

PROJECT  
"A TEST FOR EUROPEAN SOLIDARITY"



# ENERGY SOLIDARITY IN EUROPE: FROM INDEPENDENCE TO INTERDEPENDENCE

Sami Andoura

*Foreword by Jacques Delors*

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## FOREWORD

*by Jacques Delors*

**T**he European Union is a political construction which needs to submit positive projects to its citizens. While the crisis in the euro area focuses all the attention, a positive agenda is needed in the whole of the European Union, turned to an outside changing world. The next European elections will take place in May 2014. The EU will need to be able to promote a positive agenda based on a handful of concrete projects and policies. The European Energy Community that we propose is one such project.

The deep-seated changes impacting a European energy sector in a state of transition - concerning not only its structure and its competitiveness, along with the requirements of sustainable development - all carry a fully-fledged project for a European energy policy. This major challenge also requires in-depth changes in society and in the way we produce, transport and consume energy. This project also has the merit of having a practical relevance to citizens and consumers, given the persistence of acute social problems linked to access to stable and affordable energy for all. Its success implies as such the full participation of all the active forces of civil society in Europe.

A great deal of progress has been made since 2007 towards a common European energy policy. But these progresses should not make us forget the risk linked to the current, worrying trend towards a forceful return to nationalism in the energy field in Europe, whether it be in the context of national energy transition processes clashing with one another, or unilateral approaches around the development of renewable energy sources and security of electric power supply. Those unilateral national political decisions ignore the existing real interdependence with neighbouring countries, not consulted, and may destabilise the European energy system altogether, sometimes leading to unnecessary and costly investment for citizens.

In this context, a European Energy Community must be built first and foremost on common and concrete steps regarding the three main aspects, as basis of the European Single Act which led to the creation of the single market, which are the stimulating factor of competition among industrial players, the strengthening factor of cooperation among member states, and the uniting factor of European solidarity among all actors.

Where “**the stimulating factor of competition**” is concerned, it is by completing the integration of a competitive and integrated internal energy market of European dimension that industrial energy players will be able to become competitive on the European and international level, and that energy resources can be better optimised in the EU.

Where “**the strengthening factor of cooperation**” is concerned, mandating cooperation between responsible national actors should become structured and inevitable, building on the strengths and weaknesses of each. Political, economic and structural cooperation among neighbouring countries, a missing link in today’s policy, would have energy infrastructures (transport, distribution, and also common planning), on a regional basis between neighbouring countries within the EU, for its foundation stone. If this cooperation proved successful, many others might follow, whether the joint funding of these infrastructures, ambitious research and development programmes, etc.

And lastly, where “**the uniting factor of solidarity**” is concerned, security of supply demands a common approach in a spirit of solidarity through collective internal mechanisms of prevention and management of supply crises in the areas of gas and electricity, but also through the diversification of energy sources and resources. This, in particular, because certain member states, which are still excessively dependent on a single foreign supplier, cannot manage to diversify their energy mixes. This involves developing the pooling of common supply capacities in exceptional circumstances, what an interconnected market should allow, but also to negotiate at EU level the necessary framework agreements with suppliers and transit countries. The success of such a project would also illustrate further progress of the EU common foreign policy.

Back in 1951, six European countries decided to pool their interests in two key areas of the economy in order to create a Community designed to replace conflict with cooperation and animosity with prosperity. Energy was one of those areas and solidarity was one of its founding principles. Almost sixty years later, energy is still a major political and economic priority, of course, but the common rules permitting us to achieve the goals of our own era need to be further enhanced. It is up to us to reinvent those rules together, and they must be equal to the new challenges that Europe has to address. Vague formulas or barren proclamations will not be enough if Europe wishes its citizens to go on believing in its ideal. The imperatives of energy solidarity remain essential, and as such must inspire the necessary changes in future European energy policy.

*Jacques Delors*

*founding president of Notre Europe - Jacques Delors Institute,  
former minister and former president of the European Commission (1985-1994)*

## EXECUTIVE SUMMARY

### Introduction – Energy solidarity in review

*Notre Europe – Jacques Delors Institute* is leading an in-depth study of the future of European energy policy based on a proposal made by Jacques Delors for a “**European Energy Community**”. It has the merit of having opened a European wingspan debate engaged with various stakeholders: public, private, NGOs, local, national and European.

**Solidarity plays a key role** in a European Energy Community and may later be one of the drivers of the development of an EU-wide energy policy. What is a federation of nation states if it is not a place of solidarity?

While remaining realistic about what is possible within the existing framework, the following study pursues **three main objectives**:

- **looking at the issue of solidarity in Europe from a historical perspective** and providing a realistic assessment of what the solidarity clause really means for European energy policy;
- **reviewing some key areas of action** and the various mechanisms by which solidarity is integrated into the new European energy policy and improves its functioning;
- **providing a fresh take on the solidarity clause** and suggest ambitious and forward-looking ways in which Europeans can enhance their capacity to work together on this sensitive issue by further pooling their strengths and weaknesses in five key areas: solidarity in times of crisis and internal security of supply; solidarity outside EU borders (diversification and partnerships); solidarity in the optimisation of energy resources within the EU; financial solidarity; and, lastly, solidarity to ensure energy access for all.

## 1. The upsurge of the primacy of national energy independence and unilateralism is against European solidarity

The **primacy of national energy independence**, and even a certain degree of protectionism and unilateralism, has recently appeared in the sphere of energy. In post-Fukushima Europe, strategic decisions regarding certain aspects of national energy policy are being made on a unilateral basis **without consulting neighbouring countries** whose energy networks and policies are already unavoidably affected and destabilised by these decisions.

It mainly concerns the following **policy areas and national choices** over: the energy transition processes, the energy mix, the anarchic development of renewable energy and asymmetrical electricity and gas transportation infrastructure and networks, security of supply, particularly in the realm of electricity, etc.

**National concerns** also take centre stage in efforts to create an internal **gas and electricity market**, the finalisation of which has stalled mainly for this reason. A battle is also being waged by the Union's 28 member states for **access to energy resources outside EU** borders, sometimes at the expense of cooperation and at the risk of confrontation where the development of new gas corridors is concerned.

In light of these developments, it is not clear how far the EU member states are actually ready to **move forward together in a qualitative leap past the notion of national energy independence** and truly embrace their *de facto* interdependence. However, the current search for national energy independence is in no way a guarantee of energy security and goes directly against the expected benefits of the internal market in terms of solidarity and security of supply.

The capital importance of the task makes a **common approach based on interdependence and solidarity** all the more necessary.

## 2. The gradual but real increase in energy solidarity in Europe is based on legal and political innovation

In a European energy context long marked by national independence and sovereignty, a *de facto* solidarity has nevertheless become progressively a **tangible reality** of the European energy policy that is currently being developed. Raised at the level of a fundamental principle in European treaties, the principle of energy solidarity **has become increasingly important** in the drafting of the European energy policy since 2005.

**Legally speaking**, the principle is now enshrined in Article 194 of the Treaty of Lisbon, which states that Union policy on energy shall aim to achieve its main objectives in a spirit of solidarity between member states.

**Politically speaking**, while the treaty did not provide a clear definition of solidarity, the effectiveness and political importance of the principle has been proven several times over.

Year after year, Europeans face the risk of **new crises and supply shortages of both electricity and gas**. Each episode tests not only existing levels of solidarity within the EU but the strength of the system as a whole. It took each time the number of threats, attacks and failures, including gas crises between Russia and Ukraine, for the EU and its member states advancing on the path of energy solidarity and giving it a specific content.

The EU thus secured tangible and **pragmatic progress** on the issue of energy solidarity by launching a series of common initiatives in several key areas such as:

- **Internal security of supply in the field of gas**: for instance, the EU has introduced a European mechanism to organise consistently **better forecasting and coordination of risks and crises of supply** across the EU in the gas sector, and ensure effective solidarity and mutual assistance. It is so far one of the main achievements of energy solidarity in Europe, of which the best example is the principle of reverse flows from west to east on the existing pipelines, including up to Ukraine;
- **Integration of national energy networks** in a European-wide energy market: the EU has also been able to set energy **infrastructures projects**

- of European interest** and their funding with the adoption of the new Regulation on energy infrastructures and the Connecting Europe facility for the period 2014-2020, after the experience of the European recovery plan for energy adopted in 2010 with up to 4 billion euros of investments;
- **Diversification of energy sources and resources:** another important EU initiative has been to support the development of the **Southern Gas Corridor** as a genuine project of European interest for the diversification of its supply, taking a high profile stance on it and putting its full weight behind;
  - The recognition of the European dimension of gas and electricity infrastructures through **negotiating mandates from member states to the European Commission** for the implementation of the Trans-Caspian gas pipeline from Turkmenistan and Azerbaijan and the integration of the Baltic states power grids in European network negotiated with Russia and Belarus. These are the first examples of a specific energy negotiation on behalf of the EU with third countries.

**European institutions** are also often mentioning in general energy solidarity in the numerous strategies and communications they adopt.

Energy solidarity is also essentially **based on key market mechanisms**. It is the market, flanked by some European rules, which more often guarantees a secure supply to prevent and manage potential temporary crises, creating a *de facto* solidarity. **Private industry plays a major role** in implementing energy solidarity. It is directly implicated in matters regarding the supply of energy in the EU and in member states, both upstream, through the development and financing of necessary infrastructure, and downstream, in the management of supply crises.

### 3. Missing elements of EU energy solidarity within the EU

While these various progresses are beneficial and welcome, one must recognise that it mainly consists so far in **individual initiatives**, which cannot yet be regarded as an overall strategy. Energy solidarity as such has not been the subject of **any common definition** at EU level. Energy solidarity, mostly identified with the issue of energy infrastructure, is still often **discussed**

**incidentally** to the general rules and developed at the technical level. And there are **still some significant gaps** in the EU's energy policy in terms of solidarity:

- **Electricity supply security remains the weakest element** of the European energy system. While operators themselves are now aware of the challenges, especially following the historic blackout of November 2006 and the critical situation in February 2012, outrageously national approach still prevents today the establishment of common rules for a truly collective approach that will build on the strengths of the European internal market. Mutual trust needed for a common approach is not yet sufficient and attitudes have yet to change in this regard. A **new Regulation for security of electricity supply** should be drafted and based on the general principles and major components of the existing concomitant gas Regulation, while taking into account the specificities of the electricity sector.
- **Energy solidarity is not yet sufficiently integrated in bi- or multi-lateral energy instruments and agreements with suppliers and/or transit countries.** Speaking with a single voice and pursuing EU interests with regard to external partners, producer and transit countries and other trade entities should mean, when necessary, and in the name of the EU common interest and solidarity, that the EU negotiates directly with suppliers and transit countries the necessary **framework agreements** setting up the conditions of energy supply to European markets, while leaving companies care to negotiate and conclude the final contracts over volumes and prices with suppliers. Similarly, the cooperation forged by the member states individually with third countries appears as sub-optimal in the current context. A specific attention from the EU should be devoted to the European neighbourhood area, both South and East.
- The required **economic and financial solidarity** for the impetus for major infrastructure projects of European interest remains limited. For projects located outside the EU or in EU seas (offshore wind), which are of considerable importance for several member states at the same time, the EU still faces national reluctance which jeopardise those projects because they require a multilateral approach that strikes tradition national approaches. In this context, the major issues of funding and the allocation of costs and benefits between states involved often remain without an appropriate response. The EU must continue to develop the innovative

and necessary economic and financial instruments. The newly agreed European interconnection mechanism should help. The use of Structural funds in this area should also be taken into account.

- **Energy poverty is a growing phenomenon even within the EU.** Unfortunately in most cases, both national and European, even defining this problem is difficult, and the means implemented are not always commensurate with the issues at hand. With regard to interpersonal solidarity in the EU, helping the dozens of millions people affected by this phenomenon to obtain access to secure energy is a major objective for European citizens and should be a priority for energy policy makers. Beyond the sometimes narrow principle of subsidiarity generally invoked in this area and the simple dissemination of good practice which gives a good conscience, the EU should, with a genuine concern over citizens, **come up with an ambitious and operational definition of what energy poverty is and what efforts**, including strong proposals, to combat this problem should cover.

#### 4. Obstacles to European energy solidarity

There are still **political, economic and social factors which are hindering a truly shared and common European approach** to the multifaceted issue of energy solidarity. Foremost are differences across the community of nations that is Europe: since 2004 in particular, a tendency has developed whereby each country establishes its own definition of what solidarity in Europe should and should not be.

Often, differences in culture, history and energy policy among Europe's member states, where geopolitical, technical, industrial and technological conditions also differ, still lead to **conflicting outlooks and expectations from governments and citizens** on its own meaning and the mechanisms for its implementation.

Everyone has its own definition of solidarity, which is based on a national perception, making it more difficult to create a European concept of solidarity developed from concrete elements which should now be articulated at the European level. Can we achieve this synthesis that integrates energy solidarity as, among other things: a bond of charity, financial transfers from the "rich"

to the “poor”, accountability of some “free riders”, reciprocity, collective insurance against risks, pooling of strengths and weaknesses in the international arena, social and interpersonal approach to energy, etc.? Such a synthesis can only be build incrementally.

## 5. Core principles and instruments of European energy solidarity in the future

It remains appropriate for the EU and its member states to continue to reflect and debate around the issue of solidarity, including the question whether it would be better to **focus energy solidarity** around one or two priorities and objectives, or otherwise to continue to **project energy solidarity on a growing number** of equally critical energy issues.

The issue is also when the EU will be able to move **on its own initiative, anticipating the future**, and make decisions in the field of European energy policy that are based on a conscious and assumed choice on the benefit of a collective and united approach, based on the interdependence and solidarity of all member states, in a spirit of mutual trust.

In this regard, it seems essential to us that the energy solidarity within the EU mainly and consistently involves the following **five major components**:

- **Completion of the internal gas and electricity markets**, which creates a *de facto* solidarity through the liquidity of the energy flows in Europe and the fact that gas and electricity flows can freely circulate all across Europe in all respects.
- **Security of supply through physical infrastructures and effective mechanisms for mutual assistance** based both on the needs to further integrate the various national energy networks through interconnection infrastructures, to ensure and improve the complementarities of national energy mixes, and on the European dimension of the system, which altogether allow to move from a *de facto* solidarity towards an active, dynamic and conscious solidarity.
- **Optimising the use of energy resources in the EU** in the context of energy transition(s), particularly in the field of promotion of renewable energy and the essential energy infrastructures for their development, to ensure enhanced complementarity between national choices and also enable the diverse and multiple national solutions, all with their

respective strengths and weaknesses, to combine into coherence and collective force of European energy policy, as the basis for further solidarity in the future.

- **Strong political will and leadership of the member states** based on collective approaches and extensive cooperation at European level in sensitive political areas, both inside the EU, with the security of supply based on the discipline and rigour of the *acquis communautaire* in the internal market, but also outside EU borders by seeking the most favourable agreements for the entire EU and in accordance with EU rules. The same political will is required for the coherent and collective treatment of issues related to resource optimisation within the EU, energy transition and its financing, access for all to affordable energy and the fight against fuel poverty, etc.
- In the name of solidarity, **reflecting the different levels of economic and social development and wealth of each member state** which encounter specific technical difficulties in adopting and implementing the European energy targets (20/20/20 in 2020) in the field of sustainable development.

A necessary subtle and complex balance between these aspects will again be at the heart of discussions that will animate the EU and its member states in the coming months and years and in the framework of negotiations on the European energy system post 2020, i.e. 2030. The increased smartness of the energy system of the future should facilitate the research and achievement of such balance.

## 6. Reflections to continue based on competition, cooperation and solidarity

It is finally important to remind that the **European energy policy cannot be limited to the issue of solidarity**. European energy policy, like a European Energy Community, includes three major components: competition that stimulates, cooperation that reinforces and solidarity that unites. Its development must be based on these **three essential pillars**, which are at the basis of the successful experience of establishing a single European market for goods, services and so on.

Beyond solidarity, addressed on its own feet in this Study, the other two areas in question are already the subject of numerous developments and already have a number of concrete benefits within the framework of the existing EU energy policy, but also significant shortfalls that must be addressed as well. In the energy field as in others, there will be no satisfactory solution if there is not more frank and determined cooperation of all member states. ***Notre Europe - Jacques Delors Institute continues to develop its reflexion*** on these issues of competition and cooperation and plans to put forward further proposals in the future.

### **Conclusion – A positive agenda for the EU**

In conclusion, the EU remains above all a political construction, which should be receptive to its citizens' needs. **European elections** are scheduled for May 2014 and the EU should be able to promote a “**positive agenda**” that is based on a few concrete policies and projects. **Energy should be on that agenda.**

Vague wording and announcements that are not followed up will not suffice if the EU wants its citizens to continue believing that it has a purpose. It is now important to address citizens' concerns. They are calling for this **common political project in the area of energy that meets their fears, their aspirations and their needs.** The issue of energy solidarity between people, countries, regions and operators in Europe is likely to facilitate the success of this challenge.

## INTRODUCTION

### WHAT SHOULD BE INCLUDED IN THE EUROPEAN ENERGY SOLIDARITY CLAUSE?

**N**otre Europe - Jacques Delors Institute is leading an in-depth study of the future of Europe and European energy policy based on a proposal made by Jacques Delors for a “European Energy Community”, in which solidarity plays a key role and may later be one of the key drivers for the development of an EU-wide energy policy. On par with competition, which stimulates, and cooperation, which strengthens, the uniting force of solidarity will be a major component of a European Energy Community. What is a federation of nation states if it is not a place of solidarity?

