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The gas deregulation process in Europe: economic and political approach

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Abstract

This paper analyses the efforts to deregulate the market, to remove the monopolies and introduce competition, both at the European Union level (European Commission) and national levels. The first part of the paper describes the present situation, with an emphasis on the institutional disparities among the European countries. It presents the outlines of the Gas Directive, recently adopted by the European Commission. The second part analyzes the perspectives of such deregulation for Europe. Particular attention is given to the strategies implemented by the oil companies on the market. The third part of the paper insists on the pending questions: the transposition of the Gas Directive into the national laws of the European countries gives rise to several questions which have yet to be answered.

Keywords: Deregulation; Natural gas market in Europe; Competition; Oligopoly

Introduction

Europe may be liberal, but it is more than a simple free trade area. Abolishing customs duties and tariff barriers between signatory countries of the Treaty of Rome (in 1957) was the first stage in building Europe. Customs union was then followed by the free circulation of factors of production within Europe (capital and labour). Economic union is the next stage, and will also involve converging economic, social and monetary policies. Eventually, economic union could also lead on to a federation with not just converging, but shared or even single policies.

In fact, the Brussels Commission is forced to admit that certain products and services do not circulate freely within Europe, not for technical reasons but for institutional reasons: the existence of legal monopolies. This is why for almost a decade it has been working towards abolishing these obstacles and introducing real competition, ensuring that European consumers will no longer be victims of discrimination. Several Directives (or European laws) have been adopted: the electricity directive of 19 December 1996 and a draft gas directive on 8 December 1997. This directive will gradually open up the internal natural gas market through increased competition between operators. The first part of this paper presents the institutional framework within which this liberalisation process is implemented. We lay emphasis on the main outlines of the gas directive. However, the players' strategies and the relative influence of some of them must not be underestimated. There is thus a risk of collusion, and competition on tomorrow's European gas market will not be genuine and perfect, especially since today's energy strategies are global. The second part of this paper mentions that industrial strategies are taking place in relation to the opening process. A purely competitive structure is not liable to be substituted for the present oligopolistic one, contrary to current opinion. Deregulation is only just beginning, apart from a few exceptions where it is already at an advanced stage (such as Britain) and, consequently, numerous questions remain unanswered.

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In the third part of this paper the present structure of the European gas industry is shown, country by country. The degree of opening of the market varies a lot from one country to another and several uncertainties have to be mentioned concerning the future organisation of this industry.

The changing institutional context: towards greater competition?

The main objective of the European directive is, concerning gas as well as electricity, to bring about more competition and so a higher level of welfare. For understanding this objective it is necessary to remember the context of the European Union.

The Treaty of Rome (1957), which provides the fundamental legal framework of the European Union, does not dispute the notion of 'public service' since this is explicitly referred to in clause 90. Nor does it dispute the fact that certain companies should remain in public ownership, since clause 222 allows member states to choose between private and public ownership of their public services. However, the Treaty does dispute the existence of monopolies, which form an obstacle to exchanges within Europe. Competition must reduce the cost of access to energy and guarantee non-discrimination between consumers. But allowance must be made for 'natural monopolies', ie industries whose returns are increasing because of the existence of an infrastructure with high fixed costs. The Brussels Commission's position is quite clear on this point: the network industries, which are generally public service providers (electricity, gas, water, telephone, public transport), constitute natural monopolies only for the sector of their activity corresponding to infrastructure management. All their other activities must be open to competition. In other words, it would be possible to split the physical activity consisting in transporting and distributing gas (or electricity), which remains a natural monopoly, from commercial activity consisting in selling or buying cubic metres of gas and which could be opened to competition. As far as the production, importing or exporting of gas is concerned, this could not operate as a *de jure* monopoly, because there are no technical limitations at this level justifying the existence of a natural monopoly (such as the cost function sub-additivity). While, for historical reasons, such monopolies do exist, they must be abolished because any monopoly, by its very nature, tends to abuse its dominant position, practice cross subsidies between its various customer sectors, and be subject to bureaucratic operating procedures (overinvestments and excessive costs linked to over-staffing and excessive salaries). Supervision from a higher authority (monopolies commission or ministry) is not sufficient to overcome these drawbacks, especially since the "capture theory" and inconsistencies in the information (informational asymmetries) held by the supervising authority and the utility suggest that these monopolies can influence the regulator and ensure that their own interests are preserved by passing them off as being in the public interest.

