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NORDINE AIT-LAOUSSINE

The Impact on the Mediterranean of the European Gas Market Liberalization Process: A Producer's Perspective

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The Impact on the Mediterranean of the European Gas Market Liberalization Process: a Producer's Perspective

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Allow me, first, to express my pleasure and appreciation for the invitation to participate in this Roundtable organized in the context of the First International Sitgas Conference and for the opportunity to address such a distinguished audience. I was asked to present a producer's view on the impact on the Mediterranean of the fundamental changes which are taking place in the European gas market but I hope that the views I am about to express will reflect a fair balance between the interests of the various participants in the business. Let me make it clear that, by producers, I mean the gas exporting countries as well as the companies involved in gas export projects and that I am not speaking on behalf of either of them.

What I intend to do in this presentation is, first, to recall briefly the growing role of natural gas in the world energy scene and in the Mediterranean market, in particular, second, to highlight the main factors behind such a growth, third, to consider the implications of the proposed changes in the European regulatory framework and, finally, to analyse the producers' likely response in the light of which I will discuss the need for an orderly transition.

Highlights of the Gas Success Story:

Like many events of this kind, this conference has, no doubt, highlighted the growing role of natural gas in the world energy picture. Most of the participants in the gas business predict a great future for this premium fuel. Let me summarize the consensus view:

- Natural gas has become — and is expected to remain — the fastest growing fuel for the foreseeable future.
- The world gas resource base is growing and is clearly sufficient to meet the potential long-term demand.
- Gas has become the preferred fuel because of its environmental benefits and its economic advantages, particularly in power generation.
- Gas provides the ideal bridge towards a sustainable future based on renewable energy.

We have, indeed, moved a long way from the situation of the 1970s when, in Europe, it was prohibited to use gas in power generation and when, in OPEC countries, gas was simply flared in vast quantities. At that time, I was in charge of selling Algerian gas and I remember complaining about the limited attention that this premium fuel was getting outside the US market. In those days, I used to say that gas was the "neglected child" of the hydrocarbon family — or oil's "little brother" — which was, in fact, generally sacrificed for the sake of the big brother's growth. A perfect illustration of this state of affairs is the French expression "gaz fatal" used for gas associated with crude oil production, a sort of "necessary evil" that must be flared and destroyed.

Well, the "little brother" has made a lot of progress since then. He is commanding more respect and deserving more attention. Gas has, indeed, grown faster than any of the members of the large fossil fuels family and is now showing clear signs of a wish for independence to potentially become the main energy source of the 21st century.

Consider the following performance, which was achieved in the space of one generation, i.e. since the early 1970s.

Table 1	Natural gas : the fastest growing fossil fuel	
	Early 1970s	Late 1990s
World consumption (bcm)	1100	2300
Gas share(%)	18	24
Proven reserves(tcm)	52	146
Static life time (R/P ratio)	47	63
International trade (bcm)	46	485
Number of countries involved	13	57
OPEC gas flaring (bcm)	150	50

Source: BP Statistical Reviews

- World gas consumption doubled while oil consumption increased by a quarter only. In fact, gas has largely displaced oil from stationary energy markets.
- Gas share, in the world primary energy balance, grew from 18 to 24% while oil's share fell from 48 to 40%.
- Proven reserves of natural gas increased three-fold while oil reserves grew by 50% only. At the end of 1999, their static lifetime was sixty-three years compared to forty years in the case of oil.
- International gas trade grew ten-fold while oil trade remained virtually constant. The number of countries engaged in cross-border gas trade has grown from a dozen in the 1970s to almost sixty currently.
- Gas flaring in OPEC countries was reduced from 150 to 50 bcm per annum.

Natural gas developments have been spectacular in Europe over the same period:

Table 2 Gas growth and a declining resource base in Europe

	Early 1970s	Late 1990s
OECD Europe Consumption (bcm)	145	420
Gas Share (%)	6	22
International Trade (bcm)	15	270
Number of countries involved	8	34
Pipeline trade	4	22
LNG trade	2	5
Pipeline & LNG trades	2	7
Proven reserves (bcm)	5500	4800
Static life time (R/P ratio)	38	12

Source: BP Statistical Reviews

- Western European gas consumption increased almost three-fold.
- Gas share in the primary energy balance grew from 6 to 22%.
- Cross-border trade (to and within Western Europe) grew from 15 bcm in 1970 to 270 bcm in 1999, with the number of countries involved increasing from 8 to 34, including both pipeline and LNG trades.

