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# **Gas market liberalization as a key driver of change of the European gas market and its influence on the strategies of the main players**

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## Abbreviations

AG	Aktiengesellschaft
bcm	billion cubic meters
CCGT	Combined-cycle gas turbine
CEGH	Central European gas hub
CERA	Cambridge Energy Research Associates
EC	European Commission
EP	European Parliament
EU	European Union
Eurogas	European Union of Natural Gas Industry
IEA	International Energy Agency
IFP	Institute
IOC	International Oil companies
ISO	Independent System Operator
LNG	Liquefied natural gas
MOU	Memorandum of Understanding
NBP	National Balancing Point
NGCC	Natural gas combined cycle
NGMR	Natural gas market report
NOC	National Oil companies
OU	Ownership unbundling
TFT	Title Transfer Facility
TPA	Third-party access
VI	Vertical integration
WEO	World Energy Outlook

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## 1. Introduction

The market of natural gas in Europe is undergoing some fundamental changes. Restrictions on CO<sup>2</sup> emissions under the Kyoto protocol, the nuclear phase out announced by some member states, high emissions from coal-based generation and barriers to rapid development of renewable generation are factors that seem to be forcing the European Union (EU) into a high dependency on natural gas. Demand for natural gas is expected to increase even further, with gas-fired power stations being a possible driver. At the same time the European indigenous gas production is declining and the European Union is currently facing a significant rise in its dependence on natural gas imports from external suppliers.<sup>1</sup> The main challenge, however, will be how the markets and players react to liberalization that is imposed by the European Union.

### 1.1 Problem formulation

Starting with the Single European Act<sup>2</sup> in 1986, the European Commission has been carrying out a policy of dismantling of state-owned companies and of their privatization. In regards to natural gas, the European Commission issued two gas directives in 1998 and 2003<sup>3</sup> in order to promote liberalization of the gas market. The third legislative package on gas and electricity is expected to come out in June 2008. The ultimate aim of the measures implied is to introduce competition in the gas market by allowing new entrants, non-discriminatory third-party access to pipelines they do not own nor control, and to reduce the price of gas for ultimate households, but also for industrial customers in view of making the products of European industries more competitive in the world market.<sup>4</sup>

The result of liberalization and opening markets to competition has been an increase in the number and diversity of the players involved. The key players on

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<sup>1</sup> Cp. Eurogas (European gas market 2006), p. 12.

<sup>2</sup> Cp. EC (Single European Act 1986).

<sup>3</sup> Cp. EC (Gas directive 1998); EC (Gas directive 2003).

<sup>4</sup> Cp. Finon/Midttun (Reshaping European gas 2004), p. 3.

the European gas markets are on the one hand governments, liberalizing their markets and implementing gas directives as required by the European Commission. On the other hand, there are national gas incumbents, facing the end of their monopoly positions, and preparing for the upcoming European competition. Finally, international oil and gas companies (ExxonMobil, Shell, BP), former specialised electric utilities (E.ON, RWE, EDF) and traditional foreign gas suppliers (Gazprom, Sonatrach) are intervening in the European gas market scene. European authorities such as the European Commission and European Parliament do not have direct stakes in the gas markets, but are responsible for setting the rules in the gas sector<sup>5</sup> and cannot be considered as players.

The national gas incumbents have to deal with the opening of their own national markets and the potential threat of competition, so they are expanding geographically and vertically, in order to exploit global growth opportunities offered by horizontal and vertical integration on the European level. Upstream players (especially producers and suppliers from outside of the EU) have gained from liberalization an opportunity to integrate along the gas value chain and take new positions downstream in distribution of gas.<sup>6</sup>

In the thesis, it will mainly concentrate on the strategies of the companies, whether they are national gas incumbents, electric utilities, international oil and gas companies or external gas suppliers. Facing the liberalization of the gas market, these companies are choosing to adopt new strategies. It is also intended to elaborate into the position and strategies of the national governments. The analysis will take account of position of Russia, seeing energy as a key diplomatic and strategic factor; France's and Spain's attitude of the building of national champions as a key to their nations' success, but also positions and strategies of the countries which deeply oppose highly controversial "ownership unbundling" proposed by the European Commission.

Liberalization has a lot of advantages; however, there are some dilemmas and risks existing in the context of liberalization. The most important risk is security

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<sup>5</sup> Cp. Pirovska (East European gas 2005), p. 2.

<sup>6</sup> Cp. Cedigaz (Players on European gas 2005), p. 126.

of gas supply; the underlying factor is being that the EU has only 3.5 percent of world gas reserves and already imports up to 54 percent of its consumption.<sup>7</sup> In the liberalized market, the planification of supply through the institution of long-term contracts with suppliers guaranteeing new field development becomes more difficult. Long-term contracts, often criticized by the European Commission as an obstacle to liberalization, remain nevertheless a guaranty of a stable demand and the basis of the company's investment in production and infrastructure.<sup>8</sup> The aim of the European Commission to introduce gas-to-gas competition instead of indexation to oil prices which will threaten the producer's revenues and decrease their rent in the gas value chain. This may be of particular importance for Gazprom, since the company suffers major financial losses on its domestic market due to non-payments, barter, and subsidized low prices.<sup>9</sup> On the other hand, European gas incumbent firms are weakened by unbundling obligations proposed by the liberalization package; thus might bear a risk of losing bargaining power in negotiations with a supply side that would remain monopolistic. The major imbalance here is that the demand side is destabilized vis-à-vis an integrated supply side.<sup>10</sup>

As stressed below, liberalization has several aspects, some of them are positive, others negative. The difficulty in this context is the fact that often aspects which are negative for one group of players might be positive for another. Another difficulty in analysis is the wide scope of players being analyzed in the paper. Therefore the idea is to give a broad analysis of the all types of players present on the gas market and to develop a complete overview of the gas industry.

## **1.2 Objective and structure of the paper**

This thesis analyzes corporate strategies in the emerging context of rising import dependency and liberalization in the European gas market. In this dissertation, certain issues are investigated:

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<sup>7</sup> Cp. Eurogas (European gas market 2006), p. 12.

<sup>8</sup> Cp. Stern (Security environment 2006), p. 19.

<sup>9</sup> Cp. Tsygankova/Sagen (Russian gas exports 2008), p. 5.

<sup>10</sup> Cp. Pirovska (East European gas 2005), p. 3.



- What are the underlying drivers of the structure of the European gas industry and of changes (as dictated by the economics of the industry)?
- Where is the gas industry at and what underlying trends can be observed at the present?
- Where are the main players at? How have they positioned themselves going forward? Are their strategies sustainable in the light of underlying trends?

Pursuing this goal, this thesis will be consisting of six chapters. In the first chapter the objectives and scope of the document are defined. Also useful theoretical approaches for analyzing the European gas market and strategies of players on them are mentioned.

The second chapter describes the European natural gas market, gives a statistical overview of the European gas demand, reserves, production and supply, but also specifies the main historical, cultural and economical issues.

The third chapter analyses the key drivers of change that the European gas market is undergoing currently: growing demand for natural gas, import dependency on external suppliers and especially gas market liberalization, pushed by the European Commission.

The fourth chapter can be divided into two parts. The first is an overview of the major participants of the European gas market, both the external suppliers, and internal players within the EU. The second analyses the strategies drawn up by the various players involved in gas supply and distribution in adapting to the new environment. Here, the strategic instruments, such as vertical and horizontal integration, but also long-term contracts, partnership agreements and asset swaps are discussed in detail. The chapter provides as well a review of recent developments pursued by major companies in terms of mergers and acquisitions, in particular an empirical analysis of the determinants driving companies towards increasing vertical and horizontal integration is provided. Finally, the trends appearing due to the liberalization of gas markets are analyzed.

The fifth chapter discusses the possibilities of actors (players) as companies, but also member states and EU-level producer associations to intervene in the decision-making process in the EU; it shows the possible targets for lobbying and, as regards the discussion of the third energy package in European Parliament, projects the possible development of the European gas market.

The conclusion of research is provided in the final sixth chapter.

The European Union's Green Paper on "Secure, Competitive and Sustainable Energy for Europe"<sup>11</sup>, two gas Directives<sup>12</sup>, Directive of security of supply<sup>13</sup>, issued by the European Commission, built a framework, within which gas issues are analyzed. There is an abundance of literature, which provides various reports and papers related to the development of the European natural gas market. Those, published by the International Energy Agency, *World Energy Outlook (WEO)* and *Natural gas market reports (NGMR)* provide analyses about the development of gas markets worldwide; they also have actual statistic information and provide a lot of technical details. Studies and investigations made by the Oxford Energy Research Institute, Institut Français du Pétrole and Cedigaz specialize on the analysis of the current trends. The European Union of Natural Gas Industry (Eurogas) represents and lobby interests of its members and gives a position of actual policy objectives of the European Commission. Specialized consultancies, such as Cambridge Energy Research Association (CERA) and Capgemini concentrate their studies towards a corporate behaviour of gas market players and their business strategies. The websites of energy and gas companies and specialized energy research journals provide empirical information concerning the actual state of mergers and acquisitions, partnership agreements and other forms of cooperation carried out by mayor gas market players. Finally, the third energy package, in the form of a proposal for a directive amending directive 2003/55/EC concerning common rules for the internal market in natural gas presented by the European Commission on the 19.09.2007, working

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<sup>11</sup> Cp. EU (Green paper 2006).

<sup>12</sup> Cp. EC (Gas directive 1998); EC (Gas directive 2003).

<sup>13</sup> Cp. EC (Directive on gas supply security 2004).

documents, draft reports and amendments of the reporters of the Committee of Industry, Research and Energy of the European Parliament and current discussion on the Euractiv and European Voice provide up-to-date information about future outlook of the European gas market.

### **1.3 Useful theoretical approaches and methods for understanding and analyzing the European gas market and strategies of its players**

To get deeper insights into the nature, structure and functioning of the European gas market, and to analyze the strategies and actions of its players certain theoretical approaches might be useful.

For example, the **natural monopoly** theory outlines the economic context within which the gas market players can operate. Natural monopoly arises through the effect of economies of scale. One firm can produce the total output of the industry at lower prices than two or more firms. This is the case with most networks: pipelines, telephone lines, water and gas pipes, television cable networks, overland power lines, railroads. In all these cases, the share of initial investment (fixed costs) is very important. So the company that first built the network, by virtue of being its owner, will forever be the sole to exploit it.

While speaking about natural monopoly and analyzing the gas market it can be concluded that certain sectors of gas supply chain may be regarded as natural monopolies. Gas transmission segment of the gas supply chain involves long distance, high-pressure pipelines to carry gas from the producers to the consumer markets (in LNG case transmission include gasification, ocean-tanker transport and re-gasification terminal). The defining economic principle in natural gas transmission is the presence of ever declining marginal costs over the relevant units of output, economies of scale, high fixed costs of pipeline construction, and essential facility character of pipelines. Together these characteristics contribute to perpetuation of the natural monopoly.<sup>14</sup> Gas distribution segment, with low-pressure pipeline transportation, metering and

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<sup>14</sup> Cp. IEA (NGMR 2007), p. 54.

activities of delivering the gas to a certain types of customers due to its similar characteristics, also has the character of a natural monopoly.<sup>15</sup>

Having seen that natural monopolies arise from the effect of economies of scale, the gas market is confronted with the ever permanent need of very substantial investments meant to work for a good number of decades. Those investments being necessary before the first metre cube of gas may be sold, i.e. before the first cent of revenue comes in, need to have really stable environment - or they simply can not be realized, thus leaving the country with numerous bottlenecks for gas transmission, gas storage and LNG processing. While speaking about investment, the **transaction cost approach** can be mentioned.

In gas market, transaction costs are very high because of high specificity of assets especially in very specialized and inflexible pipeline transport. The high asset specificity also raises the probability of opportunistic behaviour when one party uses the relationship to better their position at the expense of the other. An example of an opportunistic behaviour can be stressed as the following: after investing in construction of gas pipeline the consumer may demand lower prices and the supplier would have to agree because he does not have any other possibilities of alternative use for the pipeline.<sup>16</sup> Gas trade, both per pipelines or in form of LNG is characterized by high degree of uncertainty due to long investment cycle and long period of the subsequent operation of specific assets. The transaction-cost approach suggests that stressed characteristics of transactions, particularly within gas industry, such as high specificity of assets, possibility of opportunistic behaviour and high uncertainty favouring vertical integration, which allows to save on transaction costs.<sup>17</sup> In cases where vertical integration is impossible, long-term *take-or-pay* contracts with strict obligations of the parties are used.

The concepts of **vertical and horizontal integration** represent the most import trends in the gas industry. The value of horizontal integration lies in the

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<sup>15</sup> Cp. Cameron (Competition in energy 2007), p. 1.67.

<sup>16</sup> Cp. Mitrova (Energy security 2008), p. 2.

<sup>17</sup> Cp. Mitrova (Energy security 2008), p. 2; Correlje/Groenewegen (Transaction costs 2007), pp. 8-11.

economies of scale associated with increasing the production of a single product type. Accordingly, horizontal integration can represent a strategic move to create a dominant market position.<sup>18</sup> In regards to vertical integration, several approaches can be applied. On the one hand, it revolves on the presence of market imperfections and applied as a strategic move to create/enhance market power in upstream and downstream markets, on the other hand – from a strategic management background vertical integration can be perceived as an instrument of risk management.<sup>19</sup> Vertical integration occurs when one firm merges either with a firm from which it purchases the inputs or with a firm to which it sells its output and can be defined as the combination of technologically separable and sequentially related economic activities within one single firm.<sup>20</sup> The concept of vertical integration represents an appropriate tool to analyse the strategies of the players in light of liberalization.

In the period prior to the liberalization European natural gas market had a character of the industry, where engagement of gas companies in transmission, distribution and customer supply, but also in long-term contracts with gas suppliers has placed them in a vertically- integrated position. Liberalization of gas markets in Europe challenged the existing framework of established industry as new players get a possibility to enter the downstream end of gas market. Loosing their market share in traditional geographies, gas companies through backward vertical integration move upstream and through forward vertical integration take new positions in downstream, but also expanding geographically through cross-border merger and acquisitions. This trend is very likely to continue in the future.

Regarding the **bargaining power**, as one of the variables for vertical integration strategies certain matters can be stressed in the case of the gas market. On the one hand, European gas incumbent firms are weakened by unbundling obligations proposed by the liberalization package; thus might bear a risk of loosing a bargaining power in negotiations with supply side that remains

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<sup>18</sup> Cp. Eikeland (Downstream natural gas 2007), p. 2.

<sup>19</sup> Cp. Eikeland (Downstream natural gas 2007), p. 2.

<sup>20</sup> Cp. Wu (Vertical integration 1992), p. 5.

monopolistic. On the other hand, by means of vertical integration, expressed in merger and acquisitions, European energy and gas companies get a stronger bargaining power, especially when it comes to negotiating energy contracts with external gas suppliers.

In the next chapters, the stressed theoretical concepts will be discussed further and on examples.

## **2. European natural gas market**

### **2.1 Basic facts about natural gas**

Having been reserved for decades basically for the more noble uses of industry, natural gas now is the energy of choice in a multitude of applications.<sup>21</sup> Natural gas is a clean energy source with the highest hydrogen content of all fossil fuels. Proven reserves are very large and ultimate resources are huge. Natural gas has certainly a key role to play as an energy source in the 21<sup>st</sup> century; especially as demand is steadily growing. Nevertheless, since its first large-scale application around 1940, gas has always been in competition with other energy sources. The percentage of natural gas reserves located either offshore, in difficult or in distant areas is growing. Technical progress remains essential for maintaining its competitiveness, and for developing new outlets for natural gas.<sup>22</sup>

Natural gas is a dilute form of energy when compared to oil. At standard conditions (15° C, 1013 millibar), 1 ton of gas occupies a volume of some 1350 m<sup>3</sup>, whereas 1 ton of oil occupies a volume slightly higher than 1m<sup>3</sup>, according to its specific gravity. This means that natural gas is more difficult and costly to transport and to store than oil. There are two basic ways to transport natural gas:

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<sup>21</sup> Cp. Eurogas (European gas market 2006), pp. 9-12.

<sup>22</sup> Cp. IFP (Natural gas fundamentals 2002), p. 1.

- in gas pipelines, under pressure;
- in the form of Liquefied Natural Gas (LNG), cooled at a temperature close to its boiling point at atmospheric pressure (around – 160 °C).

Both are capital-intensive, with long construction times and therefore a considerable period is needed to pay back the initial investment. Pipelines are generally more cost-effective, as a rule. They do however tie the consumer to the supplier which creates a negotiating position which sometimes favours the supplier and sometimes the consumer, but always involves a certain amount of trust.<sup>23</sup>

Gas is very different from oil because the supply options are smaller and more rigid and storage of gas is much more expensive than that of oil.<sup>24</sup> Characteristic for gas industry is the great financial risk involved and the long horizon over which these risks should be managed. Risks are based on very high investment costs and the lack of flexibility of the supply chain: huge, specific investments have to be made into facilities that produce and transport gas from a specific gas province, or field, to a specific area of consumption over a very long period of time. The existing system locks (curls) producers and consumers into a long term, mutual relationship of significant dependence.

Gas operations have a vertically-integrated character from production to consumption (the so-called *gas chain*).<sup>25</sup> Typically, gas supply systems entail four segments: exploration and production, transmission, distribution and trading. The *exploration and production* segment includes a diversity of firms involved in exploration, drilling, production, and, the collection of the gas from the fields' wellheads, to move it to transmission pipelines. Gas production is a potentially competitive segment of the industry. Gas producers sell natural gas to a gas utility, or to traders, which themselves sells it to the end-customers.

Gas *transmission* consists of long distance, high-pressure gas pipelines from the producers to the consumer markets, or LNG systems that involve

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<sup>23</sup> Cp. IEA (NGMR 2007), p. 22.

<sup>24</sup> Cp. Stern/Linde (The future of gas 2004), p. 4.

<sup>25</sup> Cp. Cameron (Competition in energy 2007), p. 1.67.

liquefaction, ocean tanker transport and re-gasification terminals. Natural gas *distribution* is composed of the local operations that are necessary to deliver natural gas to the end users, with low-pressure pipelines, metering, and supply activities for particular types of consumers. The transmission and distribution segment of the industry can be identified as a natural monopoly, because of the economies of scale and scope, high fixed costs of pipeline construction and the relatively low variable costs of their operation, plus their crucial facility character.<sup>26</sup>

*Trading:* The resale of natural gas in the wholesale and retail market is currently going through a period of changes: new flexible short term trading and contractual agreements will be provided to balance supply and demand and endow market participants with the essential flexibility.

While distribution, trading and marketing belong to the downstream natural gas market, gas transmission via high-pressure pipelines can be regarded as midstream sector of gas chain; gas exploration, drilling and production can be considered as an upstream part of the gas chain.<sup>27</sup>

## **2.2 Natural gas demand in EU**

Over the past thirty years, natural gas has become the second most important source of energy in Europe, its share of the Total Primary Energy Consumption (TPEC) growing from 9.6 percent in 1973 to the current 24.6 percent and expected to reach 27 percent in 2030 (Figure 2-1).<sup>28</sup>

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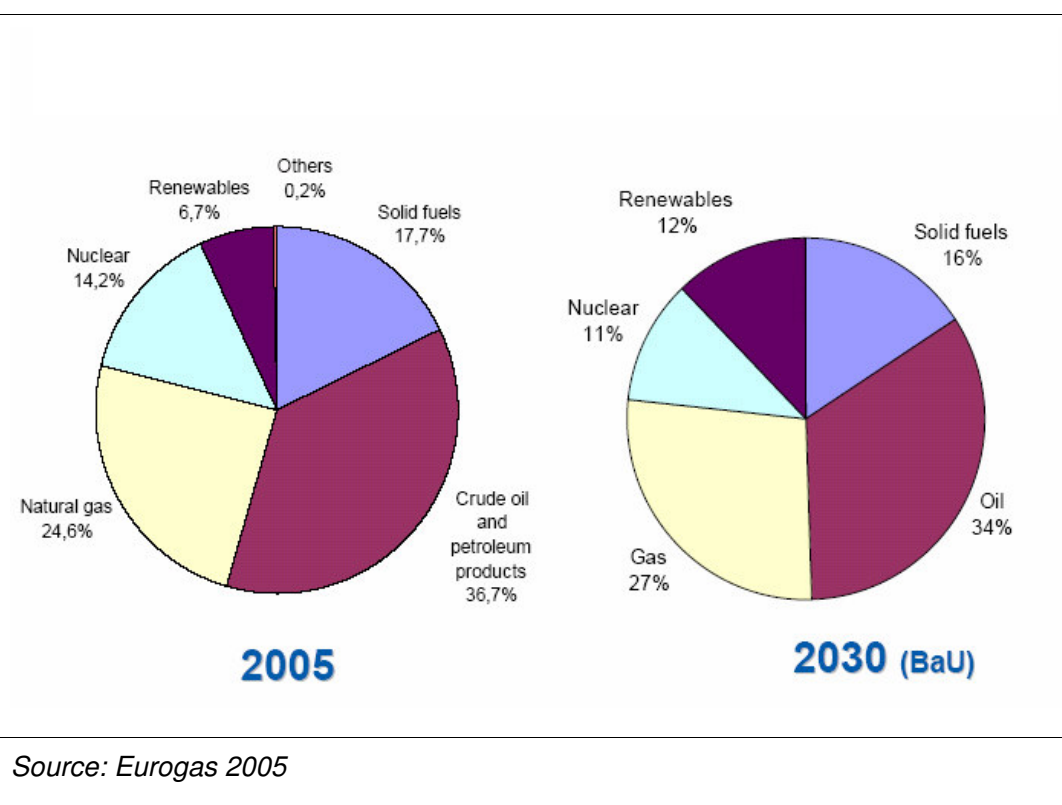
<sup>26</sup> Cp. Stern/Linde (The future of gas 2004), p. 10.

<sup>27</sup> Cp. Boussena a.o. (Le défi pétrolier 2006), p. 88.

<sup>28</sup> Cp. Eurogas (European gas market 2006), p. 12.



Figure 2-1: EU-27 Energy mix: growing importance of natural gas



Source: Eurogas 2005

According to Eurogas<sup>29</sup>, the European Union's primary natural gas demand will increase from currently 438 bcm and is expected to reach 625 bcm in 2030, which is an increase of 43 percent. Europe's primary natural gas demand is projected to increase by an average 1.7 percent over the period 2004-2015, and gas is expected to be the fastest growing fuel source in OECD Europe.<sup>30</sup>

Germany, UK and Italy are the largest consumers of natural gas in European Union, while Spain presented the fastest growth rate, almost 12 percent p.a. between 1990 and 2004.<sup>31</sup>

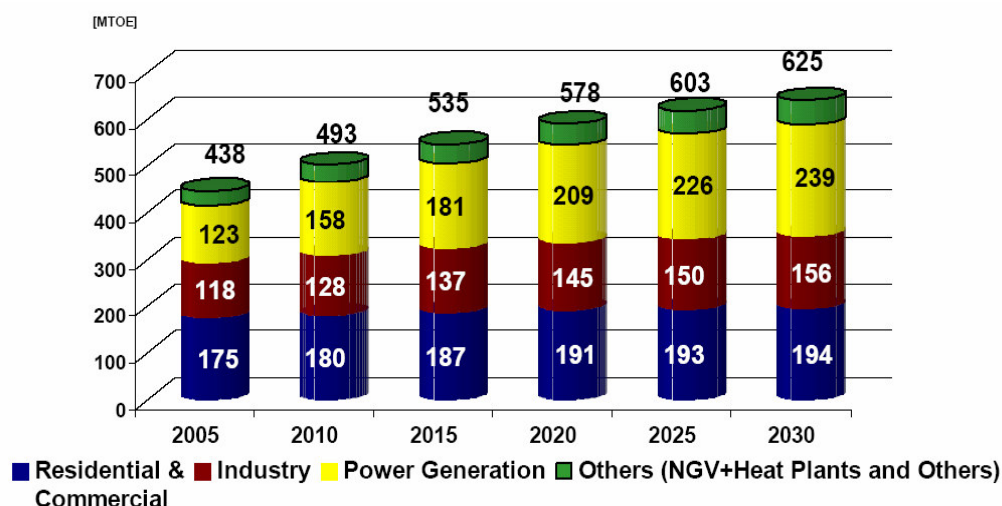
Natural gas can be used in different sectors: residential and commercial (39.3 percent), industry (35.2 percent), power generation (20.8 percent) and heat plants (Figure 2-2).

