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# Current Issues

## Liberalisation of the German gas industry - under pressure to increase competition

- Unlike the electricity market, the **opening of the natural gas market** in Germany has **up to now only taken place on paper**. The price trend is disappointing. The dominance of long-term take-or-pay contracts is unbroken. To date there is no noteworthy gas-to-gas competition. Free market offers of gas are a scarce commodity. In addition the prevailing network access regime is not suitable for either a gas exchange or for high volume business.
- The **atypical German route** of negotiated network access **has finished in a dead end**. In April 2003 the institutions involved broke off the negotiations on the Associations Agreement Natural Gas III. In view of the desolate situation, the EU Commission, large German industrial associations and the Monopolies Commission are demanding fundamental reform. Recently the German government has also been attempting to define a regulator model.
- The **EU directive on the internal market in natural gas II** dated June 2003 **defines the timetable** for the further liberalisation. At the latest on July 1, 2004 there must be freedom of choice of supplier for companies, and by July 1, 2007 for household customers. The new gas directive has major consequences in relation to the regulatory authorities, regulation and the unbundling of companies.
- Up to now regulation was not considered necessary in Germany. The pressure for action is now particularly high. By August 31, 2003 the effects of the Associations Agreements are to be analysed in the **monitoring report to be submitted by the BMWA** and proposals for improvements made based on this information. The fundamental decisions essential for the further liberalisation of the gas market will be made after the report is available. It is thus high time to prepare for the expected **“stormy autumn” in the energy industry**.
- Our **to-do list for gas market liberalisation** provides answers to questions on the future competencies of the regulator, institutional responsibility as well as the possible network access model. An ex-ante solution implemented by a modified Regulatory Authority for Telecommunication and Post is desirable in our opinion. An entry-exit model that, unlike the current model, is independent of the individual transaction could smooth the way for high volume business. The longer-term prospects for an efficient spot market are favourable. However, due to long-term contracts the gas prices will not fall as quickly or as significantly as electricity prices during the initial phase of the liberalisation of the electricity market.

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This report covers developments up to August 2003.

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## Science smoothes the path for natural gas competition

For a long time it was considered that, similar to the secondary energy electricity, the primary energy carrier natural gas lacked key prerequisites for competition to function on an open market. A key reason was the need for a grid to deliver the energy. For this reason the theory of a natural monopoly in the grid-based energy industry was still considered sacrosanct up until the start of the 90s. Competition was regarded as impractical and market-thinking superfluous.

The key starting point for the introduction of direct competition in the grid-based energy industry is a process of fundamental change in way the issue is considered. This is to be seen not just in Europe, but also worldwide. The reform process was initiated by science with criticism that increasingly questioned the prevailing dogma and finally proved it to be incorrect. All subsequent reform activities were based on the knowledge that competition, as a principle for the organisation of an economic activity, is very suitable for rectifying deficiencies in the current energy supply. These included unexploited potential for rationalisation, sub-optimal size of companies, the use of the energy suppliers for political purposes, as well as the existence of excessively high energy prices, so-called monopoly revenues.

Due to the infrastructure dependency, in the past the supply of natural gas and electricity was regarded as provision by presence in Germany. However, the Energy Industry Law does not define who is to be responsible for the supply of gas and electricity. According to the law, this is a commercial activity like any other. In this respect the Energy Industry Law certainly does not define that the supply of gas or electricity is to be a central government- or local authority-run activity.

In recent years the regional monopolies have been increasingly identified as a constraint on growth that should not be underestimated. There were many reasons for liberalisation. Particularly the reduction in prices for the production factor energy triggered by the liberalisation was expected to provide fresh impetus to growth in manufacturing in Germany. It was also expected that the improvement in the energy efficiency of assets due to competition and the cost savings for private households would generate positive growth effects.

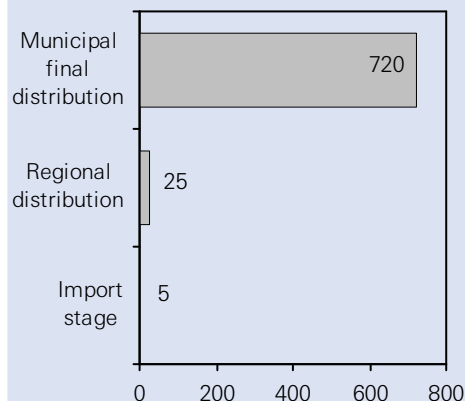
### Crucial impetus from EU and abroad

In recent decades the drivers for the liberalisation of the grid-based energy industry outside Europe were the USA and Australia. In Europe, the UK and the Scandinavian countries took on a leading role. Initially the liberalisation of the gas market proceeded considerably more slowly than the opening of the electricity market. Thus in December 1996 the European Parliament and Council formulated common regulations for the internal electricity market, the so-called Directive on the Internal Market in Electricity I, which came into force in February 1997.

The liberalisation of the natural gas market lagged considerably behind. Just reaching an agreement on the Directive on the Internal Market in Natural Gas I was more difficult, as in addition to the conflict of principles between supporters and opponents of liberalisation, a conflict of interests between the countries had to be overcome: unlike in the electricity industry, where at the start every state had an autonomous supply system, in the gas industry only the UK and the Netherlands had the prerequisites for autonomous supply thanks to their major reserves of natural gas. For this reason it was necessary to find a solution to the conflict between the many importing countries and the

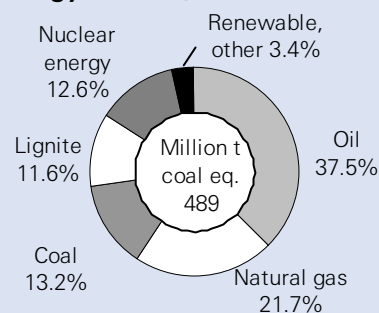
### Market structure, natural gas

Number of companies



Source: VIK

### Primary energy consumption by energy carriers, 2002



Source: Working Group on Energy Balances



few exporting countries. Accordingly in June 1998 the European Parliament and Council formulated common rules for the internal natural gas market, the so-called Directive on the Internal Market in Natural Gas I, which came into force in the middle of 1998. Both European directives for electricity and natural gas were to be implemented in national law within two years.

Similar to the electricity sector, complete opening of all European markets in the gas industry, a so-called "big bang", was not planned. Nevertheless, a core element of both directives is the stipulation of (at least) stepwise opening of the market in the EU countries. Therefore the EU prepared the way and defined the pace of the liberalisation process.

The German Energy Industry Law dated April 1998 also included a differentiation in the grid-based energy industry. In the electricity sector, the amendments to the energy law went beyond the European Directive on the Internal Market in Electricity with complete and immediate opening of the market. In this way the liberalisation of the electricity market in Germany took place considerably quicker than, e.g. in neighbouring France. There the electricity market is still not legally completely open and is thus hindering cross-border competition. Conversely, the new Energy Industry Law initially granted the gas sector a special role. Crucial here were the special features of the domestic gas market such as high dependency on gas imports and the existence of long-term contracts with foreign gas suppliers.

