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Moving towards a truly Energy Union: best regulatory practices and conditions to promote security of supply and investments in the EU gas market

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Background

The European Union needs a resilient Energy Union. The repeated disruptions of gas supplies during the last years have proven that the European Union (EU) remains largely dependent on sources of import. The current context which is characterized by decreasing national production, increasing energy demand and increasing energy dependency, is putting security of supply in the spotlight of the EU agenda. Achieving a truly internal market, diversifying its energy sources, and reducing the high energy dependency of several of the EU Member States are thus paramount.

Aim

The paper builds upon the current market conditions and regulatory framework in place at the European Union with regards to security of gas supply and investments. It investigates different options and proposes best regulatory practices that policy makers should take into account when adopting measures to ensure both investments and gas security of supply to the EU for the long term future.

Review of the regulatory developments in the EU gas market

EU Energy Framework

Many have been the regulations that have been adopted up to date on energy markets of electricity and gas. The creation and development of the electricity and gas markets has been addressed by the European legislation in three different Packages which were issued in 1996-8, 2003-5 and 2009 respectively. Even though there are many similarities in the electricity and gas regulations, gas will be our case of study.

The first Gas Directive (Directive 98/30/EC) was adopted in 1998. It aimed at creating the regulatory framework for the gas market and gave the first steps towards liberalization. Its main objective was to set the basic rules for the internal gas market, in particular with regards to transmission, storage and liquefied natural gas (LNG) operators, as well as to distribution and supply companies. The Directive included the prohibition for transmission, storage and LNG operators to discriminate amongst users. Regarding third party access, operators could refuse access of users to their systems only in cases where there is lack of capacity available and where access to the system could prevent them from carrying out their public service obligations. Such access could either be negotiated or regulated, but in both cases transparency obligations applied. In the case of those vertically integrated

companies, the directive included a provision which foresaw the need for these undertakings to have separate accounts. Moreover, the directive included the need to favour interconnection and interoperability of the system to make progress towards achieving the internal market, but without practical consequences on the development on new capacity.

The Second Energy Package included two Directives and two Regulations for electricity and gas respectively (one directive and one regulation for each sector), and focused more on developing the concepts of unbundling and third party access while defining the need for independent regulatory authorities. The Package also provided two deadlines for the liberalization of industrial customers and private households for both electricity and gas retail markets.

Gas Directive 2003/55/EC[2] included the requirement of unbundling regarding independence of different activities in terms of legal form, decision making and organization. The requirement applied to a different extent to Transmission System Operators (TSOs), Distribution System Operators (DSOs), storage and LNG facilities who had to ensure non-discrimination and publish their tariffs. Whereas the directive included the obligation for Member States to ensure the implementation of regulated third party access for transmission, distribution and LNG facilities, for storage facilities the directive allowed Member States to choose between negotiated and regulated access. Moreover the Directive included the obligation for Member States to designate an independent regulatory authority who would be responsible, in particular, for monitoring respect of the non-discrimination principle, the level of transparency and competition, the tariffs and methods for calculating them. These regulatory authorities would also act as dispute settlement authorities.

Directive 2003/55/EC laid down common minimum standards to ensure a high level of consumer protection (the right to change supplier, transparent contract conditions, general information, dispute settlement mechanisms, etc.) and took particular care to provide adequate protection of vulnerable consumers (for example, by taking the appropriate steps to avoid disconnection of the gas supply).

The Directive provided for the possibility for Member States to impose, in the general economic interest, public service obligations to guarantee security of supply, economic and

[2] Directive 2003/55/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in natural gas and repealing Directive 98/30/EC. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003L0055&from=GA

social cohesion objectives, regularity, quality and price of the gas supply and protection of the environment.

In addition to the Directive, Regulation 1775/2005 included more details and established the provisions with regards to access conditions to the natural gas transmission systems as well as to contribute to the internal gas market. This regulation laid down the basic principles to ensure a minimum level of harmonization. These included:

- Service conditions for third-party network access
- Capacity allocation mechanisms and balancing rules
- Criteria and methodologies for setting network access tariffs
- Definition of the technical information needed by users and transparency requirements[3]

The Third Energy Package adopted in July 2009 went deeper into the unbundling requirements by establishing a whole new unbundling regime, and defined new tasks for the national regulatory authorities, including the creation of the Agency for the Cooperation of Energy Regulators (ACER) via Regulation 713/2015. It included two directives and two regulations for electricity and gas respectively and the already mentioned regulation creating ACER. The Third Energy Package also improved consumers' rights and included measures for the functioning of the internal gas and electricity markets.

The main provision established by Directive 2009/73/EC refers to Unbundling. Member States may choose between three different options to unbundle the supply and production activities from the gas networks:

- Ownership Unbundling (OU): Full ownership unbundling (integrated energy companies sell off their gas networks establishing separate TSOs handling all networks operations.
- Independent System Operator (ISO): the energy company retains the ownership of its transmission networks but it is obliged to hand over the operation to a separate entity;
- Independent Transmission Operator (ITO): the energy company also retains the ownership of its transmission network but must to abide by specific rules, such as the creation of a supervisory body-composed of energy companies' representatives, third

[3] European Commission, http://europa.eu/legislation_summaries/energy/internal_energy_market/l27078_en.htm

party shareholders and TSO representatives, responsible for the decisions which have a significant impact on the value of the assets of the shareholders

The Directive also covers other aspects such as the definition of vulnerable customers and the strengthening of consumer's rights and retail transparency.

In addition Regulation (EC) Nº 715/2009[4] repeals Regulation (EC) Nº 1775/2005 on access to the natural gas transmission networks.

This regulation aims to:

- setting non-discriminatory rules for access conditions to natural gas transmission systems taking into account the special characteristics of national and regional markets with a view to ensuring the proper functioning of the internal market in gas;
- setting non-discriminatory rules for access conditions to LNG facilities and storage facilities taking into account the special characteristics of national and regional markets; and
- facilitating the emergence of a well-functioning and transparent wholesale market with a high level of security of supply in gas and providing mechanisms to harmonise the network access rules for cross-border exchanges in gas.

Moreover, Regulation 715/2009 establishes the European Network of Transmission System Operators for gas (ENTSOG). Such organisation shall promote the coordination amongst TSOs and develop certain tasks which are described in the Regulation itself, such as Network Codes, Community Wide Network Development Plan, Winter and Summer Supply Outlooks, etc. Such tasks shall be developed in line with the priorities set by the European Commission in a three-year plan and will follow a specific timeline described in the Regulation.

