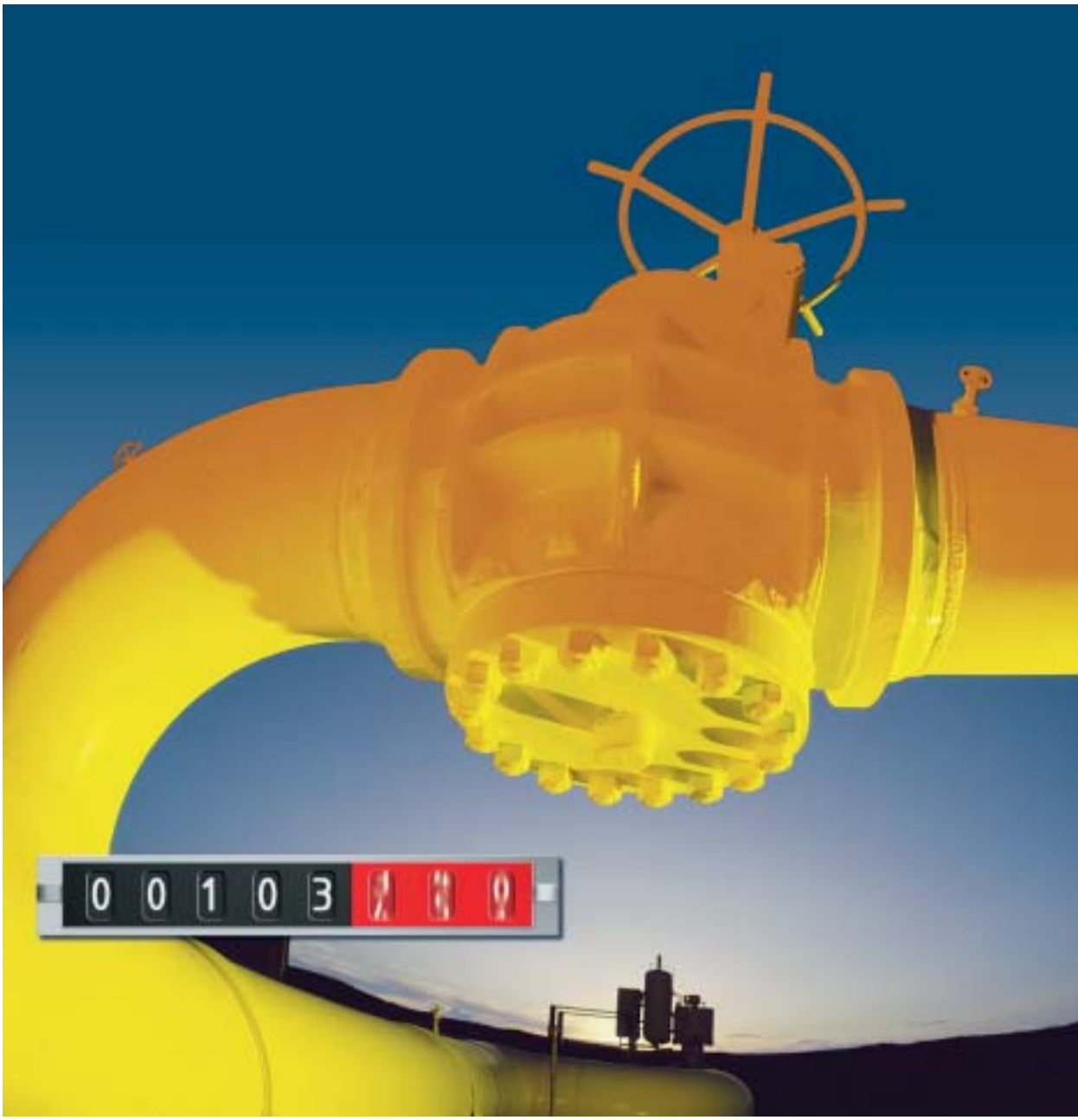
Scope of surveys

The scope of the surveys required by the Gas Statistics Order 2002 is dictated by expectations of statistical publications in a liberalised gas market, and by the need for a good overview of the Austrian natural gas industry. The focus is thus on providing a clear picture of the gas market, and an energy balance in the conventional sense, with a minimum of gaps in coverage.

The formats of the various surveys were harmonised with those required by the Electricity Statistics Order, Federal Law Gazette No. 486/2000, the Coal Statistics Order 2003 and the Oil Statistics Order 2003. This ensures that the same information is collected and published for both the network energy forms regulated by E-Control – electricity and gas – and that gaseous fuels can be included in the Austrian energy balance in the same way as other fossil fuels. The Gas Statistics Order 2002 is designed to minimise the reporting workload. Because of this, reliance is mainly placed on information flows generated by implementation of the Market Rules. Most of the statistical information is derived from the hourly data exchanged between market participants. The monthly reporting duties can be limited to supplementary information such as total supply to large-scale consumers or other consumer groups, supply curtailments, the effects of liberalisation or economic indicators. The annual survey is largely used to collect additional technical data which serves to round out the statistical information.

In the interests of close monitoring of the liberalised Austrian gas market, the Gas Statistics Order 2002 contains transitional provisions for the fourth quarter of 2002. Reporting in this period was covered both by the Fuel Statistics Order 1967 (Federal Law Gazette No. 383/1967) which expired on 31 December 2002 and by the new Gas Statistics Order 2002. The annual statistics for 2002 were collected, analysed and published by the Ministry of Economic Affairs and Labour in their familiar form.

The Austrian and European gas markets



E-CONTROL

→ Austria's role in the European gas market

The liberalisation of the European gas and electricity markets is making further strides. Some EU member states have already completely opened their markets to competition. However others (e.g. France) are merely fulfilling the minimum requirements of the EU Directives.

While countries' priorities for market opening may differ, the overall goals are the same, namely those of promoting competition so as to offer customers efficient prices, improved service and long-term security of supply. In addition, EU member states are seeking to provide incentives for innovation and increases in efficiency, whilst also enhancing their gas industries' ability to adapt to changed market conditions.

European annual gas consumption is some 1,000 – 1,100bcm. Four countries (Russia, the UK, the Netherlands and Algeria) meet more than 75% of demand. Own production contributes approx. 68% of West European supply, while Russia provides 18% of the total, Algeria 12% and other third countries 2%. Gas transportation is almost exclusively by pipeline and only some 25bcm arrive in liquid form (LNG), from Algeria and Libya.

Cross-border deliveries of natural gas in Western Europe amounted to approx. 235bcm in 2002 and the previous year. This represented almost 40% of total global cross-border gas supplies. Most of this trade was on the basis of long-term take-or-pay (TOP) supply contracts, and short-term contracts have hitherto only been concluded for small volumes.

→ Current status of gas market opening

Fig. 9

	Austria	Belgium	Denmark	France	Germany	Ireland	Italy	Luxemb.	Netherl.	Spain	Sweden	UK
Declared market opening (%)	100	59	35	20	100	82	96	72	60	79	47	100
Full opening date	2002	2003/6	2004		2000	2005	2003		2003	2003	2006	1998
Unbundling: of TSOs	Legal	Legal	Legal	Accountis	Accountis	Manage-ment	Legal	Accountis	Manage-ment	Owner-ship	Accountis	Owner-ship
Unbundling: of DSOs	Legal	Legal	Legal	Accounts	Accounts	Manage-ment	Legal	Accounts	Accounts	Legal	Accounts	Owner-ship
Regulator	ex-ante	ex-ante	ex-post	n.a.	NTPA	ex-ante	ex-ante	ex-ante	hybrid	ex-ante	ex-post	ex-ante
Transmission charges	Under review	Distance	Postalised	Distance	Distance	Entry/ exit	Entry/ exit	Postalised	Distance	Postalised	Postalised	Entry/ exit
Total network tariffs	n.a.	normal	high	high	high	normal	normal	normal	normal	normal	high	normal
Capacity reservation procedure	medium	flexible	inflexible	inflexible	inflexible	flexible	flexible	flexible	flexible	flexible	flexible	flexible
Balancing charges	low	medium	high	medium	high	medium	low	high	medium	low	n.a..	low
Balancing regime promotes market entry Y/N	favour-able	medium	Unfavour-able	medium	Unfavour-able	medium	favourable	Unfavour-able	medium	Favour-able	n.a.	Favour-able
Concentration on wholesale market	yes	no	yes	yes	medium	no	yes	yes	yes	medium	yes	medium

Comparison of degrees of opening

The EU Gas Directive lays down minimum requirements for medium-term implementation of the European internal energy market by member states. The gas markets of seven member states will be entirely liberalised before 2008. Figure 9 summarises the current status of gas market opening.

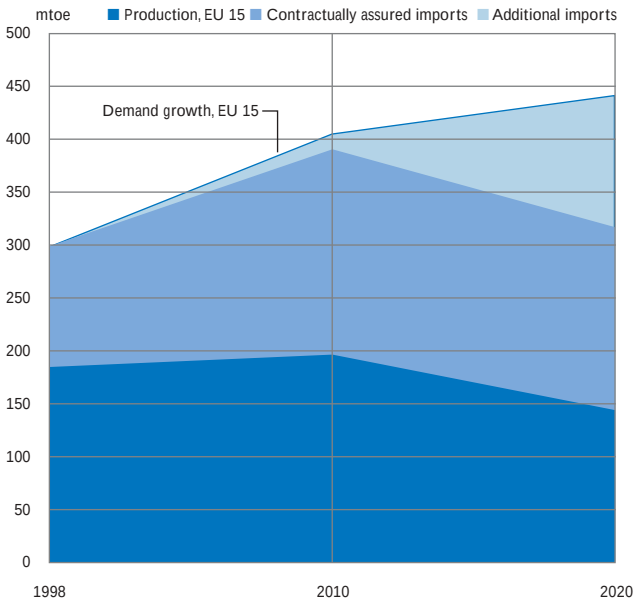
As the table shows, EU member states have different approaches to grid access. In countries like Austria with regulated third-party access, an independent regulator is responsible for market design, supervision and monitoring. In countries with negotiated access, such as Germany, grid access is negotiated between market participants.

Austria's role as a transit country

In 2001 a total of 25.3bcm of natural gas was transported through Austria on behalf of foreign companies. This means that only about 20% of the 33bcm/y or so of gas transmitted in Austria is destined for domestic consumption.

→ Gas supply and demand trends, 1998-2020

Chart 34



Source: European Commission

Primary energy resources

In 2001 West European natural gas consumption was approx. 400bcm – over 2% higher than the previous record registered in the previous year. The share of total West European energy demand met by gas was stable at 23% in 2001.

The steady overall growth of gas consumption masks highly divergent trends in different countries. Declining industrial consumption due to the economic slowdown has been more than offset by an increasing number of private consumers and weather related demand growth. In addition, there has been a marked increase in gas use for electricity generation, both by public and by industrial generators.

Take-or-pay agreements

Text box 10

Most of the natural gas consumed in Austria is imported from Russia (80% of total imports), Germany (12%) and Norway (8%). As the gas is transported to Austria via transmission pipelines and heavy investment is required to maintain and expand the grid, in the past long-term supply contracts – so-called "take-or-pay" (TOP) agreements – have been concluded with the suppliers. The latter can use the agreements as collateral with their banks, as the importers are obliged to pay for a minimum volume, regardless of actual offtake.

Important elements of the TOP agreements between importers (in Austria, chiefly OMV) and the suppliers are:

Supply volume: An annual volume is specified, with e.g. ten percent offtake flexibility upwards or downwards to adjust to annual demand fluctuations. TOP agreements may also include delivery schedules, e.g. on a monthly or weekly basis.

