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(December 2005)

REPORT ON

THE GAS COMPANY AND

MARKET STRUCTURE

IN THE EUROPEAN PART

OF THE UNECE REGION



UNITED NATIONS

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INTRODUCTION

This study was initiated by the United Nations Economic Commission for Europe (UNECE) Gas Centre in Geneva based on the priority given by its member companies¹⁾ to have aggregated information available on the present situation on the gas market and its structures in Europe and how companies are changing, as well as on the position of gas regulators and of the European Commission. The Gas Centre companies were interested in having this information from the gas industries themselves and to have their expectations on future developments included.

This report of the UNECE Gas Centre Task Force on Company and Market Structures (UNCMS) is largely based on information received through 34 responses to a questionnaire, which were returned to the Gas Centre from gas companies (in some cases together with energy institutes) in European UNECE countries. Information was added by the Gas Centre staff from its own sources as well as from EU and the International Energy Agency (IEA) publications and the discussions that took place during the UNCMS meetings.

When reference is made in this report to EU countries, de facto 23 countries are included (Malta and Cyprus do not have natural gas markets). The other UNECE countries in this report, which are referred to as non-EU countries, are Albania, Belarus, Bulgaria, Croatia, Republic of Moldova, Norway, Romania, Russian Federation, Serbia and Montenegro, Switzerland, The former Yugoslav Republic of Macedonia, Turkey and Ukraine. They are outside the EU but directly related to the gas market in the EU.

¹⁾ The Group of Gas Centre member companies consists of some 25 gas companies based in and next to the UNECE region. They fully fund the UNECE Gas Centre activities. Some of them are production, transportation and sales companies. Some are active in only a limited part of the natural gas chain.
The 55 UNECE member States are from Europe, North America and Central Asia.

The information from the responses to the questionnaire was handled, further structured and prepared for analysis by Ms. Machteld Venken, internee of the UNECE Gas Centre in the period October–December 2004. Her work provided a useful basis for this report.

The report has been approved by the UNECE Gas Centre Bureau under the Chairmanship of Mr. Jacques Deyirmendjian on behalf of all Gas Centre member companies. The head of the IREED Division of the UNECE, Mr. George Kowalski, has expressed his appreciation of this report.

**Mr. Tans Van Kleef, Manager
UNECE Gas Centre**

I. GAS MARKET

1. Reserves and production

Total recoverable gas reserves in EU countries and non-EU countries are declining during the present period (2000–2010), however they are doing so more slowly than overall consumption might indicate. An important reason for this development stems from the innovation in production techniques which allows production to come from more remote areas with challenging geographical features and climatic conditions.

The reserves in the Russian Federation are expected even to be slightly higher in 2010 than in 2000 as a result of intensive exploration programmes and the introduction of new exploration and production techniques. In all EU countries with a considerable indigenous production combined, the reserve position will decrease. In some countries, the decrease of reserves has already changed the overall supply pattern as for example in the United Kingdom which has become a net importer of gas. Indigenous production, however, will continue to make a substantial contribution to Europe's gas demand over the coming decades. Norway is expected to considerably increase its gas production in the coming years.

The reserve position of non-EU countries, such as Algeria, Libyan Arab Jamahiriya, Egypt, (Islamic Republic of) Iran and countries in Central Asia and Western Africa show ample reserves during the coming decades. In the Gas Centre report of 2003 on Security of Natural Gas Supply it was indicated, based on information of the Oil and Gas Producers Association (Natural Gas Reserve Report 2003 and updated information by Gazprom later that year on their recoverable reserves), that natural gas reserves are expected to be available for the UNECE region for about the next one hundred years.

The recent considerable increase in oil prices provides for additional energy reserves to be explored which are expected to be profitable now. As natural gas is sold in almost all mature markets based on market value (reflecting the costs for the consumer of the alternative fuel), higher producer returns stimulate additional production from a reservoir presently in production as the economic cut off point in many reservoirs will be delayed. These specific circumstances are expected to even improve the overall reserve/production ratio to more than the one hundred years mentioned earlier.

In line with the expected annual growth of the gas market in the UNECE region of about 2%²⁾, the countries that are exporting gas to the EU countries are planning to increase their production in this 10 year period between 2000 and 2010. Russia by 15% and Norway by more than 100% (including LNG).

The Netherlands is expected to maintain its present production level, which means that the gas it has available for export will remain at about the same level (approximately 45–50 bcm/year).

Production in countries such as Germany, Italy, United Kingdom, Austria and Hungary is decreasing. Poland is expecting an increase in its natural production, as is Ireland, although both countries have only limited indigenous production.

In Ukraine, gas production is expected to increase by some 30% to 24 bcm in 2010, while Romania will produce a volume of some 7 bcm less in 2010, which means a level of slightly more than 8 bcm.

In order to achieve the planned production levels, enormous investments will have to be made. The level of some 25 billion Euros in the year 2000 by the main production

²⁾ IEA World Energy Outlook 2002 as reflected in the UNECE Gas Centre report on Security of Natural Gas Supply (2003)

countries as mentioned by the IEA is expected to increase considerably during the period until 2010. In Russia, upstream investments are expected to double during this decade.

With reference to the UNECE Gas Centre report on Security of Natural Gas Supply (Geneva 2003) gas resources outside Europe (not including FSU³⁾ –countries), which could be exported to Europe, amount to some 180,000 bcm.