<sup>29</sup> Cp. Eurogas (Long-term outlook 2007), p. 2.

<sup>30</sup> Cp. IEA (NGMR 2007), p. 57.

<sup>31</sup> Cp. Cedigaz (Players on European gas 2005), p. 47.

Figure 2-2: EU-27 Natural gas demand outlook by sector



Source: Eurogas 2007(Long-term outlook 2007), p. 3

As it can be seen from the graph, the bulk of increased demand for natural gas in EU is expected to come from increased use of gas in *power generation*, particularly because of developments in UK, Spain and Italy. Natural gas market report 2007<sup>32</sup> of the International Energy Agency projects that gas-based power generation will increase by 3.1 percent in average per year over the period 2005-2015, increasing the share of gas in power generation from 28 percent to 38 percent. The reasons for the expected growth in the power generation sector are the environmental benefits of gas over coal, shorter plant construction times and the highly efficient technology.<sup>33</sup>

The employment of natural gas to generate electricity depends, however, on a number of factors. Up to now, the different member states set diverse priorities, resulting in quite a heterogeneous situation. The future importance of gas thus

<sup>32</sup> Cp. IEA (NGMR 2007), p. 57.

<sup>33</sup> Cp. Eurogas (Long-term outlook 2007), p. 4.

depends on the share given to nuclear power generation, to renewable energies, and on the gas price.<sup>34</sup>

Gas currently holds a market share of approx. 35 percent in the *residential and commercial sector*, which makes it the market leader in this sector. In 2005, about 80 million homes in the EU-27 were supplied with gas. In the future, the population in the EU-27 will grow only moderately, in some countries it is even likely to decrease, so only very modest growth in this sector is expected. The reasons are:

- Already high market penetration in some major gas consuming countries. Over time, other countries will reach gradually saturation in the residential and commercial market;
- Low population density, settlement structures and topographical conditions in some countries set relatively narrow economic limits to greater market penetration;
- Improved energy efficiency of buildings through the implementation of better thermal insulation standards and the use of new heating systems with higher energy efficiency;
- Increasingly mild winters (2006/07, 2007/08), plus general awareness of the consumers of sky rocking energy costs.

All these factors are likely to contribute to a very slight growth in this sector. Eurogas expects the gas sales to increase by only 0.4 percent per year until 2030.<sup>35</sup>

In the *industrial* sector, gas currently accounts for 33 percent of the final energy consumption and thus is a major source of energy in this market. However, in this sector, the price of energy plays a crucially important role, and only if natural gas can be supplied at competitive prices, it will then be in a position to expand its market share and its sales volumes at the expense of oil and coal. But even if energy consumption in this sector will increase, it will be outbalanced by

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<sup>34</sup> Cp. Stern (Security environment 2006), pp. 23-26.

efficiency-improving investments in plant modernisation and replacements. Based on these assumptions, though with some support from emissions trading, it can be hoped, that gas sales to industry could increase slightly by 1 percent per year until 2030.<sup>36</sup>

To sum up, there are many factors that will determine future gas demand: first and foremost the price. All forecasts depend on whether the price will continue to be bound to that of petrol. In regards to the second factor, the shares of nuclear and renewables in the national energy mixes depend on state and referendum decisions. Mild winters might be outbalanced by inappropriate high use of climatization in ever-hotter summers. And environment protection measures and climate change awareness have to be taken into account, as well.

## **2.3 Natural gas reserves**

The Netherlands hold EU's largest gas reserves with a proven gas resource base of 1492 bcm, closely followed by United Kingdom (905 bcm).<sup>37</sup> Germany, Italy and Denmark have smaller gas reserves.

The North Sea holds the bulk of Europe's gas reserves and is one of the leading gas producing regions worldwide. The North Sea is a high cost producing region, but yet still enjoys the benefit of real assets such as political stability and the proximity of major European consumer markets, ensuring that the gas is transported at relatively short distance and low cost. However, the North Sea reserves are expected to decline: UK gas production is projected to fall steeply to the point where the country may be 40 percent dependent on imports in the early 2010s, rising to as much as 80 percent by 2020. Dutch

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<sup>35</sup> Cp. Eurogas (Long-term outlook 2007), p. 3.

<sup>36</sup> Cp. Eurogas (Long-term outlook 2007), p. 4.

<sup>37</sup> Cp. Cedigaz (Players on European gas 2005), p. 13.

production may be maintained at current levels until 2010-15 with steep decline afterwards.<sup>38</sup>

To date, based on present knowledge of European gas resources, indigenous gas production will not increase beyond 2010. How fast it will decline is a matter of debate, but in the absence of substantial additional discoveries it can soundly be assumed that the European gas industry will become more and more dependent on imports.

There are sufficient gas reserves available in the long run in countries which are accessible in terms of transmission distances. Contrary to the oil supply situation, world natural gas reserves are not so highly concentrated, although large portions of them are situated in the same regions as the main oil fields. Russia has the largest, single national gas reserves, accounting for 26.6 percent of the world in total<sup>39</sup>, and is by far the largest gas exporter. The Middle East yields 35.7 percent of the world's total gas reserves, but also Africa and the Caspian region are emerging recently as gas exporters.<sup>40</sup>

The analysis of gas reserves by geographic areas respectively reveals wide disparities existing in terms of reserve-to-production ratios. While the Middle East, still a modest producer, given the size of its potential, has 234 years of gas reserves at the current production rate, the former Soviet Union 76 years.<sup>41</sup>

## **2.4 Production and Supply in EU**

It is expected that natural gas production within EU will decrease and further enhance the supply gap over the coming decades, although the current high gas prices may extend reserves slightly and thus prolong production. Main gas producing countries within the EU are the UK (although it became in 2006 a net-gas importer)<sup>42</sup>, the Netherlands, but also Germany, Italy, Denmark and Poland. The EU produces only around 43 percent (190 bcm) of its gas

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<sup>38</sup> Cp. Stern (Security environment 2006), p. 2.

<sup>39</sup> Cp. Eurogas (European gas market 2006), p.10; Boussena a.o. (Le défi pétrolier 2006), p. 87.

<sup>40</sup> Cp. Boussena a.o. (Le défi pétrolier 2006), p. 87.

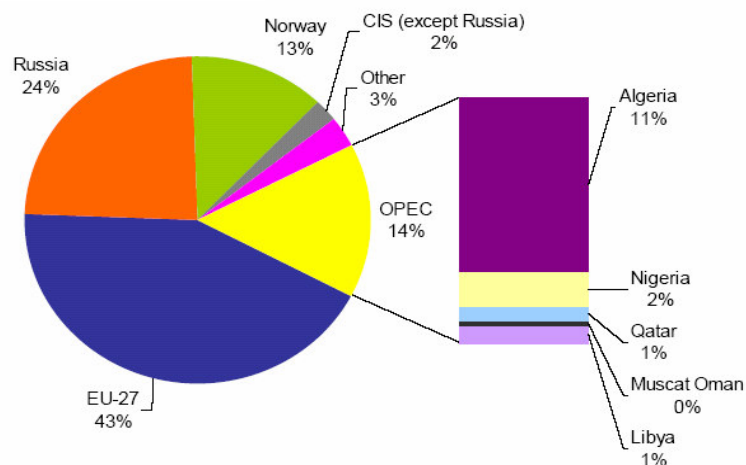
<sup>41</sup> Cp. Boussena a.o. (Le défi pétrolier 2006), pp. 98-103.

<sup>42</sup> Cp. Tran (Gas prices 2005).

consumption.<sup>43</sup> The most important suppliers of the EU are Russia, Norway and Algeria, as it can be seen in Figure 2-3.

In 2004 around 230 bcm was imported by pipeline (53 percent from Russia, 32 percent from Norway, 15 percent from Algeria). Another 36 bcm was imported as liquefied natural gas (LNG) mainly from Africa (85 percent) and the Middle East.<sup>44</sup>

Figure 2-3: EU-27 origins of natural gas



Source: Eurogas 2006

Detailed information about imports in EU and the biggest exporters is presented in the Figure 2-4.

<sup>43</sup> Cp. Eurogas (European gas market 2006), p. 12.

<sup>44</sup> Cp. Boussena (Le défi pétrolier 2006), p. 88.

*Figure 2-4: Natural gas supplies to Europe from major exporters in bcm per year (2004)*

	Norway		Netherlands		Russia		Algeria		Middle East		Nigeria		Total imports
	bcm	%	bcm	%	bcm	%	bcm	%	bcm	%	bcm	%	
Belgium /Luxemburg	7	35%	8	37%	0	1%	3		–		–		21
Germany	26	29%	22	24%	38	41%	–		–		–		92
Finland / Sweden	–		–		5	81%	–		–		–		6
France	15	33%	–		12	26%	7	15%	0,1	0,2%	1	2%	45
Greece	–		–		2	80%	1	20%	–		–		3
UK	9	80%	1	4%	–		–		–		–		11
Italy	7	10%	10	14%	21	30%	26	37%	–		4	5%	70
Netherlands	4	32%	–		3	20%	–		–		–		14
Austria	1	10%	–		6	77%	–		–		–		8
Spain / Portugal	2	7%	–		–		16	53%	5	17%	6	20%	31
Baltic*	–		–		5	100%	–		–		–		5
Poland	1	5%	–		8	87%	–		–		–		9
Czech / Slovak Rep. / Hungary	3	9%	–		24	85%	–		–		–		28
Slovenia/Croatia (FY)	–		–		2	73%	0	20%	–		–		2
Bulgaria / Romania	–		–		8	85%	–		–		–		9
Turkey	–		–		14	65%	3	15%	–		1	5%	22
<b>Total Exports to Europe</b>	<b>75</b>		<b>40</b>		<b>146</b>		<b>56</b>		<b>5</b>		<b>12</b>		<b>374</b>

*Source: Cedigaz 2005*

## 2.5 Investment

A characteristic feature of gas is that transportation and storage of gas are much more expensive than that of any other fossil fuel. Investments in gas production and long distance gas transit (pipelines and LNG options) require large incremental capacities and volumes of gas throughput, to achieve necessary economies of scale.<sup>45</sup> Every addition in supply capacity is a large project, requiring careful planning and coordinated investments along the whole chain. These multibillion projects bring large volumes of gas to the market when they come on-stream; the amounts of gas normally exceed the volume needed by a single customer or even a single region. Markets will have to be created and buyers across different market regions may have to co-operate to absorb the new large volumes of gas. Preparation of such investments is complex and the lead times are long; the commitment to invest is made many years before the first physical gas will flow. Together, with the long amortization delay, this

<sup>45</sup> Cp. Stern/Linde (The future of gas 2004), p. 4.

means that investors and financial institutions look for an environment which offers reasonable financial and economical security.<sup>46</sup>

As the EU gas market is currently heading for a thorough period of change, where downstream infrastructure having been natural monopolies are going to be dismantled and separated from the competitive business of gas supply, utilities are facing a lack of incentives to invest large sums in such new infrastructure. This is due to the fact that regulation is designed to foster competition and to reduce costs for purchasers. This results in the situation, that within many European countries, current infrastructure investment is below the necessary level.<sup>47</sup>

## **2.6 The institutional structure of the European gas market**

After the Second World War, national governments were actively involved in the development of European gas and electricity industries. The reasons for this involvement in context of the post-war reconstruction, was the fact that in many cases they started more or less, from scratch. The fact that natural gas reserves are unevenly distributed, contributed to the creation of the European gas monopolies. Moreover, the heavy transport charges and the natural monopoly characteristics of the natural gas network are a structural cause for the monopolistic organization of this sector.<sup>48</sup> Another factor which explains the previous state control over the gas industry for the decades was a strong belief in central planning, whether in the communist context, or in the semi-socialist context in Western Europe and the presence of the biggest gas reserves in politically sensitive regions. Strong European orientation towards nuclear power, a sector aligned with military-industrial context, anticipated big requirements of security.

### **2.6.1 The two-level European gas market**

The European gas market was developed on two separate levels:<sup>49</sup>

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<sup>46</sup> Cp. Stern/Linde (The future of gas 2004), p. 8.

<sup>47</sup> Cp. IEA (NGMR 2007), pp. 54-56.

<sup>48</sup> Cp. Pirowska (East European gas 2006), pp. 3-7.

<sup>49</sup> Cp. Percebois (Gas deregulation 1999), pp. 9-16.



- The *national level*, with the development of national or regional transport or wholesale monopolies. These monopolies developed the existing transport and distribution networks in co-ordination with the development of national production, and later on contributed to the setting-up of the major gas importation infrastructures with the producers.
- The *European level*, which is characterised by a two-sided oligopoly, balanced between major producers and major national companies, with the exception of the United Kingdom, which has long since differed from the continental market.

The European gas market was mainly organised as an oligopoly of producer-exporters from countries outside the European Union (Sonatrach in Algeria, Statoil in Norway, Gazprom in Russia) and from the Netherlands (Gasunie) and a purchasers' oligopoly, including gas companies in European countries (Ruhrgas in Germany, Distrigaz in Belgium, Gaz de France in France, SNAM in Italy, OMV in Austria ), which are in monopoly or quasi-monopoly positions in their national wholesale markets. It should be noted that the situation in the national markets differ from one country to the other.<sup>50</sup>

State-owned Gaz de France (GDF) retains a virtual monopoly over the French market, despite the fact that Elf Aquitaine was France's principal domestic gas producer. Elf and Total participated to a very limited degree in some of GDF's transmission and industrial marketing systems, but the control remains firmly with the French Ministry of Trade and Industry.<sup>51</sup> In Italy, SNAM was also state-owned, and had a de facto monopoly of imports and transmission, whereas the company Agip produced nearly all of Italian natural gas. Both these companies are now under the umbrella of the partly-privatized Eni, but the state still pulls the strings, and there is as yet no real competition. In contrast, the situation in Germany was different: the federal Government had no direct role in the development of the natural gas industry and there is no monopolistic state-owned player that dominates the market.<sup>52</sup> However, in the complex, multi-

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<sup>50</sup> Cp. Finon/Locatelli (Liberalisation 2002), p. 3.

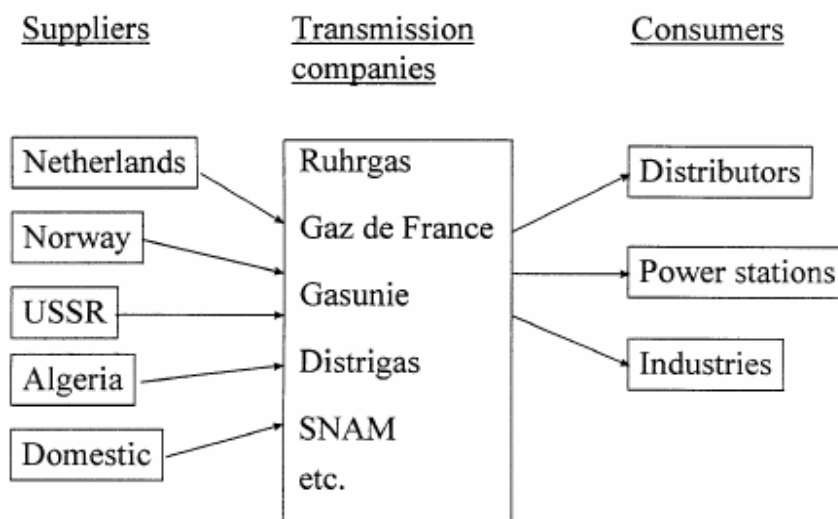
<sup>51</sup> Cp. Percebois (La politique gazière 2005), p. 36.

<sup>52</sup> Cp. Asche a.o. (European market integration 2002), pp. 251-253.

layered and regional German market, local government controlled and still controls distribution (Stadtwerke), while production, transmission and exports tended to be owned by the oil producers (Exxon and Shell) in partnership with German industrial interests. The municipal ownership of local distribution rights in Germany may prove to be one of the most obstinate obstacles to European liberalization. German local authorities derive up to 25 percent of their income from the sale of exclusive concession rights to gas, electricity and water companies.<sup>53</sup>

The upstream supply, too, was heavily concentrated and had a dominant government ownership. In USSR and in Algeria, gas exports were integral parts of the government. In Norway, Statoil, the state-owned petroleum-company and its junior partners NorskHydro and Saga (in which the government held strategic ownership positions) controlled the exports. At the same time, Gasunie, the supplier of gas produced in the Netherlands, half-owned by the government, held legal monopolies in all directions: export, import and wholesale trade. This existing scheme is outlined in the Figure 2-5.

Figure 2-5: Main features of traditional European gas market



Source: Cedigaz (*Strategy of players 2005*), p. 62

<sup>53</sup> Cp. Heren (Removing government 1999), p. 6.

The international oil companies involved in production (Exxon, Mobil and Shell) in exporting countries (The Netherlands, Norway) were also presented further down the chain, where they obtain stock-shares in transportation and resale companies in order to capture an additional part of gas profits downstream. However, their upstream strategy has never involved any attempt to obtain oligopolistic control over the European market. The stock-shares did not give them any industrial power in the strategy of these companies.<sup>54</sup>

### ***2.6.2 Vertical relations between production and wholesale***

Relations between the production oligopoly and the national import monopolies are structured by long-term contracts of 20-25 years, which share the risks and define a series of rights and obligations. These right and obligations regiment the relations over a long period of time but allow price-risk and volume-risk to be shared between partners along the gas chain, thus allowing substantial investments to be made in production and transport:

- The obligation to take-off a given quantity of gas, under *take or pay* clause;
- The *price indexation or net-back* clause on crude oil or oil product prices;
- The *final destination* clause, which obliges the purchaser to sell gas purchased on his market alone because of country-specific price-definition clauses, and therefore creates de facto partitions between national markets at the resale level.

The “two-level market” structure also lead to a balance of market power between producers and purchasers. On one hand, the national transmission companies can aggregate demands, due to their exclusive right to supply on a regional or national level. Armed with their capacity for managing the outlet risk, they are able to sign long-term purchase contracts to allow producers to develop the production and infrastructure necessary for the exportation of gas. The powerful position of the national transmission companies was widely regarded by the exporters as a guarantee that the purchase obligations under long-term

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<sup>54</sup> Cp. Radetski (European natural gas 1999), p. 19.

contracts would be fulfilled. Exporters at the time were hesitant about launching large-scale production investments, until such guarantees had been obtained. The strength of national transmission companies was also regarded as essential to ensure sufficient bargaining power for obtaining favourable import prices.<sup>55</sup> In addition as holders of a sales monopoly, European gas companies are also able to discriminate between various market segments according to the conditions for replacing gas with an alternative supply. The gas producers themselves have tended to take on the price risk: the price regulation and indexation clauses, based on the principle of *net-back*, allow gas prices to be maintained at a competitive level with rival fuels in their different uses (mainly oil products), while minimising the impact on operating margins of price variations.<sup>56</sup> In this context, monopoly gas supply companies have to be subject to government/ regulatory control to ensure that all the benefits of the monopolist are not completely captured in higher profits for the company, but are also reflected in consumer prices.

This pattern of development has ensured that gas has entered the European energy market at competitive prices, while spreading and reducing the risks associated with the high capital costs along the gas chain. This model is suitable for newly developing gas markets where there is no, or limited, gas infrastructure, but it has been questioned in the context of a mature market, where the initial investments have long been amortised and where existing gas supply companies face virtually no volume risk, at least by historical standards. In this context, the main risk is associated with the price the producer's receive for their gas.

The existing structure is set to undergo fundamental change due to the liberalisation of the gas market, which has been prescribed by the EU's 1998 first Gas Directive and elaborated by a second Directive in 2003.

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<sup>55</sup> Cp. Radetzki (European natural gas 1999), p. 19.

<sup>56</sup> Cp. Boussena a.o. (Le défi pétrolier 2006), p. 23.

### **2.6.3 Vertical integration between wholesale and retail supply**

The separation and fragmentation of the distribution activity in the period prior to liberalization was far from being conducive to development of competition in supplies, although the existence of a number of suppliers might give an impression of vivid competition. Indeed, some barriers stem from past vertical relations, others from new strategic moves by incumbent companies in to the downstream markets.<sup>57</sup>

Traditionally, as the Germany example shows, distributors served regional networks, where they had a monopolistic stance. They did not try to encroach into other distributors' regions; nor did they ever make a bid to industrial consumers, bypassing regional distribution. And, finally, they did not have a direct link to the foreign gas producers. In Germany, Ruhrgas served other regions than Thyssengas or E.ON gas subsidiaries. A parallel situation prevailed in Austria, Belgium, France and Spain, where the distributors had no direct contracts with foreign gas producer companies, but were supplied by the national incumbent.

Liberalization and economic constraints tend to increase vertical and horizontal concentrations. Thus the number of German *Stadtwerke* has dropped considerably. RWE and E.ON are now controlling several regional gas transporters and a good number of *Stadtwerke*. To counter this development the European Commission launched gas release programmes and unbundling, which allowed the entry of new vertical companies. In Spain, Germany and France the gas release programmes help oil and gas companies to strengthen to establish and to develop their positions in the supply of industrial customers. The chapter "Gas market liberalization" will further describe details of that process.

## **3. Key drivers of change on the European gas market**

At present, the natural gas market in the European Union is undergoing considerable change. These changes do not only have an impact on the natural

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<sup>57</sup> Cp. Finon/Midttun (Reshaping European gas 2005), pp. 275-278.

gas market within Europe but also on the supply relations between Europe and other gas producing countries. Hence, the gas sector has been identified as a strategic sector by the European Commission and by the International Energy Agency (IEA).<sup>58</sup> Three main challenges for the next decades can be identified: an increasing demand for natural gas, an increasing import dependency on gas supplied from outside the European Union and the liberalization of the gas sector initiated by the European Commission. These changes and the high political stakes motivate a closer look at the gas sector. The market structures within the European Union as well as the import relations to gas producing countries are issues that need further research.

### **3.1 Increasing demand for natural gas**

The Kyoto protocol and its reduction goals for carbon dioxide emissions is one of the main drivers for the projected increase in use of natural gas in Europe. Natural gas has lower carbon content than coal and oil; about 50 percent lower than coal, and 25 percent lower than oil, which makes gas a favoured fuel from an environmental perspective.<sup>59</sup> Besides environmental reasons, another important factor for natural gas usage is the longer term supply situation. Currently, the EU imports 57 percent of the natural gas that it uses, whereas the import share of oil is as much as 75 percent. Both import shares will increase in the near future given the limited reserves within the EU. Indeed, at the current level of production, the reserve/production ratio translates to around 67 years worldwide for natural gas and 41 years for crude oil.<sup>60</sup>

The driving force behind the gas demand growth in the EU is the increased use of gas for power generation. In the 1990s, the EU experienced a rapid rise in the market share of natural gas in electricity production: its share in overall electricity production rose from 12 percent in 1990 to current 28 percent.<sup>61</sup> However, wide disparities can be observed among the countries, the share of gas in power generation ranging from 2 percent in Sweden to 46 percent in

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<sup>58</sup> Cp. Holz a.o. (Strategic model of European gas 2006), pp. 5-7.