Up to now the opening of the markets within the scope of the EU Directive on the Internal Market in Gas has been very varied. These uneven steps towards liberalisation in the EU and Germany produced very different results on the gas market and electricity market. They have resulted in the current efforts at reform.

### **Natural gas - positive effects on price not yet noticeable**

In the case of natural gas the opening of the market, at least in Germany, has only taken place on paper. There have been no notable effects on the price trend on the German natural gas market due to the nominal liberalisation. At first glance, it cannot be confirmed that the European Directive on the Internal Market in Gas from 1998 has automatically resulted in lower prices. However, the special aspects of the German pricing arrangements can produce misleading results. In Germany the price of gas is still derived from the price of oil. The price advantages that can at times be obtained in gas-to-gas competition may continue to be dominated by price trends for heating oil.<sup>3</sup>

The idea of coupling the gas price to the price of heating oil is to an extent due to the development of the energy market in post-war Germany. As it became clear that the "new" energy carrier natural gas had prospects predominantly in the heating sector, the German market leader devised the concept of linking the price of gas to the price of the most important competing energy, heating oil. The coupling realised in the 60s had the advantage of providing constancy to the expectations of potential customers and thus prepared the foundation for the increasing penetration of gas in the heating market. Also the pricing

### **Excursus Electricity - Success of Liberalisation in Danger**

On the electricity market liberalisation resulted, in a relatively short time, in a noticeable reduction in the energy suppliers' previous "monopoly revenues". Of all customer groups, industry has obtained the highest liberalisation dividends. German industrial electricity prices dropped on average by a quarter up until the end of 2000. From the middle of 2000 a reversal in the electricity prices then took hold. The driving factors for this change are, on the one hand, the many new special charges, e.g. to foster renewable energy and combined heat and power generation (CHP), as well as the ecological tax reform. Other price drivers are increased fuel costs and the noticeable drop in the competitive pressure at the producer stage.

A continuing significant increase in subsidies and thus in prices is to be expected until 2005 at least.<sup>1</sup> During this period, the driving factors will be particularly the special political charges and the increased concentration. Legally, the electricity market is, as before, 100% open, however, according to the Monopolies Commission<sup>2</sup> in reality the electricity industry is on the way back to structures that resemble the regional monopolies prior to liberalisation. The reason for this trend is the unparalleled vertical and horizontal concentration that has occurred in recent years.

In our judgement there is a risk that this development will result in the replacement, in a few years, of the formerly legally sanctioned regional electricity and gas monopolies by a smaller number of, in effect, regional multi utility monopolies tolerated by the competition authorities.

<sup>1</sup> Cf. Deutsche Bank Research, "Electricity market in Germany: political charges boosting price", Current Issues, No. 227, April 2002.

<sup>2</sup> Cf. Monopolies Commission, "Netzettbewerb durch Regulierung" (Network competition through regulation), 14th Hauptgutachten, July 2002.

<sup>3</sup> Cf. Deutsche Bank Research, "Traditional monopolies: growth through stronger competition", Current Issues, No. 261, May 2003.

concept eased the amortisation of the comparatively high initial investment in the gas sector, as it facilitated the almost complete absorption of consumer revenues.

### Dominance of take-or-pay contracts unbroken

The intention of de-coupling natural gas prices from the oil prices is heavily opposed by the gas companies. They refer to the existence of long-term supply contracts with the producer countries that in some cases have a time span of one or two decades. As a rule the contracts are take-or-pay with high unconditional payment obligations. Supporters emphasize the long-term risk adjustment between the natural gas suppliers (price risk) and the importers (volume risk) that is possible with these contracts. Reliability of supply is also supposed to profit from this aspect. A serious conflict between the many natural gas importers (e.g. in Germany) and the few suppliers of natural gas (e.g. Russia) has indeed not yet occurred.

The investment strategies of the German companies have a stabilising effect in this respect; it is only necessary to consider the equity participation of Ruhrgas/E.ON in the largest Russian natural gas producer, which was recently increased to 6.5% (in the medium term the intention is 8 to 10%), or the joint venture WINGAS founded a decade ago between the Russian Gazprom and the chemical company BASF.

Today it can be predicted that the dependency of the European gas industry on imports will increase in the coming years. The expansion of the EU to the East will contribute to this increase. In 2001 imports amounted to 45% of the supply of natural gas in Europe (not including Norway and Eastern Europe). According to a forecast by WINGAS, in 2015 around 70% of the natural gas demand will be drawn from gas sources at very large distances. In addition, the natural gas producers are increasingly attempting to diversify their sales markets (e.g. in the direction of Asia) to reduce their dependency on Western Europe.

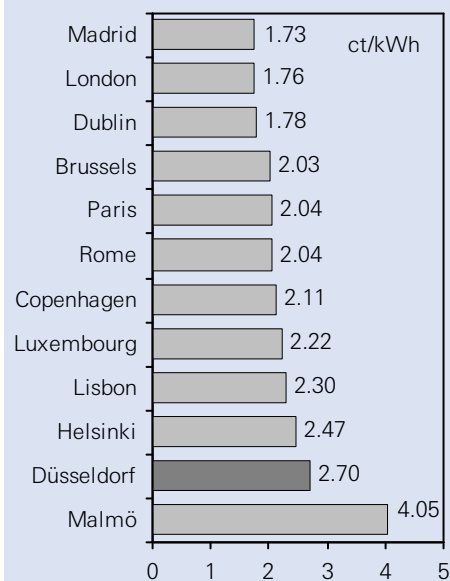
### Despite Associations Agreements, no sign of impetus

Unlike all other European countries, on the gas market Germany has taken the atypical route of an Associations Agreement (VV), similar to that in the electricity sector. In 2002, VV II Natural Gas only came about at the last minute after major pressure from the then German minister for economic affairs. Concerned at the extremely slow progress on liberalisation of the gas market, the minister openly threatened the imposition of a regulatory authority.