Table 1

In summary, the OGP⁴⁾ figures are (bcm⁵⁾)

Area	Reserves	Discovered Potential	Undiscovered Potential	Total
Europe	6052	2950	4464	13466
Africa	6544	4942	7240	18726
Middle East	15410	33760	23950	73120
FSU	32960 ⁶⁾	14906	29830	77696
Caribbean	850	142	1100	2092

2. Transportation and distribution

Transportation systems (including compressor stations) as well as distribution systems are being developed further in almost all countries as a precondition of expected

³⁾ FSU are the Russian Federation and the former Soviet Republics that are part of the Russian Federation

⁴⁾ OGP is the International Association of Oil and Gas Producers

⁵⁾ The definition for “Reserves”, “Discovered Potential” and “Undiscovered Potential” have been chosen to illustrate the supply potential. The “Discovered Potential” category includes known reservoirs, which require advanced technologies or improved economic conditions before they can be exploited. “Undiscovered Potential”, which amounts to about one-third of all resources, needs continued exploration and critically depends on a supportive and enabling policy framework.

⁶⁾ A reevaluation of the Russian Federation natural gas reserves by Gazprom indicates an increase from 32960 to some 55000 Bcm, bringing the total for FSU to almost 1000000 Bcm

market growth. Plans in EU countries as well as in crucial non-EU transit countries show an increase in capacity. The final decision-making for each individual project has to be based on commercial viability directly related to long-term supply contracts in order to guarantee a proper rate of return for the investors/owners of the infrastructure.

Map 1



Map 1 shows the main natural gas infrastructure in Europe and in some other directly related areas. More details are available on the UNECE Gas Centre website (www.gascentre.unece.org).

The overall growth of the gas market in EU countries is estimated to be around 25% during the period 2000–2010. In some non-EU countries growth is expected to be higher. In other non-EU countries where the gas share in the energy market is already high, the percentage of growth may be lower, such as in the Russian Federation, Ukraine and Belarus.

The growth in the length of the gas distribution systems is expected to be 8–10% in EU countries and 10–13% in non-EU countries. The largest increases are planned in Belgium by 25–30%, Portugal 20–80%, Spain 15–50%, Austria 20–30%, Lithuania 25–30% and Italy 18–20%.

Also in non-EU countries, distribution systems are expected to expand: in Turkey by more than 500%, Ukraine 15–20% and Russian Federation 5–10%. Turkey is still in a very early stage of developing its gas market.

In Serbia and Montenegro, a natural gas distribution system is planned to be developed. In Norway, small distribution systems have been developed since the mid-1990s around the gas landing points on the Norwegian west coast. There are plans to transport gas to eastern Norway by pipeline. Distribution by LNG (vessels and trucks) is already in place and will be expanded.

Recently, the IEA has estimated that during the coming 25 years some 20 billion Euros per year will have to be invested in the EU gas supply infrastructure (including the Balkan area and Turkey). This 0.5 trillion Euros will have to be financed by the companies involved, mainly based on the security of their shipping contracts or their sales contracts.

3. Storage

A majority of the present EU countries already had inland underground as well as above ground storage (UGS) facilities available in the year 2000 or earlier. It is expected that almost all EU countries will have one or more UGS facilities available in the year 2010.

