

# THE ROLE OF GAS IN THE EXTERNAL DIMENSION OF THE EU ENERGY TRANSITION



Sami Andoura | *Senior Research Fellow, Notre Europe - Jacques Delors Institute*

Clémentine d'Oultremont | *Research Fellow, Egmont - Royal Institute for International Relations*



---

## SUMMARY

As an economically attractive option for investors, a potential backup source for renewables and the cleanest fossil fuel, natural gas is expected to play an important role in the European transition towards a low-carbon economy by 2050. At a time when European primary energy resources are being depleted and energy demand is growing, the gas import dependency of the EU will continue to grow significantly in the coming years.

The EU is thus facing important challenges linked to its gas policy both internally, by attempting to create a competitive, interconnected and well-functioning internal market for gas; and externally, by struggling to develop a coherent and collective external strategy, which would allow it to both diversify and secure its gas supply from abroad. Meanwhile, new sources of unconventional gas could change the world's energy markets with potential consequences for the EU. However, many uncertainties remain regarding their development within the EU. In view of all these challenges, this Policy Paper concludes by laying out concrete recommendations on how the EU could strengthen its gas strategy both internally and externally.

This Policy Paper is part of a series entitled "[EU resource management: what European external action strategy?](#)" which also includes contributions by Annika Ahtonen (EPC) and Andrea Frontini (EPC), Gonzalo Escribano (Real Instituto Elcano), Nadège Chambon (*Notre Europe - Jacques Delors Institute*) and Stephen Tindale (CER).

It is a contribution to the project "[Think Global - Act European \(TGAE\). Thinking strategically about the EU's external action](#)" directed by *Notre Europe - Jacques Delors Institute* and involving 16 European think tanks:

Carnegie Europe, CCEIA, CER, CEPS, demosEUROPA, ECFR, EGMONT, EPC, Real Instituto Elcano, Eliamep, Europeum, FRIDE, IAI, Notre Europe - Jacques Delors Institute, SIEPS, SWP.

Four other series of Policy Papers deal with key challenges on defence, EU neighbourhood, migrations and economic policy. The final report presenting the key recommendations of the think tanks will be published in March 2013, under the direction of Elvire Fabry (*Notre Europe - Jacques Delors Institute, Paris*).

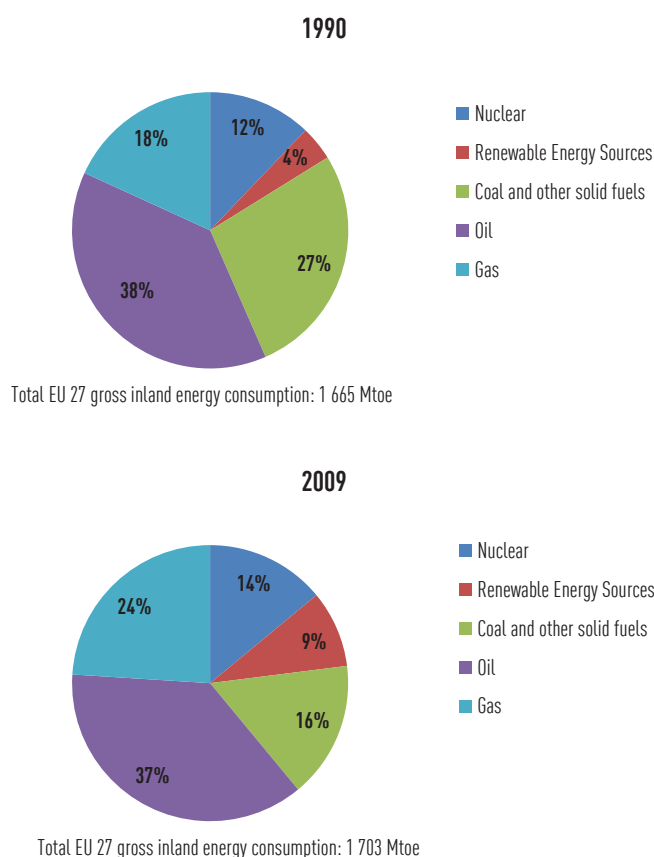
# 1. The role of gas in the European energy context

## 1.1. The fast changing share of gas in the EU energy mix

Gas is expected to become the only fossil fuel that will increase its share in the global energy demand in the forthcoming years. On a global scale, resources are spread over all continents and remain abundant. The recent boom in unconventional gas that has emerged in North America may well spread elsewhere, leading to a huge increase in global gas supplies.