Term: TOP agreements have an average term of 10–25 years (depending on where the gas comes from).

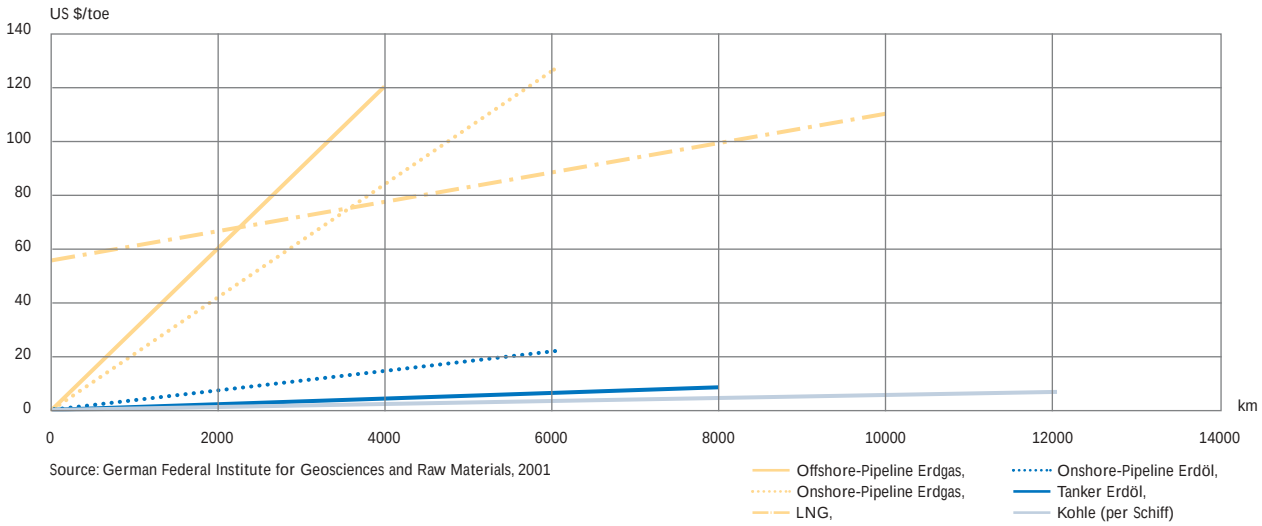
Place of delivery: TOP agreements usually contain a destination clause. This means that the gas must be delivered to a given point specified by the agreement. In addition, there are usually so-called "re-export clauses" used by the supplier to prevent the gas from being sold outside the destination country. In the opinion of the Competition Commission such clauses conflict with the EU's internal market rules. For its part the supplier undertakes to apply to the same price formulas at all European border crossing points.

Prices: An initial price is set at the start of the term of the agreement; this is usually tied to a price index (e.g. an oil price index), and is regularly indexed to overall energy price inflation ("reference price basket"). Agreements may also contain a clause permitting renegotiation of the price every three to five years.

Apart from pipelines, gas can be transported in liquid state (as LNG), in tankers. However the transport costs are considerably higher than those for coal or oil because of the low energy density. Because of this, there is no world market for natural gas, and the markets are all purely regional in character. The EU Gas Directive is aimed at changing this, at least as far as the European single market is concerned.

→ Oil, gas and coal transport costs

Chart 35



Source: German Federal Institute for Geosciences and Raw Materials, 2001

→ The Austrian gas market

Deregulation has broken the traditional integrated value chain in the gas industry. New submarkets (e.g. the wholesale market and balancing energy market) have come into being, and their efficiency has been significantly enhanced by increased transparency.

The wholesale market now offers opportunities for trading and procurement using short and medium-term contracts, beyond the traditional method of purchasing gas under long-term TOP agreements. In future gas prices are expected to be at least partly decoupled from oil price trends, owing to the emergence of gas-to-gas competition (competition between gas suppliers).

Gas-oil price link

In the past gas prices tracked oil price movements, though they were lagged and were less volatile. The industry's main reason for oil indexation was its wish to strengthen the competitiveness of gas vis-à-vis potential substitutes and thus to increase its share of the market for primary energy sources, which has in fact been happening in recent years. Other reasons were:

- → The fact that gas and oil are often produced at the same time and the resultant similarity in the cost structures (high fixed processing and transport costs);
- → The reduced opportunities for traders selling both products in the event of excessive price spreads.

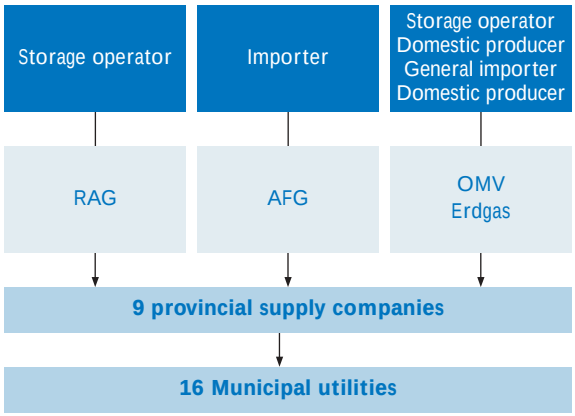
It is widely believed that gas prices will at least to some extent cut free from oil as a result of liberalisation. The appearance of gas spot markets (e.g. Zeebrugge and Bunde-Oude) will favour this trend. The stiffer competition caused by European gas liberalisation will become a major driver of gas prices, though there will continue to be a correlation with the prices of energy substitutes.

Pre-liberalisation industry structure

Prior to liberalisation the Austrian gas market was characterised by territorial monopolies (companies' supply areas). The provincial companies sourced their gas from OMV, and in turn supplied the municipal utilities. OMV acted as the country's general importer, and as the partner for the foreign suppliers (e.g. Gazprom) with which long-term supply contracts (TOP agreements) were concluded; however OMV transferred the risk associated with its offtake obligations (see text box above on take-or-pay agreements) to the provincial supply companies. In part, OMV also imported gas jointly with Austria Ferngas.

Besides its import function, OMV operates most of the country's gas transmission lines and produces and stores gas in Austria. The production and storage operations of Rohölaufsuchungs AG (RAG) are on a comparable scale to those of OMV.

→ Pre-liberalisation structure of the Austrian gas industry Fig. 10



Following liberalisation OMV Erdgas has continued to act as a grid operator, general importer and producer, as well as an operator of storage facilities. It now also has a presence on the retail market, though a new joint venture, EconGas (see Figure 12). OMV remains the negotiating partner for foreign suppliers, but will transfer this function to EconGas when the import agreements expire.

Post-liberalisation ownership structure

As with the electricity sector, there are political and historical reasons for the structure of the gas industry, under which the OMV is the main importer and the provincial and municipal gas companies are the distributors. After the Second World War the gas companies were nationalised under the second Nationalisation Act (Federal Law Gazette No. 81/1947) which required either the Federal Government or the provinces to hold majorities (over 50%) in the companies.

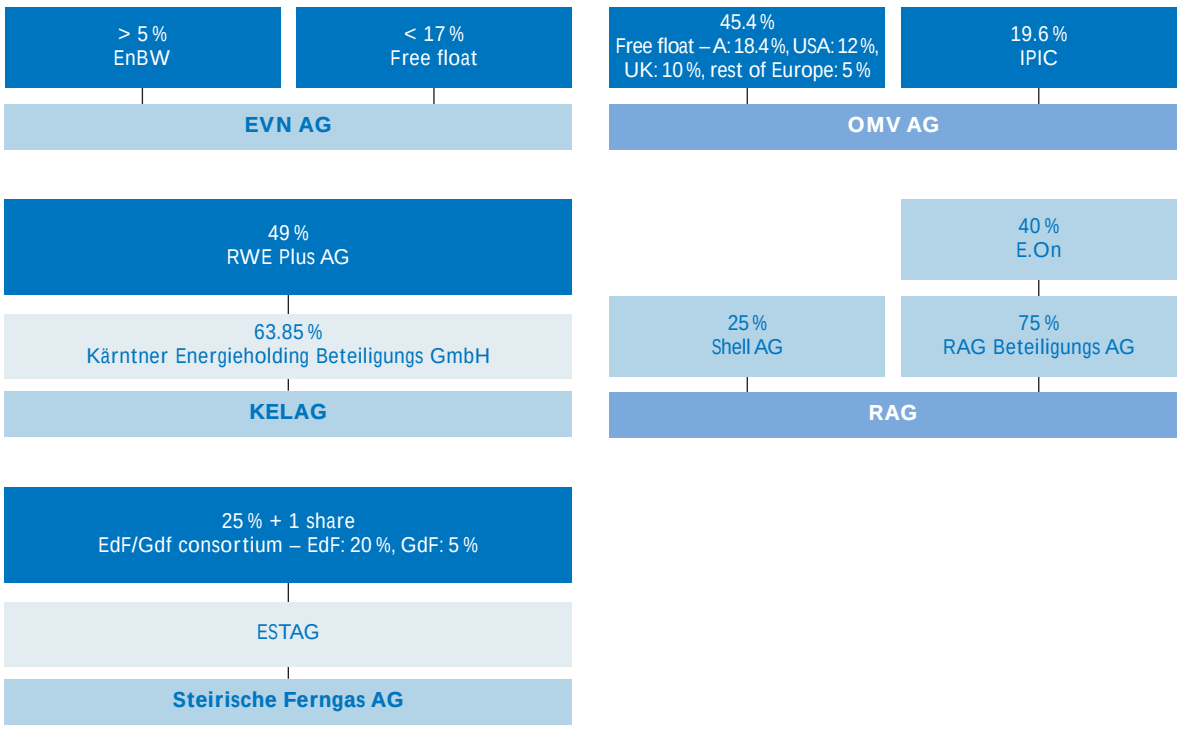
A number of alliances have been formed in the industry in recent years and more followed in 2002. During the year, EnergieAllianz merged its gas operations with OMV Erdgas GmbH to form EconGas, and TIWAG acquired an interest in IKB which will lead to its taking over the latter's electricity marketing and gas businesses in the medium term.
Due to the increasing concentration of the gas and electricity industries there is a danger that the object of liberalisation – the creation of competitive markets – will not be fully met. The consequences could be reduced choice, and opportunities for companies to exploit their increased market power by raising prices. This would be to the disadvantage of final customers and of Austria as a business location.

Only the complete opening of all European electricity and gas markets would bring a lasting improvement in this situation.