<sup>59</sup> Cp. UNFCCC (Kyoto protocol 1998).

<sup>60</sup> Cp. Boussena a.o. (Le défi pétrolier 2006), p. 88.

<sup>61</sup> Cp. Eurogas (Long-term outlook 2007), pp. 3-5.

Netherlands.<sup>62</sup> At the beginning of the development stood a number of technological innovations in the gas turbines, whose conversion efficiency was rapidly improving, with the consequence of better exploitation of a given gas quantity, thus less conversion losses. With Kyoto and the WALDSTERBEN dominating the headlines, the issue of our environment promoted gas, whose combustion sets free far less CO<sup>2</sup> than that of oil and coal, let gas to a preferential energy source. And soon the costs of building a gas plant vastly underscored those of erecting an oil-fuelled power station.

Low capital costs and high conversion efficiency of gas turbine technologies; environmental concerns and competitive gas prices were the driving forces. This evolution was also characterized by a growing interconnection between European gas and power industries. The implementation of the European Electricity and Gas Directives, introducing greater competition to the EU gas and electricity market is expected to perpetuate this trend. In Europe at the present moment 62 percent of new electricity plants under construction are gas-fired; and Natural gas market review estimates that gas based power generation will increase by an average 2.7 percent per year over the period 2002-2030, increasing the share of gas in power generation to 38 percent.<sup>63</sup> In fact, the use of natural gas for power generation depends on several factors including the future electricity demand growth, the need for new generation capacity, fuel costs, the evolution of the prices of competing fuels (particularly coal, because unlike oil, gas has many substitutes in power generation and steam raising applications) and the evolution of the costs of renewable power generation like wind power.<sup>64</sup>

### ***3.1.1 Gas demand in long-term***

If we speak in general about gas demand in middle and long term certain factors should be taken into consideration.

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<sup>62</sup> Cp. Kjärstad/Johnsson (European gas market 2006), p. 10.

<sup>63</sup> Cp. IEA (NGMR 2007), p. 124.

<sup>64</sup> Cp. Kjärstad/Johnsson (European gas market 2006), pp. 7-14.

Based on the current market situation there are no clear indications that renewables will reach a market penetration high enough to significantly influence the growth in demand for gas over the next decades – until 2030.<sup>65</sup> In 2006, the share of renewable energy (hydropower, wind power, solar and biomass) in the primary energy has reached 6.5 percent. Although increasing dramatically in some EU countries such as Spain and Germany (with respectively 1.6 GW and 2.2 GW of new wind power capacity installed in 2006) this figure is still very far away from the 12 percent objective planned by the European Union for 2010 and the 2020 20 percent respectively.<sup>66</sup>

From 2013 onwards, EU will further restrict CO<sup>2</sup> emissions – be it by raising technical standards, or by imposing extra taxation. The impact of switching from coal-fired to gas-fired power generation contributes between 50 and 75 percent of the total reduction in CO<sup>2</sup> emissions per kWh generated, because natural gas has less carbon than coal and natural gas combined cycle (NGCC) power plants are more efficient than coal-fired power plants.<sup>67</sup> Whatever the details of the move, it will help gas to widen its share, as it will inevitably hit the other fuels.

Some member states – often due to referendums – have decided to phase out nuclear power generation – among them Germany, Austria, Belgium, Spain and Sweden.<sup>68</sup> So gas will have one competitor less. Substitution of nuclear power with natural gas, a more likely option for countries that would phase out nuclear or abstain from replacing existing nuclear plants coming to their end of life.<sup>69</sup> From the other side, individual member states spend vastly varying sums into research and promotion of renewable and of nuclear energies. In those member states where nuclear power has not the image of a murderer, the erection of new-generation nuclear power plants will automatically restrain the growth of gas demand.

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<sup>65</sup> Cp. Kjärstad/Johnsson (European gas market 2006), pp. 7-9.

<sup>66</sup> Cp. Lewiner (Energy markets observatory 2007), p. 3-12.

<sup>67</sup> Cp. IEA (Scenarios 2006), p. 48.

<sup>68</sup> Cp. Kjärstad/Johnsson (European gas market 2006), pp. 5-10.

<sup>69</sup> Cp. EC (Annex to the Green Paper 2006), p. 27.



The evolution of the gas price, heavily influenced by the prices of the other energy sources like petrol, or of exploiting the said sources, like the building of windmills and tide power plants. We have been witnessing the energy prices double in the past twelve months; but any serious prediction is yet not possible. However, the price of coal as the main competitor of gas in power generation is also very important: “when making an investment, power generators base their decisions on projected relative prices between coal and gas”.<sup>70</sup>

Emerging of new technologies, as storage of CO<sub>2</sub> in subsurface reservoirs may also influence in the future the demand for natural gas.

### ***3.1.2 Emerging of new technologies influencing gas demand***

New technologies will impact all value chain segments: generation (third-generation nuclear plants, geological CO<sub>2</sub> sequestration), networks (smart metering), retail (new internet tools such as Web 2.0 for changing the behaviour of customers).<sup>71</sup> Combinations of these technologies with Information System innovations are reshaping the sector and will influence the future demand.

Storage of CO<sub>2</sub> in subsurface reservoirs or so-called carbon capture and storage (CCS) technology will be fundamental in making fossil fuels environmentally acceptable as global demand for oil, coal and gas is set to continue surging in the coming decades. CCS – is a process, by which carbon dioxide is separated and stored indefinitely. Once captured, the CO<sub>2</sub> must be stored permanently. Possibilities include: geological storage (i.e. injecting CO<sub>2</sub> into empty underground coal, oil or gas fields or into saline aquifers); ocean storage (although there is great uncertainty as to the storage time and environmental impact of this option) and mineral and biological storage (combining chemically CO<sub>2</sub> with naturally occurring minerals such as magnesium silicate). The capture and storage of CO<sub>2</sub> from steam reforming of natural gas is restricted to large-scale, centralised production and is not cost-

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<sup>70</sup> Cp. Honore (Natural gas demand 2006), p. 28.

<sup>71</sup> Cp. Lewiner (Energy markets observatory 2007), p. 11.

effective for small, decentralised hydrogen production or for compact reformers on site.<sup>72</sup>

The use of CO<sub>2</sub> capture and storage (CCS) in the industrial, fuel transformation and power generation sectors can prevent CO<sub>2</sub> reaching the atmosphere. It offers the potential to reduce CO<sub>2</sub> emissions from fossil fuels plants by between 85 and 95 percent. This option can be applied to coal and gas-fired power plants.<sup>73</sup>

The conversion of natural gas into liquid fuels is also an attractive option to commercialise abundant gas reserves. Gas to Liquids (GTL), with virtually unlimited markets, offers a new way to unlock remote gas reserves, complementary to other traditional technologies such as Liquefied Natural Gas (LNG) and pipelines.<sup>74</sup>

European Union is currently involved in the research project – International Thermonuclear Experimental reactor (ITER). This project is the real challenge to produce electrical power by nuclear fusion, which does not generate dangerous waste. In the long term, it could be a very interesting alternative to nuclear power; however it should be noted, that ITER is unlikely to become reality until several decades.<sup>75</sup>

### **3.2 Increasing import dependency**

An important factor in the long-term natural gas supply is the trend towards declining European gas production and resource discovery.<sup>76</sup> While gas demand in Europe will rise by 43 percent by 2030, domestic production will decrease. According to estimation of the European Commission, the proportion of imports in gas supplies will reach around 70 percent in the period 2020-2030.<sup>77</sup> Against this background, the European gas industry has already contracted gas deliveries from regions outside Europe that fully cover the foreseeable demand

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<sup>72</sup> Cp. EC (WETO 2006), p. 78-79.

<sup>73</sup> Cp. IEA (Scenarios 2006), p. 48.

<sup>74</sup> Cp. IEA (Oil and gas technologies 2005), p. 97-99.

<sup>75</sup> Cp. Lewiner (Energy markets observatory 2007), p. 11.

<sup>76</sup> Cp. Stern (Security environment 2006), p 2.

in the medium term. It will not be until 2015 that a substantial gap emerges between demand and the supplies coming from European production or imported from outside Europe. In absolute details this development is shown on the Figure 3-1.

The proportion of additional necessary supplies will gradually widen from 10 percent in 2015 to 22 percent in 2020 and to approximately 39 percent in 2030. This is not a fundamentally new phenomenon, but reflects the long-term supply situation: the further one looks into the future, the larger the volumes still needed are considered to be. Consequently, the European gas industry is now focusing its gas procurement especially on the period after 2015.<sup>78</sup>

Today, it can basically be assumed that for the European gas industry, which is becoming ever more dependent on imports, there are sufficient gas reserves available in the long run in countries which are accessible in terms of transmission distances. They include Russia, Norway, Middle East, the Caspian basin countries and in North and West Africa. Of the world's proven recoverable gas reserves totalling 181.46 trillion m<sup>3</sup> with a static life of 63 years, 75 percent are located in such countries situated at a favourable distance from Europe.<sup>79</sup> The proximity of established EU market makes the EU a very attractive customer for these countries/regions.<sup>80</sup> Nevertheless, new additional gas will come from more distant regions and from fields that are increasingly difficult to develop with the consequence of rising production and transport costs.

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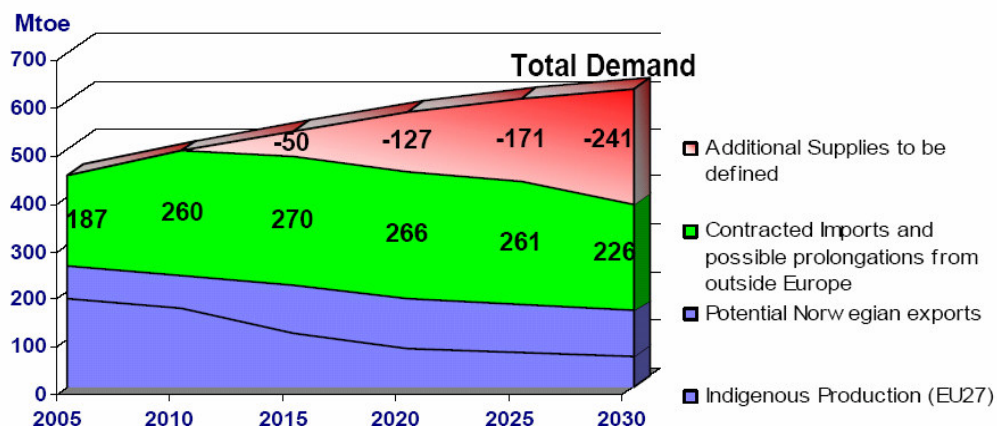
<sup>77</sup> Cp. Eurogas (European gas market 2006), p. 12-14.

<sup>78</sup> Cp. Eurogas (Long-term outlook 2007), pp. 2-5.

<sup>79</sup> Cp. Eurogas (Long-term outlook 2007), pp. 2-5.

<sup>80</sup> Cp. EC (Annex to the Green paper 2006), p. 25.

Figure 3-1: European supply gap up to 2030



Source: Eurogas (Long-term outlook 2007), p. 5

Taking into account the growing gas demand world wide and the decreasing indigenous production in Europe, it will require a huge effort and substantial investments of the suppliers to mobilise this gas in time. Besides, when assessing supply options, it has to be kept in mind that competition for supplies will become far stiffer on international procurement markets. Other regions like North America and in particular South-East Asia, with its emerging economies will increasingly compete for gas on the world market.

### 3.2.1 Security of gas supply in European Union

In the recent years, security of energy supply was jeopardized by geopolitical interests and natural disasters, leading to disruptions. According to definition of International Energy Agency (IEA), energy security is defined as availability of the regular supply of energy at an affordable price.<sup>81</sup> European Union in its Green Paper "Towards a European strategy for the security of energy supply" adds to this definition the respect for environmental concerns and perspective for sustainable development.<sup>82</sup> The European Commission sketch a strategy to keep the security of EU energy supply to highest level possible and makes

<sup>81</sup> Cp. IEA (Sustainable energy future 2001), p. 76.

<sup>82</sup> Cp. EU (Green paper 2000), pp. 2-4.

proposals in terms of potential safeguards. The security of gas supplies is important element of this strategy, especially considering the expansion natural gas imports in EU in long term.

The security of gas supplies covers a large number of aspects and requires a wide range of solutions and guarantees. Security is related to physical risks as well as to economic risks. In regards to natural gas, the physical risks are not so much related to the availability of gas resources than to potential political crisis, disruptions in the transport chain (due for instance to an accident) or uncertainties as to the realization of the required investments to bring gas from the producing to the consuming regions.<sup>83</sup>

The concept of security of gas supply has two main aspects: long-term and short-term security. While long-term security, concerns the EU's ability to ensure a reliable and economic supply of efficient energy in the long-term, the short-term security means the avoidance of interruptions of contracted gas supply, and guarantee for customers to receive their gas supply in fulfilment of their contracts. For both these aspects of security the following factors are of big importance: the availability of physical gas (indigenous production, gas storage, imports u.a.) and physical transportation capacity to move the volumes of gas to the end consumer.

It can be also distinguished between the external and internal security. While the external security or energy supply security ensured that the imported energy products meet the needs of the consumers in time and quantity, the internal security ensured that the national production, transmission and distribution system are able to provide final customers with the energy they need.<sup>84</sup>

The IEA outlooks for natural gas outline two inter-related aspects of EU gas security: the dependence on imports and the diversity of supply.<sup>85</sup> As far as it is spoken about diversification of supply we can distinguish here several aspects: diversification of the supply routes, emerging of the new suppliers and LNG.

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<sup>83</sup> Cp. Stern (Security environment 2006), pp.17-21.

<sup>84</sup> Cp. Stern (Security environment 2006), pp.17-21.

<sup>85</sup> Cp. IEA (NGMR 2007), pp.67-73.

### ***3.2.2 Diversification of supply sources, transport routes and Liquefied natural gas***

The 1973 oil shock left a permanent long-standing impression in US and Europe, stressing the necessity to terminate the dependence on petrol. Gazprom's difficulties in January 2006 to fulfil its contingents sharpened Europe's leaders' awareness against monopolistic structures. The ensuing quest for new sources resulted in contracts with Qatar, Nigeria, Trinidad and Tobago and other far-away suppliers. Diversification of supply sources in this context mean spreading of risk by cooperating with new natural gas suppliers.

In the future, three producing countries (Russia, Norway and Algeria) will continue to provide a huge share of European gas imports.<sup>86</sup> Although, despite with additional gas exports from these countries, considering the EU gas demand in the future, new supply sources have to be developed. At the present time, almost 10 percent of the EU supplies come from the other import sources, such as Libya, Egypt, Qatar, Nigeria and Trinidad & Tobago. As far as Central Asia is concerned, it will depend on the supply route: whether gas from this region will still have to travel through Russia or a route via Turkey to Europe (Nabucco) have to be created. In the Middle East, there are several possibilities to deliver the gas to Europe: from Iran via pipeline and from the Gulf region in the form of LNG.<sup>87</sup>

In addition to the traditional gas pipeline from the Russia to Europe quite a number of additional pipelines are being constructed or in the state of projects: Blue Stream, Nord Stream, South Stream and Nabucco. Choice of priority in the realization of those pipelines is dictated to a large extent by political considerations – e.g. circumventing Russia's territory by Nabucco pipeline, avoiding the Belarus and Ukraine by the Nord Stream pipeline through the Baltic Sea to Greifswald and South Stream through the Black Sea to Bulgaria. The aim is, in any case to secure transportation of the Central Asian republics' gas to the EU.

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<sup>86</sup> Cp. Eurogas (European gas market 2006), p. 13.

<sup>87</sup> Cp. Boussena a.o. (Le défi pétrolier 2006), pp. 91-93.

However, it should be noted that in particular investments such as Nabucco, a USD 7 billion-import project which travels through five different European countries, will not be realized unless a broader view of regulation is adopted. For such a pipeline, various factors must be individually negotiated, as the rate of return, third-party-access regime, and approvals process, length of time to approval and the roles of national and EU authorities. This pipeline is very significant for European supply security as it would open a new “corridor” and supply source from the Caspian. Nevertheless, large scale international projects, such as Nabucco perhaps, give the clearest example of the way in which Europe is threatening its own future supplies of gas through regulatory uncertainty.<sup>88</sup>

LNG represents another possibility for European gas market in the context of diversification of supply and supply routes.<sup>89</sup> LNG projects, as a form of gas supply to Europe, are becoming more and more competitive and have a growing importance for Europe. The higher flexibility of LNG, which allows gas importers to diversify their suppliers and supply routes, is one of the main differences of LNG with pipeline supply which is bound by asset-specific infrastructure availability.<sup>90</sup> LNG also contributes to the development of financial viability of areas, which were difficult to access via gas pipelines. As most of gas reserves are located far away from EU markets, it is clear that LNG will play a key role to bring this gas to the market, when distance or natural or political obstacles make pipeline transport impossible.<sup>91</sup>

Three variables define the differences between LNG tanker and gas pipeline transportation costs: volume, distance to be covered and natural gas pipeline capacity. As a general rule, in the case of small distances (less than 1000 km), it is more preferable to use pipelines, while LNG transportation becomes financially viable from 4500 km.<sup>92</sup> LNG is not really a competitor to the piped

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<sup>88</sup> Cp. IEA (NGMR 2007), p. 55.

<sup>89</sup> Cp. Griffin/Smith (Liquefied natural gas 2006), p. 163.

<sup>90</sup> Cp. IEA (NGMR 2007), pp. 83-88.

<sup>91</sup> Cp. IEA (Security of gas supply 2004), p. 40.

<sup>92</sup> Cp. Reymond (Key issues on gas 2007), pp. 4169–4176.

gas, but the role of LNG is estimated to grow in Europe and can offer a major means for Europe to diversify its gas supplies.<sup>93</sup>

LNG shipments mainly come from North Africa, Nigeria and Middle East. Qatar especially, which has the third natural gas reserve in the world, already established as the biggest LNG exporter strongly increasing its production rate and will be soon among the first five exporters in the world (with Russia, Canada, Norway and Algeria). In the 2000s West Africa has emerged as an important LNG exporting region, with Nigeria as the major supplier and Equatorial Guinea and Angola likely to start deliveries over the next few years.<sup>94</sup>

If we observe the consumer side in EU we can see that in 2004, 7.8 percent of the EU external supplies were in the form of LNG.<sup>95</sup> France and Spain are among countries that have chosen LNG in order to diversify their geographical reliance on natural gas. Some countries as UK, Italy and Belgium followed them.<sup>96</sup>

There is a lot of activity in the front of LNG, indeed, this could continue to help to supply a growing part of Europe's gas requirements, but because of limitations in scale LNG will not be able to satisfy more than a portion of future gas demand. Also, contrary to pipeline trade, there is an element of competition on the LNG market, because Europe is in direct price competition with the North American market, and prospectively with the Asian market as well. If the conditions in the Asia-Pacific and US markets are right, LNG suppliers from the Middle East could well focus on these lucrative markets, rather than on Europe. The supplier can redirect cargoes into alternative destinations, if the gas prices in Europe fall below a certain trigger point, by paying some compensation to the buyer.<sup>97</sup>

### **3.3 Gas market liberalization**

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<sup>93</sup> Cp. Eurogas (European gas market 2006), p. 14.

<sup>94</sup> Cp. Chabrelie/Dickel (Challenges of cost reductions 2003), pp. 2-7.

<sup>95</sup> Cp. Eurogas (European gas market 2006), p. 14.

<sup>96</sup> Cp. IEA (NGMR 2007), p. 83-100.

<sup>97</sup> Cp. IEA (NGMR 2007), p.112.



Starting from the Anglo-Saxon neoliberal ideas of the 1980s incorporated by the Reagan administration in United States and Margaret Thatcher in the United Kingdom, fostered by many liberal think-tanks on both sides of the Atlantic, the European Commission embarked with Single European Act<sup>98</sup> on a policy of the dismantling the state-owned companies and of their privatization. The ultimate aim of the measures implied was to reduce the price of all commodities in view of making the products European industries more competitive on the world market.<sup>99</sup>

Liberalization refers to a process of market opening, which, at a minimum, removes legal barriers to trade but in EU context also involves creation of an industrial structure in which competitive forces can work and a competitive ethos can be stimulated.<sup>100</sup> Generally, in the liberalized market, customers are able freely to choose suppliers, while any statutory restrictions that limit their freedom to a particular supplier must be removed. Entry of new suppliers and producers to the market should be also possible. In the field of energy politics, this was meant to be achieved by establishing national regulation authorities, not liable to receive orders from the governments. Furthermore, the existing networks had to be strictly separated from the operators, and new entrants to the networks had to be granted unrestricted third-party access and free market prices mechanism must be established. The liberalization process was initiated by Commission's directives, which got enacted by the EU member states.

The first gas directive of June 22, 1998<sup>101</sup> stipulated the right of free access to the existing networks for producers, distributors and large-scale customers. Conditions of access to the network were as follows: the member states chose between a negotiated or regulated third-party access both for transport, and access to LNG terminals and for distribution. By August 2000, Member States had chosen regulated or mixed access. The national regulation authorities have to supervise that the gas operators' transport activities be separated, both from the viewpoint of independent accounts and of effective functionality.

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<sup>98</sup> Cp. EC (Single European Act 1986).

<sup>99</sup> Cp. Finon (Reshaping European gas 2004), p. 3.

<sup>100</sup> Cp. Cameron (Competition on energy 2007), p. 1.91.

The second gas directive adopted on June 26, 2003<sup>102</sup> by the European Parliament and the Council included new measures<sup>103</sup>, such as:

- Obligation to keep separate accounts for eligible customers and non-eligible ones, latest from July 1, 2007 onwards;
- Obligation of transport network management independent from the rest of gas activities. The directive imposes that incumbent operators must ensure that transport operations will be separated from other activities from July 1, 2004 for transportation and from July 1, 2007 for distribution;
- Deadline for nation states for opening their gas market to full competition on July 1, 2004 for industries, and on July 1, 2007 for final households. The detailed realization of this transformation was left to the individual member states, which preceded each according to its own priorities and speed;
- Injunction to impose transparent, non-discriminatory public interest obligations on gas companies regarding safety, security of supply, quality, prices and environmental protection.

Third-Party access to Infrastructure is also a very important point of gas market liberalization.

Intent to create full competition European Commission insisted that the member states pass laws obliging the incumbents to open the networks by granting new entrants Third-Party Access (TPA). TPA signifies non-discriminatory rules of access and tariffication for transmission and distribution network, LNG plants and storage facilities.<sup>104</sup> Transmission and distribution networks are regarded to be natural, regulated monopolies. To secure free access to all interested parties, the incumbent operators had to set apart their transportation and distribution operations, so that competition may start from the bases of equal

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<sup>101</sup> Cp. EC (Gas Directive 1998).

<sup>102</sup> Cp. EC (Gas Directive 2003).

<sup>103</sup> Cp. Cavaliere (Liberalization of natural gas 2007), pp. 6-9.