In the EU, fossil fuels represent three quarters of the current EU energy mix and the share of gas accounts for some 24%. Between 1990 and 2009, gas consumption in the EU increased by 41%.

Graph 1: EU gross inland energy consumption by fuel in 1990 and 2009



Source: Eurostat May 2011.

The share of gas in the EU energy mix is still rising. It is projected that between 2009 and 2020 natural gas consumption in Europe will rise by around 17%. This tendency is expected to continue upward until at least 2030-40 to be progressively diverted downward in the longer term. Accordingly, in the Commission's Energy Roadmap 2050<sup>1</sup>, gas is projected to account for between 22 and 25% of the EU energy mix by 2030 and between 19 and 26% by 2050.

1. European Commission, *Energy Roadmap 2050*, COM(2011) 885 final, 15.12.2011.

The major trend emerging from the EU Energy Roadmap 2050 is that EU gas consumption in absolute terms is set to decrease in the longer term due to an increase in renewable energy and improvements in energy efficiency. However, the decision of several Member States to phase out nuclear power after the Fukushima accident, the development of unconventional gas (see §3 below) and emerging technologies such as CCS (Carbon capture and storage) could increase the role of gas over a longer time frame. Such a scenario could undermine the development and deployment of renewable energy sources at the EU level. If Europe remains committed to reducing its carbon emissions by 80-95% below 1990 levels by 2050, the fact of gas turning into a long-term solution might become problematic. In this respect, gas should not be the technology bridge to gas.

## 1.2. An increasing reliance on external supply

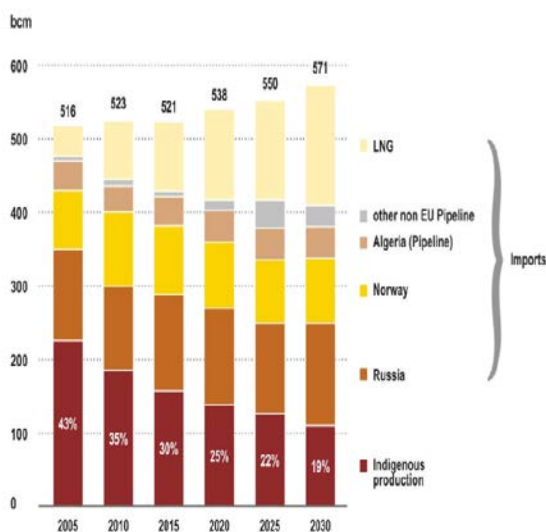
“THE EXTERNAL CONSTRAINTS THAT THE EU FACES FOR THE SECURITY OF ITS GAS SUPPLY ARE EXPECTED TO REMAIN SUBSTANTIAL”

The external constraints that the EU faces for the security of its gas supply are expected to remain substantial in the years to come. This is due not only to increasing gas demands until at least 2030, but also to the depletion of natural gas resources in the EU. Between 2009 and 2020, the amount of gas produced in the EU is projected to fall by nearly 40%. Consequently, the gas import dependency of the EU will increase in the short and medium term. While in 2007, the EU already imported 53% of its energy consumption with natural gas accounting for 60% of these external needs, its energy import dependency should reach 59% in 2030 with natural gas dependency representing 83%.

About 79% of EU gas imports come from three major suppliers, namely Russia, Norway and Algeria. The EU and Russia are very important mutual trade partners as 36% of the EU’s total gas imports originate from Russia and 70% of all Russian gas exports go to the EU. Most of this gas is delivered through pipelines and traded according to long-term contracts linked to the price of oil.