→ Foreign investments in the Austrian gas industry

Fig. 11

As of 31 December 2002



Source: E-Control

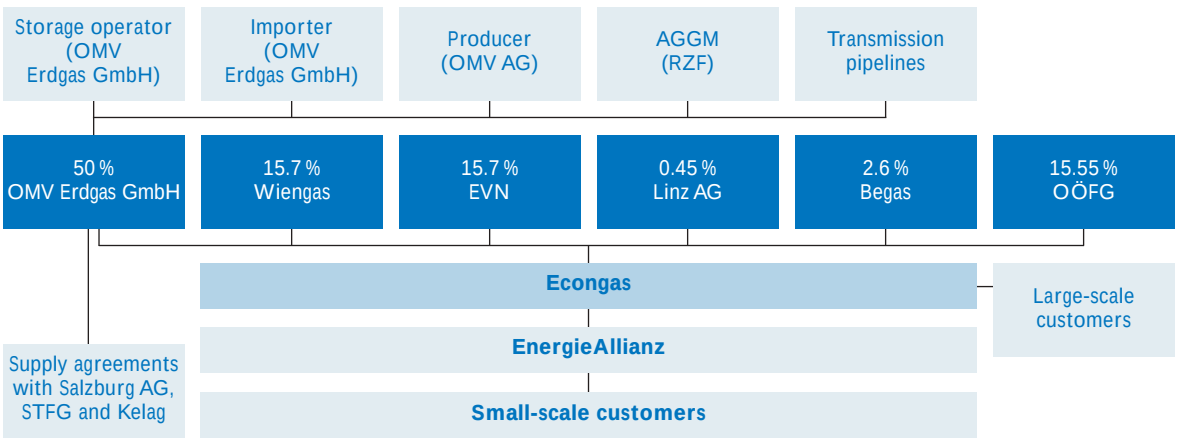
EconGas – the "Austrian gas solution"

In June 2002 the formation of EconGas – a joint venture between EnergieAllianz (Begas, EVN, Linz AG and Wiengas), Oberösterreichischer Ferngas and OMV Erdgas GmbH – was notified to the Cartel Court. EconGas will assume responsibility for the large-scale consumers previously served by the provincial gas companies or OMV (customers with an annual uptake of at least 500,000 cm).

The provincial distribution companies will bring their TOP agreements into EconGas, which will assume the offtake risk relating to large-scale customers' gas volumes. The offtake risk associated with the volumes going to small-scale consumers will remain with the provincial gas companies. Large-scale customers and the provincial gas companies will be directly supplied by EconGas while small-scale customers are to continue to be supplied by the respective provincial gas companies or EnergieAllianz.

Following talks between the notifying parties, the Federal Competition Authority and E-Control, in October 2002 agreement was reached on a package of undertakings aimed at safeguarding and promoting competition. The commitments given by the notifying parties have now been posted on the Competition Authority's website (www.bwb.gv.at) in a non-confidential version. Among the central issues on which commitments have been given is the freedom of provincial gas companies which are not shareholders in EconGas to terminate TOP agreements, non-discriminatory winding up of the storage pool and stricter unbundling rules or other transparency rules going beyond the letter of the law. The applicants modified their notification in accordance with this agreement, which was cleared by the Federal Competition Authority, the Federal Cartel Prosecutor and the Federal Chamber of Labour – the official parties to the procedure under the previous legislation. In response, the official parties withdrew their applications for an investigation.

→ Overview of EconGas Fig. 12



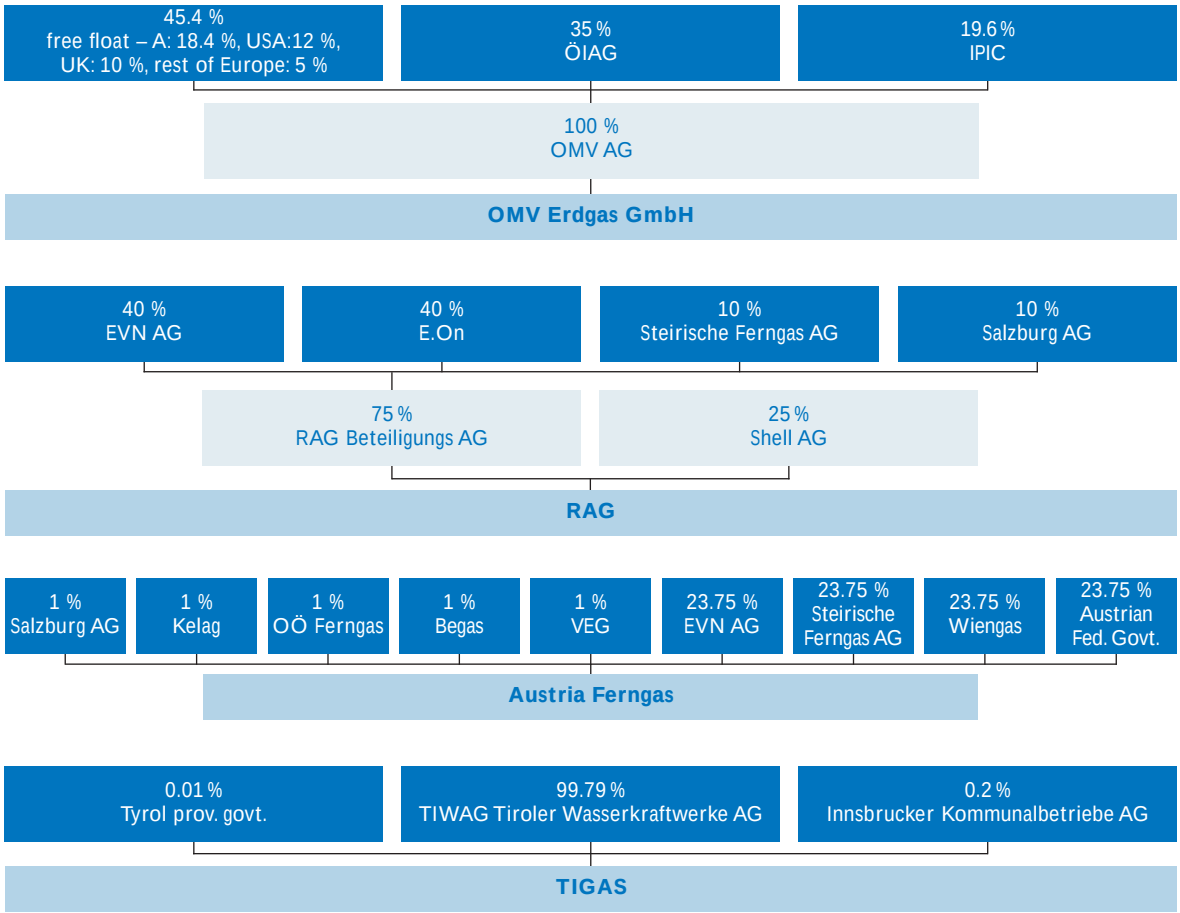
Apart from the existing market participants, since the first stage of market opening Ruhrgas Austria and MyElectric (Salzburg AG 80%, Verbund 20%) have been active in the gas industry.
Other alternative suppliers commenced operations at the start of 2003.
While Ruhrgas Austria mainly serves industrial consumers, MyElectric principally markets to small-scale customers, for whom it was the only alternative supplier until the end of 2002.

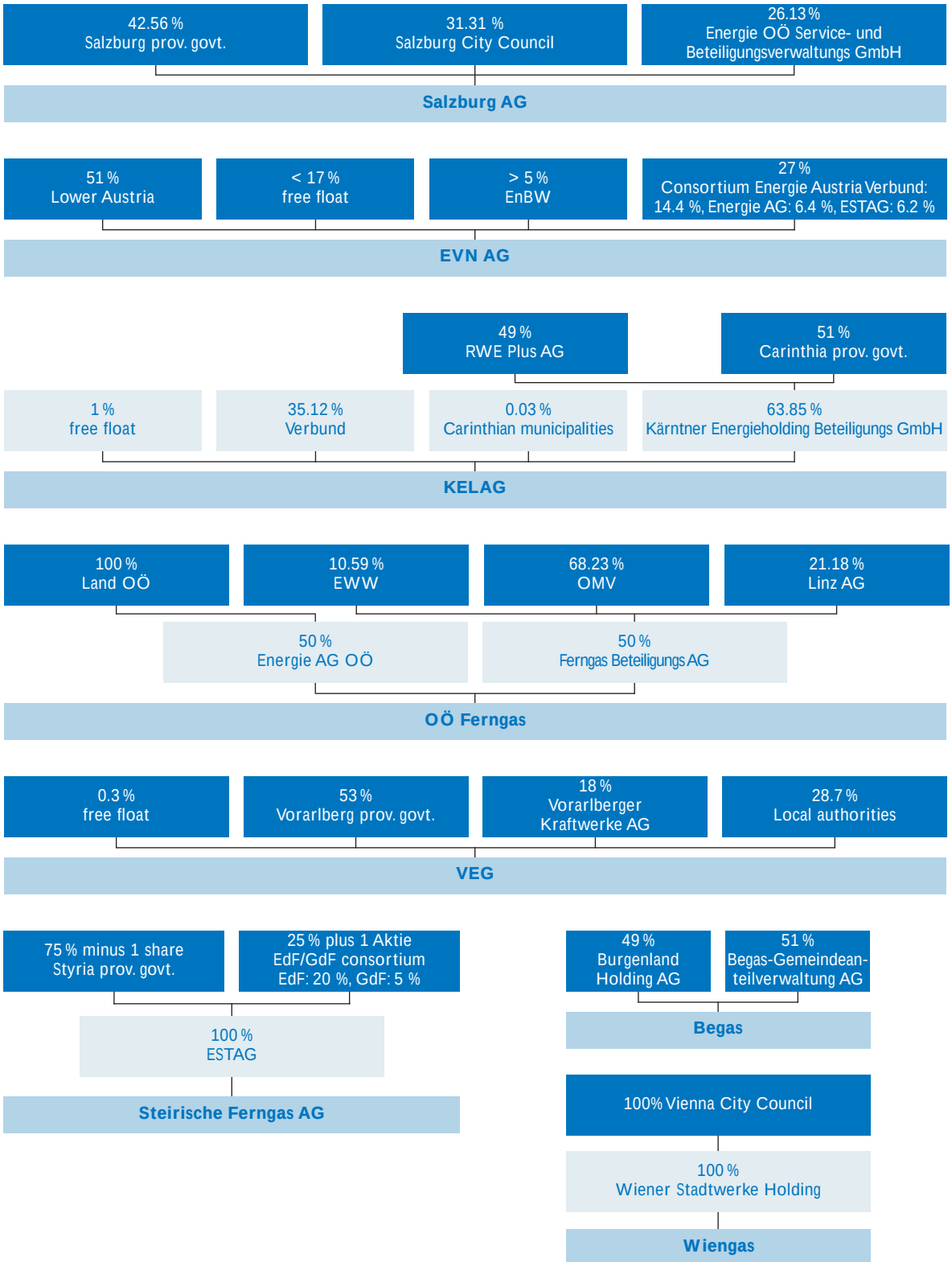
In 2003 additional suppliers began offering gas to small-scale customers. Ruhrgas Deutschland is currently holding talks with MyElectric on forming an alliance and taking a stake in it. In addition RAG, which previously largely figured as a producer and storage operator now plans to enter the market as a supplier.

→ Ownership structures in the Austrian gas industry

Fig. 13

As of 31 December 2002




42.56 %
Salzburg prov. govt.
31.31 %
Salzburg City Council
26.13 %
Energie OÖ Service- und Beteiligungsverwaltungs GmbH
Salzburg AG
51 %
Lower Austria
< 17 %
free float
> 5 %
EnBW
27 %
Consortium Energie Austria Verbund: 14.4 %, Energie AG: 6.4 %, ESTAG: 6.2 %
EVN AG
49 %
RWE Plus AG
51 %
Carinthia prov. govt.
1 %
free float
35.12 %
Verbund
0.03 %
Carinthian municipalities
63.85 %
Kärntner Energieholding Beteiligungs GmbH
KELAG
100 %
Land OÖ
10.59 %
EWW
68.23 %
OMV
21.18 %
Linz AG
50 %
Energie AG OÖ
50 %
Ferngas Beteiligungs AG
OÖ Ferngas
0.3 %
free float
53 %
Vorarlberg prov. govt.
18 %
Vorarlberger Kraftwerke AG
28.7 %
Local authorities
VEG
75 % minus 1 share
Styria prov. govt.
25 % plus 1 Aktie
EdF/GdF consortium
EdF: 20 %, GdF: 5 %
100 %
ESTAG
Steirische Ferngas AG
49 %
Burgenland Holding AG
51 %
Begas-Gemeindeanteilverwaltung AG
Begas
100% Vienna City Council
100 %
Wiener Stadtwerke Holding
Wiengas

→ Current position of the gas companies

The changed legal framework created by the GWG II and implementation of the EU Gas Directive requires the gas companies to unbundle their activities, at least in organisational and accounting terms. As a result of liberalisation all the companies' activities apart from grid operation – a natural monopoly – are now taking place in competitive markets.