Chart 1

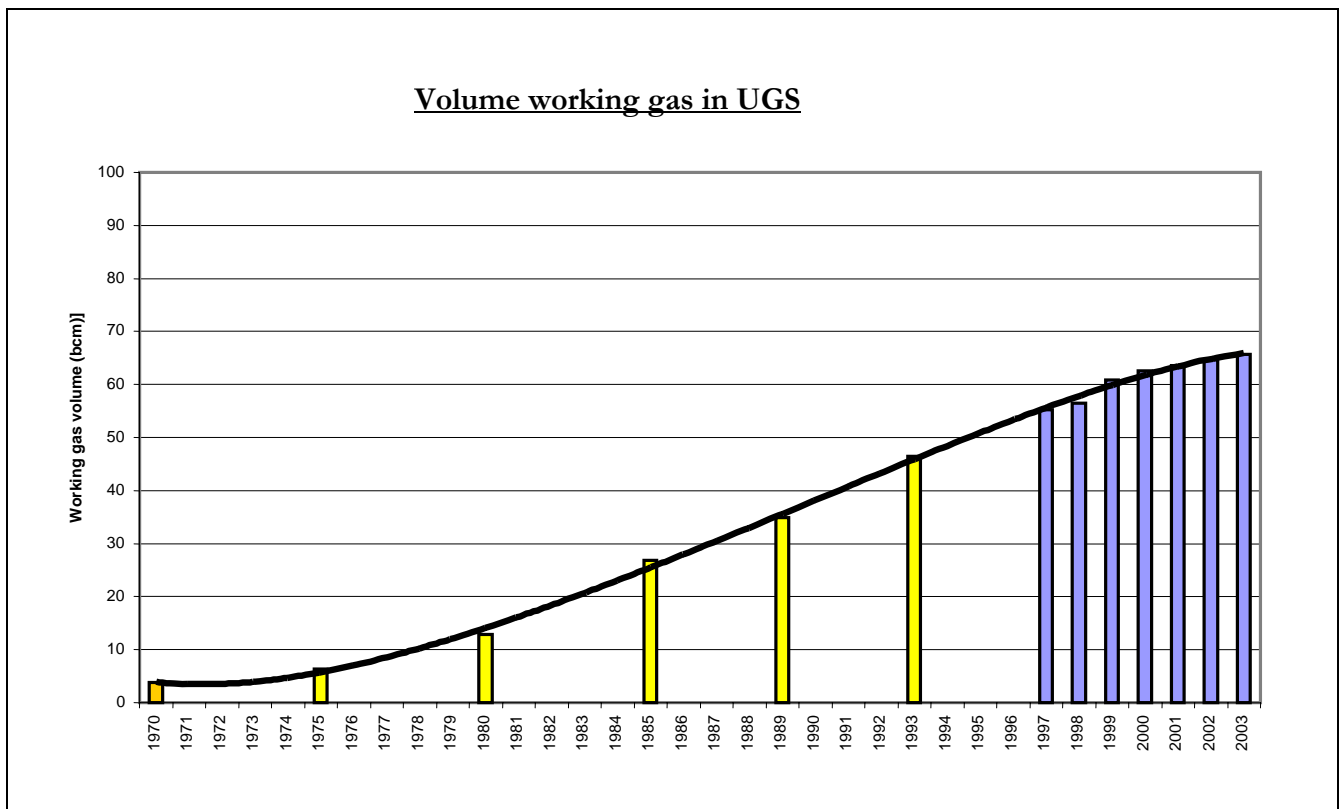


Chart 1 shows the overall development of the available UGS working gas volume (in bcm) in Europe (source: Cedigaz and IEA). Growth is diminishing, together with available gas reserves in the EU, while demand is growing. This might influence the Security of Supply in the EU area.

In Romania and Russia, the number of UGS facilities is expected to increase by some

50% during this decade. In Turkey, the first two UGS facilities are planned to be available between 2005 and 2010.

The expansion of UGS facilities is based on the necessity to balance the load factor of the gas supply with the load factor of the market, as well as creating in some countries a buffer for sufficient security of supply. The available capacities differ due to specific (market) conditions in each region or country. In order to keep the gas market as efficient as possible, available capacities and the related investment decisions should be the responsibilities of the market and especially of those stakeholders who take the financial risks.

The overall investment level in UGS projects in Europe is expected to be more than one billion Euros per year until the end of this decade.

4. Gas and Energy market shares

In many EU countries the share of natural gas in total primary energy consumption is expected to grow between 2 and 10% during the coming 5 years. Some countries are more or less at their maximum level, such as the Netherlands and the United Kingdom (the Netherlands being at a level of more than 50%). The overall market share in the EU will be around 25% in the year 2010. At the moment the market share is 22%.

In non-EU countries a similar development is expected. Russia, Romania and the Republic of Moldova are expected to keep their present share of natural gas in total energy consumption more or less stable (Russia being at approximately 50%). In 2010, Ukraine will be at a level comparable with that of the Netherlands, which is also some 50%. Turkey is planning to increase the share of natural gas in total energy use from 17% in 2000 to 29% in 2010.

Only a few countries are net gas exporters. These countries are: Russia, Norway and the Netherlands. In 2004, the United Kingdom changed its position from being a net exporter to being a net importer.

The Netherlands is expected to keep its net export level at about the same level as during the past 20 to 30 years. Russia is also planning to export some 40% more in 2010 than in 2000. About half of this additional export volume will be provided for by imports from Central Asia and by substituting natural gas by other fuels in its indigenous market if possible.

This indicates a level of investment during the coming years comparable to previous years. Taking into account a steady growth of the gas market and increasing high load factor imports from outside Europe this means a decreasing security of supply.

Norway will also increase its exports considerably during the next decades. One of its new projects, Snøhvit, is an LNG-project. Gas from Snøhvit might be exported to markets outside Europe, such as the United States of America. Algeria is preparing to increase its export volume by developing new projects and bringing new reserves onstream. So are Qatar and Nigeria.

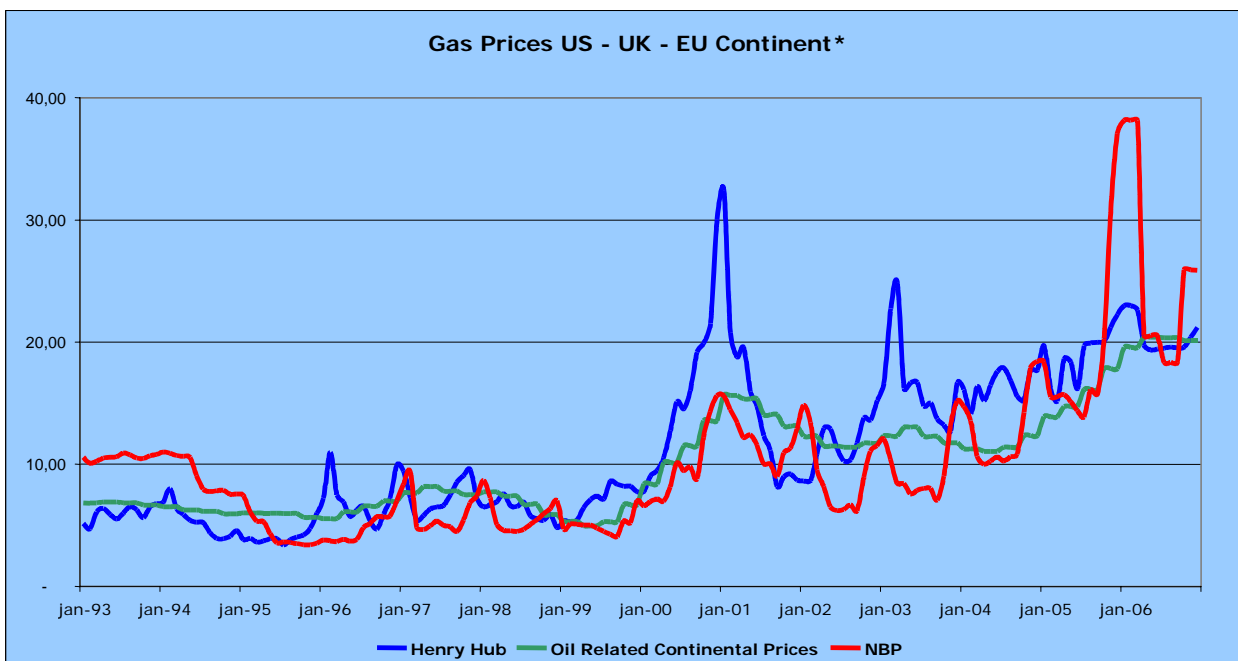
For strategic as well as commercial reasons, most EU-countries consider that future imports will have to come also from new gas producing countries such as Egypt, Libyan Arab Jamahiriya, (Islamic Republic of) Iran and Yemen with an option for LNG. Diversification of supply, including new LNG projects, will be considered in relation to costs. Normally, low cost projects will be developed first. However, an important additional aspect of LNG is its supply flexibility and the value of this flexibility in comparison with pipeline supply. This supply flexibility will also influence the supply price