But, unlike what's happening at the world level, the size of the resource base is declining with a static life down to twelve years only in 1999 compared to thirty eight years in the early 1970s.

Natural gas developments have been even more remarkable in Southern Europe's five Mediterranean countries, i.e. Portugal, Spain, France, Italy, Greece and Turkey.

Table 3			Gas developments in the Mediterranean			
	Gas consumption (bcm)		Gas share (%)		Gas imports (bcm)	
	1970	2000	1970	2000	1970	2000
France	15.1	39.6	8.5	13.7	0.5	42.8
Greece	0	1.7	0	5.0	0	1.9
Italy	14.2	63.8	10.5	34.6	0	57.6
Portugal	0	2.5	0	9.1	2.2	
Spain	0.9	16.8	1.0	12.1	0	16.9
Turkey	0	14.1	0	17.1	0	14.0
Total	30.2	138.5	7	24	0.5	135.4

Source: BP Statistical Reviews

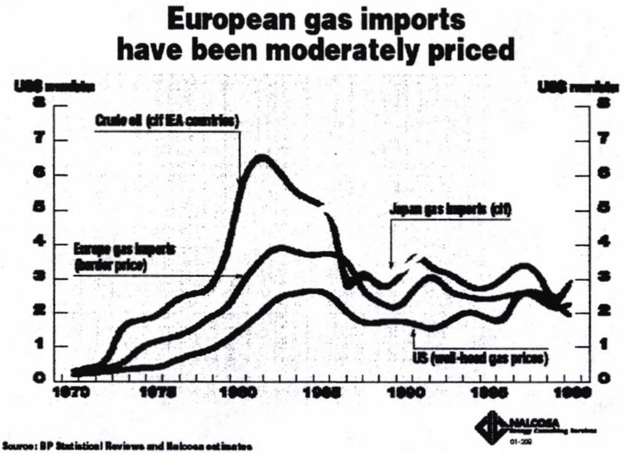
- Gas consumption increased almost five-fold.
- Gas share in primary energy grew from 7 to 24%.
- Cross-border trade increased from virtually nothing to 135 bcm per year and while, thirty years ago, only France was importing some LNG from Algeria, all of Europe's Mediterranean countries are now involved in both pipeline and LNG trades.

THE RATIONALE OF THE TRADITIONAL ORDER

Natural gas has, therefore, achieved in Europe and particularly in the Mediterranean area, in relatively short time, an excellent record in terms of demand growth, market share and international trade. This success was possible because of a number of favourable factors, the most important of which was, from a producer's perspective, the existence of a contractual framework built over the years between a limited number of sellers and buyers which was particularly well-suited for an immature market.

The traditional framework was based on long-term contracts and inter-fuel pricing in which the seller took the price risk (sometimes with a floor price safeguard mechanism and a price review clause) while the buyer took the market risk via a "take or pay" obligation. Pricing formulae were agreed on, from time to time, to ensure that gas prices remained in harmony with prices of alternative fuels in the buyer's market, thus ensuring, at the seller's risk, the buyer's competitive position in the market. Such a framework supported large investments in production, transmission and distribution facilities and contributed a great deal to the expansion of cross-border trade, which enabled Europe to achieve security of supply with increasing volumes of moderately priced imports. The average European border price for imported gas while slightly higher than the average US well-head price was, over the period under consideration, about $ 1/mmbtu less than both the average Japan import price — or the price of crude oil delivered to the IEA countries.

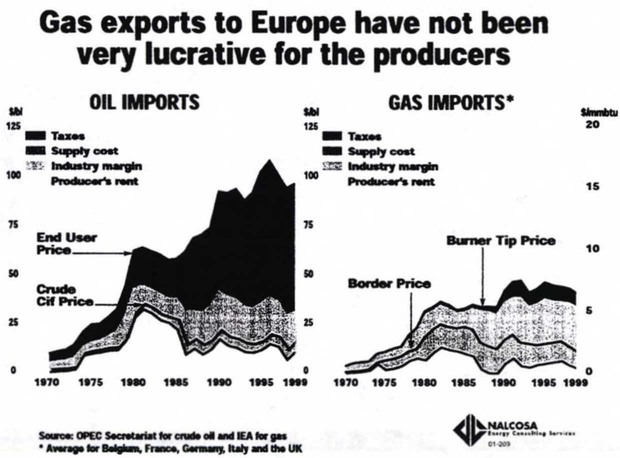
Chart 1



The contractual framework under which the European gas industry operated so successfully for decades was considered a fair arrangement. There were periods when the seller was hurt because of low oil prices, as was the case in 1986 and again in 1999, and periods when the buyer was hurt, as a result of high oil prices, like in the early 1980s and last year, as it could not favourably compete in power generation against coal or nuclear generated electricity.