While the E-Control Commission sets the use of system charges, the prices in other areas of operations reflect the workings of supply and demand. The value chains in the various areas of operations (importing, storage, transmission and distribution, wholesale and retail) are discussed below.

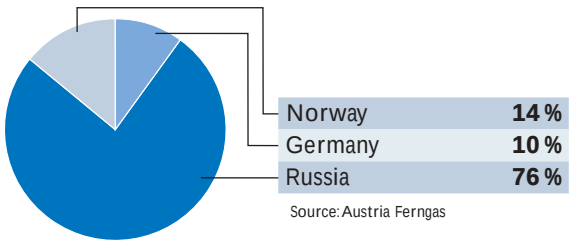
→ Comparison between electricity and gas

Table 9

	Electricity	Gas
Grid operators[1]	approx. 140	21
Grid length[1]	1,282,025 km	27,950 km
High/medium voltage, high pressure grids[1]	499,417 km	4,500 km
Low voltage/ low pressure grids[1]	782,608 km	23,400 km
Employees[2]	22,000	2,900
Turnover[2]	€ 4.206 bn	€ 1.623 bn
Customers[2]	4,032,000	1,261,308
Competitors	none	oil, coal and district heating
Inertia	pure energy	massive medium
Flow	not traceable (least resistance)	measurable
Generation	nationwide, mostly domestic	imported (low proportion domestic sources)
Reasons for network expansion	security of supply, stability	Connection to new sources

[1] 2002 data , [2] 2001 data

→ **Gas imports in 2001 by countries** Chart 36



Source: Austria Ferngas

Importing

Most of Austria's gas is imported, coming from Russia (76%), Norway (14%) and Germany (10%). The grid zones in the East control area receive their gas from the above sources (apart from domestic reserves). The Tyrol and Vorarlberg control areas source their supplies from Germany.

The main Austrian importer of Russian gas is OMV Erdgas GmbH. In 1968 Austria through OMV became the first western country to conclude a long-term supply agreement with the largest Russian gas producer Gazprom. Despite the political upheavals in Russia in the intervening period, Gazprom has met its agreements with Austria ever since.

Half of the Norwegian gas is imported by OMV and half by Austria Ferngas. OMV concluded its import agreements with Norway in November 1986. The gas from the Norwegian fields is delivered by pipeline to the German coast, and from there it travels through the European transmission grid to Oberkappel on the Austrian border. It makes no difference whether the gas is physically transported to Oberkappel, as there are switch agreements. According to OMV Erdgas GmbH the annual amounts delivered from Norway will rise from approx. 1bcm in 2001 to 1.5bcm in 2005.

The import contracts with Germany are between the provincial gas companies and Ruhrgas. The volumes imported from Germany are sold in Salzburg, Tyrol, Upper Austria and Vorarlberg.

Storage requirements and storage operators

For cost reasons, it is necessary to aim to maximise the utilisation of the capacity of transmission pipelines and gas fields throughout the year. Many import agreements therefore provide for only small variations in offtake. The import pipelines from Russia work at high levels of capacity utilisation. However the demand patterns of most customers are subject to strong daily and seasonal fluctuations, so the supply to them must be adjusted accordingly. Where a supplier is committed to meeting all of a customer's gas requirements this will normally only be possible if it uses domestic storage capacity.

There are two operators of storage facilities in Austria – RAG and OMV Erdgas GmbH. RAG operates one facility and OMV Erdgas four. Both companies use depleted gas fields for storage, but leave a considerable volume of gas – the so-called "cushion gas" – in the reservoirs. This keeps down the compressor power and the number of wells required, and hence costs.

→ Storage facilities in Austria

Table 10

Location	Working volume (106 cm)	Injection cap. (cm/h)	Withdrawal cap. (cm/h)	Operator
Schönkirchen	1770	775 000	815 000	OMV Erdgas GmbH
Reyersdorf and Tallesbrunn	300	125 000	160 000	OMV Erdgas GmbH
Thann	200	115 000	130 000	OMV Erdgas GmbH
Puchkirchen	500	210 000	210 000	RAG

→ Grid

Grid levels and zones under the Natural Gas (Amendment) Act

Section 23b (1) GWG II divides the gas pipeline network into three grid levels; the main reason for this is to provide a basis for setting use of system charges. The main distinction is according to the pressure at which the various elements in the system operate. The three grid levels are:

Level 1: The long-distance transmission lines listed in an annex to the Act; pipelines linking the entry and exit points of a grid zone or control area with each other; extensions of distribution pipelines where these create links with other distribution or transmission systems, or control areas;
Level 2: Distribution pipelines with a pressure of > 6 bar;
Level 3: Distribution pipelines with a pressure of < 6 bar.

The distinction between grid levels concerns the regional and national transportation of natural gas and the GWG II excepts transit deliveries from it.

The Act also distinguishes between grid levels and grid zones, the latter being defined as areas of the system in which uniform tariffs apply (section 6[32] GWG II).

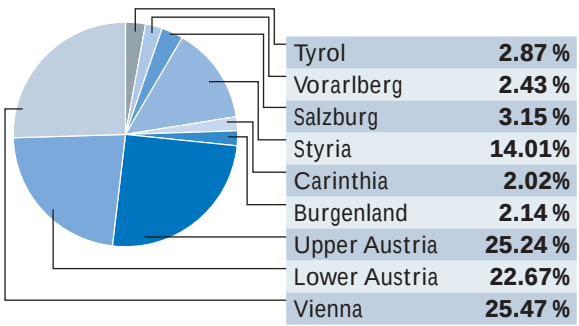
Distribution

Austrian demand structures vary from province to province. The largest volumes are sold in Vienna, Upper and Lower Austria and Styria. Vienna is the province with the largest number of residential and small business customers. In Upper and Lower Austria, and Styria, the customer mix is tilted towards industry.

Chart 38 shows the evolution of the sectoral demand structure since 1975.

→ Natural gas use by provinces, 2001

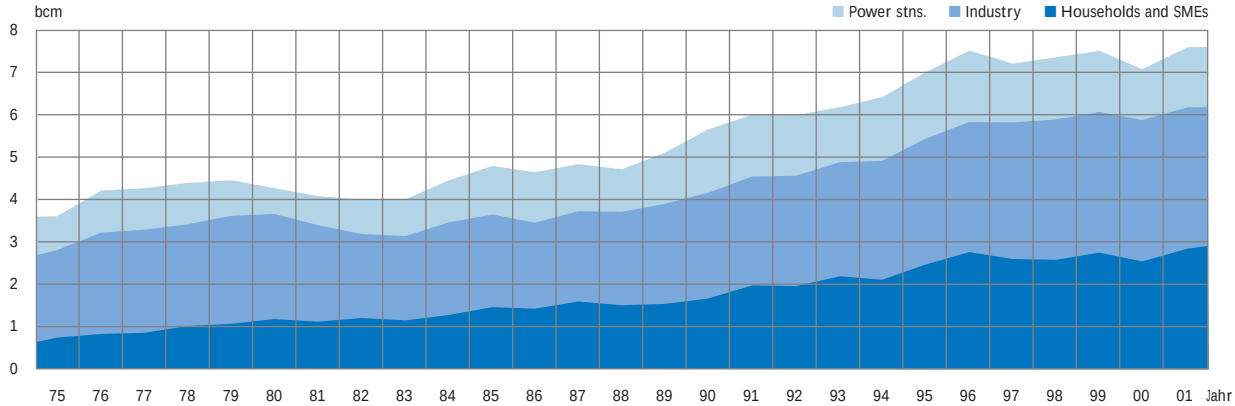
Chart 37



Source: Austria Ferngas

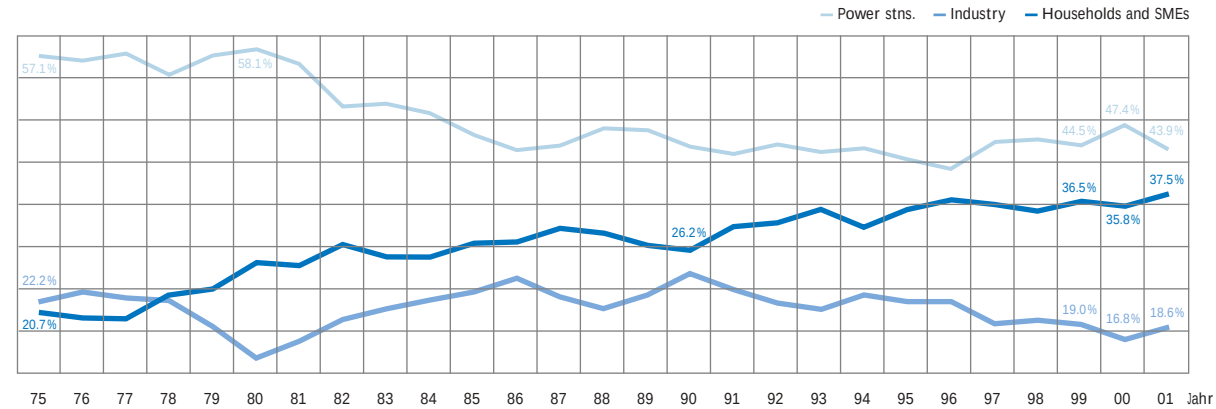
→ Natural gas use by sectors, 1975–2001, in bcm

Chart 38



→ Natural gas consumption by sectors (year-on-year change), 1975-2001, in%

Chart 39



Source: Austria Ferngas (2002)

In 2001 natural gas claimed a larger share of total energy use and there was a shift away from solid fuel, oil and hydro power. Chart 40 shows gas's share of total energy consumption in 2001.

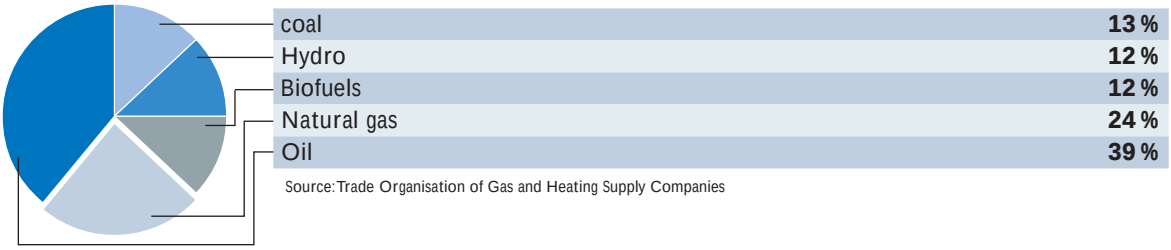
Trading

European gas trading remains comparatively underdeveloped. Only the United Kingdom has a functioning exchange and even here trading is purely electronic and involves physical delivery. There are about ten institutionalised gas markets (hubs), mainly in Western Europe, where trading is gradually emerging.
The products traded vary, but are generally monthly, quarterly or annual contracts. The contracts in Central and Eastern Europe are predominantly long-term take-or-pay agreements with re-export clauses, most of which are designed to limit international trade.