level through arbitrage between for instance the United States of America market and Europe, as well as on a global scale.

Calculations show that in comparison with offshore pipelines LNG is cheaper when the transportation distance is over 1500 km. In comparison with onshore pipelines the distance is over 4500 km. (For a list of new/potential LNG projects, see Annex 2). The Suez Canal is often seen as a major bottleneck, which could be an important element in future LNG projects in Europe with gas coming from the Middle East.

5. Gas industry

Chart 2



*Source: Gasunie Trade and Supply (2005)

The above figure gives an overview of the gas prices in eurocents per m³ in the United States (month ahead prices), United Kingdom (month ahead prices) and continental European countries (based on oil related continental prices). The prices are based on realisations until May 2005 and futures from June 2005 until December 2006.

The figure shows that:

- Prices in the United Kingdom and the United States are more volatile than oil related continental prices;
- The average Henry Hub price (United States) is 10% higher than the gas prices in Western Europe (including the United Kingdom), during the peaks the differences are often much higher;
- The average oil related continental price is about equal to the average NBP (National Balancing Point) price, with the exception of the winter period 2005/2006.

Nowadays in Europe gas is being imported and distributed by companies that are increasingly competing with each other on different national markets. These national gas markets are being integrated into one European gas market. The increase in competition and the integration of the national markets is enlarged by newly founded gas companies and large end-consumers which are able to directly source their gas supply from producers, making use of TPA (Third Party Access).

The number of gas companies (besides specialised trading companies) per country are the lowest in the Baltic States (one transmission and one distribution company). The countries with the highest number of gas companies are Italy (2 companies for transmission and 583 for distribution) and Germany (15 companies for transmission and 705 for distribution).

The expected change in the number of gas companies in EU countries until 2010 is very diverse. In some countries a significant increase expected because of unbundling as well as the start of new companies in Austria, Finland, France, Hungary, Lithuania, Poland, Romania, Slovakia and Spain. In other countries a consolidation process is much more likely, for instance in Belgium, Italy, the Russian Federation and Ukraine.

In most remaining countries, the number of active gas companies is expected not to change very much during the coming 5 years, like in France, the Netherlands, Norway, Switzerland, Ukraine and in the United Kingdom.

In the United Kingdom, one of the largest gas markets in the UNECE region, the gas industry is privatised and unbundled on the level of ownership. The infrastructure is now owned by fully independent companies. In the Netherlands, the high pressure and medium pressure gas network is in public hands, effectively resulting in ownership unbundling. In general, together with the several “unbundling options” there is a tendency for bigger companies to expand their position in the gas chain. Producer companies are moving into midstream and downstream activities. Midstream and downstream companies are getting involved in upstream activities. Companies also tend to internationalise their scope of activities.

Lithuania, Poland, Hungary, Romania and Ukraine are developing towards a largely or even fully privately owned gas industry, although the upstream activities are expected to stay out of this.

During the last decade, significant privatisation of the oil and gas industry has taken place in Russia. This trend is expected to be maintained. At the same time formal limitations are present which could limit privatised companies in their activities by law or by regulation.

II. REGULATION AND GAS POLICY

1. Regulation and legislation

Regulatory powers under the EU Gas Directive 2003/55/EC of 26 June 2003 are described in the Directive and a set of interpretation documents published by the EU Commission. While the Gas Directive prescribes regulated TPA⁷⁾ for Transmission Systems, Distribution Systems and LNG terminals, it is a Member State's choice as to whether a regulated or negotiated TPA is implemented for storage access. It is also up to Member States to decide how the regulator exercises its tariff approval powers – either by approving methodology or tariffs outright. The European Commission stresses that it expects the economic effects of both options to be the same.

Although the implementation and operation of regulatory provisions are at a national level, the European Commission will keep an oversight. A certain level of convergence of detailed regulatory provisions across Europe can be expected, supported by the creation of the European Regulator's Group for Electricity and Gas (ERGEG).