#### **Legal and political innovation in energy solidarity in Europe**

Solidarity has been a fundamental principle at the heart of Europe’s construction from the beginning, and is reflected in numerous common European policies, including energy. However despite many concrete examples of EU achievements over time - the common market, the free movement of people, economic and monetary union, and common policies on agriculture, economic, social and territorial cohesion and climate change - solidarity is not necessarily prevalent in every realm of EU influence. The economic and financial crisis, with which the EU has been confronted for several years, serves as a reminder.

In the same period, fighting climate change is one of the areas that has justified and illustrates the implementation of enhanced solidarity. It is under solidarity that the fight against climate change is based on mutual commitments for the completion of a common goal, but at the same time on a fair burden sharing between nations. This is especially true within the EU, where the regulatory system put in place to fight against climate change directly reflects the level of development and specific difficulties in this area for each member state.

The solidarity principle acquired new legal and political importance in the domain of energy. Legally speaking, the principle is now enshrined in Article 194 of the Treaty of Lisbon, which states that *“Union policy on energy shall aim to achieve its four major objectives in a spirit of solidarity between member states”*.

Similarly, while the treaty did not provide a clear definition of solidarity, the effectiveness and political importance of the principle has been proven several times over, by Russian gas suppliers and transit countries such as Ukraine in 2006, for example. Year after year, Europeans face the risk of new crises and supply shortages of both electricity and gas. Each episode tests not only existing solidarity mechanisms within the EU but the strength of the system as a whole, inciting the Union and member states to adopt effective measures to prevent and manage interruptions in supply.

This lack of a clear definition has not prevented the EU from securing tangible and pragmatic progress on the issue of energy solidarity by launching a series of common initiatives in several areas: internal security of supply, the gradual integration of national energy networks, and supply diversification.

### **An upsurge of the primacy of national energy independence and unilateralism**

The primacy of national energy independence, and even a certain degree of protectionism and unilateralism, has recently appeared in the sphere of energy. It is a general trend across Europe, as countries engage in sometimes incompatible national energy transition processes to develop renewable energy using existing systems, or develop electricity and gas transportation infrastructure and networks which carry supplies across borders.

National concerns also take centre stage in efforts to create an internal gas and electricity market, the finalisation of which has stalled. Increasingly, security of supply, particularly in the realm of electricity and the development of capacity mechanisms, is seen as a strictly national issue, which could undermine the internal market as a whole.

A battle is being waged by the Union’s 28 member states for access to energy resources outside EU borders, sometimes at the expense of cooperation and

at the risk of confrontation where the development of new gas corridors is concerned.

In post-Fukushima Europe, strategic decisions regarding certain aspects of national energy policy – the choice of energy mix, for example – are being made on a unilateral basis without consulting neighbouring countries whose energy networks and policies will be unavoidably affected and destabilised by these decisions.

In light of recent developments, it is not clear how far the European Union and its member states are actually ready to move forward together in a qualitative leap past the notion of national energy independence and truly embrace their *de facto* interdependence. The capital importance of the task makes a common approach based on interdependence and solidarity all the more necessary.

### **Differences in national positions within the EU**

Other political and social factors have stymied a truly shared and common European approach to the multifaceted issue of energy solidarity. Foremost are differences across the community of nations that is Europe: since 2004 in particular, a tendency has developed whereby each country establishes its own definition of what solidarity in Europe should and should not be. Often, differences in culture, history and energy policy among Europe's member states, where geopolitical, technical, industrial and technological conditions also differ, still lead to conflicting outlooks and expectations from governments and citizens.

Despite these evident differences, energy solidarity remains an important issue in the region. Indeed, exploring the meaning of this key principle is more important than ever. There is room for progress in the many areas mentioned above, including those where significant problems remain, to ensure that full force is given to energy policy governance – and energy solidarity – in Europe.

### **Energy solidarity in review**

There are limits to what can be accomplished in the current framework and in a political and economic climate that is difficult to say the least. The following

Study provides a realistic assessment of what the solidarity clause really means for European energy policy and suggests ambitious and forward-looking ways in which Europeans can enhance their capacity to work together on this sensitive issue by further pooling their strengths and weaknesses.

The Study begins by looking at the issue of solidarity in Europe from a historical perspective. It then provides a fresh take on the solidarity clause in the Treaty of Lisbon and analyses its implementation within the existing framework (*Part 1*). Following this is a review of some key areas of action and a description of the various mechanisms by which solidarity is integrated into the new European energy policy and enhanced. The Study also suggests ways in which energy solidarity could be further developed within the European Union.

The bulk of the Study covers five major topics: solidarity in times of crisis and internal security of supply in the EU (*Part 2*); solidarity with non-EU countries in terms of energy diversification and partnerships (*Part 3*); solidarity in the optimisation of energy resources within the EU (*Part 4*); financial solidarity and investment in projects of European interest (*Part 5*); and, lastly, solidarity to ensure energy access for all and the fight against energy poverty (*Part 6*).

# 1. The emergence of energy solidarity in Europe: from Schuman to Lisbon

## 1.1. From the beginning: European Coal and Steel Community (ECSC)

In 1951, six European states decided to pool their interests in two key areas of the economy and create a Community to replace conflict with cooperation and animosity with prosperity. Energy was one of the sectors included in the European Coal and Steel Community of 1951 and the Euratom Treaty of 1957. These two treaties remain a unique example of a framework for common policy for energy-specific action based on the delegation of powers to a supranational central authority.

Solidarity played a key role in this enterprise, as evidenced by the Schuman Declaration of 9 May 1950, which stated that: *“Europe will not be made all at once, or according to a single plan. It will be built through concrete achievements which first create a de facto solidarity”*, effectively highlighting the overall philosophy of this unprecedented project. All coal and steel production was placed under a common High Authority within a framework open to the participation of the other countries of Europe. The pooling of national production capacities and solidarity in coal and steel production laid the groundwork for collective economic development.

This *de facto* solidarity also took the form of mutual aid: Solidarity also guided the creation of an ECSC social fund to provide support to workers during restructuring phases and promote development in regions affected by job cuts. This was a forerunner to EU structural funds, which expanded rapidly in the 1990s. These components demonstrate the innovative nature of the solidarity practiced within the ECSC, which combined solidarity between nations and solidarity between people.

## 1.2. National sovereignty and European energy governance: troublesome ties

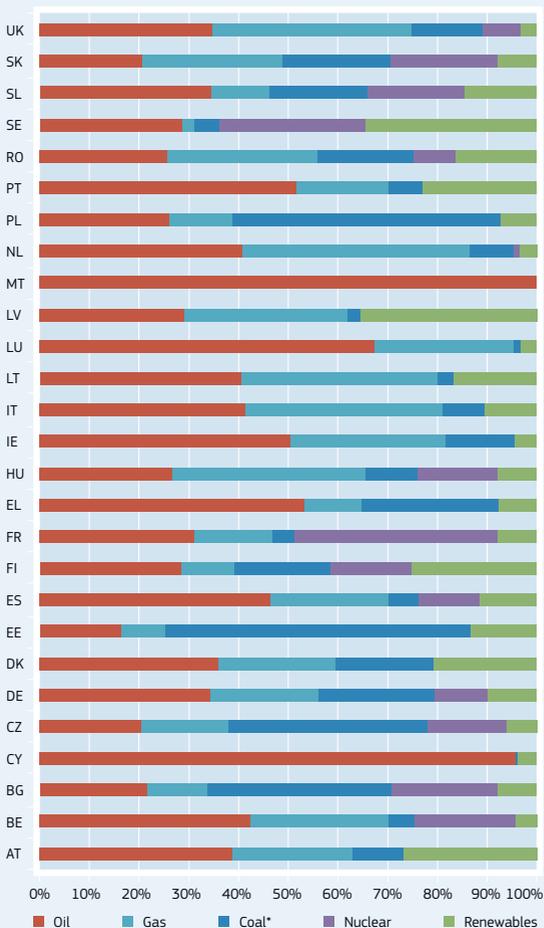
Member states have long been unable to balance divergent interests against the need to develop a common energy policy. They have consistently favoured the rule of national preference in promoting their energy interests and developing strategies deemed acceptable for the following main reasons: the primacy of national sovereignty over a collective approach; the diversity of national energy cultures and profiles; disparities in the distribution of resources within the EU; a preference for international cooperation outside of EU structures on matters of security of supply; and a lack of a collective approach under the common foreign and security policy. This is reflected in the European Treaties, which from the beginning stipulated that EU legislation may not affect a member state's choice of energy sources or the overall structure of its energy supply. This diversity is directly mirrored in the different energy mixes between member states, as illustrated in the Figure 1 below.

ENERGY SOLIDARITY IN EUROPE: FROM INDEPENDENCE TO INTERDEPENDENCE

FIGURE 1 ► Energy mix diversity in 27 member states of the EU

EU-27 Gross Inland Consumption / Energy Mix

Energy Mix in Member States in 2010  
(Share as % of Energy Sources in Gross Inland Consumption)



\* Coal and Other Solid Fuels – Source: Eurostat, April 2012  
Methodology and Notes: See Appendix 6 – No 1

Source: European Commission, *EU energy in figures, Statistical pocketbook*, 2012.

Despite the importance of a strategic dimension in any energy policy, security of supply and foreign supplier relations have largely been neglected at the EU level and remained the preserve of member states only. Faced with successive historical energy crises and oil shocks (1956, 1967, 1973, etc.) which exposed the vulnerabilities of energy-importing countries in Europe, member states have long favoured an intergovernmental approach which excludes the EC Treaty's common institutional structures and instead relies on international organisations such as the International Energy Agency (IEA) or on bilateral relations with the governments of countries that supply oil and gas (and their companies). The inability of the EU to develop a common foreign policy has intensified this trend and remains an obstacle to establishing a global energy policy. Yet the successful example of the IEA in the field of oil security shows that it is possible to reconcile national sovereignty and energy solidarity.

### **1.3. The liberalisation and integration process: cornerstone of European energy policy**

Contrary to the ECSC and Euratom treaties, the 1957 Treaty of Rome and subsequent treaties did not provide an appropriate legal basis upon which to address the subject of energy or define the goals, commitments and specific processes implied by community action in this domain. Energy measures were, however, developed based on the general provisions of the EC Treaty for the internal market (Articles of the EC Treaty on the approximation of laws), in keeping with the principle of subsidiarity, but without addressing the specific implications of energy solidarity in particular.

Thus, European energy policy has, for a long time, almost exclusively focused on establishing a single energy market for gas and electricity and the related process of liberalisation. The first steps have been developed within the Delors Package of reform which enacted several key measures for the achievement of the single market.

With the encouragement of the European Commission, the EU developed its energy policy with an emphasis on promoting competition in a single European market, based on the assumption that the completion of a single market for electricity and natural gas would push prices down and ensure a secure supply

by progressively incorporating national markets. The principle of energy solidarity is inherent to the creation of the internal energy market.

Based on eligibility and progressive implementation, successive waves of liberalisation<sup>1</sup> occurred via several legislative packages of directives and regulations.<sup>2</sup> By 2005, however, only 66% of the internal electricity market and 57% of the natural gas market had been opened up. In January 2007, a large-scale energy sector inquiry conducted by the Competition Directorate-General of the European Commission<sup>3</sup> confirmed that consumers and businesses were limited by poorly organised gas and electricity markets, which remain essentially national, and high energy prices. Member states continued to repeatedly breach successive provisions of EU energy and gas legislation.<sup>4</sup> The EU is still struggling to finalise its internal market in gas and electricity. Nevertheless, the EU Council of February 2011 set as a goal to finalise the EU energy internal market by 2014.

Furthermore, the liberalisation process has produced both winners and losers, and the extent to which the latter have been compensated within the framework of a European energy policy remains unclear. In a more integrated internal market, for example, producers in low-cost countries and consumers in high-cost countries win when energy prices gradually converge in both countries, while the opposite is true for countries where electricity was produced at a lower cost. In general, and rightly so, the least efficient producers are also penalised more quickly.

## 1.4. The new European energy policy: solidarity in the energy/climate package

The proven effects of climate change, increased energy prices, a growing dependency on foreign supplies of fossil fuels, and problems with supplier and transit countries together underline an urgent need to develop a common energy policy. In this complex environment, the EU laid the foundations for a global dynamic and ambitious energy policy for Europe at an informal summit

1. Directives 2005/54/CE and 2003/55/CE.

2. Directive 90/277/EEC, 90/547/EEC, 94/22/EEC, 96/92/EC, 98/30/EC, 2003/54/EC, 2003/55/EC and COM(94) 659, COM(95) 682.

3. *European Commission sector inquiry into gas and electricity sectors*, COM(2006) 851 final.

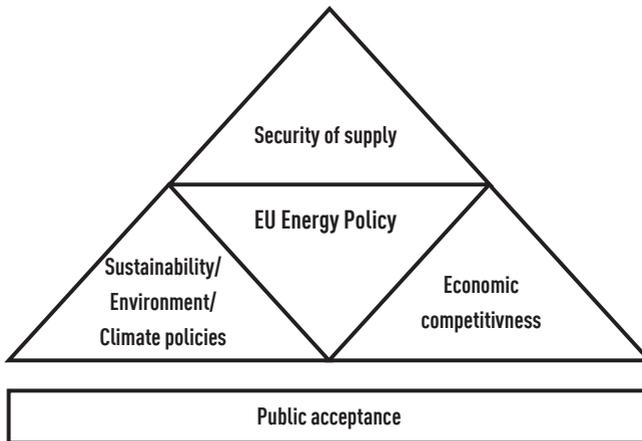
4. IP/06/430, MEMO/06/152 and IP/09/1035.

at Hampton Court in 2005. At the initiative of the European Commission,<sup>5</sup> an energy and climate package<sup>6</sup> was agreed on at the European Council meeting of 8-9 March 2007 under German Council Presidency.<sup>7</sup> This legislative package remains the cornerstone of the current EU energy system.

The newly designed Energy Policy for Europe (EPE) pursues the following three objectives:

1. Increase security of supply;
2. Ensure the competitiveness of European economies and the availability of affordable supply;
3. Promote environmental sustainability and combat climate change.

**FIGURE 2** ▶ The EU energy triangle: three main objectives



Source: Notre Europe – Jacques Delors Institute.

5. A European strategy for sustainable, competitive and secure energy, COM (2006) 105 final.

6. An Energy Policy for Europe, COM (2007) 1 final.

7. European Council on 8-9 March 2007, Presidency conclusions 7224/07 (CONCL 1).

Another significant example of progress is the commitment made by the EU to reach the 20-20-20 goal of reducing greenhouse gases, of developing renewable energies and increasing energy efficiency by 2020. For the first time, solidarity between member states is a clearly stated priority area of action for achieving these objectives and a pre-requisite for securing European supplies of oil, gas and electricity – the famous *security of supply based on solidarity between member states*.

These common policy goals raised the issue of how responsibilities would be shared among countries and the reciprocal commitments needed to achieve a common goal. When establishing national objectives in view of meeting the 20-20-20 goal, the EU took into consideration the level of development and wealth of each nation, as well as the specific difficulties each member state faced. It is a concrete illustration of energy solidarity between European states.

Nevertheless, common policy for renewable energies, energy efficiency and for limiting greenhouse gases led to heated debate over the required contribution of each member to the general effort. Occasionally, negotiations also resulted in a rejection of solidarity efforts in the form of derogations or definitive exemptions incorporated into EU law.

In 2007, the European Commission launched an institutional review of energy policy that involved submitting strategic analysis to the European institutions on a regular basis, assessing progress, identifying new challenges, and proposing short-, medium- and long-term solutions. After an initial analysis focused on the completion of the internal gas and electricity markets, a second study in 2008 directly addressed the question of energy security and solidarity and called for an *Energy Security and Solidarity Action Plan*.<sup>8</sup> It also identified solidarity between member states as “*a basic feature of EU membership*”.

Given these developments, energy solidarity within the EU is likely to be concentrated in the area of security of supply as an issue of both internal and external importance to the EU, and primarily focuses on the following elements:

8. *Second Strategic Energy Review: an EU energy security and solidarity action plan*, COM(2008) 781 final.

- **Integration of national energy networks** via interconnection infrastructure – a prerequisite to effective solidarity;
- **Internal supply security and effective European mechanisms of coordination and cooperation** to prevent and manage oil, gas and electricity supply crises;
- **Transparency of data** on energy imports and the state of involved networks;
- **Development of a common approach to the external dimension** of European energy policy mainly based on the diversification of supply sources, primarily of gas, and on Europe-wide transportation networks.

As will be examined in detail in the sections 2 to 6 below, these elements of European energy solidarity have led to a series of specific developments at the EU level.

Finally, it should be noted that energy solidarity is also essentially based on key market mechanisms. It is the market, flanked by some European rules, which more often guarantee a secure supply to prevent and manage potential crises, creating a *de facto* solidarity. Private industry plays a major role in implementing energy solidarity. It is directly implicated in matters regarding the supply of energy in the EU and in member states, both upstream, through the development and financing of necessary infrastructure, and downstream, in the management of supply crises.

## 1.5. The energy solidarity clause: an innovative addition to the Treaty of Lisbon

In parallel with these policy developments, the Treaty on the Functioning of the European Union (TFEU i.e. Lisbon Treaty), which entered into force in December 2009, brought major changes in the energy field. Article 194 TFEU now offers the first specific legal basis for a European energy policy. It is the result of a carefully-crafted compromise between respect for national sovereignty in matters of natural resources and energy taxation and a shared

competence between the EU and the member states. European legislation in this domain can be adopted by a qualified majority but cannot affect a member state's right to choose between different energy sources or the general structure of its energy supply.

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**BOX 1** ➤ **TITLE XXI - ENERGY - Article 194 of the Treaty on the Functioning of the European Union (TFEU)**

1. In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between member states, to: a) ensure the functioning of the energy market; b) ensure security of energy supply in the Union; c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and d) promote the interconnection of energy networks.

