NEW DIRECTION
THE FOUNDATION FOR EUROPEAN REFORM

ENERGY SUPPLY CRISIS MANAGEMENT MECHANISMS

A STUDY ON EXISTING AND PROPOSED SOLUTIONS

Paweł Jakubowski
Rafał Miland
Maciej Woźniak

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EXECUTIVE SUMMARY

The last decade could arguably be called a 'period of energy threat' for Europe. EU member states have had to face several cases of political and/or economic conflict that resulted in disruptions to oil and gas supplies. The worst affected countries were those of "new Europe" – but Western European economies could also potentially be put at risk.

Few substantial attempts have been made to reduce the danger arising from a cut-off of energy supplies to Europe. Initially, some international organisations such as the International Energy Agency were established, with the aim of reducing the potential impact of a supply crisis.

The International Energy Agency (IEA) has been developing a system for protection against a crude oil and fuel supply crisis. Its mechanism includes different supply protection and demand restraint measures which have been subject to verification since the '70s. Nevertheless, this organisation has not been able to introduce certain similar solutions in the case of natural gas.

The European Union is implementing an open energy market approach, which will provide consumers with competition and protection of supply. Instances of market failure resulting in supply shortages led the EU to implement a number of solutions concerning energy carrier supply security. When the EU oil and fuel crisis management mechanism was treated solely as an addition to that of the IEA, gas supply security became the main interest and resulted in a number of regulations concentrating on the protection of supply. Since the EU is also a political entity, it was also able to initiate some external actions to involve suppliers of energy carriers within the crisis management mechanism system.

The process of developing supply crisis mechanisms is dynamic. A discussion between several countries can lead to numerous recommendations for the creation of some novel solutions, especially those based on the concept of a "collective response" and "European solidarity". The idea goes far beyond certain technical solutions of low political importance which were always the domain of some dedicated international organisations. This may be one reason why its reception has been so lukewarm. In spite of this, some elements of this concept, supported by strong political pressure, have had an impact on different actions and legislation in the EU.

An ideal energy security management system should be based on a well-functioning liberalised market where demand and supply are basic tools for balancing. To reach these ideal conditions there needs to be competition among external suppliers to the EU and regulations which are binding on the internal market must be also applied to external energy companies. Possible gains for the European economy include energy security, easier procedures and laws.

INTRODUCTION

The aim of this paper is to describe energy supply crisis management mechanisms, but it does not concern itself with the problem of a common energy market within the European Union. This does not mean, however, that an integrated energy market has nothing to do with security of supply.

The regulations for liberalised energy flows create a basic safeguard for suppliers and for customers; they ensure that relationships will be safe and to some extent mutually profitable. They are also a primary reason for the development of energy infrastructure (with special regard to transmission corridors).

Furthermore, the integrated EU energy market is based on common rules and regulations which provide clarity and predictability, regardless of the country of enterprise. These rules – for example the transparency and equality of access for customers using the transmission and distribution infrastructure – are established for the whole EU area and form the foundation for a proper energy market. They allow for the free and unimpeded development of competition, which should result in the lowest possible energy prices – crucial to any economy.

However, there is a feeling that the last 10 years have clearly shown that such situations – whether caused by natural disasters, acts of terrorism, or political decisions in third-party countries – can lead to a collapse of the energy market. This kind of collapse can have profound implications even if it is only for a short period of time. Specific examples of such situations are the natural gas and oil supply crises which took place in 2004, 2006, 2007 and 2009. These crises affected large areas of Europe and resulted from causes outside of European Union control. They mainly arose from quarrels between third-party countries including Russia, the Ukraine, and Belarus. However, the negative impact on Europe resulted at least in part from a lack of capacity to respond to such situations.

Problems appearing in recent years showed that the market needs some preciseand immediate short-term support, which would allow for the restoration of its fundamental operating principles. A crisis response mechanism – implemented at the level of enterprises, countries and international organisations – acts as an impulse that the market itself is unable to generate. These mechanisms can be compared to the action of a cardiac defibrillator restoring a regular heartbeat. It gives the necessary external impulse, after which regular activity is resumed. A defibrillator works only for a few seconds, but this is enough to save lives.

This paper describes those crisis management mechanisms which are in operation – as well as those that are still required. Examples of best practice can be identified not only in the EU area and therefore mechanisms implemented by the International Energy Agency will also be presented. Irrespective of which technical solutions have been adopted by each of these organisations the nature of the crisis mechanism corresponds to an underlying philosophy of action. One possible solution is action taken by fully independent countries represented by their governments, which take some steps on a voluntary basis and with full national control, motivated by an idea or on the basis of an international treaty. We shall call this ‘collective action’. Another approach is based on the assumption that some rights and responsibilities are delegated to a body (a centre, a headquarters etc.) which may initiate, conduct and finally impose some solutions. The role of countries is support but not decision making, at least not to such an extent. This will be referred to as ‘common action’. In this context it is important to differentiate between common action understood as defined above and common rules (procedures) and regulations. The latter means “accepted by all parties”, “used in the same way” but does not necessarily indicate ‘common action’. Collective action also needs common rules.

In the process of examining potential and existing crisis management solutions, this paper will attempt to match particular activities to one of the possible philosophies. This may not always be easy – as certain real-life circumstances may go far beyond a theoretical approach. Nonetheless, an individual description and assessment will always be supported by set of arguments. In the absence of predominant features of either collective or common action, this paper will use the phrase “coordinated action” to denote a mix of both philosophies.

The ultimate aim of this paper is to present policy recommendations for energy crisis management mechanisms, which would be in line with free market principles and could be regarded as useful based on practice developments. This leads us to the conclusion that proposed solutions will not always be easy to accept by politicians, especially in the context of the energy security problems described below. Nevertheless the authors believe that some motivated recommendations could find support and be used in the policy-making process.

1. ENERGY FLOWS IN EUROPE AND ENERGY DEPENDENCY

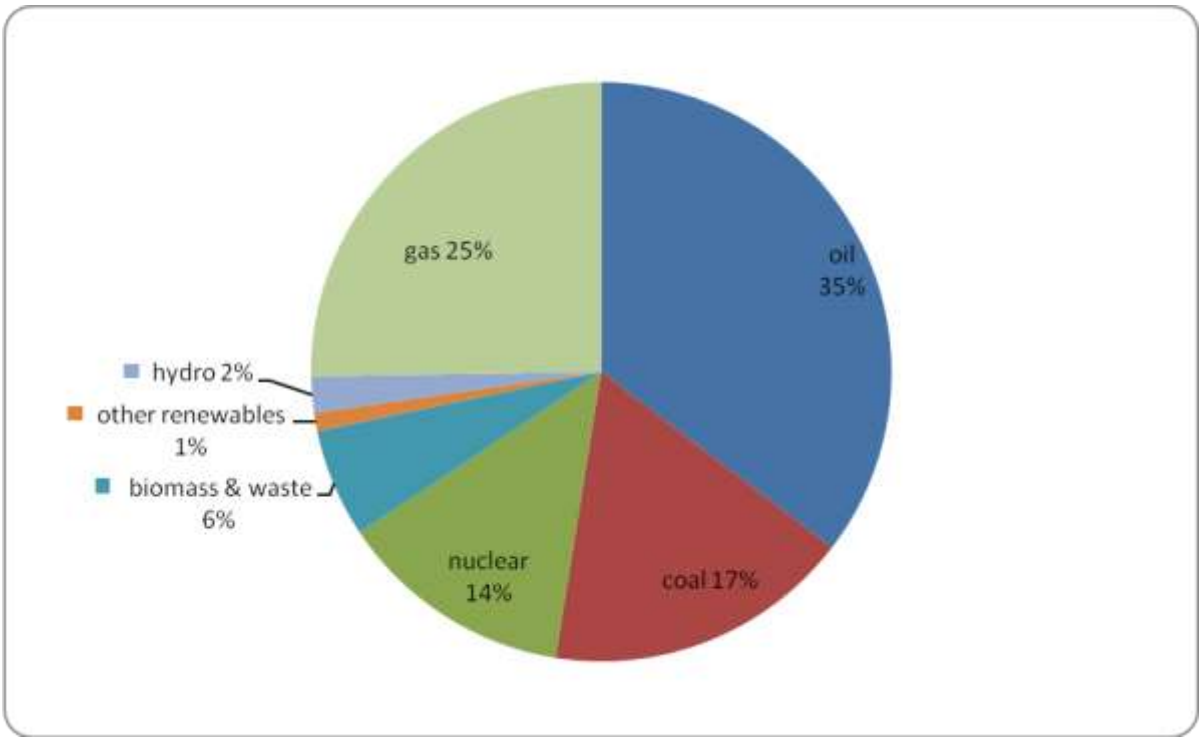
The primary energy mix for countries of the European Union[1] consists of four major components: crude oil, natural gas, coal and nuclear fuel. Fossil fuels remain in a dominant position with crude oil accounting for 35%, natural gas 25% and coal 17% of the total. Renewable sources account for 9% in total (see Figure 1.). The World Energy Outlook 2010 predicts that the existing policies and declared intentions of the European Union will lead to significant changes in the primary energy mix by 2035. The share of crude oil is expected to decrease to 27% and coal to 8%. Increasing trends are expected for natural gas (to 28%) and all renewables (to 23%).

The focus of this paper is on energy carriers such as natural gas and crude oil – due to their importance to energy supply crisis management mechanisms. These factors have a major influence on the energy security policy in all countries of the European Union. Although coal, nuclear fuel and renewables are important components of the energy mix, they will not be considered for the purposes of this particular study. As it is described later, the main energy supply problems that have affected the EU member states concerned **natural gas** (i.e. the 2006 and 2009 Russian-Ukrainian conflicts) and **crude oil** (i.e. the 2007 Russian-Belarusian conflict). A serious threat to these fossil fuel supplies also emerged during armed conflicts such as those in Georgia (2008) and Libya (2011). All of the above underlines the fact that the other components of the energy mix do not carry the same level of importance as oil and natural gas.