All countries in the EU have a regulator. A majority of the countries in this study outside the EU also have a regulator (including Russia).

On average, about 70 people are involved in each EU-country in energy/gas regulatory activities. In non-EU countries, this number is even higher. It is reasonable to conclude that nowadays many more governmental employees are becoming involved in the gas market than in the past.

⁷⁾ Third Party Access, the system of regulations and tariffs by which the infrastructure can be used.

Almost all regulators are expected to increase the number of officials involved in gas regulation during the coming years. This is also the case in non-EU countries.

In EU countries, gas regulators have to date issued on average some 34 regulations until. There is, however, a large spread in the number of regulations in individual countries ranging from 2 to 170. In non-EU countries the average is even higher, at more than 45.

On average, in EU countries about one quarter of the regulations are regulatory decrees. The others regulations are decisions by the regulators, like TPA refusals and tariff decisions. In non-EU countries, the percentage of regulatory decrees is on average around 45%.

It is expected that in almost all EU and non-EU countries the number of regulations issued by the regulators per year will increase during the coming five years.

In most EU and non-EU countries, the regulators are financed by the state. If the regulator is not financed by the state, it is financed by the gas market through the applicable tariffs.

In almost all EU and non-EU countries, the head of the regulator's office is appointed by government. In the majority of the EU countries, the gas regulator coordinates its activities with a ministry or governmental agency. In some cases the regulator is part of a larger institution, like a competition authority or an overall energy regulator. The remaining EU countries have an independent regulator. All gas regulators are members of ERGEG, the European Regulators Group for Electricity and Gas, coordinated by the European Commission. Some six non-EU countries have an observer's position in ERGEG. The main competences of the regulators are indicated in Annex 3.

With the exception of two countries, which are not in the EU, it is generally believed that adequate energy legislation is available. In a few countries, gas legislation in particular will have to be developed further. Some more countries need a better regulated gas market than is the case now, although in a few EU countries signs of overregulation are beginning to appear according to gas companies involved.

There are no indications that in EU countries more regulation is pursued by the gas industries. In some countries improvement of the existing system is required.

In some non-EU countries there is apparently a common view on the need for an extension of their gas regulation in order to create a well-organised and integrated gas market.

The respondents have a general conviction that before 2010 there will be a stable legislative and regulatory framework available in their countries.

2. Public Service Obligation

In almost all EU and non-EU countries, there are Public Service Obligations (PSOs)⁸⁾ in effect. These PSOs are only applicable to specific parts of the gas market (natural gas transport, small customers or indigenous production) although the impact can be extensive, for instance, regulating consumer prices.

In some EU and non-EU countries, PSOs have an impact on more than 50% of the total gas market. In almost all countries it is expected that PSOs will remain applicable even after the year 2010. PSOs are often considered necessary for social or economic

⁸⁾ A Public Service Obligation is a decision made by the government of a EU country, imposing on a gas company a way of operating which is in the general economic interest. It may relate to security (of supply), regularity, quality and price, environmental protection, and it initiates measures to protect final customers or vulnerable customers

reasons. Almost all gas companies are in favour of limiting PSOs in scope and in time as much as possible.

3. Unbundling

In some EU countries, unbundling of transportation and trading activities in the gas industry took longer than anticipated. A recent report of the European Commission (fourth benchmarking report) indicates that governments should do more to implement energy, i.e. gas market opening measures. In October 2004, 18 out of 25 EU countries had failed to respect the deadlines for implementation of the EU Gas Directives partly with regard to unbundling.

The European Gas Directive has put an obligation on DG TREN (Directorate-General for Energy and Transport) of the European Commission to prepare a detailed report on the internal gas market by 1 January 2006 (GD II, Article 31(3)). This report will, inter alia, provide a basis for potential changes to the unbundling and market opening provisions for the distribution sector. The Commission invited all interested parties to make contributions to this process by end July 2005.

In a parallel development, the EU Competition Directorate has started a wide ranging inquiry into the gas and electricity sectors. A provisional timeline suggests that a draft of this report will be available by end 2005 with the final report to be published sometime in 2006.

One of the problems is insufficient integration between markets because of insufficient interconnection infrastructures and congestion not being handled satisfactorily. Furthermore, full independence of transmission system operators and an

adequate level of separation of distribution system operators have still not been achieved in several countries.

Most of the non-EU countries have started the process of unbundling. For instance, Norway has fundamentally unbundled its gas industry, based on a model of its own. The offshore transportation systems are integrated and fully owned by producers together while operations are the responsibility of an independent company. The United Kingdom unbundled its gas industry already more than 10 years ago. In many other countries the expectation is that unbundling will not have a direct effect on ownership, with the exception of the Netherlands, Spain and Italy.

It remains to be seen whether the unbundling of gas companies will have a negative effect on the development of supply security. This negative effect could be caused by less synergy, lack of coordinated planning and higher investment costs as a consequence of lower financial risk ratings.

4. Infrastructure

In almost all countries investments in the gas infrastructure are largely on schedule, based on the planning of the past 3 years. It is believed that adequate investments will take place during the coming 6 years if the regulatory framework reflects the risks which investing companies have to deal with. However, there are indications that in some countries the further development of distribution systems and decision-making by large consumers, especially on the issue of fuel choice, are somewhat slowed down for various reasons. Indeed, given the level of investments needed and the expected growth of the gas market, a real postponement of some investments might have serious setbacks for the market.

