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DISSERTATION

LONG TERM CONTRACTS IN THE NATURAL GAS INDUSTRY AND THE EU REGULATORY FRAMEWORK

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1. INTRODUCTION

Natural gas demand in Europe is steadily increasing over the last decades. It is challenging the supremacy of oil as the leading source of energy and has reached a dominant position in electricity generation. Due to the European obligation to reduce greenhouse gas emissions in the framework of the **Kyoto Protocol**, the trend toward natural gas is expected to continue in the future. Europe's energy plan based on sustainability competitiveness and supply security necessitates reduction of green- house gas emissions by 20%, increasing the share of renewables in the energy consumption to 20% and improving energy efficiency by 20%,. This agenda attributes a special significance to natural gas which is expected to grow in consumption and contribute to the targets set for reducing greenhouse gas emissions.

It is clear that at least for the next 20 centuries natural gas will be the key energy sector for Europe. The demand for natural gas is set to grow, and given the **falling European reserves** and resources the European dependence on natural gas imports is also set to grow. Europe's level of gas reserves is not a simple matter to determine. Nonetheless it is an uncontested truth that natural gas availability in Europe has been falling since 1990's and at the current consumption rate, Europe's gas reserves will be exhausted within a few years. Apparently these developments put Europe in an uncomfortable position if we consider that eventually a large amount of Europe's needs in natural gas will have to be imported from non-European nations (Soviet Union's and Middle East countries' reserves and resources in natural gas are 1000 times those of Europe) .

This growing Energy dependence on imports could have various

economic and political implications. The main **economic consequence** is the creation of huge financial flows toward foreign producers. From a **political viewpoint**, it could put Europe in a weaker position and create a sort of imbalance if the exporting countries or the transit countries could obtain a greater bargaining power when negotiating terms and prices. Given all these, it is evident that the focus on the natural gas market will be of the utmost importance for Europe at least for the next 30 years, and this is why the general political relationship among importing and exporting countries could be a key element to the understanding of the global gas market. At the same time, the European policies in the natural gas sector must take place in a context where the interactions among the actors are not limited to continental boundaries but are worldwide. European policies in the natural gas sector, historically promoting competition within the continent, must therefore be adjusted to the interaction with other systems where competition might be scarce or even absent. And given this interaction between those different systems that are strongly interdependent, it is evident that European policies and priorities should be rethought. This underlines the importance of an adequate legislative framework within the European Union that could provide a protection from possible cartels, oligopolies or rising prices as well as the need for a uniform European Energy policy. It also implies that the current context of European policies in the natural gas sector might even create certain disadvantages in the global confrontation with the producing countries and that co-operation models based on fair and long term economic base might be needed.

Europe's concerns of an increasing import dependence on natural gas raised concerns about European Energy security and

favored a policy of **diversification of natural gas suppliers** combined with an effort to upgrade the capacity of the natural gas pipeline network with new challenging projects. At the same time the shift of the European policies towards the renewable energy sources marked an attempt for a **diversification of energy resources** that could in the long run reduce significantly Europe's energy dependence on imports of natural gas and at the same time lower the emission levels that produce the greenhouse effect. Renewables could therefore contribute to **energy diversity** and hence security against a background of high and growing dependence on imports of oil and gas, providing political flexibility, and an environmentally friendlier future. On this account, the future of energy in Europe in the long run is believed to be renewable.

2. DISTRIBUTION OF NATURAL GAS RESOURCES WITHIN EUROPE AND OUTSIDE OF EUROPE

On a global level, natural gas resources are unequally distributed.

Gas resources within Europe are located in Norway, the Netherlands and the United Kingdom. **Norway's** gas resources are located in the Norwegian Continental Shelf in the North Sea. Norway's future in gas production remains uncertain. With the current production levels exports will gradually decrease while they are not expected to last for more than 30 years. The **Netherlands'** gas resources are mainly located in the Groningen field. The government is following a restrictive production policy with the intention to preserve the reserves of the large Groningen field. To this effect it has set an upper limit for the production of gas in the Natural Gas Act. With the current restrictive policy, the

Netherlands' gas reserves could last for 20 years. **United Kingdom's** gas resources are mainly located the North Sea. UK's and Netherlands' gas production has been reduced in the recent years. The UK's gas production after a climax in 2000, started to decline and since 2004 UK has been a net gas importer with its gas imports exceeding its exports. Europe, in a parallel trend, also started to reduce its gas production and, over the next 10 years, there is an expectation of a sharp decrease in its production in natural gas.

The following table (Table 1) summarizes the levels of the falling European production and reserves .The last column of the table records the expected lifetime of gas reserves within Europe.

Table1

European gas balance for 2004 (BP, 2005a; BGR, 2006; IEA, 2005; TNO-NITG, 2004)

	Proven reserves (bcm)	Additional conventional resources (bcm)	Production (bcm)	Net imports (bcm)	Net exports (bcm)	Consumption (bcm)	Static lifetime of proven reserves (years)
Austria	15	50	2.0	7.1		8	8
Belgium				15.1		19	
Czech Republic	4	10	0.2	8.8		10	20
Denmark	132	100	9.4		4.4	5	14
Finland				4.4		4	
France	13	300	1.3	39.7		41	10
Germany	270	200	20.6	78.4		99	13
Hungary	69	80	3.0	11.4		13	23
Ireland	20	50	0.9	4.1		5	22
Italy	227	500	13.0	70.0		83	17
Netherlands	1357	200	68.8		22.8	46	20
Norway	2386	3200	78.5		71.5	6	30
Poland	165	150	4.4	10.6		15	38
Romania	310	400	13.2	3.8		17	23
Slovakia	15	15	0.2	6.8		7	75
Spain	3	500	0.4	27.6		28	8
Turkey	8	20	0.7	22.3		23	11
United Kingdom	531	1150	95.9	4.1		100	6
Remaining Europe	80	2491	21.5	4.1		26	4
Total Europe	5605	9416	334	318.3	98.7	555	17

Although Europe's resources are not sufficient to cover its demand in natural gas, neighboring regions, namely, in the Former **Soviet Union, Caspian, Middle East and Northern Africa** possess large amount of gas reserves. The largest gas reserves are located in the Russian Federation, followed by Iran and Qatar.

These three countries alone account already for 58% of global proven gas reserves. The following table (Table 2) records the gas reserves of selected countries, including the first three countries in the world in proven reserves of natural gas.

Table 2

Natural gas reserves of selected countries.

Country/reserves in Tcf and BcM	Tcf	BcM
Russia	1680.00	47577
Iran	974.00	27583
Qatar	910.50	25771
Saudi Arabia	239.50	6768
UAE	214.50	6060
USA	204.40	5777
Nigeria	181.90	5154
Algeria	161.70	4587
Venezuela	152.40	4304
Iraq	110.00	3115
Turkmenistan	71.00	2010
Uzbekistan	66.20	1869
Kazakhstan	65.00	1840
Egypt	58.50	1656
Azerbaijan	30.00	849

Source: EIA, 2008.

To start from Europe's neighboring regions, **Russia**, with its large deposits in natural gas ranking it first in the world, its geographic location close to Europe and its rapidly developing pipeline systems is currently the most significant energy partner of the European Union.

In **Caspian** Azerbaijan and Turkmenistan appear as alternative suppliers. Turkmenistan offers numerous advantages for Europe in terms of reserves and security of transport but appears unconvinced due to its rising commitments to China and Russia. Azerbaijan on the other hand has recently become a net exporter due to the rising production in Shah Deniz and could be an important additional supplier for EU while Kazakhstan can hardly satisfy its domestic consumption with a production leaving only a

small surplus of gas, all sent to Russia. Connecting Azerbaijan and Turkmenistan by a Trans-Caspian pipeline would be useful for EU with regard to the future pipeline project, Nabucco, which has the intention to distribute Caspian and Middle Eastern gas in Europe in the framework of Europe's energy policy that favors diversification of energy suppliers.

In the **Middle East** Iran and Qatar are the countries with the second and the third proven gas reserves respectively. Middle Eastern gas supply for EU might include imports from Iran, Iraq and Egypt. Issues of infrastructure and security, however, impede the rise of a coherent Middle Eastern natural gas supply network.