Indeed at the present stage, renewables cannot be considered as an alternative to fossil fuels and should be regarded rather as an interesting and necessary supplement to the primary energy mix. The development of renewables has been based on different financial support systems, for example feed-in tariffs or tradable green certificates – and without these instruments the share of renewables in the energy mix could be even smaller. In fact, renewable energy is not profitable in economic terms but its development is a picture of other ideological and social approaches which have less to do with the free market and more to do with the elimination of some harmful influence on the natural environment. For the purposes of this paper – which concentrates on energy security issues, the main finding concerning renewables is that their usage is clearly connected with technologies using fossil fuels or nuclear power, and most of the renewables are not able to supply energy on a constant level, being dependent as they are on some natural conditions (wind, solar energy). Potential gap in the energy supply scheme has to be backed-up by traditional fossil fuels technologies or by nuclear power plants. Hydroelectric plants in places when also natural conditions are convenient (Norway) rather seem to confirm the general rule as an exception. Also a biomass usage with huge areas of fields turned into industrial production of bio components seem to be rather a form of agriculture and industry support than a reasonable answer for world's energy needs. Serious concern about future of biomass must be taken now, when food prices rise radically and one of the reasons may be also a competition between the crops usage for energy production and for food.

[1] EU-27 with Switzerland and Norway

Figure 1 - Primary energy mix in the European Union in 2010



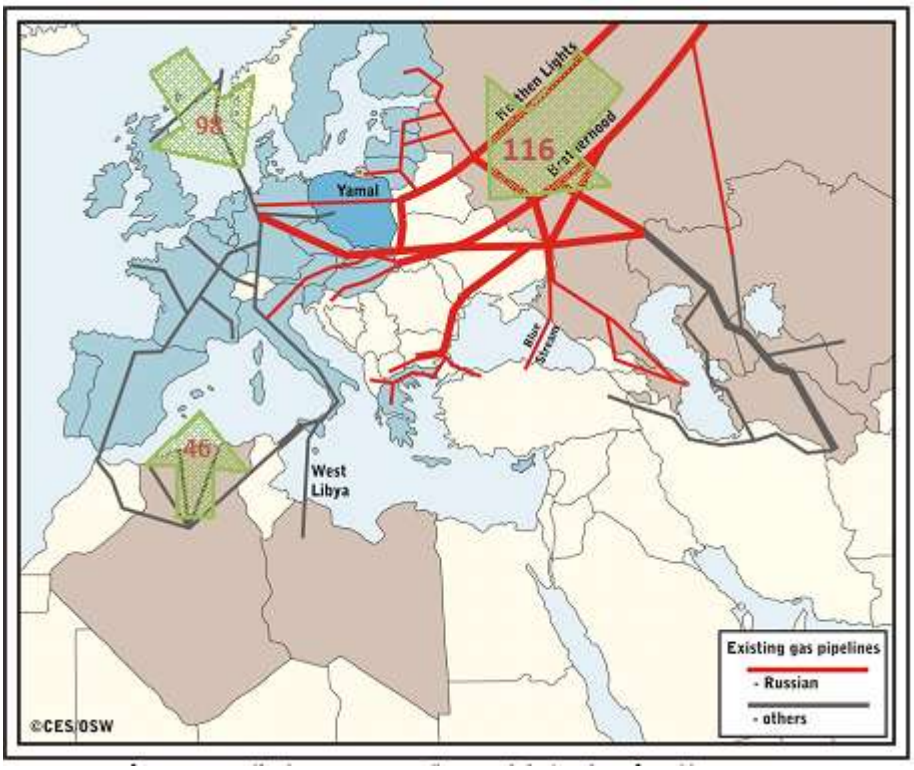
Source: International Energy Agency, World Energy Outlook 2010, page 638.

1.1. NATURAL GAS

One of the most important energy carriers for the EU is natural gas. Total consumption of natural gas was about 470 billion cubic meters (bcm) in 2009 (slightly less than in previous years because of the economic recession). The major consumers are the United Kingdom (86.5 bcm), Germany (78), Italy (71.6), France (42.6), the Netherlands (38.9), Spain (34.6), Belgium (17.3), Poland (13.7), Romania (13.6) and Hungary (10.1).

The total demand for natural gas is partly covered by domestic EU production (57%) but additional external supplies are essential. Natural gas production within the European Union is concentrated in only seven countries: the Netherlands (62.7 bcm), the United Kingdom (59.6), Germany (12.2), Romania (10.9), Denmark (8.4), Italy (7.4) and Poland (4.1). Major external suppliers to the European Union include Russia (116 bcm), Norway (98) and Algeria (46); and to a lesser extent Qatar, Libya, Nigeria, Tobago and Egypt (see Table 1).

Figure 2 - Major routes for gas supplies to the EU member states.



Source: Centre for Eastern Studies (www.osw.waw.pl); BP Statistical Review of World Energy, June 2010; own calculations; (bcm).

Russian gas supplies are carried mainly by the Brotherhood pipeline (via the Ukraine) and the Yamal-Europe pipeline (via Belarus). The total amount of gas delivered to the EU from Russia in 2009 was 116 bcm[2].

Norwegian deliveries are running through several pipelines from the Northern Continental Shelf: **Langeled** and **Vesterled** to the United Kingdom, **Europipe (I&II)** to Germany, **Franpipe** to France, and **Zeepipe** to Belgium. The total amount of gas delivered to the EU from Norway in 2009 was 98 bcm.

Algeria – the third largest supplier to the EU – uses two pipelines for the delivery of natural gas to the EU: **Maghreb-Europegas (MEG)** to Spain and **Transmed** to Italy. The total amount of gas delivered from Algeria in 2009 was 46 bcm.

The importation of gas through pipelines constitutes the greatest part of the streaming of gas to Europe (ca. 332 bcm), but an important component of importation is also liquefied natural gas (LNG) in LNG vessels. As is shown in *Table 2* the total amount of LNG delivered to the EU exceeds 63 bcm and is expected to grow in the nearest future as new re-gasification plants will be opened. The biggest importers of liquefied natural gas among European countries are Spain (27 bcm), France (13.1), United Kingdom (10.2), Belgium (6.5), Italy (2.9) and Portugal (2.8).

[2] Source: BP Statistical Review of World Energy, June 2010; However, Gazprom claims that sales of its gas to the EU was 152.8 bcm in 2009 (OAO Gazprom Annual Report 2009).

Table 1 - Main external suppliers of natural gas to the EU market

[bcm]	
Russia	116.4
Norway	98.0
Algeria	46.5
Qatar	13.5
Libya	9.9
Nigeria	9.6
Trinidad-Tobago	7.5
Egypt	6.6

Source: BP Statistical Review of World Energy, June 2010.

As shown in Tables 2-3 the range of dependency on the importation of natural gas within the EU member states differs significantly by volumes and geographical sources of supply. Only the Netherlands and Denmark can be self-sufficient in terms of production and consumption ratio, leaving the vast majority of EU member states fully dependent on importation. Germany, the largest natural gas importer in the EU (88.8 bcm) receives its supplies from five sources: Russia (31.5), Norway (30.1), Netherlands (22.4), the UK (3.7) and Denmark (1.1). The second largest EU importer is Italy (69.3 bcm) with nine suppliers, mainly from Algeria (22.6), Russia (20.8), Libya (9.2), the Netherlands (7.5) and Norway (5.9). However, there are also a few countries with a rather homogenous importation structure such as Bulgaria, Estonia, Finland, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia. Further details are provided in Table 3.

Table 2 - Natural gas overview in European countries[3]

[bcm]	Reserves	Production	Consumption	Import (pipeline)	Import (LNG)	Total import	Export to UE
Austria	-	-	9.3	8.0		8.0	-
Belgium	-	-	17.3	15.0	6.5	21.5	-
Bulgaria	-	-	2.5	2.6	0.0	2.6	-
Czech Republic	-	-	8.2	9.4	0.0	9.4	-
Denmark	64.0	8.4	4.4	-	-	-	4.0
Estonia	-	-	0.7	0.7	0.0	0.7	-
Finland	-	-	3.6	4.1	0.0	4.1	-
France	-	-	42.6	36.0	13.1	49.1	-
Germany	77.9	12.2	78.0	88.8	0.0	88.8	12.8
Greece	-	-	3.4	2.6	0.7	3.3	-
Hungary	-	-	10.1	8.1	0.0	8.1	-
Italy	64.0	7.4	71.6	66.4	2.9	69.3	-
Latvia	-	-	1.2	1.2	-	1.2	-
Lithuania	-	-	2.7	2.8	0.0	2.8	-
Luxembourg	-	-	1.3	1.3	-	1.3	-
Netherlands	1085.6	62.7	38.9	17.2	0.0	17.2	50.0
Norway	2046.0	103.5	4.1	-	-	-	98.0
Poland	109.0	4.1	13.7	9.2	0.0	9.2	-
Portugal	-	-	4.3	1.6	2.8	4.4	-
Republic of Ireland	-	-	4.8	5.1	0.0	5.1	-
Romania	629.0	10.9	13.6	2.1	0.0	2.1	-
Slovakia	-	-	5.6	5.4	0.0	5.4	-
Slovenia	-	-	0.5	0.5	-	0.5	
Spain	-	-	34.6	9.0	27.0	36.0	-
Sweden	-	-	1.2	1.3	0.0	1.3	-
Switzerland	-	-	3.0	3.1	0.0	3.1	-
United Kingdom	292.0	59.6	86.5	30.9	10.2	41.1	12.2

Source: BP Statistical Review of World Energy, June 2010.

[3] Some of the data shown in Table 4 may differ slightly due to the difference between the contracted volumes, *take or pay* clauses and realised supplies in 2009.