In hardly any EU country or non-EU country does the government directly support infrastructural investments financially. In the new European Commission guidelines concerning projects of common interest in the field of trans-European energy networks, it is indicated that specific projects may be financially supported during the study phase and/or the financing scheme of the project itself through the European Investment Bank in Luxembourg or other public or private financial institutions, or direct grants to investments can be assigned in duly justified cases. There is also a tendency to have the regional development funds linked to infrastructural projects.

Two large investment projects terminals in the United Kingdom (Grain LNG and South Hock LNG) and BBL (offshore pipeline connection between Balgzand in the Netherlands and Bacton in the United Kingdom) were given the go-ahead by the companies and shareholders of the companies after the European Commission implicitly (regulators or responsible Ministers explicitly) decided that some market regulations with regard to TPA requirements would not be applicable. Granting an exemption from TPA provisions (Gas Directive according to Article 22) is vital for the feasibility of such projects. These projects, as well as all other gas infrastructure projects, require a stable and healthy investment climate providing a long-term and secure income.

5. Gas policy

In the majority of the “old” 15 EU countries, the use of natural gas has a priority in governmental energy policy as the fuel of preference over other carbon fuels. The issues related to an increase in the use of natural gas are ranked as follows, indicating where such increase is expected to contribute significantly to the economy, a cleaner environment or a secure energy supply:

1. Security of supply (including diversification)

2. Reduction of emissions
3. Investments in the infrastructure
4. Privatisation
5. Creation of customer choice
6. Reorganisation of the market structure
7. Security of demand

In the 10 “new” EU countries, natural gas has a priority at the national political (energy) level in only a few countries. Investments and security of supply have the highest priority in those countries.

In the non-EU countries, a relatively high number of countries have policy priorities related to natural gas. The priority percentage is higher than in the EU, even in comparison with the “old” EU countries. The priority ranking is almost similar. Privatisation has a lower priority in those countries. Security of demand, often considered from the angle of diversification, is more important.

6. Taxation of natural gas

Taxation of natural gas, like that of energy as a whole, varies from one country to another in Europe. This applies, for example, to the level of taxation, the size of the tax burden (absolute, in relation to other energy sources and in relation to the gas selling price) and the use of tax revenues.

Often there exists a distinction between sectors. As a rule, the main focus of taxation is the residential and commercial sector. The tax rates in this sector are in some cases well above the rates applicable in the industry sector. Use of gas for power generation is taxed in only a few countries. In some cases, a regional

differentiation between tax levels exists.

In the case of VAT, which is levied on residential customers in West European countries, a wide range of rates exists at present.

The different levels of taxation of natural gas in the EU leads to serious distortions of competition incompatible with a single market, which suggests a clear need for harmonisation of taxation of natural gas (just like taxation of energy in general). A first step in this direction was taken after difficult and long negotiations by the adoption of the Directive 2003/96/EC on 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity.

The following applies to the minimum tax rates for natural gas:

- For the industrial use of natural gas the minimum tax rate is 0.054 eurocents/kWh (gcv).
- In the residential sector the minimum tax rate is 0.108 eurocents/kWh.
- In the power generation sector, the minimum tax rate is zero. Output taxation is generally envisaged here.

However, the Directive contains transitional periods and/or exemptions and special arrangements for energy-intensive businesses and use of energy for cogeneration. Some of them are optional. These include tax relief for specific measures serving environmental and climate protection or to increase energy efficiency. Special arrangements and transitional periods for the new EU members were laid down in an amendment to the

aforementioned Directive adopted in April 2004.

The Directive is an initial, albeit modest step towards achieving and refining the single European market by creating similar frameworks for the taxation of energy, especially natural gas. The compromise arrived at by the EU countries in laying down binding minimum tax rates is likewise only a first step – a step which, by fixing minimum tax rates and allowing exemptions and transitional periods, allows the EU members to adopt national rules that contradict harmonisation.

7. EU Commission responsibilities

The European Commission does not have a specific energy mandate (such a mandate is, however, included in the draft of the European Constitution). A majority of the total group of those who completed the UNCMS questionnaire think that the powers of the European Commission on natural gas are adequate. Of those who think they are not adequate, only two favour an increase of those responsibilities. Those two countries are not (yet) part of the EU.

Most respondents are in favour of the European Commission focussing only on regulated activities. Some respondents from EU countries are of the opinion that the Commission might be involved in (some) other elements too. A large minority of respondents from EU countries would support the Commission focussing on harmonising national TPA tariff levels. Only a few would be in favour of the Commission focussing on the national tariff level itself.

Some respondents from non-EU countries support these minority views of EU countries.

Some EU countries would support a direct involvement of the European Commission in the coordination of some parts of the gas chain. One non-EU country would be in favour of that too. Respondents from some non-EU countries refer mostly to transportation, access to the infrastructure, storage and investments, when direct involvement of the Commission is considered.

III. CONCLUSIONS

1. In general gas markets in the UNECE region are developing steadily, growing to some 25% share of the overall energy market. Supply is secured via many long-term contracts. The market is accustomed to and expects almost perfect gas deliverability.
2. There is on average an overall growth in the number of companies involved in gas sales. The number of companies involved in services (infrastructure) is to a certain extent stable. This is on average also the case with regard to the number of gas production companies.
3. There are no structural indications that supply will not be properly secured in the longer run, assuming that higher real oil prices stimulate exploration and production of (new) reserves, long-term contracts are allowed and gas will not be over-taxed. The available gas reserves in the UNECE region and in related areas are adequate for at least 100 years.
4. Decision-making on new projects upstream, midstream and downstream are expected to become more complex (due to unbundling and overregulation) and more costly (timing problems, overregulation, higher risks).