3. GEOPOLITICS OF THE EUROPEAN NATURAL GAS DEMAND

1.1 Evolution of the European gas supply system

The natural gas sector within Europe began to evolve in the 1950's and 1960's with the exploitation of gas fields in Italy and the discoveries of large natural gas fields in the North Sea and the Netherlands. Natural gas, initially considered a by product of oil production, reached a widespread use in the 1970's due to high oil prices and Europe's effort to reduce dependency on oil. In 1964 the European Union first began to import natural gas in a liquefied form (LNG) from Algeria, with the Algerian LNG shipped to the UK. In 1969 imports of natural gas from the Soviet Union to Western Europe started with the construction of the Brotherhood pipeline through Czechoslovakia to Austria. In 1973 the Soviet Union supplied natural gas to West Germany with the historic contract concluded between Leonid Brezhnev and the West German Chancellor Willy Brandt. Since then, pipelines supplying natural gas from the Soviet Union to Europe spread from Germany to

France and afterwards expanded to the rest of Western Europe. Currently Russia is the largest gas supplier for Europe and the second major supplier is Algeria.

1.2 The Geopolitical dimension of the new pipeline projects

The increased natural gas consumption, faced by Europe's low indigenous gas resources indicate that European gas supply will depend more strongly on gas imports compared to today. The economic crisis is expected to reverse the growth in gas consumption for a while, but underlying trends in energy consumption show a steady increase in the forthcoming years. This increased EU's awareness of the risk of being dependent on few suppliers and venues and raised fears that a gas supply interruption could have similarly devastating effect as the oil shock of 1973 which pointed that even small supply cuts can cause disproportional price spices. The increase in contribution of renewables in the energy market, however and the rise in LNG (liquefied natural gas) are expected to increase optionality and contribute to the European energy security. Yet, currently due to the high capital cost of the LNG facilities they also tend to be captive single customer / supplier facilities whereas the actual high cost of LNG, that requires liquefaction, ship transportation and regasification makes its trade less attractive compared to the traditional pipelines at least for shorter distances. While, thus, the European energy supply security beyond 2030 appears more optimistic due to the expansion of renewables and LNG, the mid-term period seems more challenging and investment on pipeline infrastructure will play a decisive role at least in the mid-term time.

To this end, future projects like the **Nabucco** project represent the European effort to search for additional entry points and

sources of supply outside the existing supply sources from Russia and Algeria, turning to the Caspian and the Middle East. In the search for additional entry points, another planned project the **ITGI** pipeline, on which Italy, Greece, Turkey and Azerbaijan have been collaborating, can be the first gas pipeline in the Corridor connecting Caspian Sea countries and the EU.

The concept of security of supply, however, does not involve only source dependence risks. Structural and transit risks (as for example political unstable transit countries) can as well be harmful to gas producing countries and might jeopardize the security of supply. In this framework a challenging future Russian project **South Stream (**that will pass the Black Sea, reaching Bulgaria and will be then divided in two routes, with the Southwestern route continuing through Greece and Ionian Sea to southern Italy and the northwestern route from Pleven to Serbia reaching till Austria) aims to limit the transit risks of Russia from its transit dependence on Ukraine and increase its selling capacity. Nabucco project and South Stream are expected to trigger a potential competition among the gas producing countries. Russia's selling capacity, however, is expected to increase by another main project, the **North Stream,** which will transport gas to Germany via the Baltic Sea.

Nabucco and South Stream are the most important projects passing through Southeastern Europe with the aim to supply natural gas to Western Europe. Russia's **South Stream** project- a joint venture between the Italian Eni and Gazprom- will probably have the guaranteed amount of natural gas, and its capacity can be subsequently increased. A recent agreement between Russia's Gazprom and Italy's Eni intends to increase its capacity to 63 billion cubic meters. The project intends to sell gas to Europe at

attractive prices and it is expected to be very competitive compared to Nabucco in terms of prices.

With regard to the **Nabucco** project, the pipeline is expected to cover a distance of more than 3,300-km, its overall cost is estimated at around 7.9 billion Euros ($10.7 billion) and will have an annual throughput capacity of 31 billion cubic meters. Technical calculations, however, show that it cannot be completed sooner than in 2015. The project plans to run across a difficult geographical terrain and faces numerous transit and supply risks.

On the part of the **supplies from the Caspian**, Kazakhstan can hardly satisfy its domestic consumption while Azerbaijan and Turkmenistan have not sufficient capacities as they can ensure no more that 3bn cu m a year while at least 15bn cu m is demanded for the project. Moreover, Turkmenistan has already signed agreements with Russia and China and is currently following a policy of promising supplies to all sides, Russian Chinese and Europeans. New discoveries, however, in the South Yolotan–Osman field in south eastern Turkmenistan which is considered to be the fourth- or fifth-largest field in the world might encourage Turkmenistan about developing relations with the EU while fulfilling commitments to Russia and China. Still, even if Turkmen supplies were to directly reach European markets, it would require a new pipeline under the legally contested Caspian Sea with the possibility of a veto from the Iranian or the Russian side. As for the natural gas reserves in the Caspian Sea, its reserves are claimed by five countries, Russia, Iran, Azerbaijan Kazakhstan and Turkmenistan and the main legal issue is to determine whether the Caspian Sea is to be considered an enclosed Sea or a Lake. If it is to be considered an enclosed Sea, each bordering country will own reserves whose proportion will be determined by the length of

its coastline. On the other hand, if it is to be considered a Lake, reserves will be shared by the five countries on an equitable basis. In the case Caspian will be considered a Sea for example Iran will receive 13 per cent of its reserves, so Iran favors the Lake hypothesis that would grant to Iran 20 per cent of Caspian reserves. This is also Russia's position. Azerbaijan, instead, favors the Sea hypothesis. This uncertainty regarding the legal status of the Caspian Sea, however, does not prevent the use of its deposits.

On the part of the **supplies from the Middle East,** Iran could be the bigger card as far as supplies are concerned. It could provide enough gas volume to fill Nabucco's capacity but the prominent nuclear question and the US sanctions prevent to that. To become a major supplier to the European markets Iran has to resolve the issue of the enrichment of uranium and keep good relations with the international community but with the current situation Iranian supplies do not seem to be had at an affordable political price in the foreseeable future.

The reality of sourcing sufficient gas to fill the Nabucco pipeline, thus, remains a problem and the project is caught in a difficult position where suppliers won't provide guarantees unless financing is secure while banks won't pay up until supplies are assured. The idea of constructing the pipeline albeit antecedes the securing of the gas volume required but turning infrastructure into supply is a challenge that could still work for Europe.

In addition to the supply risks, though, problems concerning **transit risks** like Turkey's efforts to use its transit location to its best advantage will inevitably affect Nabucco's progress. Turkey (given that it will host a major portion of the pipeline) is likely to leverage its position as a regional energy hub for political and

