

Because of the rigidity typical of this market changes are not predictable in the short term. If the aim is to reach a greater stability (of supply, price, etc.) what is needed above all is to diversify the sources of supply. But this can be accomplished only through an agreement among the European countries to coordinate each one's aims regarding competition and liquidity, and the development of renewable resources which respect the environment

A New Governance for European Gas

ENERGIES 2

by Antonio Villafranca

The recent risks of interruption of supplies to Italy have shown, also to a broader audience, the need to think about new forms of governance of the security of gas supply. This reflection must take into consideration, on one hand, the international context that has undergone profound changes through the years and, on the other, the need to operate in energy markets which are more and more open and competitive.

Focusing firstly on the concept of security of supply, there are different definitions and different variables which influence its determination. At a first rough estimate it is obviously evident that every definition of this concept has to take into consideration a "physical" element linked to the actual availability of the gas. In fact, the security of supply, whoever is managing it and in whatever way they are managing it, cannot aim at anything other than reducing the probability of interruption of the gas supply to the minimum. This probability will be minimized if a country can count on a national production greater than its gas consumption – as is so in the European Union for the Netherlands and Great Britain (at least up until 2004) – whereas it will increase if a country has a low national production (like the majority of European countries) and is therefore forced to satisfy its requirements with foreign imports. On this point it's necessary to stress the fact that there is no need for alarm concerning the import of gas (as with any other goods), even

in high quantities; what is worrying, though, is the dependency on one or just a few importers. In fact in the event that they would temporarily stop their supply voluntarily (for example to put pressure on importing countries for economic or political reasons) or involuntarily (in case of an accident or terrorist attack), the importing countries would have no other valid options. In Italy for example more than 70% of the gas imports come from only two countries (Russia and Algeria), and in other European countries the situation is even worse. In particular the countries more at risk of interruption of supply from a single exporting country (Russia) are the Baltic countries, the Czech Republic, Finland, Poland and Slovakia, which, in such an event, would have no significant alternative suppliers to turn to, mainly because of infrastructural limits connected to the absence of alternative supply lines and to the impossibility to re-direct the flow of gas transported by the pipelines crossing the country.

Portugal and Spain are also at a disadvantage because of their excessive dependence on a single supplier (Algeria), even if Spain has a greater manoeuvrability thanks to the prevalence of imports of liquefied natural gas (LNG).

If instead a country can count on a plurality of providers (and moreover if it has adequate infrastructure for the re-direction of gas flows) it does not have much to fear in the

case of interruption of supplies from a single producing country, especially if it is characterized by a high level of political stability. The diversification of the supply sources and the evaluation of the political risk associated with each producing country are then the fundamental variables needed to quantify the security of gas supply, that even with some limits (which we will discuss later), has the advantage of allowing us to compare different countries through time. At the outset of undertaking such an analysis it appears evident that in the last 10 years the countries of the European Union have tried to couple the increase of gas imports with a greater diversification of producing countries, but this attempt does not seem to have obtained good results. Important countries like Germany, France and Italy are in a similar situation regarding the diversification of gas import countries, but this does not imply that they share the same risks. It has to be highlighted that the weight that gas has in the Italian and German energy mix is far greater compared with that of France (given the choice by France to focus on nuclear energy for the production of electricity) and therefore the situation of these countries is assuredly worse than that of France (Germany imported over 90 billion cubic metres of gas in 2005, in comparison with 73 billion for Italy and “only” 49 billion for France).

