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Fondazione Eni Enrico Mattei
Corso Magenta 63, Milan – Italy
www.feem.it

NEW CHALLENGES AND OPPORTUNITIES FOR EUROPEAN GAS MARKETS

By **Manfred Hafner**¹ and **Simone Tagliapietra***

FEEM "Gas Talks" are closed-door brainstorming Workshops gathering high-level international experts (from the academia, international organizations, industry) to discuss mid- to long-term challenges and opportunities for European gas markets. The third edition of the FEEM "Gas Talks" was held in Milan on 20-21 November 2014. In what follows FEEM researchers Manfred Hafner and Simone Tagliapietra comment the main highlights of the event with interviews to some of the leading energy experts who participated in the debate.

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Does the EU need a new gas strategy in view of the European energy policy priorities and the Ukraine crisis?

In the aftermath of the Ukraine crisis many voices were raised calling for a new European gas strategy targeting a substantial reduction of the dependence on Russian supplies. These requests, based on geopolitical considerations, simply fail to take the European gas reality into account.

As an overall trend the European dependence on Russian gas cannot decline substantially in the foreseeable future. Up to the mid-2020s at least 100 Bcm/y will be supplied from Russia in accordance with the existing long-term contracts and even after 2030 there will be limited options to reduce Russian supplies below this level, unless the global LNG market expands very rapidly and Asian demand does not take an increasing share of the expansion.

However, individual European countries highly dependent on Russian gas do have

diversification options. In the case of Baltic countries and Poland, Polish and Lithuanian LNG terminals might provide a substantial contribution to diversification, exactly as minor volumes from the Southern Gas Corridor and small FLNG terminals might do in South East Europe, and as "reverse flow" of LNG from the west might do in Central Europe. For all these countries the most cost efficient way to enhance their security of gas supply is to jointly act in the European context by sharing LNG terminals and developing better interconnections of their gas networks.

Considering the overall little scope for gas supply diversification, the European Commission recently stressed, with its new 2030 policy framework for climate and energy, the key role of renewables and energy efficiency in enhancing the continent's energy security. The implementation of these measures will be challenging, and the EU calculation that efficiency can create a 40% reduction in gas imports by 2030 seems to be unrealistic. As far as the prospects for an EU Energy Union are concerned, it seems that the initiative will basically consist on a better coordination of the current three axes of the EU energy policy (sustainability, competitiveness, security).

In this framework, the development of the proposed EU common gas purchasing mechanism appears to be unfeasible, particularly as far as the compatibility with the EU competition law is concerned.

2. What consequences for the Russian gas strategy in view of the Ukraine crisis?

The Russian gas market is currently characterized by significant oversupply. In other words, the country's gas production potential is huge (particularly after the start of Gazprom's Bovanenkovo and with the fast growth of independent gas producers' production), significantly exceeding domestic consumption (stagnating due to slower economic performance) and export demand (weakened by falling demand in Europe and CIS).

¹ [Manfred Hafner](#) is associate researcher at FEEM Milan

* [Simone Tagliapietra](#) is senior researcher at FEEM Milan

As far as gas exports to Europe are concerned, Russia does not expect any serious growth in the foreseeable future and it just targets to preserve the current volumes in order not to allow for the disruption of budget revenues. As a consequence of this situation, Russia has found itself in the urgent need to diversify its gas export markets.

In this context, and particularly after the Ukraine crisis, Russia accelerated its shift Eastwards (a strategy planned since 2009 but only now seriously pushed ahead). North-East Asian countries seem to be the most attractive new markets for Russia, considering their booming gas demand and their lack of own gas resources. Furthermore, Asian partners are regarded by Russia not only as a market, but also as a source of financing, technologies, equipment and even labor force. Furthermore, the creation of the new energy infrastructure in the Russian Eastern Siberia and the Far East is regarded as a tool to accelerate the country's economic growth, helping to form new industrial clusters based on the development of energy resource production and processing. The clearest sign of this new trend is, of course, represented by the recent mega gas deal with China concerning the Power of Siberia pipeline, which was quickly speeded-up in the new geopolitical environment after more than a decade of negotiations.