As VV II was only slightly different to the first agreement, scepticism appeared appropriate. In fact, e.g. the Verband der Industriellen Energie- und Kraftwirtschaft (VIK) (Industrial Energy Association) has drawn a sobering conclusion<sup>4</sup> in relation to the results of both Associations Agreements on competition: noteworthy gas-to-gas competition is to date not to be seen; free market offers of gas are a scarce commodity. The current network access model is said to be unsuitable for competition in the gas market. The current point-to-point model based on individual transactions should be replaced by a point model independent of transactions. In relation to network access, the German gas industry is said to be in the same place as the electricity sector in 1998/99. Furthermore, the network access model is said to be unsuitable for a gas exchange and high volume business. In addition, the VIK criticises the level of the charges particularly in long-distance gas operations and

### EU industrial gas prices, 2003

200 days/1600 h\*)

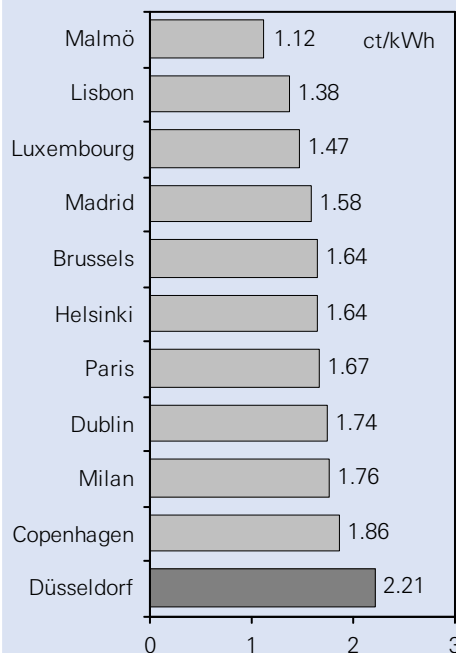


Price information: 1 January 2003,  
\*) typical user case

Sources: Eurostat, VIK

### EU industrial gas prices, 2003

330 days/8000 h\*)



Price information: 1 January 2003

\*) typical user case

Sources: Eurostat, VIK

<sup>4</sup> Cf. VIK, "Liberalisierung der Strom- und Gasmärkte: Vision und Wirklichkeit" (Liberalisation of the electricity and gas markets: vision and reality), March 2003.

final distribution. The excessively large spread in the charges for network usage is also said to be incomprehensible; thus the spread, e.g. for long-distance gas supply, is around 180%.

### Border prices - separate consideration necessary

In relation to the import prices for natural gas at the border, separate consideration appears however necessary. The border prices are not really too high; the pricing is set in European competition and is thus not subject to the effect of national regulation. The prices are based on a competitive calculation in the recipient country (this applies in principle in all user countries), as the price of gas must be competitive to other energy carriers or local natural gas in the country.

If on the way to the related market, the natural gas must pass through the pipeline system in other countries, these costs are normally borne by the producer. Currently the gas producers are living relatively well thanks to the high oil prices. However previously, e.g. in the second half of the 90s, the situation was very difficult for the producers. Thus natural gas from Russia, costs paid to the border, in those days cost 1 Pf per kWh for a time (that is 0.5 ct; currently the price is 1.3 ct/kWh); as the transit through the Czech Republic, Slovakia, and the Ukraine was deducted from this amount, there was only little left over. Conversely, positive price differences in urban distribution and at the intermediate traders were retained. The main problem, given defined contributions, are the relatively high charges for the network usage, as in comparison with the network costs there is hardly anything left for sales.

### Atypical German route has finished in a dead end

In recent years widespread opposition has formed to the atypical German route of the Negotiated Third Party Access (NTPA) in the framework of so-called voluntary "Associations Agreements". The German route was always a thorn in the side of the EU Commission. The majority of other EU member states as well as the prospective new members have already decided for Regulated Third Party Access (RTPA). In the German gas sector only a few large customers have been able to obtain price reductions after mostly difficult negotiations. In the other customer groups such as private households along with small and medium size gas users, there was anyway never any loyalty to the prevailing model, but until recently they still had to adopt the role of price taker. Also, the support in the electricity sector from smaller customer groups for the atypical German route of Associations Agreements in the grid-based energy industry disappeared with the discontinuation of the "liberalisation dividend".

The Monopolies Commission has been pushing for the opening of the markets as conceived by the EU Commission for a long time. In the middle of March 2003, the Bundesrat, the upper house of the German parliament, stopped the anchoring in law of the NPTA planned by the government, and with it the government's preference for the intensification of competition without a regulatory authority.

### Negotiation on VV Natural Gas III abandoned

In April 2003 the institutions involved broke off the negotiations on the Associations Agreement Gas III. The negotiations broke down, at least primarily, on the fundamentally different answer to the question of which remuneration model is to be used for the usage of third party gas pipeline networks:

#### Price comparison, natural gas networks

Prices as of 1/2003

Network level	Network charge ct/kWh	Price spread %
Long-distance gas supply pipeline group A 100 km *)	0.0335 to 0.0573	71
Long-distance gas supply pipeline group C 50 km *)	0.0389 to 0.1093	181
Final distribution **)	0.1586 to 0.5271	232

\*) Off-take case: 11 kWh/m<sup>3</sup>; 6,000 h/a

\*\*) Off-take case: 10 million kWh; 4,000 h/a

Source: VIK

#### Gas prices in Europe

Households

Trend since 7/2000	Price level		
	low	medium	high
falling	DK		
stable	GB, LU	IE, BE, IT	ES
rising	NL	AT, SE	DE, FR

Source: Benchmarking report EU Commission, 04/2003

- The supplier side, represented by the BGW (Bundesverband der deutschen Gas- und Wasserwirtschaft - Federal Association of the German Gas and Water Industry) and VKU (Verband kommunaler Unternehmen - Association of Local Utilities), insisted on the existing “point-to-point model” using, which the costs from the gas entry point across all networks used to the exit point are calculated.
- On the other hand, the user side, represented by the BDI (Bundesverband der Deutschen Industrie - Federal Association of German Industry) and VIK, proposed a change of paradigm. By changing to a model independent of the transaction, flat rate reimbursement is in particular intended to make a significant contribution to easing the transit of gas.

In principle the issue is how two important questions are answered. First, the definition of the “right” calculation model. Second, and closely related to the first, the question of the appropriate magnitude of charges for the transit of gas.

### Need for action due to the EU Directive on the Internal Market in Natural Gas II

The continued progress of liberalisation in the grid-based industry is no longer at the discretion of the German associations, but is mandated by the applicable international energy directives and national laws:

- With the publication of the **EU Directive on the Internal Market in Natural Gas II** on June 26, 2003, the first gas directive (1998) was abolished. Article 25 (paragraph 1) places the obligation on the member states to designate “one or more” competent bodies with the function of regulatory authorities. In the way the EU is forcing the establishment of national regulatory authorities, it leaves no room for manoeuvre. The previously controversial question of “whether” a regulatory authority is to be set up has been clearly answered.
- According to the directive, the regulatory authorities have **as a minimum, the task** of ensuring non-discrimination, effective competition and the efficient functioning of the market, as well as monitoring, the results of which are to be published in an annual report.
- While the EU directive stipulates regulation, it leaves a relatively large amount of **room for manoeuvre its relation to the duties of the regulator**. Specifically, in relation to the network access and the tariffs, the authority shall be responsible “for fixing or approving prior to their entry into force, at least the methodologies used to calculate or establish (...)” (paragraph 2). Thus two extremes are allowed: on the one hand an authority that defines practically everything; on the other hand an authority that is in reality only a “notary”, i.e. approves what is submitted. In both cases, however, the “negotiated” network access previously prevalent in Germany is in reality out of date. There is an exception for the access to the gas storage facilities, as here a negotiated solution is still possible (Article 19).
- Since the first quarter of 2003, the German government has been attempting to define a regulator model. In accordance with the first amendment to the Energy Industry Law dated May 20, 2003, the Federal Ministry for Industry and Employment (BMWA) must submit a **monitoring report** to the Bundestag, the lower house of the German parliament, by August 31, 2003. This report is to cover the energy industry and competitive effects of the Associations