<sup>104</sup> Cp. Cavaliere (Liberalization of natural gas 2007), pp. 6-9.

opportunities. Such separation of the networks, including establishment of separated ownership is called *unbundling*.

There are different variants of unbundling.<sup>105</sup> Accounting unbundling implies separation of accounts within one and the same operator. Legal unbundling signifies that activities once integrated into the same firm have to be separated and assigned to newly created enterprises, but its actions continue to be owned by the same shareholders. Functional unbundling intends to keep management units separate within the framework of the extant company.<sup>106</sup> Finally, ownership unbundling is the most decisive form of de-merging activities within the gas chain into completely independent companies.

In order to make possible the entry of new gas suppliers onto the market and weaken the dominance of incumbent operators, some countries have introduced gas release programs. These gas release programs aim to promote the development of competition, whereby gas incumbents are obliged to divest a portion of their portfolio of long-term contracts. Here it should be stressed that long-term contracts remain crucial for economic viability of capital investments over time while securing outlets for the gas produced.<sup>107</sup> Gas release programs enable new entrants to achieve access to the physical resource and win market share from incumbents, even when the latter control almost all the imported gas. For example, in Spain, Germany and France gas release programs allow oil and gas companies to develop their positions in the supply to industrial clients.<sup>108</sup>

### **3.3.1 Process of transformation of the national gas markets**

Traditionally, national markets were independent from one another, and characterized by quasi-monopoly situation of one nationwide or a few regional big operators, following the ideal of a vertically integrated, regulated monopoly. Import, transmission, distribution, storage and retail supply were often all in one

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<sup>105</sup> Cp. Broomhall/Garzaniti (Gas regulation 2006), pp. 95-96.

<sup>106</sup> Cp. Cavaliere (Liberalization of natural gas 2007), pp. 6-9.

<sup>107</sup> Cp. Cedigaz (Liberalization of gas markets 2006), p. 5.

<sup>108</sup> Cp. Finon (Reshaping European gas 2005), p. 216.

hand.<sup>109</sup> The legal implementations of the past years have greatly contributed to shaking up that static situation. But progress toward full competition has in each country its own pace; furthermore, legal and de facto situation are in many a country at enormous variance.

Recently, trading and transportation companies occupy more and more of the midstream segment between gas production and customer delivery. New enterprises crop up that dispose of nothing but tonnage which they lease or rent to trading firms. Legal obligations at unbundling business fostered horizontal integration together with simultaneous vertical de-integration, thus changing enormously the look of gas markets.<sup>110</sup> Every state has set up a national regulation authority whose sole aim is to spark off the sharpest and most eager competition. Trying to impose fair business practices, they implement, as well, the guidelines for transparent, non-discriminatory TPA.

Since 1<sup>st</sup> July, 2004, industrial customers are free to select the gas provider with whom they want to contract. Intent to know the rate of success of the new legislation, and seen the many possible indicators for measuring competition, the European Commission chose the rate of switching as its favourite parameter i.e. it esteems conservatism and fidelity as negative, day-to-day fancies or easy influencability as positive properties in consumers.

In Europe, differences start between producing and importing countries. In the UK and the Netherlands, with the complete chain inside their national boundaries, full competition followed quite naturally, once the regulation obstacles were removed. Importing countries, and thus Europe as a whole, first face the fact they are masters neither of the production fields nor of the adducing pipelines, so they cannot impose any liberalization rules there, as they continue to depend on external suppliers as Gazprom or Sonatrach.

This explains the fact, that Great Britain's large customers lead the statistics. 85 percent changed their supplier; less so in Ireland. Markets such as Spain, the Netherlands and Italy show a 30 to 60 percent of large-scale consumers did

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<sup>109</sup> Cp. Cedigaz (Players on European gas 2005), p. 63.

<sup>110</sup> Cp. Cedigaz (Liberalization of gas markets 2006), p. 3-7.

quit their traditional supplier. France ranges in the European average with a switch at around 25 percent. Despite a total or high legal market opening rate, other markets such as Austria, Belgium, and Denmark still face constraints to effective competition and posted estimated switches between 5 and 10 percent. Although the German gas market is fully opened to competition, the estimated switch of suppliers in the industrial sector was about 5 percent only.<sup>111</sup>

In order to accelerate the process, the EU Commission announced on September 19, 2007 a new legislative framework draft aimed at unbundling transmission system operators from the incumbent utilities. The draft of the third gas directive foresees a model of ownership unbundling, which imply energy supply operations from transmission ones.<sup>112</sup> The model of full ownership unbundling is criticized by several countries (France, Germany), but also by representatives of business. Reiner Seele of Wingas argued: “Can we be sure that the infrastructure in which we want to invest billions will belong to us in the future?” The third package “is not based on market mechanisms”<sup>113</sup>, he complained. Therefore, the question remains as to whether a 3<sup>rd</sup> Directive will improve competition in Europe as there are no observed results on price decrease from the two previous Directives. Colette Lewiner, Energy, Utilities and Chemicals Global Sector Leader at Capgemini believes that: “Any proposal must guarantee electricity and gas security of supply and unbundling is in itself not sufficient to create a fully fluid European market.”<sup>114</sup>

### ***3.3.2 The effects of the liberalization on the market***

Now, by the beginning of 2008, five years have elapsed since the second gas directive; time enough to evaluate its effects. Also the upcoming 3<sup>rd</sup> gas directive with feared ownership unbundling is changing the situation on the European gas market.

The idea of the European Commission to create free market prices on the European gas market is still far from realization. Despite the increased role of

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<sup>111</sup> Cp. Cedigaz (Players on the European gas 2005), p. 62.

<sup>112</sup> Cp. Shuttleworth (Ownership unbundling 2008), pp. 1-8.

<sup>113</sup> Cp. EP (The third gas market package 2008).

short-term contracts (in LNG), and growing spot trade at gas hubs such as the National Balancing Point (NBP) in United Kingdom, Zeebrugge in Belgium and the Title Transfer Facility (TTF) in the Netherlands<sup>115</sup> with their price mechanism which takes into account supply and demand situation for gas in EU markets, the prices in long-term contracts are generally linked to oil and oil derivatives. Since the oil prices are increasing steadily, the same trend can be observed also on the gas market. What could be achieved in the telecommunications sector - a downward price development benefiting both business and private consumers; in the energy sector it failed. At present, no trends towards market-based pricing mechanisms (gas- to-gas competition) can be observed.<sup>116</sup> Moreover, there are no clear correlations between market opening and price level. Prices in the UK are high, although the market was already opened in 1996; on the other hand in Baltic States that only now opening their markets still enjoy the lowest prices.<sup>117</sup> On this issue it can be concluded, that market deregulations are by far not the only factor responsible for a gas prices, there are also other factors that influence the price levels in particular countries, such as history (former CIS countries), costs of transportation, demand dynamics and short-term contracts, subsidies and regulated tariffs.

Also the high level of concentration in most national gas markets can be observed. It is sustained by historical actor's control over gas import contracts, while most of them remain long-term contracts with duration of between 15-30 years. European Commission claims that the character and long duration of these contracts is one of the biggest obstacles for access of new entrants to the gas market. It also argues that the flexibility built in long-term import contracts does not motivate importers to participate in trading to manage short-term demand and supply fluctuations.

The introduction of the third party access rule abolished the incumbents' monopoly, but, the presence of their long-term contracts with upstream reduces

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<sup>114</sup> Lewiner (Energy markets observatory 2007), p. 11.

<sup>115</sup> Cp. Cedigaz (Liberalization of gas markets 2006), p. 6.

<sup>116</sup> Cp. Gammons (Energy regulation insights 2005), p. 5.

opportunities for competition. Long-term contracts constitute a form of vertical integration and limit de facto entries. Due to liberalization, incumbent operators are losing market shares in their historical geographies. The uncertainty of liberalization for market players such as gas suppliers and incumbent operators expressed in cross-border mergers and acquisitions with high degree of vertical integration between production and supply, but also between supply businesses and distribution (as well as gas storage).<sup>118</sup> This development demonstrates the exactly opposite trend to ownership unbundling proposed by the *third gas directive*. On the issue can be stressed, that most Member States of the EU have implemented the legal unbundling requirements of the EU gas directive, but only a small number have implemented the model of ownership unbundling.

After stressing the negative aspect of liberalization for gas suppliers as the EC pressure on system of the long-term contracts, positive aspect of liberalization should be also mentioned. Through liberalization, upstream players (mainly external suppliers) are getting an opportunity to integrate along the gas value chain and grow downstream.<sup>119</sup>

European Commission claims that a lack of market integration is hindering competition on the European gas market. However, despite the common perception, this issue is not only a lack of cross-border infrastructure<sup>120</sup> (gas has been transported across Europe bypassing different borders for many years), but problems of access to existing infrastructure. Under the *second gas directive*, certain pre-liberalisation transit contracts were allowed to continue unaffected by liberalization and a lot of “primary” capacity will still be reserved by historical incumbents for long periods. The fact, that historical incumbents still enjoy the preferential access to cross-border capacity, is, according to the Commission the major obstacle to access of new entrants on cross-border infrastructure.

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<sup>117</sup> Cp. Lewiner (Energy markets observatory 2007), p. 10.

<sup>118</sup> Cp. Gammons (Energy regulation insights 2005), p. 2.

<sup>119</sup> Cp. Pirovska (Easte European gas 2005), p.3; Cedigaz (Players on European gas 2005), pp. 60-64.

<sup>120</sup> Cp. Lewiner (Energy markets observatory 2007), p. 10.

In summary, it can be concluded that the EC seems to consider vertical integration and long-term contracts as potential barriers for entry of new players. However the abolishment of long-term contracts or their decreased duration raise the question of security of supplies, as price-risk and volume-risk will not be longer shared between supplier and importer. For an industry with long-lived assets, vertical integration and long-term contracts represent essential support for sufficient investment and security of gas supply. The next chapter describes the strategies of the gas market players, affected by the liberalization; it also analyzes new ways of establishing themselves in a new environment by integrating vertically and horizontally and combining the financial security of long-term contracts with the operational flexibility of short-term trading.

#### **4. Strategies of the European gas market players**

This chapter helps to deepen comprehension and understanding of the aims of the major players in the field, and of recent and ongoing trends, they are instigating and which they are subject to. It needs to be stressed, that the term “Player” may be somewhat misleading, as generally more than half of those big companies’ activities use to be reactive to outward pressures, and as a rule only a minor part consists of creative action.

The enforced liberalization of European gas market brings some threats, but also provides former monopolistic gas companies with expansionist ambitions. Opening markets offer them possibilities to develop trading businesses and to find a new ways of investing in selling, transmission, and storage and hub services, while expanding what used to be national activities beyond territorial boundaries, possibly in Western, Central and Eastern Europe, even operating globally.<sup>121</sup> The expansion of gas-fired power generation and the convergence of national energy markets enable companies to exploit trading arbitrage or synergies and economies of scale across markets. In this context, companies will have to develop and apply new concepts, which exploit market potential and

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<sup>121</sup> Cp. Cedigaz (Players on European gas 2005), p. 12.



rationalization opportunities. The co-operation between players, who operates at various levels of the gas chain and across national borders, is strengthening in order to limit risks and reap the benefits of synergy. Due to increasing competition on the European market, a pronounced trend towards strategic alliances, concentration processes, but also, towards vertical and horizontal integration can be observed.

In the pages that follow, after illustrating the major players, various strategic measures implemented by both national and international, both upstream and downstream companies will be analyzed. Finally, the current trends in the European gas market will be drawn up.

#### **4.1 The major players: their structures, aims and importance**

In the following lines, the leading companies will be mentioned, and with a few words their structures and their strengths will be characterized. Further details about their strategies, the recent and future development will get into further details in the next chapters.

European energy companies may be classified according to a wide range of parameters. One of them being a volume of proven recoverable reserves that they possess. Another one reflects the amount of the annual production. A further parameter of importance is supply figures to the European gas market.

Every parameter generates a different ranking of the companies in question. Basically, it can be distinguished between two different groups: on the one hand, the external suppliers of gas to European Union – state-owned Gazprom, Sonatrach; on the other hand international oil and gas companies, national incumbents and electric utilities, that acts primarily in internal European gas market.

##### ***4.1.1 Key traditional suppliers to Europe***

By far the most important supplier to the European gas market is the world's leading natural gas producer and exporter, i.e. the Russian state-owned *Gazprom*. Gazprom has a gas export monopoly in Russia and is the largest vertically integrated natural gas company in terms of reserves (61 percent of all

Russian natural gas reserves and around 17 percent of global reserves), production (85 percent of domestic production and one-fifth of global production) and transportation (it owns the world's largest high pressure pipeline system).<sup>122</sup> The importance of Gazprom's role is underlined by the fact that it contributes 25 percent to European gas sales and thus it is the most important supplier to Europe. At the same time Gazprom is dependant on gas demand from Europe, as exports to Europe account for around 27 percent of volumes sold and roughly 60 percent of Gazprom's gas revenues.<sup>123</sup>

Gazprom exported 156.1 bcm to EU-25 in 2005.<sup>124</sup> Exportations are effected almost exclusively through pipelines. Since Soviet times till today, Gazprom exports to Central and Western Europe mainly under long-term, 25-year agreements that typically derive from intergovernmental framework treaties. Long-term agreements with key customers typically contain a "take or pay" provision, meaning that the customer agrees to pay for a certain minimum amount of gas even when a lesser amount was physically used.

The largest importers of Russian gas are Germany (39.4 bcm) and Italy (22.5 bcm).<sup>125</sup> Gazprom's key export destination in Central Europe is Hungary, followed by the Slovak Republic, the Czech Republic and Poland. It is the only supplier for many countries in the Eastern part of the EU and Finland. 80 percent of all Russian gas for Central and Western Europe is transported through Ukraine and 20 percent through Belarus.

Gazprom carries out major construction projects in order to bolster and diversify Russia's gas exports. In April 2006, Gazprom sold the first shipments of LNG to the UK. The most important part of the export strategy is the fulfilment of signed, long-term contracts that brought about major international projects, such as the Jamal-Europe pipeline Blue Stream crossing the Black Sea to Turkey, the North Stream pipeline through the Baltic Sea from Vyborg to

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<sup>122</sup> Cp. Gazprom (Global energy company 2008).

<sup>123</sup> Cp. Tsygankova/Sagen (Russian gas exports 2008), pp. 867-880.; IEA (NGMR 2007), p. 130.

<sup>124</sup> Cp. Gazprom (Annual report 2006), pp. 47-53.

<sup>125</sup> Cp. Gazprom (Annual report 2006), pp. 47-53.

Greifswald, thus avoiding transit countries Ukraine and Belarus and the South Stream through Black Sea to Bulgaria.

Gazprom's key international partners are E.ON, Wintershall AG, Verbundnetz Gas and Siemens AG in Germany; Gaz de France and TotalFinaElf in France; Italy's Eni and Enel; Botas in Turkey; Fortum in Finland; Gasunie in the Netherlands; StatoilHydro in Norway and the transnational giants Royal Dutch Shell, British Petroleum and ExxonMobile. Through subsidiaries, joint ventures or company stakes, Gazprom is now active in 18 out of the 27 EU countries.<sup>126</sup>

Gazprom sells its gas at the border of the importing country to local distributors, who then supply it to the final consumers. In Figure 4-1, Gazprom's natural exports by country are presented. The end-consumer price includes the cost of gas transportation via low-pressure pipelines, the costs of low-pressure pipe maintenance (which are a multiple of what they cost to maintain in Russia), and taxes. At the present moment, as a consequence of market liberalization, Gazprom is actively trying to penetrate into the European regional and local downstream distribution networks. The aim is to secure outlets for its gas reserves and to get a hold in the end-user market (either through strategic alliances with distribution companies, or participation in pipeline projects, or investments in storage and import infrastructure).

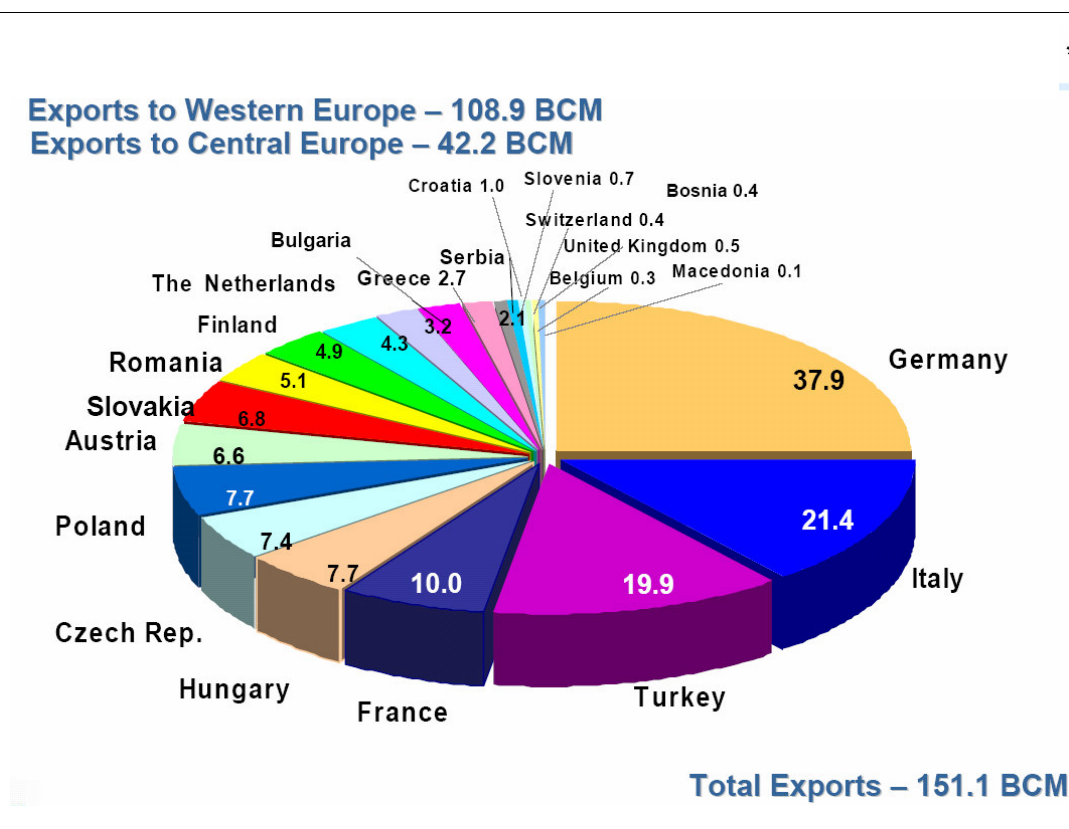
Delivering 56 bcm in 2004 to Europe-25, the Algerian state-owned company **Sonatrach** is the second biggest supplier of natural gas to the EU. Sonatrach exported 22 bcm of LNG and 34 bcm gas via two gas pipelines. Italy with 27.5 bcm imported in 2006, Spain with 1,2 bcm and France with 7,1 bcm represent the key markets of Sonatrach in Europe. France with 7 bcm is the top buyer of Algerian LNG.<sup>127</sup>

Due to its geographical proximity to key European markets and competitiveness of transport costs, Sonatrach has ambitious plans to increase its exports to Europe: up to 85 bcm/year by 2010 and about 100 bcm/year by 2020.

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<sup>126</sup> Cp. Gazprom (Annual report 2006); Cedigaz (Strategy of players 2006), p. 2.

Figure 4-1: Gazprom's natural gas exports by country in 2006



Source: Gazprom, annual report 2005

To achieve these goals, Sonatrach is participating in the pipeline projects to Spain (Medgaz) and Italy (Galsi), breaking into the downstream gas market in Europe (Spain and UK) and entering into electricity sector.<sup>128</sup>

In the future, the national oil and gas companies from Qatar (Qatargas), Nigeria (Nigerian National Petroleum Corporation), Libya (Libya's National Oil Corporation), Angola and Egypt will also emerge as significant suppliers of gas to European Union.<sup>129</sup>

<sup>127</sup> Cp. Sonatrach (Annual report 2006); Cedigaz (Players on European gas 2005), pp. 25-30.

<sup>128</sup> Cp. Cedigaz (Strategies of the players 2006), pp. 2f.

<sup>129</sup> Cp. Eurogas (European gas market 2006), p. 13.

### 4.1.2 Main actors on the European internal gas market

We can rank the companies according to the reserves they control, according to their production figures or to their supply to the European gas market.

#### 4.1.2.1 Natural gas reserves by company

In 2003 Statoil<sup>130</sup>, including Petoro, operated the biggest gas reserve base within Europe with 1395 bcm, representing around 20 percent of European gas reserves. ExxonMobil and Shell ranked second and third with volumes of 675 bcm and 599 bcm respectively (Figure 4-2).<sup>131</sup>

Figure 4-2: European proven gas reserves by company in 2003

Company	World (bcm)	Europe (bcm)	% of total European reserves
Statoil	1411	1395	20.3%
ExxonMobil	1550	675	9.5%
Shell	1272	599	8.9%
EBN	587	587	8.7%
Norsk Hydro	226	226	3.3%
Total	630	186	2.7%
ENI	510	181	2.6%
BP	1317	139	2.0%
ConocoPhillips	455	97	1.4%
Gaz de France	77	77	1.2%

Source: Cedigaz 2005

<sup>130</sup> Although Norway is not a member of the EU, it is subject to the bloc's antitrust regulations as a member of the European Economic Area, which includes the EU's 27 members, Iceland, Liechtenstein and Norway. That is why Norwegian Statoil is included amongst the European players. The bulk of literature as Cedigaz, IEA classify Norway's Statoil inside the European commercial area. Cp. Cedigaz (Players on European gas 2005), p. 29.

<sup>131</sup> Cp. Cedigaz (Players on the gas market 2005), p. 15.

According to the most recent previsions, Europe will have gas from its own fields for the oncoming 20 years at the present production rate. Again, Statoil holds the most comfortable position with projected 33 years of production ahead.<sup>132</sup>

Europe counts half a billion of inhabitants, proportioning 8 percent of worlds total population, but it has only 3.5 percent of global gas reserves – which forecasts possibilities of shortage or high margin sales. That is why a number of international oil and gas companies, like ExxonMobil and Shell, rush into the European market. As a result, the latter two companies have almost half of the fields they own concentrated in Europe.

#### 4.1.2.2 *Natural gas production by company*

It is the drama of the EU-25 energy gap that only 46 percent of its demand can be supplied from domestic sources<sup>133</sup> – a figure, that is likely even to decline in the future, making Europe more and more vulnerable to external pressures.

*Figure 4-3: Major gas producers in the EU of 25 in 2004*

<b>Company</b>	<b>Volume (bcm)</b>	<b>Share of total</b>
ExxonMobil	40.8	18%
Shell	35.9	16%
EBN	30.0	13%
Total	14.9	7%
ENI	14.7	7%
BP	13.0	6%
Centrica	11.0	5%
ConocoPhillips	8.4	4%
British Gas	7.6	3%

<sup>132</sup> Cp. Cedigaz (Players on European gas 2005), p. 15.

<sup>133</sup> Cp. Cedigaz (Players on European gas 2005), p.26.