Once the Network Codes are approved by ENTSOG, they are sent to ACER for revision and later on to the European Commission. The European Commission might then decide to send the proposal of network code for Comitology. The network code is then discussed in the respective Comitology committee where Member States are represented. Once an agreement has been reached, and after supervision of the European Parliament and Council, the text is finally adopted.and added to the Regulation as an annex becoming binding regulation across the EU.

[4] Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005, available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:211:0036:0054:en:PDF

In this respect, there are already several Decisions and Network Codes that have been adopted in line with the tasks outlined above:

- Decision (2010/685/EU) of 10 November 2010 amending Chapter 3 of Annex I to Regulation (EC) No 715/2009 on conditions for access to the natural gas transmission networks
- Decision of 24 August 2012 amending Annex I to Regulation (EC) No 715/2009 on conditions for access to the natural gas transmission networks
- Regulation (EU) No 984/2013 establishing a Network Code on Capacity Allocation Mechanisms in Gas Transmission Systems and supplementing Regulation (EC) No 715/2009
- Regulation (EU) No 312/2014 establishing a Network Code on Gas Balancing of Transmission Networks

Infrastructure Regulation

Since the adoption of the different Energy Packages the European Union has been working in the creation of a single competitive internal energy market, removing barriers to trade, harmonising rules, and ending the isolation of the so-called "energy islands". The Council, in its conclusions of February 2011, set targets for these policy goals, being 2014 the target date in which the single European internal energy market had to be completed, and 2015 the deadline in which energy islands had to be properly interconnected with the rest of the internal market.

As mentioned above, one of the tasks that were assigned to ENTSOG in Regulation 715/2009 was to develop the Community Wide Ten Year Network Development Plan (TYNDP) which has to be developed every two years. Even though this plan is not binding, it has to be coherent with the national development plans and vice versa. Moreover, the Regulation also establish that TSOs shall develop Regional Gas Investment Plans which will be published also every two years and need to be consistent with the ENTSOG and national plans.

Since the adoption of the Third Energy Package, three Ten Year Network Development Plans have been published[5]:

- ENTSOG TYNDP 2010-2019
- ENTSOG TYNDP 2011-2020

[5] ENTSOG, TYNDP publications, http://www.entsog.eu/publications/tyndp

- ENTSOG TYNDP 2013-2022
- ENTSOG TYNDP 2015, published in March 2015 and covering for the first time 20 years

More recently, and in view of aiming at completing the Internal Energy Market and contributing to the three pillars of the EU Energy Policy - competition, security of supply and sustainability - Regulation (EU) No 347/2013 on guidelines for trans-European energy infrastructure (the "TEN-E Regulation") was adopted.

The objective of this regulation is to allow the timely development and interoperability of energy infrastructure priority corridors, in order to complete the internal energy market in the most efficient and timely way, and hence deliver the greatest benefits in terms of the EU energy policy objectives.

In particular this regulation:

- addresses the identification of projects of common interest (PCIs) necessary to implement priority corridors
- facilitates the timely implementation of PCIs by streamlining, coordinating more closely, and accelerating permit granting processes and by enhancing public participation.
- provides rules and guidance for the cross-border allocation of costs and risk-related incentives for PCIs
- determines the conditions for eligibility of PCIs for Union financial assistance

Regulation 347/2013 establishes a procedure by which the "Regional Groups" defined in the regulation, shall come up with a list of Projects of Common Interest for their respective corridor. One of the requirements for a project to be eligible to be considered PCI, is to have previously been included in the TYNDP. Moreover PCIs need to have undergone a Cost Benefit Analysis (CBA) which will be performed by the project promoter. In order for all project promoters to apply the same CBA methodology, ENTSOG was defined responsible to develop a common CBA methodology. ENTSOG has applied the so-called Project-Specific CBA to those projects eligible to receive the PCI label. In future editions, the Project Specific CBA will be applied by the project promoters through an online tool developed by ENTSOG. In addition, ENTSOG will have to apply a System Wide CBA in the framework of the TYNDP. All the CBA methodologies had to be delivered to ACER who provided an Opinion. Once ENTSOG took into account the ACER Opinion, the CBA methodologies were submitted to the European Commission before final decision.

The PCI list is updated every two years. The next list will be decided by the Commission by the end of 2015.

The investment costs of construction, operation and maintenance of PCIs are to be borne by the infrastructure users. However, in case of cross-border projects the cost allocation becomes more complex. This Regulation ensures that, in that case, PCIs are eligible for cross-borders cost allocation (CBCA) process through which the costs of the respective PCIs are shared amongst those Member States benefitting from the project on a fair way. The Regulation envisages that the cost allocation is to be decided between those NRAs of those Member States affected by the PCI. If no agreement is reached among them, then ACER shall intervene to take a binding decision within 6 months.

ACER has already issued a recommendation for the treatment of CBCA requests[6].

Security of Supply

In view of the worrying of EU's dependence of gas imports from outside the European Union, the Commission started looking in the early 2000s at regulatory initiatives to safeguard measures on security of gas supply. Furthermore, and in line with the transition towards a single European gas market, the Commission made a proposal including several measures to ensure the security of supply across the EU.

In 2004 the European Union adopted a Directive concerning measures to safeguard security of natural gas supply (Directive 2004/67/EC). The Directive established a common framework within which Member States were able to define policy measures on security of supply which are transparent, based on solidarity principles and coherent with the single gas market.

Such measures included the obligation for Member States to define the roles and responsibilities of all the players which have a role in ensuring security of supply within the market. In addition, the Directive included the need for Member States to ensure supplies to household customers in case of partial disruption, extremely cold temperatures and periods of high gas demand. Protected customers could be enlarged to include Small and Medium

[6] ACER Recommendation regarding the cross-border cost allocation requests submitted in the framework of the first Union list of electricity and gas projects of common interest, available at: http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Recommendations/ACER%20Recommendation%2007-2013.pdf

Enterprises as well as other customers that cannot switch their gas consumption to other energy sources (Article 4 of Directive 2004/67/EC).

The Gas Directive (2003/55/EC) recognised the right of Member States to regard security of supply as a public service obligation. This Directive established the common rules for the internal market in natural gas that enable Member States to take the necessary measures to safeguard supply in the event of a sudden crisis in the energy market. The Community gas market was in the process towards liberalisation, which is why there was a growing need to guarantee the security of gas supplies.[7]

In this respect, Directive 2004/67/EC completed some aspects of Gas Directive/55/EC by imposing additional requirements to the tasks that were already envisaged therein. Another important inclusion was the creation of the Gas Coordination Group – composed of the representatives of Member States and representative bodies of the industry concerned and of relevant consumers under the chairmanship of the Commission. The Gas Coordination Group aims to coordinate the individual actions of Member States related to gas security of supply. It also exchanges information on security of supply with suppliers, consumers and transit countries.