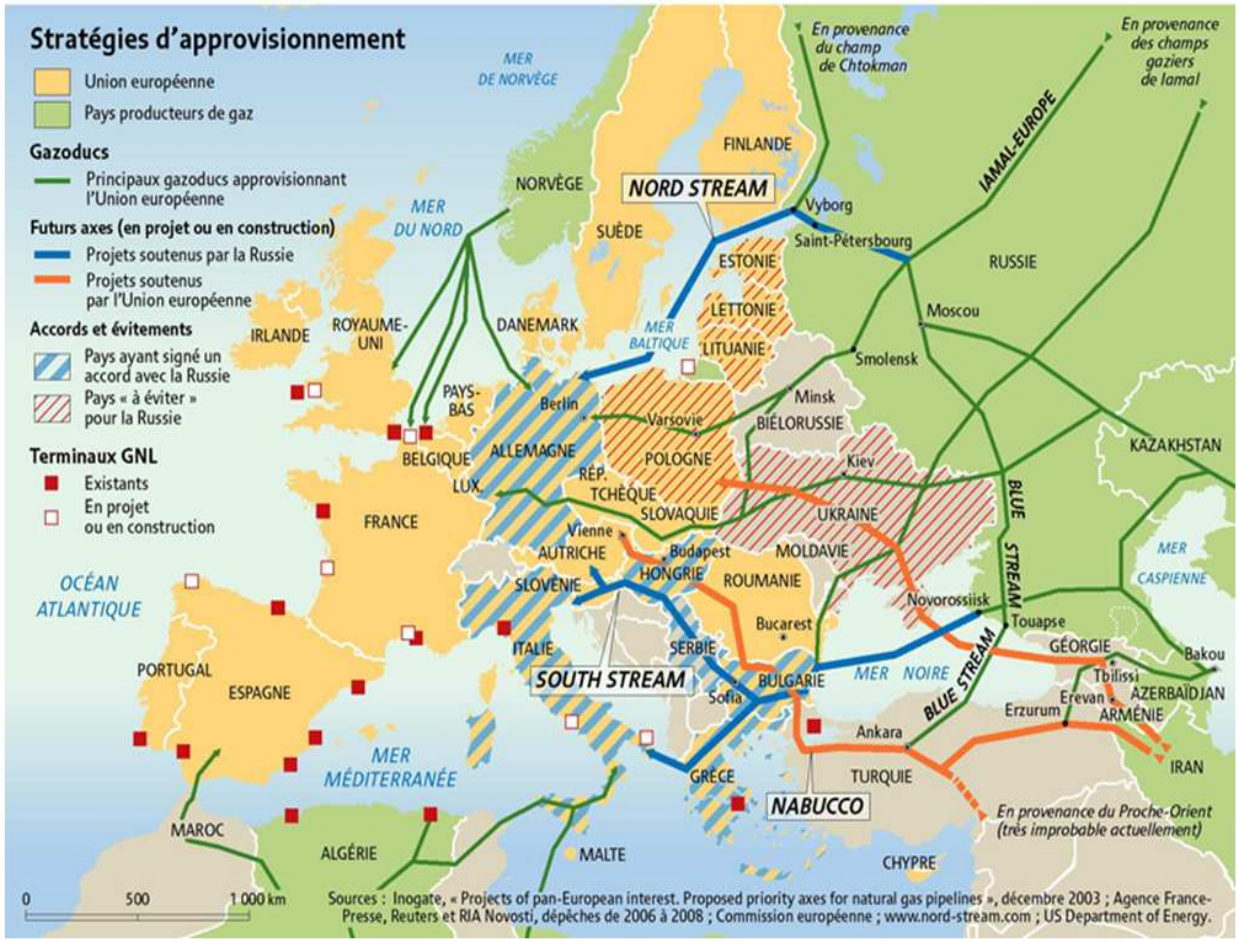
commercial effect, rather than simply signing standard transit deals. This will raise serious complications for the EU in relation to Turkish accession given Ankara would have a serious stake in the European energy security game.[1] Further issues that raised tensions between Turkey and the EU were Turkey's requests to EU to open the Energy chapter which remains closed because of Cyprus' veto, the insistence of the Turkish Botas on buying a 15% of all gas in transit at discounted price, and a sort of tax Turkey wanted to be given to the transit countries calculated in terms of the distance that the pipeline passed through the passage country. This sort of tax would be chiefly to the best advantage of Turkey, given the large portion of the pipeline this country will host. And while Erdogan dropped demands allowing for 15 percent of the take for Turkish consumption, he negotiated generous cash transit fees alongside an amount of guarantees granting access to European stockpiles at times of his choosing. Still, how closely Turkey, as a key arbitrage state will stick to the transit terms agreed it remains to be seen.

All the above mentioned risks indicate that while EU should continue to explore as many supply options as possible it **must remain politically robust** when doing so and avoid hasty measures that could lead to a political dead end.

The following Table (Table 3) records the existing pipelines that supply natural gas to Europe as well as the future pipeline projects Nabucco, South Stream and North Stream. The map also points at the existing LNG terminals and the planned LNG terminals that can provide alternative options of gas trade for EU contributing to the chain of the security of the supply.

[1] Matthew Hulbert ,Nabucco: Europe's Geopolitical Battle, ISN Security Watch, 20 Jul 2009

Table 3



Supply Strategies

European Union

Countries producing natural gas

Gas Pipelines

Existing gas pipelines in EU

Future projects (or projects under construction)

Projects supported by Russia

Projects supported by EU

Agreements and Countries to avoid

Countries that have signed an agreement with Russia

Countries bypassed by Russia

LNG Terminals

Existing LNG Terminals

Future projects (or projects under construction)

4. **THE CONTEXT OF SECURITY OF SUPPLY**

The context of security of supply involves a number of risks that can be linked to source dependence, transit dependence and facility dependence.

The first risk in the context of the security of supply is the **facility dependence.** Facility dependence concerns gas supplies from particular sources which could be interrupted by possible accidents at key transmission and venture the continuity of supply. Gas supply in Europe has little facility flexibility and as a result if one piece in the chain is blocked the strain on the system will be severe. This risk touches not only the traditional natural gas supply through pipelines but also the emerging LNG market. Accidents at key transmission however are rather rare.

To continue with **transit dependence**, given that most gas trade through pipelines transits several countries before reaching its destination, transit issues are very important with respect to European security. A Transit country in search to leverage its geopolitical position as a regional energy hub as in the case of Turkey, could acquire disproportional bargaining power and exercise political pressure to EU. (Turkey's pressure to the EU with regard to the accession issue)

The gas struggle between Russia and Ukraine indicate the emphasis on the issue of transit dependence. Russian gas supplies to Europe transit at least one country with Ukraine being by far the most important with around 80% of Russian gas supply to Europe transiting Ukraine in 2004. Both Russia and Ukraine could interrupt Russian gas transiting Ukraine whereas this aforementioned interruption of the Ukrainian transit-flows would seriously harm Europe and mainly the eastern countries of the

European Union who are dependent on one single and exclusive trunk line for a major part of their gas and therefore also increasingly for their electricity supply .

The risk of serious harm pertains to Russia too, since it can harm its reputation as a credible supplier and urge Europe to focus on alternatives such as nuclear energy or LNG at an increasing speed. Also, from a longer-term perspective, a damaged reputation could have similarly negative consequences to Russia's relationship with other demand centers such as China or India.

The transit countries, on the other hand, do not run the same risk of a harmed reputation. A decreased gas flow to Europe even if attributable to the Ukrainians would not change the ultimate consequences much since the security of Russian gas flows to Europe would still be damaged.

This was rendered more evident by the Russia-Ukraine gas disputes over non-payments by Ukraine, accumulation of Ukrainian debts and illicit diversions of gas. The first tension started in September 1993 and November 1994 with illicit diversions of gas from transit pipelines by Ukrainian companies and institutions. The gas diversion was revealed and acknowledged by Ukraine, while accusations of other diversions were disputed and the tension was finally mitigated by bilateral negotiations and agreements. However, accumulation of Ukrainian debts, the disagreement between Russia and Ukraine over the gas prices and Russia's effort to gradually stop subsidizing former Soviet republics led to further disagreements and tensions. In May 2005 it was revealed that 7.8 bcm of gas which Gazprom had deposited in Ukrainian storage reservoirs during the previous winter had not been made available to the company. It remained unclear if the gas was missing, had disappeared due to technical

problems, or had been stolen. On January 1, 2006, Russia's Gazprom reduced gas throughput to Ukraine by an amount roughly equivalent to what Ukraine would have been entitled to extract if a contract were in place. Ukraine apparently retaliated by taking unsanctioned gas from the pipeline system. The bilateral dispute affected a number of European countries particularly in Eastern Europe, who were dependent on one single trunk line for their gas and inevitably saw a drop in their supplies. Foreign governments, especially in Europe and the United States, reacted quickly, criticizing the Russian cut-off and calling for the two sides to reach a negotiated settlement. Early on January 3, Russia returned the gas pipelines to normal operations, appearing to concede that it had lost the battle for international public opinion.

Regarding the institutional solutions EU tried to impose in the dispute, it was made evident that an adequate legal background is not sufficient precondition for the security of supply. In January 2006 Ukraine ratified the Energy Charter Treaty but in January 2006 and 2008 it did not observe its obligations deriving from the Treaty since it did not ensure flows of natural gas. This is due to the fact that the Energy Charter Treaty does not contain efficient sanctions against countries breaching its provisions. This event proved that the existence of the appropriate legal framework alone does not guarantee the security of supply automatically.

The risk of transit-induced interruptions was acknowledged by Russia and was the main reason for constructing the Blue Stream Pipeline to Turkey, the Baltic Pipeline through the Baltic Sea to Germany, and the Yamal-Europe Pipeline through Belarus to Poland in order to minimize transit risks by circumventing potentially difficult transit states. Presently, Gazprom is three years closer to its objective of constructing bypass pipelines that will

allow it to transport more of its gas to Europe without having to cross Ukraine. Blue Stream, which passes under the Black Sea to Turkey, is operating at capacity while Nord Stream, which is meant to cross the Baltic to Germany, is proceeding, though not without a number of difficulties. And South Stream, which is planned to pass under the Black Sea to Bulgaria, is now under development. All three of these routes will bypass Ukraine entirely.