Gaz de France	5.2	2%
<i>Source: Cedigaz 2005</i>		

In 2004, ExxonMobil remained the largest net natural gas producer in Europe, with an output of 40,5 bcm, representing 44 percent of the company's worldwide natural gas production and 18 percent of total European production. Second ranks Royal Dutch Shell with 35 bcm production equalling 16 percent. Both of these companies get the bulk of their production out of the North Sea. Dutch EBN ranks third with their 30 bcm production representing 13 percent.<sup>134</sup>

#### 4.1.2.3 *European gas supply by company*

Natural gas supply can be defined as the sum of the total gas imports by company plus production, be it from their own fields or from purchase. Thus defined, European gas supply has been exceeding 500 bcm every year since 2004.<sup>135</sup>

Since the merger Gaz de France with Suez in September 2007, this new French national champion took the lead of the list of European gas suppliers, selling currently more than 90 bcm of gas per year. This merger, approved by the European Commission catapults France into the gas top league, but it also runs counter the avowed policy of breaking up big trusts in order to enhance horizontal competition.<sup>136</sup> Out of the merger's two partners Gaz de France contributes a much consolidated supply structure based on long-term contracts with a large number of supply sources all over the world (Norway, Algeria, Russia, Netherlands, United Kingdom, Nigeria).

An example to the contrary may be seen in ENI, which obtains more than one quarter of its supplies from Gazprom and Sonatrach each. Spanish Gas Natural has the largest number of gas suppliers, its needs provided by eleven gas exporting countries, all outside of the European Union and some at great

<sup>134</sup> Cp. Cedigaz (Players on European gas 2005), p.26.

<sup>135</sup> Cp. Cedigaz (Players on European gas 2005), p. 53.

<sup>136</sup> Cp. GDF (GDF-Suez merger 2007).

distances, such as Trinidad & Tobago, Qatar and Australia. However, Gas Natural imports remain dominated by gas from Algeria, as the company importing about 55 percent of its gas from Sonatrach.<sup>137</sup>

Principally, supply companies have two options: either to try to produce themselves, and, if need be, to purchase from as many sources as possible, or to simplify business by contracting with one or a few providers. The latter option requires little travelling, and little follow-up; the disadvantage is the dependence on regular deliveries. Examples are OMV (formerly ARAL) and Wingas, that depend more than 70 percent on Gazprom's deliveries. Finland's Gasum Oy even distributes exclusively Russian gas.<sup>138</sup>

There were two important Norwegian enterprises operating in the North Sea, Norsk Hydro and Statoil. By the end of 2006, state-owned Statoil had purchased all gas and oil activities of Norsk Hydro, with the approval of the European Commission, thus creating the world's largest offshore production group.<sup>139</sup> StatoilHydro supplied 56 bcm in 2004 to EU-25, and it sold roughly three quarters of Norwegian gas production. Statoil gas imports cover some 13 percent of EU-25's gas demand.<sup>140</sup> It is bound by long-term contracts to its three principal customers, i.e. E.ON-RuhrGas, Gaz de France and British Gas.

## 4.2 Strategies of the players

The anticipated gas demand in Europe, underpinned by the growing preponderance of natural gas in the electricity sector, and gas market liberalisation in EU with the prospects of exacerbated competition, have spurred alliance and acquisition strategies. Early signs of restructuring the gas market, with a massive wave of mergers and acquisitions, could be observed in the late 1990s and the 2000s, prompted by the first and second European gas directives.

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<sup>137</sup> Cp. Cedigaz (Players on European gas 2005), p. 53.

<sup>138</sup> Cp. Cedigaz (Players on European gas 2005), p. 53.

<sup>139</sup> Cp. Statoil (Statoil-Hydro merger 2007).

<sup>140</sup> Cp. Eurogas (European gas market 2006), p. 13.



The introduction of competition led to major structural changes (emergence of new markets and new players with new strategies) which have impacted former positioning of incumbent companies. Traditional gas market players, including the main incumbents, have to be adapted to the situation by developing specific strategies. When considering the actions of the various market players and their strategies, it must be beard in mind that company strategies are primarily driven by the need to reduce risks and uncertainties and to maximise their potential. These reactions have had drastic repercussions on the evolution of gas market patterns and have contributed in part to the reorganization of European gas industry.

This chapter analyses the whole scope of the various strategic measures (from long-term contracts and asset swaps to vertical and horizontal integration) implemented by the main players of the European gas industry. This integrates upstream players (producers, suppliers), downstream companies (incumbents, distribution companies and traders) as well as new entrants, especially electric utilities.

#### ***4.2.1 Commercial and Partnership strategies***

Since the early 1960s, gas supplies developed within specific technical and institutional boundaries of high pressure pipelines directly connecting the gas field with the load centre on the base of long-term contracts ascertaining gas supply for twenty years or more. The settlement of the extensive number of long-term contracts in European gas supply (about 95 percent of current demand) is but one of the regulatory challenges of establishing an internal gas market in Europe.<sup>141</sup> The establishment of the single European gas market was one of the final topics of the EU agenda on the completion of the internal market.

***Long-term contracts***, which could be also seen as quasi-vertical integration<sup>142</sup>, remain a key form of cooperation between producer and importers guaranteeing “security of supply” for importers and “security of demand” for

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<sup>141</sup> Cp. Konoplyanik (Russian gas 2005), p. 287.

<sup>142</sup> Cp. Finon (Reshaping European gas 2004), p. 209.

producers. Seller(s) assume reservoir and delivery risk, while buyers assume market risk. Second EU gas Directive states, that long-term contracts will continue to be an important component in the gas supply system of the member states.<sup>143</sup> Long-term contracts ensure “balance of power” by fair sharing of risks: price-risk and volume-risk to be shared between partners along the gas chain, thus allowing substantial investments to be made in upstream production and infrastructure.

Major traditional gas suppliers to Europe (Gazprom, Sonatrach, Statoil) have, through long-term contracts based on net-back pricing policies, built up sustainable and solid bilateral relations with leading national transportation and distribution operators (E.ON, GDF, ENI). This strategy underpinned massive up-front investments in production and transport infrastructures and simultaneously ensured a control over commercial outlets as far as possible. Especially in the Russian context of considerably lower prices, long-term take-or-pay contracts are vital to ensure the financing of investments necessary to begin large scale productions of new gas regions such as Yamal or Shtockman. Indeed, developing these regions is not possible without the guarantee of long-term deliveries to Europe.

In 2006 Gazprom signed a long-term contract with E.ON Ruhrgas, which foresees supply of 400 bcm between 2006 and 236. Also with GDF, one of its closest partners in Europe, Gazprom signed a long-term contract for 12 bcm per year until 2030, which will be added an additional 2.5 bcm per year, when Nord Stream will come online. Also Italian ENI, Austrian OMV and Danish Dong signed long-term contracts with Gazprom for a 20-year period.<sup>144</sup>

In the context of competition between upstream companies, some players have opted for **partnership agreements (or strategic alliance)** that could be defined as a relationship between two or more firms, whereas selected assets are shared, functions integrated and risk pooled. In difference to merger, each member of the partnership agreement remains a separate legal and financial

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<sup>143</sup> Cp. EC (Gas directive 2003), p. 25.

<sup>144</sup> Cp. Locatelli (Gazprom's strategies 2008), p. 22.

entity.<sup>145</sup> Significant advantages of these agreements are: limited risk exposure and smaller capital investments. Partnership agreements are made to meet a specific goal. An alliance with a domestic company, if carefully selected, can bring along knowledge of local laws, practices, and contacts to governments and on this way solve the problem of uncertainty related to unknown environment. Moreover, the opening of upstream assets to Western European producers has enabled some countries (Algeria, Nigeria) to alter the general perception of the geopolitical risk they present.<sup>146</sup>

Strategic partnership and alliances have generally to be a two-way relationship. Both parties involved should benefit from forming the alliance, both sides have to make concessions in order to get something for the sake of their businesses. The partner from the developing and resource-rich country will be able to utilize the natural resources in the most effective and most profitable way, because the partner from the more developed country will contribute what is missing in such regions - necessary know-how and investment needed for the projects.

Examples of partnership and cooperation agreements in upstream and downstream will be outlined below. Information was taken from Cedigaz sources<sup>147</sup> and company's websites.

On upstream level Sonatrach, in 2003, was engaged in two joint ventures with Statoil and BP for the development of gas fields in the In Salah and In Amenas region. Sonatrach also signed a memorandum of co-operation with Shell to identify and develops jointly projects in Algeria. The companies also signed a LNG Master Sales Agreement, which signalled the start of further co-operation in the LNG business. The development of upstream companies in the LNG industry is another key feature of their strategies and attests to a search of resource diversification and access to promising markets. Major oil and gas producers aim at becoming bigger in their industry, using LNG as a growth vector. Their presence is observable in all LNG activities.<sup>148</sup>

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<sup>145</sup> Cp. Cedigaz (Players on European gas 2005), p. 127.

<sup>146</sup> Cp. Cedigaz (Players on European gas 2005), pp. 127-130.

<sup>147</sup> Cp. Cedigaz (Players on European gas 2005); Cedigaz (Strategy of players 2006), p. 3.

<sup>148</sup> Cp. Cedigaz (The Players on the European gas market 2005), p. 127.

StatoilHydro and GDF are currently developing together arctic gas fields and are strategic partner in the only LNG liquefaction project in Europe: Snohvit.

Determined to increase westbound pipeline connections and to build “transit avoidance” pipelines to secure exports to Europe, Gazprom has been involved in several partnership agreements with incumbents and producers for the development of schemes, pipeline projects and exploring gas fields (Gazprom and ENI infrastructure joint venture in the “Blue-Stream” and recently signed “South-Stream”; Gazprom’s infrastructure partnership with Wintershall, E.ON and Gasunie in NordTransGas Company for the “Nord stream” project; Gazprom’s partnership on exploring huge Shtockman gas field with Total and StatoilHydro<sup>149</sup>; Gazprom consortium with E.ON Ruhrgas and GDF to control transit pipelines linking Russia to Western European Consumers<sup>150</sup>; Gazprom’s memorandum of understanding with Sonatrach in 2006<sup>151</sup>). Together with PetroCanada Gazprom is studying the possibility of building an LNG plant in the Leningrad Oblast to export LNG to North America.<sup>152</sup>

As with oil and gas producers, downstream and midstream integration is becoming a much bigger priority for traditional suppliers to secure outlets for their gas reserves. The true objectives of them is to reach the final end-user market at the international level and particularly in Europe, by intensifying co-operation with all partners along the various segments of the energy industry, in order to increase synergies in transport and delivery. In 2000 Gaz de France and Sonatrach firmed up a co-operation agreement toward a common commercialization of 1 bcm of LNG/year. In November 2003, BP and Sonatrach formed a joint venture to import LNG into the United Kingdom. Moreover, as part of its strategy to boost export volumes towards Europe, Sonatrach has acquired interests in major pipeline projects due to links with Algeria to Spain (Medgas) and Algeria to Italy via Sardinia (Galsi). In November 2006, Sonatrach signed an LNG Memorandum of Understanding with E.ON Ruhrgas of Germany for gas marketing Joint Venture in Europe.

<sup>149</sup> Cp. Abdolvand/Adolf (Gas-Gigant Russland 2006), p.479; Locatelli (Gazprom’s strategies 2008), p. 18.

<sup>150</sup> Cp. Pirovska (East European gas 2005), p. 5.

<sup>151</sup> Cp. IEA (NGMR 2007), p. 38.

Statoil is also strengthening downstream operations in selected areas as Denmark (creation of the gas marketing joint venture Statoil Gazelle with the Danish gas distribution company Naturgas), Turkey and Ireland. It is also expanding operations on the spot trading market via its interest in Eurohub.

On the downstream level, Gazprom formed strategic alliances to take positions in downstream activities (Promgas in Italy, Wingas in Germany). It allows Gazprom to distribute gas directly to Italian and German customers. London-based subsidiary Gazprom Marketing and Trading boosted spot market deliveries of gas, power, carbon and oil directly to counterparties, power stations and large industrial users in United Kingdom and Belgium.<sup>153</sup> Gazprom also established recently its Marketing and Trading subsidiary in France and in the next future will establish one in Germany.

As a player in the European downstream market, Gazprom invests a lot in storage facilities. Storage facilities help to smooth out seasonal fluctuations of gas demand and initially were designed as an insurance policy against unusually high demand during cold winters.<sup>154</sup> Gazprom's focus on storage in downstream markets is a sensible use of capital given that many pipelines run well below maximum capacity in summer when demand is low. With increased storage at demand centres, Gazprom will be able to transport more gas in the summer and increase the effective capacity without building new pipelines.<sup>155</sup> Storage facilities also would help Gazprom to guarantee continued supplies to European market in case of new disputes involving the pipeline transit countries of Ukraine and Belarus. Gazprom is participating in the development of storage facilities at Rehden in Germany, the largest in Austria (Heidach), as well as 50 percent of the Humbly Grove facility in UK. In the case of Belgium, Verhofstadt and Putin agreed that Belgium should become a hub for the storage and transit of Russian natural gas. They also agreed to quickly complete a feasibility study for building a large underground gas storage unit. Fluxys, Belgium's largest gas transporting company, is conducting the study with Gazprom. There are also

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<sup>152</sup> Cp. Cedigaz (Players on European gas 2005), p. 123.

<sup>153</sup> Cp. Cedigaz (Strategy of players 2006), p. 2.

<sup>154</sup> Cp. IEA (NGMR 2007), p. 137.

plans about building underground storages in Hungary with MOL, Hungary's oil and gas company and in Romania by establishing a joint venture to build a storage facility with Romgaz. According to recently signed Cooperation Agreement with Austrian OMV Gazprom will receive a 50 percent stake in the "Central European Gas Hub" (CEGH) located in Baumgarten.<sup>156</sup> This agreement also foresees the accord of two companies to built joint underground gas storages in Austria and neighbouring countries.

Finally, all partnership agreements must be endowed with a termination schedule, in case something goes wrong or the partners consider the alliance not to be no longer useful. Under such schedule terms and conditions of terminating the alliance will be laid down, together with the ensuing responsibilities. Markets, capital, technology, or information acquired will have to be assessed and distributed amongst the former partners.

Historical dominant downstream companies, today qualified as incumbents, formally enjoyed a monopoly position in gas transportation and distribution as well as gas supply to end-customers. In a new competitive environment caused by liberalization directives, they are losing market shares, to the benefit of new entrants. Logically incumbents saw a clear interest in evolving into the upstream part of the gas chain, in order to secure their supply via direct control over gas resources. It also accords with the strategic aim of minimizing the risk of supply price volatility.<sup>157</sup> To achieve this goal, gas incumbents as GDF are enlarging its portfolio of gas assets through direct acquisitions of licences for exploring gas fields. However, sometimes energy-rich nation states do not want to lose control of the energy assets that they recognise as strategic for the country's interest and security. Or if a company is interested in an asset, and ready to barter an item, they dispose of it in order to obtain it. In this situation, **asset swaps** might be a suitable strategic instrument.

Asset swaps allow balancing interests between producer and importer along the value chain. They are promoted by the opening of EU markets and the wish to

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<sup>155</sup> Cp. IEA (NGMR 2007), p. 137.

<sup>156</sup> Cp. OMV (Gas hub in Baumgarten 2008).

<sup>157</sup> Cp. Cedigaz (Players on European gas 2005), p. 130.

access to reserves. Asset swaps also are conducive to achieve deeper vertical integration for companies with mutually complementary core businesses.

In 2006, E.ON and Statkraft signed a letter of intent in Oslo for a multi-billion asset swap. According to this deal E.ON will obtain 44.6 percent of the stakes in E.ON Sverige that are currently held by Statkraft. Those stakes worth 4.4 billion € will help to strengthen in the future E.ON's position in the Nordic market as the sole shareholder of E.ON Sverige. In return, E.ON is going to cede to Statkraft assets they hold in Germany, Sweden, UK and Poland plus 2 percent of E.ON shares.<sup>158</sup>

Algeria's state-controlled oil and gas company Sonatrach is aiming to expand its gas marketing activities to northern Europe through an asset swap agreement with the Norwegian company Statoil, at the same time as the two firms consider a new LNG joint venture in Algeria. Statoil considers to cooperate with Sonatrach in the exploitation of the Norwegian continental shelf in return for a role in an Algerian LNG project.

Gazprom is also involved in a lot of swap asset agreements. In swapping 35 percent of the future profits from undeveloped assets in the Yuzhno Russkoye field in Russia for a 50 percent minus one stake in Wingas, the second largest seller of gas in Germany, Gazprom is partly achieving its objective of moving further downstream. However this has come about through partnering with a national incumbent rather than through direct acquisition. Gazprom and BASF signed the agreement on the asset swap in 2007. Under that document, the Gazprom group had increased its share in the authorized capital of Wingas GmbH up to 50 percent minus one share. Gazprom also has a 49 percent stake in Wintershall AG, which has the right to produce gas under concession agreements in Libya. For its part, BASF AG received 25 percent minus one ordinary and one preferred share without voting rights, which is equivalent to a 10-per-cent stake in the project, in the authorized capital of the Severnftgazprom open joint-stock company (Gazprom's 100 percent-owned subsidiary that owns the licence for the development of the Yuzhno-Russkoye oil

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<sup>158</sup> Cp. Turner (E.ON asset swap 2007).

and gas field). The proven reserves of the gas field exceed 600 billion cubic meters.<sup>159</sup>

Gazprom has signed an agreement with Italian oil and gas company Eni to complete an asset swap deal. The deal involves Gazprom gaining access to downstream facilities in Italy, with Eni gaining exploration and production facilities in Russia. The agreement, signed in Moscow on 14 November 2006 after a year of talks, will allow Gazprom to sell gas directly to the Italian market from 2007, with volumes expected to reach 3 billion cubic metres by 2010. The deal extends Gazprom's Italian contracts to 2035.<sup>160</sup> In exchange, Eni will gain access to exploration and production facilities in Russia, including former Yukos assets, and the two parties will cooperate to acquire other global assets. They will also cooperate in LNG and technology projects.

The Dutch Gasunie entered 2007 the "Nord Stream" consortium by swapping shares in the Bagzagh Bacton Line (BBL), a gas pipeline between the Netherlands and the United Kingdom.<sup>161</sup> Gazprom's agreements with European partners in 2006-2008 are presented in the Figure 4-4.

Gazprom also wants to tap Sonatrach's long experience in LNG. The recent Memorandum of Understanding (MOU) highlighted the potential for Sonatrach involvement in Gazprom's plans to export LNG from its huge Shtokman field on the Barents Sea, and Rosneft's development of its Tesselit North gas discovery in Algeria may include an LNG venture. The MOU included provisions for asset swaps which are most likely to involve trade of piped gas from Russia for Algerian LNG. Gazprom will swap LNG volumes from Algeria which it can sell on the spot market to the US in return for piped gas to Europe.<sup>162</sup>

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<sup>159</sup> Cp. Gazprom (Annual Report 2006), p. 31.

<sup>160</sup> Cp. Locatelli (Gazprom's strategies 2008), p. 22.

<sup>161</sup> Cp. Locatelli (Gazprom's strategies 2008), p. 10.

<sup>162</sup> Cp. IEA (NGMR 2007), p. 38.



*Figure 4-4: Gazprom's agreements with European partners in 2006-2008*

1. A protocol (2006) with E.ON Ruhrgas about the importation of 400 bcm between 2006 and 2036.
2. A 20-year contract with OMV for 7.5 bcm per year, as an extension of present contract. Twenty-five percent will be commercialized by two companies, Centrex and Gwh, respectively controlled at 50 percent and 100 percent by Russian interests, including Gazprom.
3. Renewal with ENI of Russian gas contracts. The signed agreement seeks to define a partnership involving asset swaps with Gazprom: 10 percent participation in EniPower in exchange for shares in a gas field, as well as the creation of common marketing company in exchange for a share of a gas field.
4. Signing with GDF (November 2006) of a contract extending the present one with Gazprom for 12 bcm per anno until 2030, which will be added an additional 2.5 bcm per year beginning in 2010, when Nord Stream comes online. The agreement reached will also allow Gazprom to sell 1.5 bcm per year directly on the French market.
5. Signing with a Danish company DONG of delivery contract of 1 bcm per year over 20 years.
6. Signing an agreement about stakes exchange with Gasunie (08.06.2006). A move gave Gazprom access to the British market. Gasunie took a share (9 percent) in Nord Stream pipeline.
7. Swap agreement with BASF/Wintershall (25.10.2007). Under that document, Gazprom has increased its share in the authorized capital of Wingas GmbH up to 50 percent minus one share.
8. Taking a 50 percent interest at Austrian group OMV's Baumgarten gas hub (25.01.2008).

*Source: own elaboration*

#### **4.2.2 Mergers and Acquisitions**

One of the main objectives of liberalization is to increase the geographical size of the market and thereby promoting competition where the most efficient producers have the largest market share.<sup>163</sup> It is natural in this situation that incumbents in the natural gas sector try to maintain their position after liberalization and reshaping their business strategies accordingly.

<sup>163</sup> Cp. Jacobsson/Lauber (Energy system transformation 2003), pp. 256–276.

Making acquisitions is seen as a good strategic option rounding off company activities and enabling synergies to develop. However, it hides also a risk of the concentration that big incumbents will try to enhance barriers in order to maintain their position and to foreclose the entrance of more efficient market actors. Thus, although the liberalization process has led to the disintegration of natural monopolies, it did not lead to the less concentration in the sector.

There have been a total of more than hundred effective mergers and acquisitions within the European Union between 1998 and 2005.<sup>164</sup> Moreover, a recent financial markets report estimates that the value of EU-internal mergers, considering the operations had concluded in 2006, increased by 56 percent in comparison to 2005, and that the number of bids increased by 25 percent, marking a higher-than-ever level.<sup>165</sup>

At present, following tendencies of the restructuring in the European gas market through mergers and acquisitions can be observed:<sup>166</sup>

- Power companies and gas producers are moving into gas distribution, where they seek new business opportunities as a result of third-party access, and shrinking margins of the pipeline owners.
- Gas transmission and distribution companies seek to extend their activities along the entire gas chain upstream and also into power generation, to gain a broader and more solid basis for their activities.

In a geographical context, mergers and acquisitions shows two opposite dynamics: a trend towards the creation of pan-European players, and an opposite trend towards the establishment of “national champions”.

There are two types of mergers and acquisitions: vertical integration and horizontal integration. The possibility to expand outside of the national borders offered for gas companies by the EU directives implicated movement in horizontal and vertical directions. Gas operators moved upstream and

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<sup>164</sup> Cp. Cedigaz (Players on European gas 2005), p.125.

<sup>165</sup> Cp. PWC (Power deals 2006), pp.2-6.

<sup>166</sup> Cp. Cedigaz (Players on European gas 2005), pp.123-126.

downstream in order to control the whole value chain. Moving back to a more general discussion of reasons supporting national and cross-border operations, rationales for national, cross-borders, horizontal, and vertical mergers, following a scheme as reported in Figure 4-5 can be analyzed.