#### Gas prices in Europe

Small companies

Trend since 7/2000	Price level		
	low	medium	high
falling		SE, ES	DK
stable		BE, LU, IE	IT
rising	GB, NL	FR, DE	AT

Source: Benchmarking report EU Commission, 04/2003

#### Gas prices in Europe

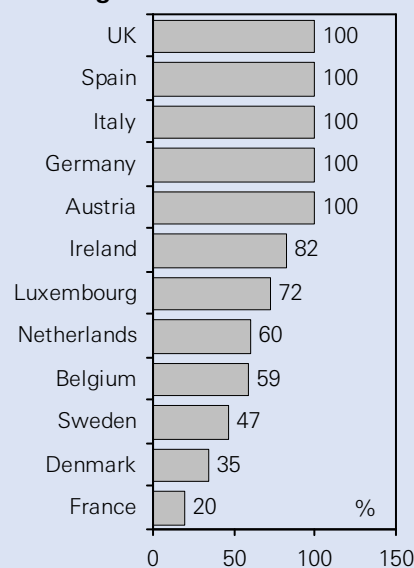
Bulk consumers

Trend since 7/2000	Price level		
	low	medium	high
falling	FR, SE	ES	LU
stable		BE, DK, IT	DE
rising		AT, GB	

Source: Benchmarking report EU Commission, 04/2003

#### Declared market opening

Natural gas: EU member states



Source: Benchmarking report EU Commission, 04/2003



Agreements and to make proposals for improvements based on this report (Article 2, Clause 3). Here the issue is the answer to the question of how regulation in Germany is to be designed in the future.

### Timetable for liberalisation - opening by mid 2007

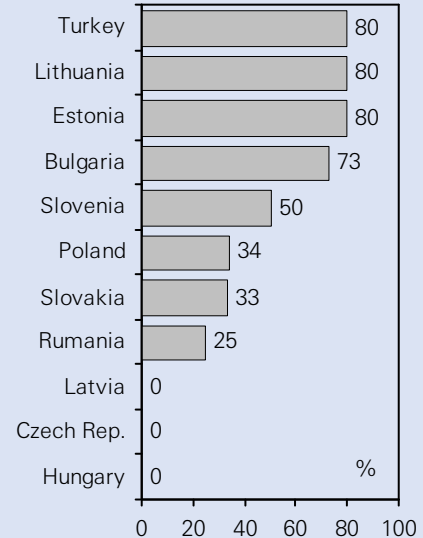
The new gas directive contains a binding timetable for opening the gas markets in the member states as well as few other important core elements:

- At the latest by **July 1, 2004 all companies** are to have freedom of choice of supplier. The member states have the obligation to publish by 31 January of each year the criteria for the definition of these eligible customers.
- By **July 1, 2007 household customer** are also to be allowed the freedom of choice of their gas supplier; they will thus be relieved of their current ties somewhat later.
- To avoid inequalities as a result of the uneven opening of the national natural gas markets, the **principle of reciprocity** is anchored in the directive. For this reason, contracts for the supply with an eligible customer in the system of another member state shall not be prohibited if the customer is eligible in both systems involved.
- Furthermore **legal separation** (so-called legal unbundling) of the accounting for the **transmission system operators** (at the latest by July 1, 2004) as well as **distribution system operators** (at the latest by July 1, 2007) is planned, if they belong to vertically integrated undertaking. With the legal unbundling of the companies for the transport of natural gas and the sale of natural gas, which is to be complete by the middle of 2007, the EU is hoping to prevent discrimination strategies, cross-subsidies and distortion of competition by the vertically integrated suppliers. In this way the energy seller should have significantly easier access to the distribution networks.
- The directive explicitly permits an **exception** for integrated distribution system operators that supply less than 100,000 connected customers (such as smaller municipal utilities). If decided by the member states, such companies are exempted from unbundling.
- The EU Commission also has the obligation to submit to the European Parliament and the Council, at the latest on **January 1, 2006**, a detailed **liberalisation report** that documents and checks the progress in the creation of internal natural gas markets. The report is to cover, among other aspects, the price trend, the effectiveness of regulation, and also the question of network access, market concentration as well as the access to gas storage facilities.

The new gas directive has major consequences in relation to the regulatory authorities, the regulation and the unbundling of the parts of the companies. In relation to the unbundling, it is worthy of mention that the unbundling of ownership for the transmission system operators as preferred by the EU parliament prior to the preparation of the directive has not been adopted; according to Article 9 the stipulations on the unbundling of transmission system operators specifically state that the rules "shall not create an obligation to separate the ownership of assets".

In Germany, which up now has not had a regulatory authority and thus has not applied any regulation to the gas market, the pressure for action is of course particularly high.

### Declared market opening Natural gas: EU prosp. members



Source: Benchmarking report EU Commission, 04/2003

### Regulation in selected EU countries

	Regulator
Belgium	ex-ante
Denmark	ex-post
Germany	NTPA*)
France	ex-ante
Ireland	ex-ante
Italy	ex-ante
Luxembourg	ex-ante
Austria	ex-ante
Netherlands	hybrid
Sweden	ex-post
Spain	ex-ante
UK	ex-ante

\*) NTPA = Negotiated third party access

Source: Benchmarking report EU Commission, 04/2003

Primarily affected are companies with a customer base of more than 100,000 users. No wonder that particularly this group of suppliers are raising constitutional objections to the EU initiative as well as the argument of the high costs of restructuring. Furthermore, larger gas suppliers see a threat to the naturally evolved advantages of integration.

## To-do list for the liberalisation of the gas market

As the EU stipulates regulatory authorities in all member states by the middle of 2004 at the latest, there is a pressing need for action in Germany. Initial preliminary answers to the pressing questions are to be expected at the earliest with the submission of the monitoring report at the end of August 2003. However, it is much more likely that a lively and controversial discussion will only take place after the report, as the report will also describe different possibilities and make recommendations on specific aspects. The basic decisions essential for the further liberalisation of the gas market will only be made by politics after the report and the discussion. For this reason it is important to make preparations in advance of the "stormy autumn" to be expected in the energy industry. At any rate, in the coming months the official framework will in any case experience significant changes that will shape events on the German and European gas market for a long time to come.