Three concepts need to be distinguished. Deregulation is a process whereby certain segments of the industry (exploration-production, sale of gas, etc.) is opened up to competition. Deintegration involves the separation, from an accounting (and even legal) standpoint, of exploration-production, importing, transport, and distribution activities between establishments, and even different companies. Privatisation involves opening up the capital of the companies concerned to the private sector. The three phenomena can go hand in hand but it is also possible for them not to co-exist. For example, deregulation and deintegration are not always accompanied by privatisation. Conversely (and this was the case in Britain in 1986), privatisation does not necessarily imply deregulation (in this case, a public monopoly is simply replaced by a private monopoly). The Brussels Commission has made deregulation and deintegration compulsory but it cannot impose privatisation because this does not come within its sphere of competence. However, this process of deregulation cannot be analysed independently of the strategy being followed on the international gas scene by the main players involved, viz, oil companies, gas transport-distribution companies and electricity companies.

Therefore, competition must be revived wherever possible (importing, exporting, exploration and production, and gas sales services), and efficient regulation introduced on the activities remaining under a natural monopoly (management of the transmission and distribution network). The Brussels Commission set about this task, and succeeded in passing an electricity deregulation directive (on 19 December 1996) and obtained initial approval of the gas directive of 8 December 1997 (this directive has to be adopted by the European Parliament before becoming law in each member state).

As is the case with electricity, the key component of the Gas Directive is the possibility of allowing certain consumers to obtain their gas from the supplier of their choice. This will inevitably lead to the disappearance of the gas importing monopolies (which still prevail in France, for example). "Regulated" or "negotiated" TPA (Third Party Access) is set to be introduced for the wholesale market. It should be noted that, unlike the electricity industry, the gas industry is rarely fully integrated. Gas is generally produced by oil companies and gas companies are then responsible for importing, transport, storage and distribution. Some of them are involved in the early stages of the gas chain (eg with a stake in production) but these are in the minority. The gas networks will be opened up gradually, in three stages over 10 years. This opening-up process will be based on two main parameters:

(1) Definition of 'eligible' consumers: these are all electricity producers who use gas (including cogeneration) as well as industrial customers exceeding a consumption threshold per site. This threshold is set at 25 million cubic metres (about 20,000 t.o.e.) when the Directive comes into effect (in theory in the year 2000), then at 15 million in 2003 and 5 million in 2006.
(2) A minimum percentage of the market opened up: 20% when the Directive comes into effect (2000), 28% in 2003 and 33% in 2006.

The Directive also makes allowance for two other principles: access to the network by third parties and unbundling. Eligible customers will be able to arrange for transport of the gas they have purchased against payment of a toll with toll rates being openly displayed or negotiated with the network managing company (each member State will choose the system that it prefers). A form of TPA is also planned for the upline offshore delivery pipes. Like the electricity Directive, the gas Directive makes provision for the possibility of constructing direct lines for the exclusive supply of an eligible consumer. However, each of the 15 States of the European Union has a wide margin for manoeuvre to apply these rules by virtue of the so-called 'subsidiarity' principle. It should be remembered that the initial situation differs from one country to another in the European Union, as illustrated in the following table. The Directive authorises the States to impose public service obligations (especially security of supply) and allows a gas distribution monopoly to be maintained for those that so desire. Moreover, waivers with respect to TPA are provided for when the security of supply is endangered. A protection system therefore exists, the 'take or pay' contracts which are long-term supply contracts concluded with foreign exporters.

The narrowness of the gas market explains how the leeway consumers have to find suppliers and producers have to find customers is much less than in the case of oil. The bilateral nature of the relations between gas exporters and importers leads to long-term supply contracts and explains why gas pricing is generally based on negotiated compromises rather than spot prices. Gaz de France officials once said: an import contract is equivalent to a marriage settled 10 years in advance for a term of 20 years. Today, with the larger part of natural gas in the European energy balance, we may observe a relative harmonisation of contract terms but it is not yet possible to speak of a spot market for natural gas in Europe. In Europe all the gas contracts contain constraints on both sellers and buyers, in the form of obligations to supply and to take gas, respectively (the level of these TOP constraints is generally very high: 75–90% of the amount of the gas sold). The liberalisation imposed by the European directive may jeopardise the relationships between the sellers and the buyers, in particular, when Third Party access is explicitly introduced. In the future the gas contracts will probably be negotiated with more flexible clauses between the seller and the buyer.