*Figure 4-5: EU mergers and acquisitions trends in energy industry*

	Within same sector and “horizontal”	Between sectors and “vertical”
National mergers	<ul style="list-style-type: none"> <li>• Defensive role against foreign hostile takeovers</li> <li>• Move towards a re-nationalization of the activities</li> <li>• Creation of an entity with sufficient bargaining power to agree favourable terms with strong European suppliers and competitors</li> </ul>	<ul style="list-style-type: none"> <li>• Restore some cost savings resulting from the integration of different steps of the supply chain</li> <li>• National gas + electricity companies = creation of national energy champions</li> </ul>
Cross-border mergers	<ul style="list-style-type: none"> <li>• Expansion of geographic scope of activities of each operator</li> <li>• Strategy to gain important weight at European level before liberalization is fully implemented</li> </ul>	<ul style="list-style-type: none"> <li>• Electricity companies securing gas supply to the gas-fired plants they own</li> <li>• Securing “captive” gas demand, in order to fully respect TOP clauses and reserved import capacity, by merging gas and electricity activities</li> </ul>

*Source: Verde (M&A in energy industry 2007 ), p.2*

Large-scale trends towards vertical and horizontal integration promote the economies of scale and scope is restructuring the gas supply chain. The idea behind the vertical integration is the incorporation of different steps into the natural gas supply chain, which allows significant cost savings, but also security of gas supply upstream and gas demand downstream.<sup>167</sup> Horizontal integration permits that an entity which possesses a sufficient bargaining power to handle successfully with suppliers and competitors, but also expand geographic scope

<sup>167</sup> Cp. Michaels (Vertical integration 2006), pp. 1-7.

of activities.<sup>168</sup> In this context, it should also be noted, that due to fast changes in the European gas market and to the multi-utility characteristic of major players on them, strict separation between vertical and horizontal integration is not always visible.

Vertical integration, whether backward to upstream or forward to downstream, makes possible to realize economies of scale and capture part of economics gas rent. European companies have decided to broaden their geographic and product range of activities in the period before the complete liberalization of the European market, in order to be ready for possible broader competition developing in Europe. If the market is completely liberalized and investments in infrastructures allow for the creation of a single market, benefits from having broadened their activities will be twofold: a weightier presence in the EU market, and thus a lower risk of being taken over by competitors.<sup>169</sup> Gas transmission and distribution companies, as well electricity utilities integrated vertically backwards by moving upstream to secure direct access to supply sources. GDF has pursued a strategy oriented towards international development. Accordingly, GDF aims to supply up to 15 percent of the French market with its own resources. For this goal GDF acquired in 2002 the exploration and development company Cal Energy, which held interests in four producing fields in the Southern North Sea Basin. It also acquired interests in Preussag Energie, in order to secure assets in more than 50 producing fields, plus 11 percent stake in the transportation company Erdgas Münster and stakes in three underground gas storages. Finally, GDF merged with Suez in 2007 and created one of the Europe's most powerful multi-utility operators.

The Union Fenosa from Spain acquired stakes in gas fields in Oman, Egypt.<sup>170</sup> In Germany electricity operator E.ON acquired in 2003 the leading gas merchant company Ruhrgas. Another German multi-utility RWE Group through wave of mergers and acquisitions in early 2000s is presented now almost in all sectors of the gas chain: through RWE Dea AG in upstream gas/oil, through

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<sup>168</sup> Cp. Verde (M&A in energy industry 2007), pp. 2-5.

<sup>169</sup> Cp. Verde (M&A in energy industry 2007), pp. 2-5.

<sup>170</sup> Cp. Finon (Reshaping European gas 2004), p. 371.

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RWE Transportnetz Gas in long distance gas transport and with RWE Energy in electricity/gas/water supply.<sup>171</sup>

There are several aims behind the idea of horizontal integration. On the national level, horizontal integration is used as a defensive strategy against hostile takeovers with a means to strengthen the company and achieve a sufficient bargaining power by negotiation with European suppliers and producers. On the international level, horizontal integration is a mean to broaden geographic scope of activities and preparation measure to gain an important weight until the liberalization is fully completed. Horizontal integration is taking place in Europe parallel to the unbundling of distribution and transmission from production.<sup>172</sup> In Germany, so was the case with E.ON and RWE and acquisition of small municipality based distribution companies (Ferngas Nordbayern, Ferngas Salzgitte), in Denmark, the acquisition of NESA by gas and electricity producer conglomerate ELSAM, in Finland Fortum merged with gas company Stora Enso Oyj Power. On the International level, German E.ON Ruhrgas acquired several gas distribution companies in Central Europe. For example, it purchased a 34 percent stake of the Lithuanian company AB Lietuvos Dujos, 47 percent of Latvian Latvijas Gaze, 20 percent of Finnish Gasum Oy, 20 percent of Soteg from Luxemburg and even is the only international holder of 6.5 percent stakes in Gazprom.<sup>173</sup>

A further incentive to mergers and acquisitions is the approach of the deadline of full liberalization. It is but natural that all big players want to be well positioned, augmenting their bargaining power by acquiring and merging in order to reduce the chance of being swallowed by a competitor. So they widen the scope of their activities by both expanding into neighbouring countries and by entering business in adjacent industries. On the other hand, by observing the recent mergers in the energy industry especially in France and in Spain an opposite trend of protectionism shows up by re-creating a national champion from the merger of the leading national energy utilities. It is expected, that the

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<sup>171</sup> Cp. Cedigaz (Players on the gas 2005), p. 132-150.

<sup>172</sup> Cp. Finon/Midttun (Reshaping European gas 2004), p. 133.

<sup>173</sup> Cp. Cedigaz (Strategy of players 2005), p. 2.

current wave of mergers and acquisitions will reshape from scrap the structure of the European gas market. For the battles which lie ahead, all market participants want to make sure they will be in optimal size and shape in order to stay on the market and not to be amongst the losers.<sup>174</sup>

### ***4.2.3 Identification of current trends in the EU energy sector***

As liberalization, deregulation and intensified competition characterize the recent challenges faced by gas enterprises, the European gas industry is experiencing some far reaching changes. In the current moment three most important trends can be identified in the European gas market: gas and electricity convergence, creating national champions and reorganization in downstream end of EU gas sector supported by emerging of the new players. Details of these trends will be analyzed below.

#### ***4.2.3.1 Integration between gas suppliers and electricity producers***

In recent years, electric utilities have made a striking breakthrough on the gas market. This was done by combining gas and electricity activities.<sup>175</sup> This extension or even diversification is taking the form of internal growth (construction of gas-fired power plants) and external growth through mergers and acquisitions of participating interests in gas transport and distribution companies in Europe. Mergers are usually divided into convergent and non-convergent ones; in the context of the electricity market, convergent mergers mean that a power generator is merging with a gas company; a non-convergent case signifies that an electricity utility acquires its competitor.<sup>176</sup>

Increased discovered worldwide gas resources and technological development of combined cycle gas turbine (CCGT) were the leading reasons of transforming gas into one of the main important sources for electricity production. Accordingly to the lower initial investments and shorter period to build compared to other kind of plants (coal-based power generation or nuclear power plants) CCGT

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<sup>174</sup> Cp. Verde (M&A in the energy 2007), p. 3.

<sup>175</sup> Cp. Cedigaz (Strategy of players 2006), p. 5.

<sup>176</sup> Cp. Domenico (Concentration in electricity 2007), p. 5070.

technology also presents low degree of returns on scale, making the entry of new competitors difficult.<sup>177</sup>

The competitive, but uncertain environment, created by energy market liberalization does not encourage gas incumbents to make heavy long-term investments. This is why the CCGT technology will be preferred both by new entrants to the market as by long-standing incumbents. The stressed advantages of CCGT explain the tendency of increasing number of gas-fired power plants in Europe; however, the economic reasons behind the trend of vertical integration between gas and electricity are not clear. Different causes may be brought into the light.

Natural gas and electricity are not substitutes in the residential sector and electricity is consumed in every single household. Hence, for the gas supplier it will be possible to offer electricity to all of its already existing gas customers. From market power perspective, however, it exists a fear that if the gas distributor is integrated with the locally dominant supplier of electricity they can locally sell bundled gas and electricity that would make it unprofitable for competitors to penetrate (enter) this market.

The bundling or tying in this concept is a very important issue; it might take also place with other products of similar characteristics, inside, but also outside the energy markets. Examples of this distributed products or services could be water distribution, waste or even telecommunications as cable TV and internet access.<sup>178</sup> Economies of scale and scope, customer lock-in and the tactics of excluding competitors in one market by excluding their access to customers in another market are strong arguments for bundling practice.

Economies of scale and scope are possible in the distribution of services and products to the same customers. This might apply grid connection, maintenance services, IT systems, etc. If in a market exist sizeable economies of scope, a dominant supplier might be tempted to enter its adjacent market in order to reduce a potential competitor's benefits and market share. If the

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<sup>177</sup> Cp. Toh (Convergence of gas and electricity 2003), pp. 5-20.

<sup>178</sup> Cp. Girault (Bundling of gas and electricity 2008), pp. 1-3.

enterprise sells service, connected to a specific product, this service might be called the “after market services” and will lock-in the customer. Also, bundling allows the vertically integrated electricity generator during the periods of peak gas demand to produce less electricity and to sell more gas to its downstream competitors.

Another reason for gas and electricity convergence was that it represented the reductions in transaction costs.<sup>179</sup> The relationships between gas suppliers and electricity utilities are generally regulated by long-term contracts. In this case the classical decision whether to “make or buy” is responsible for some explanation.<sup>180</sup> The third reason represents the topic of synergies in terms of already acquired experience in the field. Gas sector as a network industry have lots of similarities with the electricity industry and by acquiring or merging with each other the best practices can be carried out.

Confronting the risk of highly varying prices, generation power firms will resort to upstream vertical integration if such acquisitions will provide them with a higher number of reliable gas sources. Electricity holdings with an access to multiple gas fields enjoy more independence and are less vulnerable to the influence of volatile prices. Thus, they succeed in hedging the price risk.

Finally, the vertical integration between gas and electricity can also be perceived as a business diversification strategy to the point that the losses that might occur in one sector might be neglected with the revenues in the other.<sup>181</sup>

To illustrate this situation, some examples might be stressed. Mixed gas-electricity operators are especially active in the United Kingdom, because of the significant opening to competition, but are also active in Italy, Germany and Spain, where access to gas resources is legally permitted by gas release measures.<sup>182</sup> Mixed gas and electricity operators are very present in Germany. In 2000, there was a merger between RWE and VEW. In May of 2002, E.ON, which nearly holds one-third of the electricity production in Germany acquired

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<sup>179</sup> Cp. Eikeland (Downstream natural gas 2007), pp. 227-237.

<sup>180</sup> Cp. Domenico (Concentration in electricity 2007), pp. 5064-5076.

<sup>181</sup> Cp. Domenico (Concentration in electricity 2007), pp. 5064-5076.



Ruhrgas, the third gas operator in Europe. Besides E.ON, the German electricity company RWE, which acquired the German gas operator Thyssengas, ranks as one of the largest mixed gas-electricity operator in Europe. The French Electricité de France (EDF), Europe's top electric utility has a very ambitious plan to trade 53 bcm gas a year across Europe by 2015. EDF subsidiaries focussing on five main gas markets (France, UK, Italy, Spain and Germany) have already bought gas assets and own gas affiliates, enabling the group to sell already around 24 bcm in Europe. In Spain, the electric utilities, as Iberdrola also strengthening their positions on the domestic market and securing their gas supply by signing long-term contracts, mostly for LNG.

The tendency of mergers and acquisitions can also be observed in new Member States. The electricity giants, as E.ON, Endesa or ENEL expanding through cross-border mergers in Eastern Europe geographic scope of their activities and gaining important weight at European level. The examples are the E.ON acquisition of the Hungarian power utility MOL, the acquisition by the Spanish Endesa of the polish electricity operator Zedo and the ENEL acquisition of the Slovakian Elektrarne.<sup>183</sup> These acquisitions are done within the same sector of electricity and can be identified as cross-border horizontal integration.

In the future, it is suggested that the trend of consolidation and internationalization will lead to a new wave of concentration in the energy industry and emergence of pan-European multi-energy players. On the one hand, the concentrations can generate efficiencies, but on the other hand they can also bear some anticompetitive risks. Some authors stress the concerns that an oligopolistic market with a few actors and with high degree of vertical integration upstream in the natural gas supply might occur.<sup>184</sup> Considering the limited cross-border interconnection capacity, the actual risk is represented in exercising the market power by big actors in several Member States or regions.

The stressed examples show that this trend toward vertical integration was applied by many players on the gas market, this also understates the fact that

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<sup>182</sup> Cp. Cedigaz (Players on European gas 2005?), p. 132.

<sup>183</sup> Cp. Verde (M&A in energy industry 2007), p. 3.

<sup>184</sup> Cp. Domenico (European electricity industry 2007), pp. 5064-5076.

this strategy is a response to compete in a “horizontal way” with other upstream and downstream integrated companies.<sup>185</sup>

#### 4.2.3.2 *Building national champions*

Despite the recent Green Paper by the European Commission on “A European strategy for sustainable, competitive and secure energy”<sup>186</sup> and orientation towards the realization of three goals: more competition, security of supply and green energy (environment), the development of the last years show that the national governments aiming an additional idea of creating “national energy champions”. Some member states have implemented a favourable policy toward mergers of national gas incumbents with other firms, mainly in the same segment, but also in adjacent industries.<sup>187</sup>

To better understand this situation the development of recent mergers in Europe will be analyzed: Gas Natural/E.ON/Endesa and GDF/Suez.

In September 2005, Gas Natural, Spains’ biggest gas supplier, launched a takeover bid for Spanish Endesa, one of the largest electricity producers in Spain. In February 2006, the German E.ON launched a counter bid for Endesa. The national regulation authority (Tribunal de Defensa de la Competencia) admitted the German offer, but shortly thereafter Spanish government blocked it by special decree. E.ON raised its bid, but the government transferred new powers to the national energy regulator (Comisión Nacional de Energía). When later Gas Natural withdrew its bid Spanish Acciona and Italian Enel acquired 24 percent of Endesa’s shares. E.ON, although having raised their bid up to 40€ per share and despite the European Commission’s actions on its behalf to the European Court of Justice in Luxemburg was not able to convince the Spanish High Court (Audiencia Nacional), and withdrew its bid. Enel and Acciona through acquiring Endesa, helped Spain to have her national solution.<sup>188</sup>

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<sup>185</sup> Cp. Eikeland (Downstream natural gas 2007), p. 229.

<sup>186</sup> Cp. EU (Green Paper 2006).

<sup>187</sup> Cp. Domenico (Concentration in the European electricity 2007), p. 5068.

<sup>188</sup> Cp. Verde (M&A in the energy 2007), pp. 4-6.

Another example is Gaz de France and Suez merger in 2007. The deal created one of Europe's largest distributors of natural gas, active as well in adjacent sector as water services.<sup>189</sup> Interestingly enough, the agreement about the merger was announced just a few days after a hostile bid by the Italian electricity operator Enel on Suez. Here, also the French government played a crucial role in the merger in order to thwart a foreign hostile bid. That issue got wide publicity by the fact that the newly elected French president, Nicolas Sarkozy, played a crucial role in the merger, having personally and publicly urged the creation of a national strategic energy entity. Thus, France reinforced its position as a major player in European and global energy markets.

The above two cases are characterized by the overt intervention of the respective government in favour of an intra-national solution, by *ad-hoc* regulations or legal dispositions tailored expressly to the case in question.

It is interesting to reveal the reasons behind the active role of the state in this kind of deals. One of the reasons is *economical*. It can be argued that the current trend of globalization of trade and businesses gives encouragement to create bigger players able to survive in a widened and global environment. Another reason is *security*, in order to defend national players from foreign overtaking. Some areas are recognised by the state as a strategic and it is logical that the state wants to keep weight there for the general interest of the nation. The energy sector is definitely a strategic one and the state involvement is justified by its sheer importance. At a joint press conference by GDF and Suez, Jean Francois Cirelli, the chief executive of Gaz de France said: "Energy is a strategic sector for all states. Nowhere are governments completely absent from the energy sector."<sup>190</sup>

The third reason is *bargaining power*. Emerging national multi-utility giants as GDF-Suez carry, quite a different weight when it comes to bargaining with outside giant suppliers like Gazprom. Such a company has not to fear hostile bids from outsiders especially, as the recent state intervention for its creation will not quickly be forgotten in economic circles. But on the other hand, such a

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<sup>189</sup> Cp. Dempsey (GDF-Suez merger 2007).

<sup>190</sup> Cp. Cirelli in Dempsey (GDF-Suez merger 2007).

national champion will perform successfully outside the national boundaries, profiting from global liberalization.<sup>191</sup>

#### 4.2.3.3 *Reorganization in the downstream gas sector and emerging new players*

Until recently, the European gas importing companies were incumbent operators in the transport, distribution and storage of natural gas. Though, liberalization has challenged this model. Existing incumbent operators are adopting different strategies concerning separation of network management and trading activities as required by the Gas Directives.<sup>192</sup> Some of them, as Gaz de France had retained exclusive control over regulated activities, which presumed to be less risky, with attempt to secure a solid financial base guaranteed by recurring income.<sup>193</sup> Other operators strengthen their role in the core business activities as supply and distribution of natural gas and withdrew partially (Gas Natural) or entirely (British Gas) from their assets in the transport company. They may also develop in new sectors by taking up new positions on the electricity market and expand internationally through cross-border mergers.<sup>194</sup>

At the same time, with the advent of liberalization, a great many enterprises have considered the pros and cons of entering the downstream gas distribution sector. The liberalization of European gas market provides players with new opportunities to intervene directly on gas markets and sell gas to the ultimate customers. Researchers as Locatelli, have also argued that liberalization has helped to make the downstream end of the gas value chain generally more profitable (for new entrants).<sup>195</sup>

Following liberalization, new market participants were lured into the downstream segment by the prospect of sustained profits: power utilities as E.ON, EDF and Enel, international oil and gas companies led by ExxonMobile,

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<sup>191</sup> Cp. Finon (Reshaping European gas 2004), p. 373.

<sup>192</sup> Cp. EC (Gas Directive 1998); EC (Gas Directive 2003).

<sup>193</sup> Cp. Cedigaz (Players on European gas 2005), p. 123.

<sup>194</sup> Cp. Cedigaz (Players on European gas 2005), pp. 124.

<sup>195</sup> Cp. Locatelli (Gazprom's strategies 2008), p. 11.

Shell and BP, traditional gas producers from outside of EU like Gazprom and Sonatrach. They acquired licenses and created trading entities operating in trading, marketing and supply in order to compete with former integrated companies.

As stressed in the previous chapter, **electricity utilities** are entering the downstream end of the gas sector. Their motivation behind such a step it can be explained by the following arguments:<sup>196</sup>

- In case there is a decrease in power demand, excess gas volume can be resold with profits to retail gas customers;
- The desire to stabilize the business by entering into long-term gas supply contracts directly with producers;
- Exploiting the different price movements of power and gas spot market prices for reaping profits (price arbitrage);
- Simple and easy expansion of business by using existing customers' databases in order to offer the complementary energy;
- Providing customers with both forms of energy prevent competitors from entering into a deal with one's own customers;
- Last, but not least, this form of business diversification makes the utility less vulnerable to seasonal ups and downs.

Amongst the new participants in downstream distribution the **international oil and gas companies** may be found as well. In pre-liberalization times, these companies would buy shares in national transport and distribution companies in Europe. By doing so, they could be certain to sell their energy at a profitable price; their national partners, on the other hand, could rely on an uninterrupted flow of supply. Now upstream-to-downstream vertical integration is gradually giving way to vertical de-integration. The trend is to withdraw from their holdings

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<sup>196</sup> Cp. Cedigaz (Strategy of players 2006), p. 6.

in integrated operators and set up a trading entity to sell their gas resources directly.<sup>197</sup>

It is true, though, that, for example, ExxonMobil and Shell recently sold their shares in Ruhrgas and Thyssengas, arguing that the sector did not form the part of their core business. The following examples illustrate this strategic development:

- In Germany in 2003, US supermajor ExxonMobil, and its peers Shell and BP sold the German electricity operator E.ON their shares in Ruhrgas, and Shell withdrew of Thyssengas.
- In Netherlands in 2004, Shell and ExxonMobil sold their shares/interests in the Dutch gas transportation network to the Dutch government for EUR 2.78 billion.
- In Germany in 2004, Shell and Exxon decided to interrupt gas marketing and retail sales within BEB and establish separate gas trading business in Germany – Shell Energy Deutschland and ExxonMobil Gas Marketing Deutschland GmbH.<sup>198</sup>

Behind this strategy, orientation of selling energy distribution assets is an idea to specialize more on the core business of upstream exploration and downstream gas trading that might promise more lucrative profits and faster growth. The management decided to specialise upstream in the exploration of new gas fields and to set up trading units in order to market their gas directly to customers.

The Russian monopolist Gazprom has of late developed the strategy to expand its downstream business segment which is reaction to uncertainties due to the liberalization of the gas market. Those uncertainties Gazprom wants to counter by contracting directly with industrial clients and end-consumers. In that way

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<sup>197</sup> Cp. Cedigaz (Strategy of players 2006), p. 4; Eikeland (Downstream natural gas 2007), p. 13.

<sup>198</sup> Cp. Eikeland (Downstream natural gas 2006), p. 14.

Gazprom reduces risks that derive from modification clauses in long-term *Take or Pay* contracts, abolishment of destination clause and from spot markets.<sup>199</sup>

For more than a decade, Gazprom has been active in the downstream sector through Wingas, a joint venture with Wintershall/BASF. Since the economic recovery of Russia, Gazprom is actively pursuing its joint venture policy with French GDF, Italian ENI and Austrian OMV. The contract with GDF entitles Gazprom to sales of 1.5 bcm directly to the French consumers.<sup>200</sup> In the UK and recently in France, Gazprom has been setting up its subsidiary Gazprom Marketing and Trading; it projects to do the same in Germany.<sup>201</sup>

Gazprom's policies were to a certain degree successful in the UK, where it Pennine Natural Gas and Natural Gas shipping Services, all quite marginal enterprises. But when Gazprom later tried to acquire the British gas firm Centrica, politicians and boulevard papers raised a public outcry. The issue of outside-EU companies acquiring European energy firms is thus divisive that no major enterprise could be purchased by Gazprom up to now. Contrary to the overall development in Western Europe, Gazprom was quite successful in the South and East European countries buying shares in the extant energy companies. Gazprom holds already a 37.2 percent share in Estonia's Eesti Gas, 48 percent of Europogaz of Poland, also shares in Latvian, Lithuanian transmission system operators.<sup>202</sup> Recent acquiring of 51 percent stake in Serbia's national oil company, Naftna Industrija Srbija by Gazprom just stressed this context.<sup>203</sup>

To sum up, Gazprom's principal strategy is, and has been, to create and sustain *partnerships* with the major European gas importers, *and not* to enter into competition with them. Its preferential commercial instrument remains the long-term contract that guarantees regular income over the years thus allowing a steady exploration and development of the Siberian and Caspian gas fields.

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<sup>199</sup> Cp. Locatelli (Gazprom's strategies 2008), p. 12.

<sup>200</sup> Cp. Locatelli (Gazprom's strategies 2008), p. 35.

<sup>201</sup> Cp. Gazprom (Annual Report 2006).

<sup>202</sup> Cp. Dempsey (Guessing game 2007).

<sup>203</sup> Cp. Mityyev (Serbia approves sale 2008).

Also, the Algerian state company Sonatrach, as the main gas supplier to Iberian energy firms, is interested in entering into the downstream business in this region. Recently, Sonatrach signed a joint venture with Energias de Portugal (EDP) that allowed him to take 25 percent share of three combined cycle gas turbine plants. Additionally, Sonatrach raised its 2 percent stake in EDP to 5 percent.<sup>204</sup>

Finally, new actors such as ***Equity funds and Banks*** have entered the game. They are investing in utilities such as network infrastructures and water assets that have recurrent low risk revenues. Further unbundling will create more opportunities for them.<sup>205</sup>

## 5. Third energy package on liberalization and possibilities of influencing the EU legislation

We speak above about first and second gas directives as a matter of fact. Discussed strategies of the companies reflected the adequate answer on the EU legislation. However, the liberalization of the gas market in Europe is still an ongoing process. At present, the third energy package proposed by the European Commission is discussed and voted in the Parliament's Industry (ITRE) and Internal Market (IMCO) Committees and on the 6<sup>th</sup> of June the Energy Council will try to reach political agreement on it. Since the agreement is on the way, there are several possibilities for actors to intervene and to influence the process of decision-making. In the first part of this chapter I will give an overview of the targets of lobbying purposes and discuss the legal framework and legislative procedures. The second part of the chapter is a practical part. There I will analyze the current situation with the third gas package.