The to-do list for German liberalisation for the coming months is extensive. The answers to the questions on the future responsibilities of the regulator, the institutional responsibilities as well as the possible network access model are particularly important and interesting.

### 1. Catalogue of tasks for the regulator

In reaction to the pressure for reform from the EU, the government coalition agreed as early as March 24, 2003 the "key points for the alignment of the energy law-related aspects of the official framework with competition in the grid-based energy carrier sector". Here, to implement the EU directives by 1.7.2004, the coalition approves the establishment of "a national competition authority" as an "independent authority or part of an existing authority". Legal and sector-related supervision are to be performed by the BMWA. While the institutional arrangements are kept very vague in the key points paper, the tasks are described more specifically and correspond to the EU requirements. However, more detail will only be specified after the evaluation of the monitoring report; then the necessity for legislation on network access will also be decided.

### 2. Question of responsibility - who will be the regulator?

For reasons of rationality, in our opinion the German competition authority should meet requirements such as far-reaching independence, cost efficiency and competence in the sector with adequate power of implementation. Beyond these, the following maxim should apply: as much regulation as necessary and as much market as possible. As such minimum regulation adequate for the objectives is definitely to be preferred to excessive total regulation.

A regulatory authority with a role that primarily comprises the performance of a notary function can be set up completely differently to an institution that, for example, also shapes and attends to the central area of ex-ante regulation of the network access. Due to the large amount of room for manoeuvre that the new EU gas directive allows the individual states, many responsibilities are also conceivable in Germany.

The key points paper rewrites the **catalogue of tasks** for the competition authorities as follows:

1. Ensuring non-discrimination and competition using ex-ante and ex-post-measures.
2. Network access:
  - a) Specific definition of conditions for network connection and network usage as well as for balancing and system services;
  - b) Definition of methods for the calculation of tariffs for network connection and usage. Here the well developed proposals from the associations must be taken into account as appropriate;
  - c) Ensuring that suitable information is available, e.g. from the network operators, in relation to possible methods of using the network and transit capacities, among other aspects;
  - d) Control in relation to cross-border link issues.
3. Monitoring and ensuring adequate unbundling of the operators from transfer networks and distribution networks as well as of the accounting.
4. Ensuring smooth supplier changes.
5. Involvement in disputes with complaints against network operators in relation to network access issues in accordance with the Energy Industry Law and GWB (arbitration office).
6. Ensuring market data is transparent.
7. If necessary, legislation on network access from the competition authorities will place specific requirements on how these tasks are tackled.

In recent months a series of suggestions have been made. Due to the nature of the issue, those involved come to very different results depending on their evaluation criteria and interests.

For us it does not appear very sensible to establish a completely new competition authority. It is not just the time pressure that has built up in the meantime due to the EU requirements that is against this route. There already exist many authorities that have a certain amount of know-how and appropriate experience in the energy sector. Making use of existing resources also has the advantage that there is no threat of the establishment of a new over-sized mammoth authority.

The current discussion encompasses a wide range of institutions that are possible candidates for the future regulatory authority. Due to the previous experience during the liberalisation of the grid-based energy industry in Germany, in particular on the gas market, particular attention should be paid to the areas of ex-ante regulation, market supervision and arbitration of disputes. In comparison with these aspects, other regulator tasks, e.g. meeting reporting obligations to the EU Commission or ensuring the reliability of supply, appear less relevant.

It is to be expected that a regulator will be designated that does not yet have the necessary personnel resources to tackle all the tasks to be performed. The missing know-how in this respect can however be added, e.g. by moving personnel or incorporating the necessary parts of other institutes.

In our view, the following institutions are worthy of discussion:

- a) Price supervisory authorities in the German Länder (federal states);
- b) Cartel offices in the Länder;
- c) Federal Cartel Office;
- d) Network Access Task Force at the BMWA;
- e) Limited company model similar to that in Austria;
- f) Regulatory Authority for Telecommunication and Post.

Other suggestions, e.g. the Ministry for Commerce and Export (BAFA) appear less suitable. In the natural gas sector the BAFA only prepares statistics on natural gas.

- a) Based on the Energy Industry Law and the Federal Regulations on Tariffs, the **price supervisory authorities** have the task of monitoring and approving tariffs as well as their constituent elements, e.g. in the electricity industry. This is indicative of suitability also for taking over the required ex-ante regulation of the gas market. A weak spot is the almost complete lack of experience in relation to ex-post abuse supervision. However, the authority has a certain amount of competence in relation to market supervision in relation to grid-based energy in that it monitors the observance of the approved tariffs. A further problem is that the arbitration of disputes between participants in the market cannot be the task of price supervision.

Another aspect that goes against the price supervisory authorities taking over such a task is that they are in general departments in the ministries for economic affairs for the Länder; such an arrangement can hardly be combined with the demand for independence in the EU directive. In addition, there is also the objective of equal opportunities and legal security in competition; it would be easier for a central government authority to contribute to this aspect than for authorities based in the Länder. In addition, authorities in the Länder can hardly guarantee the required reliability of supply at national level.

### **No completely new competition authority**

### **A wide range of institutions possible**

### **No experience for ex-post abuse supervision**

b) The **cartel offices in the Länder** have a relatively high level of competence in the area of supervision of abuse in the grid-based gas and electricity industry. After all they are responsible for the implementation of federal law, provided the market constraint does not stretch beyond the borders of the related German Bundesland (federal state). The most recent cartel case (TEAG, municipal service in Mainz) however indicates that the responsibility also for regional and municipal energy suppliers is in the meantime going in the direction of the Federal Cartel Office. In relation to the evaluation criteria for ex-ante regulation, there is hardly any competence. In addition, only limited experience is available for any dispute arbitration necessary. Here these disputes regularly result from the market behaviour of smaller or medium-sized suppliers, but not from the “big players” that are gaining increasing influence and market relevance. The reservations in relation to a regulator based in the Länder in the statements on the price supervisory authorities (see above) also apply.

**Hardly any competence for ex-ante regulation**

c) Compared to the authorities in the Länder, the **Federal Cartel Office** is the only option that already has the advantage of being an independent central government authority. The safeguarding of equal opportunities and legal security in competition beyond the boundaries of the Länder is thus much easier. A single central government solution would also be of advantage because the Commission intends to establish an “European Regulators Group” for gas and electricity to reinforce the coordination and collaboration of the national regulatory authorities. The need for agreement between the cartel offices in the Länder would not be necessary in the first place with a central government authority.

**Central government solution eases task**

The main tasks of the Federal Cartel Office include, along with checking mergers and the implementation of the prohibition on cartels, also the supervision of abuse by market dominating companies. It is undisputed that the Cartel Office has a high level of competence in relation to ex-post abuse supervision and market supervision. The two most recent proceedings in the context of grid-based energy are evidence of the special sector know-how.

