

# European Energy Security Challenges and Global Energy Trends: Old wine in new bottles ?

Marie-Claire Aoun

Paper produced within the framework of the  
IAI-OCP Policy Center partnership

## About OCP Policy Center

OCP Policy Center is a Moroccan policy-oriented Think Tank whose mission is to contribute to knowledge sharing and to enrich reflection on key economic and international relations issues, considered as essential to the economic and social development of Morocco, and more broadly to the African continent. For this purpose, the Think Tank relies on independent research, a network of partners and leading research associates, in the spirit of an open exchange and debate platform.

By offering a "Southern perspective" from a middle-income African country, on major international debates and strategic challenges that the developing and emerging countries are facing, OCP Policy Center aims to make a meaningful contribution to four thematic areas: agriculture, environment and food security; economic and social development; commodity economics; and "Global Morocco", a program dedicated to understanding key strategic regional and global evolutions shaping the future of Morocco.

[Read more about OCP Policy Center](#)

## About Istituto Affari Internazionali

The Istituto Affari Internazionali (IAI) founded by Altiero Spinelli in 1965, does research in the fields of foreign policy, political economy and international security. A non-profit organisation, the IAI aims to further and disseminate knowledge through research studies, conferences and publications. To that end, it cooperates with other research institutes, universities and foundations in Italy and abroad and is a member of various international networks. More specifically, the main research sectors are: European institutions and policies; Italian foreign policy; trends in the global economy and internationalisation processes in Italy; the Mediterranean and the Middle East; defence economy and policy; and transatlantic relations.

[Read more about IAI](#)

## About the author, Marie-Claire Aoun

Marie-Claire Aoun is Director of the Center for Energy at the Institut français des relations internationales (IFRI). She began her career in the energy sector in 2004 as a researcher at the Center of Geopolitics of Energy and Raw Materials (CGEMP) at Paris Dauphine University. She holds a PhD in Economics from the same university. Her thesis, defended in March 2008, focused on the impact of the oil rent on the economic development of oil exporting countries. Economist at the French energy regulator (Commission de Régulation de l'Énergie) between June 2008 and February 2014, she contributed to the elaboration of key policy documents on the European gas markets integration within the framework of the Agency for the Cooperation of Energy Regulators.

[Read more about Marie-Claire Aoun](#)

The views expressed in this publication are those of the author.

This publication can be downloaded for free at [www.ocppc.ma](http://www.ocppc.ma). Printed copies are also available. To request a copy, thank you for sending an e-mail to [contact@ocppc.ma](mailto:contact@ocppc.ma)

This Policy Paper was produced within the framework of the IAI-OCP Policy Center partnership and presented at the international seminar entitled «[Morocco's Role in Fostering Euro-Mediterranean Energy Cooperation](#)» organized in Rabat on 26 September 2014. The first draft of the paper was written in September 2014.

## Abstract

European energy security challenges have changed dramatically in the past 20 years. On the one hand, the current tensions between Russia and the EU are undermining their historical partnership on energy; on the other, deep transformations in the energy landscape at the global level, triggered by technological advances and major geo-political transformations, are leading the EU to rethink its energy security strategy. The aim of this paper is to discuss European energy security in a changing global context and to analyse the tools and policies implemented to strengthen it. The role of potential future vectors of energy cooperation between the EU and its Mediterranean neighbours is also examined.



## Introduction

European energy security seems to be a never-ending story. In 2000, the Green Paper published by the European Commission raised concern about the increasing energy dependence of the EU after the rise of crude oil prices.<sup>1</sup> It sketched out a European long-term energy strategy aimed at reducing the risks of such dependence, by better managing consumption and by the development of renewable energy. At that time, next to renewable energy, natural gas was viewed as a “seductive alternative”. A “long-term strategy in the framework of a partnership with Russia” was also considered as an “important step” towards security of supply.<sup>2</sup> The calls for a common external energy policy significantly increased at the European level after the first gas crisis in 2006 between Russia and Ukraine.<sup>3</sup> The 2009 crisis between Russia and the EU was followed by a series of measures and communications in view of strengthening energy security. The current tensions between Russia and the EU are undermining the historical partnership on energy and are leading the EU to rethink its energy security strategy. However, the energy landscape at the global level has also changed substantially, increasing the challenges faced by the EU to define a new energy security strategy.

The aim of this paper is to discuss European energy security in a changing global context and to analyse the tools and policies implemented to strengthen it. The role of potential future vectors of energy cooperation between the EU and its Mediterranean neighbours will also be examined.

### 1. European energy security in a changing global energy context

The world energy markets have been going through deep changes these last few years. Sustained high oil prices (above 80 dollars per barrel since 2007 until June 2014) allowed for the development of unconventional resources, as well as deep offshore resources and the emergence of new producing countries notably in East Africa and the eastern Mediterranean. The development of shale gas in the US since 2007 led to American energy self-sufficiency and to a revolution in the world’s energy markets. It also resulted in an “industrial renaissance” of the US economy, with a significant recovery in the competitiveness of the manufacturing and chemical industries supported by energy affordability and relatively low gas prices.<sup>4</sup> Furthermore, the Fukushima nuclear disaster in March 2011 led to a strong increase of LNG prices in Asia (around 16 dollars per MBtu). The willingness of Asian importers to pay higher prices created sustained price differentials with the low US prices (3.7 dollars per MBtu on average in 2013). The European gas spot prices lie in the middle, fluctuating between 10 and 12 dollars per MBtu.

In parallel to these new global energy trends, Europe has been subject to four basic – somehow unchanging – facts about energy security.

- First, the energy resources of Europe are inadequate to meet its energy needs. The impossibility of energy self-sufficiency is a fundamental characteristic of the EU energy system. The overall energy production in the EU has been steadily declining in the past decade (15 percent decline between 2001 and 2012). EU gas production is even expected to lose 25 bcm over 2013-2019.<sup>5</sup> Unlike the US, the potential development of domestic unconventional resources will probably not be a major game changer in the EU. However, several studies show that these resources could partially offset

---

<sup>1</sup> European Commission, *Green Paper: Towards a European strategy for the security of energy supply* (COM(2000)769), 29 November 2000, <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex:52000DC0769>.

<sup>2</sup> Ibid.

<sup>3</sup> European Parliament Committee on Foreign Affairs, *Report on towards a common European foreign policy on energy* (A6-0312/2007), 11 September 2007, <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+REPORT+A6-2007-0312+0+DOC+XML+V0//EN>.

<sup>4</sup> Sylvie Cornot-Gandolphe, “The Impact of the Development of Shale Gas in the United States on Europe’s Petrochemical Industries”, in *Notes de l’Ifri*, November 2013, <http://www.ifri.org/en/node/7073>.