EU-Russia Gas Crisis

The European Security Strategy of 2003 stated that "*Energy dependence is a cause for particular concern in Europe, which is the greatest importer of oil and gas in the world. The imports supply about 50% of the energy currently consumed. In 2030 this percentage will rise to 70%*"[8].

A serious dispute between Russia and Ukraine began in March 2005 over the price of natural gas supplied and the cost of transit. During this conflict, Russia claimed Ukraine was not paying for gas, but diverting that which was intended to be exported to the EU from the pipelines. Ukrainian officials at first denied the accusation, but later on Naftogaz admitted that natural gas intended for other European countries was retained and used for domestic needs. The dispute reached a crescendo on 1 January 2006, when Russia cut off all gas supplies passing through Ukrainian territory. On 4 January 2006, a preliminary agreement

[7] European Commission, Summaries of EU legislation, Security of supply of natural gas, available at http://europa.eu/legislation_summaries/other/l27047_en.htm

[8] A Secure Europe in a Better World: European Security Strategy, Brussels, 12 December 2003, Page 3, available at: http://www.consilium.europe.eu/uedocs/cmsUpload/031208ESSIIES.pdf

between Russia and Ukraine was achieved, and the supply was restored. The situation calmed until October 2007 when new disputes began over Ukrainian gas debts. This led to reduction of gas supplies in March 2008. During the last months of 2008, relations once again became tense when Ukraine and Russia could not agree on the debts owed by Ukraine.

In the 2008 Monitoring Report, after the first Russia-Ukraine Gas War, it was reaffirmed that "*Concerns over energy dependence have grown over the last 5 years. Europe's decreasing production means that in 2030 up to 75% of our oil and gas will have to be imported*"[9].

In January 2009, a new disagreement resulted in supply disruptions in many European nations, with eighteen European countries reporting major drops in or complete cut-offs of their gas supplies transported through Ukraine from Russia. Even though the possibility of such a disruption had long been recognised, countries enacted emergency measures only after the crisis had already developed[10].

The main reason of the 2009 Russia-Ukraine gas crisis was a pricing dispute between the two countries. Gazprom refused to conclude a supply contract for 2009 unless Ukrainian gas company Naftogaz paid its accumulating debts for previous gas supplies[11]. After several negotiations in 2008, Russia decided to cut off its supplies to Ukraine on 1 January 2009. On 7 January, the emergency status was declared when the flows from Ukraine into South-eastern Europe, and partially to other European countries were disrupted. It has to be borne in mind that South-eastern European countries fundamentally depend on Russian gas supplies.

Both countries blamed each other in the dispute. In an attempt to help solve the crisis the European Union sent a mission to Ukraine in order to monitor the gas flows, however this was not successful. The dispute between Russia and Ukraine continued until 18 January when the Prime Minister of Russia (Vladimir Putin) and the Prime Minister of Ukraine (Yulia Tymoschenko) negotiated a new contract for the next ten years. Gas flows to Europe

[9] *Report on the application of the European Security Strategy: security in an evolving world*, Brussels, 11 December 2008, Page 5, available at http://www.consilium.europe.eu/ueDocs/cms_Data/docs/pressdata/ES/reports/104637.pdf

[10] Kovacevic, A.: "The Impact of the Russia–Ukraine Gas Crisis in South Eastern Europe", March 2009, Oxford Institute for Energy Studies. Available at: http://www.oxfordenergy.org/wpcms/wp-content/uploads/2010/11/NG29-TheImpactoftheRussiaUkrainianCrisisinSouthEasternEurope-AleksandarKovacevic-2009.pdf

[11] Kiev told to pay up or gas is off". Upstream Online (NHST Media Group). 24 December 2008. Retrieved December 25, 2008

restarted on 20 January and were fully restored within two days. The crisis had a negative impact on Russia as a reliable energy supplier and on Ukraine as a transit country.

Regulation 994/2010

In this context, the European Union decided to draft a Regulation repealing Council Directive 2004/67/EC concerning measures to safeguard security of supply. The new Regulation was adopted on 20 October 2010 in order to increase standards on security of supply in view of the recent crisis between Russia and Ukraine.

The regulation takes into account that due to the increasing import dependency from the EU and the decrease in national production, it is necessary to address aspects of gas security of supply. The regulation provides for increased solidarity and coordination between Member States with regards to preventive action and in an event of disruption. Regulation 994/2010[12] on measures to safeguard security of supply includes the following provisions:

- Definition of Protected Customers: it includes households connected to a distribution network, and where the Member State so decides, small and medium sized enterprises, social services provided that these customers do not represent more than 20% of the final use of gas and/or district heating installations as long as they are not able to switch to other fuels.
- Responsibility for security of gas supply: the regulation establishes that no later than 3 December 2011, each Member State shall designate a Competent Authority responsible for implementing the measures contained within the Regulation.
- Establishment of a Preventive Action Plan and an Emergency Plan: the Competent Authority of each Member State shall draw up a Preventive Action Plan which shall contain measures aiming at removing or mitigating risks identified and an Emergency Action Plan which shall contain the measures to be taken to remove or mitigate the impact of a gas supply disruption. Such plans shall be exchanged at regional level.
- Infrastructure standard: the N-1 indicator is introduced in order to measure whether in the case of a disruption of the single largest gas infrastructure, the remaining capacity is enough to satisfy total gas demand of the calculated area during a day of exceptionally high gas demand occurring with a statistical probability of once in 20 years. Furthermore,

[12] Regulation (EU) No 994/2010 of 20 October 2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC, available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:295:0001:0022:EN:PDF

the regulation obliges transmission system operators to enable flows at cross border points in both directions.

- Supply Standard: the regulation foresees the obligation to supply the above mentioned protected customers under the following circumstances:
  a) extreme temperatures during a 7-day peak period occurring with a statistical probability of once in 20 years;
  b) any period of at least 30 days of exceptionally high gas demand, occurring with a statistical probability of once in 20 years; and
  c) for a period of at least 30 days in case of the disruption of the single largest gas infrastructure under average winter conditions.
- Risk Assessment: the Competent Authority shall draw an assessment on the basis of the following common elements, of the risks affecting the security of gas supply in its Member State.
- Gas Coordination Group (GCG): it is given more powers than before and shall be convened on a more regular basis. Furthermore the GCG is enlarged to include representatives of the Member States, in particular of their Competent Authorities as well as ACER, the ENTSO for Gas and representative bodies of the industry concerned and those of relevant customers. In this context new rules of procedure[13] for the GCG are approved by the Commission in 2012.