In the past, the Cartel Office has however limited itself rather to a passive role by not defining the rules of play on the energy markets, but monitored the observance of the rules, uncovered abuse and issued instructions if necessary. The rules of play were negotiated more by the associations. There is practically no experience and competence for the ex-ante regulation expected of the future competition authority. This goes against the Federal Cartel Office as a regulatory authority.

**No experience for ex-ante regulation**

In addition, it is also certainly questionable whether the ex-ante regulation should also be transferred to the Federal Cartel Office in addition to its ex-post authority. Both together could result in a type of over-regulation of the market economy processes on the energy markets that are actually desired, with the danger of proliferation to other sectors of industry.

Also to be noted is the lack of suitability of the Federal Cartel Office for ensuring the reliability of supply as well as the almost complete lack of competence for dispute arbitration between market parties. Admittedly the office has an ample pool of experience in typical judicial type proceedings and administrative proceedings. Particularly the deficits in ex-ante regulatory competence go against the Federal Cartel Office.

d) The idea of a **Network Access Task Force** drawn from the BMWA also has a certain attraction. The job of the task force set up in 2001 is moderation between suppliers and network operators. In the electricity sector, the task force is responsible for checking network utilisation charges and controlling dispute arbitration; in addition, it has the task of developing a catalogue of best practice. Thus the task force undoubtedly has a high level of competence in dispute arbitration. As the energy industry (including associations, network operators, trade) provides some of the workforce, the task force has a high level of specialist knowledge about the energy industry. The involvement of such personnel is, however, also a cause for concern, as it contradicts the independence required by the EU. Such a fusion of personnel involves the risk of “regulatory capture”, i.e. the monopolisation of the regulator by the sector of industry to be regulated. This phenomenon familiar from politics is also criticised by the BDI and Monopolies Commission. A key issue against the task force as the new regulatory authority, apart from the combination of personnel, is also the current lack of experience in the areas of ex-ante and ex-post regulation.

e) In the middle of July 2003, it became known that the German government is considering arranging the regulation of grid-based energy in Germany based on the **limited company model** in Austria. A legal assessment on this arrangement is said to be already available. Currently the feasibility of transferring this model to German conditions is being checked.

The regulation of grid-based energy in Austria is performed in the institutional triangle of the Austrian BMWA, Electricity Commission (independent) and Energie-Control GmbH (sole proprietor: the Federal Republic of Austria). The core competencies of the Commission lie in the approval of the conditions for the usage of the network as well as the definition of tariffs; in addition it acts as an appeal authority for Energie-Control decisions. The (non-profit based) Energie-Control has on the other hand far-reaching supervisory, monitoring and regulatory tasks (including arbitration).

A key reservation against the Austrian model results from the fact that a large portion of the employees of the limited company come from the energy industry. This can impair their loyalty, despite payment of wages by the limited company. There is also another problem, more on principle: in Austria the regulatory instance is only responsible for one industry sector. In Germany there is a predominant preference for cross-sector solutions. Thus the Federal Cartel Office, for instance, is not responsible for just the energy industry. In this way the risk of “political or regulatory capture” is reduced. Important reasons for this approach are the greater independence of the multiple sector regulator compared to individual departments or industries. In the case of an attempt to influence the regulator, a socialisation effect is produced in all other industries that increases the public attention to the inappropriate attempt at influence. Overall the transfer of a sovereign right to a sector-specific limited company is a model not to be supported due to the independence of the future competition authority that is to be sought.

f) As the **Regulatory Authority for Telecommunication and Post** (RegTP) is familiar with the opening and arrangement of the market for the telecommunication and post monopoly sectors, it has relevant experience in the fields of ex-ante regulation (in particular in relation to prices) as well as supervision of the market and abuse. Both qualify the authority in principle for taking over the regulatory activity

### Involvement of industry personnel questionable

### Risk of “political capture”

### Regulation experience in the telecommunications/post sector

in the grid-based sector, as there are parallels here to the current activities of the authority. A further advantage is that in its area of responsibility, it already covers comprehensive reporting obligations in relation to the EU Commission. In the dispute arbitration the emphasis is rather more on judicial type administrative proceedings, similar to the Federal Cartel Office; this is a definite problem.

Of course, a significant weakness is the lack of energy industry know-how; not all knowledge from the regulation of other network sectors can be transferred one to one. According to expert circles this insufficiency could be rectified relatively easily. A step increase in competence is said to be possible by moving established posts. In this relation the 11th Judgement Department of the Federal Cartel Office, the price supervisory authorities in the Länder or the Network Access Task Force are mentioned. Moving an established post would also have the positive effect that it would not be necessary to create any new posts. This would also address the concerns of the German minister for economic affairs who is known to have drawn up a “master plan for reducing bureaucracy”. As the number of personnel in the RegTP is also already currently regarded as large, the movement of personnel within the current authority is of course possible. In any case, the establishment of an additional regulatory bureaucracy as in the UK should be opposed.

### **Ex-ante solution using RegTP desirable**

For some time the Monopolies Commission has favoured opening of the market in the spirit of the new EU directive for grid-based energy. Ex-ante regulation of the network utilisation charges is explicitly regarded by the Federal Cartel Office as more effective than ex-post control. Conversely, the FDP (a German political party), which rejects a new regulatory authority, is in favour of also transferring the supervision of the calculation of network access charges to the Federal Cartel Office.

In relation to the future institutional responsibility, the preferences of the two associations that represented the user side in the failed negotiations on VV Gas III do not match completely: according to the VIK the Federal Cartel Office and the RegTP would currently be the best to fulfil the tasks to be addressed. Conversely, the view from the BDI is that the RegTP (supplemented with sector-specific know-how) would be the most suitable. The basic concerns of the VIK that anchoring the ex-ante regulation in the Länder would risk splintering and inconsistent decisions are accepted.

On balance, the RegTP appears to us to be the most suitable for the future regulatory authority also for the energy industry; it goes without saying that the institution today already has a high level of competence in ex-ante regulation of network-based infrastructure sectors. This ex-ante competence is vital for the gas sector where the previous Associations Agreements, unlike in the electricity sector, have not fostered competition and have in the end been ineffective. Such a decision would also address the request of the Monopolies Commission. Of course, we see the necessity to create the (currently lacking) sector-specific know-how as quickly as possible, e.g. by moving established posts between already existing authorities.

If the RegTP were to be responsible for the energy industry, it would need a new name. We consider appropriate, e.g. a simple name such as “German Network Competition Authority”, without any industry sector addition. Which name best suits the new multi-sector regulator is of course a matter of taste. As “regulators” in Germany traditionally meet with reservations, such vocabulary would be best avoided.