For infrastructure projects to be successful, a predictable, long-term and secure stream of income is needed. This can only be guaranteed by a healthy, stable and predictable investment climate, which should be as market driven as possible.

5. In many countries the new regulatory regimes tend to overregulate the liberalized gas market for mainly two reasons. The first is the limited success to date of a liberalized market (no structural oversupply, no structural lower end prices) and the second is the

need to limit increasing costs caused by unbundling, growing bureaucracy and increasing taxation.

6. It appears to be difficult to find a balance between a free market and regulators' responsibilities in order to create a properly functioning liberalized market. Too much regulation is being used to create a balance artificially, ignoring specific gas market characteristics and risks. In this way, additional unbalances are created.

PSOs (Public Service Obligations) have to be abolished as soon as possible where they add imbalances in the market.

7. The increasing segmentation of the supply chain – as a consequence of the changes being introduced through the Gas Directive – and the need for security of supply (long term as well as short term) require clarity on roles and responsibilities, stability in the regulatory framework and consistent implementation of regulation.

8. The use of gas should be stimulated more effectively on the national and EU level because of the economic and security advantages and of its (comparatively) favourable impact on the environment, which should also be reflected in tax policies and specific tax levels. At the same time, tax levels should be harmonized.

ANNEX 1

BALANCED NATURAL GAS DEMAND AND SUPPLY (BCM)

- Demand in the UNECE region
- Supply in the UNECE region and from North Africa (incl. Egypt), Middle East, Africa and South America (incl. Caribbean).
- Supplies by pipeline and LNG

DEMAND*	2000	2005	2010	2015	2020	2025
EU (incl. Balkans & Turkey)	530	610	680	740	775	800
Russian Federation, Belarus, Ukraine	425	480	525	570	610	630
TOTAL	955	1090	1205	1310	1385	1430
SUPPLY	2000	2005	2010	2015	2020	2025
EU (incl. Balkans & Turkey)	320	368	355	320	270	210
Russian Federation + former Soviet Republics	565	635	715	785	790	760
North Africa	60	70	95	120	165	200
Middle East	0	5	20	55	90	160
Africa	10	5	10	15	40	55
South America	0	7	10	15	30	45
TOTAL	955	1090	1205	1310	1385	1430

* Based on an average of EU, IEA scenarios and Gas Centre calculations.

ANNEX 2

LNG : EXISTING AND POTENTIAL LNG EXPORTING COUNTRIES TO EUROPE

▪ Norway (Snøhvit)	(part of)	3.830 bcm
▪ Russian Federation and former Soviet Republics (Sakhalin, etc.)	(part of)	55.000–100.000 bcm
▪ Middle East		73.000 bcm
▪ North Africa (incl. Egypt)		7.300 bcm
▪ Africa		4.900 bcm
▪ South America (incl. Trinidad and Tobago)		4.700 bcm

EXISTING AND NEW LNG TERMINALS

	Sent out cap/year	Storage cap
▪ Belgium		
Zeebrugge (1987) (Fluxys, Tractabel, Shell)	4.5 bcm 9 bcm (2007)	261.000 m ³ 401.000 m ³ (2007)
▪ France		
Fos sur Mer (1972) (Gaz de France)	4.5 bcm	150.000 m ³
Montoir de Bretagne (1982) (Gaz de France)	10 bcm	360.000 m ³
Fos Cavaou (2007)	8.25 bcm	330.000 m ³
▪ Greece		
Revithoussa (2000) (Hellenic Petroleum, Greek State)	2 bcm 4.5 bcm (2007)	130.000 m ³
▪ Italy		
La Spezia (1971) (SNAM Rete Gas)	3.5 bcm	100.000 m ³

ROVIGO (2007) (Qatar Petr., ExxonMobil, Adison Gas)	8 bcm	250.000 m ³
▪ Portugal		
Sines (2003) (Galp Energia)	5.2 bcm 8.5 bcm (2007)	240.000 m ³ 380.000 m ³
▪ Spain		
Huelva (1988) (Gas Natural, + many others)	4 bcm 7.9 bcm (2004) 11.8 bcm (2006)	160.000 m ³ 460.000 m ³
Cartagena (1989) (Enagas)	5.2 bcm 7.9 bcm (2005–07)	215.000 m ³ 337.000 m ³
Barcelona (1998) (Enagas)	10.5 bcm 14.5 bcm	240.000 m ³ 390.000 m ³
Bilbao (2003) (BP, Iberdrola, Repsol, Ente Vasco de la Energia)	2.7 bcm	300.000 m ³
El Ferrol (2006) Union Fenosa Gas, Endesa, Tojeiro Group, Sonatrach, others)	3.6 bcm	300.000 m ³
Sagunto (2006) (Union Fernosa Gas, Iberdrola, Endesa, Oman Oil Company)	6.6 bcm	150.000 m ³
▪ Turkey		
Marmara Ereglisi (1994) (Turkish Petroleum Corp/Botas)	5.2 bcm	255.000 m ³
Aliaga (2005?) (Colagoglu Group)	6 bcm	280.000 m ³
▪ United Kingdom		