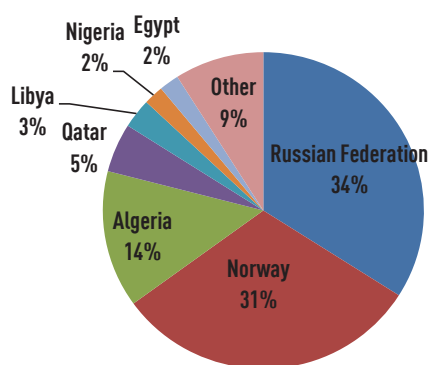
Around 15% of EU gas imports come through Liquefied natural gas (LNG), mainly shipped from North Africa, Qatar, and Nigeria. Despite the important costs of LNG, its share in overall EU imports is expected to grow with the aim of improving the security, diversity and reliability of EU gas supply. However, the EU will be in increasing competition for LNG supplies with the rest of the world, especially Asia.

Graph 2. Gas in the EU until 2030



Source: Eurostat May 2011.

Graph 3. EU imports of gas, by country of origin (2009)



Source: IHR CERA, October 2011.

## 2. Lack of a comprehensive EU strategy for gas

In the field of gas supply, the European Union faces both internal challenges and external constraints, the two being interlinked. The EU is committed to the completion of the single market for gas and electricity by 2014. Although progress has been made in recent years, barely half of the work needed to create the single energy market for gas has been done. There is still a long way to go before the various national markets become parts of a homogeneous block.

One of the main reasons why the single energy market for gas is difficult to complete is the fact that energy policy is a shared competence between the EU and its Member States. European countries can thus make unilateral sovereign choices in the field of energy, especially regarding the external dimension of the policy. Initiatives launched at the EU level regarding the external dimension of gas policy remain mainly in the form of soft law, i.e. communications, statements of objectives and declaratory resolutions without binding commitments. As a consequence, the European Union struggles to develop a common strategy regarding its choices of energy resources. This prevents it from exerting its full economic, commercial and political weight in its relations with producer and transit countries.

Another key issue in the development of a competitive EU gas market is the lack of infrastructure, strategic interconnections and storage facilities both within and outside the EU. These are essential in ensuring the security and diversity of supply. In this context, Europe's strong sense of insecurity has drastically increased due to the successive gas disputes between Ukraine and Russia which directly affect its supplies.

Moreover, various competing and controversial projects for gas pipelines along diversified supply routes have emerged. For instance, the European "Nabucco" project, which aims to reduce the EU's dependence on Russia, is in competition with "South Stream", a project resulting from a consortium between Russia's Gazprom and Italy's ENI. Both projects intend to exploit the resources of the Caspian Sea. The politicisation of these gas corridors has been particularly damaging to the creation of a common European energy market.

**“ THE UNCOORDINATED SYSTEM OF LONG-TERM GAS CONTRACTS IS CAUSING HUGE DISPARITIES IN GAS PRICES AMONGST MEMBER STATES”**

The EU is clearly the main battlefield for gas pricing. Contrary to the US, the UK and Australia, where gas prices are established through competition, EU gas prices are mostly indexed on oil prices under long-term contracts with foreign suppliers. This uncoordinated and uncompetitive system is causing huge disparities amongst Member States regarding the price of their gas supply. This has also a direct impact on the global competitiveness of EU industry, facing a more expensive energy bill.

More recently, however, the EU has been making progress in strengthening the external dimension of its energy policy for gas, especially with regards to four aspects:

- Traded gas markets are slowly developing in the EU through hub-based gas trading. However, except for the UK, exchange trade is still marginal.
- Following the Russia-Ukraine gas crisis, the EU adopted new legislation related to security of supply and the issue of crisis management. The new regulation on the security of gas supply adopted in autumn 2010<sup>2</sup> aims at creating a genuine EU mechanism for rapid and coordinated management of external energy crises.

2. Regulation No 994/2010 of the European Parliament and the Council of 20 October 2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC.

- The EU is trying to develop energy partnerships with its neighbouring regions, especially after the recent gas discoveries in the Eastern Mediterranean region.
- The EU has improved its negotiation position towards its main foreign suppliers due to a combination of factors, i.e. the arrival of shale gas competition, the financial crisis that reduced energy demand and the deregulation of European electricity prices. The oil-indexed, long-term, take-or-pay contracts are thus coming under enormous pressure. For instance, Russia's Gazprom has granted substantial retroactive cuts to several of its European customers, including Germany's E.ON and France's GDF Suez. Moreover, the European Commission together with some Member States is trying to put pressure on Russia to renegotiate some of its long-term contracts with countries from Eastern and Central Europe.