Outside the transit dependence, the **Source Dependence** of Europe will increase from 36% in 2002 to 69% in 2030 and the bulk of the supply is expected to be concentrated on Russia (33%), North Africa (27%) and the Middle East (17%). It is accepted in academic circles that source dependence creates a degree of interdependence between Russia and Europe. However, in spite of the fact that the launch of the EU–Russia Energy Dialogue actually acknowledges Russia and Europe being at some degree interdependent, reactions from some EU member States emphasized that Europe should not depend too much on Russian gas since Russia may abuse its dominant position. However, it should not be forgotten that diversification of supplies to another major gas supplier such as Qatar, Algeria or Iran, does not necessarily decrease fears of a producer state using energy as a political weapon. Furthermore, it should not be overlooked that Gazprom and Russia are to a significant extent dependent on revenues earned from exports to Europe to support its dual gas pricing policy. Europe constitutes a premium market for Russia since revenues from the gas exports to Europe allows Russia keep domestic prices at a very low level offering some kind of subsidy to large industrial enterprises , essential to the Russian economy. Lower domestic gas prices lower the operating costs for gas intensive industries as well as the operating costs for the electricity

generation, given that natural gas is very important in the production of electricity. With residential gas prices regulated and subsidized, gas intensive industries are able to avoid passing their increased costs to consumers and this way the government creates a social safety net for its residents. Moreover, subsidized residential gas prices protect poor consumers against large price increases that could severely affect them, given the cold climate of the area. Within this dual gas-pricing system three main classes of sales can be identified: domestic sales are priced very low; sales to countries from the CIS are priced higher; and sales to Europe are priced even higher. Europe, thus, constitutes a premium market for obvious reasons (In 2003, for example, 65% of Gazprom's revenues were from European sales) and therefore Gazprom has significant financial incentives in supplying natural gas to Europe being to a large extent dependent on the revenues from the European sales. Furthermore, the large financial investments in pipeline infrastructure create an additional interdependence since "if the consumer countries fear not being able to control supply flows and prices, the producer countries meanwhile are worried about loosing market share or not gaining the market position that can repay their huge investments". [2] Infrastructure development, therefore, creates another kind of interdependence between gas consuming and gas exporting countries and requires close co-operation along the production-distribution chain and among the countries involved. All the above indicate that the importance of the diversification of supplies to reduce the European source dependence cannot overlook the fact of interdependence between Europe and the gas exporting

[2] Andrea Gilardoni ,The World Market for Natural gas, Implications for Europe, 2008, Springer-Verlag edision

countries while Europe must at the same time take into account that reducing source dependence on one single supplier does not necessarily limit risks from increasing prices nor can it avert the possibility of a creation of a future “gas OPEC” , even though a cartel agreement is not conceivable in the short term due to the currently heterogeneous ambitions of the gas producer countries involved.

The European security of natural gas supply could further be affected by new emerging economies, especially India and China that can create a buyer competition in the gas sector and become competitors with Europe. The agreement between Russia and China in March 2006 to construct two pipelines delivering gas from the east as well as from Western Siberia indicates that Europe may lose its current status as a premium market for gas in the future and that Russian gas exports automatically flowing to Europe cannot be taken for granted. The prospect of China becoming competitor for European gas cannot be disregarded, if we take into account that geopolitical considerations are becoming increasingly important in gas relationships and the fact that China is relatively better placed to obtain Russian gas supplies as they can tap into western as well as eastern gas fields. It cannot, therefore, be assumed that higher gas production capacity will automatically be diverted to EU in the future.

5. LONG TERM ENERGY SUPPLY CONTRACTS IN THE NATURAL GAS INDUSTRY

5.1 The long term contract debate in the context of competition- Positive and negative effects from the point of long term social welfare.

Long term contracts (LTC) remain a pervasive feature of most European energy markets despite the progress of liberalization. Natural gas industry in particular was traditionally developed based upon long-term contractual relations between producers and trading companies. Return on investments in pipeline infrastructure could only be achieved if al the risks attached to the infrastructure were reduced or removed and long term contracts with “take or pay clauses” were fundamental to this long term approach for risk reduction. Long term contracts (LTC) first appeared in the 1960s when it became necessary to build costly transnational pipelines to import gas from Russia or build liquefaction and regasification facilities in order to import Algerian gas. The 20-25 year contracts with the “take or pay” provisions provided sufficient mechanisms to avoid breach and costly renegotiations by linking sellers and buyers in a bilateral monopoly for a long period with strictly defined obligations for both. These contracts covered the financing of exploration and production of natural gas fields in remote places, such as Western Siberia, and the capital intensive infrastructure to bring the natural gas to the marketplace. Price fixing in these contracts was made by agreements to charge a slightly lower price to countries furthest away from the export location in order to compensate the additional costs associated with gas transmission. To counterbalance this, the importer committed to avoid

‘**cabotage**’, in other words, not selling gas during transmission in order to not create conditions of disloyal competition for suppliers who had bought the gas locally at a higher price. Current long term contracts (LTC) do not use these clauses anymore. Other clauses however, like the “**take or pay” clauses** where purchasers are required to pay for a pre-specified minimum quantity of natural gas, according to the terms agreed, whether or not that quantity is actually taken and producers are required to deliver this quantity are still in force. The “take or pay” clauses provide enough flexibility to avoid breach and thus expensive renegotiation of a contract. It is important to note that long term contracts (LTC) are not monolithic and display different results according to the contract characteristics and the clauses contained. The inclusion of **tacit renewal clauses**, for instance, decreases the transaction costs of renegotiation, whereas **reduction clauses** allow the buyer to reduce off-take in case the supplier starts reselling in its commercial area protecting the buyer’s market and its investments.

From the point of view of social welfare long term contracts (LTC) have both positive and negative effects. The main problem with LTC is the risk of foreclosure of more efficient players and this is why European competition authorities often emphasized the risk of foreclosure over their positive effects on investment and operation. It is true that LTC may constitute “entry barriers “for new operators. If a significant part of demand is tied in the long run, the tied consumers will not be able to benefit from future and potentially more profitable offers by new entrants. In this case, LTC can consequently create a barrier to entry and have negative effects on third parties. It is interesting to note, however, that the maintenance of long-term contracts on natural gas is not

necessarily incompatible with the entry of new operators, providing the regulator ensures "gas release" mechanism. The French regulator, for example, has obliged Gaz de France to place a certain amount of gas imported in France at the disposal of the market (15 per cent of the gas supplying the South of France) in order to allow its competitors to acquire this gas, through a bidding system, to supply customers and to open the market to competition. This release mechanism has also been used by the Brussels Commission by means of various mergers and acquisitions, as 'compensatory measures' (during the EON-Ruhrgas merger for example)[3]

It was also argued that Long term contracts (LTC) indirectly have exclusionary effects by drying out spot markets which -if competitive – allow more transparency than bilateral contracting on the evolution of supply and demand and the current production costs of the firms in place. Yet, the "spot market" is well known for price volatility as prices in the short term are very sensitive to market conditions , as opposed to long term contracts which use prices indexed on oil products but with a "smoothing effect" which allows short-term market fluctuations to have less of an impact on prices. This price indexation in LTC limits at the same time the incentives of dominant operators to abuse their market power.

Several further arguments can be given in support of the maintenance of long-term contracts. In the longer term, long term contracts (LTC) contribute to market building since they facilitate investment and thus strongly support long term infrastructure adequacy. For the seller who makes huge investments in exploration and production as well as in pipeline infrastructure or

[3] Jacques Percebois, The supply of natural gas in the European Union-strategic issues, March 2008, OPEC Energy Review, Vol. 32, No. 1, pp. 33-53

the construction of gas liquefaction facilities, signing a long-term contract ensures the profitability of the investment as the contract guarantees a constant level of sales over several years. With the long term contracts (LTC), **the seller is taking a 'price' risk**, because even if the volume is known ex ante, the price is not, as the gas price is indexed on crude or other oil products. The seller knows the amount to deliver, but does not know how much he will earn. In the context of high oil prices, however, where price expectations are increasing, this system remains very profitable. **The buyer, on the other hand, takes the 'volume' risk**, as he will need to sell further downstream the contractual quantity bought upstream, and he is not guaranteed to find good outlets in the long term. Yet, the buyer does not carry any 'price' risk as gas price indexation is linked to oil prices, and this guarantees the competitiveness of gas compared to its major alternatives. **The main advantage of long-term contracts (LTC) for the buyer remains that of supply security.** This is an important point, especially for a country that imports a large part or even all of the gas consumed.