### 5.1 What is lobbying?

Lobbying is a central and legitimate part of the democratic process in all political systems. Lobbying can be described as the professional practice of advocating private and public interests towards legislators and decision makers. In contrast to US, where lobbying was born as an extension of the rights deriving from the First Amendment of the US-Constitution, lobbying in Brussels

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<sup>204</sup> Cp. EDP (EDP Sonatrach deal 2007).



was only born in the late 1970s. Up to that time, “diplomatic lobbying” at the highest level remained the rule. There were only few lobbyists involved in the system and, except for some business associations, representative offices were rarely used.<sup>206</sup> The situation changed in 1979. The event that sparked the explosion of lobbying was the first direct election of the European Parliament. Through that change, EU decision making became more complex and enterprises felt the need of an expert local presence to find out what was happening in Brussels. On this stage, the keystone of lobbying was the need to provide information. The need to influence the process actively and effectively developed later. The next important step in lobbying development was the Single European Act in 1986, which created the qualified majority vote for taking decisions in the Council but also enhanced the role of the Parliament, getting EU legislation more complex and lobbying more attractive and important for shareholders. With the EU enlargement in 2004 and 2007 this development has taken a step further, bringing in not only a lot more shareholders and interest representations but also a wide range of different political cultures and traditions. Gareth Harding from *The Washington Times* has drawn the picture of Brussels to the phenomenon of lobbying: “there are not many growth industries in Brussels...but lobbying is definitely one of them”.<sup>207</sup>

In the recent policy papers on more transparency in the EU, European Commission specifies: “lobbying is a legitimate part of the democratic system; it means all activities carried out with the objective of influencing the policy formulation and decision-making processes of the European institutions. Accordingly, “lobbyists” are defined as persons carrying out such activities, working in a variety of organizations such as public affairs consultancies, law firms, NGOs, think tanks, corporate lobby units (“in-house representatives”) or trade associations.”<sup>208</sup> Moreover, Siim Kallas, the commissioner in charge of administration and anti-fraud plans to introduce lobbyists register and code of

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<sup>205</sup> Cp. Lewiner (Energy markets observatory 2007), p.11.

<sup>206</sup> Cp. Geiger (EU Lobbying Handbook 2006), p. 13.

<sup>207</sup> Harding (Analysis: Reining in EU lobbyists 2005).

<sup>208</sup> EC (Green Paper on European Transparency Initiative 2006), p. 5.

conduct in June 2008 in effort to bolster transparency of European institutions and decision-making processes.<sup>209</sup>

It can be concluded that the development of lobbying has been the result of two other aspects of the EU legislation: not only the EU Justice takes precedence over the members states legislation, but 80% of Community law is “made in Brussels”, so national parliaments and governments have to comply with it when they pass national laws.<sup>210</sup> For companies, due to globalisation, EU lobbying has become a strategic core business function to compete successfully and operate internationally. EU lobbying is now at the cutting edge as an interpreter of complex governmental EU policies and respective stakeholder demands.<sup>211</sup>

## 5.2 The actors

There are currently around 15.000 lobbyists in Brussels (consultants, lawyers, associations, corporations, NGOs) seeking to influence the EU's legislative process. About 2600 special interest groups have a permanent office in Brussels.

Almost all major **companies**, so-called “global players”, have set up representative offices in Brussels to cover their political issues. Interesting enough is the fact that about 37% are US companies, while only 9% each from France and UK, and 7% from Germany. The reason for this is twofold. First, the lobbying is a long established business in Washington, so US companies already have experiences in it. And after some recent cartel decisions of the European Commission (GE/Honeywell, Microsoft) and due to some merger US companies have realized that they could no longer “walk all over” Brussels and therefore decided to join the game. Secondly, historically speaking, the industry and trade associations covered most of the political interests of the corporate world in Europe. Only few European companies, as DaimlerChrysler have joined the political process from the beginning. The majority of the companies

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<sup>209</sup> Cp. Euractiv (Commission sets June date for lobbying register 2008).

<sup>210</sup> Cp. Marziali (Lobbying in Brussels 2005), pp.1-4.

<sup>211</sup> Cp. Geiger (EU lobbying Handbook 2006), p. 16.

followed the US model of individual interest representation much later when they realized that being in the same industry or trade association with most of their largest competitors was not always helpful to really find a common position on all political issues. And if such position was found it would not cover all aspects of companies' individual interests and problems.<sup>212</sup> Furthermore, companies saw the rising importance of EU legislation and its implications on their daily business. Establishing an own "EU-governmental affairs" office was therefore a consequent decision for most of them.

As far as **associations** concerned, there are associations for almost every thing in Brussels: European associations, international associations, national, regional, local associations. There are also industrial, professional, trade, environmental associations. Most of them are highly specialized as for example around divisions in the product chain, clustered around upstream extractors of raw materials and downstream enterprises bringing products to the market. Another reflects issues rather than sectoral representation.

The most influential is the *Business Europe* (previously UNICE) – the Confederation of European Business. It represents industry interests and in 2006 was composed of 39 national federations from 33 countries. Other important and influential associations are *American Chamber of Commerce*, *European Trade Union Confederation*, *European Round Table of Industrialists*.

The largest category of EU lobbying groups is that of trade associations. One of the most strongest and efficiently organized is the *Conseil Européen des Fédérations de l'Industrie Chimique* (CEFIC), which represents the European Chemical industry.

The example of national association is the *Federation of German Industries* (BDI), a cross-sector association representing large parts of the German industry landscape.

Pieter Bouwen in his analysis on the kind of information that EU interest representations can provide, stressed following: the firms are best at delivering

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<sup>212</sup> Cp. Geiger (EU Lobbying Handbook 2006), p.20.

export knowledge about markets and technologies, while EU associations control information about the so-called “encompassing European interest” of their members. National associations command information about the comprehensive national interest of their members.<sup>213</sup>

*Non-Governmental Organizations* (NGOs) are also present on the European lobbying scene. Usually, they constitute a necessary counterweight to industry lobbying by representing the public good. Among the issues of NGOs are usually environment, conservation, ecology, labour conditions and human rights, trade policies, wages and working conditions, education, health and social welfare. The most influential and well known are Greenpeace, Amnesty International, Red Cross, Association of European Consumers and World Wide Fund for Nature.

*Governments*, being lobbying targets at home, are also active lobbyists on political playground themselves. Therefore, different national and local governments lobbying the EU legislators, with their respective interests, are important Brussels players. They usually lobby primarily through the member states representatives in the Council. They also lobby through the Permanent Representations of the member states.

Finally, we can stress also the third parties, as *lobbying firms*, *law firms*, *PR firms* and *consultancies* specialized in EU matters. The importance of the law firms in the lobbying process can be explained by the fact that European law plays a crucial role in issues such as competition or business activity. As a law firm, there is an advantage of being on a level playing field with the EU legislator. Public affairs consultancies in Brussels usually focused on information gathering and monitoring services, however most consultancies attempt to change this now and spread their services also in direct lobbying.<sup>214</sup>

### 5.3 The Targets

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<sup>213</sup> Cp. Bouwen (Corporate lobbying in the EU 2002).

<sup>214</sup> Cp. Geiger (EU Lobbying Handbook 2006), p. 27.

In general, interest representations have more frequent interactions with the working level of EU institutions than with their political leaders. European integration consists mainly of technical details.<sup>215</sup> The desk officers of different Directorate Generals (DG) of the EC, Council working groups as well as *rapporteurs* of the EP committees are responsible for drafting policy proposals or sorting out their details. Accordingly, administrative staff depends heavily on external information and support. As the Commissioners do not personally deal with every policy detail, main task for lobbyists is to influence broad policy principles push for revision of prior decisions or enhance the attractiveness of certain policy alternatives. Given this, it can be said that access to these leaders is as much of importance as access to technical staff.

The Economic and Social Committee (ESC) has only consultative rights in the EU legislation. It is generally considered to be of marginal importance in influencing EU legislation. Given this, direct contacts between EU institutions and interest representations are now much more important than this institutionalized forum for interest intermediation so it is not included in the empirical analysis.

### **5.3.1 The European Commission**

The European Commission (EC) is probably the EU institution a lobbyist has to deal with the most – for its double function: legislative and administrative. Having right to initiate legislation by drafting proposals to submit both to the Council and to the European Parliament, the Commission plays a role of agenda setter and it is considered to be the driving force in the EU's institutional system.<sup>216</sup> EC is also the EU's executive arm – it is responsible for implementing the decisions of the Parliament and the Council. Moreover, since the trade policy is an exclusive competence of the EU, not only the EC rules the negotiations process within the World Trade Organisation on behalf of the European Union, but also handles all the cooperation agreements with third countries.

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<sup>215</sup> Cp. Wallace (An institutional anatomy 2005), p. 58.

<sup>216</sup> Marziali (Lobbying in Brussels 2005), p. 18.

Expert knowledge is crucial for Commission's legislative work process: since it has to write technical and expertise-based proposals, the EC needs help from external groups and is open to them. Another reason is the under-resourced nature of the EC. Its total budget is almost equal to that of the Belgian government and their administrative staff is only 2 % of the size of the US federal government.<sup>217</sup> This is why the Commission is very dependent on outside support and information from the lobbyists.

### **5.3.2 The European Parliament**

Over time, the European Parliament (EP) has acquired substantial legislative powers. Since the Treaty of Maastricht, the co-decision procedure<sup>218</sup> has provided the EP with real veto power in the legislative process. The new procedure granted the EP the right to a second reading of all Community legislation related to the establishment and functioning of the internal market, to social and economic cohesion, industry, to technological research and development, and to certain aspects of social and regional policies.

However, even today, it is often regarded as less important to interest groups than the Council or the European Commission because its influence varies greatly according to the issue and the decision-making procedure at hand. In general, the EP is considered to represent supranational interests in the EU policy-making process. But being elected by national voters, its members are said to be more amenable to national interests than the European Commission and also more open to diffuse interests, including those representing consumers, the environment or large group such as the unemployed and pensioners.<sup>219</sup> The links between interest groups and MEPs are often regarded by analysts as "coalitions of the weak".<sup>220</sup>

Lobbying the Parliament starts when the *rapporteur*, who is the member of the parliamentary committee responsible for examining a new measure and

<sup>217</sup> Cp. Geiger (EU Lobbying Handbook 2006), p. 36.

<sup>218</sup> The co-decision procedure, as it applies to majority of policy issues most lobbyists have to deal with.

<sup>219</sup> Cp. Eising (Towards elite pluralism 2007), p. 388.

<sup>220</sup> Cp. Kohler-Koch (Organized interests in the EC and EP 1997), p. 6.

reporting on it, begins to write the report before the committee and party groups start discussing it. This is the reason why the most important people to lobby are the *rapporteur* and the chairman of the committee that examines the proposal of the Commission. Given their relevance, some interest groups even try to influence the appointment of certain MEPs as *rapporteurs* on subjects which they are known to be helpful.

There are also other ways to lobby the EP: by addressing the leaders of party groups, especially the biggest as EEP and PES, so they give voting instructions to their colleagues; or lobbying the “working level” – contact the assistants and the professional staff members of MEPs.

### 5.3.3 The Council of Ministers

Regarding its decisive position in EU legislation, the Council of EU is a very relevant point of access for interest groups. The meetings and decisions of national ministers are prepared by the Committee of permanent Representatives (COREPER) and the numerous Council working groups which are composed, mainly, from national experts. Taking into account its relatively few meetings, the Council and its administrative machinery are rarely lobbied in Brussels. Rather, domestic groups address their concerns to government departments at national level.

The rise of Parliament’s powers coincides with relative decline of the Council of Ministers influence. In the one hand, the increased use of qualified majority voting removed the veto of individual member states in the decision-making process, on another hand – the Council has also increasingly had to share its residual power with the EP.<sup>221</sup>

There are two channels that interest groups can use for lobbying: either by lobbying the national representatives of the home government and of the member states or the staff of the Council itself.

Since everything is already decided when ministers are called to vote, lobbyist should try to intervene in the earliest phases of examination of a directive or a

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<sup>221</sup> Cp. Bouwen/McCown (Lobbying versus litigation 2007), p.2.

regulation by the Council. This is a reason why interest groups prefer to lobby the Permanent Representations to the EU.

The interesting difference between the European Commission and the Council is that while the EC is looking for detailed and technical knowledge, the Council is interested to facilitate the bargaining process among member states.

Lobbying the Council goes beyond the attempt to influence the positions by national governments: in order to form coalitions either to pass a proposal or to block it, it turns also to other governments. In fact, as a consequence of the *qualified majority voting* (QMV) system, interest groups are encouraged to put pressure on other executives than only on the national ones if they are not able to convince national ministers to adopt their position or if their points of view are different. In addition, the influence of a national government over the adoption of a particular measure is reduced because of the QMV system.<sup>222</sup>

#### 5.4 Third energy package

As discussed in previous chapters the main aim of the *third package* of the energy market liberalization pursued by the European Commission is the creation of the competitive internal market for natural gas, decreasing prices for industrial users and households, but also increasing energy security of the EU. Third-party access to pipelines and gas storage facilities, improvement of conditions for cooperation between network operators, strengthening the role of regulatory agencies (also the creation of the new agency for the Cooperation of Energy Regulators - ACER) and liquidation of vertical integration through ownership unbundling of producing capacities from transport networks (gas pipelines) should be the appropriate tools to achieve these aims.<sup>223</sup>

In my analysis I would like to concentrate on the most controversial issues and not to describe the whole energy liberalization package. By concentration on these issues and by analysing the positions of the parties in the liberalization process I will try to figure out what was achieved to find compromises, analyse

<sup>222</sup> Cp. Marziani (Lobbying in Brussels 2005), p.19.

<sup>223</sup> Cp. EC (Proposal for Directive concerning common rules for the internal market in natural gas 2007), p. 3.



the arguments of the different actors and project the future development of the Third energy package.

### **5.4.1 Controversial issues of the 3<sup>rd</sup> energy package**

#### **5.4.1.1 Ownership unbundling and Independent System Operator**

Proposal of “Ownership Unbundling” (OU) was from the very beginning the prominent issue in the energy package, but also the most controversial one. According to it large vertically integrated energy firms would be forced to sell transmission assets such as pipelines to independent companies as a way to ensure competitors gain fair access to the network.<sup>224</sup>

Based the opposition of France and Germany the European Commission came with the second proposal – so-called “Independent System Operator” (ISO), which is the case of drastic regulation, but allows the preservation of the property of companies on pipelines under condition that management of networks should be given to independent company and it will be stiff control from the regulator. ISO should be established in each member state and will be given more power to intervene: it will fine the companies in case of anti-competitive behaviour. According to this proposal, the network owners should follow decisions by the ISO to finance investments in transmission capacity and comply with a ten-year network investment plan proposed by the ISO.<sup>225</sup>

#### **5.4.1.2 Long-term supply contracts**

Long-term supply contracts are also criticized by the EC, as they recognized as an obstacle for new market entrants buying their gas at more volatile market prices.

"Long-term supply contracts should be protected," maintains **Italian MEP Romano Maria La Russa** (ALDE), because they do not give foreign suppliers control over the network. La Russa therefore believes member states should be given the freedom "to promote agreements which help to improve the

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<sup>224</sup> Cp. . Euractiv (Liberalization of EU gas sector 2008).

<sup>225</sup> Cp. Euractiv (Liberalization of EU gas sector 2008).

production and distribution of energy whilst ensuring that final consumers benefit and investments are profitable".<sup>226</sup>

#### 5.4.1.3 "Gazprom clause"

Another controversial point of the third energy package is the reciprocity clause or so-called "Gazprom clause". It is feared, that after the ownership unbundling strategic EU energy transmission assets will be acquired by the companies from outside the EU. Under the reciprocity clause, foreign companies interested in acquiring EU assets, would need to comply with the same unbundling requirements at home and to open its market for foreign investors.<sup>227</sup> Also in addition an agreement between the EU and the third country is essential in a further clause if "third-country individuals and companies" want to acquire control over a Community transmission system or transmission system operator.<sup>228</sup>

According to the EC proposal, any extracting or generating company established in the third country outside of EU can not acquire or even control transport capacities or gas distribution assets in the territory of the EU.<sup>229</sup> Though the provision is planned to be introduced implying that these restrictions will not be applied to the countries authorizing the participation of European companies in hydrocarbon production. Gazprom came to an agreement with BASF, ENI, Enel, Total and E.ON with regard to granting these companies the access to its resources. Thus logically the Russian gas corporation should have no difficulty in obtaining the permissions to purchase the European assets.<sup>230</sup>

But there might be some bordering cases like WinGas, a joint Russian-German company- Germany not being a third country according to the formulation. The

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<sup>226</sup> Ibid

<sup>227</sup> Cp. EC (Proposal for Directive concerning common rules for the internal market in natural gas 2007), p. 7.

<sup>228</sup> Cp. Nies (Ownership unbundling in energy markets 2008).

<sup>229</sup> Hence, it is not clear how the control will be defined: it can be a control package or just share in 10%, which still will allow influencing the decision-making process.

<sup>230</sup> Cp. Pravosudov (Gas chess: struggle for energy resources 2008), pp.46-49.

Commission recognizes that it is impossible to exclude completely the third country risk, even if Brussels obliges the grid owners to prove that any direct or indirect influence by third countries is excluded. It is clear however that, once the law is adopted, national competence is removed in the area and the Community is now in charge of bilateral energy agreements with third countries.<sup>231</sup>

In the long-term perspective it may arise the question of Gazprom's property on the main gas pipelines which are situated in the EU territory (Yamal-Europe gas pipeline, gas supplying systems in the Baltic countries, and recently Nord Stream and planned South Stream). However, as it was stressed by the Energy Commissioner Mr. Piebalgs and discussed on the Conference "Energy dialogue EU-Russia – gas aspects" which took place on the 20<sup>th</sup> May 2008 in Berlin the offshore-part of the export pipelines (Nord Stream) is not involved in the 3<sup>rd</sup> energy package and can not be unbundled.<sup>232</sup>

Currently, there is a lot of discussion about the reciprocity clause. However it should be stressed that in the investment agreements between EU and Russia, and especially, investments in the energy sector the basis of reciprocity have a special sense. While Brussels perception of the energy cooperation is based on the competition policy, the Russian position is very economical and profit-oriented. Gazprom's move into the European downstream sector just proves this statement. In such a situation of different perceptions of energy cooperation, transition to a new principle of reciprocity can appear as a conceptual breakthrough. The unclear and vague character of the reciprocity clause attracts upon itself special attention in political and business circles. The discussions to find compromises might be very useful not only for the Energy dialogue between EU and Russia, but also for the whole scale of relations between EU and Russia, especially in the framework of development of new Partnership and Cooperation Agreement.

#### 5.4.1.4 Gas and electricity: equal treatment or distinction?

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<sup>231</sup> Cp. Nies (Ownership unbundling in energy markets 2008).

<sup>232</sup> Cp. Tsygankov and Seele on the press conference "Energy Dialogue EU-Russia – gas aspects", 20.05.2008.

Also one of the very hotly discussed issues is the question if gas and electricity issues which are both the parts of the third energy package should be discussed in an equal way. In an explanatory statement accompanying its September proposals, the **European Commission** insists that ownership unbundling should apply to gas as well as electricity as "the fundamental conflict of interest" between energy generation and transmission "applies equally to both sectors".<sup>233</sup>

However, in a report for the European Parliament, **Italian MEP Romano Maria La Russa** (ALDE) says a distinction should be made between the two, given the EU gas sector's dependence on external suppliers and its reliance on multi-annual supply contracts.

"We must not forget the circumstances of the new member states which, having inadequate, or sometimes non-existent, infrastructure, are totally dependent on third-country operators for their gas supplies," writes La Russa in his draft report.<sup>234</sup>

#### **5.4.2 Current development of legislation and targets for lobbying**

These proposals of the EC – *ownership unbundling* and *Independent system operator* were from the beginning deeply opposed by Germany, France and some another smaller member states, but also by representatives of electricity and gas industry and different associations related to this sector. Associations as CEEP – public sector employers also stressed their concerns related to future employment.

Several crucial doubts concerning the legality, opportunity, proportionality and efficiency of *ownership unbundling* were stressed. OU was considered as not compatible with constitutional law and free movement of capitals. Also several doubts were stressed that OU will have positive consequences on investment and prices. It does not respect the principle of proportionality, since other effective solutions are possible. Finally, it can not be regarded as sufficient tool

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<sup>233</sup> Cp. Euractiv (Liberalization of the EU gas sector 2008).

<sup>234</sup> Ibid

to deliver additional opening for gas and electricity markets and can not guarantee an adequate level of investment in the networks.

Facing the opposition of member states and electricity and gas businesses the Council secretariat at the end of November 2007 drafted a paper for the Energy Council, requiring that member states opposed to ownership unbundling should come up with detailed alternatives. The energy representatives' summit finally, held on December 3<sup>rd</sup>, could not go further than an endorsement of the progress report, with the elaborated alternatives still missing. Germany, France and six smaller Member States remain opposed, underlining especially "that they do not consider the proposed ISO... as a genuine alternative to full ownership unbundling". Nevertheless, if Berlin and Paris converge on the refusal, their strategies and approaches are different, as a consequence of diverging industrial policy: Public or under large public control in France versus private in Germany.. Herein lies the very reason why the two states did not come up so fast with a "third option".<sup>235</sup>

Anyway, on the 29<sup>th</sup> January 2008 in a letter to Commission and Parliaments Industry's Committee (ITRE) Chairwoman Angelika Niebler the alternative proposal *Effective and Efficient Unbundling* was put forward by the eight member states (Germany, France, Austria, Greece, Bulgaria, Slovakia, Latvia and Luxemburg).<sup>236</sup>

The first pillar of so-called "third option" is related to organization and governance of the undertaking which guarantee an effective independence of transmission system operator (TSO). The second pillar is related to grid investments and market integration. Instead of suggesting that national regulatory authorities could "oblige" Transmission System Operators (TSOs) to carry out grid and infrastructure upgrades, the new text proposes that regulators can "request" TSOs to invest "by all legal means". Beyond this change, the proposals put forward essentially the same message: that fair competition can be achieved without full ownership unbundling or third-party (ISO) oversight by

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<sup>235</sup> Cp. Nies (Ownership unbundling in energy markets 2008).

<sup>236</sup> Cp. Letter to ITRE Chairwoman Angelika Niebler, 28.01.2008

ensuring a number of safeguards concerning the independence, management and investment decisions of TSOs.<sup>237</sup>

This proposal was criticized by the Commission and in a set of amendments circulated in late April; the Commission specifies the criteria under which it could accept the "Third way" issued by eight EU countries.

The Third Way needs to be strengthened in order to be acceptable," EU Energy Commissioner Andris Piebalgs told the French Senate at a hearing on 17 April. But he declined to give deputies further details, saying the Commission would wait for a vote in the European Parliament's industry committee on 6 May before taking a more definitive stance.