On the contrary, the situation of the Netherlands does not raise any concern, as the low diversification is compensated by a production/consumption ratio equal to about 1.60; in other words it is the high national production that allows for a low diversification of their imports (equal to about 17.5 billion cubic metres in 2005). Furthermore on the European level the position of Eastern countries needs to be highlighted: for obvious historical reasons, a strong dependency on Russian imports still hangs over them (amounting to more than 75% of total imported gas for the Czech Republic in 2005, and 63% for Poland). Outside the European context the United States and Japan represent two extreme cases. The rather high levels of national production in the United States (production/consumption ratio equals 0.84) explains their low level of diversification, but its main reason is above all the import of about 85%

of the gas from a single country, Canada, which is characterized by a high level of political stability and by a privileged relationship with the USA. The situation is completely different in Japan, which imports gas from nine different countries and as such is less exposed to the risks of interruption of supply connected to relying on a single provider, considering that its first supplier (Indonesia) counted for “only” 24% of the total imported gas in 2005.

The limits of this kind of analysis are linked to the fact that turning to more countries does not represent a better situation if it is not an informed choice by the country, but it is instead simply a need connected to the existing infrastructure, and to the proximity to or distance from the main producing countries. Moreover it is not necessarily the case that a high political instability will always turn into a concrete risk of interruption of supplies (Algeria went through several years of high political instability connected with Islamic radicalism, but this did not lead to the interruption of supplies). This second limit can anyway be softened taking into consideration that political instability influences the supply contracts and obviously the agreed price (that, as we will show later, represents a fundamental variable for a wider definition of the security of supply).

In spite of these limits, from the analysis of the diversification of imports it's possible to attain implications of *policy* that can lead us to identify a new model of governance for the gas market, in which the European Union Institutions will have an increasingly significant role. The fact that most of the member countries (especially the most significant ones) share a similar level of risk is in fact a positive factor in the creation of a shared energy policy, which would stem from the variable that is moving more towards this homogeneity (that is, the shared dependency by few, and almost always the same, suppliers). The proposal of a *European External Energy Policy* (EEP) which would allow the Union to speak with a single voice to its major extra-European suppliers is certainly a move in that direction.

Furthermore, a more detailed analysis allows us to highlight the fact that, even within a relative homogeneity, diverse national peculiarities remain, linked to several factors



_The Blue Stream gas pipeline, the result of the Eni-Gazprom tie-up, began transporting Russian gas to Turkey in January 2003. The pipeline is 1,213 km long and a 390 km stretch of it runs a record depth of 2,150 metres under the Black Sea

(energy mix, existing infrastructure, degree of openness of markets, geographical position, etc.) which cannot be addressed by assigning the whole energy policy to the European Union. The identification of different levels of governance (European, national and local) and the involvement of institutional and non-institutional subjects (from the companies to the final consumer) represent, in fact, the priority elements of a model of governance which moves away from the traditional European approach (based mainly on the presence of the State and on “national champions”) and instead takes into consideration the evolution of the world gas market and the consequences of the liberalisation process presently unfolding. Before proceeding to the discussion of European governance and of the contribution that can be given to it by European institutions, it is therefore fundamental to verify the room for manoeuvre of the Union

and the present distribution of jurisdictions among the different levels of government.

The European intervention and the difficult road towards liberalisation

In the Treaties of the European Union following the constitutive Treaties of ECSC and EURATOM, no specific jurisdiction on energy issues has been given to European Institutions. The “strategic” value given by the single countries to the energy sector has in fact prevented the beginning of a shared European action. Limited interventions by the EU have been possible only using section 5 of the EEC Treaty which states that the European institutions can take care of issues on which no specific jurisdiction has already been planned, if these issues are necessary to complete the Unified Market. Therefore the actions taken by the Union are only of minor importance and therefore it is not surprising to see the relative inactivity of the European institutions in the field of energy. Only in recent years has the changed international context (with an increasing demand for energy by the developing countries) and the concerns of dependence on a limited number of countries (first of all