<sup>5</sup> International Energy Agency (IEA), *Medium-Term Gas Market Report 2014*, June 2014.

the decline of domestic conventional production and, at best, contribute to reduce EU energy dependency as of 2025.<sup>6</sup>

- Second, in the global energy system, the EU has very limited influence over international energy prices. The EU accounts for only 13 percent of the world energy consumption (for 7 percent of world population), in comparison with the US (18 percent) and China (22 percent). The weight of demand in the global energy market has been progressively moving from OECD towards non-OECD countries. Furthermore, primary energy demand in the EU is expected to decline by around 7 percent between 2011 and 2035.<sup>7</sup> In this context, the EU weight on the global energy markets is fading.
- While energy security remains closely linked to climate changes, the EU has been almost alone bearing the burden of costly policies aimed at replacing fossil fuels by renewable energy and increasing energy efficiency, since the adoption of the Energy-Climate Package in 2009 with its 20-20-20 targets. Furthermore, these policies are insufficient at the global scale, as major greenhouse gas emitters are still absent from any global agreement. The “lead-by-example” EU ambition has to a certain extent reached its limits.<sup>8</sup> However, strong signals have recently been given, with the consensus reached within the European Council in October 2014 for the 2030 framework, the agreement between China and the United States to reduce their CO<sub>2</sub> emissions and the high expectations for successful international talks in December 2015 in Paris.<sup>9</sup>
- For several decades now, energy security issues have been mostly addressed at national levels, without taking into account the interdependence of Member States. The European institutions have been regularly calling for a coordinated policy on energy security at Community level, without success, even after the great expectations raised by the adoption of the Lisbon Treaty in 2010. In its May 2014 Communication, the European Commission stated again that “the key to improved energy security lies first in a more collective approach through a functioning internal market and greater cooperation at regional and European levels, in particular for coordinating network developments and opening up markets, and second, in a more coherent external action.”<sup>10</sup>

Thus, European energy security is confronted with growing challenges given these four realities and the changing world energy landscape. Furthermore, the same trends are observed for the evolution of the European supplies of crude oil, natural gas and coal: a continuous decline in domestic production, linked to the gradual depletion of EU reserves, resulting in an increased reliance on fossil fuel imports (Figure 1). The import dependency<sup>11</sup> ratio for all fossil fuels at an EU level reaches almost 80 percent in all scenarios,<sup>12</sup> albeit with significant discrepancies at national levels.

The EU energy mix still reveals a high contribution of fossil fuels in the total primary energy consumption, with a central share for oil of 36 percent, 24 percent for natural gas and 17 percent for

---

<sup>6</sup> See, for instance, ICF GHK, Enerdata and Cambridge Econometrics, *Macroeconomic impacts of shale gas extraction in the EU*, Study for the European Commission DG Environment, March 2014, <http://ec.europa.eu/environment/integration/energy/pdf/Macroec%20Impacts%20of%20Shale%20Gas%20Report.pdf> .

<sup>7</sup> International Energy Agency (IEA), *World Energy Outlook 2013*, November 2013.

<sup>8</sup> See Cécile Maisonneuve, “The European Energy Policy: Building New Perspectives”, in *Notes de l’Ifri*, April 2014, <http://www.ifri.org/en/node/7989> ; Claude Mandil et al., *A New European Energy Policy? Assessment and Proposals*, Synopia report, March 2014, <http://www.synopia.eu/?p=1051> .

<sup>9</sup> Carole Mathieu, “From 2020 to 2030, from Copenhagen to Paris: a mindest change for the European climate policy?”, in *Actuelles de l’Ifri*, December 2014, <http://www.ifri.org/en/node/9025> .

<sup>10</sup> European Commission, *European Energy Security Strategy* (COM(2014)330), 28 May 2014, <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex:52014DC0330> .

<sup>11</sup> The sum of the relative shares of the net imports in total energy demand represents the import dependency for all energy products.

<sup>12</sup> World Energy Outlook scenarios elaborated in 2013.



coal.<sup>13</sup> There is a high reliance on external suppliers, notably on Russia and the Middle East for the three fossil fuels. However, while the EU is exposed to the dynamics of global oil and coal markets without a real influence on world prices, the question of energy security, in the case of a disruption of oil or coal supplies, raises less concern than that for natural gas. Liquid global oil and coal markets seem to mitigate against the risk of supply disruption, but in the case of gas, the possibility of switching suppliers is limited due to the reliance on heavy infrastructure to transport gas from production sites to the final customers. One must mention, however, the dependency of the European refineries on Russian crude oil, which is considered a key issue for EU energy security.<sup>14</sup>

With the physical need for extensive and expensive infrastructure, the impact of a potential disruption in natural gas supplies could be substantial and direct, in particular because the natural gas market remains a regional market, subject to the instability of the countries where gas pipelines are built. Thus, energy security in Europe remains closely linked to security of natural gas supplies.

With imports representing almost 70 percent of its natural gas consumption, the EU remains highly dependent on external gas supplies, albeit with different import profiles among the Member States. As mentioned by the European Commission, the most pressing energy security-of-supply issue is the strong dependence on a single external supplier.<sup>15</sup>

Indeed, several European countries rely heavily on Russian gas.<sup>16</sup> In this respect, the disputes between Ukraine and Russia in 2006 and in 2009 caused an interruption of Russian natural gas to the EU and plunged a part of Europe into darkness. While the disruption of gas supplies in 2006 lasted one day (the available storage capacities could easily make up the shortfall), the January 2009 dispute resulted in a severe supply crisis in Europe, affecting 12 Member States and depriving the EU of 20 percent of its gas supplies, i.e. 30 percent of imports.<sup>17</sup> Despite several attempts to avoid a repetition of this scenario in 2014, the conflicts between Kiev and Moscow led to a cut of Russian natural gas supplies to Ukraine in June, until an agreement was reached in October 2014 between the EU, Russia and Ukraine. Although the EU was much better prepared than in 2009 for this kind of disruption, especially considering the very high storage filling levels in September, the risks of a prolonged disruption would undoubtedly have had significant impacts on Europe.

In addition to these concerns on security of natural gas supplies, the European energy policy has also to face the unexpected resurgence of coal in the EU power generation mix due to the collapse of the CO<sub>2</sub> markets and to low coal prices. While natural gas was supposed to accompany the development of renewables, the European energy system is currently experiencing a paradoxical coupling between coal and renewable energy. In 2012 and 2013, around 20 GW of gas-fired capacity was (or almost was) mothballed in the EU.<sup>18</sup> The uncertainty concerning the future role of gas in the EU energy mix and on the evolution of the EU gas consumption also raises a key concern for energy security,<sup>19</sup> as it hinders favourable investment decisions in gas infrastructure because of the risk of stranded assets.

---

<sup>13</sup> In 2013 according to BP. See *Statistical Review of World Energy 2014*, June 2014, <http://www.bp.com/en/global/corporate/about-bp/energy-economics/statistical-review-of-world-energy.html>.