But, to be perfectly candid, it can be said, with the benefit of historical perspective, that, while the risks were shared between the buyer and the seller, the producer did not receive, on balance, a fair share of the rewards. It is, indeed, a well-known fact that gas export projects have not been very lucrative for the seller.

Chart 2

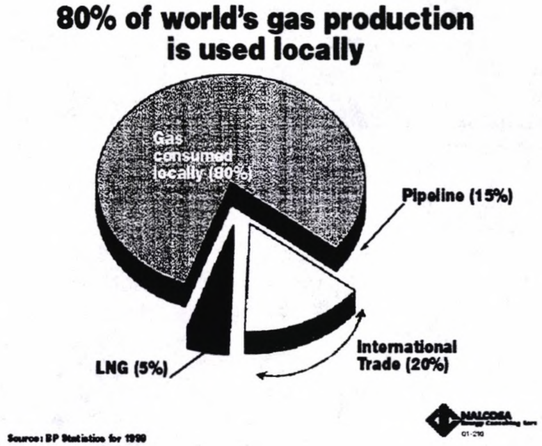


The resource economics of a long-haul gas project have, indeed, historically been relatively poor compared to oil projects. This is due to the fact that natural gas is much more expensive to transport than crude oil. As a result, the value netted back at the wellhead — or the economic rent available for the producer — is much smaller in the case of gas. The producer's rent associated with gas exported into Europe is about one-third of the rent available in oil exports. The average rent collected by the producer for the period following the 1986 price crash is about $ 12/bl (or the equivalent of $ 2/mmbtu) for oil compared to less than a dollar per million btu for gas, that is less than the rent collected by the consumer's government through taxes and about 10% of the burner tip price.

In the early days of the LNG business — during the 1960s and early 1970s — Algeria was barely making a modest financial return on Sonatrach's investments. The netback achieved for the rest of the 1970s was about 25 cents/mmbtu on average. As a result of the general increase in energy prices of the late 1970s and the early 1980s, the well-head value improved and exceeded the dollar mark until the 1986 price crash. Since then, it has been less than a dollar except during the last couple of years, as a result of the recent oil price increase. I suspect that the record is not any better for Norwegian and Russian exports.

The relative low profitability generated by gas exports is behind the long gestation period associated with the launching of long-haul "grass-roots" projects, which are capital intensive and require long lead times. This is well illustrated by the fact that, in 2000, as much as 80% of world's gas production did not leave the country in which it was produced and that, as a result, only 20% of produced volumes were traded internationally as compared to more than 50% in the case of oil.

Chart 3



IMPLICATIONS OF THE LIBERALIZATION PROCESS

With the proposed changes in the EU regulatory framework, driven by the desire to increase the economy's industrial competitiveness, the European gas industry is now expected to undergo a fundamental restructuring. The on-going reforms seek to achieve several objectives through competition in a single liberalized market, with the ultimate aim of reducing gas prices for the benefit of the final consumer. The process is likely to lead to a shift in the composition of the gas value chain, with the expected gradual erosion of the competitive advantage enjoyed by many of the established players and the entry of new players, particularly those with secure access to resources.

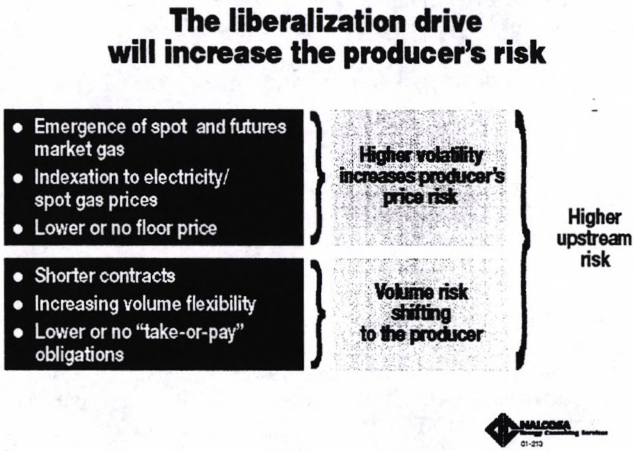
Market liberalization is obviously a good thing to the extent that, through competition, it improves cost efficiency, stimulates technical innovation and progress and ensures that suppliers are more responsive to their customers. No one could object to that. This process should normally translate into lower gas prices at the consumer end and to higher gas demand. The real question is whether it will provide the appropriate investment climate for the continued expansion of the European gas industry consistent with Europe's concern for security of supply and its ambitious goals under the Kyoto Protocol.

