

European energy security: a cleverer gas approach, betting on a cost-efficient mid-term interconnection strategy

by Marzio P. ROTONDÒ

The 2020 climate and energy roadmap is well-advanced, gas imports have dropped for many years, the consumption patterns are changing while the security targets are still the same. Investment in gas infrastructures are following overestimated projections and risk to become unused sooner than expected. Coordinating funds in a rational way, better distributing existing imports, strengthen stock capacities and catalyse public-private investment to exit the carbon-based economy rapidly, can reconcile energy independence and a green economy perspective.

Policy advices

- Better link the energy security mid-term policies with the low-carbon long-terms goals
- Stop funding fossil based new infrastructures to avoid idling or lock in risk
- Catalyse public-private investments for a faster transition to green energy
- Interconnect existing energy facilities in a more shock-resistant continental grid
- Enhance a cross-border coordination and build a more resilient Energy Union

Energy supply is a strategic field for the European Union. The growing geopolitical instability around Europe of recent years, the economic crisis, volatile prices and the changes in energy consumption patterns have made it difficult to plan a long-term strategy of diversified and secure supply. The European Union has undertaken the road toward a green economy, looking for a strong, independent and sustainable future. **Nevertheless, hydrocarbon fuels are still the present.** Investing cost-efficiently, better allocating the available resources in this time of budgetary constraint, creating business-oriented durable opportunities with coordination, trust and foresight must be a major concern for the European policy-makers and energy stakeholders.

| Looking forward

On the well-advanced path of the [2020 climate and energy package](#), looking ahead to the [2030 framework](#) on the roadmap for the [2050 low-carbon economy](#), the European Union has taken the **robust commitment to embody a global leading player in fighting climate change**. The [Paris Agreement](#), the first worldwide signature on the reduction of greenhouse gases, has been an eloquent message about what the global trend in energy investment should be whilst pursuing reduced atmospheric emissions.

Fossil fuels are still present today. They represent the major share of the EU's gross inland energy consumption. In 2014, 73.3% of all energy in the EU-28 was produced from coal, crude oil, natural gas and non-renewable wastes. The 87.4 % of petroleum products were imported, 67.4 % for natural gas and, 45.6 % of solid fuels¹. Even though the European member states' dependency has slightly decreased since 2010 – considering the economic crisis and the growing impact of green energy (16.7% in 2015²) – the energetic supply remains an important component of the European economy.

| European fears

Above all others energy sources, **natural gas has embodied the anxiety of energy insecurity**. By relying on pipeline infrastructure, few suppliers and little on LGN input volume; having an inefficient trans-border interconnection grid and not an abundant storage capacity capable to follow the presumed consumption projections; **the gas market structure has represented the emblem of energy dependency's concerns on EU countries**. Still signifying a significant 21,4% portion of the EU energy consumption in 2014, it has been considered a primary dilemma for European energy security for more than a decade.



1. Gas infrastructures and projects in Europe (source: gie.eu)

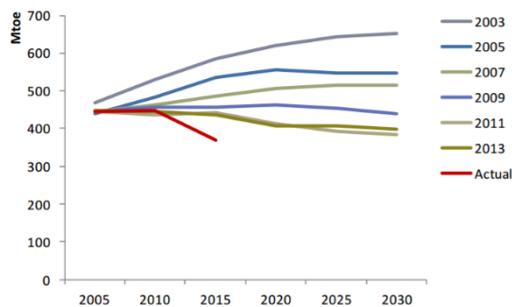
The geopolitical context of tensions around the EU, such as the difficult relationship with Russia and its confrontation with Ukraine, have given a main push for the diversification of energetic axes and suppliers. The Arab Spring has created more fears, where the pipelines from Algeria, also passing through Tunisia, could be the target of a terrorist attack. More recently, the growing authoritarian regime in Turkey and its increasingly frequent frictions with European countries make rising interrogative about its reliability, and has made the lane for Caspian Sea more difficult. The EU internal production is decreasing, such as

¹ <http://ec.europa.eu/eurostat/documents/3217494/7731525/KS-DK-16-001-EN-N.pdf/cc2b4de7-146c-4254-9521-dcbd6e6fafa6>

² http://ec.europa.eu/eurostat/statistics-explained/index.php/Energy_from_renewable_sources

Groningen gas field Nederland³, but new discoveries as the Leviathan in 2010 and the development of American shale gas, are signals going towards a more diversified supply spectrum.

| Overestimated projections



2. Gas consumption & forecasts (source: e3g.org)

Gas consumption projections have been characterise in recent years of overestimation. Between 2010 and 2015, gas demand in the European Union has decreased around 20%⁴, following the aftermath of the crisis on the economy and the rapid progression of the renewable energy in the electricity production. For ten years, since 2003, [PRIMES model](#) used by the [European Commission's Energy Trends](#), similar to other reports produced in the same years, have had to reduce systematically forecasts for the European gas demand⁵.