<sup>14</sup> European Commission, *European Energy Security Strategy*, cit.

<sup>15</sup> Ibid.

<sup>16</sup> Greece, Austria, Poland, Romania, Hungary, Bulgaria, Czech Republic, Estonia, Finland, Latvia, Lithuania and Slovakia rely on Russian gas for more than 50 percent of their gas supplies.

<sup>17</sup> European Commission, *The January 2009 Gas Supply disruption to the EU: An assessment* (COM(2009)977), 16 July 2009, <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex:52009SC0977>.

<sup>18</sup> See presentation of François-Régis Mouton, Chairman of GasNaturally, “Making a clean future”, Ifri Energy Breakfast Roundtable, 1 July 2014.

<sup>19</sup> See “Energy CEOs call for end to renewable subsidies”, in *EurActiv*, 11 October 2013, <http://www.euractiv.com/node/268523>.

## 2. The internal and external dimensions of the EU energy security strategy

The literature generally explains the concept of energy security by the availability of sufficient supplies of fossil fuels such as oil, natural gas and coal coupled with additional energy derived from renewable resources and the offset from energy efficiency improvements, at affordable prices, with a distinction between short-term risks (supply shortages due to accidents, extreme weather conditions, terrorist attacks, and technical failures) and long-term risks linked to structural imbalances between supply and demand, inadequate infrastructure and insufficient investments.<sup>20</sup>

EU energy security policy captures all these aspects. The EU policy mix is based on the intensification of energy efficiency (with a target of 20 percent in 2020) and the wide deployment of renewable energy (Energy Climate Package). It is also composed of internal and external policies aimed at increasing the diversification of supplies, achieving the internal energy market and implementing solidarity measures between Member States in case of supply disruptions.

### 2.1 Towards the completion of the internal energy market?

The 2009 crisis between Russia and Ukraine raised vivid concerns about EU security of supply and served as a wake-up call for policy makers to revise the internal and external dimensions of the EU energy security strategy. A Regulation on security of gas supplies was adopted in 2010, introducing risk assessment and emergency plans at regional and EU levels, new rules for securing supplies to protected customers, the obligation to implement reverse flows projects and the introduction of the N-1 infrastructure standard in order to ensure that the gas network is robust enough to withstand the disruption of the largest infrastructure.

The Energy Infrastructure Package was also adopted in October 2011 in order to identify priority corridors for the transport of oil, gas and electricity. In May 2014, the Commission identified critical projects for EU energy security in the short and medium terms among the “projects of common interest” (PCI) adopted in 2013. For gas, the projects considered as decisive for security of supply at European level are located in Eastern Europe and in south-western Europe. They sometimes require significant amounts of investment for which favourable decisions are difficult to trigger, especially given the current uncertain context of the gas market in Europe, i.e., the underutilisation of gas infrastructure and a steadily declining demand (the EU gas consumption reached 438 bcm in 2013, almost equivalent to the level of the EU demand in 2000<sup>21</sup>). For instance, the enhancement of the French-Spanish interconnection capacity in order to enable LNG flows arriving in Spain to be spread into north-western Europe requires around 1 billion euros of investment, if we include the necessary reinforcements needed on the French network.<sup>22</sup>

The creation of an internal integrated energy market is one pillar of the European energy policy and of energy security. It aims at stimulating energy trade, improving competitiveness and removing all obstacles to the circulation of natural gas on the European network. By creating interconnected gas hubs and the associated convergence of wholesale prices at a European level, this internal gas market would also contribute to security of supply by improving the competition between the different supply sources. Trading mechanisms and liquid spot markets are supposed to offset (at least partially) the potential failure of a supply source in the short term. During the 2009 crisis, commercial arrangements, such as swaps and short-term trades provided a short-term response to the disruption. Supplies from

---

<sup>20</sup> Sijbren de Jong, *The EU's external natural gas policy – caught between national priorities and supranationalism*, KU Leuven Thesis, April 2013, <https://lirias.kuleuven.be/handle/123456789/393181>; Gawdat Bahgat, “Energy Security: What does it mean? And how can we achieve it?”, in *The Journal of Social, Political and Economic Studies*, Vol. 33. No. 1 (Spring 2008), p. 85-98.

<sup>21</sup> According to BP *Statistical Review of World Energy 2014*, cit.

<sup>22</sup> See GRT Gaz, *Open Season for the development of new gas interconnection capacity between Spain and France as from 2015*, Information Memorandum, May 2010, [http://www.grtgaz.com/fileadmin/clients/fournisseurs/open\\_season/en/openseason-France-Espagne-memorandum\\_EN.pdf](http://www.grtgaz.com/fileadmin/clients/fournisseurs/open_season/en/openseason-France-Espagne-memorandum_EN.pdf).

Norway and alternative routes for Russian gas (Yamal or Blue Stream) replaced some of the missing gas in Europe where interconnections existed.<sup>23</sup>

The third energy legislative package adopted in 2009 accelerated the opening of the EU market to competition and the creation of an integrated gas market. Several texts were adopted in the last few years by the Member States (through comitology) after a long and complex process involving several actors at the European level (ACER, ENTSOG, etc.), such as the rules for the reduction of congestion in the European gas transmission pipelines and the allocation of capacity in gas pipelines.<sup>24</sup> A consensus on these binding texts dealing with technical measures on the gas network at a European level is a difficult exercise, as national gas systems have different characteristics reflecting the historical development of their networks, the size of their markets, their supply-and-demand structures, the role of their storage and LNG infrastructure and the relative importance of transit on their transmission network.<sup>25</sup>

This new model for the EU gas market aims at providing an increased role for short-term trading and for market hubs. A study published in October 2013 by the Oxford Institute for Energy Studies, confirms that the eight main market hubs (in the UK, the Netherlands, Belgium, Austria, Germany, France, and Italy) are now closely interconnected, with a high level of price convergence reflecting an integrated gas market in this part of Europe.<sup>26</sup> The establishment of a new platform for the allocation of 70 percent of the natural gas transmission capacity in the EU (Prisma<sup>27</sup>) and linking the grids of 28 transmission system operators from 10 countries is also a sound illustration of EU energy cooperation.

Thus, one has to acknowledge that several positive steps have been achieved in gas market integration, that Europe is able to adopt a coordinated and coherent approach and “speak with one voice” on market integration. This common approach is indeed progressing but mainly at a regional level, in the western part of Europe. The Baltic States and south-east Europe lag behind, with limited markets and a significant dependence on one supplier as shown in the ENTSOG network development plan for 2013-2022,<sup>28</sup> reflecting a situation of particular vulnerability in this part of Europe especially in view of the current context of crisis between Russia and Ukraine.