Despite these efforts, the unilateral approach of the Member States to secure their energy supply continues to prevail over a coordinated EU approach.

### 3. The consequences of unconventional gas developments

New unconventional gas developments could radically change the global geo-energy stakes by improving global security of energy supplies. In 2011, the International Energy Agency (IEA) has explicitly wondered whether we are "entering a Golden Age of Gas".

Unconventional gas differs from conventional gas in that it is difficult to access. It requires innovative drilling techniques to be extracted from the ground. Thanks to breakthrough technology in the US, operating costs have been reduced, leading to a real gas revolution in this country. If they are exploited, the important reserves of unconventional gas in politically stable locations could fundamentally shift the world's energy market as well as current power relations.

Currently, only the US, Canada and Australia are exploiting their unconventional gas resources, especially shale gas. Unconventional gas production amounts to half of US gas production today and could reach 71% in 2035. In an optimistic scenario, the US, Canada, and Australia could, respectively, meet 5%, 4% and 19% of EU gas demand by 2035. This could further lead to a reduction of the price of oil-indexed gas.

In Europe, shale development is in its infancy. Although shale gas resources are thought to exist in many EU countries, the situation is very different than that in the US. The EU possesses lower reserves, a much smaller geographic area and a much greater density of population. Keen to break their dependence on Russian supplies, it is in Eastern Europe that the perspectives for shale gas development are the most optimistic, especially in Poland.

At the same time, numerous uncertainties remain surrounding shale gas development in the EU, making future investments far from certain. First of all, the volume of exploitable reserves within the EU is difficult to calculate. For instance, Polish estimates of recoverable resources are 10 times lower than initially thought. Also, public concerns about the negative environmental and climate impacts of extracting shale gas are rising. The main concerns are linked to water contamination, water resource depletion, earthquakes, degradation of biodiversity, land take and methane emissions. This last issue could have an impact on global warming. Following the publication of several reports on the risks of shale gas exploitation by the Commission, the European Parliament considers the current regulatory framework insufficient and calls for the Commission to propose new, more restrictive, legislation in 2013.

“THE EU GAS MARKET MIGHT BENEFIT FROM THE DEVELOPMENT OF UNCONVENTIONAL GAS RESOURCES”

negotiating position of the EU with respect to its foreign suppliers.

While the uncertainties regarding the environmental and climate impacts of unconventional gas exploitation can certainly not be ignored, the EU gas market might benefit from the development of unconventional gas resources. On the one hand, it will improve the diversity of supply thanks to increasing LNG supplies originally directed to the US that will become available on the EU market. On the other hand, although the potential exploitation of unconventional gas within the EU will not be a game changer, it could trigger investment in transport infrastructure and slightly reduce EU energy dependency. All in all, these new elements are expected to improve the

## 4. Recommendations: the need for a comprehensive EU strategy for gas

Facing all these challenges and constraints, it is crucial that the EU clarifies its strategy regarding its gas policy in the aim of improving its security of supply while remaining committed to tackling climate change. In order to do so, the EU should endorse the following recommendations.