The implications of the liberalization drive on contractual relationships have, recently, been the subject of an intense debate. The opinions are divided between those who expect that the traditional system I have described earlier will prevail, in a slightly modified form, and coexist with a limited form of the Anglo-Saxon model, and those who believe, on the contrary, that the emergence of short term and spot market trading will, undoubtedly, have a tidal wave effect on the underlying structure of the industry in which long-term "take-or-pay" contracts will be, at best, renegotiated and, at worst, abandoned altogether.

But, judging from recent developments and from the experience of the countries who have totally liberalized their market, the move is clearly towards the Anglo-Saxon model, with market related pricing, shorter-contracts, increased volume flexibility leading to volatile prices, decreased supply security, loss of confidence in the gas industry and the gradual surrender of all that has been achieved in the past.

There is a clear pressure today on the producers to give up the assurances of off-take commitment they received in the past in order to create conditions for greater competition in the market place. As a result, the producers will be asked, not only to take a higher level of price risk, than was heretofore the case, but also the volume risk, which was traditionally taken by the buyer.

Chart 4



The inevitable effect for the gas industry is that the risk associated with export projects will be shifted upstream. What will be the producer's likely reaction?

PRODUCERS' RESPONSE

Producer governments are conscious of the fact that, in today's global world dominated by a free market economy, they must adapt to changes if they want to survive. Most of them are engaged in a radical process of transformation of their own to offer a better future for their citizens and are moving away from a simple model of direct state management of resource development to a more complex model which offers an enhanced role for foreign investment and private capital. The producers are adopting a pro-active stance, including:

- The phase-out of State management in resource development;
- An enhanced role for foreign investment and private capital;
- Forward integration downstream;
- New alliances and partnerships;
- The restructuring of the gas value chain;
- Greater flexibility on indexation mechanisms

The ongoing reforms in the Algerian energy sector, for example, pursue the goal of increased economic efficiency through liberalization, privatisation and competition with the minimum level of regulation required to insure a smooth transition from the old centralized state-owned system to the new economic order. In the new gas regime now under discussion, private companies (Algerian or foreign) are invited to participate in the development of the Algerian gas industry on the same terms as Sonatrach which will ultimately be privatised.

They will have the right to freely monetise their gas reserves for local consumption or exports at market prices. They have guaranteed access to the existing transmission infrastructure at non-discriminatory tariffs and are free to build their own LNG or pipeline export facilities. But this does not mean that Algeria will be indifferent to the value placed on its gas reserves. This is an issue I shall return to in a moment.

The ongoing reforms on both the producer and consumer sides can, therefore, open the door for attractive opportunities and for profitable partnerships along the gas value chain, with forward integration of the producers' downstream, including the power generation sector and the backward integration into production of the established mid-stream players.

Such a strategy is already being implemented on a limited scale and will, no doubt, be pursued vigorously. Will it succeed in achieving a fair distribution of the economic rent between the upstream and downstream sides of the business? If it does, so much the better and if gas prices come down at the consumers' end as a result of competition, so be it, as long as the producer is adequately compensated.

As far as gas indexation is concerned, many analysts expect that, under a liberalized market, competition will succeed in decoupling oil and gas prices, with the emergence of spot and future markets and gas-to-gas competition. Some even argue that the increasing gas-electricity convergence will ultimately lead to a situation where the electricity market will progressively serve as the main reference for gas trading and prices, with an indexation based on power, coal and, perhaps, spot gas prices.

In my view, the indexation of gas prices to oil or other energy or cost-based indices is not the most crucial dilemma facing the producers. In reality, gas prices have moved in tandem with oil product prices, even in fully traded gas markets, driven by interruptible markets that swing between oil and gas, so natural gas prices will never be completely independent from oil prices in the foreseeable future. To be sure, producers have not always benefited from a rigid oil indexation and some have even welcomed, in the past, the use of coal, electricity and/or inflation indices once an acceptable minimum base price has been agreed.

The real problem, as I see it, is not price indexation but rather price volatility. In this respect, I believe that a departure from the current indexation mechanisms in favour of spot gas prices will inevitably result in an extreme fluctuation of gas prices as has been the case for oil prices since the introduction, in the early 1980s, of the spot and futures markets.

COOPERATION OR CONFRONTATION?