Table 3 - Natural gas: Sources of supply to European countries with detailed import structure

[bcm]	Trinidad Tobago	Denmark	Germany	Netherlands	Norway (pipeline)	Norway (LNG)	Norway TOTAL	United Kingdom	Russia	Qatar	Algeria(pipeline)	Algeria (LNG)	Algeria TOTAL	Egypt	Libya	Nigeria	TOTAL import
Austria	-	-	1.5	-	1.1	-	1.1	-	5.4	-	-	-	-	-	-	-	8.0
Belgium	0.2	-	0.8	6.2	6.4	0.2	6.6	1.7	-	6.0	-	-	-	-	-	0.1	21.5
Bulgaria	-	-	-	-	-	-	-	-	2.6	-	-	-	-	-	-	-	2.6
Czech Republic	-	-	-	-	3.0	-	3.0	-	6.4	-	-	-	-	-	-	-	9.4
Estonia	-	-	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	0.7
Finland	-	-	-	-	-	-	-	-	4.1	-	-	-	-	-	-	-	4.1
France	0.7	-	3.3	6.4	16.0	0.4	16.4	0.3	8.2	0.2	-	7.7	7.7	1.6	-	2.4	49.1
Germany	-	1.1	-	22.4	30.1	-	30.1	3.7	31.5	-	-	-	-	-	-	-	88.8
Greece	-	-	-	-	-	-	-	-	2.1	-	-	0.5	0.5	0.2	-	-	3.3
Hungary	-	-	0.7	-	-	-	-	-	7.2	-	-	-	-	-	-	-	8.1
Ireland	-	-	-	-	-	-	-	5.1	-	-	-	-	-	-	-	-	5.1
Italy	-	-	1.4	7.5	5.9	-	5.9	0.2	20.8	1.6	21.4	1.3	22.6	0.1	9.2	-	69.3
Latvia	-	-	-	-	-	-	-	-	1.2	-	-	-	-	-	-	-	1.2
Lithuania	-	-	-	-	-	-	-	-	2.8	-	-	-	-	-	-	-	2.8
Luxembourg	-	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1.3
Netherlands	-	1.7	2.5	-	7.6	-	7.6	1.2	4.3	-	-	-	-	-	-	-	17.2
Poland	-	-	0.5	-	-	-	-	-	8.7	-	-	-	-	-	-	-	9.2
Portugal	0.4	-	-	-	-	-	-	-	-	-	1.3	0.1	1.4	-	-	2.1	4.4
Romania	-	-	-	-	-	-	-	-	2.1	-	-	-	-	-	-	-	2.1
Slovakia	-	-	-	-	-	-	-	-	5.4	-	-	-	-	-	-	-	5.4
Slovenia	-	-	-	-	-	-	-	-	0.5	-	0.4	-	0.4	-	-	-	0.9
Spain	4.2	-	-	-	1.9	1.4	3.3	-	-	5.0	6.9	5.2	12.1	4.1	0.7	5.0	36.0
Sweden	-	1.2	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	1.3
Switzerland	-	-	1.5	0,8	0,1	-	0.1	-	0.3	-	-	-	-	-	-	-	3.1
United Kingdom	2.0	-	-	6.4	23.7	0.3	24.0	-	-	5.8	-	1.7	1.7	0.5	-	-	41.1

Source: BP Statistical Review of World Energy, June 2010.

1.2. CRUDE OIL

Europe consumes ca. 680 MTA (million tons annually) of crude oil. The biggest consumers are Germany (113.9 MTA) and France (87.5). Other top consumers include Italy (75.1), the United Kingdom (74.4), Spain (72.9) and the Netherlands (49.4).

Table 4 - Crude oil overview in European countries[4]

[MTA]	Production	Consumption	Import	Export
Austria	-	13	7.5	-
Belgium	-	38.5	31.7	-
Bulgaria	-	4.4	8.3	-
Czech Republic	-	9.7	7.1	-
Denmark	12.9	8.2	3.5	8.6
Estonia	-	-	-	-
Finland	-	9.9	10.7	-
France	-	87.5	71.8	-
Germany	-	113.9	98.3	0.1
Greece	-	20.2	17.7	1.0
Hungary	-	7.3	6.4	1.0
Ireland	-	8	2.7	-
Italy	4.6	75.1	76.7	0.2
Latvia	-	-	-	-
Lithuania	-	2.9	8.4	0.1
Luxembourg	-	-	0.0	-
Netherlands	-	49.4	48.1	0.7
Norway	108.3	9.7	1.0	88.2
Poland	-	25.5	20.0	0.2
Portugal	-	12.9	10.5	-
Romania	4.5	9.9	8.4	-
Slovakia	-	3.9	5.7	-
Slovenia	-	-	-	-
Spain	-	72,9	52.6	-
Sweden	-	13.7	19.0	-
Switzerland	-	12.3	4.8	-
United Kingdom	68	74.4	47.6	38.6

Source: U.S. Energy Information Administration 2009 (http://www.eia.doe.gov)

[4] Light and middle distillates, fuel oil and other products made from crude oil are not shown here, therefore there are some differences between specific columns.

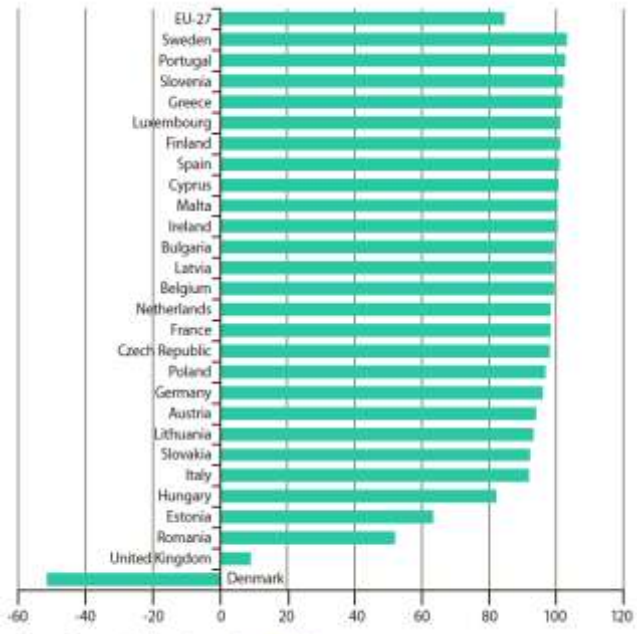
In order to meet such high demand, Europe relies on crude oil imports, especially from Russia and other former Soviet countries (almost 350 MTA). Other important external sources of crude oil are the Middle East (105.9) and Northern and Western Africa (129.3). Within some Western European countries crude oil is also produced but on a smaller scale, especially in Norway (108.3 MTA) and in the United Kingdom (68.0). Other internal producers are Denmark (12.9), Italy (4.6) and Romania (4.5).

Table 5. Crude oil: sources of supply to the EU.

from	[MTOE]
US	20.3
Canada	0.3
Mexico	5.6
S. & Cent. America	21.0
Former Soviet Union	347.8
Middle East	105.9
North Africa	81.0
West Africa	48.3
East & Southern Africa	0.1
Australasia	0.1
China	1.8
India	3.5
Japan	1.1
Singapore	1.9
Other Asia Pacific	4.4
Unidentified5	22.1
Total imports	665.3

Source: BP Statistical Review of World Energy June 2010.

Table 6. The EU energy dependency – crude oil, (%).



Source: Eurostat, 2008.

With few exceptions, the vast majority of European countries are dependent on imported oil supplies, similarly to the situation with natural gas referred to in chapter 1.1. In addition to some domestic production (Norway, UK), which covers less than one third of European consumption, the importation of oil is crucial to all EU member states (*see Table 6*).

[5] Includes changes in the quantity of oil in transit, movements not otherwise shown, unidentified military use, etc.

2. EXISTING AND PLANNED MECHANISMS FOR ENERGY SUPPLY CRISIS MANAGEMENT

Existing mechanisms for energy supply crisis management include those which have been implemented in the EU member states as well as those applied in a wider range of countries. Since the EU – or more precisely the European Community – is a political entity whose aim is to increase economic integration with legislative tools for implementing common standards, the overall solutions and impact cannot be considered as an example of effective measures. This will be demonstrated more widely below. In contrast, the ideas and actions exhibited by the International Energy Agency – an international organisation whose origins date from the oil shock of the 1970s, and which represents collective action by countries of the Western World – are an example of a good approach to the difficult problem of making international relations workable in the case of a crisis in energy supply. However, even some good experience in preventing crisis with one energy carrier (in this case crude oil) cannot provide certainty of a successful outcome with another in the future (the IEA natural gas security system).

2.1. THE INTERNATIONAL ENERGY AGENCY

Overview. The International Energy Agency (IEA, the Agency) is an autonomous international organisation linked with the Organisation for Economic Co-Operation and Development (the OECD) consisting of 28 Member States[6]. The governments of the member countries are committed to taking joint measures to meet oil supply emergencies. These and other provisions – such as sharing energy information, co-ordination of energy policies and development of rational energy programmes – are embodied in the Agreement on an International Energy Program (I.E.P.), the treaty pursuant to which the agency was established[7]. The I.E.P. agreement requires the countries involved to hold oil stocks equivalent to at least 90 days of net import and to release stocks only in the event of major disruption of supply, and sometimes to use other agreed measures such as demand restraint, production surge or fuel switching.

How to minimise a potential oil crisis? The first step for effective action during an emergency situation is establishing a clear organisational structure. The IEA emergency structures include:

- the Governing Board, which is comprised of senior energy officials representing member states, and which determines the major policy decisions,
- an Executive Director, who consults with and advises the Governing Board,
- Expert-based Directorates inside the IEA.

The consultation process to determine the need for IEA co-ordinated action can be accomplished within 24 hours if necessary. At individual member country level, there is a “contact point” or a partner for the IEA bodies called NESO (National Emergency Sharing Organisation), which is responsible for nationally implementing the decisions made at the IEA level.

[6] Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Republic of Korea, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States

[7] Agreement on an International Energy Program, 18 November 1974; http://www.iea.org

A second condition for successful action is having sound rules of conduct that are respected by all member states. Before joining the IEA, every candidate country has to harmonise its own regulations with those binding within the organisation and therefore there are few problems when implementing a common decision or action.

In the particular case of the IEA, another condition for success is the collective philosophy of its work. As an international organisation with some rights and responsibilities, this is based on the need for gaining the formal agreement of every member state concerning actions undertaken. Naturally, a set of procedures should make the decision process clear and fast; nevertheless formal voting on proposals made by representatives of member states is the rule. In this case the IEA Secretariat plays a very important role[8]. It should be effective, impartial and supportive of the Governing Board and indirectly of member states. In no way should it behave as a separate player within the decision making process.