5.2 Long term contracts and price indexation

The last few years, the world has witnessed an increase in gas prices. Demand growth and gas- oil linkage are among the factors that triggered the price boom. Gas prices are influenced by the contractual terms and the conditions of long term contracts (LTC) with the "take or pay" clauses that we analyzed above. The structure of the long term contracts (LTC) allows a change in prices but with a certain delay, whereas these price changes are most of the time indexed to oil prices.

The indexation of gas prices on crude or other oil product prices finds its origins in history. In the 1960's and early 1970's oil was the most commonly used fossil fuel in industry and in the domestic sectors as well and the major fossil fuel used for electricity generation. The widespread use of oil definitely encouraged the indexation of gas prices to oil prices but what played a decisive role in the indexation was the fact that gas exporters were also oil exporters and therefore gas exported was in part associated with oil. It was, thus, not in the gas exporters' interest to encourage competition between these two energies, and this is why price association seemed logical. Due to the indexation of gas to oil product prices gas importers do not carry any 'price risk', as even in the scenarios of a possible oil price collapse the sharp reduction in the price of oil would inevitably have repercussions on the price of natural gas and, therefore, gas price will still hold its competitiveness facilitating gas importers to sell further downstream the amount of gas bought. It is important to recall, however, that importers still carry the 'volume risk' as they are committed in buying and paying the amounts of gas agreed in the long term contracts (LTC). Of course, gas price indexation is neither complete nor instant. Indexation formulas, in general, foresee certain smoothing mechanisms to ensure that gas price indexation on that of oil is not complete. Yet, in the case of a rapid change in oil market conditions this can result to certain disadvantages if the gas price increases while the oil price has already begun to fall again.

Indexation, however, has important virtues. On the part of the exporters, it presents significant advantages because it guarantees them earnings that are correlated with energy leader prices. On the part of the importers, the most important virtue of indexation is

the protection of buyers from arbitrary gas price increases by producer countries. In a context where the oil market would remain competitive and the gas price indexed on crude oil prices a possible creation of a “gas OPEC” would not have many consequences. In a gas spot market, on the contrary, gas price volatility would not exclude the possibility of dominant agents abusing their market power, whereas the possibility of a creation of a “gas OPEC” would not be excluded in a context where gas prices would be energy leader prices.

The opponents of indexation, however, argue that the gas-oil linkage in the long term contracts (LTC) encourages a price increase of both energies and impedes the development of a free gas market. Furthermore, the impending oil shortage that will inevitably result in an increase in oil prices will have an indirect effect on gas prices even though the ratio between reserves and production is much higher for gas and the natural gas reserves are exhausted at a much slower rate than oil reserves. For all that, opponents of indexation see no reason to link gas prices with the exhaustion of crude oil reserves. The main argument put forward by the opponents of indexation, though, is the fact that indexation prevents the gas price from being set by the market powers of supply and demand. According to the opponents of indexation, the gas and not the oil market conditions should determine the gas price level. In line with this point of view it is argued that long term contracts (LTC) must be signed with gas ‘spot’ price indexation clauses. This, however, presupposes that the ‘spot’ market is flexible enough and that the gas spot price represents the tension that exists at a certain point in time between gas supply and demand.

Long-term contracts (LTC) in the UK, for example, include at

least a 40 per cent gas spot price indexation and the rest of the indexation is based on the price of heavy fuels, of domestic oil, of electricity or of coal. (16 per cent on light fuel oil prices, 15 per cent on heavy fuel oil prices and 7 per cent on electricity prices and the remainder is indexed on the price of coal or on the inflation rate[4]).

In continental Europe, on the contrary, where the gas spot market is very narrow, indexation on gas spot prices does not exceed 5 per cent in long-term contracts which include it. In particular, in the continental Europe, LTC gas prices are indexed up to the limit of 50 per cent on the price of light fuel oil, up to 30 per cent on the price of heavy fuel oil and up to less than 5 per cent on the gas spot price. As far as prices are concerned, there are several trends. With the development of LNG throughout the world, arbitration will increase between consumption areas and we can expect some international gas price convergence. Today, there are three sections: The North American market, the European market and the Asian market. This does not only present positives, since, at a certain time the European gas price will be affected by the gas spot price observed at other markets with a more volatile price.

On the whole, it should be expected that gas prices will become more volatile in the future, and long-term contracts more 'flexible' (with more flexible 'take or pay' clauses) but the perspectives for the gas price to become the energy leader price are scarce. It will most probably remain either indexed or at least correlated with oil and petroleum product prices.

Obviously, long-term contract prices are less volatile than those of the spot market. However, they are less representative of the market reality and the seasonal character of the demand. In order to deal with price volatility, operators can use financial derivatives

4 Energy Sector Inquiry, 2005/2006, p. 104).

such as forwards and options. Forwards are bilateral contracts negotiated by private agreement, and thus they are not standardized. They specify the amount and price of gas which will be delivered at a future date but whose conditions are set at the negotiation stage. These contracts, which generally result in the physical delivery of the molecule, involve the risk that one of the parties will fail. Options are asymmetric contracts, which give the purchaser the right to change his mind in exchange of paying a premium in the beginning to the option seller, and this premium is definitely acquired whatever the purchaser's decision.

For the Commission of Brussels, gas import contracts based on price indexes which are related to petroleum by- products (heavy or light fuel oils) result to price variations which are closely related to petroleum market variations. This connection gives rise to wholesale prices, which are not affected by gas supply and demand fluctuations. In order to improve trust in price formation, thus, in gas negotiation platforms according to Brussels it is essential to improve market liquidity. At the moment, however, the gas–oil linkage in the long term contracts (LTC) resulted to a lower gas price volatility compared to the price in the gas spot markets and this is why the take or pay contracts with the indexation clauses are used as a means for risk reduction. As regards the long term contracts (LTC), though, Brussels gives the example of the UK where existing long term contracts (LTC) apply for shorter durations than on the continental Europe with indexation clauses, which are more adapted to the conditions of energy markets (40% of prices indexed on gas spot prices) and thus it is not impossible to see a restructuring of the old oil linked contracts in the future with more contracts linked to spot gas prices.

5.3 The EU Law framework to analyze anti-competitive effects of long term contracts (LTC) in the natural gas industry

Prior to liberalization long term contracts (LTC) were not a priority of the European Commission which rather focused on removing legal monopolies over imports and exports. The few decisions in the early to mid 1990's mainly aimed at limiting the duration of the long term contracts (LTC) so that these contracts would not jeopardize the forthcoming opening of the markets whereas no clear methodology to analyze foreclosure effects in the energy markets had been explicitly communicated by the competition authorities. Since the early 2000's, however, a series of decisions like the EON Ruhrgas decision and the Distrigas pointed at the emerging methodology of the European Commission to analyze the anti-competitive effects of gas LTC in an attempt to deal with the inherent risks of anti-competitive effects of these contracts without overlooking their positive aspects.

The gas long term contracts (LTC) that fall under the jurisdiction of the European Commission are contracts implemented by a company with market power and with market shares close to the level of dominance. As long as market shares of each contracting party do not exceed 15%, the long term contracts do not fall under the jurisdiction of the European Commission because, in practice, long term contracts (LTC) between small and medium sized companies are normally not considered by the European Commission as being capable of distorting competition sufficiently or affecting appreciably trade between member States in order to justify a full competition analysis.

To determine market shares and find the level of dominance,

however, is not without difficulties. The competition authorities must define the relevant product and geographic markets and the main problem lies in the definition of wholesale customers. In the case of the natural gas industry the relevant product market is wholesale supply (as opposed to retail supply which excludes very large customers). An important issue is whether large gas industrial customers and resellers constitute the same product market. Another important issue is whether trading and supply markets should be dissociated, even though the European Commission has always considered power exchanges and hubs part of the wholesale supply.