Russia, led by Putin) modified the orientation of the European political leaders, who decided to start an EEP in embryo towards other external countries, and on the internal level to open the national energy markets. With regards to this the Commission has repeatedly stated that some substantial gaps remain in both the gas and the electricity markets. In particular, they exist mainly on a national level, with low clarity and big vertically integrated incumbents that hinder the entrance of new subjects into the market. All this stems also from the fact that the structure of the market in many member states is still affected by the legacy of the traditional state monopolies, especially in the gas sector, whereas anti-competitive practices still contribute to keeping prices high. Looking in particular at the major European countries, it seems that the British market could represent an example of “best practice” (thanks to the progress already made in the opening of the markets) from which the other European markets should take inspiration, still respecting national needs and peculiarities. It has still to be verified if the British model, especially in the long term, could be the best possible solution for the challenge of the security of supply. On one hand the supporters of liberalisation have in fact often shown the British case as an example of a market free of the conditioning of national champions and anyway able to assure a proper level of supply with quite reasonable prices. On the other hand doubts have been raised on the capability of a completely liberal market to invest large resources in order to predispose redundant infrastructure (needed to manage emergency situations) that normally would be scarcely used, and consequently, scarcely remunerative. As Stern has shown, Great Britain is less equipped than the main European subjects in terms of storage and transport capacity, although we need to remember that Great Britain has been a net importer for less than three years and therefore it is logical that it felt less of a need to invest in redundant infrastructure, being able to count, in case of necessity, on rapid increases in national production. The United Kingdom is considering only now its strategies for the security of supply, while it looks to the future with a perspective of growing dependence on imports, to date



scarcely diversified both with regards to provenance (Norway) and to available infrastructure. What happened in winter 2005-2006 is very meaningful in relation to this point. British consumers had to face the most considerable increase in prices of the last decade, mainly due to lesser flow than anticipated along the pipeline from Belgium and at the LNG terminals, added to the fact that it was a particularly cold winter. In conclusion the British model certainly needs to be looked at as a reference point, since it shows the steps that continental Europeans still have to take towards greater openness and liquidity of their markets. However it has to be properly adapted, taking into consideration the perspectives of the world market, and as I will explain later, the “failures” into which markets strongly characterised by the presence of incumbents and of “take or pay” contracts can incur. These perspectives allow room for open solutions with subsequent steps, and for multi-level interventions (European, national, sub-national) aimed at stimulating and directing market forces.

The grip of “take or pay” contracts

A serious obstacle in attaining a sufficient level of competition in the gas market and in the liquidity of the market itself is



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_The definition of a new energy policy is no longer just an option for the European Union (facing photo: EU energy commissioner Andris Pielbargs), but is instead a necessity

represented by the “take or pay” contracts which are the standard international practice in the supply/procurement of gas. These contracts have on average a very long life (usually 15-25 years, but often even 30 years) as they respond to the common need of the producer and of the purchaser to recover their respective infrastructural investments. In this way the purchaser is also able to assure an almost constant supply of gas to his clients. It is evident that this kind of contract has not been discouraged by European governments, as it answers to the need for national security of supply, allowing the purchasing companies (be they public or private) to have a function of “public service”. It has to be noted that while the medium-long term contracts are typical of markets with vertically integrated companies, the short term contracts are instead needed in those markets where unbundling has taken place, as the market operators need to reach a balance between demand and supply in a rather short time-span (usually from one day to one month). It is what happens in a market

such as in Britain, where the “*Network Code*” is a collection of rules for the “system balancing”, for the acquisition of new capacities and for the transportation and trade of gas through the pipeline systems managed by BGT. It is a legal document which is at the foundation of the agreement between BGT and the various ‘shippers’ on the use of the pipeline systems.

The great importance of long-term contracts with the “take or pay” clause (especially in continental Europe) is not surprising considering the presence of strong incumbents which, even respecting the present European and national laws on unbundling manage anyway to influence – more or less directly – the various phases of the gas chain.

In this context it is evident that a company that has in fact a monopoly or anyway a dominating position will tend to calibrate the minimum quantity established by the “take or pay” contract on the basis of their estimates of final consumption, showing therefore the maximum determination to defend the corresponding share of the market. From this situation stems the fact that the balance in the oligopolistic gas market depends on the effective capacity of each single company to sell its own supplied gas, proportionally to the “take or pay”

contract it has signed, to a precise share of consumers who are not served by other companies. Each company will act as having a monopoly on this limited demand. Therefore even if no evident collusion agreement among the companies is carried out, the oligopolistic balance stemming from a simple and rational application of the “take or pay” clause leads to a rigid distribution of the market.