Expectations of the growth of EU's gas needs have driven development of import and storage infrastructure over the last decades. The pipeline's import capacity from Russia, Norway, Algeria and Libya seems to be today sufficient to satisfy the current EU gas demand and the import requirements of tomorrow. An infrastructural size excess is confirmed by the gas facility low rates use: only 58% for import pipelines and 32% for LNG terminals⁶. Considering the European climate policies' commitments intentioned to reach the peak fossil-fuel consumption as soon as possible – if this did not already happen – even a decline of internal gas production, **it is unlikely that the sector needs more consistent investment.**

| Energy Security

In the frameworks for supply security, gas represents the major concern. In the short-term, the European Union will take into the consideration “a complete halt of Russian gas imports to the EU”⁷. Yet, even if gas gives an important political leverage trough prices to suppliers, it is unlikely to think that such belligerent scenario can happen, and if it will be so gas will certainly not be any more the major concern. Moreover, the more dependent countries represent only the 7% of EU demand⁸. **Based on what seems to be partially influenced by a political view of the problem**, the EU pushed for diversifying supplier countries and routes in the long-term, encouraging new projects, risking supporting **a gas interest rescue strategy more than security goals.**

³ <http://www.reuters.com/article/us-netherlands-gas-groningen-idUSKCN11J14S>

⁴ http://ec.europa.eu/eurostat/statistics-explained/index.php/Natural_gas_consumption_statistics

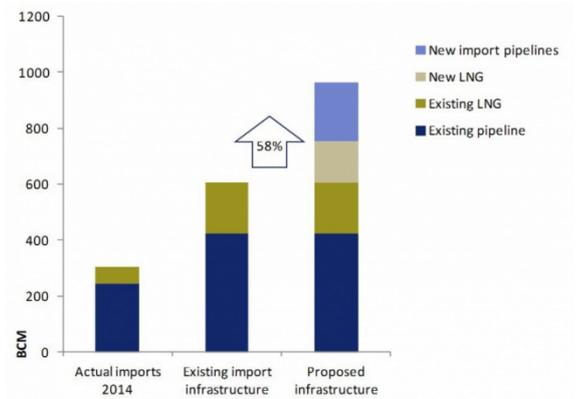
⁵ https://www.e3g.org/docs/E3G_Trends_EU_Gas_Demand_June2015_Final_110615.pdf

⁶ <http://bruegel.org/2016/01/rethinking-the-security-of-the-european-unions-gas-supply>

⁷ <https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/energy-security-strategy>

⁸ https://www.e3g.org/docs/E3G_Trends_EU_Gas_Demand_June2015_Final_110615.pdf

If current plans were to materialize, the EU would see a significant increase in gas infrastructure, with pipelines and LNG terminals under development collectively representing a 58% increase in EU gas import volume⁹. In 2014, the entire system capacity build was used approximatively by half and if EU will meet the 2030 targets, the gas imports could be reduced further by 29%¹⁰. The risks of overinvesting in the field is to build 'out of business' facilities or create a 'lock in' effect



3. Existing & projected infrastructure capacity (e3g.org)

that collides with EU decarbonisation goals. Smarter energy choices would be able to cut the investments in gas infrastructures by 80%, which will risk being a white elephant before the end of their life time by 2050¹¹.

| Policy solutions

Today policy makers have the time-limited great responsibility to build a better future for the next generations. In order to improve the allocation of today's resources and continue to follow the road of a green evolution, a clear, independent and non-contradicting analysis of gas industry and of the energy sector in general is recommend. This policy brief aims to contribute to this work, giving some preliminary advice, with a view to continue an empirical study to find the best strategy to pursue, a cost-benefit logic calibrated on an autonomous and sustainable horizon.

The threshold which delimit the beginning of the end of fossil fuel investments in the European Union could have been reached. Today policies need to focus in interconnecting existing pipeline and LNG facilities to avoid plausible mid-term shock, enhance underground storage capacity and make them able to function as clearing houses for fluctuating flux and prices. Gas is still the present and will be there also in the next future, considering that other energy production, like coal and nuclear, could phase out soon in certain countries and renewable energy need today to be backed when idle. Yet, resist with the present capacities and few investments is possible, redirecting more financial efforts to even exceed 2020-2030 goals for renewable energy and efficiency, which is the only authentic way to reduce day by day the fossil fuel dependency.

It would be necessary to fully commit the public-private funding of [Connect European Facilities](#) and the [European Fund for Strategic Investment](#) to a coordinated strategy to invest in a low-carbon projects, prioritizing investment in energy efficiency, renewables, storage, electricity mega grid and in continuing research on new green solutions. This is the primary aim of the [European Energy Union](#) and the [Energy Security](#) projects: to support a competitive, independent, durable economy, closer to business and to citizen's needs of the future.

⁹ <https://www.e3g.org/library/more-security-lower-cost-a-smarter-approach-to-gas-infrastructure-in-europe>

¹⁰ ibid

¹¹ ibid.

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Tags: Natural Gas, European Energy Security, Energy Union, CEF, EFSI, pipelines, LNG, underground storage, Russia, Ukraine, Algeria, Turkey, Norway, Groningen, Leviathan, Caspian Sea, overestimating forecast, lock in, energy, climate change, low-carbon economy, hydrocarbon fuels, cost-efficient strategy, cross-border coordination, renewable, efficiency, 2020.