In order to achieve the objectives of an international organisation (in this case the IEA) and to maintain the role of member states and of the internal bodies (while preserving the founding principles such as the collective philosophy of operation), the continued agreement between founding parties (usually states and their governments) is a crucial element. There should be a group of parties including major players (majors) who will be able to convince others to follow the founding principles. In the IEA, the major oil producers and consumers set trends and propose new solutions. In this context, understanding the role of the Director General and of the Secretariat is crucial. It is virtually impossible to appoint anyone to the main positions in the organisation if they do not understand the complex relationships between the majors and the others, and who is not in fact supported by the majors. On the other hand, all member states always finally agree to any decision and therefore the onus – to find ways of cooperating and reach a compromise – rests with the main players.

In practice the Secretariat makes everyday management decisions and acts as an instrument for the transmission of the majors' opinion in an emergency situation. In so far as the IEA is a dedicated and non-political organisation, this model of management works smoothly. This is a practical example of managing an international organisation – but it does not mean that it is always positive. Nevertheless, since the parties are satisfied and newcomers still find proposed solutions useful, mute consent lets the IEA work effectively.

Oil crisis reaction measures. The IEA collective response actions are designed to mitigate the negative impacts of sudden oil supply shortages by making additional oil available to the global market through a combination of emergency response measures, which include both increasing supply and reducing demand. Although supply shortages may bring about rising prices, they are not a trigger for collective response action, as these can be caused by other factors and the goal of the response action is to offset an actual physical shortage, not react to price movements[9].

[8] "The IEA Secretariat may be regarded as the centre of the visible, tangible and permanent presence of the Agency. The Secretariat consists of approximately one hundred and forty members based in Paris. Members of the Secretariat are selected from highly qualified personnel from IEA member countries. Their function is not to represent their countries in the Agency, but to carry out the tasks of the Secretariat in an impartial way under the authority of the Executive Director, without seeking or accepting instructions from their governments or from any other external source". In: Richard Scott, "The history of the International Energy Agency. 20 years of the IEA. Origins and Structure"

[9] *IEA response system for oil supply emergencies*, IEA 2010

Each IEA member country is required to maintain total oil stock levels equivalent to at least 90 days of net imports, but there is flexibility in meeting this requirement which allows countries to use both crude and refined products. Stocks can be held as government emergency reserves, through specialised stockholding agencies, or by placing minimum stockholding duties on industry. Stocks held by agencies or owned directly by a member state government are referred to as public stocks. Industry stocks include both stocks held to meet government stockholding duties and stocks held for commercial purposes.

Stock draw is the main mechanism for coping with crisis, but there are also other agreed methods, such as a **surge of oil production**, naturally available only to those member countries which have indigenous production and spare production capacity; **fuel switching**, which is of less importance; and **demand restraint**. The latter is based on the assumption, that in oil shortage situations, governments should introduce coordinated action for oil consumption reduction – such as administrative speed reduction or driving restrictions. Obviously, during supply disruptions mainly stock draw and demand restraint mechanisms are used to bring more significant relief to markets. Currently, there is a decreasing capacity to switch fuels in power generation or transportation, and limited surge production capability make these response measures less viable.

What is important is that the expectation of IEA collective action alone has already been shown to have a calming effect on the market. IEA solidarity is particularly powerful for communication purposes, enabling a collective and united media strategy.

A supply crisis situation causing disruption in oil supplies to the market may have an impact on the functioning of the economy of an individual member state or on a group of member states. In the first case, a government can introduce some single relief action, using provisions included in the domestic legislation (which are often similar to those agreed by the IEA) as well as call for coordinated action by the organisation. In most cases, a collective response will involve public stocks, industry stocks or a combination of both. Public stocks may be released through processes such as tenders or loan offers. Industry stocks held to meet minimum stockholding requirements are made available by decisions of a temporary reduction in stockholding duties. It is noteworthy, that industry stock, in case of emergency relief, is rapidly available to the market for producers or traders. Public stocks work rather like placing additional volumes of oil into the supply chain. Releasing stocks also has financial implications; the price for the released goods is in fact set by the market with a current demand and supply relationship, although legal possibilities for price regulation are available.

Additional actions taken by the IEA to ensure the effectiveness of the response measures also include the constant monitoring of the oil market, emergency response reviews, and emergency response exercises as well as maintaining and monitoring emergency stock levels.

Emergency policy for natural gas. The IEA originated from the oil supply crisis of the 1970's and its activities and experience is focused on oil security. After more than 30 years of operation, the general situation of the energy market has changed so much that this organisation has also been encouraged to take on the issue of gas security and the implications for the tried and tested collective response mechanisms.

The *"ideal principle"* of the IEA gas security is that in open, transparent gas markets, supply and demand are balanced by the market. Therefore, gas security is *"the capability to manage – for a given period of time – external market influences which cannot be reduced or balanced by the market itself*".

A deeper analysis made by the IEA bodies[10] examined different gas security measures used locally such as strategic gas stocks, and tried to present some alternatives to this 'ineffective and expensive gas emergency measure', as the IEA analysis describes it. Some of the options presented include supply response (spot LNG purchase), demand response (modification of consumption depending on the price of gas on the market), fuel switching or the diversification of suppliers.

Pressure at expert-level to identify some reasonable solutions and to prepare collective action for a gas emergency received no support at the political level of the IEA. Very limited action was taken by the Governing Board at the Ministerial Level in 2009, which was restricted to an agreed Action Plan only, which highlighted the importance of a well-functioning, flexible gas market and encouraged member countries to improve individual emergency preparedness. In fact, the only thing which could be implemented within the IEA collective action for supply crisis emergency response is the prospect of adjusting the oil stock relief procedure in case of gas disruption that could mitigate the negative influence on the overall economy of a single country[11].

Why is gas not an issue? It seems that gas security exceeds the current response capacity of the IEA, and more importantly, it attracts no support at the political level of the organisation. This may be explained in part, by the essentially different conditions concerning the trade and supply of gas compared to that of oil; natural gas has been a locally supplied commodity, strongly linked with a highly costly and inflexible distribution system (pipelines). Another factor contributing to this different approach by the IEA could be that within the forum of the European Union, the development of a process with regard to gas security has already started. Since the IEA is based on the EU member states, they could have supposed that Brussels lead action was a sufficient tool. The EU energy security concept is also closely linked to the creation of a single energy market, but goes far beyond the studies and proposals from the IEA. In a way it was the reverse side of the collective action idea, which means the consent of all parties involved. In this case co-operation was impossible. It also leads to the consideration that the idea of collective action works only when all the involved entities share the same view of certain problems, or when the effects achieved by collective action can be attractive for all; in the opposite situation even one voice "against" may stop the action.

2.2. THE EU AND ITS CRISIS MANAGEMENT MECHANISMS

Since the Lisbon Treaty, the European Union is formally an international organisation and one of its interests is energy security. But this issue is not something new for the EU. The European Community – one part of the previous EU – had been in existence earlier and was concerned with this problem for over 40 years. During this period, the Community was able to develop a crisis management mechanism for crude oil and refining products as well as for natural gas. In the case of the Union, a very important factor is the relation between the European Commission (the EC, the Commission) and the other EU bodies (the European Council and the European Parliament). The Commission has the initiative in the legislative process and has a duty to safeguard the Union's treaties. Every draft law has to be accepted by the Council (member states governments) and sometimes also in co-decision with the Parliament. Complicated procedures make the preparation process long and often ineffective; the only initiator, the EC, is able to keep the process moving and in fact controls the current state of progress, but in fact this makes the European Commission a separate political actor. The fundamental idea of the European Union is that it is

[10] *Emergency Policy for natural gas*, November 2008, IEA/SEQ(2008)45

[11] Communiqué of the 2009 Meeting of the IEA Governing Board at Ministerial Level and Action Plan of the 2009 Meeting of the IEA Governing Board at Ministerial Level

based on collective action by member states, but the development of formal or factual powers centred in the EC means that it is more akin to common action.

What would the EU do in case of an oil crisis? Why is this not fully effective? Since the end of the 1960s, the European Union has been aware of the need to prevent potential oil supply shortages. Council Directives from 1968 and 1972 therefore placed a duty on member states to build up and maintain strategic oil stocks, which were eventually set at the equivalent of at least 90 days of the daily internal consumption. A Council Directive from 1998 developed and strengthened the previous provisions. The provisions from all three were codified in one directive in 2006. Although this system is still in force, there have been announcements that changes will be made in 2013. [12]

The main arrangement emanating from the binding EU legislation is that of the duty to hold strategic stocks of oil and petroleum products. Member states are required to build up and constantly maintain minimum stocks of petroleum products equal to at least 90 days of the average daily internal consumption during the previous calendar year. Stocks must be available and accessible to member states so they can react immediately in the event of a supply crisis. Stock-holding may rely on a system of partial or total delegation of this task to a stock-holding body or agency. Member states have a duty to ensure administrative monitoring of their stocks. Breaches of these control mechanisms are covered by a system of penalties. Another important feature of the system is that in the event of a supply crisis, a coordinated operation is put in place and the EC organises a consultation between the member states. Member states should not, in principle, make withdrawals from the stocks that would reduce them below the compulsory minimum level before such a consultation – except in a particularly urgent situation. Member states must therefore inform the Commission of any withdrawal from stocks[13].