Another problem of the gas market is represented by the reference price of purchase contracts. These long-term contracts do not take as a reference the actual price of gas resulting from the balance between demand and supply, but are based on the price of oil products (usually with a delay ranging from three to twelve months). The low liquidity of spot markets prevents them from providing sufficiently clear indicators for the formation of prices of long-term contracts. In fact a desirable gas stock market would allow the price of gas to be detached from the price of oil (building the base for the financial *settlement* of contracts), but it is evident that this way can be taken only if the market has enough operators ready to exchange significant quantities of gas. In other words the entrance of new competitors is essential for the development of spot gas markets with an adequate liquidity, and the ability to treat quantities of gas sufficient to be taken as reference in long-term contracts. In reality, however, the present prevalence of this kind of contract (which even in Great Britain assures about 70% of the supplies) creates a rigid segmentation of the supply market and therefore the number of competitors and above all the quantity of gas that they could negotiate would hardly be enough to develop the existing fragile spot markets. It is evident, in conclusion, that the persistent presence of “take or pay” contracts is one of the major obstacles to competition for the gas market in Europe. The rigid segmentation of the market described above also has as a consequence that even when several subjects are present (even if usually insignificant in comparison with the incumbent), no real competition for prices exists among them. A new intervention strategy is therefore necessary, not aiming simply to increase the quantity of market operators, but aiming also to assure proper levels of security of supply through a

balance between the institutional intervention (European, national, sub-national) and the work of free market forces.

“Public goods” and private preferences

In the past decades the presence (often exclusive) of the State in the energy sector assured a proper level of security of supply, given that within Europe no significant situation of interruption of the gas flow has ever occurred. From the point of view of the economic analysis, therefore, the tendency to consider the security of supply as a ‘public good’ provided by the State has prevailed. This view – which would seem to suggest a continuation of the *status quo* for years to come – deserves to be reconsidered above all under the light of the future perspectives of the global markets of energy. In fact recognising that the presence of the State has assured until now an adequate level of security does not imply that this can be an optimal solution for the future. The entrance onto the world scene of new, increasingly competitive subjects (both on the side of demand and of supply) does not assure the success of solutions adopted in the past decades for the future. Furthermore, from a strictly economical point of view, the supply of a high level of security by the State was possible because of the presence of a (State) monopoly which could directly charge the cost of that security on the final sale price. The recent European orientations instead push towards the liberalisation of the market, which is based on competition of price. It must be added to this that the typical characteristics of a “public good” (“non-rivalry” and “non-excludability” of consumption) do not seem to perfectly fit the definition of security of supply. It is in fact possible, in market logic, to imagine different levels of “consumption” rivals of that security, and the faculty to exclude some consumers from its full enjoyment.

It appears then to be necessary to think again about the security of supply, taking into consideration, on one hand, the growing importance of the market in comparison with that of the State, and on the other hand, the advantages deriving from a possible multi-level action. The concept of security of supply that has been followed until now has taken into consideration its most intuitive and certainly most important element: the

physical availability of the gas. However, if the aim is to proceed to a more accurate analysis it will be necessary to widen the concept, including also the variable of the price. For a deeper analysis, in fact, the security of supply is intended as the availability of any quantity of gas demanded at reasonable prices. This definition allows us to unite the physical element of the security of supply (already considered previously) with the element connected to the existing laws and to gas market dynamics, that is the price. It is evident that even if the physical availability of gas would be present (in the sense that the supply had not been interrupted) but the

that the demanded quantity of gas is made available at reasonable prices, it has to be observed that this assurance does not necessarily have to be valid for all clients. It is in fact possible to imagine a division of the clients into “interruptible clients” – that is clients for whom the flow of gas can be interrupted in case of pre-defined exceptional events – and “non-interruptible clients” (be they companies, institutions or individuals). The latter could be partially identified by the State (as in the case of electric companies, public services, the less well off, etc.); but the final consumers themselves would be primarily making such a choice based on their real necessity to be assured a continuous flow of gas.