- The EU should clarify its energy choices. Regarding the economic attractiveness of gas for investors, the potential shale gas developments and the decision of several Member States to phase out nuclear power after the Fukushima accident, the EU needs to ensure that the increasing interest in gas does not substitute renewable energies in the long term. This could undermine the long-term strategy to tackle climate change, including the energy transition of the EU economy.
- The EU must complete the creation of a common energy market for gas. In this context, more competition, better supervision, adequate regulation and increased use of hub-traded gas volumes should lessen the domination of oil-indexed price contracts and reduce average wholesale gas prices. Moreover, the completion of the internal gas market is reliant on large investments in infrastructure, strategic interconnections and storage facilities both within and outside the EU in order to ensure the security and diversity of supply.
- LNG terminals should continue to play an important role in efforts to secure and diversify EU gas imports. However, it is important to keep in mind that a large contribution of LNG in gas imports could increase gas prices due to the important costs of LNG projects.
- The EU should define a clear regulatory framework for the development of shale gas so as to clarify the situation for investors.
- The EU needs to remain committed to the process of concluding binding international agreements and energy partnerships with producer and transit countries, as well as with other key international actors. Whereas the EU has engaged in opening its Southern Corridor to energy imports from the Caspian Sea and Central Asia, mainly through the building of the Nabucco gas pipeline, it now needs to conclude the necessary agreements and align its economic, technical and political means in order to finalise this project in due time.
- Beyond the simple inclusion of energy objectives in foreign relations, the EU needs to achieve a more systematic, structured and coherent use of the set of foreign policy instruments that could contribute to the development and strengthening of the Union's external relations in the field of energy (i.e. CFSP, trade agreements, development policy association treaties, the energy community with south eastern European countries, enlargement process, European Neighbourhood policy, strategic partnerships, etc.). In this respect, the new diplomatic service, EEAS, together with the European Commission, should play an active

role in better coordinating EU external action in the energy field, while ensuring the coherence of this external action (mainly security of supply and international relations at large) with internal development (internal market for gas). One way to achieve this would be to better structure and consolidate relations between the EEAS and the DG Energy, including the relations between the High Representative and the Energy Commissioner when acting both in Brussels and abroad.

- Europe and its Member States will only make themselves heard if they present a united front by speaking with a single voice abroad. Consequently, the EU should be in a position to question commercial deals at the national level when they are not in line with Europe's security of supply as a whole. Moreover, the EU should supervise the renegotiation of long-term contracts for gas with foreign suppliers (especially Russia) in its aim of applying the same range of gas prices everywhere within the EU. Last but not least, the EU should stand firm in applying its internal regulation to external operators as long as they are active in the internal market for gas. The antitrust case launched by the EU Commission against Gazprom is an illustration of this new trend.

In conclusion, the future of EU gas policy has become a major long-term geopolitical, economic, environmental and social concern. In the unstable energy landscape of the twenty-first century, it is therefore key that the EU and its Member States improve their cooperation in identifying and implementing clear priorities in external energy policy.

On the same theme...

Contributions to the TGAE series: "EU resource management: what European external action strategy?"

MEETING EUROPE'S RESOURCE CHALLENGE WITHIN AND BEYOND EU BORDERS

Annika Ahtonen (EPC) and Andrea Frontini (EPC), *Policy Paper No. 78, Notre Europe - Jacques Delors Institute, March 2013*

THE ROLE OF GAS IN THE EXTERNAL DIMENSION OF THE EU ENERGY TRANSITION

Sami Andoura (*Notre Europe - Jacques Delors Institute*) and Clémentine d'Oultremont (Egmont), *Policy Paper No. 79, Notre Europe - Jacques Delors Institute, March 2013*

PROMOTING LOW-CARBON ENERGIES IN MEDITERRANEAN PARTNER COUNTRIES

Gonzalo Escribano (Real Instituto Elcano), *Policy Paper No. 80, Notre Europe - Jacques Delors Institute, March 2013*

AN EXTERNAL STRATEGY FOR EUROPEAN AGRICULTURE. MEETING FOOD SECURITY AND ENVIRONMENTAL CHALLENGES

Nadège Chambon (*Notre Europe - Jacques Delors Institute*), *Policy Paper No. 81, Notre Europe - Jacques Delors Institute, March 2013*

SAVING EMISSIONS TRADING FROM IRRELEVANCE

Stephen Tindale (CER), *Policy Paper No. 82, Notre Europe - Jacques Delors Institute, March 2013*

Managing Editor: Yves Bertoncini • The document may be reproduced in part or in full on the dual condition that its meaning is not distorted and that the source is mentioned • The views expressed are those of the author(s) and do not necessarily reflect those of the publisher • *Notre Europe - Jacques Delors Institute* cannot be held responsible for the use which any third party may make of the document • Original version • © *Notre Europe - Jacques Delors Institute*