In attempting to adapt to the change with a pro-active stance — i.e. in a climate of co-operation rather than confrontation — the producers will need to protect their revenues and market share. There is no guarantee, however, that they will succeed. The restructuring of the gas value chain of the magnitude required to level the playing field, in terms of economic rewards, between the well-head and the burner tip, is a slow process. The producers' desire to move downstream may be frustrated by their financial constraints. Entry barriers and further EU regulations and interference may limit their autonomy and, with no minimum price, their exports revenues may collapse as a result of gas-to-gas competition. Moreover, the modus operandi they are developing with the former "national importers" to avoid disturbances may be challenged by the EU regulators. Under these conditions, they may have no choice but resort to a defensive strategy to resist the change.

In the case of on-going sales, the producers' ability to resist is relatively limited by their economic incentive to keep the existing supply infrastructure fully utilized as long as revenues exceed marginal cost. If they cannot secure a minimum level of revenues to cover tax paid cost, they may very well decide to adopt a co-ordinated stance to regulate supply.

Security of supply, which is a legitimate concern for Europe, goes hand in hand with security of off-take for the producer. One is not possible without the other. The EU may think that it can destroy the buyers' cartel but it clearly cannot unilaterally change the rules of the game without consulting the countries who have taken the risk to create a market and who would not be allowed now to benefit from that risk. If there is no obligation to "take", then there should be no obligation to "deliver", with all the consequences that such a situation could entail in terms of irregular deliveries and potential supply interruptions.

In this respect, the Forum of the Gas Exporting Countries, which was created in May 2001 in Tehran and which will convene again in January 2002 in Algiers, should be seen as the first sign of a defensive strategy. Producer governments will, in any case, likely adapt their fiscal regime to protect their tax base, with a norm or reference price, to avoid the undesirable consequences on national spending of volatile commodity prices. They will simply refuse to take the risk of subsidizing their gas exports through the tax system.

Chart 5.

In the case of new supply, where a producer would be asked to consider a new "grass-roots" project, without a long-term "take-or-pay" contract, the situation is more straightforward. It is simply unacceptable. No responsible government or company will, in my view, commit to invest billions of dollars in any capital intensive and high-risk venture without the assurance that the produced output will be regularly lifted. Besides, in view of the gas exporting countries limited ability to support large capital investments programs in resource development, given their obligation to meet more pressing social needs, the new infrastructure required to increase gas exports will have to be financed externally by private investors and lending institutions, which are unlikely to commit the huge funds required without the guarantee of a "take-or-pay" provision.

THE NEED FOR AN ORDERLY TRANSITION:

If the proposed changes in the European regulatory framework go forward the Anglo-Saxon way, if the industry does not succeed in restructuring the gas value chain to level the playing field between the well-head and the burner tip, and if the producers' interests are not protected with long-term "take-or-pay" contracts, gas will progressively be traded as a commodity and market forces will determine the level and timing of the investments required to meet the projected demand.

The risk of allowing this to happen is to create an environment of increased price volatility and an erratic investment climate, with smaller and more expensive projects, higher market risk and lower flexibility which may result in potential supply shortages and disruptions, as was the case in California during the 2000-2001 winter period. While such a risk can be mitigated in the short to medium term, in view of the current contractual over-supply and the available ample infrastructure capacity, Europe may not be able to secure the significant incremental gas supplies which it needs to import in the long term. A kind of "false calm" may persist for some time and may disguise hidden challenges.

The alternative, for the EU's regulators, is to recognize that, in view of Europe's increasing dependence on long-haul external supplies and its ambitious environmental commitment to the Kyoto Protocol, Continental Europe cannot afford a radical liberalization "à la UK".

Because gas has an essential role to play in meeting Europe's security of supply and environmental objectives and because it is a fuel which provides an ideal bridge towards a sustainable future based on renewable energy and is, therefore, of critical importance to the long-term development of the global economy, it should not be treated merely as a tradable commodity and only and simply as a profitable business opportunity.

It is now widely recognized that the question is no longer whether the European gas market will be fully liberalized but when, how and at what pace. True, the old model cannot survive if it inhibits competition but, surely, there is need for an orderly transition from the traditional contractual framework to a modified Anglo-Saxon type model which will recognize the specific political, economic and social dimensions of Southern Europe's relations with its gas suppliers, which are totally different from those prevailing in the US and the UK. Innovative approaches are required for a gradual reallocation of risk and rewards which, although not totally in line with the prevailing "competition" and "free market" philosophy, would ensure the continued expansion of the Mediterranean gas industry.

Nordine Ait-Laoussine

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