In the event that an importer should risk having to pay a penalty to his foreign supplier as a result of taking an insufficient quantity of gas after losing some eligible customers (previously supplied by him) this operator could refuse to transport the gas to these customers. However, the Commission intends to ensure strict control at this level.

The consequences of this Directive will differ depending on whether or not the country makes use of large quantities of natural gas for electricity generation. The Directive constitutes a minimum restrictive condition for the States and certain countries have already gone well beyond these conditions. In short, the European countries can be classified into three general categories (see Table 1):

(1) Those in which the gas industry is still relatively integrated and not highly deregulated. Its capital ownership may be predominantly public (France, Italy, Greece, Ireland) or predominantly private (Belgium). Note that the privatisation process is at an advanced stage in Italy (ENI), but no progress in deregulation has been made.
(2) Those in which the deregulation process has started and where integration is often less marked than in the previous category of countries (Spain, Netherlands, Germany, Austria). A good proportion of the industry has already been privatised (Spain, Germany).
(3) Those in which the deregulation, deintegration and privatisation process is at an advanced stage (United Kingdom).

The gas directive project was pending until the adoption, at the end of 1996, of a common point of view among the various European governments about the electricity directive. The consensus was difficult to obtain because of large initial divergences but a compromise solution was at last possible. It is necessary to bear in mind that the European countries have very different positions: some of them are net exporters of natural gas, others import it; in some countries the gas market is already mature, in others it is nascent. Some countries use natural gas for most of their electricity generation; other countries do not.

The liberalisation expected by the European directive will affect the transmission, distribution and commercialisation of natural gas. It does not concern gas production, which remains the job of a small group of oil companies. The European gas oligopoly is composed of GAZPROM (a quasi-monopoly in Russia) SONATRACH (a monopoly in Algeria), GFU (an export monopoly in Norway) and GASUNIE (an export quasi-monopoly in the Netherlands) (see Table 2).

Table 1
European Gas Industry Structure in 1998

Country[a]	Import or export	Exploration-production (theoretically open)	Transmission	Distribution
France (I)	Legal monopoly of Gaz de France (100% public owned)	ELF AQUITAINE (sole producer)	Quasi-monopoly of G.D.F.	Quasi-monopoly of G.D.F. (+ a few local public utilities)
Italy (I)	SNAM (ENI) *de facto* monopoly (ENI is being privatized)	AGIP (ENI) (sole product)	SNAM quasi-monopoly (with limited TPA)	Local utilities (75%) + ITALGAS (SNAM) (25%)
Belgium (I)	DISTRIGAZ *de facto* monopoly (TRACTABEL 42%, SHELL 17%, STATE 17% and private 24% TRACTEBEL is controlled by SUEZ-LYONNAISE-EAUX)	no production	DISTRIGAZ monopoly	DISTRIGAZ and local utilities (largely controlled by ELECTRABEL i.e. TRACTABEL)
SPain (I)	GAS NATURAL (REPSOL) (private) *de facto* monopoly	REPSOL (oil company) (sole producer)	ENAGAS (GAS NATURAL) (TPA since 1996) monopoly	ENAGAS (50%) GAS NATURAL (40%) others (10%)
Netherlands (E)	GASUNIE (SHELL, EXXON, and State for 50%) *de facto* monopoly	NAM (Shell, Exxon) ELF, CFP-TOTAL (several producers)	GASUNIE quasi-monopoly	Largely public Local utilities (120)
Germany (I)	RUHRGAS *de facto* monopoly	BEB (SHELL, EXXON) MOBIL, WINTERSHALL... (several producers)	RUHRGAS, BEB, THYSSENGAS (SHELL, EXXON) several companies (limited TPA)	576 local utilities (i.e. STADTWERKE)
United Kingdom (E/I)	Open to competition	Open to competition Several oil companies (BP, SHELL, EXXON, CONOCO, TOTAL) and BRITISH GAS (CENTRICA)	BRITISH GAS(TRANSCO) Monopoly with regulatedd TPA (BG is private)	• Open to competition • several distribution firms (among them CENTRICA) • several traders and brokers • TPA largely adopted

[a]1 for importing Country and E for exporting country, TPA for third party access, The gas companies shareholders are mentioned between parentheses.