## *2.2 Europe is facing many challenges when looking at its own energy assets*

The wide deployment of renewable energy is a key component of EU energy strategy, which was triggered in 2008 by the Energy Climate Package. In 2013, 14 percent of the final energy consumption came from renewable energy sources, in line with the 20 percent target in 2020.<sup>29</sup> In October 2014, the EU leaders agreed on a new policy framework for 2030 with a binding target equivalent to a 40 percent reduction in greenhouse gas emissions and a binding target at an EU level for renewable-based generation of 27 percent. This ambitious policy mix triggered wide debate and raised concern about the costs of this new target and its impact on the internal energy market.<sup>30</sup>

Europe is also looking towards its unconventional resources. Technically recoverable reserves of unconventional gas are estimated at around 18 tcm in Europe, but they still need to be transformed

---

<sup>23</sup> European Commission, *The January 2009 Gas Supply disruption to the EU*, cit.

<sup>24</sup> European Commission, *Gas network codes*, last updated 22 January 2015, [http://ec.europa.eu/energy/gas\\_electricity/codes/gas\\_en.htm](http://ec.europa.eu/energy/gas_electricity/codes/gas_en.htm).

<sup>25</sup> See Laura Parmigiani, “The European Gas Market: A Reality Check”, in *Notes de l’Ifri*, May 2013, <http://www.ifri.org/en/node/6861>.

<sup>26</sup> Beatrice Petrovich, “European gas hubs: how strong is price correlation?”, in *Oxford Institute for Energy Studies Working Papers*, No. NG 79 (October 2013), <http://www.oxfordenergy.org/?p=382>.

<sup>27</sup> For more information see the Prisma website: <https://www.prisma-capacity.eu>.

<sup>28</sup> ENTSOG *Ten-Year Network Development Plan 2013-2022*, <http://www.entsog.eu/publications/tyndp>.

<sup>29</sup> European Commission, *European Energy Security Strategy*, cit.

<sup>30</sup> Mathieu Carole Mathieu, “From 2020 to 2030, from Copenhagen to Paris...”, cit.



into economically recoverable reserves. There is a large uncertainty around the potential of these resources in Europe, due to the limited amount of drilling to date. Several Member States (Poland, the UK and Denmark) have been exploring their unconventional gas potential during the last few years, but social acceptability remains a key challenge for a wider development of these resources.<sup>31</sup> In any case, no substantial volume of shale gas can be expected in this decade in Europe.

### 2.3 “Speaking with one voice” on external energy policy: an impossible quest?

One of the major weaknesses of European energy policy is its inability to adopt a common external energy policy; that is, to be able to “speak with one voice” with external partners. Progress is being achieved after the Communication of November 2011,<sup>32</sup> notably by introducing bilateral energy cooperation with several key countries (Turkey, Algeria, etc.), with international institutions (OPEC, IEA, Union for the Mediterranean, etc.) and consuming countries (China, Japan, etc.). Specific rules for the energy sector are also being negotiated in free trade agreements, notably with the US through the Transatlantic Trade and Investment Partnership (TTIP).

Furthermore, an information exchange mechanism<sup>33</sup> was created in 2012 imposing an obligation on EU Member States to submit to the Commission any legally binding agreement having an impact on the operation or the functioning of the internal energy market or on the security of energy supply. This new mechanism led to the identification by the Commission of incompatibilities with EU legislation (in particular with the 3rd Energy Package) for the intergovernmental agreements signed between Russia and Bulgaria, Serbia, Hungary, Greece, Slovenia, Croatia and Austria in relation to the South Stream project.

One of the main pillars of European external energy strategy is the diversification towards Caspian natural gas supplies. Representing 11 percent of proven world gas reserves, the resources of Turkmenistan, Kazakhstan, Uzbekistan and Azerbaijan are of crucial importance for the long-term energy security of the EU, but also for Russia and China. Several infrastructure projects are being discussed and negotiated in view of bringing Caspian gas to EU markets, circumventing Ukraine and Russia. The original planned contribution of the “Southern Corridor” was to secure around 10 to 20 percent of natural gas demand in the EU by 2020 (between 45 and 90 bcm per year). The ambitious Nabucco project, was supposed to transport gas from Turkmenistan and Azerbaijan to Europe, through Turkey and the Black Sea. However, although the planning started in 2002, the project failed for several reasons, notably because it never had any firm supply and because there was no unanimous agreement between EU Member States on this project.<sup>34</sup>

The Southern Corridor is now based on the Trans-Anatolian Pipeline (TANAP) linking Turkey to Azerbaijan and the TransAdriatic Pipeline (TAP), connecting TANAP to Greece, Albania, and the Adriatic Sea to Southern Italy. TAP was selected in December 2013 by the Shah Deniz consortium as the future route of the Azeri gas towards Europe. TAP is expected to be commissioned in 2019 at the earliest, with an initial annual capacity of 10 bcm (potentially rising to 20 bcm), though Total and E.ON announced recently their withdrawal from the project. Ultimately, this pipeline could also deliver gas from Turkmenistan, Iran, Iraq and southeastern Mediterranean to southern Europe, but these potential

---

<sup>31</sup> See Sylvie Cornot-Gandolphe, “Gaz de schiste en Pologne, au Royaume-Uni et au Danemark: vers un modèle européen?”, in *Notes de l’Ifri*, January 2014, <http://www.ifri.org/fr/node/7138>.

<sup>32</sup> European Commission, *On security of energy supply and international cooperation - The EU Energy Policy: Engaging with Partners beyond Our Borders* (COM(2011)539), 7 September 2011, <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex:52011DC0539>.

<sup>33</sup> Decision No 994/2012/EU establishing an information exchange mechanism with regard to intergovernmental agreements between Member States and third countries in the field of energy, 25 October 2012, <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex:32012D0994>.

<sup>34</sup> For detailed explanation of the failure of the Nabucco project see International Energy Agency (IEA), *World Energy Outlook 2014*, November 2014.

alternative sources remain subject to political uncertainties.<sup>35</sup> The further development of this corridor depends also on the evolution of other gas markets, primarily energy-hungry Asian countries. China has strong interests in the Caspian region, especially in Turkmenistan, which is already supplying 20 bcm per year of natural gas to the Chinese market (i.e. 50 percent of the total natural gas Chinese imports).

In addition to the Southern Corridor, the South Stream project, aimed at transporting 63 bcm per year of natural gas via the Black Sea to Europe (i.e. 12 percent of EU gas needs in 2018), was a key project for Russia bypassing Ukraine. However, given the conflict around Ukraine and the objections of the EC on the project considering it non-compliant with the EU legislation, Russia announced the abandoning of the project in December and proposed to replace it by an undersea pipeline to Turkey.