From this short overview of the main EU oil stock provisions that will be in force until 2013, it is already possible to state that this system has been much less effective than that of the IEA. Firstly, it has focused solely on oil stocks and made no mention of any other measures such as demand restraint. Moreover, it has provided a different method of calculation for oil and petroleum product stocks than the equivalent provisions of the IEA. The effect on member countries of the EU and the IEA is that they are obliged to maintain a dual system of registers, monitoring and reporting. The main problem was the quite complicated and prolonged decision making process concerning the release of stocks (although this was in line with the formal functioning process of the EU). In the case of a supply crisis, the Commission could begin consultations within the forum of the dedicated committee known as the Oil Supply Group[14]. Real-life examples (i.e. during the Katrina hurricane in 2005) showed that the consultation process could not evolve

[12] The set of Directives concerning oil stocks are as follows: Council Directive 68/414/EEC of 20 December 1968 imposing an obligation on Member States of the EEC to maintain minimum stocks of crude oil and/or petroleum products, Council Directive 72/425/EEC of 19 December 1972 amending the Council Directive of 20 December 1968 imposing an obligation on Member States of the EEC to maintain minimum stocks of crude oil and/or petroleum products, Council Directive 73/238/EEC of 24 July 1973 on measures to mitigate the effects of difficulties in the supply of crude oil and petroleum products, Council Directive 98/93/EC of 14 December 1998 amending Directive 68/414/EEC imposing an obligation on Member States of the EEC to maintain minimum stocks of crude oil and/or petroleum products, Council Directive 2006/67/EC of 24 July 2006 imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products (Codified version), Council Directive 2009/119/EC of 14 September 2009 imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products.

[13] http://europa.eu/legislation_summaries/energy/external_dimension_enlargement/l27071_en.htm

[14] Art 3 of Council Directive 73/238/EEC of 24 July 1973 on measures to mitigate the effects of difficulties in the supply of crude oil and petroleum products

into a decision-making process[15]. Additionally, inconsistency between the IEA decisions and those of the Commission has been a simple path to legal problems for the countries who are members of both organisations.

In order to be able to mitigate a supply crisis, the European Union revised the oil stockholding system in 2009. This revision is concerned with enhancing the system (particularly through the creation of a Central Stockholding Agency by each member state, with responsibility for maintaining oil stocks –including the acquisition and management of these stocks as a non-profit making body), bringing it into line with the existing standards of the IEA, and optimising administrative duties by member states (stock calculation, reporting). Apart from this, some emergency procedures have been introduced, concerning international decisions on releasing stocks and contingency procedures in particular[16].

The new regulations should be in force from the beginning of 2013, since they will be enacted through member state national legislation. Even before their actual effectiveness is tested, it can be stated that they are now more reasonable, since they include sound proposals for harmonisation of procedures with those of the IEA, and clarification of emergency measures focused on providing a fast reaction in the case of a crisis. Looking at the process of preparation for the new EU oil crisis regulations, it could be said that the influence of the IEA, and its good reputation for oil crisis prevention capabilities, were the main factors on which the idea for the new regulations was founded. There was in fact no need to invent anything new: the adaptation of some previously-established good examples to the specific EU conditions was sufficient.

The evolution of the EU natural gas security system. The European Commission always proposed a single market as a remedy for the natural gas supply problems occurring regularly within the EU. As long as the affected countries were only EU candidates or newcomers from Eastern and Southern Europe who did not present their interests effectively, a general directive and some studies could suffice. Directive 2004/67/EC[17] in particular was very much framework legislation which could enable member states to establish general security-of-supply policies that were transparent, solidarity-based, non-discriminatory and consistent with the requirements of a single market in gas.

Duties placed on individual European countries were limited to some general requirements such as protecting households and small customers from the risk of their gas supplies being cut-off, and some requirements for monitoring and reporting to the EC. A Gas Coordination Group was established as a special forum for discussion on the security of supply of natural gas, to facilitate the coordination of security-of-supply measures by the Community, in the event of a major disruption of supply. This group was also able to assist member states in the coordination of measures taken at national level. The Group was composed of representatives of member states, of representative bodies from the industry concerned and of relevant consumers, under the chairmanship of the Commission[18].

[15] The decision making process in this particular case lasted quite long and was completed with the issue of the Recommendation of 7 December 2005 on the release of security oil stocks following the supply disruption caused by Hurricane Katrina C(2005) 4655.

[16] http://europa.eu/legislation_summaries/energy/external_dimension_enlargement/en0006_en.htm

[17] Council Directive 2004/67/EC of 26 April 2004 concerning measures to safeguard security of natural gas supply, Communication from the Commission to the European Parliament and the Council "The internal market in energy: Coordinated measures on the security of energy supply" COM(2002) 488 final

[18] Commission Decision 791/2006/EC of 7 November 2006 establishing the composition of the Gas Coordination Group

It seems that the initial idea was that in the case of a supply crisis, following measures undertaken by individual countries, collective action by member states would be the answer to an energy carrier shortage. During the period of application of the Directive, it transpired that the common action idea was dominant – starting with the role of the EC as a judge who assess the circumstances, and a leader in the Gas Coordination Group, which was in fact dependent on the decisions taken by the Commission. Newcomers to the EU expected that the generally powerful Commission would fight for them even though it did not have any formal plenipotentiary powers.

The European Commission was asked to react to a crisis several times, but its tools were in fact ineffective. Member states who wished for certain reforms of the EU natural gas security system always presented some examples of provisions included in the Directive which they considered as extremely ineffective e.g. major supply disruption – an indicator of the level of disruption of supply which was a trigger for Community action. Emergency measures were only to be introduced when more than 20% of natural gas supplies to the whole Community were cut. However, this level was higher than the total consumption of nine Eastern and Southern European Union member states! Furthermore, the emergency measures proposed in that situation were more supportive or political in nature. Certain member states (especially "new Europe") would have expected that with the formal involvement of the EC, common action would be undertaken to end a crisis situation. However, examples show that tangible effects had been reached when the Commission and the member states had applied collective action, using specific instruments which were at their disposal: political engagement, bilateral contacts, and personal relations. In theory, the Commission should have adhered to its mandate emanating from European law; but in practice, when considering this Directive it had never gone far enough. In truth, in some emergency situations, political moves by the EC – even out of mandate – would have been welcome. Generally, however the "old EU member states" have always maintained their position and the idea of Commission supremacy was not an issue.

Regulation 2010/994/EU concerning measures to safeguard the security of gas supply. Strong criticism and united action by some member states during a discussion in the European Council (as well as the clear and strong voice of the European Parliament), and finally the unprecedented gas supply crisis in January 2009 (as a result of the Russia-Ukraine dispute), enabled the adoption of new legislation on the security of supply of natural gas. Experience gained before and during the entry into effect of Directive 2004/67/EC finally led member states and the EC to develop a Regulation – legislation that is directly binding upon EU member states without transposition to a national legislation. This gave a very clear signal to the public that the security of natural gas supply is of the highest interest to the European Union.

As stated in article 1: "This Regulation establishes provisions aimed at safeguarding the security of gas supply by ensuring the **proper and continuous functioning of the internal market in natural gas**, by allowing **for exceptional** measures to be implemented when the market can no longer deliver the required gas supplies and by providing for a **clear definition and attribution of responsibilities** among natural gas undertakings, the Member States and the Union regarding both preventive action and the reaction to concrete disruptions of supply. This Regulation also provides transparent **mechanisms**, in a spirit of solidarity, **for the coordination of planning** for, and **response** to, an emergency at Member State, regional and Union levels.[19]" This fragment of the Regulation provides a view of the philosophy which lies behind the

[19] Regulation (EU) No 994/2010 of the European Parliament and of the Council of 20 October 2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC Text with EEA relevance.

EU security of gas supply mechanism. Firstly, “proper functioning of the internal market”, then “exceptional measures” when the market no longer works, as well as distribution of “responsibilities” and “mechanisms for the coordination of planning and response to an emergency”. The Internal market for natural gas is not the subject of this paper, but nevertheless, during recent years the EC had focused on the development of conditions for free energy flows across Europe. Concluding that the market itself is not able to cope with some crisis situations – or does not function very well when major external suppliers are often not market oriented but rather politically driven entities – the European Union as a whole decided to introduce coordinated planning and response for an emergency situation, not without problems caused by those member states who currently maintain better contacts with external suppliers. Since the regulation is dated 20th October 2010, the new arrangements were not yet tested in practice. Moreover, it will take between a few months (formal and organisational requirements) and several years (infrastructure expansion and new energy flows) for all the provisions in the regulation to come into force. Apart from that, the regulation can still be considered as a success in terms of the idea of the European solidarity and collective response.

The emergency management mechanism provided for in the regulation is based on two pillars: **coordination and planning**, which includes the establishment of preventive action plans, emergency plans and the provision of infrastructure standards; as well as **emergency response**, which means the coordination role of the EC (represented by the Gas Coordination Group or crisis management group), implementation of previously prepared plans and finally – the **collective response to the emergency in the spirit of solidarity**.

The role of the European Commission has been strengthened in terms of the Regulation provisions concerning gas emergency management – when compared with the former rules. The Commission should be informed when a declaration is made concerning emergency levels in any member state, and as to what remedial action is going to be taken. When any member state sets an emergency stock level, the EC can request a modification of the level if it fails to comply with the common regulation conditions. The Commission may also lift a declaration of emergency when it considers that such a declaration is not justified or no longer justified. The Commission may declare a **Union wide emergency** or a **regional emergency** for a region which has been affected specifically. In cases of a Union wide or regional emergency, the Commission shall coordinate the actions of the member states. This in fact demonstrates a mix of the collective and common approaches (though with some domination of the latter). During the development of legislation, the Commission, the ”new Europe” states, and the European Parliament were all strong supporters of the idea of common action and of a general strengthening of the Commission’s position. However, the final effect cannot be called a “common approach”. It could be said that a discussion between certain “old and new Europe” states, the European Parliament and the European Commission resulted in an actual step back as far as the position of the EC is concerned. In particular, the duty of consultation between the Commission and member states included in the final text of the Regulation is a significant sign that the common approach will not work in the long term. In fact there will be a “coordinated approach” with the role of the EC stronger than before, but not as much as some smaller member states would like.

The most interesting aspect is the emergency reaction initiation procedure envisaged in the legislation. Undoubtedly, this procedure is the result of a political compromise. A detailed set of **emergency levels** (*early warning*, *alert* and *emergency*) – a system of mutual **control** between **emergency action** initiated in a single country and by the EC at the level of the Union, and separation into **regional emergency** or **Union wide emergency** – do not augur well for easy use of the Regulation. In this case, the European Union is

introducing a system which is totally contrary to simplicity, in spite of this being a primary condition for success.