_The biggest Norwegian gas pipeline will be 750 miles long. It will cross the North Sea, connecting Norway and the U.K., and will be able to satisfy 20% of the demand for gas

prices would be exceedingly high, the consequences in any case for the final users would be very serious. The variable of the price is the result of a complex interaction of factors stemming from the acknowledgement of the strategic role of energy on the national level, by the consequent regulation of the sector, by the particular international practice of the supply contracts (long-term contracts), by the link with oil products, by the process of liberalisation and by the low liquidity of the gas markets.

Therefore, starting from a definition of security of supply based on the assurance

In other words the same logic applied to private insurances could be used. In relation to cars, for example, the State limits itself to fixing the minimum insurance level required for everybody, but leaves it to the consumer to choose his desired level of insurance (from fire and theft to total protection). From the demand side it is therefore possible to imagine gas consumers with different preferences regarding security of supply. The presence of a competitive market would make it possible for the consumer to choose the supplying company that would assure him a level of security as close as possible to his preferences. In order for this to be possible, however, it is essential that significant differences of price between one company and another exist (or inside the same company, between clients with different security needs). In particular those consumers who require a greater protection (to the extreme case of total “non interruption” also for legally protected companies or subjects) will have to be ready to pay a higher price than the “interruptible” clients. These latter clients would need to be encouraged (also through *ad hoc* laws) to use the savings obtained in this way (in terms of lower price) to invest in an alternative *fuel capacity* (for example solar panels), which could compensate in the event of temporary interruptions of the supply. Therefore sending precise pricing signals to consumers would be instrumental for the identification of different levels of protection. From the supply side, those companies that

have predominantly an “interruptible” group of clients and a greater diversification of suppliers should be encouraged more than those serving a “non-interruptible” group of customers and depending on one or a few suppliers.

This means that the State would have to recognise this difference among the various companies and consequently modify existing laws. A law which expects the same reserve quota to be adopted by all companies intending to import from a new extra-European country is in fact inconsistent with this setting. It is evident that this obligation should be stricter for those companies which are serving mainly a “non-interruptible” group of clients.

Therefore the State would have to limit itself to requesting each company to assure the supply only to the “non-interruptible” clients and allow the companies with less risks to sell “rights” for emergency supplies to the more risky companies, which in this way would be able to re-activate the supply to their clients – even if at higher prices – for the period of the crisis. Obviously once this period would be over, these clients would go back to pay a considerably lower price than that of “non-interruptible” ones. It could even be possible to plan the creation of a public agency that would act as a “last opportunity lender” to make further reserves available in the event of a particularly serious crisis (when the mechanism of the sale of “rights” would not be sufficient). On the other hand the possibility itself of selling the “rights” would push some market operators to increase the quantity of gas in storage, given the real perspective of its sale at considerably higher prices.

Towards a multi-level approach

This model of (partially) private provision of the security of supply could be in theory preferred, but it clashes inevitably with the reality, in which the national laws do not take into sufficient consideration the diversification of the supply and the typology of clients of the various companies, and in which often the markets are not guided by real competition in prices, even in the presence of multiple operators.

Furthermore, the mechanisms of the market can work, not only at the level of each individual country, but also amongst the

various European countries, only if adequate infrastructure exists and possible “solidarity clauses” among the Member States are only activated in very exceptional cases (to be established at the European level), in order to avoid *free-riding* behaviour.

At present therefore there are many limits (both infrastructural and legal) which make it objectively difficult – at least within a few years – to put into practice the model described above. In fact depending on the time-span considered, it would be wise to set in place various interventions. The proposed model therefore would be a long-term objective for a European action that needs the involvement within different government levels already in the short term.