In the case the European Commission grounds the finding of dominance or collective dominance it retains the right to conduct a full competition analysis of the LTC. Long term contracts (LTC) for companies with larger market shares require a full competition analysis in all cases. The first step of the European Commission is to analyze the long term contract (LTC) clauses which are thought to contravene the EC Treaty objectives. Recent decisions indicated that the European Commission would not accept clauses in the long term contracts (LTC) other than **duration and exclusivity** when they are implemented by dominant firms even if they lead to significant switching costs. Among them, unclear **termination rights**, **fidelity rebates** and **tacit renewal clauses** have been considered illegal by the European Commission in several decisions. And despite the fact that the inclusion in the long term contracts (LTC) of some clauses like the tacit renewal clauses, for instance, decrease the transaction costs of renegotiation, the Commission has clearly preferred the fight against foreclosure over the saving of transaction costs for

individual contracting parties, even to the detriment of the non-dominant firms contracting with a dominant incumbent.

There are certain clauses, though, that are not included in the long term contracts (LTC). In this case competition authorities see a ‘grey’ area where the assessment of anti-competitive effects becomes more complicated and competition authorities have to consider a lot of different elements to analyze anti-competitive effects. They are, thus, forced to asses the market characteristics before going on to analyze the contract itself. The most important element is the assessment of the effects of all the long term contracts (LTC) signed by the different producers on market foreclosure. Indeed, long term contracts (LTC) can foreclosure markets to new entrants only to the extent that a substantial part of market demand is already tied in the long term. As a general rule, the European Commission considers that a significant foreclosure effect is unlikely to arise if the total market demand tied in the long term does not exceed 30% of global demand. In the case of a ‘super-dominant’ incumbent like in the Distrigaz case, the European Commission considered that no competition concerns would arise if its portfolio of long term contracts (LTC) would cover less than 20% of the market .In E.ON Ruhrgas, the Bundeskartellamt estimated that the firm contributed significantly to market foreclosure with 75% market shares in its supply area, within a national market where 80% of total demand was supplied in the long term. This demonstrates that when a firm is largely dominant, the anti-competitive effects of its demand tied in the long term arise sooner .In the case of a group of leading suppliers, the European Commission will look similarly at the cumulative effects of their long term contracts (LTC) but there will be no need to

prove that they lead to tacit collusion to show that significant foreclosure effects occur.

After having analyzed market conditions and their likely evolution, the European Commission focuses on the characteristics of both the long term contract (LTC) itself and the contracting parties. In Particular, the European Commission will conduct a combined analysis of duration, exclusivity clauses. It will, therefore, first look at the percentage of the consumer demand tied under the long term contracts LTC, namely the **exclusivity clause**, as it is one of the main sources of foreclosure effect.

Indeed, if a customer must meet all or a big part of its needs with a particular supplier for a long period of time, he does not constitute any longer an available outlet for a potential entrant. In Gas Natural/Endesa in 2000, the Commission reduced the size of the contract from nearly 100% to 75% of Endesa global purchases as Endesa was one of the leading electricity producers in Spain and thus could motivate entry in gas supply in its own right. Consequently, the European Commission is looking in this case at the degree of economic dependency of the buyer vis a vis the dominant supplier and the share of the customer's demand tied is the best way to demonstrate dependency.

In addition, European competition authorities recognize when they analyze exclusivity that transaction costs may become too high when negotiating for a small quantity and that it may become uneconomic for an alternative supplier to provide less than a certain amount. Recent decisions seem to indicate that it is considered that 20% of a customer demand is the threshold for having incentives to enter into a relationship with a second supplier (E.ON Ruhrgas and RWE). Competition authorities are thus more

reluctant to accept long term contracts (LTC) accounting for more than 80% of a customer demand.

The share of the customer's demand tied, however, has to be analyzed along with the **duration of the contract**. As a general rule, the European Commission is very suspicious of contracts longer than 5 years. One can nevertheless notice a more tolerant approach of the European Commission towards gas import contracts than to electricity producer/reseller contracts. This is due to the fact that the European Commission when analyzing the risk of anti-competitive effects in the long term contracts (LTC) it also analyzes the potential efficiency gains and can accept longer duration (up to 25 years in the case of gas import LTC) but at the retains the right to impose remedies in the case a long term contract includes forbidden clauses. The two main efficiency gains recognized by the Commission have been investment and entry and it is generally accepted that long term gas import contracts facilitate investments and contribute to the security of supply. Today, long- term gas import contracts are accepted on the basis of a 'security of supply' argument. The fact, of course, that the dominant supplier resides outside the EU does not change the potentially severe anti-competitive effects of long term gas import contracts (LTC) which can similarly be used to foreclose national markets. However, the antitrust practice of the European Commission on the long-term import gas contracts of Gazprom or Sonatrach with European firms has generally been more influenced by considerations involving security of supply. The European Commission has indeed compromised the enforcement of EC competition law accepting longer durations, even up to 25 years, -we note that this status of exception was already accepted

in the second gas Directive (2003/55/EC, Recital 25)- , and limited its action to the deletion of forbidden destination clauses.

As regards the remedies that can be imposed by the European Commission, a first group of remedies consists in modifying the drafting of the long term contracts (LTC), for instance by deleting certain clauses such as use restrictions or limiting duration. In this case, the whole agreement is not cancelled and it belongs to the parties to decide whether the contract is still valid. Other more behavioral remedies can be imposed such as forbidding any vertical mergers or acquisitions for a certain number of years. These, however, are classical remedies in EC antitrust policy and are not specific to the gas sector.

Yet, there is a second group of remedies regarding the long term contracts (LTC) imposed by the European Commission specifically devised for the energy sector and has to do with abuses of dominance. The Distrigaz decision constitutes according to the European Commission the landmark case for future antitrust enforcement on long term contracts (LTC) in energy. The European Commission opened a proceeding against the Belgian gas incumbent for possible breaches of the EC Treaty rules on abuse of a dominant position due to their long term contracts (LTC) with industrial customers. The European Commission started by excluding of the analysis of foreclosure effects all the long term contracts (LTC) linked to a new investment in gas-fired power plants, in line with its analysis of efficiency gains. A strict limitation of 5 years was then imposed on remaining contracts to avoid that customers who would be particularly likely to switch suppliers be tied for a very long period of time and unilateral termination rights were granted to buyers with contracts longer than 5 years. A specific limitation to two years was imposed for

contracts with resellers. The innovation lied in the flexibility parameters granted to the dominant firm. Distrigaz was allowed to adjust its portfolio of contracts to its own needs as long as it complied with contract durations of maximum 5 years and if 70% of its customers came back to the market every year. As a result, Distrigaz could indifferently have 37.5% of customers supplied under 5 year contracts and 62.5% supplied under one year contracts or 40% supplied under 4 year contracts and 60% supplied under one year contracts. These commitments were to last for a minimum of four years and until Distrigaz' market shares decrease below 40% (or another supplier reaches the level of Distrigaz market shares minus 20%).

The analysis of the recent series of decisions shows that the European Commission is using an economic approach to analyze foreclosure effects of long term contracts (LTC) and imposing remedies in the energy sector whereas its combined analysis of duration, exclusivity clauses and the pattern of consumption are particularly interesting. The methodology that the European Commission follows tries to balance between the need for predictability and the need for full competition analysis in the complicated cases and at the moment the elements that the European Commission takes into account during the balancing exercise seem to lack of clarity. In addition it is not certain yet if the European Commission's approaches that have been successfully used in other sectors will inevitably be successful in the energy sector and especially in the natural gas market especially if we take into account that the European Commission under its anti-trust powers inevitably focuses on market structure rather than on market design.