In Austria the Baumgarten hub could develop into a market.

→ Total energy consumption in Austria in 2001

Chart 40



Source: Trade Organisation of Gas and Heating Supply Companies

→ Gas prices

Before liberalisation the gas supply companies charged all-inclusive prices which covered both the system charges and the cost of the gas itself. A ceiling was established by the "parity price committee" nominated by both sides of industry and the companies mostly set their prices at this maximum.

The separation of the transmission and distribution from the production and marketing functions, the different treatment thereof and obligatory itemised billing have increased the transparency of pricing.

When assessing price trends it should be noted that changes in overall gas prices are influenced by:

- → Energy prices;
- → Use of system charges;
- → Taxes and levies.

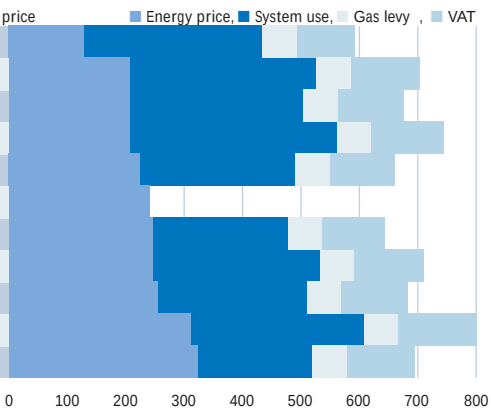
Chart 41 shows clearly that the energy prices in the East control area vary markedly, despite the fact that the supplier, OMV Erdgas, is the same. This implies that in some cases considerable margins are being earned on the energy component of prices. Network and connection density, topography and the age of the infrastructure are the factors responsible for the differences in system charges.

→ Residential gas prices by grid zones

Chart 41

As of 1 December 2002: household with an annual consumption of 15,000 kWh (prices for own supply areas)

EUR/year	Energy price	System use	Gas levy	VAT	Gross price
Tigas	129	306	59	99	592
Kelag	208	321	59	118	705
Steir. Ferngas	208	298	59	113	678
SAG	208	356	59	125	748
OÖFG	225	267	59	110	662
My Electric	240	–	–	–	–
Wiengas	246	234	59	108	647
Begas	247	288	59	119	713
EVN	256	256	59	114	686
Grazer Stw.	312	298	59	134	803
VEG	323	198	59	116	696



Source: E-Control

Influence of natural gas on electricity prices

The degree to which gas prices influence electricity prices depends on the structure of the electricity market. In oligopolistic markets such as those of Italy and Spain prices are determined by new market participants – mostly gas fired power stations. Reductions in gas prices lead to falls in those of electricity.

By contrast in Central Europe electricity prices are driven by marginal costs and the current overhang of generation capacity. When the marginal costs of hydro or coal fired plants are below those of gas fired power stations, as is the case at present, a drop in gas prices has only a minor influence on the cost of electricity. In the long term however, it is likely that new entrants will determine prices in these markets too, such that a long-term increase in gas prices will raise the electricity prices.

→ Supplier transfers

With the exception of Ruhrgas Austria, which succeeded in acquiring customers even before the start of liberalisation, there was no switching of suppliers between the entry into force of the GWG I on 10 August 2001 and full liberalisation on 1 October 2002.

There were two main reasons for this:

- → Contractual reservation of physically free grid capacity, meaning that it was not available;
- → The need to negotiate access to each grid individually.

Since 1 October 2002 switching has been governed by the Transfer Order. The main difference from the switching process in the electricity sector is the fact that a new third-party access agreement is concluded whenever a customer changes suppliers. This is because of the need to check whether pipeline capacity is available – a task performed by the control area manager in co-operation with the grid operators.

The first large-scale industrial consumer switched suppliers on 1 October 2002. Most large-scale consumers have succeeded in renegotiating their contracts with their existing suppliers. The first alternative gas supplier won 2,000 small-scale customers by the end of the year – 10% of them small business and 90% residential customers. These consumers are almost exclusively (98%) in eastern Austria. Almost 70% of the customers who have made use of their right to choose their supplier since 1 October 2002 are in Lower Austria and the remaining 30% in Vienna. Two gas pools have already been created. The vast majority of the new gas customers have also opted to sign new electricity contracts.

→ European cooperation on gas

The Madrid Process

In 1999 the European Commission initiated the Madrid Process. This forum consists of representatives of national regulatory authorities, EU member states, the European Commission, transmission system operators, gas suppliers and traders, consumers, network users and gas exchanges. In 2002 the regulatory authorities of candidate countries were invited for the first time. Representatives of Gazprom were also invited with a view to intensifying the dialogue with Russia on security of supply.

The Forum was set up to discuss issues regarding the creation of a true internal gas market which are not explicitly addressed by the Gas Directive (98/30/EC). It can be seen as the counterpart to the Florence Process (the EU forum for regulatory issues concerning electricity). In its second benchmarking report on the implementation of the internal electricity and gas market, published in 2002, the European Commission found that member states had made less progress towards building the single market in gas than that in electricity. The main conclusions of the 6th meeting of the Madrid Forum were that there is a need to: harmonise tariff structures along the lines of a pan-European "entry-exit" system; assure transparency with regard to system capacity availabilities by publishing them at the main network hubs in Europe; and harmonise the rules for capacity allocation at times of commercial and physical congestion. An important focus of activities in 2003 will be undertaking an assessment of how the conditions can be created for the development of gas trading hubs in Europe.

In addition, progress towards the technical interoperability of gas grids is anticipated in 2003. 2002 also saw the foundation of EASEE-gas – a gas industry association devoted to removing technical and organisational barriers to trade in gas by promoting standardisation.

CEER gas working group

The CEER has been addressing issues relating to the internal gas market for some years now. The main priority of the organisation's gas working group is preparatory and follow-up work for meetings of the Madrid Forum. At the 6th meeting of the Madrid Forum the working group presented papers on harmonisation of tariff structures by creating a Europe-wide "entry-exit" system, on means of achieving improved transparency with regard to system capacity availabilities and on harmonisation of the rules for capacity allocation and congestion management. Important aspects of work in 2003 will be studies on means of facilitating the development of gas trading hubs in Europe, and on gas transit and storage tarification. Another key task of the working group is that of monitoring the results of Madrid Forum meetings in individual countries. For instance, it will be observing compliance with commitments to ensure that transmission grid operators publish information on pipeline capacity availabilities at network hubs.

Responsibilities common to electricity and gas

→ Public information activities

Lecturing and publications by E-Control staff

During the year under review E-Control again made a major effort to keep consumers and market participants up to date with recent developments on Austria's liberalised energy markets. To this end E-Control staff members addressed some 80 Austrian and international meetings and conferences on energy market liberalisation. Numerous public information events were held, especially at the time of full opening of the Austrian gas market. Staff also wrote articles for specialist magazines.

Media relations work in 2002

E-Control has always attached great importance to public relations work because of the need to raise public awareness of the advantages and problems associated with liberalisation. At the time of the liberalisation of the electricity market in 2001 E-Control held press conferences and briefed numerous journalists, as well as running an advertising campaign with the slogan "Welcome to the free electricity market" in the main regional dailies. In this way we were able to achieve our objective of putting the population in the picture about electricity liberalisation.

With the full opening of the gas market in October 2002, E-Control again had the task of providing consumers with comprehensive information on the advantages of liberalisation, the various tariffs and suppliers, opportunities to switch and the like.

A number of activities were launched, over and above the ongoing PR effort. These included a press conference by the Minister of Economic Affairs and Labour Dr. Martin Bartenstein, an interview by CEO Walter Boltz with the Austrian Broadcasting Corporation (ORF), and reports on national and local radio news programmes. Reports on gas market liberalisation were also carried on the main national TV news broadcasts and the local Vienna TV news programme. Routine PR activities proceeded throughout the year. For instance, E-Control held a number of press conferences and energy round tables, frequently issued press releases and regularly briefed journalists off the record.

Website relaunch

During the year under review the E-Control website was redesigned to give users faster and more targeted access to information. The main aim of the project was to build information on gas market liberalisation, "green" power and arbitration into the existing site. In addition, technical improvements were made to enable E-Control staff to post and update content quickly and easily without requiring specialist programming knowledge. This will ensure that users are offered the latest information on the various topics dealt with by the site.

→ New screen design

Fig. 14

In the course of the project the screen design was also completely remodelled.

Among other things, the E-Control site contains the following:

General information

- → Introduction to E-Control and the E-Control Commission, and the division of responsibilities between the regulatory authorities;
- → A "market chronicle" with brief accounts of events since 1 October 2001;
- → Links, job opportunities, FAQs and a glossary;
- → Information for consumers on E-Control's arbitration activities.

Electricity and gas

- → EU legislation, and Austrian federal and provincial Acts and orders;
- → Market rules: the general terms and conditions approved by the E-Control Commission, the Technical and Organisational Rules (TOR) and the Other Market Rules;
- → Price information broken down into energy prices, system charges, taxes and levies, as a supplement to the tariff calculator;
- → Austrian electricity and gas statistics;
- → Information on crisis prevention measures.

Renewable energy
This section of the site contains descriptions of the various technologies, gives an overview of the injection tariffs and provides details of the Green Electricity Act.

Press archive
The press area of the site offers downloads of all E-Control press releases and background materials provided at press conferences and energy round tables.

Multimedia centre
The "multimedia centre" provides videos of E-Control presentations (e.g. relating to the system charges review project).

Discussion forum
The "E-Diskurs" forum gives market participants an opportunity to exchange information on current projects. Registered users can also send suggestions to E-Control. The fact that an access code is required to enter this part of the site means that access to project information is restricted to authorised users.

Translation into English
The traffic statistics and numerous telephone inquiries have revealed that the E-Control website is visited by many non-German speaking users, because of this some 70% of the content is also available in English.

Annual report
E-Control's annual reports are downloadable from the site.

Electricity and gas tariff calculator
The tariff calculator fulfils E-Control's legal duty to compile and publish price comparisons for final customers. The electricity tariff calculator was developed by a joint project mounted by E-Control, the Federal Chamber of Labour, the Presidents' Conference of the Austrian Chambers of Agriculture and the Austrian Federal Economic Chamber. The gas tariff calculator was implemented in conjunction with the Federal Chamber of Labour and the Austrian Federal Economic Chamber. It enables Internet users to make price comparisons on the basis of individual consumption behaviour within a given region. This is important because the various components of overall electricity prices vary greatly across the country, and standardised comparisons based on predefined consumption patterns would therefore be of very limited value.

The tariff calculator can be found on E-Control's site and those of partner organisations.

Visitor statistics
The E-Control tariff calculator was visited by about 95,000 people in 2002. This yields an average of approx. 255 visitors per day (300 on weekdays and 150 on Saturdays, Sundays and national holidays).

The statistics show a slight decline in visits in the period up to August (from 381 per day in January to 194 in August), followed by an upturn in the last third of the year (e.g. 268 visits per day in October). The growth in traffic was evidently reflected fall-out from the public interest generated by full liberalisation of the Austrian gas market.

The calculator covers the electricity charges of 32 different suppliers – which add up to some 300 different tariffs or tariff variants – as well about 300 different use of system charges and taxation variants.

Modifications and extensions to the electricity tariff calculator

In 2002 the tariff calculator application was frequently adapted to changes in market conditions and the legal framework and extended. Among other things, new suppliers were included, and the use of system charges and taxes updated. Thanks to the flexibility of the calculator's administration interface E-Control staff can normally perform such updates without specialist help. The energy charges are almost always entered by the suppliers.