Dragon (2007) (BG Group, Petroplus, Petronas)	6 bcm	336.000 m ³
Grain (2005) (National Grid Transco)	4.5 bcm 14.5 bcm (2007–08)	200.000 m ³ 770.000 m ³
South Hook (2007–08) (ExxonMobil, Qatar Petroleum)	10.5 bcm 21 bcm (2009–10)	465.000 m ³ 775.000 m ³

PROPOSED LNG TERMINALS

▪ Cyprus

Vasiliko (2009) (Dev. Cypriot Government)	0.7 bcm
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▪ Italy

Rosignano Marittima (Livorno) (2010) (Edison, Solvay, BP)	3 bcm
Offshore Livorno (2005+) (Offshore LNG, Toscana–Cross Gas)	3–6 bcm
San Ferdinando (?) (Falck Group)	6–12 bcm
Gioia Tauro (?) (Cross Energy)	4–2–8 bcm
Taranto (?) (ENEL)	5–9 bcm
Taranto (?) (Gas Natural)	8 bcm
Vado Ligure (?) (ENEL)	5–9 bcm
Muggia (?) (ENEL)	5–9 bcm

Trieste (?)
(Gas Natural)

8 bcm

▪ **United Kingdom**

Anglesey (2008)
(Cannaxx Energy Ventures)

Canvey Island
(Calor Gas)

OTHER POSSIBLE PROJECTS (IN DIFFERENT STAGES OF DISCUSSION OR EVEN SHELVED FOR THE MOMENT)

France	– Le Verdon
Germany	– Wilhelmshaven
Netherlands	– Eemshaven
Poland	– Gdansk
Turkey	– Izkenderun

ANNEX 3

REGULATORS (GAS-RELATED COMPETENCES AND RESOURCES)*1

	Country	Ex-ante Ex-post	TPA- conditions	Dispute Settlement	Ministry Involvement	Information Powers	Staff Total* 2	Gas Market 3)	Annual Total Budget (03)2) 4)	
1	Albania	Ex-post	Regulated	Regulator	Instructions	Strong	17	0.2	0.2	
2	Austria	Ex-ante	Regulated	Regulator	General guidelines	Strong	60	8.5	8	
3	Belgium	Ex-ante	Regulated	Regulator	No	Strong	99	19.8	17	
4	Bulgaria	Ex-ante	Regulated	Regulator	No	Strong	85	4.6	0.7	
5	Croatia	Ex-ante	Ministry + regulated	Regulator	Tariff approval	Strong	8	3.8	2.0	
6	Czech Republic	Ex-ante					90	11.4		
7	Denmark	Ex-post	Regulated	Regulator	Yes	Strong	25	9.2	2.5	
8	Estonia	Ex-ante	Regulated	Regulator			11	1.5	0.3	
9	Finland	Ex-post	Regulated	Regulator	No	Strong	16	5.7	1.25	
10	France	Ex-ante	Regulated	Regulator	Tariff approval	Strong	96	52.3	12	
11	Germany	No details available on the new regulator (appointed 13 July 2005)							98	
12	Greece	Ex-ante			Tariff approval	Strong	40	3.5	4.4	
13	Hungary	Ex-ante	Ministry	Regulator	Tariff approval	Strong	95	14.1	6.2	
14	Ireland	Ex-ante	Regulated	Regulator	No	Strong	39	5.3	10	
15	Italy	Ex-ante	Regulated	Regulator	General guidelines	Strong	104	82.4	18.6	
16	Latvia	Ex-ante	Regulated	Regulator	No	Strong	68	1.9	1.7	
17	Lithuania	Ex-ante	Regulated	Regulator	Instructions	Strong	50	3.0	0.6	
18	Luxemburg	Ex-ante	Ministry + regulated	Regulator		Strong	2	1.2	0.3	

19	Netherlands	Ex-ante	Hybride	Competent authorities	Instructions	Strong	55	42.2	7	
20	Norway	Ministry of Petroleum and Energy is regulator for upstream gas activities. Announcement of regulator for downstream activities deferred.							3.8	
21	Poland	Ex-ante	Ministry	Regulator	Supervision	Strong	258	14.8	6.7	
22	Republic of Moldova	Ex-ante (?)	Ministry	Regulator	Yes	Strong	-	4.4		
23	Portugal	Ex-ante			No	Strong	53	4.3	6.4	
24	Romania	Ex-ante	Regulated ⁵⁾	Regulator	No	Strong	78	18.4	1.6	
25	Russian Federation		Regulated	Anti monopoly law	Maximum rate of price increase	Strong	300	347.6	3.6	
26	Serbia and Montenegro	No regulator has been appointed yet								
27	Slovakia	Ex-ante	Regulated	Regulator	No	Limited	57	6.3	1.5	
28	Slovenia	Ex-??	Ministry	Regulator	Non-eligible	Limited	22	1.2	1.5	
29	Spain	Ex-ante	Ministry	Regulator	Yes	Strong	187	28.1	21	
30	Sweden	Ex-post	Regulated	Regulator	No	Strong	43	2.0	3	
31	Switzerland							3.5		
32	Turkey	Ex-ante	Regulated	Regulator	No	Strong	283	21.7	25	
33	United Kingdom	Ex-ante	Regulated	Regulator	No	Strong	302	125.8	57	

*) Largely based on: European Power Daily, volume 7, issue 53, 17 March 2005. Mc Graw Hill Camp

2) Total energy regulator (s)

3) In billion m³ 2005 (expectation)

4) In million Euros

5) Often: Upstream-Government
Midstream-Parliament
Downstream-Ministry