The diversification towards LNG supplies was also viewed as another key component of EU energy security because, unlike pipeline gas, LNG regasification terminals offer access to a wide range of suppliers. A strong growth of LNG supplies has indeed been observed during the last decade, reaching 60 bcm or 13 percent of the total gas supply in 2012,<sup>36</sup> with the bulk of LNG supplies to Europe coming from Qatar and to a lesser extent Algeria and Nigeria. Several regasification terminals were built during the last 10 years (in Spain, France, Italy, Portugal, Greece, the UK, Netherlands and Belgium), requiring heavy and long-term investments and bringing the LNG regasification capacity in Europe to 186 bcm per year. However, the imports of LNG to Europe have been decreasing since 2011, with an utilisation rate of 20 percent of the LNG terminals on average in 2013.<sup>37</sup> LNG is preferentially shipped to the Asian markets, where prices are the highest. In 2013 and 2014, 13 LNG regasification terminals were completed in Asia (having now 54 percent of the global regasification capacity), against only one in Europe.<sup>38</sup> With LNG, Europe has access to many potential suppliers but it also has to compete with other regions of demand to attract the LNG flows. According to several scenarios, sustained flows of LNG returning to Europe are not expected before 2018-2020.

Europe took its major investment decisions on infrastructure before the economic crisis of 2008. Apart from the Southern Corridor, few projects are currently envisaged in Europe to be commissioned on a five-year horizon. Given the current context of the EU gas market, the diversification strategy of gas supplies in the medium term will probably be more based on the optimisation of the existing infrastructure, pipelines or LNG terminals, than on the development of new projects. The main focus of the EU energy security strategy will be to improve the fluidity of the trades on the EU network in order to maximise the spread of energy supply sources to all Member States and ensure gas flows from the west to the east and from the south to the north-west of Europe. In this context, the EU will have to engage dialogue with its partners, notably with the Mediterranean suppliers in order to ensure an efficient use of existing infrastructure.

### 3. What's in for the Mediterranean?

The EU quest to diversify its energy sources provides an opportunity for the Mediterranean countries to strengthen their energy cooperation with the EU. The May 2014 Communication of the European Commission refers to a “political and trade dialogue with Northern African and Eastern Mediterranean partners, in particular with a view to creating a Mediterranean gas hub in the South of

---

<sup>35</sup> Ariel Cohen, “Caspian Gas, TANAP and TAP in Europe’s Energy Security”, in *LAI Working Papers*, No. 14|06 (April 2014), <http://www.iai.it/content.asp?langid=2&contentid=1104>; Elif Burcu Günaydin, “Can South-Eastern Mediterranean Gas be a Supply for the EU?”, in *LAI Working Papers*, No. 14|17 (November 2014), <http://www.iai.it/content.asp?langid=2&contentid=1217>.

<sup>36</sup> According to BP *Statistical Review of World Energy 2014*, cit.

<sup>37</sup> See Rocío Prieto, *The role of LNG in the security-of-supply context*, presentation to the 25th European Gas Regulatory Forum, Madrid, 6 May 2014, [http://www.ceer.eu/portal/page/portal/EER\\_HOME/EER\\_WORKSHOP/Stakeholder%20Fora/Madrid%20Fora/25supthsup%20Madrid%20Forum](http://www.ceer.eu/portal/page/portal/EER_HOME/EER_WORKSHOP/Stakeholder%20Fora/Madrid%20Fora/25supthsup%20Madrid%20Forum).

<sup>38</sup> International Energy Agency (IEA), *Medium-Term Gas Market Report 2014*, cit.

Europe.”<sup>39</sup> Geographical proximity, significant energy resources as well as an already existing framework for cooperation under the Union for the Mediterranean (UfM) (as a continuation of the Euro-Med partnership established in 1995) are all strong assets making the Mediterranean region an attractive alternative for the EU to increase its energy security. While the EU is seeking to improve its energy security, the Mediterranean countries are also facing several challenges in their energy sector, in particular a growing energy demand in the long term.<sup>40</sup>

With 4.5 tcm of proven gas reserves, Algeria remains the most promising alternative supplier of gas for Europe. The total capacity of the main pipelines transporting Algerian gas to Europe is around 53 bcm per year, and 37 bcm of LNG liquefaction capacity in 2014.<sup>41</sup> However, Algerian gas production has been declining over the last seven years with the depletion of its main gas fields. Several projects are launched to compensate the decline (bringing potentially an additional 20 bcm per year of gas to Europe), but they are experiencing delays linked to the investment framework and to infrastructure and security issues. In addition, the country has to face significant internal challenges, with rising internal energy consumption and a breakeven oil price reaching 120 dollars/bbl to balance the budget.<sup>42</sup> Algeria has also to cope with the declining demand in Europe (Algerian gas rents dropped from 11 to 7 billion dollars, according to World Bank data). The other traditional oil and gas exporters of the region are also facing challenges: Libyan oil and gas exports to Europe are still under the levels of 2011, due to political instability and terrorist threats. Egypt is also encountering several challenges in terms of security and has also to satisfy a rising domestic demand.

These difficulties should not conceal the extent of the potential resources of the North African region, notably given the estimation of unconventional resources particularly in Algeria (with 20 tcm of technically recoverable shale gas reserves<sup>43</sup>), but also in Tunisia, Libya and Egypt. However, in the medium term, the realisation of additional projects transporting North African gas to Europe remain uncertain, especially considering the political context in the region.

The East Mediterranean is another area of interest for oil and gas resources, with the discoveries of large offshore gas fields in Israel, Cyprus, Lebanon, Syria and the Palestinian territories. These resources will not be a world game changer, but can provide these countries an opportunity to boost their economies and ensure their energy security. The new discoveries could be a regional game changer as they offer the opportunity to rebuild regional stability. Several export routes are currently envisaged to export gas from Israel (Jordan, Egypt, and Turkey) and Cyprus (Israel, Greece) in addition to the LNG exports possibilities. These resources are of strategic importance for the EU as they are indigenous resources (in the case of Cyprus) and they could complement the Southern Corridor in the medium term.<sup>44</sup>

The Southern Corridor could mirror an increasing role for several Mediterranean countries in the gas supplies to Europe. A number of countries are seeking to play the role of a hub for gas trade in the region (Greece, Cyprus and Turkey). The key role of Turkey in this Mediterranean scheme should also be mentioned. With an expected doubling of its energy dependency in the next decade, Turkey remains a key player lying between the Caspian region, the East Mediterranean countries and the European market. Furthermore, Turkey has strategic relations with Russia and has been in discussion with the

---

<sup>39</sup> European Commission, *European Energy Security Strategy*, cit.

<sup>40</sup> International Energy Agency (IEA), *World Energy Outlook 2013*, cit.

<sup>41</sup> Pasquale De Micco, “The EU’s Energy Security Made Urgent by the Crimean Crisis”, in *European Parliament In-Depth Analysis*, April 2014, [http://www.europarl.europa.eu/thinktank/en/document.html?reference=EXPO-AFET\\_SP%282014%29522338](http://www.europarl.europa.eu/thinktank/en/document.html?reference=EXPO-AFET_SP%282014%29522338).