2. Without prejudice to the application of other provisions of the Treaties, the European Parliament and the Council, acting in accordance with the ordinary legislative procedure, shall establish the measures necessary to achieve the objectives in paragraph 1. Such measures shall be adopted after consultation of the Economic and Social Committee and the Committee of the Regions.

Such measures shall not affect a member state's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply, without prejudice to Article 192(2)(c).

3. By way of derogation from paragraph 2, the Council, acting in accordance with a special legislative procedure, shall unanimously and after consulting the European Parliament, establish the measures referred to therein when they are primarily of a fiscal nature.

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The treaty does specify that the four main objectives of Europe's energy policy set out in Article 194(1) TFEU must be met "*in a spirit of solidarity between member states*". It is precisely in a context of crisis for the security of supply of gas between Russia and Ukraine, which has affected the EU since 2006, that certain member states called for the addition of an energy solidarity clause during the renegotiation of the Treaty establishing a Constitution for Europe to establish a new treaty which ultimately became the Treaty of Lisbon. Poland, supported by the Baltic states and other member states, played a key role in this process by pressuring the European Council and threatening to veto the treaty if Article 194 TFEU did not enhance solidarity.

While this principle or “spirit” of solidarity appears to apply to all four objectives of EU energy policy, the Treaty stopped short of defining a framework or guidelines for its implementation in the development of a new energy policy. Several questions remain as to its practical application and whether the EU and its member states would be held to any obligations as a result.

## 1.6. Differences in the positions: member states, European institutions, industrial operators and consumers

Generally speaking, **member states have differing expectations** - forged by both reluctance and support - with regard to energy solidarity. Similarly, despite all the visible progress made in the field of energy solidarity since 2005, member states remain divided on certain elements surrounding its practical and operational implementation and what it actually implies for them in terms of rights and responsibilities. Member states take different approaches to solidarity in the following terms:

- Energy solidarity as a form of charity, which ensures unconditional support to and does not ask for anything in return from the recipient;
- Energy solidarity through the availability of significant European budgetary resources and other financial instruments, especially for those who require improved energy access to the European grid via interconnections;
- Energy solidarity as a sensitive issue of financial transfers from the “rich” to the “poor”, with some divisions in this respect during last budget negotiations for the 2014-2020 multiannual financial framework;
- Energy solidarity as an issue which primarily concerns member states in Central and Eastern Europe;
- Energy solidarity against certain “free riders” that only take advantage of it. All stakeholders involved in the common energy policy process should be held accountable. Some do not wish to pay for things - infrastructure, for example - which they believe are the responsibilities of each individual country. The notion of responsibility is opposed to the principle of

solidarity, i.e. everyone must do its own part in terms of obligations before thinking about what others should do on behalf of the community;

- Energy solidarity based on reciprocity, provided to any EU member state facing particular difficulties. This vision of solidarity is based on a binding contract between member states that is independent of each member's exposure to the risk for which insurance is provided;
- Energy solidarity is to guard against collective crises and supply disruptions through mechanisms for crisis management and adequate infrastructure;
- Energy solidarity as insurance, which creates a reciprocal relationship between group members, but under which the responsibilities of each member are strictly proportionate to the risks against which the member seeks to protect itself;
- Energy solidarity in order to pool the strengths and weaknesses of individual member states in order to have more influence in international negotiations with supplier countries as part of a European strategy for diversification of supplies;
- Energy solidarity as way to optimise energy resources within the EU in the context of energy transition;
- Energy solidarity as a social and interpersonal approach to the fight against fuel poverty.

In addition, generally, **private operators in the energy sector** do not want the EU to meddle in their commercial activities or develop and commercialise resources in a way that would negatively impact their access to them. They also view themselves as being on the front line for ensuring energy security if markets are affected by an interruption in supply, and as best equipped to do so. As a result, they would like the EU to establish a stable and adequate regulatory framework through which to exercise a *de facto* solidarity via the necessary network infrastructure. Moreover, these operators are wary of the

potential for an excessive or inappropriate use of the solidarity principle to justify increased intervention on the part of national or European authorities.

Last but not least, according to the European Parliament's Eurobarometer on energy of 2011,<sup>9</sup> almost 80% of European citizens are in favour of solidarity between member states in the event of supply difficulties. The survey also shows that 60% of Europeans consider they would be better protected through a EU coordinated approach of energy policies above national measures, which constitutes a further plea for the "europeanisation" of energy policy.

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<sup>9</sup>. *The Europeans and energy*, European Parliament Eurobarometer, Brussels, 31 January 2011.

## 2. Solidarity in times of crisis: internal security of supply

### 2.1. Crises in Russian gas supplies: a triggering event

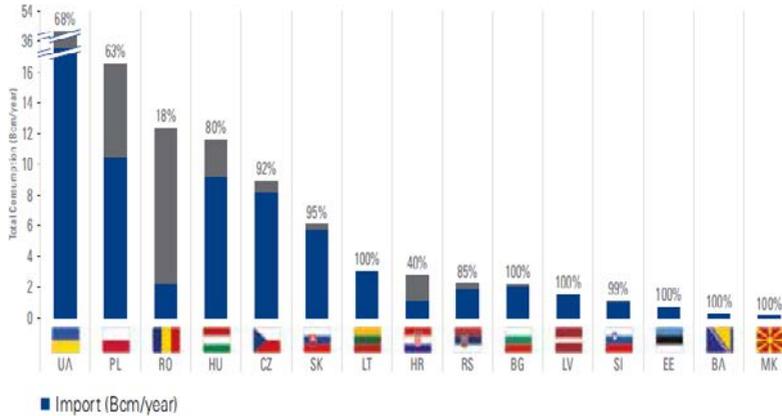
The early 21<sup>st</sup> century was marked by serious energy conflicts in the neighbourhood of Europe, especially in the East. In an unstable context, where Russia exerted increasing pressure on transit countries, including Ukraine, Belarus, Georgia and Moldavia, the gas supply conflicts between Russia and Ukraine were a watershed in European energy policy.

Since 2006, on several occasions, Russia has cut off gas supplies to the gas network transiting through Ukraine as a result of conflict between the Russian company Gazprom and its Ukrainian counterpart Naftogaz over the price of gas sold to Kiev, which Gazprom wanted to raise from \$50 per 1,000 cubic metres to \$230 roughly. At the time, approximately 70% of the gas sent from Russia to the EU flowed through the Ukraine. As a result, these interruptions, all of which occurred at the beginning of the year (2006 and 2009, primarily) and therefore during cold waves, affected several member states (17 in total) which imported Russian gas via Ukraine. Among the countries most affected were Bulgaria, Hungary, Poland, Austria, Slovakia, Slovenia, Romania and Croatia, as well as non-EU member states such as Bosnia-Herzegovina, Serbia and Macedonia. Altogether, tens of thousands of homes had no heating and economic and industrial activity stagnated when expected deliveries were suspended up to two weeks and gas reserves re-allocated.

These energy crises highlighted the extreme vulnerability of certain member states mainly located in Central and Eastern Europe, and the lack of solidarity both in reality and on paper at the core of Europe's energy system as a whole, even though the amount of gas available in the EU as a whole remained sufficient, given the existing storages. The successive gas conflicts between Russia and Ukraine revealed the inability of the EU and its member states to provide a coordinated response in the event of an unplanned interruption in gas supply. Several troubling observations were made:

- **Absence of a truly diverse energy mix** and a heavy dependence on Russian gas in certain member states;
- **Lack of the interconnections needed** for bringing gas from western to eastern markets and the creation of a Europe-wide energy network;
- **Persistent limitations and constraints** in existing energy infrastructures (inability to reverse flows between countries) which prevented certain states with sufficient gas supplies from helping neighbouring countries in distress;
- **Limited storage capacity** and unequal access to capacity between countries;
- **Disagreement between member states with regard to Russia**, viewed by some as a threat and by others as a strategic partner where energy is concerned, but also regarding other export and transit countries;
- **Disruption of the internal market** due to unilateral measures taken by EU countries in times of crisis;
- **Weak response from the EU institutions and its member states** which were slow to react on several occasions and intervene in these bilateral conflicts between Russia and Ukraine.

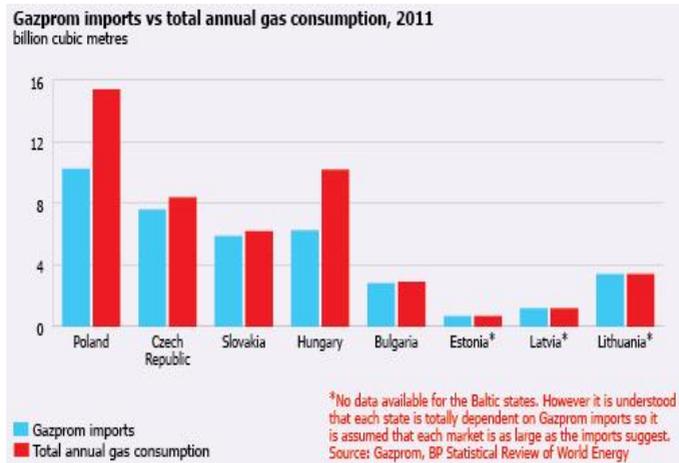
**FIGURE 3** ▶ Total imports and domestic consumption of natural gas in 2010 in Central and Eastern Europe



Note: percentage values represent import/consumption ratio based on 2010 figures  
Source: US Energy Information Administration, 2011

Source: US Energy Information Administration, 2011.

**FIGURE 4** ▶ Share of Gazprom natural gas imports in Central and Eastern European countries



Source: Gazprom, BP Statistical Review of World Energy.

**TABLE 1** ▶ Percentage of Russian gas in overall imports by EU member states (and Turkey) (in %)

WESTERN EUROPE AND TURKEY	2000	2010
Austria	86.1	77.5
France	30.9	77.5
Germany	44.3	37.1
Greece	84.2	52.8
Italy	36.6	18.8
Turkey	73.6	45.4
EASTERN EUROPE	2000	2010
Bulgaria	100	100
Czech Republic	88.8	73.1
Hungary	84.8	86.6
Poland	90.8	89.5
Romania	94.1	100
Slovakia	100	100

Source: based on David Koranyi, Adnan Vatansever, "Lowering the Price of Russian Gas: A Challenge for European Energy Security", *Issue Brief*, Atlantic Council, 2013.

Member states and European institutions later understood that a greater level of intra-European solidarity was needed to find satisfactory solutions to these issues. The gas crises were therefore a wake-up call for everyone and a catalyst for significant progress in that field. This allowed, as will be seen, several major advances, particularly in the internal domain of security of supply with regard to the gradual establishment of necessary infrastructure, including interconnection, establishment of mechanisms for prevention and crisis management in the gas industry, but also externally with a European strategy for diversification.

## 2.2. Preventing and managing gas supply crises: *de facto* and legally binding solidarity

After the successive gas crises which occurred since 2006, the EU took measures to correct its main shortcomings by revising the *weak* provisions of the 2004 Directive<sup>10</sup> establishing a minimum European legal framework for the security of natural gas supply. Launched in July 2009 by the European Commission, this revision led to the adoption, in 2010, of a new framework to safeguard the internal security of supply within the gas sector.<sup>11</sup>

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### BOX 2 ► Enhanced European regulation on the security of natural gas supplies

Solidarity and cooperation play a key role in the new framework to safeguard gas supplies in the form of binding legal measures to better prevent supply crises and provide a coordinated response in an emergency at the national, regional or European level. Nevertheless, Member states still bear the primary responsibility for safeguarding national energy supply.

In the area of crisis prevention, each competent national authority must now conduct a complete assessment of the risks to security of natural gas supply based on supply and infrastructure standards, various scenarios of exceptionally high demand or disruptions in supply, and on the interaction and correlation of such risks with other EU countries. The regulation includes common customer protection measures under which gas supplies must be protected for certain customers (all households and, if necessary, small and medium-sized enterprises, essential social services and/or district heating installations). By December 2014, EU countries must be able to satisfy total gas demand during a day of exceptionally high gas demand in the event of a disruption of the single largest gas infrastructure (determined according to the N-1 formula).

Each competent authority must then adopt and make public a preventive action plan which includes necessary measures to eliminate or limit detected risks and an emergency plan which includes measures to eliminate or limit the impact of an interruption in gas supply. Three main crisis levels are specified in the emergency plan: the early warning level, alert level and emergency level. Each competent authority shall make a full assessment of the risks affecting the security of gas supply in its member states by identifying the interaction and correlation of risks with other member states, including, *inter alia*, as regards interconnections, cross-border supplies, cross-border access to storage facilities and bi-directional capacity and by taking into account the maximal interconnection capacity of each border entry and exit

10. Directive 2004/67/EC.

11. Regulation (EU) No 994/2010.

point. The evaluation of these risks and action plans, required every two years, is then carried out by the European Commission in consultation with a gas coordination group, established by the regulation and in charge of advising and assisting the Commission on the adoption of measures. The group is chaired by the European Commission and is composed of member state representatives, particularly from competent authorities, as well as the Agency for the Cooperation of Energy Regulators, the European Network of Transmission System Operators for gas, and industry sector and consumer representative bodies.

In the area of crisis management, the regulation establishes a transparent, intra-European mechanism for security of gas supply entailing common commitments to ensure the continued proper functioning of internal gas markets. The European Commission still plays an important role in the declaration of EU- or regional-level emergencies, for example, which it decides of its own accord or at the request of a competent authority which has declared an emergency. In the event of a European- or regional-level emergency, the Commission has the right to ask the competent authority to provide information without delay on measures already or to be implemented to deal with the emergency situation.

Natural gas companies must guarantee supply to protected customers in difficult conditions such as extreme temperatures during a seven-day period and during any period of at least 30 days of high demand, or in case of the disruption of infrastructure under average winter conditions. During an emergency, gas companies must provide certain information to the competent authority on a daily basis. The regulation also requires the development of reverse flow capacity on all cross-border interconnections between EU countries by 3 December 2013.

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Within this new common coordination framework, security of supply is the shared responsibility of natural gas companies, member states and the European Commission. Solutions to a rupture in supply must first come from the market. The solidarity mechanism thus implemented is primarily a *de facto* form of solidarity and an obligation of diligence on the part of private operators, not one which legally binds member states to achieve fixed results.

Henceforth, European institutions still cannot oblige a member state to invest in certain types of energy production, or increase exploitation of its own energy resources for the rest of the EU, even if this is to ensure Europe-wide security of supply. Nor can European institutions step in for national governments in the event of an energy crisis.

Member states and private industry promptly implemented this new European system of solidarity. Several shortcomings and absurdities were corrected in the process. Several gas pipelines which only allowed one-way flow were

modified to transport gas in both directions. The ‘Yamal’ pipeline, for example, made it possible to ship to Poland gas transiting through Germany during the February 2012 energy conflict between Russia and the Ukraine.

As we will see in more detail in section 5 of this Study, the EU has provided a significant amount of direct financial support for several infrastructure and reverse-flow technology projects in the framework of the European Economic Recovery Plan (EERP).

It is noteworthy that these regulations and new market dynamics have not pleased Russian energy operators, particularly when they involved changes in the structuring and management of energy infrastructure they had a stake in, like PGNiK in Poland or in the Baltic states. The Russians do indeed a constant reproach to the Europeans: to change the rules of the game without discussing them with them.

Other initiatives were launched at the European level to ensure energy solidarity and internal security of supply, including enhanced mechanisms for cooperation between national operators and regulators within formal groupings of gas and electricity transportation networks which report their activities to EU energy regulation authorities and the European Commission. The grouping includes ENTSO-G (European Network of Transmission System Operators for Gas) and ENTSO-E (European Network of Transmission System Operators for Electricity), as well as the ACER (Agency for the Cooperation of Energy Regulators).

## **2.3. Solidarity and the internal market: interconnection infrastructures**

### **2.3.1. Integration of energy markets as a major vehicle of solidarity**

The completion of the European internal market for gas and electricity is the major vehicle for security of supply and energy solidarity in Europe, mainly in that it is possible to integrate the various national energy markets, and prevent any member state from remaining isolated from electrical and European gas networks, but also to harmonise up the various national regulations in this area.

In this context, the interconnection of both electricity and gas grids is an essential infrastructure mechanism to ensure energy solidarity within EU energy markets. It directly addresses security of supply problems as well as the challenges related to the intermittency of certain energy resources, and meets the challenges inherent to isolated peripheral markets by reducing and optimising the pooling of individual supply risks between member states and national grids. Incorporating national and/or regional energy markets into the EU's internal market can also improve cross-border exchanges and step up further regional cooperation initiatives.

The European Commission has proposed<sup>12</sup> rough estimates of the economic and social costs of implementing these infrastructures too slowly. Optimised transportation on a mainly national scale, rather than at an EU level, would increase energy costs. The European Commission even warns of significant congestion rents for the European transmission system operators: to the tune of €1.21 to €1.95 billion per year, and estimates the welfare losses caused by saturated interconnections and the resulting differentials (€15 to €29/MWh) to almost €3.1 billion per year. For natural gas, the main economic impact mentioned is a more stable supply, guaranteed by the extension of the gas pipeline network.

The European Commission thus estimates the economic cost of the gas supply disruption of January 2009 affecting South-East Europe at €1.65 billion, i.e. a much higher cost than that of the reverse flow infrastructure projects and interconnection and storage projects in Central and Eastern Europe provided for in the European Economic Recovery Plan. Furthermore, the competition created by additional infrastructures could also have other positive impacts. The construction of new infrastructures would reduce the stark differences in prices between Italy, Eastern Europe and North-Western Europe for instance.