In addition to the speed-up of Russia's shift Eastwards, the Ukraine crisis and the related sanctions imposed on Russia by the US and EU might have another key impact on the country's gas export strategy: the dismissal of LNG projects in favor of pipelines. LNG equipment is currently not under sanctions, but considering the monopoly of Western companies on the production of critical equipment for LNG plants (i.e. heat exchangers) and the eventuality that further sanctions might also target this sector, the entire Russian LNG strategy is currently under threat.

Thus on October 2014, Gazprom for the first time announced that it is ready to

abandon the Vladivostok LNG project and to send all the feed-gas to China via pipelines. This strategic re-focus on pipeline gas export might turn out to have positive impacts for Russia, particularly considering that the economics of its pipeline exports look much better than the one of its LNG projects.

3. The way forward for EU-Russian gas relations

Since 2009 the EU and Russia have engaged in a regular in-depth dialogue on gas. Key interest of Russia has been to have more predictability of EU energy policies (i.e. the future role of gas in the EU energy mix), while key interest of the EU has been to have more comfort on both security of supply (i.e. transit issues) and with respect with the conduct of companies with large market share in individual States of the EU.

So far the dialogue has been moving in the right direction, helping the two parties to better understand their respective interests. However, this successful exercise has been frozen for political reasons in the aftermath of the Ukraine crisis. In a crisis situation what is needed is more dialogue, not less dialogue.

For this reason what should now be ensured (particularly on the EU side) is that, despite the on-going political tensions, the EU-Russian dialogue on gas restarts from where it was a year ago, in order to allow an inclusive and coordinated response to the numerous challenges concerning the EU-Russian gas partnership.

4. Mid-to long term domestic and pipeline supply options and potential for Euro

Due to gas resources depletion in Norway, Netherlands, the UK and elsewhere, European conventional gas production is expected to fall by 40 per cent in the period 2013-2030. This dramatic reduction will unlikely be compensated by unconventional gas production, considering that shale gas will most likely remain marginal in the continent even up to the mid-2030s. Only the prospects of biogas might be substantial (28 Bcm/y by 2020, possibly up to 50 Bcm/y

by 2030), albeit dependent on subsidies and competition with food production.

As a consequence of this situation, despite the fact that European gas demand will not increase greatly during the 2013–2030 period, the requirement for gas imports will increase, although not substantially. As the most important source of gas in Europe, the prospects of gas production in the Norwegian continental shelf should be better assessed. Large sectors of the continental shelf are largely unexplored, raising hopes (or at least questions) about future additional gas production potential. Also considering these prospects, the EU-Norway gas partnership should be reinforced in the future.

In particular, Norwegian gas resources should be considered as European resources. Norway is already part of the European Economic Area and fully part of the EU internal market for electricity; the opportunity of presenting Norwegian and EU gas resources together might represent an important tool to give a better image of gas in the EU.

As far as North Africa is concerned, significant gas resources are there but gas production is declining all over due to unattractive investment environment and security/political uncertainties. North African gas exports to Europe might even slightly decline in the 2020 horizon, particularly due to rapidly increasing gas demand in North African countries themselves (an increase mainly due to poor energy efficiency, extensive subsidies and high levels of gas flaring).

As far as the Southern Gas Corridor is concerned, the only certain input to the European gas market will be represented by the 10 Bcm/y that Azerbaijan will start to deliver by 2019. Notwithstanding their huge gas potential, both Turkmenistan and Iran continue to represent unfeasible options for the Corridor due a number of geopolitical and commercial issues.

In the foreseeable future only the Kurdistan Region of Iraq and the Eastern

Mediterranean might provide an additional input to the European gas markets (potentially up to 10-20 Bcm/y by the mid-2020s), but also in this case a number of geopolitical and commercial barriers will need to be overcome. A proactive EU role is needed in order to mobilize additional gas resources from the Mediterranean, Middle East and Caspian regions for Europe.

5. LNG supply potential for Europe

LNG might represent a more important alternative to Europe than pipeline supply options. In fact, the existing LNG regasification capacity already allows Europe to potentially import large LNG quantities. Of course, Europe is not alone on the global LNG markets and for this reason the competitiveness of LNG in Europe will depend on the future global gas supply/demand balance. As far as the short-to-medium term is concerned, a new wave of LNG supply has already started in May 2014 with Papua New Guinea and about 60 Bcm/y of new Australian LNG capacity, presently under construction, will be added by 2016.