<sup>42</sup> See International Monetary Fund (IMF), “MENAP Oil Exporters”, in *Regional Economic Outlook: Middle East and Central Asia*, October 2014, <http://www.imf.org/external/pubs/ft/reo/2014/mcd/eng/mreo1014.htm>.

<sup>43</sup> According to the US Energy Information Administration (EIA) estimations.

<sup>44</sup> See Maité de Boncourt, “Offshore Gas in East Mediterranean: From Myth to Reality”, in *Notes de l’Ifri*, May 2013, <http://www.ifri.org/en/node/6846>.

Kurdistan Regional Government for additional supplies. The East Mediterranean gas is also seen by Turkey as an opportunity to feed its growing domestic gas demand and secure its role as a transit country towards Europe.

There is a key opportunity for Mediterranean countries to cooperate in view of creating the basis for an integrated market in the Mediterranean region to foster energy trades in the region and with Europe. The improvement of cross-border trade in the region would contribute to optimising energy supplies, developing solidarity between countries, improving competition between different sources and enhancing competitiveness. This regional market could be supported by the already existing European Northern Mediterranean hubs converging with the north-western hubs, such as France's PEG Nord or the PSV in Italy. These developments would require the implementation of a regulatory framework enabling investments in infrastructure and introducing the conditions for functioning markets in electricity and gas (as proposed by the Association of Mediterranean Energy Regulators - MedReg<sup>45</sup>). This proposal is in line with the establishment of an EU-Southern Mediterranean Energy Community and the extension of the Energy Community Treaty to the region, proposed in the EC Communication of March 2011.<sup>46</sup>

Beyond the gas sector, the cooperation of the EU with the Mediterranean countries should also address the oil sector, as one of the key actions identified in the EU Communication is to find alternative crude oil suppliers to EU refineries in view of reducing dependency on Russia. In parallel, the Algerian oil sector has to deal with a significant drop in its crude exports to the US (by 91 percent between 2010 and 2013<sup>47</sup>), following the development of the American shale oil production. There are grounds for an increased cooperation between the Mediterranean oil-producing countries and the EU, especially given that the potential offshore oil resources of Morocco could be significant following the discoveries of these last few years.

Another key contribution for the South Mediterranean to EU energy security is based on the huge potential of the region in the production and management of renewable energy, notably solar and wind energy. This potential could both meet the energy demand of the region and provide a major source of export income for the South Mediterranean countries.<sup>48</sup> It is also completely in line with the European Energy Climate proposal and the EU roadmap towards a low carbon economy in 2050. This contribution requires investments in installations in the Mediterranean region and the development of an adequate political and regulatory framework for investment.

Energy is a breeding ground for cooperation between the EU and the Mediterranean. The collaboration between the two regions should not be focused only on traditional infrastructure projects (pipelines). The reinforcement of the energy market in the South Mediterranean region could also create trade opportunities for the region and for the EU and increase the energy security of the two partners. In this respect, the proposal of creating a Euro-Mediterranean platform on gas to bring together policy makers, industrial representatives, regulators and energy stakeholders is a useful tool in view of the development of a new partnership on energy between the Mediterranean and the EU.<sup>49</sup>

---

<sup>45</sup> Association of Mediterranean Energy Regulators, *Medreg strategy 2020-2030. A contribution to the establishment of a Mediterranean energy community*, August 2014, [http://www.medreg-regulators.org/Portals/45/documenti/MEDREG\\_Strategy\\_2020.pdf](http://www.medreg-regulators.org/Portals/45/documenti/MEDREG_Strategy_2020.pdf).

<sup>46</sup> European Commission and High Representative of the Union for Foreign Affairs and Security Policy, *A partnership for democracy and shared prosperity with the Southern Mediterranean* (COM(2011)200), 8 March 2011, <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex:52011DC0200>.

<sup>47</sup> According to EIA data. See *U.S. Imports from Algeria of Crude Oil*, last updated 30 December 2014, <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=p&t=mc&f=a>.

<sup>48</sup> Moncef Ben Abdallah et al., *Towards a Euro-Mediterranean Energy Community: Moving from import-export to a new regional energy model*, Paris, IPAMED, May 2013, <http://www.ipemed.coop/en/publications-r17/building-the-mediterranean-c49/towards-a-euro-mediterranean-energy-community-a2014.html>.

<sup>49</sup> See *Security of gas supply: the role of gas developments in the Mediterranean region*, Joint Statement by Günther H. Oettinger, Vice-President of the European Commission responsible for energy and Konrad Mizzi, Minister for Energy and Health of the Government of Malta, Malta, 11 July 2014, [http://europa.eu/rapid/press-release\\_STATEMENT-14-222\\_en.htm](http://europa.eu/rapid/press-release_STATEMENT-14-222_en.htm).

## Conclusion

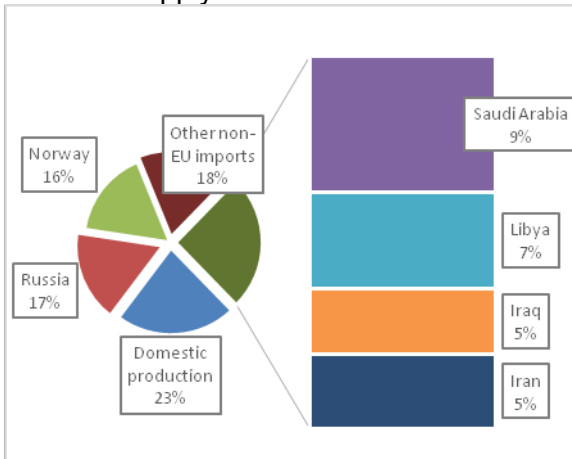
The definition of an EU energy strategy has to take into account the changing global context: a progressive shift of global energy demand towards Asia, a renewed energy self-sufficiency in the US and the emergence of several new producers on the global energy market. Europe has to cope with a stagnating energy demand and is struggling to find a policy mix reflecting the right balance between sustainability, security of supply and competitiveness. Several instruments and policies have been implemented during the last 20 years in view of strengthening EU energy security. The creation of an internal energy market, the development of domestic resources such as renewable energy and the diversification of its energy supplies were the main pillars of the energy security strategy. However, the current tensions between Europe and Russia and the disruption of gas supplies in 2014 raised (again) new concerns and led officials to revisit the EU energy security strategy. This new strategy is focused on the internal instruments in terms of achieving the completion of an EU integrated market; strengthening solidarity mechanisms between Member States; moderating energy demand; increasing domestic energy production (in particular of renewable energy), and developing further energy technologies. The diversification strategy of the EU is based on the improvement of existing interconnections to ensure that gas coming from North Africa or Norway reaches the EU market. Diversification towards new sources of supply mainly relies in the medium term on the potential achievement of the Southern Corridor.