**Minister for economic affairs for “master plan for reducing bureaucracy”**

**FDP against regulation authority**

**RegTP is the most suitable**

**Proposed name: “German Network Competition Authority”**

### 3. New network access model to be expected

The main problem of the two VV Gas was the transaction-dependent network access model at the core. A feature of this so-called contract path model is that the entire contract path is to be stated for each individual transaction. That is, the specification encompasses, along with the specific entry and exit points, all sections of pipeline used. The outcome of such a point-to-point model and the related case-by-case control is, as a rule, a relatively lengthy, difficult negotiation processes and as a result high transaction costs. As a consequence, the number of supplier changes in Germany remained below 100 per annum. According to statistics from the BGW, up until April 2003 a total of 469 transit contracts were concluded (end 2002: 290; end 2001:132). Due to the negative experience with the current access model, a radical system change to a network point model independent of the transaction (also called entry-exit model) is highly likely in future; this is to smooth the path for high volume business.

BET GmbH (Büro für Energiewirtschaft und technische Planung - Office for Energy Industry and Technical Planning, Aachen) has been commissioned by the BMWA to make a contribution to the monitoring report to be submitted by the end of August. In the recent past, senior BET staff have considered the elements of an alternative network point model in a series of papers<sup>5</sup> and favoured the entry-exit model. Key elements of the point model may well be taken into account in the monitoring report. The network point model must perform a sort of balancing act as for reasons of practicality and to prevent abuse, on the one hand it must be as simple and transparent as possible and checking must be feasible, at the same time, however, the legitimate interests of the network owners in relation to confidentiality of strategic industry information must be addressed.

#### Entry-exit model has advantages

The entry-exit model has several advantages: the utilisation of the network from the entry point to the exit point can be processed with only one contractual partner in a single act. Charges are paid to only one network operator, who involves the upstream networks by passing on costs. In addition, due to the disappearance of the case-by-case consideration, netting out is simplified, as by means of the establishment of control zones it is possible to create energy balance groups, similar to the electricity sector.

Numerous design variants are conceivable for the network point models. Differentiating features are the special treatment of the transits as well as the calculation of the charge components dependent on the entry point and exit point. The location dependency of the charges differentiates the gas sector for the electricity sector where in Germany a point model without distance dependency was agreed. There are two reasons for taking into the account the location for gas: firstly here the average transport distances at 250 to 300 km are significantly larger than in the electricity sector (50 to 70 km). Secondly, the entry points for natural gas are not evenly distributed across Germany, unlike in the electricity sector. From an economic point of view, distance dependent price signals are of great benefit on the gas market. For instance, they can reduce the risk of network bottle-necks. In a whole series of European countries,

<sup>5</sup> On the statements that follow cf. e.g. Müller-Kirchenbauer, Joachim/Zander, Wolfgang, "Netzzugangsmodell Gas: Gestaltungselemente eines Netzzugangsmodells" (Network access model for gas: elements of a network access model), emw, Heft 1, 2003; Müller-Kirchenbauer, Joachim/Zander, Wolfgang, "Stetig steigender Druck?, Eine Momentaufnahme zum Gasnetzzugang in Deutschland" (Continuously increasing pressure?, a snapshot of gas network access in Germany), Marktplatz Energie, Heft 1, 2003.

**Contract path model unsuitable**

**Radical system change probable**

**Network point model is to be expected**

**Case-by-case consideration is out of date**

**Take into account location dependency of the charges**

(e.g. in Italy, the Netherlands or Austria) distance dependent charge models are already firmly established - both in the gas and the electricity sector. The European dimension must not be underestimated, as at the end of the day the long-term objective is the creation of a uniform European market for natural gas (and electricity) with largely uniform rules and overall conditions.

### **Access to system services indispensable**

The economic benefit of the entry component can only come into effect if the potential for abuse is limited due to asymmetrical information (in favour of the network operators) and can thus not be exploited. Challenges in this respect are the identification or development of suitable measurement criteria for the entry and exit components as well as ensuring that the charges are designed such that they can be checked. According to the BET, suitable parameters for the quantification of the entry and exit components are the "load moment" and the "mean transport distance":

- The "load moment" is produced by forming the product of the transport distance and the transport service.
- By means of the addition of the load moments for the individual sub-sections, the total load moment for the entire network is obtained. The "mean transport distance" is the quotient of the total load movement and total load.

To create a liquid gas trade, along with a useable network access model, simultaneous access to the system services for all market participants in indispensable. The necessary system services include the elements of network utilisation and transport, structuring and storage, quality management and compatibility, as well as netting out.

All system services for the gas infrastructure are provided by optimised usage of the entire system (so-called dispatching); in the gas sector these services include the network flows as well as the storage and mixing plants. As the transport network operator or system operator is the only provider of system services, his position is that of a monopoly. Nevertheless, the system services certainly do not need to remain an area devoid of competition. Specifically, it is conceivable that the advance concession of the system services be subject to a tender process, similar to the procurement of balancing energy on the electricity market. There are of course a few special aspects related to handling gas networks: in comparison to the electricity networks, the possibility of the storage of natural gas brings a degree of relief. On the other hand the lack of a complete interconnected gas network across Europe with uniform quality standards makes the work more difficult.

According to the BET, the questions still open in relation to the new network access model can be addressed. On balance, the entry-exit model should give the competition on the German natural gas market new impetus. Furthermore, thanks to the improved feasibility of harmonisation with the network access models in other EU countries, the internationalisation of the European gas market would take a significant step forward.

The establishment of a regulator and the adaptation of the network access model also simplify institutional collaboration at member state level. In the "Green Paper on Services of General Interest" dated May 2003, the EU Commission has expressly emphasised the necessity for a degree of "consistency of national regulatory approaches". In this way "distortions" that stem from different types of concepts and that could impair the correct function of the internal market will be avoided. A degree

#### **Calculation of:**

- Load moment
- Transport distance

#### **Competition for system services**

#### **Impetus for EU gas market**

of coherence will also simplify the collaboration with the Council of the European Energy Regulators (CEER), which acts as the hub for contacts between the regulatory offices and the Directorate-General for Energy and Transport of the European Commission.

### Competitive impetus from spot market for natural gas

Currently there is no efficient spot market for natural gas in Germany. The current gas trading centres, so-called hubs, certainly do not have the desired efficiency and liquidity. However, in principle they offer the possibility of trading volumes of gas in standardised packets using standardised contracts. The Zeebrügge hub and the newly created North West European Hub (NWE Hub) in the region of Emden/Bunde<sup>6</sup> have a degree of importance for the German market. Some impetus is also provided by the Gas Release Program run by Ruhrgas: as part of the ministerial approval, E.ON/Ruhrgas had the obligation to auction a total of 200,000 million kWh of natural gas in six auctions.