Table 4

European Natural Gas Supply from Long Term Contracts (LTCs)

European gas imports contracted volume (in bcm)

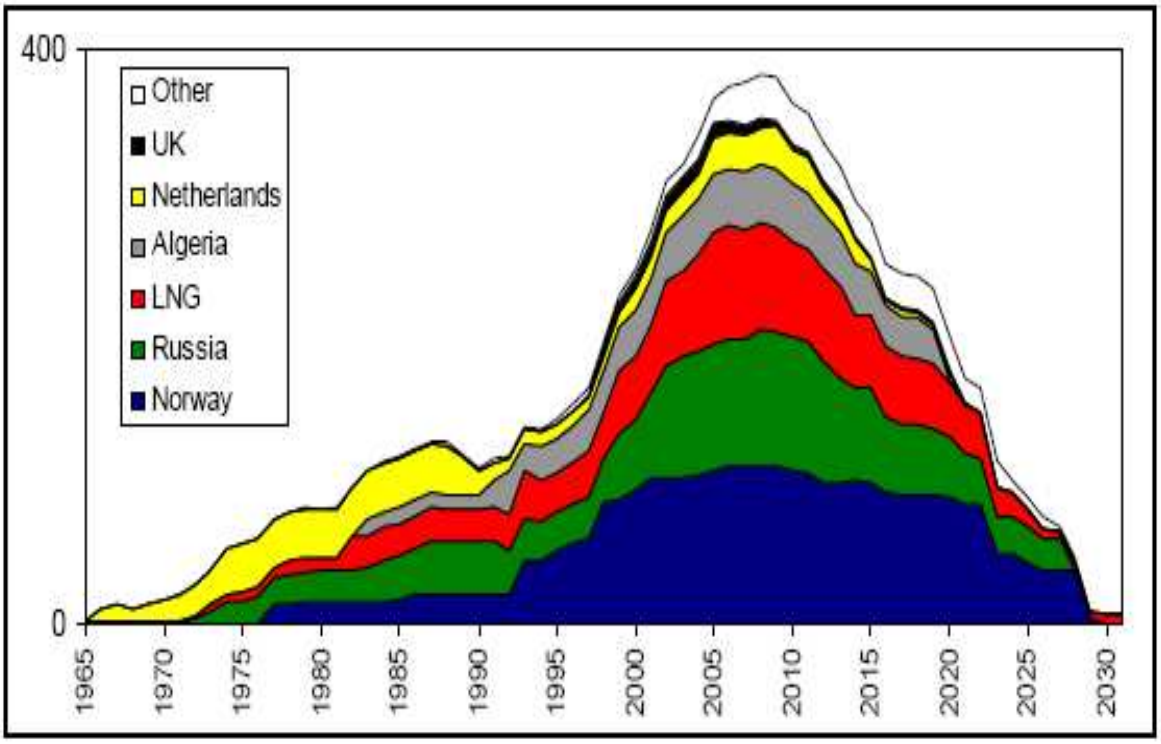


Table 4 provides an insight into the volumes of natural gas contracted between major European gas-importing companies and their producers (as of 2003). The table shows an increasing role of LNG in European gas contracts, and a more rapidly decreasing volume contracted with traditional suppliers

6. THE IDEA OF A COMMON EUROPEAN AUTHORITY FOR NEGOTIATING LONG TERM CONTRACTS

The idea of the creation of a common negotiator for the signing of gas long term contracts with the gas producer countries arose by the rationale to speak with a single voice to the gas producing countries and in a sense to balance power with power. Even if the idea was not introduced in the list of propositions envisaged by the European Commission it is widely discussed and still evoked from time to time given that the establishment and development of the numerous bilateral relations between the individual EU member States and the gas producer countries was made possible by the fragmented EU natural gas markets. The European Commission indeed recognizes that the EU Member States are exposed to very different degrees of economic risk by the gas imports. Furthermore, bilateral relationships of some Member States with the gas producer countries could weaken the bargaining power of other Member States. What must also be taken into account is that by competing with each other for access to natural gas the European companies could become weaker. Some European commentators close to the European Commission express fears that the gas producer countries may be able to create cartels and impose their conditions to the European gas market. Consequently, any bilateral contract concluded between two uneven parties could further weaken the bargaining power of each European buyer in its negotiations with the gas producer countries. From this perspective, liberalization of the European gas market, which has led to an increase in the number of buyers seeking to trade with the narrow oligopoly of gas sellers, might

enhance the market power of the gas producer companies, enabling them to impose their conditions regarding price and volume. Faced with these alleged risks, the idea of a “common negotiator” which was from time to time suggested by different governments would mean for the EU to take direct coordinated action in the negotiation of long term contracts with the gas exporting countries, a policy consistent with the Commission’s political stand of speaking with one voice to the gas producer countries. Such a perspective, however, will have to consider several aspects, one of the most important being to track down if the interests of the individual Member States are actually converging in the need of coordination. Another important aspect is to examine if the producer countries’ position is sufficiently dominant in order to weaken the position of the European gas companies.

In the context of market liberalization, however, the role and functions of a common negotiator for organizing a real coordination and reinforcing the bargaining power of the European buyers are far from consistent with the market principles and couldn’t be accepted unless its role is symbolic. So, European coordination in the type of a common negotiator with the power to negotiate the gas long-term contracts in Europe contradicts the short and long term effective competition that the European Commission wants to establish in Europe.

In this framework of competition, when the European officials evoke coordination, they actually imply that the Commission can only manage the contractual arrangements with gas producer countries (like for example the time span of contracts or the pricing clauses etc), a kind of coordination, namely, which is far from the ambitious Single Negotiator.

7. CONCLUSION

The debate on the re-emergence of gas long term contracts occurs at a time when the European Union pursues more liberalization in the gas industry, especially after the formal adaptation on June 2009 of the third energy package for the European gas and electricity markets consisting of (a) the directive concerning common rules for the internal market in electricity; (b) the regulation on conditions for access to the network for cross-border exchanges in electricity; (c) the regulation establishing an Agency for the Cooperation of Energy Regulators; (d) the directive concerning common rules for the internal market in natural gas and (e) the regulation on conditions for access to the natural gas transmission networks. This third wave of liberalization following the second energy package of 2003 was an effort by the Commission to complement the existing rules that shaped the internal market in electricity and natural gas, given that the second energy package failed to adequately separate the network and supply gas companies leading to a foreclosure of new entrants and investment.

And despite the fact that the segmentation and fragmentation of EU's natural gas market and EU's unwillingness to "speak with one voice" in the gas matters made possible the establishment and the subsequent development of bilateral relations in the form of the long term contracts (LTC), the European Commission responded with more liberalization promoting the unbundling under the third Energy package. The directives regarding the unbundling require that network operations be legally and functionally separated from supply and generation or production

activities. [5]

It is, however, argued that more liberalization, far from weakening incumbent operators, tends to reinforce their market power. From this aspect, once transmission is unbundled from supply and production, regulated Third Party Access no longer runs into such strong resistance from the companies that control access to protect rents. That in turn opens the prospect of spot markets and gas-on-gas competition to emerge. In addition, alleged risks that companies from non EU countries that are not subject to the Community Law could take over European gas networks are minimized by the fact that the European Commission has the legal means for implementing barriers with directives that prevent the takeover of networks by firms which do not respect the European Law. (The third energy package, for example, includes provisions to prevent control of transmission systems from non EU countries unless they fulfill certain conditions.) Still, how efficiently the EU's regulatory framework and the effort of Brussels to promote competition to the gas exporting countries will work in a globalized economy by bringing about a radical freeing of internal gas competition in each country

[5] The package as adopted after two years of discussions contains **three equivalent options** for Member States for separating gas as well as electricity supply and production from transmission network operations:

(i) **Ownership unbundling (OU)**. This option requires that networks are no longer controlled or majority-owned by energy production or supply companies.

(ii) **Independent System Operator (ISO)**. This option leaves ownership of the transmission networks with the supply companies, but requires that vertically integrated companies hand over the operation of their transmission network to a designated independent system operator.

(iii) **Independent Transmission Operator (ITO)**. This option leaves ownership of the transmission networks with the supply companies, but requires that they abide by certain rules to ensure that the production/supply and transmission network operations are conducted independently

and by deterring gas exporting countries from creating a cartel that could control gas prices and gas exporting volumes it remains to be seen.

From all the above it is obvious that the natural gas industry is very dynamic and has undergone significant regulatory reforms during the last decade. From being an industry with mainly monopolistic structures it has become a market oriented industry with a range of organizational forms among which are long term contracts (LTC). The discussion on whether long term contracts are compatible with gas market liberalization and what policy conclusions to draw in this respect revives in a context where numerous EU energy companies negotiate with gas producing countries on bilateral basis and renew their long term bilateral contracts. It is worth mentioning that in 2006 energy companies of the largest importing countries of Russian natural gas like Germany, Italy and France renewed their long term contracts with Gazprom until 2026-2036. Even where gas markets have been completely liberalized for several years (such as in Britain), around 70% of gas supplies are still sold on long-term contracts.

The interpretation of long-term contracts, of course, depends to a certain degree on subjective assessments, and sometimes on pure interests: thus, adherents of market competition are generally less enthusiastic about the re- emergence of long-term contracts, as these reduce the scope for short-term competition. On the other hand, industry and a large part of policymakers defend the nature of long-term contracts with its positive impact on investment decisions. Competition authorities therefore have a difficult time when assessing the total impact of long-term contracts on social welfare.