Another modification related to labelling. The original primary energy sources offered by the calculator as options – hydro, biogenic fuels (biomass and biogas), other renewables (solar, wind and geothermal), fossil fuels (coal, oil and natural gas), nuclear and other energy sources (lyes, sludge and domestic waste) – were replaced by hydro, "green" power, coal, oil products, gas, nuclear, other and the UCTE mix (Europe).

This change was required to adapt the calculator to the classification of primary energy sources adopted for the provincial implementing legislation, which was not yet known when it went online in September 2002.

Another important modification was undertaken to make it easier to relate tariffs to actual circumstances in the various distribution grid zones. This meant that distribution grid zones had to be introduced as an additional regional parameter, along with postcodes, provinces and grid zones. The administration interface now allows users to set up grid operators and assign any number of postcodes to them within grid zones, such that they can create new distribution grid zones. Naturally, existing distribution grid zones can also be edited. This functionality is particularly useful when distribution grid zones disappear or are expanded, for instance as a result of company mergers. This option also means that the calculator can now correctly assign tariff components such as the metering charge and stranded costs contribution, which generally vary from one grid operator to the next.

The screenshot below illustrates this, taking postcode 5741 as an example.

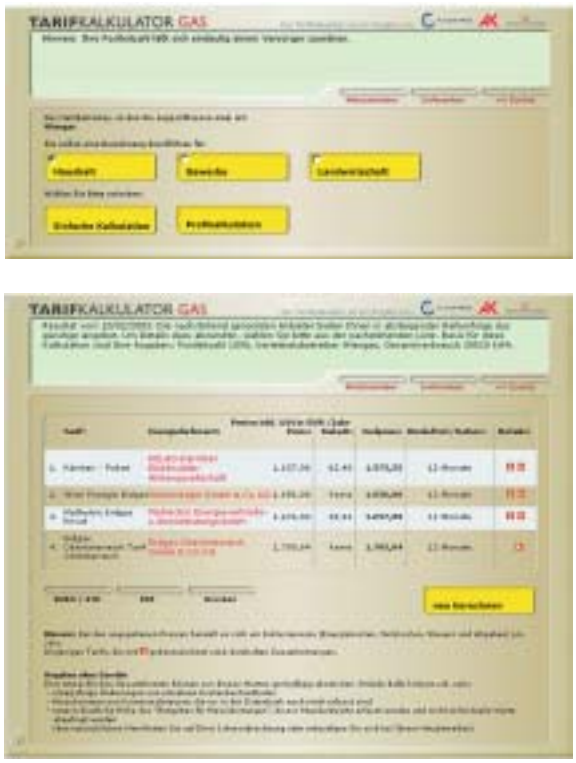
Fig. 15

The gas tariff calculator

Full gas market liberalisation in October 2002 made it necessary to add gas price comparisons to the tariff calculator. The combined electricity and gas calculator was unveiled by E-Control, and the Chambers of Labour and Economics in January 2003. The delay was caused by the fact that the order establishing the use of system charges for gas was not published until the end of September 2002. The calculator is based on the tariff structure contained in the order, and detailed design could thus not begin until its principles were definitely known.

As with the electricity tariff calculator, the gas application comes in simplified and "professional" versions. In the simplified version setup parameters such as the grid level and the type of demand are defaulted (electricity: grid level 7 and passive metering; gas: grid level 3 and passive metering). "Professional" users have to take these decisions themselves. The advanced version is chiefly of relevance to businesses with actively metered consumption. At the same time as gas was added the design of the tariff calculator was upgraded. Figures 16 and 17 show the launch and summary pages before and after the redesign.

Fig. 15



Response

Conversations with consumers, market participants and interest group representatives have shown that the tariff calculator now plays an important role as a guide to Austria's liberalised energy markets. Its impartiality is accepted. It offers consumers the necessary transparency with regard to price comparisons while grid operators and suppliers can be sure that the information on their companies' tariffs is accurate.

Fig. 17

Consumer brochures and hotline

A new E-Control consumer information brochure appeared at the start of October. This is a guide to the changes that have occurred on the electricity and gas markets as a result of liberalisation. The brochure also contains answers to frequently asked questions about electricity and gas deregulation, and provides contact addresses for other queries or problems. It can be ordered directly from E-Control (by phone or via www.e-control.at), and is free of charge.

The energy hotline, set up by E-Control in co-operation with the Austrian Consumer Information Association in August 2001, continued to operate successfully in 2002. Consumers can ring 0810 810 224 at local rates for information on tariffs, rights and duties when switching suppliers, notice periods and much more besides

Other information services

E-Control provides information on its arbitration activities and other matters, mostly by telephone. The queries are extremely varied, and range from general legal issues to the reasonableness of electricity prices, system charges, "green" power injection tariffs and future trends in system charges. They come from every group of market participants. Both energy companies and their customers use the E-Control information service. Particularly in the immediate aftermath of liberalisation, a considerable number of inquiries were received from lawyers, business consultants and other professions of an advisory nature wishing to share the information with their clients.

The number of inquiries in 2002 is estimated at around 1,500 for electricity alone.

Working papers

The series of working papers published by E-Control contains articles and studies by staff members on a variety of electricity and gas topics, including economic, environmental, social and legal aspects of the industries.

The working papers can be downloaded from our website, and can be ordered in print by mailing office@e-control.at.

Working papers have been published to date

Text box 11

WP 1 Liberalisierung und Regulierung des österreichischen Strommarktes (15 Feb. 2002)
WP 2 Electricity Market Liberalisation in Austria – The First Experience (26 March 2002)
WP 3 Bedeutung von Ökostrom und Regulierungsansätzen (27 March 2002)
WP 4 Strukturen und Mechanismen des liberalisierten Strommarktes (15 April 2002)
WP 5 Liberalisierung und Strompreisentwicklung – Österreich und Deutschland im Vergleich (28 May 2002)
WP 6 Mechanismen der Anreizregulierung (20 June 2002)
WP 7 Competition Issues in the Electricity Sector (21 Oct. 2002)

→ Market timeline

→ January

2 January 2002 Following the issue of an order requiring a reduction, system charges in Burgenland (Bewag) are cut by about 12%.
2 January 2002 Crude oil prices hit their lowest level since 1970 following a 31% fall in 2001. Steepest drop in energy prices in 2001 recorded by gas at 74%.
3 January 2002 Steirische Ferngas cuts gas prices for residential and small business customers by 2.6% and 5.7%, respectively, due to lower procurement costs.
8 January 2002 German energy company EnBW reported to have acquired an interest of over 5% in EVN.
11 January 2002 2002 EVN general meeting approves merger of the company's electricity and gas marketing operations with its wholly owned subsidiary EVN Energievertrieb GmbH & Co KG.
15 January 2002 EU Commission clears merger of E.On and Verbund hydro power stations into European Hydro Power (EHP) in which E.On will hold 37% and Verbund 63%.
17 January 2002 As with its liberalised electricity market, Germany decides not to establish a regulatory authority for the gas market. Regulation is to be by means of negotiation between market participants, through industry associations.
21 January 2002 E.On asks German economics minister Werner Müller to issue an order overruling a Cartel Office ban on its merger with Ruhrgas.

→ February

4 February 2002 Verbund states its continued commitment to an alliance with E.On. The two form a hydro power joint venture, EHP. The deal strengthens Verbund's equity base because the power stations brought into the new company by E.On are debt free.
15 February 2002 At a general meeting of Austrian Hydro Power (AHP) shareholders approve contribution of the Styrian hydro power stations to Verbund subsidiary AHP following the merger of Steweag und Steg. Styria's EStAG receives a 5.3% holding in AHP in return.

→ March

1 March 2002 Agreement reached on "Austrian gas solution": OMV Erdgas GmbH, OÖ Ferngas and the partners in Energieallianz to form a joint subsidiary to market gas to industrial and other large-scale customers.
2 March 2002 EU Commission clears Province of Upper Austria's planned sale of its holding in Energie AG to Energieallianz.
21 March 2002 First day's auction trading on Graz based electricity exchange EXAA. There are 13 members.
26 March 2002 APT Power Trading GmbH starts trading RECS renewable energy certificates.
28 March 2002 Wienstrom cuts its use of system charges by an average of 8.4%, with effect from 1 April 2002.

→ April

2 April 2002 Outline agreement on an "Austrian electricity solution" apparently reached. Verbund and Energieallianz to merge all their hydro and thermal power generation and electricity trading operations.
10 April 2002 Cooperation agreement between Bewag and EneAustrian economics minister Martin Bartenstein waters down draft legislation on gas market opening in response to heated protests from gas suppliers. The new bill provides for independent control area managers throughout Austria, which are to act on cases of system access denial.
20 April 2002 OÖ Ferngas AG announces that it will respond to gas market liberalisation by unbundling operations into a number of different companies. Entry to Gas-Allianz to result in formation of a holding company for wholesale business in which Ferngas will have a 15% interest. Distribution company serving 50,000 residential and small business customers founded.
25 April 2002 E-Control order on the reporting of statistics required to prepare and implement emergency measures to safeguard security of electricity supply (Energy Emergency Data Order) published in the Wiener Zeitung (entry into effect on 1 May 2002).
26 April 2002 10% cut in Upper Austrian electricity system charges announced for 1 May
29 April 2002 Publication of E-Control Commission order setting charges for cross-border trade, due to enter into effect on 1 May 2002.
29 April 2002 4.4% reduction in Lower Austrian electricity system charges announced for 1 June.

→ June

1 June 2002 E-Control order regulating equalisation payments between grid operators (Equalisation Payment Order – AGZ-VO) enters into force.
4 June 2002 Salzburg AG announces rebates of up to 10% in electricity and gas tariffs for large-scale customers from July onwards, conditional on a two-year lock-in period.
14 June 2002 Parliament unexpectedly returns Natural Gas (Amendment) Bill and Green Electricity Bill to Economics Committee.
27 June 2002 Accord between the federal and provincial governments on principle of uniform "green" power surcharges.

→ July

6 July 2002 Drafting of an outline consortium agreement between Energieallianz and Verbund on the formation of Austrian Energy is completed. Antitrust clearance is required from Brussels. Plans call for the operating companies to commence business at the beginning of 2003.
10 July 2002 Key Federal Chamber of Labour positions written into the Natural Gas Bill. Market transparency to be enhanced by regulated third-party access involving fixed transmission tariffs for all customers.
11 July 2002 Energie AG Oberösterreich signs an agreement to acquire a 49% stake in Wels Strom AG.
18 July 2002 Political steering committee (representatives of the four provinces concerned and the economics minister) backs Energie Austria plan.
19 July 2002 Federation of Austrian Industry slams Green Electricity Bill, sees extra annual cost burden of up to € 144m. E-Control takes view that the Bill will not raise costs for electricity customers but will bring savings as compared to existing system.

→ August

2 August 2002 E-Control demands attachment of specific conditions to clearance for merger of OMV and Energie Allianz gas operations in Econgas.
5 August 2002 Düsseldorf regional appeal court upholds decision blocking the merger between E.On und Ruhrgas. "Serious doubts" about the legality of the ministerial order approving the deal.
9 August 2002 CHP surcharge of 0.2 cent/kWh to be imposed in Salzburg Province from 1 September 2002 on. System charges to be simultaneously cut by the same amount, meaning that the price for consumers remains the same.
13 August 2002 OÖ Ferngas announces intention to launch own gas brand. Erdgas OÖ to serve customers with annual gas consumption of less than 500,000 cm.
23August 2002 Natural Gas (Amendment) Act published. This provides for settlement agents, along the lines of those in the electricity market.
27 August 2002 Vorarlberger Kraftwerke AG and its partners announce reduction in electricity prices for large households and business customers with effect from 1 October 2002.
30 August 2002 Salzburg AG announces average 7% cut in tariffs in its distribution area as of 1 September 2002.