Since the adoption of Regulation 994/2010, EU Member States have been intensively working on implementing the measures envisaged in the Regulation.

EU-Russia Gas Crisis 2014

Despite the increased efforts made by the European Union to strengthen the measures on security of supply, Europe's exposure to Russian gas was again seen in the recent crisis of June 2014.

Aiming at decreasing its dependence from Russian gas, the Ukrainian state-owned company (Naftogaz) signed an access deal to Slovakia's pipeline belonging to Slovakian TSO (Eustream) on 28 April 2014. The deal would provide Ukraine with 3 billion cubic meters of natural gas beginning in autumn of 2014 with the aim of increasing that amount to 10 billion cubic meters in 2015[14].

[13] Rules for procedure for the Gas Coordination Group (January 2012), available at: https://ec.europa.eu/energy/sites/ener/files/documents/rop_of_the_gcg.pdf

[14] Norman, Laurence: "EU Modestly Expands Sanctions on Russia", 12 May 2014, *Wall Street Journal*

In view of the agreement reached between Ukraine and Slovakia, on 1 April 2014 Gazprom cancelled the natural gas discount that had been previously agreed in the Ukrainian – Russian action plan of 17 December 2013, arguing that Ukrainian owed up to $1.7 billion since 2013. Furthermore, and due to several actions taken by the Russian Government, on 16 June 2014 Gazprom stated that Ukraine's debt to the company was $4.5 billion[15]. On 30 May 2014 Ukraine paid $786 million to Gazprom.

The EU, Ukraine and Russia in an attempt to reach an agreement had several trilateral talks which failed and ended up in Gazprom unilaterally deciding that Ukraine had to pay upfront for its natural gas. Ukraine insisted that transit to the European Union would not be disrupted.

Finally, on 30 October 2014, after seven rounds of negotiations between Russia and Ukraine, a $4.6 bn "Winter Package" securing gas supplies for Ukraine and the EU was agreed[16]. The talks, moderated by the European Commission, resulted in a deal that covered gas supplies from October until the end of March 2015. According to this agreement, Ukraine had to settle its debts based on a preliminary price of $268.5/1,000m^3 of gas and payments had to be made in two stages: $1.45 billion in November, and $1.65 billion by the end of 2014.

This adds in total up to $3.1 billion in debt payments, with the final sum of debt to be determined by the Arbitration Institute of the Stockholm Chamber of Commerce between Gazprom and Naftogaz.

Meanwhile, Russia agreed to deliver gas following advance monthly payments from Ukraine. The deal states that Ukraine is free to order as much gas as it needs and is not subject to any take-or-pay obligations.

Ukraine said it would purchase four billion cubic meters of gas by the end of 2014, worth some $1.5 billion.

According to European Union officials the deal secured that there would be no natural gas supply disruptions in other European countries during that period of time.

[15] Russia Cuts Gas to Ukraine While Maintaining Flow to EU , Bloomberg News(16 June 2014)

[16] European Commission, News, "EU-Ukraine-Russia talks agree on $4.6 billion to secure gas supplies"

Energy Security Strategy

In view of the events that have taken place during the past years, and in particular the temporary disruptions of gas supplies in 2009 and 2014, the EU has strengthened its European energy policy. In this respect, and following a request from the European Council, the European Commission published the Communication on European Energy Security Strategy on 28 May 2014. This document was setting out areas where decisions need to be taken or concrete actions implemented in the short, medium and longer term to respond to energy security concerns.

The European Union's natural gas import dependency amounts to 66%. A lot has been done in order to strengthen the EU's energy security in terms of gas supplies and to reduce the number of Member States that are exclusively dependent on a single supplier. Yet despite all the achievements in strengthening its infrastructure and diversifying its suppliers, the EU remains vulnerable to external energy shocks[17].

Following the Communication from the European Commission on Energy Security, the Commission, in cooperation with ENTSOG, issued a report on the resilience of the European gas system[18], also known as "Stress Tests Communication". The report showed the impact of a disruption from Ukraine and Russia on Member States under certain scenarios previously defined by the European Commission. The Commission conducted a number of stress tests and presented the results of a modelling exercise conducted by 38 European countries, including EU Member States and neighbouring countries. It analysed different scenarios, in particular a complete halt of Russian gas imports into the EU for a period of six months. It showed that the regions most affected by a Russian supply disruption would be those which belong to regions such as the Baltic area and Eastern Europe which are less integrated and connected to the rest of Europe. Finland, Estonia, the Former Yugoslav Republic of Macedonia (FYROM), Bosnia and Herzegovina, and Serbia would miss at least miss 60 per cent of the gas they need.

The most pressing energy security of supply issue is the strong dependence from a single external supplier for natural gas. In particular, there are six Member States which from Russia as a single external supplier for their entire gas imports and three of them use natural

[17] EC Communication of 28 May 2014 on a European Energy Security Strategy, available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014DC0330&from=EN

[18] EC Communication on the short term resilience of the European gas system ("Stress Test Communication") available at: http://ec.europa.eu/energy/en/news/stress-tests-cooperation-key-coping-potential-gas-disruption

gas for more than a quarter of their total energy needs. In 2013 energy supplies from Russia accounted for 39% of EU natural gas imports or 27% of EU gas consumption from which around 40% is gas piped through Ukraine; Russia exported 71 % of its gas to Europe with the largest volumes to Germany and Italy[19];