Table 2
Natural gas production and consumption in Europe in 1996 (billion cubic meters)

Country	Natural gas production 10^9 cm	Natural gas consumption 10^9 cm
U.K	84.6	85.2
Netherlands	75.8	41.7
Italy	20.2	52.1
Germany	17.4	83.6
France	2.9	32.3
Spain	0	9.3

The main stake of the electricity directive is the opening of the electricity production. The main stake of the gas directive is the opening of the transmission and distribution activities of natural gas in Europe. Gas production is already theoretically open in Europe. Practically, it is not exactly the case in all European countries. Another directive, published in 1994, mentions that the natural gas reserves are not European but national reserves. Upstream the impact of the recent directive will be limited. Downstream it will be greater.

Players' strategies: a future risk of collusion?

Atomistic competition will not result from this deregulation movement because, hidden beneath this process are industrial strategies often of global significance. The stakes involved include the constitution of industrial groups capable at international level of profiting from the combined proceeds of gas and electricity which would eventually lead to a real oil-electro-gas oligopoly. The main players in the ongoing restructuring operations are: (1) the anglo-saxon oil companies like Shell and Exxon, but also Gazprom, Sonatrach, Statoil or Elf. (2) gas transport-distribution companies such as Ruhrgas, Gaz de France, Transco, Gasunie, some of which are vacillating between either forming an alliance with the oil companies by investing in upline of the gas chain, or entering the electricity production market even if this means competing with the electricity companies which are currently their customers. (3) As far as the electricity companies are concerned, they have no hesitation, in certain countries (cf. United Kingdom, Italy, Spain, Portugal even Germany) in planning direct strategic alliances with oil–gas companies, imitating certain major chemical groups (cf. Basf, Montedison) which bypass their usual suppliers (gas transport companies) by obtaining their supplies directly from oil–gas producers. The progressive setting up of TPA will tend to reinforce these alliances because each of the operators knows very well that he must diversify and also acquire a multinational dimension. Especially, as the deregulation process observed in the United States makes Europe the prime target for restructuring operations. The mergers observed between oil and gas companies or between gas and electricity companies in the United States are just a prelude to the growing list of take-overs within the European gas and electricity industries. These American companies, in fact, occasionally use capital resulting from the recovery of their stranded costs (on their protected home base) to finance the purchase of European companies.

Since the law of 1992 (EPACT), American electricity companies are entitled to expand their growth outside the United States. Thus, seven of the 12 British Regional Electricity Companies (RECs) responsible for electricity distribution, have been purchased by American companies. For example, the Southern Company (American company) took control of Sweb in the southwest of Britain while at the same time acquiring a stake in the German electricity distribution industry (Bewag in Berlin). The American gas company US Enron which was a specialist in gas transport, progressively increased its growth in gas sales and subsequently in the independent production of electricity from natural gas and then took over a major American electricity company, Portland General Electric. This electro-gas group now has European ambitions. At the same time, the European oil companies have entered the independent electricity production market using gas, whenever this has proved to be legally possible (thanks to the market being opened up to competition which, in any case, will become the rule in Europe after 19 February 1999). This is the case in Britain where independent electricity production already represents more than 15% of the electricity supply available on the National Grid.