The very new concept of the "infrastructure standard" means that in four years, counting from the entrance of the regulation into force, every single member state must ensure that the natural gas supply infrastructure will be able to provide the country with sufficient amounts of this fuel even in the case of disruption of a single largest item of infrastructure. In fact it is a direct enhancement of interconnection development or demand restraint, as this measure is also allowed (in a form adjusted to the specifics of the gas market).

Another aspect worth mentioning is the involvement of commercial companies in the development of emergency plans at member state level. It will impose a duty on them and therefore, a list of mandatory actions in case of a supply crisis – as well as clear division of responsibilities – would be very welcome.

In summary, greater consideration ought to be given to the difficulties encountered during the development of the Regulation, and the fact that this led to familiarity with at least two concepts of security of gas supply and of crisis reaction mechanisms. Most of the countries of Western Europe were not interested in the development of too ambitious a solution at the level of the European Union. They preferred security at the national level and good commercial bilateral relations with suppliers. In this particular case, they preferred the collective approach; the consent of all governments for any action could provide some margin of security for those who managed to maintain a better relationship with energy carrier suppliers. On the other hand, Eastern and Southern EU member states supported by the European Parliament tried to set the common crisis response mechanism to be as strong and effective as possible. They were afraid, that without action which was unanimous and coordinated by the EU a potential supply crisis would be more dangerous to them than for the so called "old Union" and only common action would make them safe. The question of what will happen in a crisis situation will only be answered after the new rules are applied in practice. In fact the full-use option will only be in force in several years time, once the plan is implemented in full.

The EU-Russia early warning mechanism as prevention in the case of energy crisis. Since the set of internal procedures for the management of a supply crisis was adopted, the EU has been trying to conclude some agreements with external suppliers, which could constitute a framework for mutual contacts in the case of supply problems. Since the most important external gas supplier to the EU is Russia (Gazprom, the supplying company is in fact a *"commercial arm"* of the Russian government), the Community and Russia signed a **Memorandum on an Early Warning Mechanism** on 16th November 2009. The press release states[20]: "*…the EU and Russia have strengthened the current dispositions under the EU-Russia Energy Dialogue to prevent and manage potential energy crises, with an enhanced Early Warning Mechanism that includes a clear definition of the circumstances that would trigger the activation of the mechanism, in terms of what constitutes a <significant disruption of supplies>, be it due to maintenance of relevant infrastructure, accidents, or commercial disputes (…). The mechanism covers oil, natural gas and electricity, and includes three basic steps: Notification, Consultation and Implementation. In practice, it is foreseen for the EU or Russia to notify any likely oil, gas or electricity supply interruption, including an exchange of the assessments of the situation. It would then allow the holding of consultations or, if needed, to have a common assessment of the situation and a joint plan for a solution. Moreover, third parties would be allowed to take part in the arrangement…*"

[20] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/1718

For an instrument in a political game, this Memorandum has been working surprisingly well, to the extent that it is a tool for information exchange. The intention of both sides was to demonstrate to the public that cooperation in the energy field can be effective and therefore the frequency of the contacts based on this memorandum were quite high. Reference to the Memorandum can also be found in the recently adopted Regulation No 994/2010 concerning measures to safeguard the security of gas supply. Motif 46 in the preamble directs attention to the early warning mechanism between the EU and a third country.

An Example of national energy crisis management mechanisms. In a discussion on emergency energy cooperation at the international level, national crisis management mechanisms can also be of interest. Every country – irrespective of their membership in dedicated organisations or how they cope with problems of their own – should have a system constructed specifically to respond to an energy carrier supply crisis. Since this paper mainly concerns countries which are EU member states, it is worth examining some systems at a national level.

Poland – membership means compliance. Poland is a country which is exposed toa serious supply crisis as far as natural gas and crude oil supplies are concerned. In Poland's case, these two energy carriers are at the greatest risk of disruption and are dependent mainly on one geographical source of supply.[21]

The internal system of security for the supply for gas in Poland is fully compliant with the EU solutions and the system of oil security is not only EU compliant but also compatible with that of the IEA[22].

Membership in both organisations was a trigger for preparing the whole process of internal harmonisation of the legislation and in physical stocks. When joining the EU in 2004, Poland went through a period of transition in the field of energy, especially in relation to the level of oil stocks. Attempts to join the IEA finally succeeded but required the country to fulfil stockholding obligations up to 2008. The oil stocks system is based on two pillars: industry stocks (76 days of internal consumption) and public stocks (over 14 days of internal consumption). Other requirements of the IEA system – such as measures aimed at demand restraint – are also in force. In fact, in the field of oil security, fulfilment of the IEA standards also means compliance with the EU standards. This is the case in Poland.

As far as natural gas is concerned, an extra feature of the Polish crisis management mechanism is the duty of stockholding of gas. Companies operating on the Polish market have a duty to maintain gas reserves in underground gas depots, localised in Poland at their own cost – with a statutory minimum level of stocks set at 30 days of internal consumption. In the case of a supply crisis, a competent authority (the Minister of Economy) and a transmission system operator take over the stocks and use them to balance the system; price clearing occurs according to an agreed tariff.

The energy market in Poland is regulated but the authorities tend to refrain from setting prices and duties for companies. The oil and fuel markets are the most liberalised, while the least is that of electricity production and trade. Governments tend to adhere to the rule that transmission system operators – as well as owners of the most important elements of infrastructure – should be companies owned by the state, or under the control of state owned entities. In the case of any energy crisis, a central role is played by the Minister of Economy, who is responsible for energy security and for transmission system operators.

[21] Natural gas consumption in Poland is ca. 14.5 bcma, in which up to 7-9 bcm come from Russia (depending on contracts). Crude oil consumption in Poland is ca. 22 MTA, in which up to 18-20 MTA comes from Russia.

[22] Poland gained membership in the IEA in 2008 after formal IEA invitation in October 2007.

A rather interesting example of administrative influence on the market, aimed at preventing potential supply problems, is a national regulation which sets maximal levels of gas volumes imported from a single supply route by a single company[23]. As the importation of natural gas was dominated by supplies from Poland's eastern neighbour, the main objective of the regulation was to force traders to seek other supply routes and suppliers.

When it joined the EU, Poland became one of the biggest beneficiaries of funds devoted to the implementation of the common coherence and regional development policy. The country introduced the novel concept of using these resources for financing the development of energy infrastructure, especially in the area directly linked with energy security. About 1.7 billion Euros will be spent by 2015 on new gas pipelines, the development of underground gas storage and an LNG re-gasification plant in Świnoujście (on the western Polish Baltic coast). This idea of co-financing energy infrastructure may be treated as a practical exercise in using public funds for the purpose of energy security.

[23] Regulation of the Council of Ministers of 2000 on minimal level of gas supplies from abroad (Journal of Law of the Republic of Poland of 2000 No. 95/1043)

3. EUROPEAN ROAD TO THE CRISIS MANAGEMENT MECHANISM – "COLLECTIVE RESPONSE"

January 2006 – double gas supply disruptions to the EU

In January and February 2006, the Southern and Eastern European countries were affected by two major gas supply disruptions. Italy, Germany, Hungary, Austria, Slovakia, Czech Republic, Poland and even France, Romania and Bulgaria had to manage a sudden decrease in gas pressure in pipelines coming from Russia through Belarus and Ukraine. At the height of the drama, the organisers of the Winter Olympic Games in Torino even had to give serious thought to the possibility of switching off the Olympic torch which was fuelled with gas. The reason for these supply crises at the beginning of 2006 were troubled price negotiations between Russia and the Ukraine, followed by the severe winter in Western Russia. Therefore, a dispute between third-party countries and a severe winter affected 30% of the EU member states deeply.

3.1. European Energy Security Treaty – Poland's idea in 2006

In March 2006 Poland widely publicised its idea for a new intergovernmental energy security agreement – the European Energy Security Treaty (EEST). The EEST non-paper was presented at the 2717th meeting of the Council of the EU - Transport, Telecommunications and Energy Council (TTE) on 14 March 2006[24]. A letter from the Prime Minister of Poland addressed to the governments of all EU and NATO member states explained the rationale and main principles behind such an idea[25]. The aim of the Treaty was to guarantee energy supply support in the case of a crisis situation based on an all member solidarity approach. The Treaty proposal very soon came to be called *The Musketeer Pact*.

EEST – Proposal rationale. According to Poland's government, the need for the Treaty "stems from the contemporary experiences of world interdependence, wherein the difficulties of one country are immediately reflected in neighbouring states. The progressing interdependence of the energy systems of European Union Member States, emerging simultaneously with the common electricity and natural gas markets, dramatically underlines the need for political solidarity in this field.

The negative impact of this kind of interdependence affecting European states was recently exemplified by disagreements concerning supplies of natural gas between Ukraine and Russia (2006), Belarus and Russia (2004), technical deficiencies in the electricity systems between Switzerland and France, resulting in a blackout in northern Italy (2003). Natural disasters, terrorist activity and grid failures may cause energy problems in neighbouring countries. In such situations, there is a need to have a mechanism that would allow us to assist the countries affected in a fast, effective and coordinated manner. This mechanism could be based on a political agreement that would imply mutual security guarantees, modelled on the guarantees at the root of the Western European Union (provided by the modified Brussels Treaty) as well as NATO (provided by the Washington Treaty).

The immediate aim of the EEST is to raise the level of the Parties' energy security. This can only be achieved through the creation of a political space, wherein all the participating Parties would develop their own systems of energy security (different types of power plants and electricity transmission lines, oil and natural

[24] No.: 7160/06 ENER 89 RELEX 136; http://europa.eu/rapid/pressReleasesAction.do?reference=PRES/06/67
[25] http://ece.columbia.edu/academics/regional/conf/Appendix%203%20-%20letter%20of%20Prime%20Minister%20Marcinkiewicz.pdf

gas pipelines, oil and natural gas maritime ports, storage facilities, transmission system interconnectors, development of renewable energy sources, capital strengthening of domestic companies active in this field, etc.). For today, potential political pressure exerted with the use of energy instruments, as well as natural disasters or terrorist acts, can fundamentally hamper or even prevent the achievement of long term objectives.