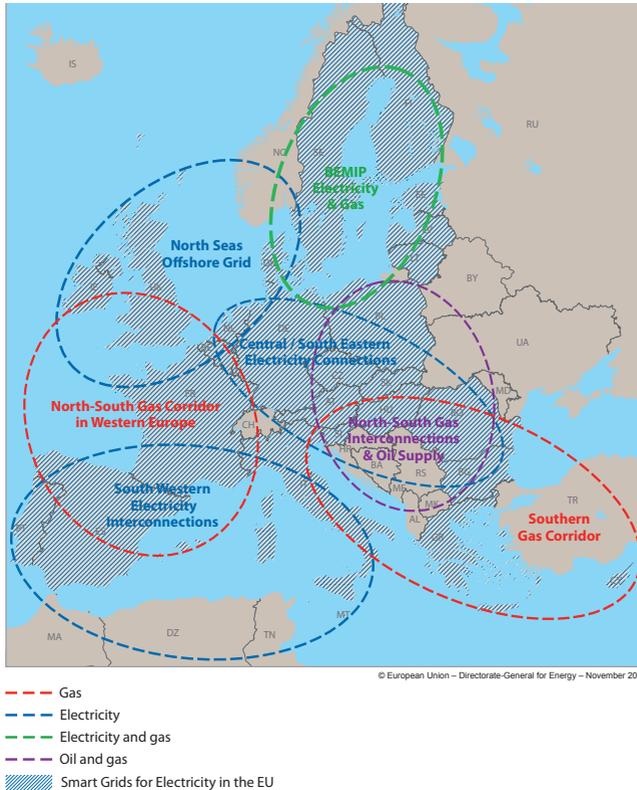
### 2.3.2. Missing energy corridors and infrastructures

In 2002, the Barcelona European Council stated that each member state should have in the future interconnexions capacities of at least 10% of their total installed capacities of electricity. Many cases of missing infrastructure have

12. *Impact Assessment: Energy Infrastructure Priorities for 2020 and Beyond – A Blueprint for an Integrated European Energy Network*, Commission Staff Working Document, SEC(2010) 1395 final, Brussels.

now been identified within the EU, and some have been marked as priority actions to obtain European political and economic backing to fill in the existing gaps. The main infrastructure facilities identified are as follows: the implementation of a diverse and adequate LNG supply for Europe, effective interconnection of the Baltic region, the Southern Gas Corridor, the Mediterranean Energy Ring, the need for North-South gas and electricity interconnection within Central and South-East Europe, and the North West Offshore Grid.

**FIGURE 5** ► European energy infrastructure priorities for electricity, gas and oil



Source: European Commission, DG Energy, Map "European energy infrastructure priorities for electricity, gas and oil", November 2010.

European coordinators have been appointed to pursue four of the most important projects: the Power-Link between Germany, Poland and Lithuania; connections to off-shore wind power in Northern Europe; electricity interconnections between France and Spain; and the Nabucco pipeline, bringing gas from the Caspian sea to Central Europe. The outcomes of these initiatives have been uneven.

The electricity interconnection project between France and Spain was finalised thanks to the intervention of mediator Mario Monti, but under conditions that differ to those originally planned due to fierce opposition from residents. The project's financing also far exceeded the initial projections. The Nabucco project is in its final phase but, again, its conditions and proportions differ greatly to early proposals, resulting in a more downsized and realistic option. In the North Sea, a consortium of ten countries (nine member states and Norway) was created to develop offshore wind power. While the grouping succeeded in signing a joint Memorandum of Understanding in 2010, in reality the project is struggling to come into being as a viable industrial project, partly because the cost of production of offshore wind is still high. The Power-Link between Germany, Poland and Lithuania is scheduled for completion in 2015 but is hitting some stumbling blocks on a bilateral level between the countries involved, mainly with regard to the sensitive issues of its financing and the distribution of costs and benefits.

The EU must take practical action to ensure that the various national markets will be well-integrated in the future and that priority EU actions with regard to infrastructures marked as "of common European interest" are completed to guarantee energy security in the EU and bring about solidarity. To achieve this, positive signals must be given to encourage the necessary investment in Europe's gas and electricity markets in the years ahead, including investments in security of supply and infrastructure to enable mutual assistance.

In this context, the European Council meeting of 4 February 2011 on the future of European energy policy, at the initiative of its President, Herman Van Rompuy, confirmed that considerable efforts were essential in order to modernise and develop European energy infrastructure and to interconnect networks across borders and, as a result, establish effective solidarity between member states in addition to making alternative shipping and transit routes

and other energy sources a tangible reality. Thus, most of these facilities may normally be funded by the market, especially if transmission rates were high enough. But this would imply that member states modify the tasks assigned to regulators, including security of supply into their field of competences.

Furthermore, the European Council pointed out that certain infrastructure projects, which met security of supply and solidarity objectives but for which sufficient financing could not be found on the market, may in future require limited public financing, in accordance with clear and transparent criteria, in order to encourage private financing. It also insisted that by 2015, no member state should be isolated from European gas and electricity networks or have its energy supply put at risk by a shortage of appropriate connections. Focusing primarily on the issue of infrastructure, this approach to solidarity was also present in a Communication from the Commission on the future of energy policy 2011-2020.<sup>13</sup>

Major progress was made in this respect with the adoption of the new European Regulation on European energy infrastructures in March 2013<sup>14</sup> and the financial instrument, the “Connecting Europe Facility”<sup>15</sup>, for the Multi-Annual Financial Framework for the period 2014-2020.

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**BOX 3** ➤ 2013 EU Regulation on energy infrastructure

This new Regulation on European energy infrastructure sets out rules for developing, in due course, the interoperability of European energy networks, mainly to ensure the functioning of the internal energy market and to promote the interconnection of energy networks. More specifically, the Regulation aims to ensure security of supply and solidarity between member states, in particular by ensuring that no member state remains isolated from the European network.

To achieve this, the Regulation lists a number of energy infrastructure priority corridors and areas for 2020 and beyond, covering electricity and gas networks and requiring the most urgent EU action. This Regulation shall apply to the following trans-European energy infrastructure priority corridors and areas: (1) Northern Seas offshore grid (“NSOG”);

13. *Energy 2020 – A strategy for competitive, sustainable and secure energy*, COM(2010) 639 final.

14. Regulation (EU) No 347/2013.

15. COM(2011) 665 final.

- (2) North-South electricity interconnections in Western Europe ("NSI West Electricity");
- (3) North-South electricity interconnections in Central Eastern and South Eastern Europe ("NSI East Electricity");
- (4) Baltic Energy Market Interconnection Plan in electricity ("BEMIP Electricity");
- (5) North-South gas interconnections in Western Europe ("NSI West Gas");
- (6) North-South gas interconnections in Central Eastern and South Eastern Europe ("NSI East Gas");
- (7) Southern Gas Corridor ("SGC");
- (8) Baltic Energy Market Interconnection Plan in gas ("BEMIP Gas");
- (9) Oil supply connections in Central Eastern Europe ("OSC");
- (10) Smart grids deployment;
- (11) Electricity highways;
- (12) Cross-border carbon dioxide network.

"Projects of common interest" (PCI) based on these corridors must then be selected for entitlement to specific regulatory treatment such as rapid authorisations and other facilitated administrative formalities.

The Regulation provides for the streamlining of permit granting processes for projects of common interest in order to shorten them significantly, foster public participation and encourage public endorsement of their implementation. It also provides for the facilitated regulatory treatment of projects of common interest in the electricity and gas sectors, by distributing the costs according to the benefits provided and by making sure that the authorised revenue is commensurate with the risks incurred.

Applications to obtain the status of project of common interest must be made directly by the operators. They will be assessed by twelve regional groups made up of experts from the competent bodies of the member states concerned (administrations, regulators, system operators, and industrial and financial operators, etc.). With the added advantage of promoting cooperation and the creation of a common approach with regard to regional networks, these groups will draw up regional lists that will be then submitted to the member states and the European Commission for arbitration and final decision. The first list of projects of European interest is set to be adopted by 31 July 2013 at the latest. Subsequent lists will be drawn up every two years. A report on the implementation of these projects will be issued by the European Commission by 2017.

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The new Regulation on energy infrastructures and the corresponding financial instrument (*see Part 5 on financial solidarity*) are a major step forward in the range of existing European regulations, and should ultimately promote energy solidarity in Europe by enabling the necessary future infrastructures to support it. We must remain hopeful that the investment signals given are sufficient to enable market operators to complete the projects identified.

Last but not least, such European approach over energy infrastructures also involves greater coordination in a range of fields by the competent national and European institutions (mainly ACER, ENTSO-G and ENTSO-E who play a key role in this area), in particular with regard to the necessary planning of energy infrastructures and their financing.

## 2.4. Security of electricity supply: the weak link

Serious discrepancies currently exist between gas and electricity regulation: the latter offers far less security guarantee than the former in the event of a rupture in supply. Whether the EU has achieved important progress these last years in the field of gas security of supply, the situation is quite different in the electricity sector, where the issues faced are not the same and for which much remains to be done in securing electricity supplies.

A 2005 European Directive<sup>16</sup> calls for basic harmonisation measures for each member state, aimed at securing electricity supply and ensuring investments in infrastructure. The directive is primarily intended to guarantee the proper functioning of the internal electricity market, an adequate level of interconnectedness between member states, adequate production capacity and a balance between supply and demand.

To do so, member states, upon adopting the necessary measures to implement this policy, should consider certain elements, such as a need to: ensure continuity of electricity supply; assess the internal market and cross-border cooperation possibilities for securing electricity supply; reduce the long-term effects of increased growth in electricity demand; diversify electricity production to ensure a reasonable balance between different fossil fuels; promote energy efficiency and a transition to new technologies; and to continually renew transportation and distribution networks to maintain performance.

In practice, however, this Directive has not prevented the development of a patchwork of ill-assorted and sometimes even contradicting national solutions. Moreover, the development of renewable energy sources has to some extent

<sup>16</sup>. Directive 2005/89/EC.

shaken the stability of the European electricity network by heightening this phenomenon.

The diversity of national systems and to certain extent the growing unilateralism in this area is demonstrated in the debates currently underway in many member states (Italy, Spain, Sweden, France, the United Kingdom, Germany, etc.) on the adoption of capacity mechanisms, which are made necessary by the increasing development including intermittent sources of energy, and which in the current state still often consist of a number of interventionist and unilateral measures that are potentially incompatible with EU competition rules and which may even create imbalances on neighbouring countries' networks. Ultimately, the differences between the adopted measures, in terms of temporary or permanent capacity mechanisms, strategic reserve systems, floor prices for capacity or reliability options, etc. could be in a longer term an additional threat to the finalisation of the internal energy market.

In order to strengthen the reliability and security of the EU's electricity networks and avoid widespread blackouts, experience has shown the need for minimum and binding common security standards for the networks and other electricity infrastructures in the EU. Ad hoc, minimal and more often than not purely voluntary coordination, such as the *Coreso* initiative in Brussels,<sup>17</sup> while welcomed, is insufficient.

While operators themselves are now aware of the challenges facing them, especially following various blackouts and repeated threats of disruptions, many obstacles remain for any kind of collective approach and attitudes have yet to change in this regard.

Operators' drive alone is not enough, and must be backed by national administrations and political bodies with decision-making powers in this field. The latter are currently looking inward at their national prerogatives and frameworks and refuse to "compromise" themselves with further cooperation. Despite their experience, the existing collective bodies such as the Pentalateral Forum<sup>18</sup> created by France, Germany and the Benelux countries are dormant, and no

17. [www.coreso.eu](http://www.coreso.eu)

18. Memorandum of understanding of the Pentalateral Energy Forum on market coupling and security of supply in Central Western Europe.

longer allow for a shared approach on a regional basis which was successful until only recently for the implementation of market coupling.

Under the necessary guaranteed of energy solidarity within the EU, a revision of the current framework (2005 Directive) now seems necessary to resolve the lack of cooperation between member states and start the transition towards a collective and consistent European approach for the security of electricity supply, and taking into account that the current framework has been built at a time when no one imagined that 20% of the electricity would be supplied by intermittent energy sources. The issue was raised by the European Commission in its Communication dated November 2012 on the finalisation of the internal market<sup>19</sup>.

The common European standards concerning the security and reliability of electricity systems must be adapted through a rapprochement or even the harmonisation of rules and conditions to be met by each member state when considering setting up such capacity mechanism(s). Cooperation between responsible transmission system operators must also be stepped up, in particular with regard to coordinated network planning. Finally, a European approach in that field also imply for the member states involved to take into account the capacities of neighbouring countries and the development of cross-border interconnection infrastructure more accurately. This would directly allow energy solidarity within the system. Regulators and system operators who are now effectively cooperating within collective institutions such as ACER and ENTSO-E/G also play a key role in this respect.

On some elements, the new regulation that should be drafted could be based on the general principles and major components of the concomitant gas regulation. The European Commission and/or ACER should conduct stringent checks to ensure that adopted national rules comply with European law and to combat negative economic and systemic impacts and distortions with regard to neighbouring countries.

If such a system is not implemented, it could take several years simply to reverse the current trend and “repair” the damage caused to networks in the

<sup>19</sup>. *Making the internal energy market work*, COM (2012) 663 final.

meantime by the adopted national measures. The question is whether it will take further crises, as is too often the case, for the EU and its member states to make progress in this field.

## **2.5. Finalisation of the internal gas market: price differences**

A finalised and well-functioning European gas market, indispensable condition for the development of European energy solidarity, can only be achieved if it also takes into consideration external dynamics with a direct impact on the internal market and intra-European solidarity.

In general, most supply contracts signed with external suppliers, in particular from Russia, Norway or Algeria, remain inflexible, long-term, via a vast network of pipelines, and use oil prices to directly determine gas prices (oil-indexed). While gas prices on spot markets are showing a downward trend, due to the increased supply provided particularly by LNG and unconventional gas in the United States, European consumers are not (yet) sufficiently enjoying the benefits.

A problematic development within the EU is the fact that certain excessive differences remain between member states within the internal market in the prices of imported gas from the same supplier, namely Russia. Central and Eastern European countries and also the Balkans are often those who pay much higher prices for Russian gas than Western European countries such as the United Kingdom, Italy, France and Germany, the companies from the latter countries having recently renegotiated lower contractual rates with Gazprom. These price differences between EU member states, illustrated in the table below, are contrary to the very purpose of the internal gas market, and also the principle of energy solidarity.

**TABLE 2** ► Average price of natural gas sold by Gazprom in EU member states in 2012

WESTERN EUROPE AND TURKEY		EASTERN EUROPE	
United Kingdom	313,4	Hungary	390,8
Netherlands	371,4	Slovakia	429
Germany	379,3	Romania	431,8
Finland	384,8	Serbia	457,3
France	393,7	Slovenia	485,6
Austria	397,4	Bulgaria	501
Turkey	406,7	Czech Republic	503,1
Italy	440	Bosnia&Herzegovina	515,2
Switzerland	442,2	Poland	525,5
Greece	476,7	Macedonia	564,3
Denmark	495		

With regard to this major discrepancy, the European Commission opened formal proceedings in 2012 to investigate whether Gazprom may be in breach of EU antitrust rules, and in particular whether it may be abusing its dominant position in certain Central and Eastern European gas markets.<sup>20</sup> This sensitive issue regarding tariff-based discrimination is at the very core of the investigation, as well as the issue of oil-indexed prices. Should the investigation prove any breaches, Gazprom would have to cease these practices and may be subject to considerable financial penalties.

## 2.5. External contracts and compliance with the *acquis communautaire*: the importance of coherence

Another key phenomenon is the non-compliance of related infrastructure contracts signed with third-party suppliers with the EU *acquis communautaire*. It is essential to continue internal market integration, with regard to not only internal but also external operators. If member states and their national industries remain sovereign in deciding the origin and content of their energy

20. Antitrust: Commission opens proceedings against Gazprom, IP/12/937, 04.09.2012.

supply, external infrastructure contracts must not be detrimental to the internal market when they take part in it, but must comply with the *acquis communautaire* into place.

It is not a question of applying a political treatment to external partners, but rather to properly assert a single market supportive of solidarity by insisting upon each internal and external operator's compliance with the rules adopted within this framework in an independent and non-discriminatory manner. The European Commission has been requiring compliance with the regulatory framework established by the 3<sup>rd</sup> legislative package in the EU and beyond since 2011. When renegotiating their gas infrastructure contracts with Russia, Poland (as concerns the Yamal pipeline) and then Lithuania (as concerns its gas network) asked the European Commission to check the planned agreements' compliance with EU law. The Commission concluded that the contracts were not in compliance.

Russia subsequently contested this, believing that it was not subject to these rules that would be unfavourable and discriminatory to it. It even called into question the validity of EU legislation, including its third legislative package, and has threatened to refer the case to the World Trade Organisation's dispute settlement mechanism.

The European Commission has remained firm in the face of these criticisms and has made two proposals. Firstly, it has offered to become involved in earlier phases of infrastructure contract negotiations in order to ensure their compliance with EU legislation, and secondly, it aims to foster dialogue with Russia as part of EU-Russia energy relations. Thanks in particular to the willingness of the Polish and Lithuanian authorities, who accepted to work with the European Commission, this has been a successful experiment that could be repeated in a somewhat more systematic manner in the future, at least when it is welcomed by member states.