In the US two LNG projects are under construction (Sabine Pass, Cameron), while two other projects have won FERC's approval. This new LNG will partially reach Europe, albeit not in very large quantities as Asia will continue to absorb most new LNG supplies.

As far as the longer term is concerned, additional supplies from East Africa and Canada will certainly add to the global LNG balance, but the result of the overall equation will largely depend on the evolution of Chinese LNG demand, today largely unpredictable.

For instance, to the extent that China buys larger volumes of pipeline gas from Russia, it may need correspondingly less LNG and this could benefit Europe. Also, the pressing Chinese need to lower local pollution in Chinese cities can be achieved either by switching from coal to gas or by switching final consumption to electricity and building high voltage electricity lines from new coal

power plants located in inner China. Chinese officials are seriously evaluating also this option.

As far as LNG prices are concerned, Europe might well benefit from cheap prices in the 2020 horizon thanks to a possible global LNG glut by then. In fact, LNG is evolving from a “gold-plated” industry into a “low-cost” industry and in this context over-expensive upstream projects will not go ahead (see, for instance, the current problems with Israeli LNG, Australian Bonaparte FLNG, Australian Wheatstone and Canadian Kitimat LNG projects). Courtesy of Gazprom, the competition is getting stiffer also between the remaining LNG projects in Canada, Mozambique, Tanzania and the US.

Taking advantage of being the lowest cost gas producer for Europe also in the 2020 horizon, Russia can use the competitive advantage of its pipeline gas to Europe to prevent US LNG from berthing in Europe, opening a price war that could ultimately lead to oil-derived spot prices of HH+2 by 2020. However, the future role of LNG in the European gas markets will not only depend on the global supply/demand balance, but also on the development of better gas interconnections and reverse flow capabilities between European countries themselves. This will be crucial to exploit the full potential of LNG, allowing consistent volumes of gas to penetrate from today’s little used LNG terminals in Western Europe also into Eastern European gas markets.

6. Where is European gas demand going, what are the determining factors, and how can gas demand be re-launched

Nightmare, disaster, disruption. These are the expressions often used to portray the current situation of Europe's gas demand. In fact, the upward trend of gas demand experienced in Europe in the 1990s and 2000s dramatically reversed since 2008, not only due to the economic recession but also to the increasing share of renewables in power generation, to the increasing level of energy efficiency and to the increased

competition of cheap coal made available to Europe in the aftermath of the US shale gas revolution (also favored by cheap carbon prices, fallen in the EU ETS system from 28 EUR/tonnes in 2008 to 6 EUR/tonnes).

In this context, the short-term outlook of gas for power in Europe is not looking good, particularly considering that the current power market design does not provide adequate price signals for new and existing fossil plant capacity. Renewables have already taken a lot of gas’ market share and this trend will continue reducing load factors of gas-fired power stations to an intermittency role. However, the intermittency of renewable energy sources might create new security of supply problems for the power markets and mothballing gas fired power generation will eliminate needed back up capacity for renewables. Even if capacity payments for gas might be considered as a mistake in Europe considering that the current gas-based generation park is overbuilt due to wrong projections done before the crisis, a European approach to capacity charges for energy security reasons should be considered. After all energy security has a price, and if competitive gas pricing plus carbon prices cannot be sufficient to support a sufficient level of back up capacity, capacity mechanisms should be considered. In a decarbonisation context, gas would need to be not just about capacity but also about electricity being produced from gas. This is completely the opposite of the current situation in Europe, where gas is not a story about electricity being produced but a story about keeping capacity open to provide the flexibility to renewables. However, notwithstanding the current difficulties, gas can well make a come back in the post-2020 horizon. In fact, substantial baseload capacity in Europe will need to be replaced due to progressive nuclear phase-out in several countries and due to the progressive shutdown of coal plants accordingly to the Large Combustion Plant Directive, and gas might well fill this gap. Furthermore, in the post-2020 horizon gas might well play an increasing role in the

transportation sector, not only in terms of CNG but also in terms of LNG for trucks and for ships. In this sector technology is already available and companies are already investing: what is now needed is support from policy makers.

[Links](#)

["FEEM Gas Talks", Second edition, Milan, 5-6 November 2013](#)

["FEEM Gas Talks", First edition, Milan, 13-14 December 2012](#)