The geographic situation and the structure of energy consumption and production of European states determine the kinds of dependencies to which they are subjected. Thus, we achieve a basic synergy stemming from a shared interest in building a system of mutual energy security. In other words, the requirement of energy security exists regardless of geographic situation or kinds of energy dependencies. This is one of the most fundamental premises of the EEST.

[…] Current international arrangements do not provide a legal basis for the mutual granting of energy security guarantees by states wishing to do so within a multilateral framework. Neither the European Union, nor the European Community provides such a basis. NATO is not properly equipped in this respect, either: the Parties to the Washington Treaty are required to grant each other mutual assistance in a situation of armed attack. In this context, it is the intent of the EEST to enhance the internal cohesion and solidarity of its Parties in the field of their individual energy security as well as the energy security of the entire area of the EEST.[26]"

EEST – Main principles. The EEST authors stressed that the Treaty would:

- impose on member states a duty to bring coordinated assistance to other member states affected by energy supply restrictions. Such coordinated assistance would be organised with institutional and technical infrastructure designed by the member states,
- introduce a clause that a threat (which does not result from a trade agreement freely concluded) to the energy security of one member state would have been considered as a threat to the energy security of all member states,
- be open to EU and NATO members in the initial phase, and then to other countries at a later phase after the EEST entered into force,
- not interfere with the right of every member country to determine their own model for the "energy mix", and would not be an instrument of intervention on the energy markets,
- establish a mechanism enhancing the establishment and development of an infrastructure for transport, transmission and storage of energy and its sources. The mechanism would include TEN-E framework principles and would be based on a common treaty budget to be used for co-financing key non-commercial elements of the infrastructure,
- propose energy security indicators that would have set the levels of maximum dependency on particular geographical sources, route of transportation and type of energy consumed and imported,
- determine the objectives of a system of mutual confidence and transparency building measures and its development in the relationships between the countries importing and exporting energy and its sources.

Among the different proposals included in the draft, one in particular seems worthy of special commentary: in order to achieve the objectives of a future agreement, the states-parties should have the physical ability to supply their neighbours with energy carriers in the case of a crisis. As far as energy is concerned national or local markets can be isolated from one another for a variety of reasons. Sometimes the building of

[26] Poland's Non-Paper: Outline of the European Energy Security Treaty (7160/06 ENER) http://register.consilium.eu.int/pdf/en/06/st07/st07160.en06.pdf

potential interconnection infrastructure under market conditions is too expensive. On the other hand, full use of existing interconnections may be evident but there may be no spare capacity to transport any extra volumes. To resolve this problem, the EEST proposal included a category of "sleeping pipelines" which are certain interconnecting items of infrastructure with possible two-way flow that are erected solely or mainly for use in a crisis situation. According to the proposal, resources for this equipment would be provided from the existing EU funds such as the TEN-E programme or the Cohesion Fund.

EEST – A weak response, the new EU approach to energy policy and a further major gas crisis. In fact, the principles of the EEST shared the philosophy of the Washington Treaty (NATO) and the Brussels Treaty (Western European Union). A central point of the proposed agreement was the duty for collective action in case of energy supply disruption. This was a purely intergovernmental concept that originated from the assumption that states involved in the same political organisation (such as in the EU) and suffering from the same problems (but not to the same extent) should be interested in mutual assistance.

It soon became apparent that too many partners in Europe had differing opinions. In 2006, the EEST proposal was perhaps an astonishing idea, too futuristic for its time. Intensive consultation by Poland's government and wide promotion of the idea did not lead to any formal conclusions or further steps by other countries, international institutions, or other organisations. The authors were hoping for some sort of European solidarity but it became apparent that a political organisation such as the EU – with economic and policy interests spread across so many areas – cannot "speak with one voice" on this specific energy matter. The failure of this idea was also a signal to a public that the collective approach in the Union does not always leads to a compromise.

A new EU approach to energy policy and another major gas crisis. Meanwhile the European Commission presented a *Green Paper - A European Strategy for Sustainable, Competitive and Secure Energy*[27], which dominated discussions on energy in Europe for months. With the publication of this green paper the EC had started the long process of implementing an energy policy for the EU based on three pillars:

- decreasing the energy impact on the natural environment,
- energy market integration and liberalisation,
- security of energy supply.

This process was finalised with the adoption of the so called Climate Package in 2008 and Third Regulatory (liberalisation) Package in 2009. The European Commission initiative was developed in accordance with Community rules. A mixed collective and common approach left a vast space for the Commission to gain "independence" – which could be seen from the increasing role of the EC in the first and second pillar. However, it was difficult to indicate a final set of legislative provisions or program covering the third pillar of the EU energy policy - i.e. the security of supply. This pillar was always the weakest, as the related assumptions were too closely connected with foreign policy issues, bilateral relations of particular member states with third-party countries, and the duties imposed upon huge and influential energy companies.

Discussion of the security of energy supply received a new impetus following the biggest and most unprecedented gas supply crisis in January 2009. Another dispute on gas prices, in terms of both purchase and transportation, between the governments of Russia and Ukraine (and their native companies) hit the economies and citizens of a major part of Europe. Almost the whole of Southern and Eastern Europe (the

[27] Commission Green Paper of 8 March 2006: "A European strategy for sustainable, competitive and secure energy" [COM(2006) 105]

non-EU Balkan countries, Bulgaria, the Czech Republic, Greece, Hungary, Poland, Romania, Slovakia, and Turkey) faced a situation in which part or even all gas supplies would be cut-off in the middle of winter for more than a week. The EU and the energy companies failed to provide the most basic goods (warmth and electricity) to millions of consumers. This crisis resulted from an over-dependence on one gas supplier, insufficient import alternatives and a lack of the institutional and physical infrastructure necessary for a European-wide assistance response, and was a salutary shock for many governments in EU member states and for the European Commission.

During the following months, the Commission – together with member states and with the European Parliament – prepared, discussed and adopted several papers concerning the security of energy supply. This was in the nature of a response to that shock. All these documents and regulations together with some provisions of the Lisbon Treaty have established a range of tools and procedures whose origins may be found in the EEST draft proposed previously. This signalled the rather unexpected success of a seemingly forgotten idea.

3.2. European Energy Security Treaty – heritage

The Second Strategic Energy Review (SER2)[28]. A set of security of supply and energy efficiency focused documents: green paper, legislation proposals, impact assessments and action plans was published by the European Commission in November 2008. This extensive energy-oriented programme touched on areas of energy infrastructure development (new energy transportation axis in Europe; energy isolated islands such as Baltic States; revision of the TEN-E program (which aims to co-finance the development of energy infrastructure especially through the design and creation of transmission corridors for energy carriers); and reports about new infrastructure instruments) and the improvement of supply crisis tools and legislative instruments.

Regulations on the security of gas supply. In June 2009, the European Commission presented a draft of a regulation concerning measures to safeguard security of gas supply. This legislative acceleration was forced by member states because the EC previously planned to publish this proposal in 2010. The Regulation was adopted in October 2010. Its main principles and provisions concerning the coordinated approach to gas supply crisis situation management are described in detail in chapter 2.2.

Regulations on the security of oil supply. In the meantime, in September 2009 the EU adopted revised legislation on the oil crisis supply mechanism, compatible with the IEA mechanism. This legislation was described in detail on pages 17-18.

The Lisbon Treaty. The Lisbon Treaty was signed by the heads of state and government of the 27 EU Member States on 13 December 2007 and was ratified by all Member States by the end of 2009 (the last four countries were Germany, Ireland, Poland and the Czech Republic). It is intended to reform the functioning of the European Union following the two waves of enlargement which have taken place since 2004 and which have increased the number of EU Member States from 15 to 27[29].

For the first time, in a very clear and irrefutable way, the European Treaty inserted the principle of solidarity into the energy market, which should guide the implementation of an integrated energy market, security of

[28] http://ec.europa.eu/energy/strategies/2008/2008_11_ser2_en.htm

[29] Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community, signed at Lisbon, 13 December 2007, 2007/C 306/01

supply, promotion of energy efficiency and renewable energy sources as well as the expansion of interconnection:

Article 194

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.

The Recovery Plan[30]**.** Regulation (EC) No 663/2009[31] established a programme to aid economic recovery by granting Community financial assistance to projects in the field of energy and was adopted on 13 July 2009. On the basis of this regulation, a budget of 4 billion EUR was targeted as a new financial instrument to co-finance energy infrastructure projects such as interconnectors, wind farms and carbon capture and storage installations around EU.

[30] http://ec.europa.eu/energy/eepr/index_en.htm

[31] Regulation (EC) No 663/2009 of 13 July 2009 establishing a programme to aid economic recovery by granting Community financial assistance to projects in the field of energy

4. Policy recommendations for a new approach to the security of energy supply to Europe

This paper has demonstrated two main philosophical concepts concerning crisis reaction mechanisms (collective and common approach) and several currently implemented crisis management tools for the energy markets. Each of them should be judged through the prism of the factual political and historical circumstances in which they were created. But those specific circumstances cannot be perceived as the sole explanation for the negative assessment of their effectiveness. In this section the authors will try to propose some alternative solutions which originate from market values.

The collective approach to the crisis management mechanisms is based on the assumption that governments decide on unilateral action, without leaving any country aside. An external framework is required; for the IEA this is the OECD. Other conditions include a degree of common interests and shared ideas among the parties. This concept accepts that there is a need for establishing structures for management and crisis response but they should be rather limited and possibly professional in nature. In this model, the managing structure would be purely executive, concentrated on implementing decisions made by the parties, never becoming a policy entity in itself. The collective approach does not even necessarily require fixed procedures or set measures; in fact in a crisis situation everyone should help in all possible ways. Everything should take place in the framework of previously agreed rules.

The common approach to the crisis management mechanisms is much more eclectic; generally it requires common rules and procedures but may also be similar to the collective concept. In the collective approach (at least the version exhibited within the EU), a managing structure (the EC) gets more and more independence, in fact becoming a separate player or entity. It may also create policy and finally reach for supremacy over the parties.