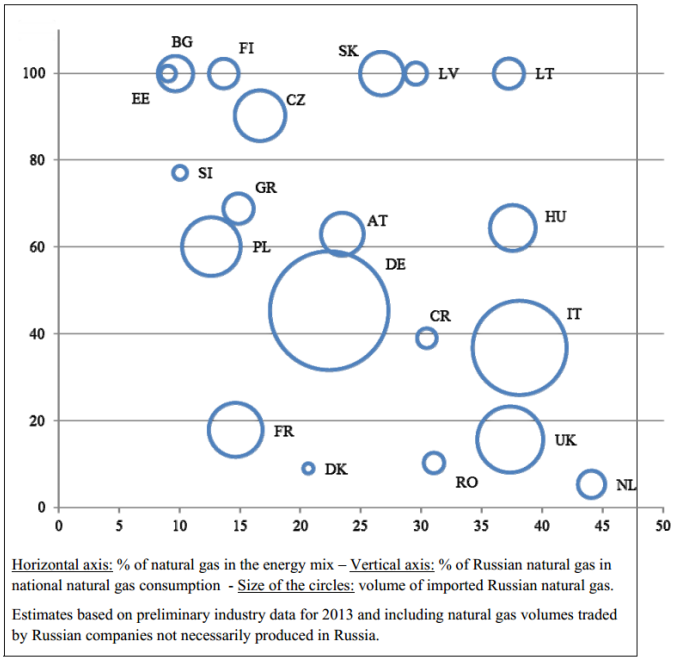


Figure 1: Dependency on natural gas supplies from Russia

The stress tests communication showed that EU countries must work together to ensure no household is affected in the event of a gas disruption. EU countries and neighbouring countries envisage a wide range of measures to mitigate the impacts of a potential supply disruption, from diversifying their supplies, to using reserves and strategic stocks, to curtailing demand and switching fuels where possible.

However, in general these plans are often too much limited to the national market and resort too quickly to interventionist measures. A market-based approach should be the guiding principle, with non-market measures (i.e. the release of strategic stocks, forced fuels switching and demand curtailment) only kicking in when the market fails. In a functioning market, price signals will attract new deliveries of gas, mainly LNG, and limit demand. The

[19] EC Communication of 28 May 2014 on a European Energy Security Strategy, pages 2 and 19, available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014DC0330&from=EN

commercial use of storage will help ensure the demand-supply balance. The communication also contains concrete recommendations on short-term measures for the most vulnerable EU Member States and the neighbouring countries.

European Gas Market Functioning in Times of Turmoil and Increasing Import Dependence

In October 2014 a study[20] was made public of future scenarios concerning the supply of gas to Europe up to 2040, on the basis of the following assumptions:

- From 2015 to 2040 world gas consumption will increase by 48% to 5,300 bcm per year (an average increase of 1.6% per year).
- In the same period, European demand will grow by 20% (an average increase of 0.6% per year, thus below the global increase).
- Europe's own production will decrease to 208 bcm in 2020, and to 199 bcm in 2040 (including a production of 20 bcm of shale gas).
- In view of the political instability in Iran and Iraq, the "South Corridor" for energy supply to the EU will not be fully developed until 2030.

The basic scenario envisages a Brent barrel price of 100 dollars; that all the Russian supply contracts are extended for 10 years, with 65% of the supplies indexed to the price of oil and the remaining 35% to spot market prices; that the Ukrainian gas transit system will carry on being accessible; and that the South Stream gas-pipeline is constructed. All of the aforementioned questions are dealt with in the following sections. The main forecasts of the study for that basic scenario are as follows:

- LNG imports will rise from 66 in 2015 to 146 bcm in 2040, making up for a fall in internal production, whereas imports via gas-pipeline will only increase from 219 to 238 bcm.
- The EU consumption covered by gas-pipeline from Russia will fall from 31% in 2015 to 23% in 2040 (year in which 32 bcm of Russian LNG will be imported), whereas the consumption covered with gas from the Caspian Sea and the Near East will rise from 3 to 10%.
- Prices will go down between 2015 and 2020 because larger amounts of LNG will arrive, but they will go up again until 2040 due to the demand from Asia.

[20] VV.AA, "Business as usual: European gas market functioning in times of turmoil and increasing import dependence", *Brookings Policy Brief*, nº 14-05, October 2014, pp. 11-20, available at http://www.brookings.edu/~/media/Research/Files/Papers/2014/10/european%20gas%20market%20import%20dependence/business_as_usual_final_2.pdf

In view of the above, the EU is still going to require external supply sources and Russia is still going to play a basic role in providing that need.

Spain, a real alternative to gas supply from Russia

One of the most evident consequences of the Ukrainian crisis is the growing concern within the European Union to ensure secure gas supplies as approximately one third of EU's gas consumption comes from Russia, from which around 40% is piped though Ukraine.

Such supply was interrupted in 2006, 2009 and most recently in 2014 and there is fear that the situation could be repeated in the future.

Given this situation, the EU is looking to reduce its gas dependency on Russian gas by mainly diversifying routes and sources of gas.

In this context, Spain could be considered a realistic alternative supply route for Europe. Its total independence from Russian gas, its large LNG regasification capacity, allowing for wide diversification of LNG supplies, and its two gas connection pipelines with Algeria, makes Spain an ideal solution to reduce EU dependency on Russian gas. Such complete independence has been reinforced in the Stress Tests Communication published by the European Commission. The results show that the Iberian Peninsula would not be impacted by such Russian disruptions.[21]

According to BP statistical data, Russia produced in 2013 a total of 604.8 bcm (billion cubic meters) and imported another 27.8 bcm from Central Asia. A total of 162.4 bcm were exported to the EU from which approximately 50% (i.e. > 80 bcm) transit through Ukraine. The most important entry point for Russian gas into the European Union is on the "Brotherhood" pipeline which transited 52 bcm in 2013. A gas supply disruption from Russia would mean that at least this amount should be substituted by other sources of supply.

[21] EC Communication on the short term resilience of the European gas system, available at: https://ec.europa.eu/energy/en/news/stress-tests-cooperation-key-coping-potential-gas-disruption