Oil companies are therefore looking for opportunities downstream in the gas industry (gas distribution and trading) and to enter the electricity production business. Electricity companies are themselves looking to forge links with gas companies, especially at distribution level (benefiting from the gas–electricity synergy). As far as gas transport companies are concerned, it is in their interest to enter the chain further upstream and take a stake in the gas exploration-production business. However, alliances with oil companies are occasionally difficult because the balance of forces is favourable to the oil companies and does not favour the gas companies (cf. British Gas opposite British Petroleum or Gaz de France opposite Elf Aquitaine). The game is complicated by the fact that major chemical industries, often controlled by oil companies, are or will be capable of forging direct links with gas producers (oil companies) by using the transport infrastructure managed by the gas companies (via TPA). These gas companies are therefore hesitant about forming alliances with oil–gas companies upstream or with electricity companies downstream (as with Gaz de France opposite Elf and EDF). It is still too early to say what the European energy scene will look like tomorrow, but gas deregulation, following on from electricity deregulation, will undoubtedly be the catalyst for strategic mergers and alliances. Agreements are possible and national regulators such as the Brussels Commission will have to make sure that competition rules are respected.

Pending questions

The transposition of the Gas Directive into the national laws of the European countries gives rise to several questions which have yet to be answered:

(1) Can we still define public service assignments for gas and electricity? Can access to gas for the underprivileged be considered on the same footing as the search for energy independence through diversification of supplies from abroad? Does the priority given to cogeneration and environmental protection constitute a mission in the public interest? Today, gas is better placed than coal from the environmental standpoint and its European market should develop, especially at electricity generation level.

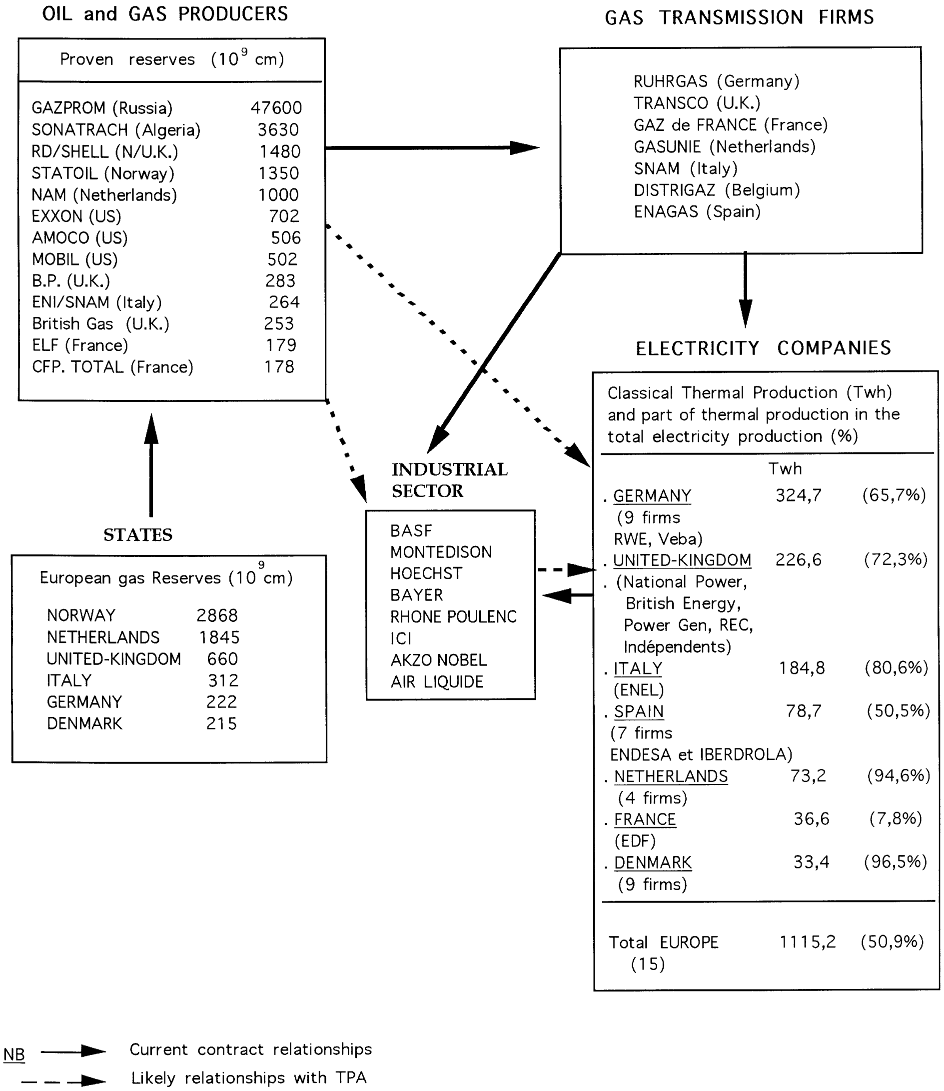
(2) Who will be the regulator tomorrow? Should an independent Commission of ministries and operators be set up (as is the case in the United States or Britain) or should the State be left to take on this mission through a simple ministerial department (system preferred in France)? How will the fields of competence be divided between the Brussels Commission and the various member States and what will be the role of the European Court of Justice? How will disputes connected with the regulator's decisions be settled? Should the regulator's function be transferred to Brussels? How can we make sure that the functions of regulator and those of shareholder will be kept separate when it is the State itself which controls public companies?