In this context, there is a unique opportunity towards an increased cooperation between the Mediterranean countries and EU on energy, which will undoubtedly bring benefits for both parties. Beyond the cooperation on traditional infrastructure projects, it is time to develop a policy mix between the two regions based on new partnerships over renewable energy, energy efficiency and the development of a sound regulatory and investment framework in view of creating an integrated energy market in the Mediterranean countries.

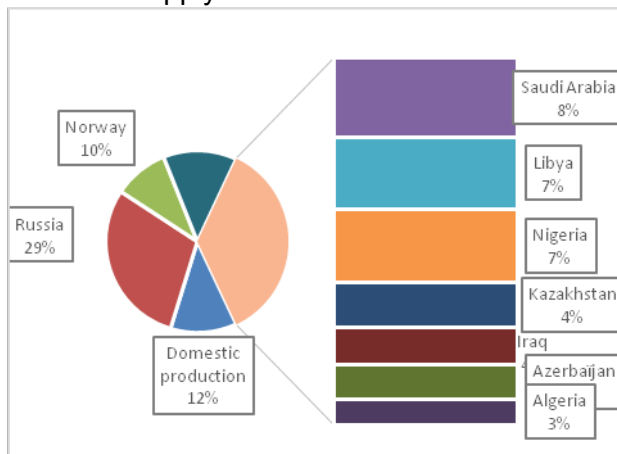


**Figure 1** | Fossil-fuels supply of the EU in 2000 and 2012

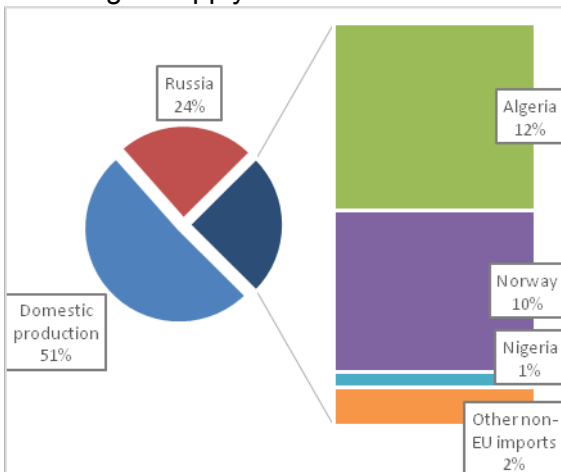
**Crude oil supply in 2000**



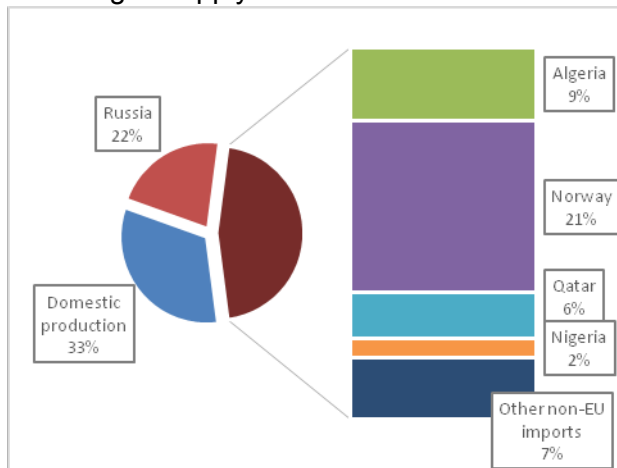
**Crude oil supply in 2012**



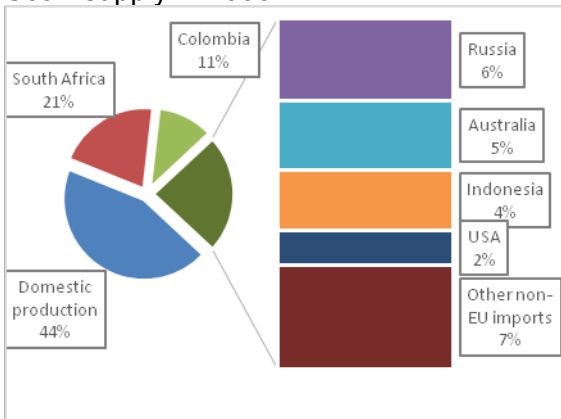
**Natural gas supply in 2000**



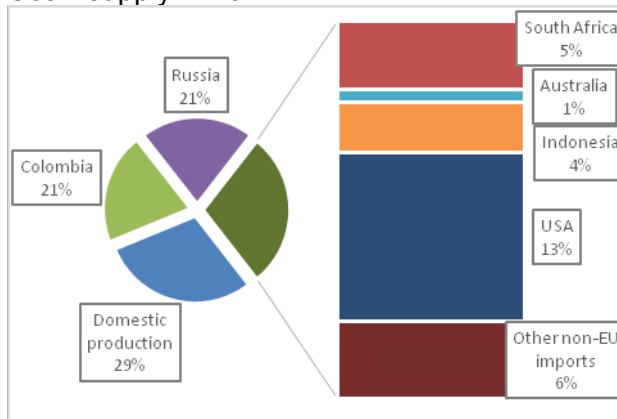
**Natural gas supply in 2012**



**Coal\* supply in 2000**



**Coal\* supply in 2012**



*Note:* \* Bituminous coal and anthracite (hard coal) and lignite and brown (sub-bituminous) coal.

*Source:* Eurostat.

## References

Marie-Claire Aoun and Quentin Boulanger (eds.), “Strengths and weaknesses of the European Union gas security of supply”, in *INSIGHT\_E Hot Energy Topics*, May 2014, [http://insightenergy.org/ckeditor\\_assets/attachments/28/het1\\_final.pdf](http://insightenergy.org/ckeditor_assets/attachments/28/het1_final.pdf)

Association of Mediterranean Energy Regulators, *Medreg strategy 2020-2030. A contribution to the establishment of a Mediterranean energy community*, August 2014, [http://www.medreg-regulators.org/Portals/45/documenti/MEDREG\\_Strategy\\_2020.pdf](http://www.medreg-regulators.org/Portals/45/documenti/MEDREG_Strategy_2020.pdf)

Gawdat Bahgat, “Energy Security: What does it mean? And how can we achieve it?”, in *The Journal of Social, Political and Economic Studies*, Vol. 33. No. 1 (Spring 2008), p. 85-98

Moncef Ben Abdallah et al., *Towards a Euro-Mediterranean Energy Community: Moving from import-export to a new regional energy model*, Paris, IPEMED, May 2013, <http://www.ipemed.coop/en/publications-r17/building-the-mediterranean-c49/towards-a-euro-mediterranean-energy-community-a2014.html>

BP, *Statistical Review of World Energy 2014*, June 2014, <http://www.bp.com/en/global/corporate/about-bp/energy-economics/statistical-review-of-world-energy.html>

Ariel Cohen, “Caspian Gas, TANAP and TAP in Europe’s Energy Security”, in *LAI Working Papers*, No. 14|06 (April 2014), <http://www.iai.it/content.asp?langid=2&contentid=1104>