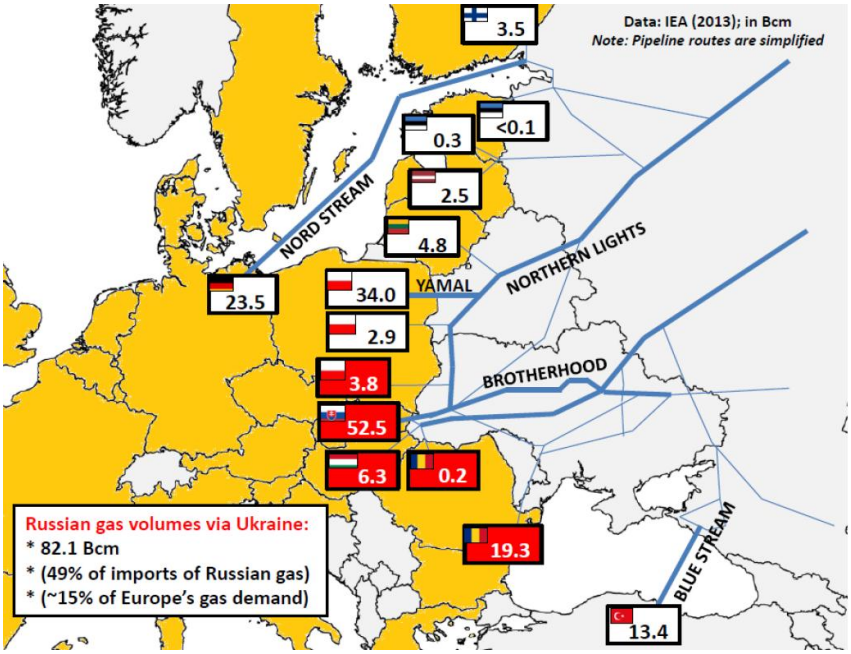


Figure 2: Russian pipeline imports in 2013; actual flows per entry point

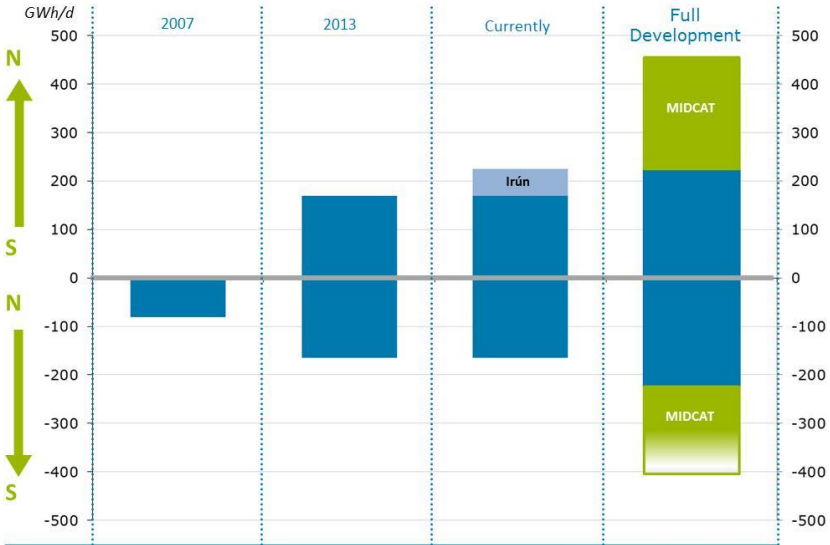
In 2013, Spain imported via pipelines a total of 17.05 bcm (77% from Algeria and 20% from France), whereas a total of 14.08 bcm arrived in the form of LNG from 10 different suppliers including Qatar, Nigeria, Trinidad and Tobago and Peru. Spain barely exported to France over 3% of its imports, whereas 19 % of LNG was re-exported by sea to other countries around the world.

Spain is connected to Algeria via two cross border interconnections, that is, the Maghreb-Europe Gas Pipeline (MEGP), arriving to Spain in Tarifa, with an annual capacity of almost 14 bcm/y and MEDGAZ pipeline, arriving to Spain in Almeria, with a total capacity of 8 bcm/y. Due to the fact that in 2013 a total of 13.2 bcms were imported from Algeria in form of piped gas, it is observed that the total capacity of MEDGAZ could be used to send Algerian gas into the European Union. However, in order to allow this to happen, gas volumes should be able to cross the Spanish-French border and flow across France and beyond.

Figure 3: Gas Infrastructure Map of the Iberian Peninsula (source: IEA 2014[22])

Since the current gas interconnection capacity between Spain and France is insufficient, it is essential to complete the MIDCAT project to enable gas to flow from South to North and reach the potential full capacity of 14,3 bcm (direction South → North) and 12,7 bcm (direction North → South) between France and Spain.

22 Energy Supply Security Spain 2014, available at: https://www.iea.org/media/freepublications/security/EnergySupplySecurity2014_Spain.pdf



	2007	2013	Currently	Full Development
N → S	87 GWh/d 2,6 bcm/y	165 GWh/d 5,2 bcm/y	165 GWh/d 5,2 bcm/y	**405 GWh/d 12,7 bcm/y**
S → N	-	170 GWh/d 5,3 bcm/y	225 GWh/d 7,2 bcm/y	**455 GWh/d 14,3 bcm/y**

Figure 4: Interconnection Capacity between France and Spain

The full development of MIDCAT would convert Spain into a "transit" country which would provide the European Union with increased security and diversification of supplies. On the contrary, if the MIDCAT project is not developed the cross border capacity from Spain to France would be limited to the current annual capacity of 7.2 bcm/y, which is clearly insufficient to allow the EU to take advantage of all the potential benefits that Spain could provide in terms of security of supply and diversification.

Furthermore, Spain counts with a total of six LNG plants in operation and a seventh (El Musel) LNG plants which is currently completed but mothballed[23]. The latter is conditioned to the start-up authorization by the Government according to Royal Decree-Law 13/2012, in view of the demand decrease. The total amount of regasification capacity in Spain amounts 60 bcm/y and if El Musel starts operating, the total capacity would be additionally increased by 7 bcm/y.

Even though in 2013 and 2014 the global LNG market led to most LNG supplies to be re-directed or even re-exported to other markets such as Asia and Latin America, this tendency is changing and price differentials between Europe and those regions are narrowing. LNG is

[23] Facility pending start-up authorisation by the Government according to Royal Decree-Law 13/2012

starting to return to Europe and it could come even in larger quantities if the right gas infrastructure (e.g. interconnections) and policy decisions are put in place within the EU.

Furthermore one of the results obtained in the ENTSOG Ten Year Network Development Plan 2013-2022 indicated that there is *"…limited ability to decrease LNG to Iberian Peninsula and South of France due to the lack of interconnection with Northern Europe…*[24]", i.e., due to the lack of network transmission capacity which prevents these regions from having access to varied supply mixes.

These results have been effectively confirmed by the sustained price differential for more than three years (since LNG markets tightened after the Fukushima disaster in March 2011) between Southern France and Spain, which added to the differential between Southern France and Northern France (totalling the differential between Spain and the main European markets up to 10 €/MWh). Despite the alignment within French balancing zones since November 2014 due to the changing situation of LNG markets, price differentials of 2 €/MWh have continued between Southern France and Spain ("AOC" in the figure below).