(3) How will the transition be made between the old and the new institutional system? In particular, how will 'stranded costs' be financed, i.e., costs incurred as a result of decisions taken or imposed within a different regulatory context? How can we be sure that these 'stranded costs' will not cover part of the costs linked to inefficiency in the behaviour of historical operators? How also can we be sure that these 'stranded costs' are not simply a pretext to reduce the beneficial effects that are expected to be achieved from greater competition? (certain European countries tend to overestimate these costs to protect restructuring of their national industry).

(4) How will infrastructure tariffs be determined once TPA has become widespread in Europe? (for the time being, tariffs have been established only in the United Kingdom and, on an experimental basis, in Spain). Should access charges be established in relation to a 'postage stamp' concept (lump sum toll), or would a 'cost-plus' type tariffing system be better, based on the distance actually covered by the gas transported, or should a RAMSEY-BOITEUX price-cap, hybrid price-cap system be chosen (i.e., a tariffing system which takes into account demand price elasticities) or (Efficient Component Pricing Rule) ECPR? The RAMSEY-BOITEUX tariffs correspond to a second-best pricing. The principle is the following: the difference between the price paid by the user and the marginal cost supported by the supplier must be low when the demand-elasticity is high and high when this demand elasticity is low.

The ECPR system was proposed by BAUMOL and SIDAK. The toll includes both the mean incremental cost borne by the network operator as a result of the arrival of a new supplier, and the opportunity cost that he incurs since this supplier takes a customer from him. The mean incremental cost is the cost supported by the operator to satisfy an additional demand on the network. The opportinity cost corresponds to a drop in earnings for the operator when this demand is satisfied by a competitor. Such a system could only be imagined in the case where the operator of the transport infrastructure is also a gas producer and supplier. In addition, measures must be taken to ensure that these tolls are transparent, non-discriminating and do not encourage bypassing of the networks in place, which would be inefficient from the economic standpoint.

The European gas industry is undergoing drastic change. A wind of competition is blowing and this should promote the development of gas, especially for electricity production. However, this competition is also the prelude to industrial restructuring and integration operations and the member States, just like the Brussels Commission, must remain vigilant especially as, in the long term, Europe will become increasingly dependent on imported natural gas (from Russia, the Middle East or Africa). In Europe buyers and sellers have managed to ensure security of supply globally with a network of connected pipes and to impose the net-back logic within long-run purchase contracts. The European gas market was 'regulated' through stable relationships among a few actors. One of the basic interests that the producer and the distributor have in common is without any doubt ensuring a continuous outlet for the quantity of gas for which both have invested. This supposes a favourable environment that will encourage the gas industry to invest in exploration, production, transmission and distribution. This is the main reason why some minimum level of regulation is necessary in the gas industry. Competition is useful to introduce incentives to efficiency. The role of the European Commission is to limit monopoly



SCHEDULE 1 - MAIN ACTORS IN THE EUROPEAN GAS MARKET

rents and to improve the welfare for each consumer. Now, it is necessary to organise the 'new regulation' inside Europe. First of all, this regulation will be set up by each Government. In the future (in a few years probably) it will be implemented by the European Commission itself. But a European energy policy is not easy in a context in which the UK is oil-oriented, the Netherlands gas-oriented, Germany coal-oriented, France nuclear-oriented and Italy dependent on its imports. For European countries natural gas has tended to be an element of complementarity and cooperation, rather than an element of dissension.

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