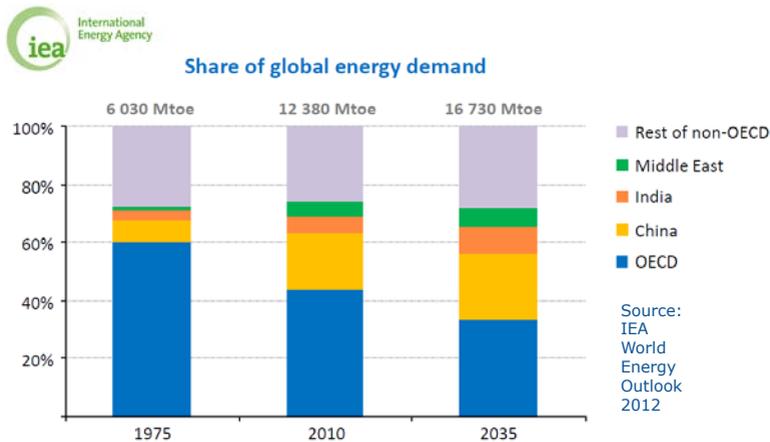
In future, it will also be up to member states, especially those politically and/or economically close to Russia in this sector, to act more as mediators by explaining to Russia upstream and downstream of the adoption of the rules concerned the validity of European legislation and its non-discriminatory character, in order to avoid these recurrent disputes in years to come.

## 3. Solidarity outside EU borders: diversification and partnerships

### 3.1. Uncertain global and European energy contexts

Many external constraints caused by the global energy context in terms of both supply and demand are having an increasing impact on the internal energy situation of the EU. According to IEA's projections,<sup>21</sup> global fossil energy demand is expected to grow significantly over the next 20 years. Primary energy consumption is expected to increase by 45% by 2035. The needs of developing countries alone are expected to represent over 80% of this increase, with China and India accounting for half. The EU's energy consumption is expected to increase by approximately 10%.

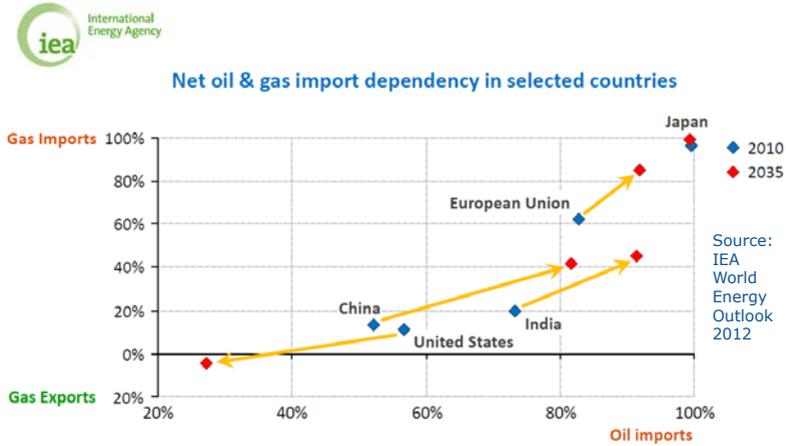
FIGURE 6 ▶ Share of global energy demand



Source: International Energy Agency, *World Energy Outlook*, 2012.

21. International Energy Agency, *World Energy Outlook*, 2012.

FIGURE 7 ▶ Net oil & gas import dependency in selected countries



Source: International Energy Agency, *World Energy Outlook*, 2012.

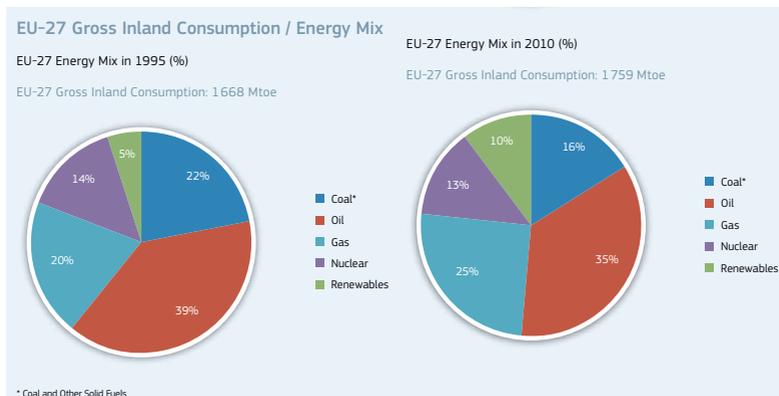
Moreover, global raw material markets remain extremely unstable and volatile, as can be seen in the recent events in Libya, Egypt, Iraq, Iran and Algeria. There are also considerable energy tensions in the European neighbourhood, particularly in the east with the mounting pressure from Russia on transit countries.

Generally speaking, energy has once again become politicised, and yet the EU itself appears insufficiently armed in the face of these complex dynamics. It has not enough powers in external energy policy and struggles developing a common strategy when it comes to choosing between different energy sources, or their geographic origin. Moreover, taken individually, the member states appear to have increasingly limited means to deal with this difficult situation and especially broad international competition.

### 3.2. Gas in the energy mixes in Europe: transition(s) and uncertainty

Natural gas is an essential element of the EU energy mix. Used mainly for electricity generation, heating, a raw material for industry and fuel for transport, it accounts for approximately 25% of the total primary energy supply.

**FIGURE 8** ➤ Evolution of the European energy mix between 1995 and 2010



Source: European Commission, *EU energy in figures*, Statistical pocketbook, 2012.

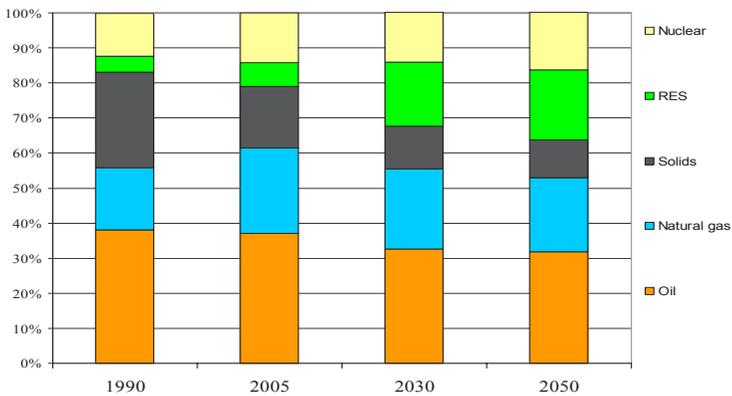
In the past ten years, gas consumption has grown rapidly in Europe and this process could accelerate in the coming years, especially in light of decisions taken by certain member states on their energy mix and the Fukushima nuclear accident in Japan. However, there has been a drop in gas consumption in the EU in both 2012 and 2013 without knowing at this stage whether this trend will be sustained.

In the energy transition that is gradually taking place in Europe, gas will likely be called upon to play a growing role as a substitute or back-up for intermittent renewable energy sources. But it is not yet clear to what extent or in what quantities. The magnitudes in question will inevitably have an impact on energy security in Europe.

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It is therefore still not clear if the EU could eventually import enough gas to meet its needs, or on the contrary, be engaged in too many infrastructure projects, making a portion of them unnecessary and unprofitable. This can also be seen as the fact that excess capacity infrastructure is the price to pay for security of supply.

**FIGURE 9** ➤ Possible changes in European energy mix in 2030 and 2050



**TABLE 3** ➤ EU natural gas forecast 2005 to 2030 (of 2010)

EU 27 BCM	2005	2020 BASELINE SCENARIO*, OIL PRICE \$88/BBL	2030 REFERENCE SCENARIO**, OIL PRICE \$88/BBL	2030 BASELINE SCENARIO*, OIL PRICE \$106/BBL	2030 REFERENCE SCENARIO**, OIL PRICE \$1068/BBL
Demand for natural gas	519	538	479	511	457
Natural gas production	219	130	129	88	87
Natural gas imports	299	408	349	423	370

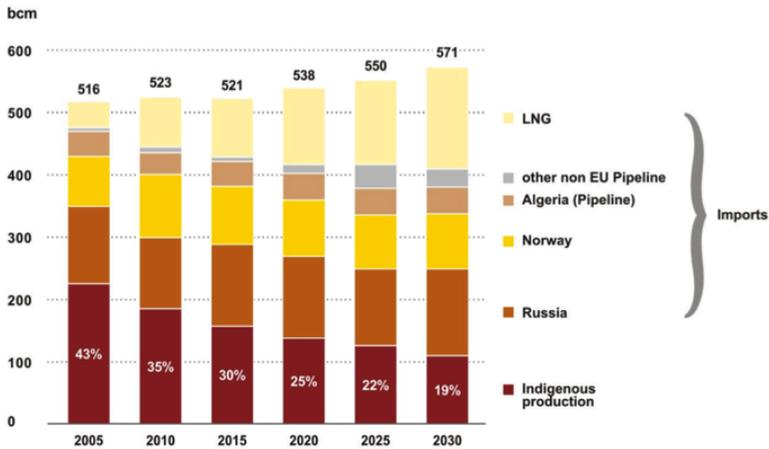
\* includes energy policy measures implemented until April 2009.

\*\* includes 20% renewables in energy consumption, 20% less CO<sub>2</sub> emissions, and policy measures implemented until the end of 2009 and a few energy efficiency measures.

Source: based on Dr. Frank Umbach, "Gas - The Impact of New Supplies and the Potential Impact of Unconventional Gas Supplies", presentation at the International Conference: "Advancing EU Energy Objectives in East Central Europe: The Next 40 Years", organised by the Atlantic Council and REKK, Budapest, Hungary, 4-5 October, 2012.

With decreasing domestic production, gas imports have increased even more rapidly, thus creating higher import dependence. It is significant that the United Kingdom is now a net importer of primary energy (21.3% in 2006).<sup>22</sup> Although the EU was already importing 54% of its energy needs in 2006,<sup>23</sup> its dependency on non-EU countries for its energy supply has only increased since that time. This dependency is expected to grow: EU imports are set to increase to 67% by 2030, covering relatively 95% of its oil needs and 84% of its natural gas needs.<sup>24</sup> Import dependency is not in itself an inherently negative phenomenon; it nevertheless involves conducting a review of the issues of security of supply and European solidarity.

**FIGURE 10** ► EU natural gas consumption forecast 2005 to 2030 by source



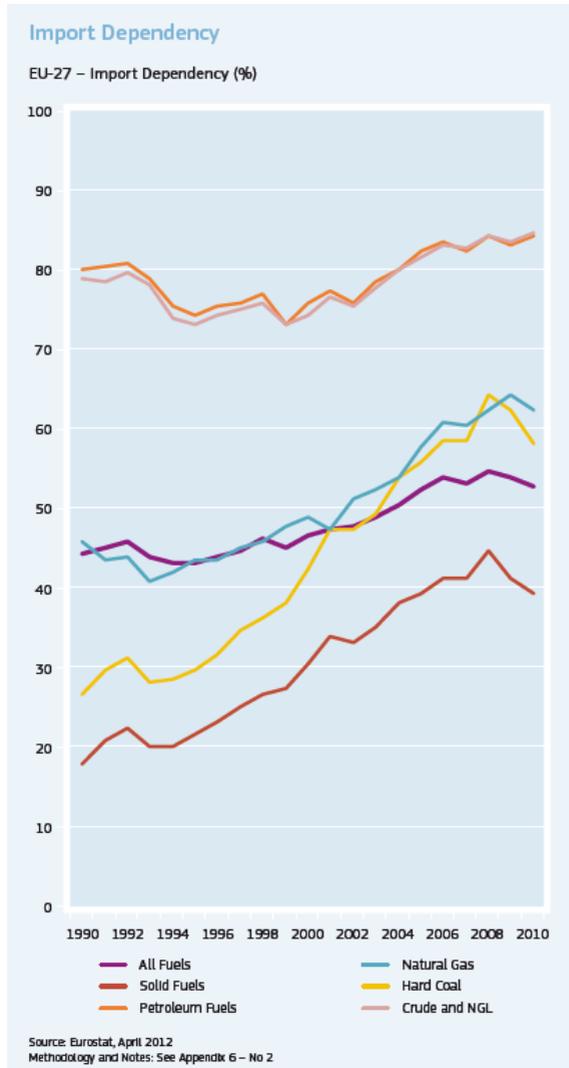
Source: IHR CERA, October 2011.

22. European Commission, DG ENER, *EU energy in figures*, Statistical Pocketbook, 2012.

23. *idem*.

24. European Commission, DG TREN, *Trends to 2030 - European Energy and Transport*, 2009.

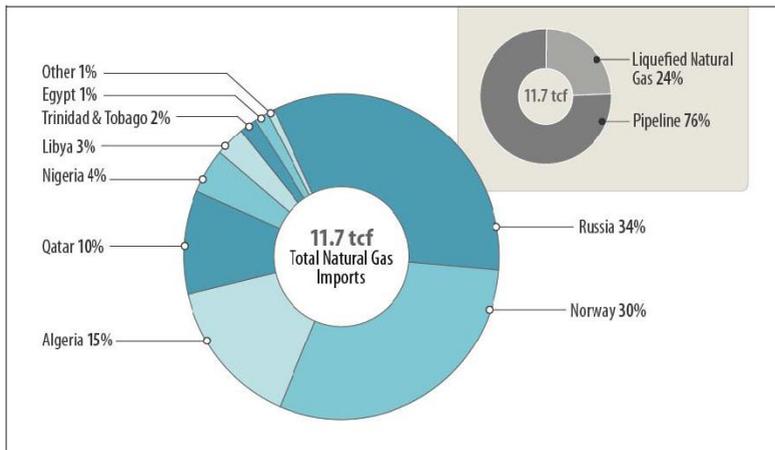
FIGURE 11 ► European import dependency for fossil energy sources



Source: European Commission, *EU energy in figures*, Statistical pocketbook, 2012, p. 64.

Beyond the main trends of the EU's overall import dependency on three main suppliers (Russia, Norway, Algeria), dependency varies greatly from one member state to another. At EU level, the range of gas supply sources is relatively broad. At national level, however, for historical reasons, a number of member states rely on a single supplier for 100% of their gas needs. While most Western European states have a reasonably well-diversified gas supply, other member states, mainly in Central and Eastern Europe but not exclusively, rely completely (Estonia, Finland, Latvia and Slovakia) or mainly (Bulgaria, Czech Republic, Greece, Lithuania, Poland and others) on a single source, which in most cases is Russia, as noted in Section 2.1 above.

**FIGURE 12** ► Geographical origin of imported gas in Europe in 2010



Source: BP Statistical Review of World Energy 2011, <http://www.bp.com/sectiongenericarticle800.do?categoryId=9037130&contentId=7068669>.

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**BOX 4** ➤ **Potential impact of unconventional gas in Europe**

In addition, there is growing supply of unconventional gas, i.e. shale gas, following the energy revolution begun in the United States (US), but whose concrete benefits for the EU are relatively scant so far. In Europe, the development of unconventional gas is in its infancy. Although it is estimated that unconventional gas resources exist in a number of European countries, the situation is extremely different to that in the US. The EU has fewer resources, is much smaller geographically and has a much larger population density. Eastern Europe, mindful of limiting its independence on Russian energy supply, offers the promising prospects of developing unconventional gas, particularly in Poland, but also other countries such as France, the UK, etc.

At the same time, a number of doubts still remain when it comes to unconventional gas in Europe, which makes future investments far from certain. First, the volume of genuinely exploitable reserves in the EU is difficult to calculate. For example, estimates of Polish recoverable resources are much lower than initially expected.

In addition, concerns about the negative impacts of unconventional gas extraction on the environment and the climate are real. The main concerns are water contamination, water depletion, earthquakes, biodiversity and land degradation, and methane release. This last problem could have an impact on global warming. Following the publication of several reports on the risks related to unconventional gas exploitation by the European Commission, the European Parliament considers the current regulatory framework to be inadequate and has asked the European Commission to put forward new, more binding legislation in 2013.

While the uncertainties concerning the impact on the environment and climate of unconventional gas extraction cannot be ignored, the EU gas market stands to benefit from the development of unconventional gas resources. First, it could improve the diversity of supply thanks to the increase of LNG supplies initially intended for the US that will be available on the European market. Second, although the exploitation potential of unconventional gas in the EU is not a radical shift, it could nevertheless trigger investment in transport infrastructures and also slightly reduce EU energy dependency. Overall, the new factors could likewise help improve the position of the EU and its member states in negotiations with foreign suppliers.

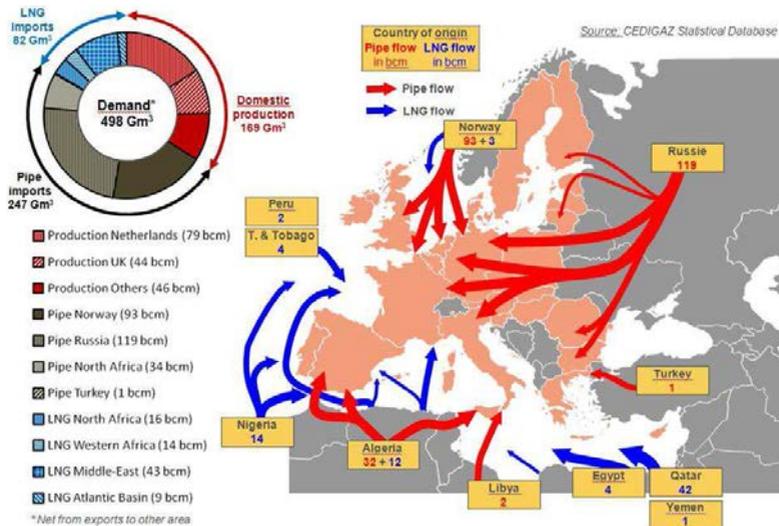
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### **3.3. Supply sources diversification: a European strategy**

In light of the growing challenges posed by security of supply, fossil energy supplier countries have understood their value and some of them tend to maximise their advantage, not only in economic terms, but also in certain cases

as a political lever vis-à-vis dependent countries. The growing vulnerability and dependency of member states has caused intra-European competition for supply diversification. Most EU member states are engaged in unprecedented diversification strategies of energy sources and resources, which have at times undermined the principle of energy solidarity (*see in particular the next section*). Various competing and controversial projects for oil and gas pipelines to diversify the supply routes have emerged as a result. Examples include *Nord Stream, Nabucco and South Stream*.