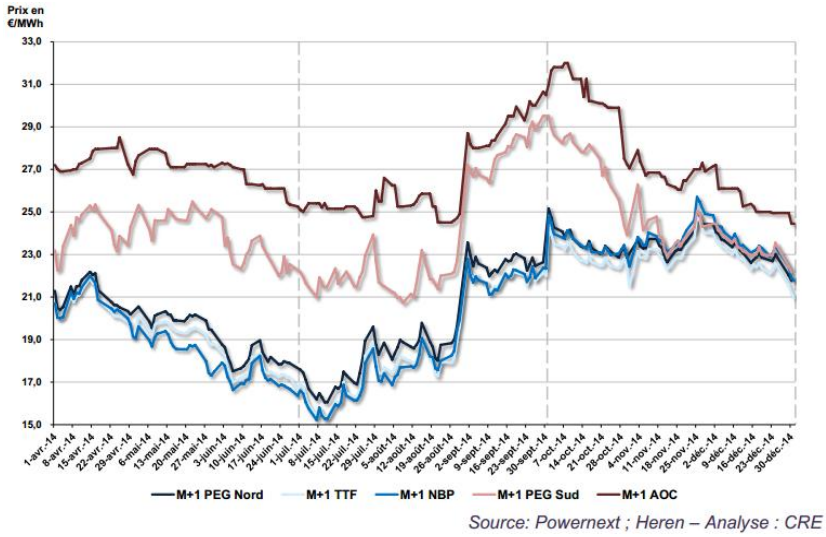


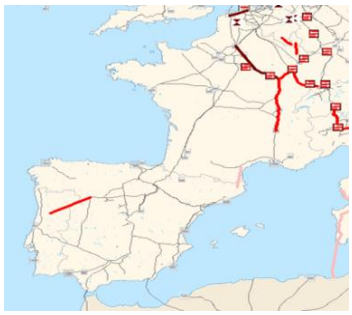
Figure 5: Month-ahead prices in France's PEGs, UK's NBP, The Netherlands' TTF and Spain's AOC (source: CRE 2015[25])

[24] ENTSOG TYNDP 2013-2022, available at: http://www.entsog.eu/publications/tyndp#ENTSOG-TEN-YEAR-NETWORK-DEVELOPMENT-PLAN-2013-2022

[25] CRE (2015): "Marchés de gros. Observatoire des marchés de l'électricité, du gaz et du CO2. 4e trimestre 2014", available at: http://www.cre.fr/media/fichiers/marches/consulter-l-observatoire-des-marches-de-gros-du-4eme-trimestre-2014

In addition, and in view of the study performed by the International Energy Agency (IEA) on the role of LNG in Europe's gas supply security, IEA stressed that "theoretically, if LNG supply and shipping capacity was infinitely available the potential gas shortages as a result of Ukraine crisis can be overcome via LNG." The study highlights that only 24% of the LNG terminal capacity available across Europe was utilised in 2013, most of which came from the disproportionate share underutilised LNG capacity in the Iberian Peninsula which is de facto isolated from the rest of Europe. LNG imports reached their peak at 2011 at 89 bcm, or 17% of EU gas supply. However, the IEA study concludes that in order to attract LNG several measures would need to be taken in order to capture the available volumes, and these actions are very much driven by global LNG market prices.

If Spain supplied the European Union with 50% of the natural gas that comes through main Ukraine transit pipeline, it would have to send approximately 26 bcm per year through France, from which 8 bcm/y would come via MEDGAZ all the way through the MIDCAT project into France. However, it has to be taken into account that this alternative is not currently considered a short-term measures but rather a mid-term measure (i.e. 2017-2020) as stated by the European Commission in its Communication on Energy Security Strategy.[26]



Projects allowing bidirectional flows between Portugal, Spain France and Germany:

No	Definition
5.4.	PCI 3rd interconnection point between Portugal and Spain
5.5.	PCI Eastern Axis Spain-France – interconnection point between Iberian Peninsula and France at Le Perthus [currently known as Midcat]
5.6.	PCI Reinforcement of the French network from South to North – Reverse flow from France to Germany at Obergailbach/Medelsheim Interconnection point (France)
5.7.	PCI Reinforcement of the French network from South to North on the Bourgogne pipeline between Etrez and Voisines (France)
5.8.	PCI Reinforcement of the French network from South to North on the east Lyonnais pipeline between Saint-Avit and Etrez (France)

Figure 6: PCIs - Iberian Peninsula and France

In addition if the EU was to import gas from the United States in the form of LNG, it seems evident that the most sensible option would be to use those LNG facilities that the EU has already in place rather than making new investments. In times of economic downfall, the European rationale should be to optimise those infrastructures that are already in place. However, and in order for the EU to benefit from those infrastructures facilities located in the coasts of only a few Member States, it would be necessary to make further investments or

[26] EC Communication of 28 May 2014 on a European Energy Security Strategy, pages 23, available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014DC0330&from=EN

enhancements in the transmission network, such as, increasing the interconnection capacity between Spain and France and reinforcing the gas transmission capacity in the South of France which to date does not have sufficient capacity to transport all this gas.

The Gas Regional Investment Plan 2013-2002 developed by the three TSOs of the South Gas Region, i.e. GRTgaz, TIGF, REN Gasodutos and Enagás concluded that:

"After developing the MIDCAT project, merging the GRTgaz North and South zones and the creation of gas flows from France to Germany; Algerian gas could reach the North of France, Switzerland and Germany. Therefore, the developments of these projects provide a new source to central Europe increasing the diversification of sources and consequently the security of supply.

"*The development of these main projects could also integrate the existing and coming LNG terminals projects in the area, increasing their utilisation, whether from important needs of gas in central Europe or due to any other interest of the shippers operating in the market*".

Moreover and in line with Regulation 347/2013 on guidelines for trans-European energy infrastructure, it is determined that in order to achieve the EU energy and climate policy objectives, that is, achieving a full integrated single energy market, increasing security of supply, reducing CO_2 emissions, increasing energy efficiency, integrating renewables and higher competitiveness, it is necessary to undertake more investments within the European Union.

In this regard, and in line with the provisions envisaged in the above mentioned Regulation, the European Commission issued the first list of Projects of Common Interest in October 2013 [27]

As a result of the good regional cooperation between Spain and France, MIDCAT was identified and included within the first PCI list. This project has been taken on board in the framework of the North West Gas Corridor which would enable to transport natural gas into the core of the European network.