The introduction of a really efficient spot market would permit independent, i.e. aligned with short-term supply and demand, pricing for natural gas. In the UK where this is already established, at the start it was possible to obtain price reductions in the double digit range. However, for some time it has been observed here that the prices are also orientated on the oil-related prices on the continent. The markets are linked by the Interconnector and the phenomenon of arbitrage provides for a degree of convergence of prices. The Interconnector pipeline between Belgium and the UK, which was placed in operation in October 1998, links the natural gas industry on continental Europe with the production region of the North Sea.

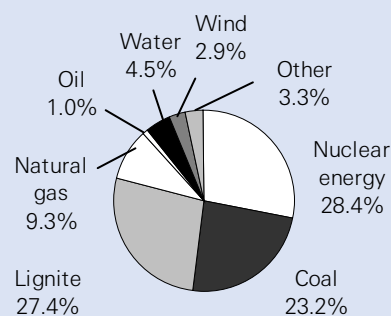
Even in the case of a future decoupling, the gas price will, however, never be able to be completely independent of the other energy carriers. The increasing usage of natural gas as a fuel for the generation of electricity, e.g. in combined cycle gas turbine power stations is resulting in the so-called convergence of the electricity and gas markets. In addition, natural gas has favourable prospects as a fuel for vehicles and is thus competing with traditional fuels. On balance, the creation of a spot market for natural gas should lead to a reduction in the price level due to competition, combined with increased price volatility at the same time.

Lower natural gas prices are also an advantage because natural gas is the only growth energy among the fossil fuels in Germany. Lower prices favour the function of natural gas as a "bridging energy" for a future hydrogen economy based on regenerative energy. In the coming years, it is predominantly natural gas that will be required for the operation of fuel cells.<sup>7</sup>

### Network utilisation charges too high

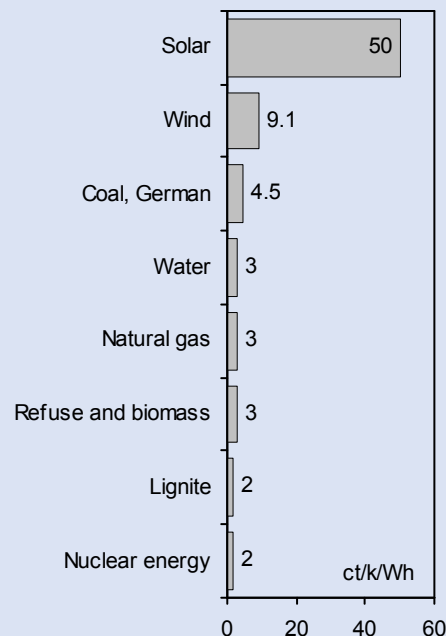
The establishment of a regulatory authority should also have an effect on the network access and utilisation prices as well as on the prices for gas storage, which appear excessive<sup>8</sup>: in Germany the gas transmission prices of Ruhrgas (E.ON) and Thyssengas (RWE) are on average 9 and 13% higher respectively compared to the average in the Northern and Central European countries (Belgium, France, UK, Netherlands, Austria), which have similar network structures. Also the prices for gas

**Energy mix for electricity generation, Germany 2002**



Source: Energiemarkt Deutschland

**Specific costs for electricity generation mix**



Source: FH Aachen/RWE Plus

<sup>6</sup> Cf. E.ON AG, "Beitrag der E.ON AG zum Monitoring Bericht des BMWA" (Paper by E.ON AG on the BMWA's monitoring report), Berlin, June 11, 2003, p. 15.

<sup>7</sup> Cf. Deutsche Bank Research, "My home is my power plant, Mit Wasserstoff zur dezentralen Energieversorgung?" (My home is my power plant, hydrogen for decentral energy supply?", Current Issues No. 246, December 2002.

<sup>8</sup> Cf. on this topic Deutsche Bank AG, Global Equity Research, "German Utility Regulation. Balancing the Risks", August 2003, pp. 45-51.

storage that are demanded by Ruhrgas and Thyssengas are in the two digit percentage range above those of comparable European companies. In addition, the large spread in the charges for network utilisation should be a challenge for the regulator. In the end rather lower network utilisation prices could result.

In the coming years the conditions for an efficient gas spot market will improve<sup>9</sup>. In future additional gas from Russia should penetrate Central Europe. A further aspect is that the new oil producers also have gas fields that are looking for a market. For example, after the withdrawal of Ruhrgas, the establishment of an own gas upstream sector by BP/Exxon is to be expected; this will provide more product at the German border. TotalFinaElf and Marathon are also penetrating the market. In addition there is liquefied natural gas (LNG) from the Mediterranean region that is affecting the traditional gas flows and applying additional volume pressure in Central Europe<sup>10</sup>. Finally, natural gas from Kazakhstan or Turkmenistan may find its way to Europe. It has been heard within the sector that Verbundnetz Gas AG (VNG) has a contract signed with Turkmenistan for 4,000 million m<sup>3</sup>/a; but up to now it has not been possible to transport the gas. On balance, in the longer term the amount of gas available will increase and with it the liquidity of the market. Admittedly consumption is also increasing, in particular if in the future more gas power stations are built.

Overall the prospects for an efficient spot market in a future liberalised gas market are thus favourable. This is an advantage because market pricing is more compatible with a competitive market than the currently customary oil pricing. Lower gas prices due to competition would be a positive location factor for the development of German industry. Due to long-term contracts the gas prices will not reduce as quickly or as significantly as electricity prices at the start of the liberalisation of the electricity market five years ago.

## Conclusion

The liberalisation trend on the German and European gas market should finally receive new impetus due to the latest EU directive as well as the establishment of a regulatory body in Germany. To us it appears that the placing of the regulatory competence with a modified RegTP would be the most suitable. The transition from a transaction dependent model to an entry-exit model that is to be expected should simplify network access and favour the way to high volume business. It would certainly be of advantage for the competition on the natural gas market if the monitoring report to be submitted at the end of August were to meet our expectations. Competitive natural gas prices, as a location factor, would improve the international competitiveness of German industry.

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<sup>9</sup> Cf. Deutsche Bank AG, Global Equity Research, "European Gas", June 2003.

<sup>10</sup> For an overview on the LNG market cf. Deutsche Bank AG, Global Equity Research, "LNG: going...going. Gone Global", May 2003, pp. 5-15.

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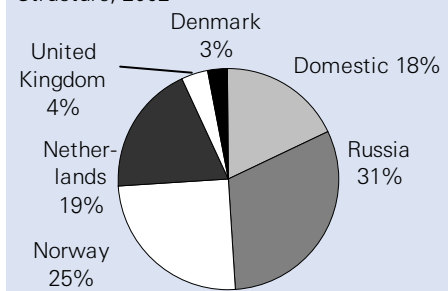
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## Natural gas supplies

Structure, 2002



Sources: BV Gas u. Wasserwirtschaft, Ruhrgas AG

## Prospects for spot market positive

## Competitive natural gas prices as location factor