FIGURE 13 ► EU gas supply projects



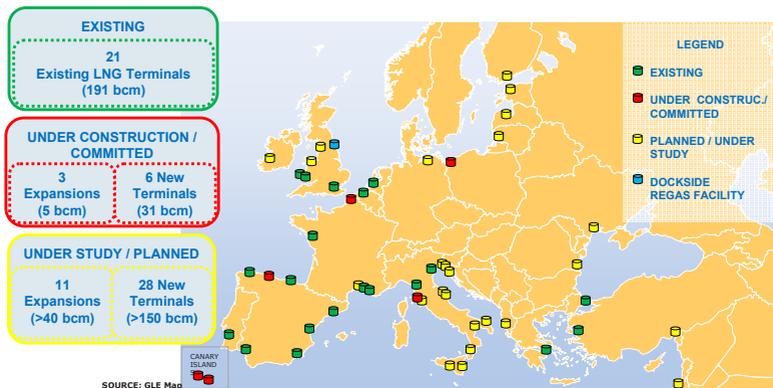
Source: CEDIGAZ Statistical Database.

It is the energy industrial operators who have so far played an important role in stimulating greater diversification of supply flows and flexibility within gas markets. They have for instance spearheaded several investment projects to develop a supply of liquefied natural gas (LNG) from a diversified range of sources in the Middle East, Qatar and Africa, as well as in North and South America and elsewhere, and to develop storage capacity as well as additional

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pipelines to the EU. They have also invested necessary funding for the overhaul of gas transportation infrastructure to develop reverse-flow technology.

FIGURE 14 ► LNG expansion in the European gas market

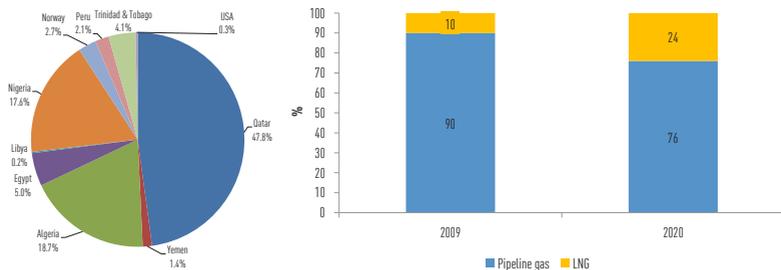


SOURCE: GLE Map

Detailed information on LNG Projects available at: [http://www.gie.eu/maps\\_data/index.asp](http://www.gie.eu/maps_data/index.asp)

Source: GLE Map.

FIGURE 15 ► LNG-expansion in the EU gas market and strong surge in share of LNG in Europe by 2020



Source: Gasunie.

Last but not least, one of the major European initiatives is to develop a *Southern Corridor*, with *Nabucco* being the flagship project. The EU has taken a high profile stance by putting its full weight behind developing a project that it

conceived as of genuine European interest. However the project has overcome since its inception a number of obstacles: delays, rising cost, supply that is not yet secure, fierce competition from other European projects, including those promoted by the Russians i.e. *South Stream*, etc.

It is now almost certain that *Nabucco* will never come on line in the form initially promoted by European institutions. It was first scaled as *Nabucco West* (supported by private operators Austrian OMV, Hungarian MOL, Romanian Transgaz, Turkish Botas and Bulgarian Bulgargaz) supposed to transport gas from the Caspian to the EU from Turkish border, as an extension of the *Trans Anatolian Pipeline* (TANAP) and then through Bulgaria and Romania to Austria and gas hub Baumgarten.

The *Nabucco West* was finally eliminated from the competition by Azeri suppliers and other developers of the consortium for the *Shah Deniz II* gas field (supported by the companies BP, Statoil, Total and SOCAR) for the benefit of its direct competitor the *Trans Adriatic Pipeline* (TAP - supported by Statoil and E.ON Ruhrgas AXPO), which will deliver the gas up to 10 bcm per year, from the Turkish border to the EU (by extending the TANAP) through Greece and Albania to Italy.

FIGURE 16 ► Pipelines options for the Southern corridor



Source: [www.EurActiv.fr](http://www.EurActiv.fr)

A number of lessons can be learned from the Nabucco experience. Above all, it is difficult to develop a gas transit without sufficient insurance about the volumes of gas available for such a pipeline. Concretely, this project was not sufficiently based on the existence of enough quantities of gas available. Gas resources from Azerbaijan were quickly proved inadequate and it was never clear how much Turkmenistan or other suppliers beyond, would engage in this European project of diversification. Moreover, it is more difficult to develop a project of this magnitude when companies and private operators involved are small or medium size, not among the largest in Europe, as it turned out after the withdrawal from Nabucco of German operator RWE. Other factors have also played a role, such as the Russian lobby vis-à-vis the countries of Central Asia, the price differences between gas markets targeted by TAP and those covered by Nabucco West, or the (in)direct interest of Azeri (SOCAR) in the Greek energy infrastructure.

Nevertheless, the EU is still seeking to define a coherent and collective diversification strategy for supplies and international partnerships, notwithstanding the 2011 European Commission communication on the external dimension of European energy policy.<sup>25</sup> It is important to note that the communication never specifically mentions energy solidarity.

By ensuring greater diversification of supply sources, mainly natural gas, and transport routes at European level, the European strategy is seeking to limit the EU's exposure to its imports, and particularly for member states that depend on a single supplier. Efforts include correcting the excessive imbalances in the gas markets between Continental and Central European Countries in order to attain a pan-European gas market over time. To this end, the EU has committed to speaking more often "with a single voice" on the international energy stage and more coherently by reinforcing energy partnerships and dialogues with the main transit and supplier countries, as we will see in the following sections.

<sup>25</sup> *The EU Energy Policy: Engaging with Partners beyond Our Borders*, COM(2011) 539 final.

### 3.4. Intergovernmental agreements transparency: mutual confidence

The lack of transparency in bilateral supply contracts signed by member states has been detrimental to European energy solidarity several times in the past. Mutual trust between member states is valuable yet fragile and has been lacking in this sensitive area for a long time.

It is against this somewhat tense backdrop that operators Wintershall/BASF, E.ON, Gasunie and GDF SUEZ have made a deal with Gazprom over the construction of the Nord Stream pipeline. The project directly connects Germany and Russia via the off-shore pipeline across the Baltic Sea, thereby bypassing transit countries Ukraine, Poland and the Baltic states, but without having informed them about the project. These countries appeared to have found out about the existence and conclusion of this project in press coverage, sparking anger against Germany and denouncing the lack of energy solidarity in Europe (the most senior Polish officials have even called this contract the new Ribbentrop-Molotov pact!).

In addition to the negative and conflicting consequences caused between member states, this project also gave rise to much tension with regard to the EU-Russia partnership, with Poland and the Baltic states successively vetoing the negotiations for a new partnership agreement aimed at replacing the current legal framework, which expired in 2007 and has not yet been renewed in 2013.

Learning from these past conflicts, the EU implemented in November 2012<sup>26</sup> an information exchange mechanism with regard to new and existing intergovernmental agreements between member states and third countries in the field of energy. The aim of this mechanism is to increase transparency between member states and to ensure that these agreements comply with EU rules concerning the internal energy market and the objectives of security policies. It is the European Commission's role to disclose this information to all member states, taking into account the need to protect sensitive commercial information.

<sup>26</sup>. Decision No. 994/2012/EU.

This is set to provide greater visibility and ultimately strengthen mutual trust between member states, an essential corollary for energy solidarity. It is now up to member states to provide this key information in good faith. It should nevertheless be noted that these requirements do not apply to private law contracts concluded between suppliers and industrial operators but only to inter-governmental agreements between two countries, as was the case for instance of the agreement between Russia and Bulgaria on the construction of the South Stream pipeline.

### 3.5. Energy partnerships: strategic approach and framework agreements

Strategies to share and spread risk, and to make the best use of the combined weight of the EU in world affairs can be more effective than dispersed national actions. As a large trading bloc, Europe has a lot to offer to energy suppliers. If the EU truly wants to have influence in security of supply, it must be first and foremost a bargaining and negotiating power, and to this end have the possibility to conclude international agreements but also be represented collectively in international organisations.

Joining forces, speaking with a single voice with external partners, whether producer or transit countries, and pursuing its interests with regard to these states and other trade entities can also mean, when necessary, and in the name of the EU common interest and solidarity, that the EU negotiates directly with suppliers and transit countries (Russia, Ukraine but also Central Asia, etc.) the conditions of energy supply to European markets, while leaving companies care to negotiate and conclude the final contracts over volumes and prices with suppliers.

Beyond the current case-by-case *ad hoc* approach, it is up to the EU to conclude framework agreements with these countries establishing the rules of the game for energy relations, on an equal footing and in line with the principles of inter-dependence, reciprocity and solidarity.

In the negotiations of such energy frameworks agreements, the EU could for instance have the following objectives: negotiating framework supply

agreements; establishing the right legal and economic framework for investment consortiums with supplier countries and companies; using transport and storage infrastructures (EU and non-EU), and/or develop joint emergency mechanisms, etc.

Such a step would be consistent with objectives and agenda of EU energy security since by establishing a stable legal framework with partner countries, it would enable the European institutions, member states and companies taking part to cooperate closely on strategic issues such as organising negotiations with external suppliers and building trans-European infrastructures. It could also improve energy crisis management, prevent supply disruptions, advance the overall security of supply in Europe, and reinforce energy solidarity in the EU.

The development of strong political relations between European and partner countries would also promote trade relations among industry players involved on both sides. Transparent and reliable framework conditions are likewise essential within the EU and regarding third countries so that EU private companies can take advantage of new investment possibilities. This would eventually open up the European energy market to the foreign companies concerned, in compliance with regulations established in the EU, and also enable European companies to invest in the energy sector (upstream and downstream) of the countries concerned, according to the rules and parameters negotiated in the framework agreements.

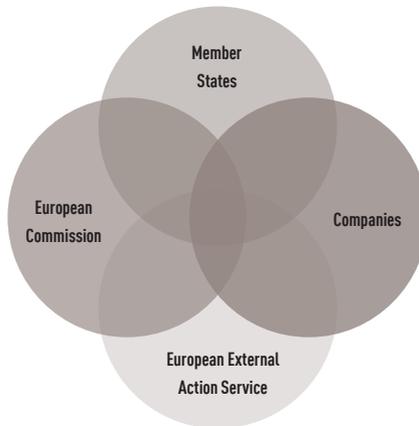
However, in general, such an approach of energy solidarity is still too often absent in bi- or multilateral instruments concluded with supplier and/or transit countries, notably with Russia. The mandate of the European Commission to negotiate a framework agreement with supplier and transit countries in Central Asia (Azerbaijan and Turkmenistan) is a first step in this direction. However, it has taken nearly a decade since the launch of the Nabucco project for the EU Council to finally give the European Commission a clear mandate to negotiate. The problem is that the markets, operators, and producer and transit countries have not waited.

Finally, the EU could undertake other decisive steps to drive progress in this area by making a greater use of its instruments and external action policies

in this area. It is in the EU's interest to pursue the systematic inclusion, where necessary and justified, of energy objectives in its external policies and instruments and other financial and economic means to attain them. To achieve that goal, the EU could mainly use its neighbourhood policy, both in the East and South, strategic partnerships, with Russia as a priority, its enlargement policy, focusing on Turkey, its development policy, notably in sub-Saharan Africa, and lastly its common foreign and security policy.

This approach requires giving the European Commission clear, coherent and ambitious negotiating mandates. Moreover, the European External Action Service (EEAS) would have a special role in coordinating the different instruments and the multiple geographic areas concerned.

**FIGURE 17** ► Major stakeholders involved in developing a European external energy policy



Source: Notre Europe - Jacques Delors Institute.

### 3.6. Solidarity with EU neighbouring countries: concrete co-development energy projects

Energy cooperation with neighbouring countries is part of a far-reaching project to create a pan-European area of security and prosperity, be it in the name of energy security, diversification of supply, or even overall political, economic and social solidarity with the EU neighbourhood. However this strategy cannot be limited to transferring the Community energy *acquis* to neighbouring countries. Whether it is in the framework of the European Neighbourhood Policy, the Eastern Partnership or the Union for the Mediterranean, the EU and its neighbours must gradually open up their respective energy markets on a reciprocal basis, and develop with partners concrete co-development projects in the energy sector.

The Mediterranean Solar Plan led by the EU and its member states within the EU for the Mediterranean is essential in this regard. It requires a closer legal, economic, regulatory and financial relationship with Southern neighbours. The best instruments to achieve this are cooperation between network regulators and operators on both rims, and especially in the Medreg/Medtso initiative actively supported by the European Commission, and duplicating to a certain extent in the south what was started with Balkan countries in the South East European Energy Community.

In the east, it is also important to recall the central, although diminishing role that Ukraine continues to play in the transit of Russian gas to the EU, as well as that of Georgia, Moldavia, and Belarus. Although until very recently, 70 to 80% of Russian gas towards the EU passed through these countries, this percentage is steadily dropping, particularly since the construction of the *Nord Stream* gas pipeline. It will drop even further if the *South Stream* project is completed, as it will redirect a considerable percentage of Russian resources to the EU, carefully avoiding countries like Ukraine.

It remains important for the EU to establish closer relations with neighbouring countries, whether in the South East European Energy Community or even within the framework of the European Neighbourhood Policy and/or the Eastern Partnership. The latest initiatives of the European Commission in this regard are welcome. They include:

- Bilateral mechanisms adopted (early warning mechanisms) to prevent and manage crises particularly with Ukraine;
- Participation in financing the renovation of gas infrastructure networks of countries with European funds available within the framework of the instrument for the European Neighbourhood Policy and even the European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD);
- Inclusion of energy provisions in Deep and Comprehensive Free Trade Agreements (DCFTA).

The European Commission must nevertheless remain firm with the national authorities of these countries so that they implement the needed reforms in their energy sectors (in gas, electricity sectors, etc.), and mainly when it comes to opening them up to competition.

However these different national networks could still fall under Russian control. In recent years the Russian company Gazprom has developed an ambitious strategy (that some consider aggressive) of buyouts and/or investment in the network industries of the countries concerned, but also in the Central and Eastern European countries. In this regard, Russia has put constant pressure on the authorities and operators in these countries and has recently been pushing the Ukrainians and Moldavians to withdraw from the European Energy Charter and the South East European Energy Community.

### **3.7. Gas supply capacities: a collective approach**

The EU could in exceptional and solidly justified circumstances, consider the possibility of pooling adequate supply capacity for energy resources, establishing exceptional “European Union Gas Purchasing Group” aiming to give states and participating companies a genuine power of negotiation with regard to external suppliers. This would be particularly relevant when it is the suppliers themselves who ask for it and make it an essential precondition.

The European institutions via the European Commission could be involved both upstream in providing authorisation and downstream in ensuring compliance with the EU *acquis communautaire* and competition rules within the internal market. Enhanced cooperation between national authorities and regulators in gas import countries/entities concerned could also be necessary in order to ensure the smooth functioning of the internal market. The European Commission could supervise and coordinate such cooperation of national authorities at regional and European level. The national authorities could meet regularly to develop a joint working method and to establish mutual trust.

Establishing this type of instrument however would pose a number of problems, mainly with regard to the application of European competition rules. Indeed, it can be considered that it would mean limiting competition upstream, between operators, by allowing them to form a cartel. It would then be necessary to demonstrate that there are a number of advantages for the final consumer that offset the limitation of upstream competition. Some of these advantages could be: greater flexibility and diversification, which would be beneficial in terms of security of supply, but also the introduction of more competition between suppliers themselves with potential for reducing gas prices, which would be more aligned with spot prices.

Moreover, it is not clear to what extent this type of instrument could be based on existing European legislation, and particularly exemption regulations by category. The European Commission is indeed increasingly reluctant to use this type of general exemption, which could however offer participating companies the antitrust security they need and enable the European Commission to impose a sufficient number of conditions to ensure that upstream cooperation would not affect downstream competition. Article 103 directly enables the Council to adopt this type of regulation or delegate this task to the European Commission. The Commission could also provide case-by-case authorisations, which would take much more time and most likely make administrative procedures more cumbersome.

The various uncertainties regarding the legal justifications and structures are major obstacles to the development of this type of project, which requires considerable legal certainty and visibility, especially with regard to their financing but also concluding supply contracts with foreign suppliers.

Precisely, the European Commission has studied in that respect the feasibility of a group purchase mechanism, mainly to develop the Southern European gas corridor, i.e. the Caspian Development Corporation.<sup>27</sup> The mechanism responds directly to an offer expressly made by the Turkmen negotiators concerning the purchase of gas in large quantities of around 30 billion cubic meters per year, without knowing at this stage whether this is a real offer or rather a diversion from the Turkmen.

No European operator or member state alone is able to handle such a large quantity of gas. The mechanism is therefore of immediate practical and concrete interest. However the project continues to come up against a good deal of opposition, mainly among the big national industry players, and some member states that consider it to be too rigid and that it interferes too much in their respective activities. All in all, they do not see any commercial interest for them in such a tool. And so far, these industrial operators remain the *de facto* key actors responsible for access to energy resources outside the EU and therefore security of supply.

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<sup>27</sup>. Caspian Development Corporation, *Final Implementation Report presented to World Bank, European Commission and European Investment Bank*, Cambridge MA: IHS CERA, December 2010, 155 p.