[27] Commission Delegated Regulation (EU) No 1391/2013 of 14 October 2013 amending Regulation (EU) Nº 347/2013 of the European Parliament and of the Council on guidelines for trans-European energy infrastructure as regards the Union list of projects of common interest. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R1391&from=EN

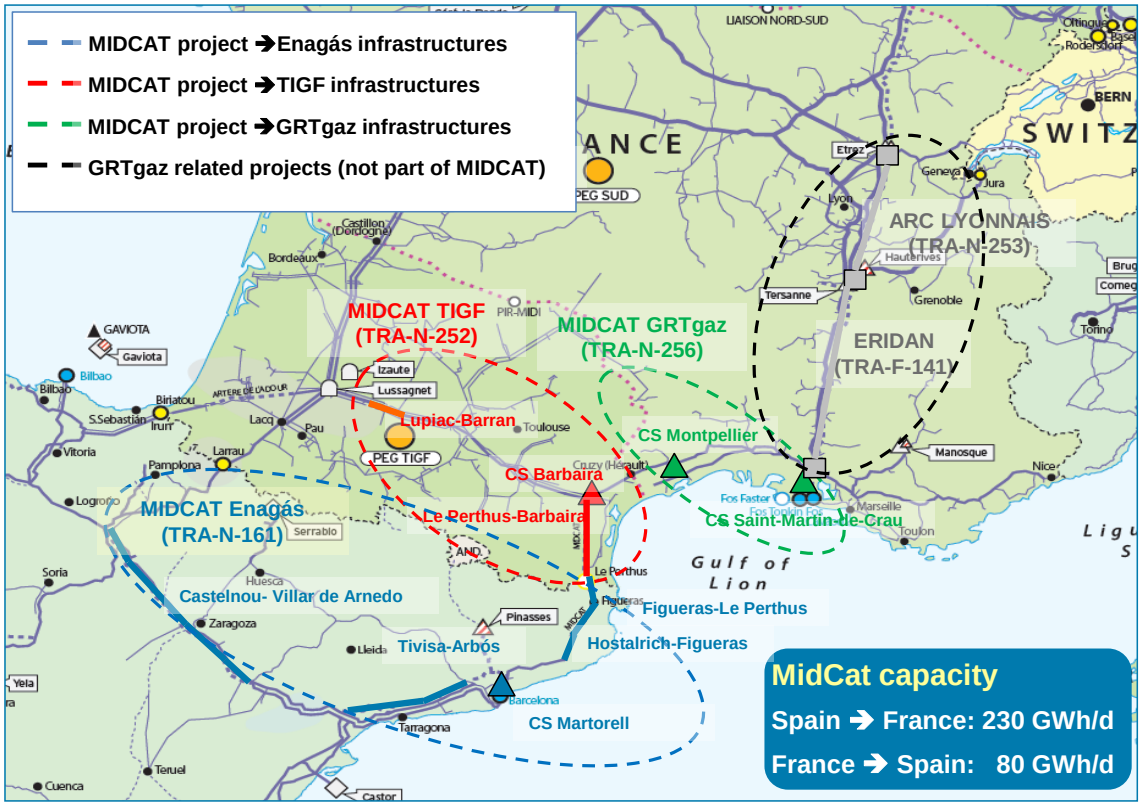


Figure 7: MIDCAT project configuration presented for the 2015 PCI list

On 4 March 2015, the European Commission President Jean-Claude Juncker met in Madrid with the President of France François Hollande, the Prime Minister of Spain Mariano Rajoy and the Prime Minister of Portugal Pedro Passos Coelho to agree on ways to strengthen the connections of the Iberian Peninsula with the rest of the EU energy market. The Commissioner for Climate Action and Energy Miguel Arias Cañete and the President of the European Investment Bank Werner Hoyer have also attended the meeting.

During this Summit[28], it was agreed that building missing cross-border energy links is a priority for the European Commission. A well-connected European energy market is crucial for creating an Energy Union and key driver to strengthen the security of energy supply across Europe.

[28] European Commission - Press release: "President Juncker and the leaders of France, Spain and Portugal agree on the way forward to better connect the Iberian Peninsula with the rest of the EU energy market", available at http://europa.eu/rapid/press-release_IP-15-4551_en.htm

The leaders agreed to set up a High Level Regional Group to step up the efforts to develop energy interconnections in South-West Europe and ensure that all the present and planned project are implemented in time.

As regards MIDCAT, it was agreed that this High Level Group (HLG) would discuss in the next 6 months the compatibility between MIDCAT project, the national energy plans, the need to guarantee supply to the EU, and whether all this allows bidirectional flows gas between the networks of the Iberian Peninsula and France. This HLG also facilitate the process of permitting the MIDCAT project at the earliest possible date and it will support its access to EU funds as a priority project.

Conclusions

The European Union has made significant efforts and has taken a number of measures to strengthen security of supply in the region and to reduce the number of Member States which are dependent on a single supplier. However, many of the measures remain very much focused at national level, leaving solidarity and the European dimension aside.

Whereas market-based measures remain to be at the core of decision making of energy infrastructure projects, the EU has acknowledged that there are infrastructure investments which may have not been totally eligible under market tests, but may be necessary to attain the objectives of the European energy policy, i.e. security of supply, a competitive internal energy market, and sustainability. For those projects to come along, EU funding might be essential.

On the other hand, the Winter crises of 2006, 2009 and most recently 2014, have reinforced the need of the European Union to take further action to minimise the impact of further gas supply disruptions in the EU Member States.

Whereas it has been claimed in many occasions that the Iberian Peninsula could become a "transit" corridor to bring gas from Algeria and LNG into the core of the European network, and its capability to assist other Member States in the case of disruption from Ukraine and Russia, this position has long been undermined.

In addition and even though Russia will still play a key role in supplying gas to the European Union, it is necessary for the EU to ensure that security and diversification of supply is safeguarded to the extent possible.

The Iberian Peninsula remains relatively isolated from the rest of the European gas network due to its insufficient interconnection with France in both directions. As a consequence of the

good cooperation between the different market players of Spain and France, and of the increasing recognition of its benefits, the MIDCAT project has been identified as Project of Common Interest and is receiving strong political support both at national and EU level.

If the project goes ahead, this would provide a substantial increase in the interconnection capacity between the Iberian Peninsula and the rest of the EU, totalling up to 12.7 bcm/y France-Spain and up to 14.3 bcm/y Spain-France. This would enable the European Union to benefit from the gas that enters, and could enter to a larger extent, the Iberian Peninsula from Algeria, and from all the LNG infrastructure capacity that is available at the moment, thus enhancing the North-Western gas corridor which would allow physical flows to travel into the core of the European network.