Sylvie Cornot-Gandolphe, “Gaz de schiste en Pologne, au Royaume-Uni et au Danemark: vers un modèle européen?”, in *Notes de l’Ifri*, January 2014, <http://www.ifri.org/fr/node/7138>

Sylvie Cornot-Gandolphe, “The Impact of the Development of Shale Gas in the United States on Europe’s Petrochemical Industries”, in *Notes de l’Ifri*, November 2013, <http://www.ifri.org/en/node/7073>

Council of the European Union, *Follow-up to the European Council of 22 May 2013: review of developments on the external dimension of the EU energy policy* (17756/13), 12 December 2013, <http://register.consilium.europa.eu/pd/en/13/st17/st17756.en13.pdf>

Maité de Boncourt, “Offshore Gas in East Mediterranean: From Myth to Reality”, in *Notes de l’Ifri*, May 2013, <http://www.ifri.org/en/node/6846>

Sijbren de Jong, *The EU’s external natural gas policy – caught between national priorities and supranationalism*, KU Leuven Thesis, April 2013, <https://lirias.kuleuven.be/handle/123456789/393181>

Pasquale De Micco, “The EU’s Energy Security Made Urgent by the Crimean Crisis”, in *European Parliament In-Depth Analysis*, April 2014, [http://www.europarl.europa.eu/thinktank/en/document.html?reference=EXPO-AFET\\_SP%282014%29522338](http://www.europarl.europa.eu/thinktank/en/document.html?reference=EXPO-AFET_SP%282014%29522338)

European Commission, *European Energy Security Strategy* (COM(2014)330), 28 May 2014, <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex:52014DC0330>

European Commission, *Green Paper: Towards a European strategy for the security of energy supply* (COM(2000)769), 29 November 2000, <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex:52000DC0769>

European Commission, *Implementation of the Communication on Security of Energy Supply and International Cooperation and of the Energy Council Conclusions of November 2011* (COM(2013)638), 13 September 2013, <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex:52013DC0638>

European Commission, *The January 2009 Gas Supply disruption to the EU: An assessment* (COM(2009)977), 16 July 2009, <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex:52009SC0977>

European Commission, *On security of energy supply and international cooperation - The EU Energy Policy: Engaging with Partners beyond Our Borders* (COM(2011)539), 7 September 2011, <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex:52011DC0539>

European Commission and High Representative of the Union for Foreign Affairs and Security Policy, *A partnership for democracy and shared prosperity with the Southern Mediterranean* (COM(2011)200), 8 March 2011, <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex:52011DC0200>

European Parliament Committee on Foreign Affairs, *Report on towards a common European foreign policy on energy* (A6-0312/2007), 11 September 2007, <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+REPORT+A6-2007-0312+0+DOC+XML+V0//EN>

GRT Gaz, *Open Season for the development of new gas interconnection capacity between Spain and France as from 2015*, Information Memorandum, May 2010, [http://www.grtgaz.com/fileadmin/clients/fournisseurs/open\\_season/en/openseason-France-Espagne-memorandum\\_EN.pdf](http://www.grtgaz.com/fileadmin/clients/fournisseurs/open_season/en/openseason-France-Espagne-memorandum_EN.pdf)

Elif Burcu Günaydin, “Can South-Eastern Mediterranean Gas be a Supply for the EU?”, in *LAI Working Papers*, No. 14 | 17 (November 2014), <http://www.iai.it/content.asp?langid=2&contentid=1217>

ICF GHK, *Enerdata and Cambridge Econometrics, Macroeconomic impacts of shale gas extraction in the EU*, Study for the European Commission DG Environment, March 2014, <http://ec.europa.eu/environment/integration/energy/pdf/Macroec%20Impacts%20of%20Shale%20Gas%20Report.pdf>

International Energy Agency (IEA), *World Energy Outlook 2013*, November 2013

International Energy Agency (IEA), *World Energy Outlook 2014*, November 2014

International Energy Agency (IEA), *Medium-Term Gas Market Report 2014*, June 2014

International Monetary Fund (IMF), “MENAP Oil Exporters”, in *Regional Economic Outlook: Middle East and Central Asia*, October 2014, <http://www.imf.org/external/pubs/ft/reo/2014/mcd/eng/mreo1014.htm>

Cécile Maisonneuve, “The European Energy Policy: Building New Perspectives”, in *Notes de l’Ifri*, April 2014, <http://www.ifri.org/en/node/7989>; Claude Mandil et al., *A New European Energy Policy? Assessment and Proposals*, Synopia report, March 2014, <http://www.synopia.eu/?p=1051>

Carole Mathieu, “From 2020 to 2030, from Copenhagen to Paris: a mindest change for the European climate policy?”, in *Actuelles de l’Ifri*, December 2014, <http://www.ifri.org/en/node/9025>

Observatoire Méditerranéen de l’énergie, *OME Declaration for the UfM Energy Ministerial Meeting*, Brussels, 11 December 2013, [http://www.dimed.gouv.fr/sites/dimed.gouv.fr/files/7\\_ome\\_declaration\\_ufm\\_ministerial\\_11dec2013.pdf](http://www.dimed.gouv.fr/sites/dimed.gouv.fr/files/7_ome_declaration_ufm_ministerial_11dec2013.pdf)

Laura Parmigiani, “The European Gas Market: A Reality Check”, in *Notes de l’Ifri*, May 2013, <http://www.ifri.org/en/node/6861>

Beatrice Petrovich, “European gas hubs: how strong is price correlation?”, in *Oxford Institute for Energy Studies Working Papers*, No. NG 79 (October 2013), <http://www.oxfordenergy.org/?p=3827>

Simon Pirani et al., “What the Ukraine crisis means for gas markets”, in *Oxford Institute for Energy Studies Energy Comments*, March 2014, <http://www.oxfordenergy.org/?p=4212>

Rocío Prieto, *The role of LNG in the security-of-supply context, presentation to the 25th European Gas Regulatory Forum*, Madrid, 6 May 2014, [http://www.cceer.eu/portal/page/portal/EER\\_HOME/EER\\_WORKSHOP/Stakeholder%20Fora/Madrid%20Fora/25supthsup%20Madrid%20Forum](http://www.cceer.eu/portal/page/portal/EER_HOME/EER_WORKSHOP/Stakeholder%20Fora/Madrid%20Fora/25supthsup%20Madrid%20Forum)





OCP Policy Center

Ryad Business Center – South, 4th  
Floor – Mahaj Erryad - Rabat,  
Morocco

Website: [www.ocppc.ma](http://www.ocppc.ma)

Email : [contact@ocppc.ma](mailto:contact@ocppc.ma)

Phone : +212 5 37 27 08 60

Fax : +212 5 37 71 31 54

ISSN N° 2421-9487