Under the proposed amendments, obtained by EurActiv, former state monopolies such as E.ON in Germany and EDF in France would be allowed to retain ownership of their power grids.<sup>238</sup>

However, they would have to leave their management to an independent subsidiary, the transmission system operator (TSO), with "the power to independently adopt its annual investment plan and to raise money on the capital market, in particular through borrowing and capital increase".<sup>239</sup>

Under the German-French lobby, which have threatened to derail the Commission's initial proposal by forming a blocking minority with six other member states in the Council (see the Figure: 5-1), a compromise deal with a modified text on how to force more competition onto EU gas and electricity markets was presented on the meeting of diplomats (COREPER) on the 14<sup>th</sup> May in Brussels.

**Figure 5-1: Blocking Minority in the Council of Ministers**

<sup>237</sup> Cp. Euractiv (Eight EU states oppose unbundling, table "third way" 2008)

<sup>238</sup> Cp. Euractiv (Brussels sets tough conditions for third way on energy 2008).

<sup>239</sup> Cp. Euractiv (Brussels sets tough conditions for third way on energy 2008).

Country	Population	Votes in the Council
Malta	400.000	3
<b><u>Luxembourg</u></b>	<b>460.000</b>	<b>4</b>
Cyprus	800.000	4
Estonia	1.400.000	4
Slovenia	1.900.000	4
<b><u>Latvia</u></b>	<b>2.400.000</b>	<b>4</b>
Lithuania	3.600.000	7
Ireland	3.700.000	7
Finland	5.200.000	7
Denmark	5.300.000	7
<b><u>Slovakia</u></b>	<b>5.400.000</b>	<b>7</b>
<b><u>Bulgaria</u></b>	<b>7.500.000</b>	<b>10</b>
<b><u>Austria</u></b>	<b>8.200.000</b>	<b>10</b>
Sweden	8.900.000	10
Portugal	10.000.000	12
Hungary	10.100.000	12
Belgium	10.200.000	12
Czech Republic	10.300.000	12
<b><u>Greece</u></b>	<b>10.600.000</b>	<b>12</b>
The Netherlands	15.900.000	13
Romania	22.400.000	14
Poland	38.600.000	27
Spain	39.400.000	27
Italy	57.800.000	29
<b><u>France</u></b>	<b>59.400.000</b>	<b>29</b>
Great Britain	59.500.000	29
<b><u>Germany</u></b>	<b>82.200.000</b>	<b>29</b>
<b>EU 27</b>	<b>481.700.000</b>	<b>345</b>
<b>Blocking Minority</b>		<b>91</b>
<b>Currently</b>		<b>105</b>

*Source: Own elaboration*

The MEPs vote on the 19<sup>th</sup> May in the Parliaments Industry Committee (ITRI) on internal market in natural gas refused a proposed gas directive of the EC that would oblige groups such as Gaz de France and RWE Gas in Germany to sell off their pipelines and storage assets in a bid to force more competition onto EU markets.<sup>240</sup>

The results of this vote can be regarded as the victory of the group of 8 countries opposing ownership unbundling headed by Germany and France.<sup>241</sup>

<sup>240</sup> Cp. Euractiv (Spotlight turns to gas in EU energy battle 2008).

<sup>241</sup> Ibid

Angelika Niebler (EPP-ED, Germany), chairwoman of the Parliament's industry committee, expressed her satisfaction with the outcome. "I am happy because we have a third-way option," she said, according to Euractiv.<sup>242</sup>

Particularly interesting in this situation is the fact, that on the 6<sup>th</sup> of May a Franco-German alternative to the Commission's electricity market liberalisation proposal – *Effective and Efficient Unbundling* was rejected by a slight margin during a key vote in Parliament's Industry Committee. MEPs also voted against a Commission substitute plan to put in place a strict regulatory regime policed by an Independent System Operator (ISO).

With the **Parliament's industry committee** taking opposite positions on gas and electricity, the debate is now shifting to whether the proposal should be split up, with the Franco-German 'Third Way' option made available only for the gas sector.

#### **5.4.3 Future of the third energy package and possible outcome**

In the forefront of the institutional battle at the moment, it is not that clear what will be the possible outcome. The eight countries heading with Germany and France are pleased with the vote outcome on the 19<sup>th</sup> of May in Parliamentary's industry Committee (ITRE). Most possible outcome sounds that they will not block with veto the Energy's Council aim for "general approach" on liberalization package. Energy Ministers could then formally adopt the plans under French presidency in the second half of 2008. On the 16-19 June 2008 the Parliamentary vote on the proposed gas directive (*rapporteur* La Russa) will happen. Should the Council's position be different from that of Parliament, a second reading must take place with a long wave of discussions and bargaining.

The question might arise whether the liberalization battle is not first of all of a very ideological nature: The European Commission fighting against national enterprises? What is the proof that the best means to come up with a unified and stronger EU also in energy policies does not require strong European

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<sup>242</sup> Cp. Euractiv (Spotlight turns to gas in EU energy battle 2008).



“champions”, resulting from mergers, and a reinforced competition among these. National energy enterprises have to prove their European capacity and ambition, also with a Europe oriented approach both in strategy and in marketing. The EU’s regulation for interconnectors and competition among these actors, a reinforced European regulation would be necessarily part of the picture.<sup>243</sup>

Position papers and arguments of the countries, companies, NGOs, associations are presented in the next chapter. They allow overview of the gas and electricity market, but also of the related sectors.

#### **5.4.4 Position papers and arguments of the parties**

Here I analyse the position of the countries, companies, association of the industries and public interest groups on the 3<sup>rd</sup> liberalisation package and particularly their positions on ownership unbundling.

As we can see from declared positions there a lot of parties have their own particular interest on the issue on energy market liberalization. Most of the parties are pro-liberalization; however ownership unbundling was from the beginning deeply opposed by lots of parties.

The situation in EU member states seemed to be very heterogeneous. There are, states which realized the full unbundling – “ownership unbundling”, states which preserve minority shares in the grids, or states with vertically integrated production and transmission structures, which are the strongest opponents of the “ownership unbundling” proposal of the EC<sup>244</sup>. The positions of the EU member states and their arguments are presented in the figure below:

*Figure 5-2: Countries position on 3<sup>rd</sup> energy package*

<sup>243</sup> Cp. Nies (Ownership unbundling in energy markets 2008).

<sup>244</sup> Cp. Nies (Ownership unbundling in energy markets 2008).

France, Germany, Austria, Greece, Bulgaria, Slovakia, Latvia, Luxemburg	<p>Deep opposition of “ownership unbundling” and “Independent system operator”</p> <p>One of the arguments of the states is that unbundling is unconstitutional. Further, they also claim that there is no correlation between unbundling and investment or prices and unbundling, that unbundling has negative social consequences, and that unbundling is a disproportionate measure.</p> <p>Unbundling violates the right to property; however how the EC argues that will be the case if owners would have been obliged to sell assets to price less than the full market value. Under Commission's proposal it will be the full value of the open market.</p>
Most of the countries who are dependent on external gas suppliers	Long-term contracts are essential to guarantee stable prices for consumers. Breaking up the transport and distribution activities of European gas incumbents will weaken their bargaining positions in negotiating with gas suppliers from outside the EU and might negative influence the Europe's security of supply.
Countries which have long-term supply contracts with Russia – first of all Germany, France, Italy, Austria	Against Investment reciprocity clause – The “Gazprom clause”
UK, Spain, Sweden	Very PRO – liberalization
<i>Source: own elaboration</i>	

*Figure 5-3: Companies position on ownership unbundling*

<p>Electricité de France, Gaz de France, RWE Gas Midstream, Gas Natural</p>	<p>The most reluctant companies against ownership unbundling, which also reflect the position of their Member States.</p> <p>France traditionally defends the concept of consumer protection and supports “national champions”, large companies, able to compete on the world market (EDF, GDF). Germany’s argument is based on the consideration, that division of assets will destroy the existing efficient system of functioning of energy sector which is based on the mutual agreements and obligations of private energy companies.</p>
<p>E.ON</p>	<p>Until recently one of the biggest opponents of ownership unbundling, E.ON recently announced its willingness to settle with the European Commission in respect of its energy assets and to unbundle its electricity and gas network.</p> <p>One of the reasons is the potentially devastating impact of the Commission’s anti-trust prosecutions in the energy sector both in terms of political and reputational damage and financial consequences is forcing incumbents to seriously consider settling with the Commission.<sup>245</sup></p> <p>Another reason is the threat created by DG Competition’s antitrust prosecutions. Since the 2005 when the EC launched the sectoral review of the energy sector – certain amount of anti-competitive behaviour, as price-fixing, market-sharing practices and agreements of incumbents and abuse of the dominant position through denial third-party access came into the light. DG Competition launched a series of prosecutions against these companies.</p> <p>According to EU law interest on damages is usually from date of damage and not as in US, from date of judgement, so the level of damages to be paid by incumbents could be enormous.</p> <p>Also the prospect of significant reputational damage is crucial for gas incumbents as it might cost for them the loss of domestic and industrial customers.</p> <p>Taking a proactive action E.ON recently declared the wish to work with the EC and to sell part of his high voltage grids in Germany or to exchange it for assets in other European countries.</p>
<p>British Gas</p>	<p>Was from the beginning very pro-liberalization and pro ownership unbundling. After the privatization in 1997 it was split and ownership unbundled into Centrica, retail and industrial consumers supply</p>

	company and BG, which owned the transmission network. The consequence of unbundling was not only good for consumers, but also for shareholders, however it should not be forgotten that the British gas market is very different from the most European continental markets, as it was until 2007 self-efficient and not dependent on external suppliers.
Gasunie	Followed the ownership unbundling it split into N.V. Nederlandse Gasunie (gas transmission and storage infrastructure) and Gasunie Trade & Supply B.V. (gas production, purchase and sale).
Statoil, BP, Shell, Exxon-Mobil	International oil companies (IOCs) are basically PRO-liberalization. However, they were not very active in the liberalization process as they have sold (Shell and ExxonMobil) their transmission interest in Ruhrgas and Thyssengas in 2002 to E.ON and RWE and are currently not subject of the discussed OU. However, in context of proposed by EC the strategy of diversifying of energy supplies through building of new LNG terminals, the IOCs – traditionally well presented in the LNG business might have pro-liberalization position.
Sonatrach	Deeply oppose the <i>Ownership unbundling</i>
Gazprom	Gazprom and Russian government from the very beginning criticized heavily “ownership unbundling”. On October 16 <sup>th</sup> 2007 it was established the EU-Russia task force which came to the conclusion that OU will be very negative not only for Gazprom but also for EU itself. <sup>246</sup>
<i>Source: own elaboration</i>	

*Figure 5-4: EU-level producer associations positions on gas market liberalization*

<i>Organization</i>	<i>Description</i>	<i>Relationship to liberalization/basic points</i>
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Eurogas – European Union of Natural Gas Industry	Gas generators. 43 members in 2 different countries; 30 natural gas companies; 12 federations.	<p>Broadly PRO -liberalization</p> <p>Improved regional cooperation and market development – as a step towards fully integrated EU market.</p> <p>Non discriminatory access and system operation;</p> <p>Difference between gas and electricity, due to geopolitics and external dependency of the EU;</p> <p>Any future legislation should aim at a well functioning internal market and at preserving the ability of energy companies to become globally competitive, to invest and to determine their portfolios and their long term strategies</p> <p>Strong European companies to negotiate gas supplies in the interests of European consumers.</p> <p>Recognition of long-term contracts;</p> <p>Opposing the mandatory ownership unbundling and ISO, as it will lead to weakening of European energy companies and to long-lasting legal disputes about violation of property rights;</p> <p>Supporting efficient and independent TSOs with clear responsibilities and functional/operational autonomy.</p>
EFET – Electricity and Gas Traders	Established in 1999 and represent over 90 trading companies operating in more than 20 countries	<p>Pro-liberalization</p> <p>Improving conditions for energy trading in Europe and fostering the development of an open, liquid and transparent European wholesale energy market.</p> <p>Difference between gas and electricity, due to geopolitics and external dependency of the EU;</p> <p>Effective unbundling of gas TSOs in order to avoid distortions in investment decisions. Unbundling is not an end in itself, but a means to ensure that the Internal energy market (IEM) can develop effectively. A third way (not only OU or ISO) must be possible.</p> <p>Greater consistency between methods of unbundling of government and unbundling of privately owned TSOs must</p>

		<p>be achieved.</p> <p>The role of ownership of grid assets is not the only decisive factor; there are alternative means for some MS to achieve effective IEM.</p>
Eurelectric – Union of electricity industry	Members (national associations, or utilities) involved with the generation, transmission, distribution, and supply of electricity.	<p>Not central in gas liberalization – mainly focused on electricity liberalization.</p> <p>Welcome similar approach taken for gas and electricity as a driver to facilitate the competitive sourcing of gas for electricity generation;</p>
CEFIC – European Chemicals Industry Federation	Traditional EU sector or cross industry associations	<p>Pro-liberalization</p> <p>Market integration (increase of cross-border and transmission capacity), strengthened TSO cooperation.</p> <p>Essential character of long-term contracts – as they enable energy-intensive industrial consumers to fulfil their electricity and natural gas needs in the medium and long-term at reliable, international competitive prices.</p> <p>Not necessarily ownership unbundling or ISO, most important – unbundling provisions must ensure non-discriminatory transparent access to grid or pipelines on cost basis.</p>
IFIEC Europe – International Federation of Industrial Energy Consumers	IFIEC Europe has 13 federations representing 75-80% of industrial energy consumption in Europe – steel & alloys, chemicals, non-ferrous metals, pulp&paper, food & packaging, automobile	<p>Welcomes Third Energy package and supports strengthened power for the national regulation authorities, enhanced transparency, improved cooperation among national regulators and TSOs.</p> <p>Concerns on market concentration as measures do not tackling efficiently the problem of market dominance by the incumbents in most EU Member States (MS).</p> <p>On long-term contracts there is a need to avoid market foreclosure between the producers and gas suppliers, however long-term contracts are essential for industrial consumers in order to underpin new manufacturing investments or to secure the sustainability of existing</p>

		<p>plants.</p> <p>Supports legal and functional unbundling of all gas infrastructures - pipelines, storage systems, LNG facilities. Regulated access, rather than negotiated.</p>
Business Europe – The Confederation of European Business		<p>Long-term contracts essential for security of energy supply and very important for energy-intensive industries.</p> <p>Development of innovative models of long-term contracts.</p>
CEDEC – European Federation of Local Public Energy Distribution Companies	Municipal members, claiming a 20% market share of supply	<p>Traditional, public-sector view on liberalization where focus is more on threats.</p> <p>Ownership unbundling on distribution level reinforces concentration in generation and supply, and thus reduces competition.</p> <p>ISO on distribution level leads to the same problems and seems an even greater threat, as local and public shareholders may be excluded completely from the European energy market having to sell off the distribution operation activities.</p>
GEODE – European Group of Enterprises and Organisations of Energy Distribution	Members – over 100 independent municipal distributors of gas and electricity, both privately and publicly owned.	<p>In general supports the EC proposal, however worried that the role of independent distribution companies not sufficiently recognized.</p> <p>Strong supporter of proposed ownership unbundling of transmission infrastructure from production and supply activities.</p>
CEEP – European Centre for Enterprises with Public Participation and of Enterprises of General Economic Interest	Public Sector Employers – though also active on wider public sector issues.	<p>Originally anti-liberalization with strong employment-related concerns. However now realizes also the chances that liberalization can bring, as new jobs in energy, transport, industrial production sectors.</p> <p>In favour of an enhanced cooperation between TSO for more efficient market.</p> <p>An (ownership) unbundled transmission system operator (TSO) or ISO is not a guarantee of increased investments. OU or ISO – disproportionate, as it can slow the investments in infrastructure.</p> <p>Especially for the gas sector, the loss of transmission assets or industrial competences in this area (ISO solution) will weaken the bargaining position of integrated gas</p>

		<p>companies compared to powerful gas suppliers.</p> <p>Concerning reciprocity clause and restriction of Third country operators to invest in transmission networks some CEEP members consider that these restrictions do not comply with commitments taken by the EU and MS within the WTO framework. These restrictions may also lead to decreasing global level of investments in midstream infrastructures.</p>
<p>EPSU – European Federation of Public Service Unions</p> <p>ETUC – European Trade Union Confederation</p> <p>EMCEF – European Mine, Chemical and Energy Workers Federation</p>	<p>EU-level trade Unions most affected by liberalization</p>	<p>Initially anti-liberalization due to concerns about job losses. As stated EPSU Deputy Secretary General – Jan Willem Goodrian “Serious issues of employment loss (300.000 over the last ten years), also more competition will not bring more investments to a sector that needs a very stable framework. The result will be higher prices and serious impact on all users”.</p> <p>Deeply oppose OU and ISO, which are part of the 3<sup>rd</sup> liberalisation package. “Bureaucratic”, “ideological” and “based on flimsy evidence”.</p> <p>Gas social dialogue committee with employment study, work programme and demographic change.</p>
<p><i>Source: own elaboration in accordance at Greenwood and position papers of EU-level producer associations</i></p>		

*Figure 5-5: Public interest group positions on gas market liberalization*

Consumer organizations	<p>BEUC (The European Consumers organization) – welcomes ownership unbundling of the Transmission system operators (TSO) as a means to stimulate competition and to reduce prices for consumers. Also COFACE (Confederation of Family Organizations in the EC) – supportive of liberalization.</p>
Enviromental Non-	<p>Climate Network Europe (CNE), World Wide Fund for Nature (WWF),</p>



Governmental Organizations (NGOs)	<p>Greenpeace and Friends of Earth (FoE) have been active in the liberalization of the EU electricity and gas markets. For some of them liberalisation offered the prospect of more environmentally friendly forms of generation, such as natural gas instead of coal and nuclear, as a result of pressure for cheaper and more energy-efficient forms of generation. Due to emerging technology of production of combined heat and power (co-generation) by using gas they were able to find allies in the growing producer sector, which use these technologies. One of these allies – Cogen Europe – which consist of of Co- (often gas) generators, industrial users in their own generation needs, and equipment producers.</p> <p>Environmental NGOs may have influenced the liberalization debate through separate policy initiatives, such as transparency pricing to prevent hidden subsidies or the Renewables Directive, however their effort can not be considered as central in delivering the outcome of liberalization.</p> <p>Greenpeace published a report, where it analyses the market shares of Europe's largest electricity and gas utilities. According to its report the liberalisation process has worked in favour of large established utilities as demonstrated by the wave of mergers and acquisitions. Conventional sources of energy are clearly favoured and new green utilities have little chance of competing with large incumbents.</p>
<i>Source: own elaboration in accordance on Greenwood</i>	

## 6. Conclusion

Coming to a final assessment of the undergoing transformations in the natural gas market in the ever-expanding EU, and of the predicaments faced by the main players, but also the reactive strategies they have formulated, certain key issues which dominate the evolving gas market landscape can be recognized.

Rising natural gas demand, growing import dependency on external suppliers and especially the ongoing process of liberalization in Europe are changing profoundly the structure of European gas industry and leading to fundamental changes in corporate behaviour. Customer choice, the evolution to gas-to-gas competition and the unbundling challenges affecting investment decisions have forced companies to rethink their strategies, restructure their operations, develop new services and become more efficient.

The EU treaty aims at integrating markets and enhancing competition in the interest of consumers and at eliminating distortions caused by Member States pursuing national interests. Ironically, driven by their specific national interests, some national governments have chosen the strategy of creating or reinforcing national champions in order to protect them from hostile takeovers.

**Long-term contracts**, criticized by the European Commission as a barrier to real open competition in the gas market, are likely to remain a defining feature of the industry due to their advantages from a security of supply and long-term investment planning perspective. This is especially crucial for external suppliers such as Gazprom or Sonatrach, as they need to carry out massive up-front investments in exploration, production and transport infrastructure, but also for their counterparts as E.ON, GDF, ENI i.e. which are facing the scarcity of domestic (EU) gas reserves.

One of the main goals of gas market liberalization is the unbundling of the network infrastructure from other segments, ultimately aiming to enhance competition on the market and reduce the prices for the customers. At the same time, it can be concluded that the liberalization process has been followed by a wave of consolidation, expressed in a wave of **mergers and acquisitions**. The strategy of the incumbent companies such as GDF or ENI to the regulation has been, in fact, concentration and diversification, by means of *vertical and horizontal integration*, in order to maintain their market share, achieve economies of scale and scope, prepare against foreign hostile takeovers and expand geographically.

Being historically already vertically integrated through their engagement in customer supply, distribution and transmission, and also in the long-term

contracting of gas, and facing now the necessity of unbundling, the gas incumbent companies such as GDF, ENI are currently diversifying their business toward electricity, waste, water and even communication services. Classical power utilities such as E.ON, EDF or Enel, by moving into the gas business, are able to sell locally bundled gas and electricity, reduce their transaction costs, hedge the risks, achieve experience synergies and secure gas for their gas-fired power plants.

Some of the previous gas incumbents, such as Gas Natural and British Gas have strengthened their role in core activities such as supply and distribution of natural gas and have withdrawn from their assets in transport companies. The same strategy of *vertical de-integration* was chosen by the International oil- and gas majors as ExxonMobil, Shell or BP; these companies withdrew from their holdings in integrated operators, remain in the core business of upstream exploration and set up their own trading and marketing entities to sell their gas directly to customers.

***Strategic partnerships and asset swaps*** are the key to the future. They allow for the long-term investment decisions to be made and for transfer of technology and expertise between companies, as they do not involve ownership takeovers of foreign companies and do not run into as many political obstacles.

Strategic infrastructure partnerships allow the building of new “transit avoidance” pipeline connections such as Blue Stream, Nord Stream and South Stream and thus secure the export of gas to Europe. For external gas suppliers, such as Sonatrach and especially Gazprom, strategic partnerships or alliances allow transfer of technologies and know-how for development of new gas fields, offer possibilities of investing in storage facilities, and of distributing of gas to European customers. While, not being able to acquire the gas distribution companies in the biggest gas markets in Western Europe such as Germany, UK, and Italy, Gazprom, by the means of strategic alliances (Wingas) and asset swaps (EniPower), is taking positions in European downstream activities. Gazprom’s principal strategy here is, and has been, to create and sustain partnerships with the major European gas importers, and not to enter into competition with them.

In a new competitive environment caused by liberalization, gas incumbents and power utilities, involved historically in the distribution of gas and power, are losing their market shares to the benefit of new entrants. Logically, their interest is to evolve into the upstream part of the gas chain. For these companies, partnerships and asset swaps represent a possibility to secure the natural gas supply via direct control over the gas resources.

Industrial transformation in the gas sector – mergers and acquisitions, strategic alliances and asset swaps have been very dynamic and have lead to an industry in which a small number of large and powerful players are active. As markets become more competitive the wave of restructuring is likely to continue. The borderlines between producers, incumbents, buyers, sellers, distributors, electricity suppliers are continuously shifting. The gas company concept is developing from the mono-sectoral vertically integrated company towards the international multi-energy or even multi-utility group. The ultimate irony is that, despite the push for liberalization, the old national vertically integrated monopolies may be destroyed, just to have an oligopoly of giant energy companies, dominating global utility markets.

The 3<sup>rd</sup> energy liberalization package attempts to prevent this development. However the ambiguity of the interests of the countries, companies and business associations, their pro- or contra liberalization attitude and, most importantly, their capability to influence the legislation and decision-makers, will shape the future development of the European gas market.

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