In particular at the European level there is the need to continue following a strategy aimed on one hand at the definition of an EEP and on the other to strengthen the competition, both inside each Member State and between them. In the first case it would mean aiming to an energy policy that could allow shared actions (as is the case in the WTO for trade policies) capable of assuring a greater negotiating strength against the large extra-European suppliers (being ever more important considering the risks of a possible cartel of gas producers, with a structure based on the example of the OPEC in the oil market). In the second case the Union should carry on the process of opening national markets through measures which could gradually lead to the elimination of national laws that hinder free European competition (also in terms of technical standards), to the definite separation of the ownership of companies under the authority of the incumbent, to the reduction of the weight of “take or pay” contracts, to the encouragement of trans-national initiatives (public and private) that could increase infrastructural investments, to the development of renewable sources of energy and to environmental preservation. These are measures the Commission seems to promote only partially, as is evident from the Green Book of March 2006 and from the recent “Energy Package” proposed in January 2007.

It does not seem reasonable to expect significant changes in future years, considering the slowness with which changes are accomplished (the origin of which is the repeatedly mentioned rigidity of the market

and of infrastructure). Evidently, it would be more effective to outline an agreement among the European countries – a sort of “European Energy Pact” – which could fix the objectives that the Member States should aim for in order to reach competition and market liquidity, the development of renewable sources that respect the environment, the creation of new infrastructure, and to the application of technical standards which could be valid for everybody. It is furthermore evident that in some fields this Pact should limit itself to the fixing of general guidelines (maybe even going a step further and outlining a gradual convergence), leaving the definition of the more appropriate national policies to the discretion of each State. Obviously in order for this Pact to really

the recent controversy between Germany and Poland concerning the construction of the new oil-pipeline linking Russia to Germany through the Baltic Sea). At the internal level it will be necessary to work in order to respect the Pact proposed above, trying to considerably reduce the monopoly situation still existing at present (produced by the embarrassing presence of incumbents) and assuming a non-judgmental attitude toward the operation of “mergers & acquisitions”, above all when they are stemming from European Union companies (fully respecting the principles on which the unified market is based). An important role will have to be given also to the sub-national levels of government, not only because the authority on the regional gas distributive network is often assigned to them, as in the Italian case, but also because they are naturally called to interact with the subjects (public and private) present within their territory in order to implement the national and European policies. On this point it is sufficient to think of the role local institutions can have in avoiding negative reactions to investments with a substantial landscape impact (as for example the installation of gas pipelines and re-gasifiers), possibly even following policies based on fiscal benefits and consumer prices particularly favourable to the citizen. It would furthermore be appropriate to create communication channels between the sub-national governments and the Commission, so that regional needs could influence, even *ex ante*, the deciding process of the Union on the energy and environmental policies that have a substantial landscape impact.

In summary it is therefore desirable to have a shared energy policy which would use different steps for various time-spans and would not undervalue the role of the State, but instead place it inside a multi-level perspective – strongly oriented towards the development of competitive markets – where the jurisdiction and the authority is given following a strict application of the principles of subsidiarity. It is now evident that the definition of a new energy policy is no longer just an option for the European Union, but is instead a necessity required to cope with the changes developing in the world market of energy and to assure, also for the future, appropriate levels of security of supply to the citizens.



Contrasto, REA

work, it would be necessary also to plan adequate infraction procedures, and as a result, sanctions for those States in default (the example to follow would be the present Stability and Growth Pact).

These European policies will have to be reflected on at a national level. In fact, even at this level it will be necessary to work in a two-fold direction: the relationship with extra-European countries and internal action. In the first case it would be necessary to verify that the decisions of each State would be consistent with the EEP (especially with regards to bilateral agreements with other, external countries) and therefore that they would not be clashing with the interests of other Member States (avoiding situations like