## 4. Solidarity, the energy transition and optimising resources within the EU

Whereas the choices of energy sources used, the supply structure but also energy taxation remain issues of national sovereignty, as carefully enshrined in European treaties, it is nevertheless regrettable that European countries too often continue to use national strategies to achieve the joint 20-20-20 targets set in 2007, related to the broader process of energy transition(s) in which the EU and its member states have engaged.

The isolated national measures taken, particularly in the area of renewable energies, give an immediate picture of their limitations and increase further still the risk of differing - even conflicting - responses to the challenges even more. This is not to deny that some countries can more or less attain their respective parts of objectives on their own, but this often comes at too great a price.

Facing the huge challenges related to the energy transition, there cannot be satisfying solutions nor added value in these areas without far-reaching cooperation among member states. To this end, solidarity could eventually become a driver in developing European energy policy and prevail over conflicts of national security. Solidarity could here be structured around optimising natural resources in the EU.

### 4.1. Solidarity in national choices: ensuring complementarity

Better optimisation of resources in the EU would ensure enhanced complementarity between national choices. It would also enable the diverse and multiple national solutions to become a cohesive force and not a structural weakness of European energy policy.

Although the process of increasing competition and opening up the energy markets has to a certain extent optimised a number of existing assets, the EU

has not yet been able to find the solution that promotes the investment that is required to optimise energy resources in the energy transition in Europe and direct the funds towards appropriate projects.

Developing the renewable energies that are crucial for the energy transitions at the EU level also requires a collective approach. In light of the geographic and regional constraints posed by renewable energy sources, a certain specialisation of different member states around a common vision of the exploitation of these resources in Europe could be an effective way of guaranteeing a diversified energy portfolio and to create *de facto* solidarity. In these conditions, member states would not only be responsible for their own national production, but also for European production. Obviously, it would be best for Europe to develop solar energy in regions with high sunlight potential, and wind power in the regions with high wind strength. It is however not always the case.

In addition, the unpredictable production modes will require new approaches to stabilise networks and incorporate new infrastructures, particularly control technologies, gas and electricity storage capacity, and stable and reliable gas supply as an emergency fuel. More particularly, from a technical viewpoint, it will be necessary to complete the high-voltage AC technologies as “overlay networks”. In addition, the regulatory approaches will have a major impact on financing these cross-border infrastructure projects.

In this respect, further economies of scale are possible thanks to cross-border cooperation in the use of resources to correct existing structural imbalances in the sustainable use of resources between different member states. It is also important to collectively define new organisational models, to reconsider the role of national and European regulators and also to establish more appropriate regulatory and financial instruments. It has become crucial for the EU and its member states to adopt a more proactive role in planning and financing the construction of infrastructures in order to internalise the effects and reduce the cost of infrastructures.

In this context, several projects of common interest have already been considered between a number of member states involving solar power, onshore and offshore wind power, smart meters and grids, and even carbon capture and



The blueprint for a North Sea grid is based on the following points:

1. It is necessary to connect the wind generation capacity to the existing grid;
2. New trade links between Continental Europe, Scandinavia and the United Kingdom would have a positive impact on the integration of a European internal electricity market;
3. Market integration would boost security of supply (for example, in Norway, which has produced very low levels of hydropower for many years);
4. Connection to Scandinavian hydropower storage (which serves as reserve capacity, in combination with offshore wind power) would reduce fluctuations in hydropower;
5. Connection of fairly isolated markets would result in price convergence and create winners and losers;
6. With offshore connections, the North Sea grid would be an alternative to the land transport connections that are currently being studied.

The current debate on the different North Sea grid designs highlights the crucial role of long-term planning and cooperation and the controversies that they can cause. Three different options are possible, according to the stakeholders who are deciding on the grid design, financing structure and regulatory framework:

- 1. The Radial scenario** which foresees only the integration of offshore wind generation capacity at national level. The trade capacity between the markets in Scandinavia, the United Kingdom and Continental Europe would not be increased and would include only existing connections. No financing for the cross-national interconnection project would be necessary.
- 2. The Trade scenario** which takes into account integration of existing offshore wind generation capacity in the radial scenario and foresees an extension of direct current connections (constructed directly between the countries concerned) with new lines that establish a European internal market. These additional trading schemes would be planned and constructed independently of the connections to integrate offshore wind generation capacity and would be merchant lines, the establishment of which is justified by price differentials.

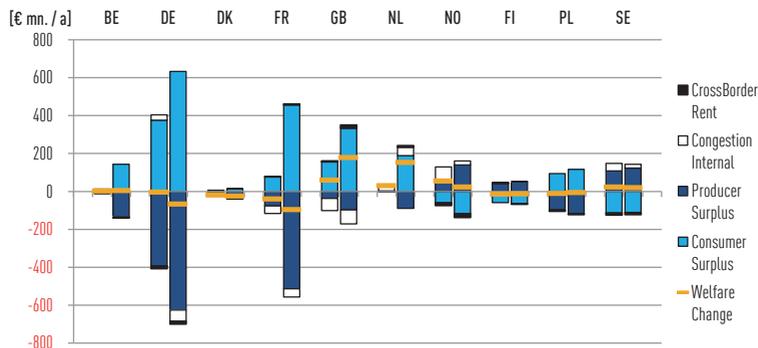
**3. The Meshed scenario** which foresees an approach combining wind power and market integration that would result in a meshed North Sea. In this scenario, the infrastructure project would become more complex because of the large number of countries involved. However it would be a good idea to connect the main regions of North Sea energy production to a more extensive grid. This type of connection would help address the intermittent nature of production by allowing for greater flexibility in wind power distribution and significantly contribute to establishing a European internal market.

In addition to the required costs of integrating wind generation capacity in the radial scenario, the trade and meshed scenarios involve international investments of €10 to €20 billion from now until 2030. The meshed scenario is the most costly because of the offshore connections it requires.

Although the first North Sea cable, the NorNed interconnection between Norway and the Netherlands is very lucrative, future connections are expected to be much less so: one or two additional lines could continue to be profitable but the majority of investments, if made, are most likely to be regulated. Merchant investment alone will therefore not guarantee sufficient trade capacity. It is essential to find the means to assess the different grid designs with regard to a set of advantages and to establish a regulatory framework to implement cross-national projects. This approach also requires the problem of repayment of the required investment to be resolved.

This project highlights the dilemmas inherent in a cross-national energy infrastructure in Europe: there may be an improvement in overall welfare but the North Sea grid will also create winners and losers at regional level. Two opposing scenarios are thus possible: a North Sea grid in which market forces prevail, established with investment motivated by price differentials between the three regions or a regulated approach based on an overall North Sea grid expansion project over the medium term.

**FIGURE 18** ➤ Congestion rent in the Trade scenario (left)/ Meshed scenario (right)



Source: Jonas Egerer, Christian von Hirschhausen, Friedrich Kunz, "The North Sea Grid - Technical and Socioeconomic Analysis with a Focus on Welfare Effects", *Competence Team Electricity Markets Working Paper*, TU Berlin and TU Dresden, 2011.

The North Sea grid project highlights a number of issues related to planning, defining a grid and financing that can benefit other European energy priorities:

- There is a real difference between the overall benefits of the North Sea grid project and the benefits felt by each country. In concrete terms, although the overall improvement in welfare is clear and incontestable, benefits for each country vary depending on the grid design, regulatory approach and supply-and-demand scenario. The expected benefits greatly differ from country to country, which would curb the enthusiasm to participate in this type of multilateral project.
- It likewise demonstrates that an infrastructure project has its winners and its losers, and that in a transport network development strategy, it is essential to find a balance between all the stakeholders' interests. The development of a grid benefits low-cost electricity exporters (Norway and the United Kingdom) because in the regions where they export (Continental Europe) they obtain higher sale prices than in their respective markets. European consumers benefit from this infrastructure that provides them with lower prices. By contrast, electricity producers in more costly regions (Continental Europe) are losers in terms of market

share and congestion rent while consumers of the regions where the prices are low also see a disadvantageous shift in congestion rent. For these consumers, building infrastructure is synonymous with price rises. It is therefore important to come up with an option to establish the appropriate solidarity and compensation mechanisms to correct this problem in the short and medium term.

- The time issue is complex and creates conflict between public policy options and private investors' interests. Indeed, if the integrated meshed grid is the most advantageous over the long term, it is also the grid design that takes the longest to produce results. Whereas, for an investor seeking a short-term secure investment, a modest investment in a one-off extension with a predictable outcome is more attractive than a long-term investment involving a good deal of uncertainty, even if it greatly benefits social welfare.

This project highlights the difference between a for-profit business investment and a regulated investment motivated by considerations including public interest, i.e. finalising a European internal energy market, and promoting solidarity in optimising energy resources in the EU. Of the two grid designs, the meshed scenario appears to be the most promising because it provides considerable advantages even without the additional wind generation capacity and justifies bigger investment with higher gains in terms of social welfare, and therefore solidarity.

The North Sea grid is an interesting example among others of the need to find an approach that satisfies European interests and those of member states and market operators and requires an in-depth analysis of regulatory, financial and solidarity issues that it raises, including the establishment of solidarity and compensation mechanisms, etc. To this end, it needs to be developed through "collective welfare maximiser" among all actors involved. This "maximiser" could be a European institution i.e the European Commission together with ACER if national regulators agree with it. A first step in this direction has been made with the new infrastructure package and its new mechanisms for cost benefit analysis.

## 5. Financial solidarity and investment in projects of European interest

The creation of a genuine European network of infrastructures in order to integrate the growing field of intermittent energy but, to cover the increased distances between the sites of electricity production and consumption in a system based on renewable energy, and to ensure overall security of supply, all vehicles of energy solidarity within Europe, require large-scale investments.

In general terms, the European Commission estimates the financing needs of all kinds of energy infrastructure at €1000 billion by 2020. More specifically, approximately €200 billion is required for the construction of gas pipelines and electricity networks, including €140 billion for high-voltage electricity transmission networks, storage infrastructures and smart grid applications, and €70 billion for gas pipelines, storage infrastructures, liquefied natural gas (LNG) terminals and reverse flow infrastructure to allow gas to flow in both directions.<sup>31</sup>

In this context, it is in no member state's interest to solely finance interconnectors and other transport and distribution networks linking it to other European countries or third countries while the infrastructure serves several member states.

It is also not in each member state's interest to duplicate research and development programmes. The resources needed to develop research programmes that could lead to new energy sources are too considerable for one member state to mobilise alone, as the United States or China does for example. Some projects, such as fundamental research on nuclear fusion or carbon capture and storage, are simply inconceivable at national level, at least for most European countries.

Markets must provide the financial backing required for the implementation of projects of common interest. However, some priority infrastructure projects deemed of European interest fail to the market test, a prerequisite opening up the option of private investments for the completion of the projects. In order to

<sup>31</sup>. *The Commission's energy infrastructure package*, MEMO/11/710, 19.10.2011.

give these projects of European interest the necessary political support and a decisive economic impetus, European energy solidarity could involve the EU making a financial contribution. Common actions financed at European level could also optimise the investment and maintenance costs of the energy infrastructures concerned.

## 5.1. Financing network infrastructure: the rise of European instruments

The EU has provided a significant amount of direct financial support for several infrastructure and reverse-flow technology projects in the framework of the European Economic Recovery Plan (EERP). Based on a total of €4 billion in funding, the European Commission selected 43 large-scale energy projects that would contribute to economic recovery in the EU and increase security of supply by developing cross-border infrastructure. It is the most money the EU has ever invested in energy infrastructure to date. A large percentage was earmarked for infrastructure projects to ensure energy security: €910 million for 12 electricity interconnection projects, €1.39 billion for 31 gas pipeline projects, including reverse flow projects in nine member states worth a total of €79.5 million, and the Nabucco and Galsi projects to diversify gas imports.

**TABLE 4** ▶ Business-as-usual, commercially viable and needed investment by sector 2011-2020

SECTOR (INVESTMENTS 2010-2020, bn€)	BUSINESS-AS-USUAL DELIVERY	COMMERCIALLY VIABLE DELIVERY	TOTAL NEED
Electricity	45	90	141
Gaz	57	63	71
CO <sub>2</sub> transport	0	0	2,5
Total	102	153	215,5
Total (in %)	47%	71%	100%
Investment gap (in bn€)	113,5	62,5	0

Source: European Commission, *Impact Assessment: Energy Infrastructure Priorities for 2020 and Beyond – A Blueprint for an Integrated European Energy Network*, Commission Staff Working Document, SEC(2010) 1395 final, Brussels, 2010.

**TABLE 5** ➤ **Infrastructure and equipment to permit reverse flow supply of gas in the event of short-term disruption**

REN-GASODOTJ S.A	PT	10,700,750
SNTGN TRANSGAZ SA	RO	1,560,000
BAUMGARTEN-OBERRKAPPEL GASLEITUNGSGES M.B.H (BOG)	AT	1,883,500
OMV GAS GMBH	AT	425,000
OMV GAS GMBH	AT	1,150,000
TRANS AUSTRIA GASLEITUNG GMBH	AT	4,800,000
NAFTA A.S	SK	2,936,121
EUSTREAM A.S	SK	664,500
RWE TRANSGAS NET, S.R.O	CZ	3,675,000
FGSZ NATURAL GAS TRANSMISSION	HU	8,078,500
LATVIJAS GAZE & AB LIETUVOS DUJOS	LV	12,940,000
GAS SYSTEM S.A	PL	14,405,248
RWE TRANSGAS NET, S.R.O	CZ	2,300,000
RWE TRANSGAS NET & GAZ-SYSTEM S.A	CZ & PL	14,000,000
<b>TOTAL REVERSE FLOW</b>	<b>EU</b>	<b>79,518,619</b>

Source: European Economic Recovery Plan.

More recently, the new “Infrastructure Package” states the eligibility conditions for projects of infrastructures of common interest to receive EU financial aid under the Connecting Europe Facility. In its Communication dated June 2011 on the next Multiannual Financial Framework (2014-2020), entitled *A Budget for Europe 2020*,<sup>32</sup> the European Commission proposed to create a Connecting Europe Facility to finance priority infrastructure in the areas of transportation, energy and information and communications technologies, through a single fund of €40 billion, including an initial budget of €9.1 billion for the energy sector.

In the meantime, the budgetary negotiations held in early 2013 on the Multiannual Financial Framework reduced the budget earmarked for energy

32. *A Budget for Europe 2020*, COM(2011) 500.

infrastructures under the Connecting Europe Facility from €9 billion to €5 billion - almost by half. The European Commission believes that this new Facility, which can be supplemented by loans and/or guarantees from the European Investment Bank, will be used to raise funds twenty times greater than the amounts put forward by these mechanisms. Some experts believe that this projection is excessive and that the scale would be between five and ten times the required amounts. Given the financial commitments calculated in this area, this drastic cut decided by the European Council is regrettable in an already limited but necessary EU budget.

Last but not least, it would be necessary to provide the EU with ambitious economic instruments in the form of independent and autonomous financial resources, including the power to tax certain goods and types of production, and intended to finance these effective actions and common projects of European interest in the field of energy. It would also mean being able to harmonise energy-related taxation and to use the proceeds as a common resource to finance the above-mentioned effective actions.

## 5.2. Structural funds in the area of energy: solidarity between regions

The use of structural funds, in the name of energy solidarity in Europe, is another important instrument that has been promoted in a regional context. Structural funds, which receive substantial budget allocations, conducted as part of EU economic and social cohesion, are a direct way for the EU to express European solidarity among peoples and regions.

The EU organises a form of mutual assistance that expresses, independently of any specific objective, fundamental solidarity among people, which is primarily motivated by the needs and structural difficulties of its most vulnerable member states. This mutual assistance is first established between regions; it therefore affects all member states struggling with equal opportunities. However the allocation of resources earmarked for this mutual assistance is increasingly concentrated on “regions whose development is lagging behind”. It is organised in structural policies targeting the development of persons and their living environments. Based on the principle of subsidiarity, it reinforces

efforts that have already been made to develop these regions via the national community to which they belong.

In light of negotiations on the 2014-2020 European budget, European Structural funds and Cohesion fund financing in the area of energy could increase from €5 to €17 billion. In order to successfully ensure cohesion and energy solidarity in Europe, a number of investments could be made in the areas of infrastructure, decentralised energy sources and local energy efficiency, which could help support growth and jobs at regional level.

This financing would address the specific needs of the different regions in Europe in view of the varying stages of development and energy models in the member states, and even regions in the same country. The European energy projects could further regional development and strengthen cross-border cooperation by helping regions increase their energy resource management capacity, especially in optimising low-emission energy and renewable energy sources, so as to enable the poorest member states and regions to take full advantage of the European financial instruments available and reduce current disparities.

In this regard the European Parliament adopted a resolution in January 2013<sup>33</sup> in which it recalls the major role that EU cohesion policy and regional stakeholders can play in implementing the new European energy policy. The Parliament also stresses that the current climate and energy targets and any future energy goals beyond 2020 should be based on fair burden sharing between European regions and should enable them to avail of necessary development in the future. The Parliament recalls rightly the importance of the Structural funds and Cohesion fund in achieving these short- and long-term energy policy objectives in accordance with the spirit of solidarity between member states as enshrined in the Lisbon Treaty, and in combating energy poverty in the less developed regions of the EU and the most vulnerable households.

33. Resolution of the European Parliament of 16 January 2013, 2012/2099 INI.

## 6. Solidarity to ensure energy access for all and the fight against energy poverty

Energy is not like other commodities. Energy is essential to all human economic and social activity whatever it may be. Access for all to one or several energy sources is indispensable to the everyday life. Access to affordable energy has become an energy policy objective at both national and European level. Clearly the force of this type of policy varies with time. There are fewer constraints and unforeseen problems in a time of plenty and economic growth than in a time of shortage and economic and social crises. It is a time of shortage and poverty that our societies are experiencing today.