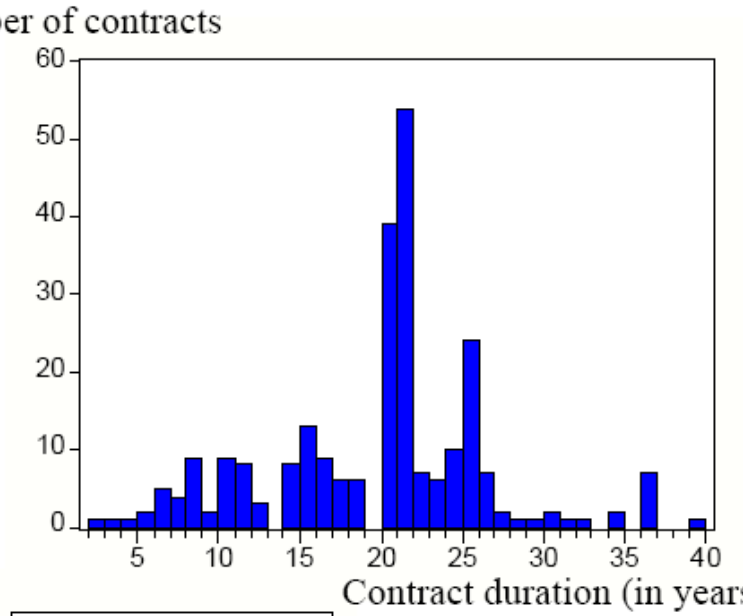
The methodology that has emerged in the recent line of cases,

though, indicates that the European competition authorities use a multiple step approach to reduce regulation costs, balance anti-competitive effects with potential efficiency gains and impose remedies. During this multiple step approach the European competition authorities consider all the following elements that we analyzed above, namely, the per se prohibited contract clauses, the market position of the supplier, the share of the customer's demand tied under the contract, the duration of the contracts, the overall share of the market covered by contracts containing such ties, and the efficiency gains in order to conduct a full competition analysis. The first step, however, of the competition authorities as indicated by the recent decisions that we mentioned in the previous chapters is to analyze the per se prohibited clauses of the long term contracts (LTC) which are consequently modified or deleted if judged to have anti-competitive effects. The second step to approach the long term contracts (LTC) especially in the grey cases of clauses not included in the contracts is to conduct a combined analysis of all the aforementioned elements in order to decide if a contract infringes the EC antitrust law and the third step is the balancing of anti-competitive effects with potential efficiency gains. This multi-step approach shows that the European Commission is much less dogmatic than is usually thought and that an emerging methodology on energy long term contracts is depicted.

As regards the role of long term contracts in the natural gas industry, it is expected that gas imports will continue to be secured by long term contracts because of their evident importance to finance production and develop the infrastructure. In addition, import dependence raises security issues that are also logically handled by the long term contracts. Yet, whereas

long term contracts will remain important in Europe, their role is likely to evolve in the future. Concerning the price indexation, there will probably be a much wider range of indexation formulas. Oil-linked pricing and indexation will probably change in favour of a more floating indexation to a product with immediate relevance to the customer. A larger percentage of the gas price indexed to gas spot price is likely to be introduced in the future contracts, moving the contract price of gas progressively closer to the price of a competition-based market. Moreover, contract length will probably shorten, whereas “take or pay” clauses -traditionally representing the 80–90% of the annual contract quantity- are gradually becoming more flexible.

All contracts



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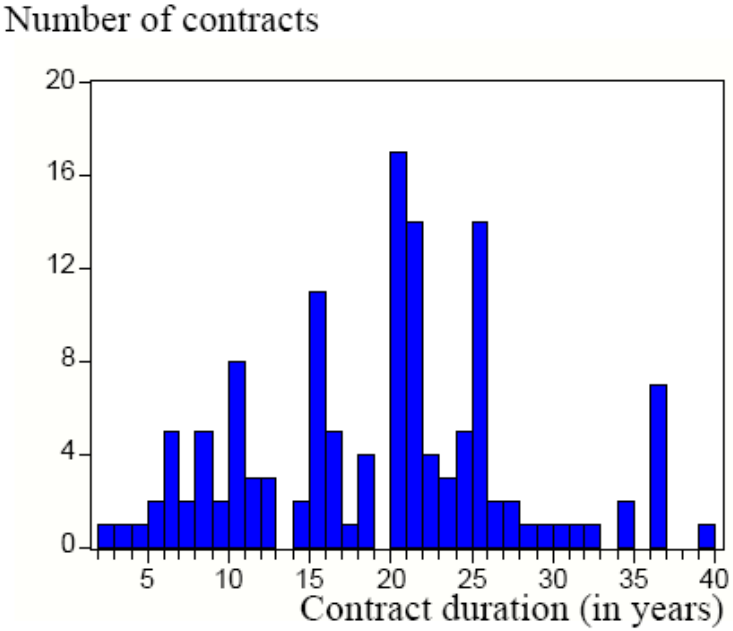
Jarque-Bera	2.330526
Probability	0.311841

European contracts



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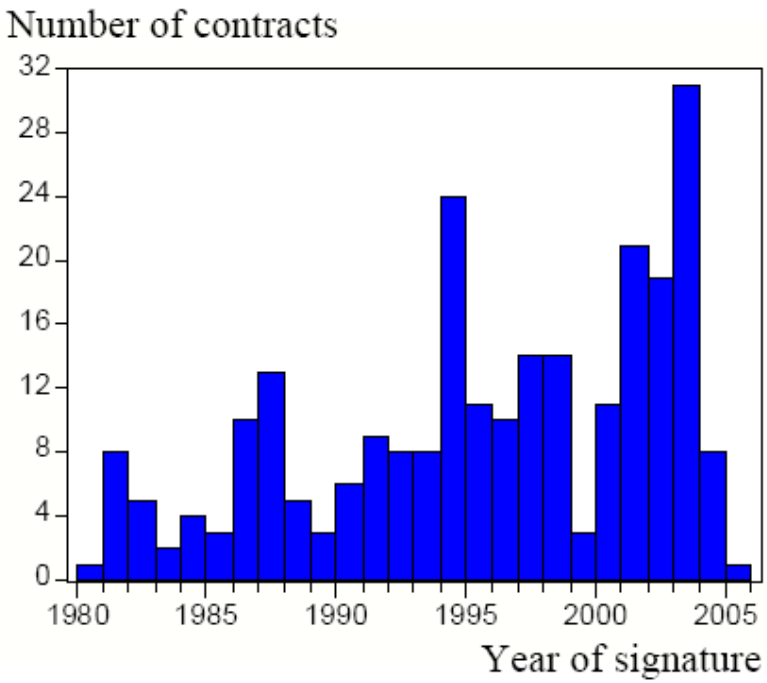

Series: YOS
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Observations 252

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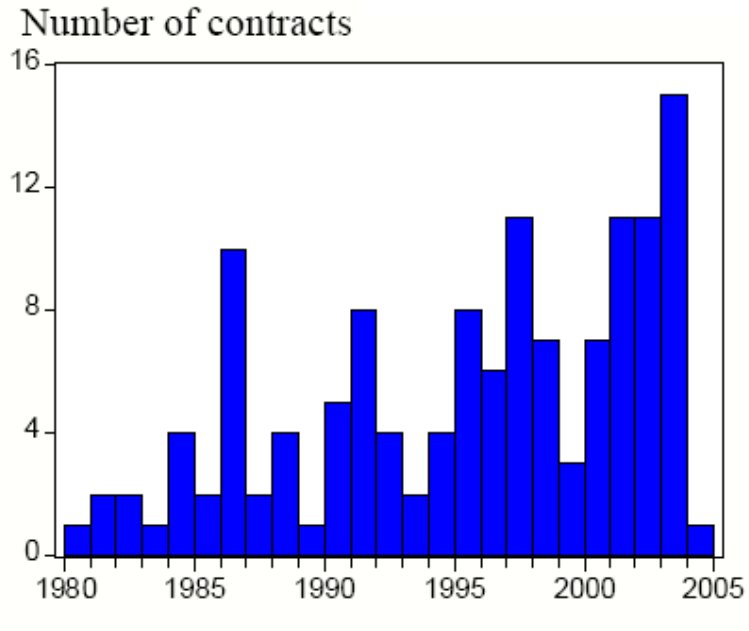
Probability	0.000108

All contracts



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Kurtosis	2.096234
Jarque-Bera	10.14970
Probability	0.006252

European contracts

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