When compared to others described in this paper, the crisis mechanism for the oil market introduced by the IEA seems to be almost perfect. It is effective is for two reasons:

i) the mechanism is clear, quick to run and precise as to the expected results and the area of action

ii) the mechanism has an impact not only on direct technical crisis response operations but also as a "deterrent effect" against those who would deliberately cause a crisis. They are aware that the mechanism of joint, solidarity-based and coordinated reaction will work rapidly, reliably and long enough to protect the economies of the IEA member countries – in contrast to the economies of the countries trying to cause a crisis. It appears probable that the establishment of the IEA and its mechanisms dampened the enthusiasm of those who wished to create and use oil-producing cartels to interfere with the world economic order. OPEC, the only cartel currently in existence, is not the same organisation as it was when founded in 1960. Currently, OPEC co-operates very effectively with the IEA and maintains a stable and predictable production policy, ensuring sustainable development of the global oil market.

The IEA has chosen the collective approach to the crisis management mechanism. In fact, the intergovernmental model was the only possible one for an organisation created in an ad-hoc fashion as a response to the sudden oil shock. All parties had their interests, all had agreed to the principles, and eventually began to trust one another. This was also possible because of the fact that member states were more or less similar (for example, since all were members of the OECD, all had to comply with certain standards). The role of the majors in the decision-making process within the IEA should not be underestimated.

A similar instrument for the oil market crisis in the EU was finally adopted in 2009. This mechanism was upgraded to a fully compatible and semi-IEA mechanism, which clearly proves that the IEA has developed a standard model for this field.

The collective approach to the crisis management mechanism is in fact more market-oriented than common action. Based on our understanding of how the system functions within the IEA we must notice that without free-trade tools and some authentic needs of energy companies, this concept could not function well.

The lack of implementation of similar solutions for the gas market – in particular in the EU – seems to be a glaring omission. The high cost of establishing and maintaining emergency stocks of gas is often given as an explanation, but this argument is invalidated by the lack of real alternative tools and the fact that the IEA's mechanism for oil (which was also expensive at the stage of its introduction) has paid for itself many times over – by creating a guarantee for the economies of member states that the effects of a crisis will likely be avoided.

In 2006, Poland presented the EEST in an attempt to tackle the lack of a sufficiently effective crisis management mechanism for energy not limited to just the gas market. The purpose of the Treaty was to build a tool of dual effectiveness: on the one hand as a range of crisis procedures and investments (such as the construction of interconnectors for crisis situations – the so called "sleeping pipelines") and on the other hand as a political tool of deterrence against those who would cause a crisis. Crisis response procedures were to be based on market principles, i.e. coordinated assistance would not have been free of charge for a beneficiary, on the contrary such assistance would have been quite expensive due to the proposed additional "crisis premium" in the price proposed by the donor.

As it turned out, 2006 was obviously not the right time for the proposal of such solutions, even if there had been an expectation that most of the conditions – described above as crucial for the collective action mechanism – were in place.

But in 2009, the strenuous efforts of the European Parliament and several governments of the EU member states made it possible to enact a Regulation on the security of gas supply. The concept of a collective action mechanism was slightly changed during work on the legislation and evolved into a mixed structure with dominance of the common action philosophy. In fact it became a coordinated action concept. However, this compromise has still not brought Europe an adequate crisis mechanism; a simple tool – quick to use with clearly laid down procedures and a range of management responsibility – was still absent. Although the European Commission stands to gain more power in the case of a supply crisis, it still has to consult with EU member states before taking any action. Only in a very serious state of crisis would the EC be able to issue instructions to the national authorities of the EU member states, but this would still require consultation with the Gas Coordination Group. This too is a result of the collective action concept; independent governments were not interested in deepened cooperation.

Europe still faces the challenge of implementing a consistent external energy policy. Finally, the Union needs an effective and simple mechanism to respond to crises of energy supply, which will be accepted by all its member states. Europe's *"speaking with one voice"* to non-EU countries means common objectives and tools agreed at intergovernmental level, which are used in case of energy crisis. It seems clear that no solution which is contrary to a member states view of energy security will be accepted. Even if the European Commission gains formal plenipotentiary powers and has an opportunity to introduce the common approach, the opposition of a single member state (particularly one of the bigger and more influential ones) will make those powers worthless. The collective approach is a fact, even if sometimes it prevents the achievement of better practical effects from crisis management action (*vide:* potential mechanisms which could have been, but never introduced in the regulation on security of gas supply). The common approach to the security of supply cannot work effectively – not only because of the contrary interests of member states, but also because of the weakness of the EC itself, which although formally independent often acts as a second body (after the Council) representing governments of member states rather than as the representative of the Union.

Does the EU need another energy supply shock, even greater than the one in January 2009 to understand the need for a simple and effective gas crisis mechanism? It is still not too late to agree on a clearly defined collective approach energy crisis response tool, which will join the forces and attitudes of Western and Eastern Europe in a synergistic effect. A solidarity assistance mechanism, together with interconnected transportation infrastructure, organised in an ownership unbundling regime, will result in the strongest, most effective, secure and competitive integrated energy market in the world. The European energy market, a market of consumers, should not belong to the suppliers.

When thinking about possible organisation of the Europe-wide energy security system, we must think about liberalisation of the energy market and also about liberalisation of the conditions offered by external suppliers to the European companies and to the consumers. Liberalised markets could use more effectively their natural instruments like demand and supply, but they should also be precisely regulated. Finally, liberalised energy markets could become more independent from the influence of governments, which often want to use them in contacts with third-party countries as an adequate platform for building of political cooperation (especially, when these third-party countries cannot offer much more than energy carriers in economy dimensions). Market conditions and a wise energy security system would together provide the ideal situation.

Actions which have been made within the European Union were aimed to create a liberalised **internal** market. Integration under the same scope of regulations according to the principles of equal and transparent access to infrastructure for all – not just for owners (three packages of liberalisation regulations – including ownership unbundling of transmission of energy from the energy trade) changes in our eyes the image of the European energy market. Energy companies separate or sell their network of transmission lines and pipes, and focus on trade of energy and energy carriers. This deepens integration of markets and promotes rational networks linking into an interconnected European network and additionally liberalises and promotes energy trade, making this sector of the economy more market-based and transparent. All these actions were concentrated more on market- opening ideas than on energy security ideas.

This liberalisation process has not been running without obstacles. Some EU member countries try at all costs to slow it down, proposing various derogations and exceptions – such as different levels of ownership unbundling. Their governments simply want to keep "greenhouse conditions" for national energy companies as long as possible. The granted time is used to strengthen bilateral relations with governments and energy companies from third-party producing countries, hoping for special treatment, better trade

terms and some additional economic benefits. Sometimes, such special conditions are obtained: there are some gas pipelines in Europe being built right now that were planned in secret and which will hit the security of other countries (*Nord Stream*); and there are supply contracts signed with different price levels. But what is against logic is that the farther to the West gas is pumped, the less expensive is. This attitude of some EU countries, not only slows down the integration of European energy market, but worse, it weakens the single voice of integrated Europe in communication with third-party countries. Consequently, it makes it impossible to create a Europe-wide energy security management system. This attitude finds its equivalent in the suppliers' behavior: external companies such as Gazprom did not accept the principle of ownership unbundling and third-party access, and want to build their pipelines under a law regime that excludes them from the EU regulations. At the same time, this major Russian supplier counteracts the construction of infrastructure which is independent of it. A good example is limitation of the access to the LNG terminal (under construction) in Świnoujście in Poland, by laying Nord Stream pipeline directly on the sea bed of the Baltic Sea, at the nearby harbor, and just crossing the main sailing route. Also, the majority of Gazprom's existing supply contracts include clauses that are incompatible with EU law – for example those that prohibit further re-export of gas.

If any serious market-based security system is developed, it should be started from **creating real competition among external suppliers** to the EU. This applies most strongly to the gas market, which is dominated by major external companies and some specific infrastructure configuration. The first step must be to concentrate on preparing an effective legal framework, according to which all suppliers would be subject to similar obligations. Some of them seem to be already mentioned in the set of rules creating third legislative packages (unbundling of transmission system operators, third party access), but its scope should be extended not only to the European companies but also to outside actors. Prohibition of re-export or take-or-pay rule, currently typical clauses in supplies contracts, distort competition on the internal market and are used by third country companies, often motivated by their governments as an indicator of political cooperation between states. It has nothing to do with a market game, as well as required support of government in the process of contract preparation. Latest examples comes from Poland where supply contract with Gazprom was backed-up by intergovernmental agreement and price negotiations were outcome of another political consents. This kind of business-conduct should be abandoned on European level and the European Commission should take all measures to prevent it. Of course, one can say that internal law regulation cannot be binding for external companies but examples of existing and functioning European anti-cartel law, used in case of powerful companies coming out of the EU (i.e. of the IT branch) show a legal path.

Only providing clear and applicable to all external companies rules would make them to competition and it will be the introduction to energy security. A control and execution of rules could be placed on the EC (but its capacity seem to be too weak) or on the just created ACER (Agency for Cooperation of Energy Regulators) but also (and possibly with an even better result) on national regulatory offices with united competences. This of course would require some preparations but the potential effect is surely worth the effort?

In our opinion, external suppliers will not be able to put enough pressure on consumers – even with possible actions like threat of supply-cut – unless they get political support from their governments and the EU, or single member states will not surrender. Longer supply-cut is impossible because of the need for revenue on the supply side, mostly connected with national budget demands of the producing countries.

Having the "external dimension" under control, an energy security management system in the European Union could be based on liberalised market rules, when a market came in connection with collective action

philosophy, as it was described before. Free trade of energy would work like the first step of an emergency system, where lack of supplies to end-consumers from one trader is replaced by another. Only in very serious situations, collective actions initiated on the intergovernmental or European level would balance the market.

Introduction of the proposed market-based collective action system could also lead to a reduction of some Europe-wide procedures and rules which have been constructed to fit the current situation which are marked by dominance of external suppliers, and which in fact make energy crisis reaction weak. Complicated regulations concerning measures to safeguard the security of gas supply would not probably be needed as well – cutting down on a part of the bureaucracy of Brussels' and the national governments...

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