→ September

12 September 2002 Innsbrucker Kommunalbetriebe (IKB) and Tiwag subsidiary Tigas announce intention to merge their gas operations on 1 January 2003. Transaction results from a cooperation agreement between the two.
14 September 2002 Details of the support payments for environment friendly power generation being worked out. Apart from the injection tariffs, the different "green" power surcharges for residential and industrial consumers are a potential bone of contention.
24 September 2002 Salzburg AG announces a 4.4% cut in its gas prices from 1 October 2002.
26 September 2002 2002 Kilowatt-hour (kWh) to replace the cubic meter (cm) as the billing unit when the gas market is deregulated on 1 October 2002. The conversion factor is 10.7 kWh per cu m.
28 September 2002 Publication of a Eurostat report placing Austria among the EU frontrunners with regard to the share of renewable energy in gross electricity consumption; this is chiefly due to the high share of total generation accounted for by hydro. The EU average for renewables is 6%.

→ October

1 October 2002 Full liberalisation of the Austrian gas market enters into force. Austria becomes the third EU member after the UK and Germany to fully deregulate its energy markets.
1 October 2002 E-Control and the Federal Chamber of Labour set up an arbitration service for electricity and gas customers.
10 October 2002 E-Control launches tariff audits at Salzburg AG, EVN and Kelag – the gas suppliers with the highest system charges.
12 October 2002 Austrian "green" power generators demand a significant increase in subsidies for renewable energy sources. E-Control has recently proposed a new system for these surcharges.
14 October 2002 EVN acquires Stadtwerke Korneuburg and will supply its 4,500 gas customers.
15 October 2002 Merger of OMV Erdgas, Wiengas, EVN, Oberösterreichische Ferngas, Linz AG and Begas approved by the Austrian competition authorities, following the merger parties' acceptance of conditions.

→ November

1 November 2002 Cartel Court approves the sale of a 49% interest in the energy operations of Grazer Stadtwerke to Energie Steiermark Holding AG.
16 November 2002 EVN disposes of its 6.9% stake in Swiss electricity company Aare Tessing AG (Atel).
19 November 2002 France pledges to open its residential electricity and gas markets for household consumers between 2007 and 2009. In March EU member states had agreed to liberalise their markets for non-household consumers by 2004.
25 November 2002 EXXA announces that it expects three new members (E.ON, Enel and Cargill) to join the exchange.
26 November 2002 EU Council of Energy Ministers agrees on full EU-wide electricity and gas liberalisation by 2007. Non-household customers are to be free to choose their electricity and gas suppliers by 1 July 2004 and household customers by 1 July 2007. Ministers also reach agreement on the legal unbundling of the energy production, transmission and distribution functions.
27 November 2002 From 1 July 2004 onwards electricity suppliers will be required to disclose their power mix for the previous year in their bills. Suppliers will also be obliged to provide information on CO2 emissions and nuclear waste arisings associated with generation of their power.
30 November 2002 Memorandum on the "Austrian electricity solution" submitted to the European Commission. After preliminary discussions it will be clear how long the approval procedure will take.

→ December

2 December 2002 EVN announces its intention to increase electricity prices by 0.2028 cent/kWh to cover the additional costs incurred as a result of the Green Electricity Act.
6 December 2002 Following a green light from the competition authorities Tiwag takes an interest of 25% plus one share in Innsbrucker Kommunalbetriebe.
7 December 2002 E-Control criticises the price increases announced by some electricity companies for 2003. Both EVN and WKW intend to raise their prices by 0.2028 cent/kWh in response to the new Green Electricity Act. E-Control takes the view that these costs are offset by the abolition of small hydro certificates.
11 December 2002 Verbund again presses for rapid action to close the gaps in the 380 kV ultra-high voltage grid, arguing that these endanger Styria's competitiveness as a business location and that grid congestion will lead to an increasing number of outages. Demand in the region has risen massively as a result of the location to it of many industrial companies.
12 December 2002 E-Control CEO Walter Boltz predicts falls of 15–20% in gas system charges over the next two to three years and announces that there will be tariff proceedings for all grid operators to achieve this. Grazer Stadtwerke announce a price reduction as of 1 January 2003. Some 800 customers have switched suppliers; 20–30% are residential consumers.
18 December 2002 Starting in 2003 Austrian electricity consumers will be subsidising "green" power (wind, solar, biomass, small hydro and CHP) to the tune of € 220m. Most of the support payments will be collected by way of a standard nationwide surcharge of 0.289 cent/kWh to be paid by customers on the use of system charges. Electricity traders to support "green" power by paying a fixed procurement price of 4.5 cents.
20 December 2002 The new gas supplier for large-scale customers, EconGas announces its intention to sell gas in neighbouring countries. Steirische Ferngas expresses dissatisfaction with the conditions imposed on the gas alliance by the competition authorities. CEO Peter Köberl calls for a purchasing joint venture with OMV.

Annex

Annex

→ Regulatory proceedings and regulations

→ Regulatory proceedings and regulations of E-Control and the E-Control Commission

Electricity

Decisions

Licensing of balancing group representatives	10
Approval of the general terms and conditions of settlement agents	8
Extensions of the applicability of the general terms and conditions of balancing group representatives	16
Extensions of the applicability of general terms and conditions of distribution and transmission grids	30
Approval of the general terms and conditions of "green" power balancing group representatives inc. part-approvals	4
Other	12

Regulations

Electricity Control Ltd. regulation amending the Electricity Control Ltd. order concerning electricity supply agreements relating to procurement from third countries (Electricity Supply Agreement Regulation) of 17 December 2001 (Electricity Supply Agreement [Amendment] Regulation), published on 28 June 2002 in the official gazette supplement of the Wiener Zeitung

Electricity Control Ltd. regulation regulating equalisation payments between grid operators (Equalisation Payment Regulation, AGZ-VO), published in No. 102 of the official gazette supplement of the Wiener Zeitung on 29 May 2002

Regulation determining the use of system tariffs, previously amended by Electricity Control Commission regulation Z1. K SNT 01/01-2, K SNT 02/01, published on 27 March 2002 in the No. 61 of the official gazette supplement of the Wiener Zeitung and amended by Electricity Control Commission regulation Z1. K SNT 14/01, K SNT 04/01, K SNT 05/01, published in No. 83 of the official gazette supplement of the Wiener Zeitung on 29 April 2002

Electricity Control Commission regulation determining the use of system tariffs (Use of System Tariff Regulation [SNT-VO]), published on 29 May 2002 in No. 102 of the official gazette supplement of the Wiener Zeitung, and amended by Electricity Control Commission regulation Zl. K SNT 13/01, K SNT 04/01, K SNT 05/01, published on 24 September 2002 in No. 184 of the official gazette supplement of the Wiener Zeitung.

Electricity Control Ltd. regulation regarding the reporting of statistics required to prepare and implement emergency measures to safeguard security of electricity supply (Energy Emergency Data Regulation), published in the official gazette supplement of the Wiener Zeitung on 25 April 2002.

Electricity Control Ltd. regulation on reporting duties regarding the assessment of compliance with targets for electrical energy from "green" and small hydro plants (Reporting Regulation), published in the official gazette supplement of the Wiener Zeitung on 10 July 2002.

Electricity Control Commission regulation determining the charges for cross-border trade (CBT Regulation), published in No. 83 of the official gazette supplement of the Wiener Zeitung on 29 April 2002 (expired on 31 December 2002)

Energy Control Commission regulation of 19 December 2002 determining the charges for cross-border trade (CBT Regulation), published in the official gazette supplement of the Wiener Zeitung on 23 December 2002 (expired on 1 January 2003)

Gas

Decisions

Licensing of balancing group representatives	8
Approval of the general terms and conditions of balancing group representatives	5
Approval of the general terms and conditions of settlement agents	2
Approval of the general terms and conditions of distribution grids	20

Regulations

Energy Control Ltd. regulation concerning transfers of suppliers and balancing groups (Gas Transfer Regulation), posted on www.e-control.at on 28 August 2002

Energy Control Ltd. regulation concerning the assignment, preparation and adjustment of standardised load profiles (Load Profile Regulation), published in the official gazette supplement of the Wiener Zeitung on 28 August 2002

Energy Control Ltd. regulation regulating equalisation payments between grid operators in the gas industry (Gas Equalisation Payment Regulation, AGZ-VO), published on 30 September 2002 in the official gazette supplement of the Wiener Zeitung

Energy Control Commission regulation concerning control area managers' charges, published on 30 September 2002 in the official gazette supplement of the Wiener Zeitung

Energy Control Commission regulation determining the use of system charges in the gas industry (Gas Use of System Charges [GSNT-VO]), published on 30 September 2002 in the official gazette supplement of the Wiener Zeitung

Energy Control Ltd. regulation determining the clearing charge for the performance of the duties of a settlement agent in the gas industry (Gas Clearing Charge Regulation), published on 15 November 2002 in the official gazette supplement of the Wiener Zeitung

→ Gas glossary

Annual consumption: The quantity of gas, measured in Nm^3 or kWh, shown by the consumption data for the last one-year billing period. In the absence of metered data, billing on the basis of estimated consumption is permissible.

Applicable use of system charges: The tariffs, set by the regulator, paid by grid users to grid operators for use of the grid.

Balancing energy supplier: Any balancing group member that meets the technical standards for sellers on the balancing energy market.

Balancing energy: The difference between supply and demand in a balancing group within a given metering period; volume may be metered or computed.

Balancing group (BG): A virtual group of suppliers and customers within which gas availabilities (procurement schedules and infeed) and demand (delivery schedules and withdrawals) is balanced.

Balancing group coordinator (BGC): A natural person or legal entity that has an official licence to operate a settlement agency for the organisation and settlement of balancing energy supplies within a control area.

Balancing group members (BGM): Suppliers and customers assigned to a balancing group for the purpose of balancing the gas supply and demand in that group.

Balancing group membership, direct: Where a market participant makes a contract for the procurement and settlement of balancing energy with a balancing group representative this is referred to as direct balancing group membership.

Balancing group membership, indirect: When a grid user or a gas trader makes a contract with a gas supplier that includes the procurement and settlement of balancing energy it is indirectly assigned to the supplier's balancing group.

Balancing group representative (BGR): A natural person or legal entity responsible for and representing the members of a gas balancing group in its dealings with other market participants and the balancing group coordinator.

Basic security: The security that a balancing group representative is required to provide on the basis of its creditworthiness check.

Clearing interval: Period in which initial clearing is performed by the settlement agency.

Clearing period: The smallest time period (1 hour) for which the settlement agency calculates the prices charged for the balancing energy and meters the amount of balancing energy for volume clearing. The period begins and ends on the hour.

Connection load: Maximum capacity of gas appliances connected to the grid after the metering point or the contractually agreed maximum hourly capacity for the metering point in kWh/h or Nm^3/h.

Consumption: The amount of gas, measured in Nm^3 or kWh, consumed within a billing period.

Control area (gas): A geographical unit within a grid (consisting of transmission and distribution lines with pressure control equipment and storage facilities), designated with reference to existing grid structures to the extent that they exist for the purpose of domestic supply.

Control area manager (CAM): The entity responsible for pressure control in a control area; this function may also be performed by a third party domiciled in a European Union member state.