### 6.1. Energy poverty: a growing and unregulated problem in Europe

Energy poverty is affecting a growing number of households in Europe. According to rough estimates,<sup>34</sup> between 50 and 125 million people throughout Europe and nearly 4 billion people worldwide, live without regular access to the energy sources they need to satisfy their basic needs and/or spend a disproportionately high share of their low income on meeting their energy needs. The figures could increase in the future, concomitantly with financial crises, rising energy prices and rising heating bills.

Energy poverty mainly affects retired people, unemployed or low paid people, and welfare recipients. The main direct causes of poverty are: badly designed or insulated buildings; the voluntary or involuntary waste of energy; and prohibitive pricing of energy resources for poor people. Unpaid gas and electricity bills are a major source of debt and a primary reason for applying for public assistance. In this context, energy poverty is a final stage in energy precariousness when people have technical problems accessing energy sources for

<sup>34</sup>. European Fuel Poverty and Energy Efficiency Project.

their housing in addition to problems paying for them. Energy poverty can quickly turn into a terrible cycle of unpaid bills, progressive debt, power cuts, restriction or deprivation of heating, health problems, safety problems, social withdrawal and isolation, etc.

## 6.2. Need for action: a new political impetus

Some national authorities have been seeking to address this issue in recent years. Member states, including the United Kingdom (since 2001 - Fuel Poverty), France and the Scandinavian countries have made more headway than other member states. Furthermore, the 2009 EU directives on the internal market rules for electricity and gas requires member states to take measures to ensure market transparency and citizens' rights during the process of opening up the market, but also to protect the end consumers and particularly the most vulnerable users. The 2012 revision of the directive on energy efficiency<sup>35</sup> sets out that within the energy efficiency obligation scheme, member states may include requirements with a social aim in the saving obligations they impose, including by requiring a share of energy efficiency measures to be implemented as a priority in households affected by energy poverty or in social housing.

It is a good starting point, but not sufficient given the scope of the problem. Unfortunately in most cases, both national and European, even defining this problem is difficult, and the means implemented are not always commensurate with the issues at hand.

With regard to interpersonal solidarity in the EU, helping people to obtain access to secure energy is a major objective for European citizens and should be a priority for energy policy makers. It is important to acknowledge that energy falls under the principle of subsidiarity and it should be handled in a national, and even local, framework. The EU could nevertheless drive a strong political initiative, as it has done in the past, by promoting energy efficiency and the development of renewable energies at European level.

<sup>35</sup>. Directive 2012/27/EU.

It is now up to the EU to come up with an ambitious and operational definition of what energy poverty is and what efforts, including strong proposals, to combat this problem should cover. In this regard, if access to electricity, which varies from country to country depending on its rural or urban nature, can be used to measure energy poverty, the share of income spent on energy needs per household is also important. The EU could also define a category of vulnerable customers and what constitutes “vulnerability”.

Furthermore, it is important to better understand energy poverty by identifying and measuring the scale of the problem at European level, as well as to better understand the multiple forms and operational mechanisms to address it effectively. It is also necessary to develop a coherent number of indicators of energy poverty. A common ambitious and coherent vision could then be developed with regard to the various problems that energy poverty covers and that require action. The EU could also promote the sharing of best practices between the different stakeholders involved.

Concrete quantified objectives could also be set that each member state could then apply to its national framework and implement as they see best. The different means of action available and to be implemented would also be addressed, such as social assistance and solidarity, energy prices and tariffs, energy efficiency in housing, including with regard to improving heating and insulation, establishing coherent and coordinated administrative schemes at local level, raising awareness of targeted populations about available aid and developing appropriate financial instruments to the means and situations of fuel-poor households.

The European Commission could ensure that the national measures developed do not harm the energy system as a whole such as the market rules and principles, and specifically and effectively target people who stand to benefit from this solidarity. Major regional inequalities between and within EU member states with particular differences in the quality of housing, economic prosperity, and regional climate and demographic factors could also be considered in the drafting of a European strategy to combat energy poverty. The use of the Structural and Cohesion funds in this area could be a very good idea to trigger investment in measures to reduce household energy poverty thereby having a positive impact on economic, social and regional cohesion.

## CONCLUSION

### TOWARDS A EUROPEAN ENERGY COMMUNITY BASED ON COMPETITION, COOPERATION AND SOLIDARITY

In a European energy context long marked by national independence and sovereignty, solidarity has become progressively a tangible reality of the European energy policy that is currently being developed. Raised at the level of a fundamental principle in European treaties, the principle of energy solidarity has become increasingly important in the drafting of the European energy policy since 2005.

### Gradual but real increase in energy solidarity in Europe

It took each time the number of threats, attacks and failures, including gas crises between Russia and Ukraine, for the EU and its member states advancing on the path of energy solidarity and giving it a specific content.

The EU thus secured tangible and pragmatic progress on the issue of energy solidarity by launching a **series of common initiatives** in several key areas such as:

- **Internal security of supply in the field of gas:** for instance, the EU has introduced a European mechanism to organise consistently **better forecasting and coordination of risks and crises of supply across the EU in the gas sector**, and ensure effective solidarity and mutual assistance. It is so far one of the main achievements of energy solidarity in Europe, of which the best example is the principle of reverse flows from west to east on the existing pipelines, including up to Ukraine;
- **Integration of national energy networks** in a European-wide energy market: the EU has also been able to **set energy infrastructures projects of European interest** and their funding with the adoption of the new Regulation on energy infrastructures and the Connecting Europe

facility for the period 2014-2020, after the experience of the European recovery plan for energy adopted in 2010 with up to 4 billion euros of investments;

- **Diversification of energy sources and resources:** another important EU initiative has been to support the development of the **Southern Gas Corridor** as a genuine project of European interest for the diversification of its supply, taking a high profile stance on it and putting its full weight behind;
- The recognition of the European dimension of gas and electricity infrastructures through **negotiating mandates from member states to the European Commission** for the implementation of the Trans-Caspian gas pipeline from Turkmenistan and Azerbaijan and the integration of the Baltic states power grids in European network negotiated with Russia and Belarus. These are the first examples of a specific energy negotiation on behalf of the EU with third countries.

European institutions are also often mentioning in general energy solidarity in the numerous strategies and communications they adopt.

Energy solidarity is also essentially based on key market mechanisms. It is the market, flanked by some European rules, which more often guarantee a secure supply to prevent and manage potential temporary crises, creating a *de facto* solidarity. And private industry plays a major role in implementing energy solidarity.

## Missing elements of EU energy solidarity within the EU

While these various progresses are beneficial and welcome, one must recognise that it mainly consists so far in individual initiatives, which cannot yet be regarded as an overall strategy. Energy solidarity as such has not been the subject of any common definition at EU level. Energy solidarity, mostly identified with the issue of energy infrastructure, is still often discussed incidentally to the general rules and developed at the technical level.

And there are still some **significant gaps** in the EU's energy policy in terms of solidarity:

- **Electricity supply security remains the weakest element** of the European energy system. While operators themselves are now aware of the challenges, especially following the historic blackout of November 2006 and the critical situation in February 2012, outrageously national approach still prevents today the establishment of common rules for a truly collective approach that will build on the strengths of the European internal market. Mutual trust needed for a common approach is not yet sufficient and attitudes have yet to change in this regard. A **new Regulation for security of electricity supply** should be drafted and based on the general principles and major components of the existing concomitant gas Regulation, while taking into account the specificities of the electricity sector.
- **Energy solidarity is not yet sufficiently integrated in bi- or multi-lateral energy instruments and agreements with suppliers and/or transit countries.** Speaking with a single voice and pursuing EU interests with regard to external partners, producer and transit countries and other trade entities should mean, when necessary, and in the name of the EU common interest and solidarity, that the EU negotiates directly with suppliers and transit countries the **necessary framework agreements** setting up the conditions of energy supply to European markets, while leaving companies care to negotiate and conclude the final contracts over volumes and prices with suppliers. Similarly, the cooperation forged by the member states individually with third countries appears as sub-optimal in the current context. A specific attention from the EU should be devoted to the European neighbourhood area, both South and East.
- **The required economic and financial solidarity for the impetus for major infrastructure projects of European interest remains limited.** For projects located outside the EU or in EU seas (offshore wind), which are of considerable importance for several member states at the same time, the EU still faces national reluctance which jeopardise those projects because they require a multilateral approach that strikes traditional national approaches. In this context, the major issues of funding and the allocation of costs and benefits between states involved often remain without an appropriate response. The EU must continue to develop the innovative and necessary economic and financial instruments. The newly agreed European interconnection mechanism should help. The use of Structural funds in this area should also be taken into account.

- **Energy poverty is a growing phenomenon even within the EU.** Unfortunately in most cases, both national and European, even defining this problem is difficult, and the means implemented are not always commensurate with the issues at hand. With regard to interpersonal solidarity in the EU, helping the dozens of millions people affected by this phenomenon to obtain access to secure energy is a major objective for European citizens and should be a priority for energy policy makers. Beyond the sometimes narrow principle of subsidiarity generally invoked in this area and the simple dissemination of good practice which gives a good conscience, the EU should, with a genuine concern over citizens, come up with an ambitious and operational definition of what energy poverty is and what efforts, including strong proposals, to combat this problem should cover.

Moreover, there are still **political, economic and social factors which are hindering a truly shared and common European approach** to the multifaceted issue of energy solidarity. Foremost are differences across the community of nations that is Europe: since 2004 in particular, a tendency has developed whereby each country establishes its own definition of what solidarity in Europe should and should not be.

Often, differences in culture, history and energy policy among Europe's member states, where geopolitical, technical, industrial and technological conditions also differ, still lead to **conflicting outlooks and expectations** from governments and citizens on its own meaning and the mechanisms for its implementation.

Everyone has its own definition of solidarity, which is based on a national perception, making it more difficult to create a European concept of solidarity developed from concrete elements which should now be articulated at the European level. Can we achieve this synthesis that integrates energy solidarity as, among other things: a bond of charity, financial transfers from the "rich" to the "poor", accountability of some "free riders", reciprocity, collective insurance against risks, pooling of strengths and weaknesses in the international arena, social and interpersonal approach to energy, etc.? Such a synthesis can only be build incrementally.

## Reflections to continue

*Notre Europe – Jacques Delors Institute* pursues a thorough reflection on the future of European energy policy, developing the policy proposal put forward by Jacques Delors on a “European Energy Community”. It has the merit of having opened a European wingspan debate engaged with various stakeholders: public, private, NGOs, local, national and European. Energy solidarity occupies a prominent place, and could eventually be a driving force in the further development of a European energy policy.

It remains appropriate for the EU and its member states to continue to reflect and debate around the issue of solidarity, including the question whether it would be better to focus energy solidarity around one or two priorities and objectives, or otherwise to continue to project energy solidarity on a growing number of equally critical energy issues.

The issue is also when the EU will be able to move on its own initiative, anticipating the future, and make decisions in the field of European energy policy that are based on a conscious and assumed choice on the benefit of a collective and united approach, based on the interdependence and solidarity of all member states, in a spirit of mutual trust.

In this regard, it seems essential to us that the energy solidarity within the EU mainly and **consistently involves the following five major components:**

- **Completion of the internal gas and electricity markets**, which creates a *de facto* solidarity through the liquidity of the energy flows in Europe, and the fact that gas and electricity flows can freely circulate all across Europe in all respects.
- **Security of supply** through physical infrastructures and effective mechanisms for mutual assistance based both on the needs to further integrate the various national energy networks through interconnection infrastructures, to ensure and improve the complementarities of national energy mixes, and on the European dimension of the system, which altogether allow to move from a *de facto* solidarity towards an active, dynamic and conscious solidarity.
- **Optimising the use of energy resources in the EU** in the context of energy transition(s), particularly in the field of promotion of renewable

energy and the essential energy infrastructures for their development, to ensure enhanced complementarity between national choices and also enable the diverse and multiple national solutions, all with their respective strengths and weaknesses, to combine into coherence and collective force of European energy policy, as the basis for further solidarity in the future.

- **Strong political will and leadership of the member states** based on collective approaches and extensive cooperation at European level in sensitive political areas, both inside the EU, with the security of supply based on the discipline and rigour of the *acquis communautaire* in the internal market, but also outside EU borders by seeking the most favourable agreements for the entire EU and in accordance with EU rules. The same political will is required for the coherent and collective treatment of issues related to resource optimisation within the EU, energy transition and its financing, access for all to affordable energy and the fight against fuel poverty, etc.
- In the name of solidarity, **reflecting the different levels of economic and social development and wealth of each member state** which encounter specific technical difficulties in adopting and implementing the European energy targets (20/20/20 in 2020) in the field of sustainable development.

A necessary subtle and complex balance between these aspects will again be at the heart of discussions that will animate the EU and its member states in the coming months and years and in the framework of negotiations on the European energy system post 2020, i.e. 2030. The increased smartness of the energy system of the future should facilitate the research and achievement of such balance.

## Competition, cooperation and solidarity

It is finally important to remind that the European energy policy cannot be limited to the issue of solidarity. European energy policy, like a European Energy Community, includes three major components: competition that stimulates, cooperation that reinforces and solidarity that unites. Its development must be based on these three essential pillars, which are at the basis of the successful

experience of establishing a single European market for goods, services and so on.

Beyond solidarity, addressed on its own feet in this Study, the other two areas in question are already the subject of numerous developments and already have a number of concrete benefits within the framework of the existing EU energy policy, but also significant shortfalls that must be addressed as well.

**Competition that stimulates.** Free competition and an internal market are not ends in themselves but major tools that can be used to integrate national energy policies in a competitive and comprehensive European energy system. In this regard, at least on paper, competition is supposed to enable private market operators to compete on a national, regional and eventually European basis. It is also supposed to promote the liberalisation of national markets, provide incentive to reduce prices and to improve the quality of services and consumer choices, and give the impetus for the required investments in the various technologies needed.

However since it is not adequately implemented, rules are not properly implemented by member states and there is no genuine European regulatory approach, particularly in the form of a European regulator, competition is not yet a sufficient driver nor does it play the role that one should expect from it. Unfortunately, as most stakeholders have pointed out, tangible benefits linked to the process are slow in coming. The European Council has set the goal of establishing an energy market by 2014.

**Cooperation that reinforces.** European energy policy can neither be limited to the competition dimension of EU energy policy. Member states must also manage the interdependence that arises from competition within national, even regional, markets, which are progressively integrated via network infrastructures and other cross-border interconnections as well as market consolidation mechanisms such as market coupling.

Nevertheless, recent months and years have only highlighted the lack of cooperation between member states in the energy sector. For example, European countries have individually undertaken major changes in their policies, strategies, models and national market mechanisms without any consultation

whatsoever with their partners. They have failed to measure and anticipate the disruptive or even harmful impact that these changes have on their neighbouring countries, partially linked to their national energy network.

For example, Germany phased out nuclear power without any consultation, and even developed its renewable production unilaterally, which has had a number of adverse effects on neighbouring networks, including loop flows, and also has impacted the planning of energy import and export capacity of neighbouring countries. Another example is France, who established its own national stress tests for the nuclear industry and decided unilaterally and without consultation to reduce its share of nuclear energy in its energy mix from 75% to 50%, lowering the confidence of its European partners. Yet another example is the United Kingdom and a number of other member states who have decided to progressively implement, without consultation, capacity mechanisms that will inevitably have an impact on the competition of and within national markets. The same can be said about a number of price support mechanisms for electricity, especially in the area of renewable energies but also gas, which destabilise and fragment the regulatory framework at European level, resulting in distortions of competition and segmented national renewable energy markets. And so on.

In these areas as in others, there will be no satisfactory solution if there is not more frank and determined cooperation of member states. *Notre Europe – Jacques Delors Institute* continues to develop its reflection on these issues and plans to put forward further proposals in the future.

Last but not least, the EU remains above all a political construction, which should be receptive to its citizens' needs. European elections are scheduled for May 2014 and the EU should be able to promote a "positive agenda" that is based on a few concrete policies and projects. Energy should be on that agenda.

Vague wording and announcements that are not followed up will not suffice if the EU wants its citizens to continue believing that it has a purpose. It is now important to address citizens' concerns. They are calling for this common political project in the area of energy that meets their fears, their aspirations and their needs. The issue of energy solidarity between people, countries, regions and operators in Europe is likely to facilitate the success of this challenge.

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## ENERGY SOLIDARITY IN EUROPE: FROM INDEPENDENCE TO INTERDEPENDENCE

*Notre Europe – Jacques Delors Institute* is leading an in-depth study of the future of European energy policy based on a proposal made by Jacques Delors for a “European Energy Community”. Solidarity plays a key role in a European Energy Community and may later be one of the drivers of the development of an EU-wide energy policy.

While remaining realistic about what is possible within the existing framework, the following Study pursues three main objectives. It first looks at the issue of solidarity in Europe from a historical perspective and provides a realistic assessment of what the solidarity clause really means for European energy policy. It then reviews some key areas of action and the various mechanisms by which solidarity is integrated into the new European energy policy and which improve its functioning.

Lastly, this Study provides a fresh take on the solidarity clause and suggest ambitious and forward-looking ways in which Europeans can enhance their capacity to work together on this sensitive issue by further pooling their strengths and weaknesses in five key areas: solidarity in times of crisis and internal security of supply; solidarity outside EU borders (diversification and partnerships); solidarity in the optimisation of energy resources within the EU; financial solidarity; and lastly solidarity to ensure energy access for all.

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