Control energy: The energy required for short-term balancing of pressure fluctuations in the grid occurring within a given interval.

Cost reallocation: A method of calculation used to allocate the costs of all grid levels above that of the connection to a group of consumers on a pro rata basis.

Creditworthiness check: A creditworthiness check on a new or existing BGR to evaluate its economic, legal, financial and human resources position.

Cross-border shipment: A shipment of natural gas to a destination country (irrespective of whether the gas is stored in transit in Austria).

Direct line: A gas pipeline that does not form part of the interconnected system.

Distribution company: A natural person or legal entity performing a distribution function.

Distribution lines: Pipelines which are principally or exclusively used to transport gas for the direct supply of customers.

Domestic connection: That part of the distribution grid which links it with the customer's installations. Starts at the point of connection to the grid extant at the time of conclusion of the connection agreement and ends at the main shut-off valve or the building's gas pressure regulator, if any.

Eligible network customers: Customers and biogas or natural gas producers who are entitled to grid access, as well as grid operators and control area managers, to the extent that access is necessary for the performance of their functions.

Eligible storage customers: Gas producers, traders and suppliers domiciled in the European Union.

Final customer: A consumer who/which purchases gas solely for own use.

Gas company: A natural person or legal entity gainfully transmitting, distributing, delivering, selling, purchasing or storing natural gas (including LNG) and performing commercial, technical or maintenance functions in connection with these activities, with the exception of final customers.

Gas customers: Final customers, gas traders or gas companies that purchase gas.

Gas day: Period of time to which schedules relate. A gas day starts at midnight and ends at midnight the same day.

Gas exchange: An exchange on which gas contracts are traded.

Gas meter capacity: Governed by the R31 and R32 standards (G series) issued by the International Organisation of Legal Metrology (OIML). A measure of minimum and maximum flow, expressed in m^3/h.

Gas supplier: A natural person or legal entity who/which supplies gas to resellers or final consumers.

Gas trader: A natural person or legal entity who/which buys or sells gas and performs no transmission or distribution functions either inside or outside of the grid in which he/she/it operates.

Green card: Notice from a settlement agent to E-Control confirming that an applicant fulfils the technical, financial and contractual conditions for membership of the balancing group in question and that E-Control should therefore issue an operating licence.

Grid access agreement: An individual agreement between an eligible network customer and a grid operator under section 17 GWG II, governing the connection point and use of the system.

Grid admission charge: The one-time grid admission charge that compensates the grid operator for all expenses arising directly from the connection or a change in a connection due to an increase in the connected load.

Grid connection point: A technically suitable gas withdrawal or injection point in the grid, extant at the time of conclusion of the connection agreement, which is also accordance with the economic interests of the grid user.

Grid connection: The physical connection between the system of a customer or producer and the distribution grid.

Grid operator: Any transmission or distribution company.

Grid provision charge: The charge billed by a grid operator to a grid user to compensate it for the cost of the completed and prefinanced works required to expand the grid in order to enable a connection to be made, in as far as such costs are not covered by the grid admission and use of system charges; is related to agreed network use. The grid provision charge must be non-discriminatory and cost reflective and must be invoiced to the customer when a connection is made or is modified due to a change in load; it is a one-time, lump-sum charge.

Grid user: Any natural person or legal entity who/which injects energy into the grid or withdraws energy from it.

Grid zone: A sector of a grid in which the same rates apply.

Grid: Totality of the transmission or distribution networks owned and/or operated by a gas company, including service equipment (e.g. control and metering equipment), and the systems of connected companies which they required for access to the transmission and distribution systems.

Horizontally integrated company: A gas company with a non-gas area of business which also performs at least one of the following functions: gas transmission, distribution, marketing, procurement or storage.

Infeed supplier: A biogas or natural gas producer, or storage company that supplies gas to a grid.

Infeed: : Infeed volume, measured in Nm^3 or kWh, in a billing period.

Initial clearing: Takes place periodically (at least once a month) and involves determining the balancing energy per clearing period and BG by netting off the aggregate scheduled volumes against the total of the aggregate metered volumes (time series divided into clearing periods) and aggregated load profiles.

Integrated gas company: A vertically or horizontally integrated gas company.

Large-scale customer: A final customer with a contractually agreed consumption of over 10,000 Nm^3/hour.

Load profile meter: A meter that records the actual hourly load curve.

Load profile: The volume of gas, measured at intervals, delivered by an infeed supplier or procured by an offtaker.

Long-distance transmission line/grid: A high-pressure gas transportation pipeline or grid also used for gas transit or gas transportation to other transmission or distribution companies.

Market participants: Balancing group representatives, balancing group members, gas suppliers, gas traders, producers, grid users, customers, final customers, gas exchanges, settlement agents, transmission and distribution companies, control area managers and storage companies.

Market Rules: The sum total of all the legal and contractual rules and regulations that participants must observe in order to ensure that the gas market operates in an orderly fashion.

Metering differences: The differences between the injection and offtake volumes measured by meters in a distribution grid, which arises because of network losses and metering inaccuracies.

Metering point: An infeed and/or offtake point at which gas volume is measured and recorded.

Network admission: The initial connection to a grid or an increase in the capacity of an existing connection.

Network losses: Arise as a result of leaks and pigging and blowing of distribution pipelines.

Off-taker: A final consumer, storage company or grid operator that purchases natural gas from the grid.

Operating pressure: Pressure at the metering point, in bar or mbar

Other Market Rules (OMR): The market rules drawn up in accordance with section 9 (1)(1) Federal Act Regulating the Tasks of the Regulatory Authorities in the Electricity and Gas Sectors, as well as the Establishment of Energy Control and the Energy Control Commission (Energy Regulatory Authorities Act [E-RBG]) as amended (Federal Law Gazette I No. 148/2002) and implemented by way of the general terms and conditions.

Own use: Gas volume required by a grid operator to assure uninterrupted operation of distribution pipelines.

Producer: A natural person, legal entity or partnership who/whích produces gas.

Schedule: A document stating the volume (standard cubic meters/time period) to be exchanged between balancing groups or control areas during fixed periods (metering periods).

Second clearing: The adjustment of the balancing energy attributable to each BG determined by the initial clearing on the basis of the annual production and consumption volumes actually metered.

Settlement period: Period in which financial clearing is performed by the settlement agency.

Standard cubic meter, standard state (Nm^3): The volume of gas that fills one cubic meter of space at 0°C (273,15 K) under an absolute pressure of 1,01325 bar (101,325 kPa). Stated in Nm^3.

Standard load profile (SLP): A characteristic load profile for a given infeed or offtake group, computed by appropriate methods.

Storage company: A natural person or legal entity operating a gas storage facility.

Storage facility: A facility for the storage of natural gas, owned and/or operated by a gas company, with the exception of that part thereof which is used for production activities.

Supplier ranking: Ranking of balancing energy volumes in terms of price, drawn up by the balancing group coordinator.

Supplier: A natural person or legal entity performing a supply function.

Supplier: A natural person or legal entity who/which supplies gas to resellers or final customers.

Supply point: A designated, contractually determined point in a grid at which gas is exchanged between contractual partners. This may be identical with the metering point and ownership boundary.

System access: The use of a grid by customers, and biogas or natural gas producers. This is referred to as indirect balancing group membership. In such cases there is no direct contractual relationship between the grid user or gas trader and the balancing group representative.

Transmission company: A natural person or legal entity who/which operates a transmission pipeline and holds a permit under section 13 GWG II or is exempt from the need for a permit under section 76 GWG II.

Upstream pipeline network: Pipelines or grid of pipelines, the operation or construction of which forms part of a natural gas production or storage project, or which is used to transport gas from one or more such projects to a treatment plant, terminal or storage facility.

Use of system charge: The transportation charge paid by domestic final customers.

Vertically integrated gas company: A gas company that performs at least two of the following functions: the production, transmission, distribution, delivery, sale, purchase or storage of natural gas.

Volume converter: A measurement instrument that converts gas volume at operation condition into standard condition.

→ Index of illustrations

→ Illustrations

→ Charts

→ Text boxes

→ Tables

Annex

→ Addresses

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→ Abbreviations

A&B Ausgleichsenergie- & Bilanzgruppen-Management AG
AGGM Austrian Gas Grid Management AG (Regelzonenführer Ost)
APCS Austrian Power Clearing and Settlement AG
APG VERBUND – Austrian Power Grid AG
best connect best connect Ampere Strompool GmbH
BEWAG Burgenländische Elektrizitätswirtschafts-Aktiengesellschaft
BG Bilanzgruppe
BGBl. Bundesgesetzblatt
BKO Bilanzgruppenkoordinator
BLV Bundeslastverteiler
BMWA Bundesministerium für Wirtschaft und Arbeit
BMLFUW Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft
CEER Council of European Energy Regulators
DEA Data Envelopment Analysis
DSG Datenschutzgesetze
e&s Energievertriebs und -service Gesellschaft m.b.H.
EBR Elektrizitätsbinnenmarktrichtlinie
E-Control Electricity Control GmbH
E-Control Kommission Electricity Control Kommission
EdF Electricité de France
EGBRL Europäische Gas-Binnenmarktrichtlinie
ElWOG 2000 Elektrizitätswirtschafts- und -organisationsgesetz idF. BGBl. I 2000/121
EnBW-Austria Energie Baden-Württemberg AG Austria
Energie AG Energie AG Oberösterreich
EXAA Energy Exchange Austria – Österreichische Strombörse
EnLG Energielenkungsgesetz
ENERGIEALLIANZ ENERGIEALLIANZ Austria GmbH
Ennskraft Ennskraftwerke AG
E-RBG Energie-Regulierungsbehördengesetz
ETSO European Transmission and System Operators
Eurostat Das statistische Amt der Europäischen Gemeinschaft
EVN Energieversorgung Niederösterreich
EVU Elektrizitätsversorgungsunternehmen
EW Wels Elektrizitätswerk Wels AG
Grazer Stadtwerke Grazer Stadtwerke AG
idF. in der Fassung
IKB Innsbrucker Kommunalbetriebe AG
IPCC Intergovernmental Panel on Climate Change
KartG Kartellgesetz
KELAG Kärntner Elektrizitätswirtschafts AG
KSchG Konsumentenschutzgesetz
Linz AG Linz AG für Energie, Telekommunikation, Verkehr und Kommunale Dienste
MyElectric MyElectric Stromvertrieb GmbH
ÖEKV Österreichischer Energiekonsumentenverband
Ökostrom AG Oekostrom AG für Energieerzeugung und -handel
Raiffeisen Ware Wasserkraft Raiffeisen Ware Wasserkraft GmbH
RWE RWE AG
RZF Regelzonenführer
Salzburg AG Salzburg AG für Energie, Verkehr und Telekommunikation
select Select – Energie Steiermark
StatistikVO Statistikverordnung
STEWEAG Steirische Wasserkraft- und Elektrizitäts-AG
switch switch Energievertriebsgesellschaft m.b.H.
TIWAG TIWAG – Tiroler Wasserkraft AG
Überland Strom Überland Strom GmbH
UCTE Europäische Verbundorganisation "Union für die Koordination des Transportes elektrischer Energie" (Übersetzung aus dem Französischen)
VDEW Verband der Elektrizitätswirtschaft e.V.
Verbund Österreichische Elektrizitätswirtschafts-AG
VEÖ Verband der Elektrizitätsunternehmen Österreichs
Verbund-APG VERBUND-Austrian Power Grid AG
VIW Vorarlberger Illwerke AG
VKW Vorarlberger Kraftwerke AG
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Wienstrom WIENSTROM GmbH