Building a strong natural gas network in Northwestern Europe

Walter Peeraer
Fluxys

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1. Background

The European natural gas market is being integrated through the interim stage of regional gas markets. In this process, the Northwest European regional gas market is generally considered to be the pilot zone for the market integration to take shape in the EU-27.

At the same time supply patterns in Europe are changing as indigenous production is declining and gas is increasingly imported from sources further afield. This requires considerable investment along the gas chain in new pipeline and LNG projects to bring new sources of gas to the European markets.

In line with this the European Commission supports the creation of new gas corridors into Europe and acknowledges the need for transmission system operators (TSOs) to make the required downstream investments to ensure security of supply. The Commission also insists on adequate investment in new infrastructure and connections between markets to arrive at the market integration needed for a true internal gas market.

However, it has become increasingly unpredictable what volumes Europe will need to import in future. In what timeframe will renewables make their way as key source in the energy mix? What solutions will be chosen as back-up for intermittent renewable energy sources such as wind and solar? How far energy efficiency may reduce demand in gas? How will shale gas production in Europe develop? And what will be the future of nuclear? In other words: what outcome will policy choices entail for the future of natural gas?

2. Aims

Overall goal. Against this multiple movement of market structure change, changing supply patterns and uncertainty of future demand, Belgian gas infrastructure company Fluxys has set itself the goal of becoming a key player in the integrating Northwest European regional gas market. The company's mission is to enhance security of supply and market liquidity by facilitating cross-border flows and connecting markets and gas trading places.

Fluxys in a nutshell. Fluxys is a gas infrastructure company with its roots in Belgium as TSO for gas transmission, storage and LNG terminalling. With 18 interconnection points to neighbouring grids and systems the Belgian network is tied in to all natural gas sources available to the European market:

- pipeline supply from Norway, the United Kingdom, the Netherlands, Germany and Russia (with direct subsea pipelines to the United Kingdom and Norwegian sources),
- worldwide LNG supply through the Zeebrugge LNG terminal.

Over the years the company has considerably invested in enabling bi-directional flows and developed its Belgian infrastructure into a crossroads of international gas flows: any pipe gas or LNG delivered into the Belgian system can be redelivered for supplying the domestic market, redelivered to any adjacent network or system, or traded on the Zeebrugge Hub market. This brings a wide number of suppliers into the gas system, enhancing security of supply through volume and diversification of sources, and creating room for competition

which ultimately reflects in better end-user prices. In addition, combining domestic and border-to-border gas flows in its system results in a high utilization rate of the infrastructure and enables the company to offer highly competitive tariffs.

The crossroads functionality achieved in the Belgian system is in Fluxys' view what the European system will evolve into in the spirit of the Third Energy Package. Hence the company's goal to make the Northwest European gas market evolve, under economically acceptable conditions, into a market with sufficient capacity and a wide spectrum of services so that producers and suppliers can flexibly supply their customers with natural gas from any border point and easily trade gas between trading places.

3. Methods & results

3.1. Double overall strategy

On the one hand Fluxys continues to invest in its Belgian system. Over the past three years, the company has invested almost €1 billion ($1.3 billion) in infrastructure in Belgium and an indicative investment budget of €1.5 billion ($2 billion) has been earmarked for the next ten years, covering all of its activities: natural gas transmission and storage and LNG terminalling, provided of course that sufficient commitment through long-term contracts from the market is obtained to found these investments on sound economic principles.

On the other hand, to foster the integration of the Northwest European market and linking it with the South European market, Fluxys aims at close cooperation with other gas infrastructure companies and making investments in new projects or acquiring stakes in existing infrastructure. And what the company is looking for is infrastructure connecting directly or indirectly into its system to extend it with branches abroad. And through this development into a tentacular cross-border infrastructure the aim is to attract additional flows to enhance security of gas supply and to connect markets and gas trading places so as to deepen market liquidity.

3.2. Challenges

3.2.1. Achieving cross-border cooperation among gas infrastructure companies

Several gas infrastructure companies in Northwest Europe have the same ambition of attracting additional cross-border gas flows to their networks. But if every TSO is to plan its investments from its isolated position there is an overall risk of over- or under-investment which is sub-optimal from an economic point of view.

Facing the challenge of keeping the right level of investment to ensure competitive tariffs, the way forward for gas infrastructure companies in Fluxys' view is to step up their cooperation so as to ensure efficient investments and develop synergies from a regional market point of view. Fluxys has been coordinating investments in cross-border capacity with other gas infrastructure companies for several years now. And in the meantime a lot of progress has been made in the infrastructure planning process within the European Network of Transmission System Operators for Gas (ENTSOG) and the Northwest Gas Regional Initiative. But coordinated infrastructure planning is not enough. TSOs also need to intensify cooperation to develop cross-border services to optimize the utilization rate of the hardware in place. As with infrastructure planning this requires a supranational perspective at what the community of suppliers is looking for, and this mindset is required not only for TSOs but also for the national regulatory bodies involved in the process.

3.2.2. Making policy makers endorse natural gas as a key fuel beyond 2050

The European Commission's Energy Roadmap 2050 regards natural gas as a critical energy to achieve the 2030-2035 carbon targets with existing technologies. Beyond that horizon the

picture becomes somewhat blurred. But essentially gas keeps a 20-25% share in primary energy provided Carbon Capture & Storage is deployed in the power sector and heavy industry. In line with this the Roadmap supports the creation of new gas corridors into Europe and insists on adequate investment in new infrastructure and connections between markets.

However, there seems to be a trend among national policy makers to consider natural gas not to be fundamental in the long run: the choice for renewables seems to become the choice to walk away from natural gas. In the knowledge that regulators as a rule of thumb only allow for depreciation periods of about 50 years for new gas infrastructure, this is quite a paradox. A paradox triggering a high risk of stranded assets for the gas infrastructure business – as infrastructure built now would be depreciated but after 2060, long after the transition to a low-carbon economy – and consequently the risk of discouraging investors out of new projects by lack of long-term prospects.

Against the backdrop of this trend, all players in the natural gas business should set themselves the task of stressing the key role of natural gas in the future and keep on hammering in the message:

- Natural gas and renewables go hand in hand to achieve secure energy supplies with lower carbon emissions.
- Natural gas is the enabler of renewables with variable output, today and in the long run.
- Natural gas and natural gas technology have specific advantages over other fossil fules in both power generation and transport, which are among the largest carbon emission sources.
- Further development of power-to-gas into a powerful technology to keep excess electricity in storage would strengthen the position of natural gas and natural gas infrastructure as enabler of renewables.
- Natural gas infrastructure can also be used as a vehicle for climate-neutral biogas, another example of the complementarity between natural gas and renewables.

3.2.3. Keeping up with the basics of long-term investment

The investment prospect for TSOs on the Northwest European market is impressive. They have to make sure that gas markets are thoroughly interconnected and that they can tap into supplies from gas sources further away. They need to link the gas trading places and provide services for easy transfers between them so that gas can flow where price signals make it go. They also have to maintain high standards of security of supply in changing market conditions. And the gas infrastructure is to be developed to include solutions for optimum integration of renewables in the energy mix.

All this requires a lot of money. The European Commission assesses investment needs of about €200 billion ($264 billion) in gas and power infrastructure. If for the moment we take it for granted that new gas projects can be backed with long-term commitments from the market, the first challenge is to be able to rely on a stable regulatory framework stimulating investment in line with the risk profile of the business and incorporating safety and environmental aspects. For investors and their shareholders this is paramount.

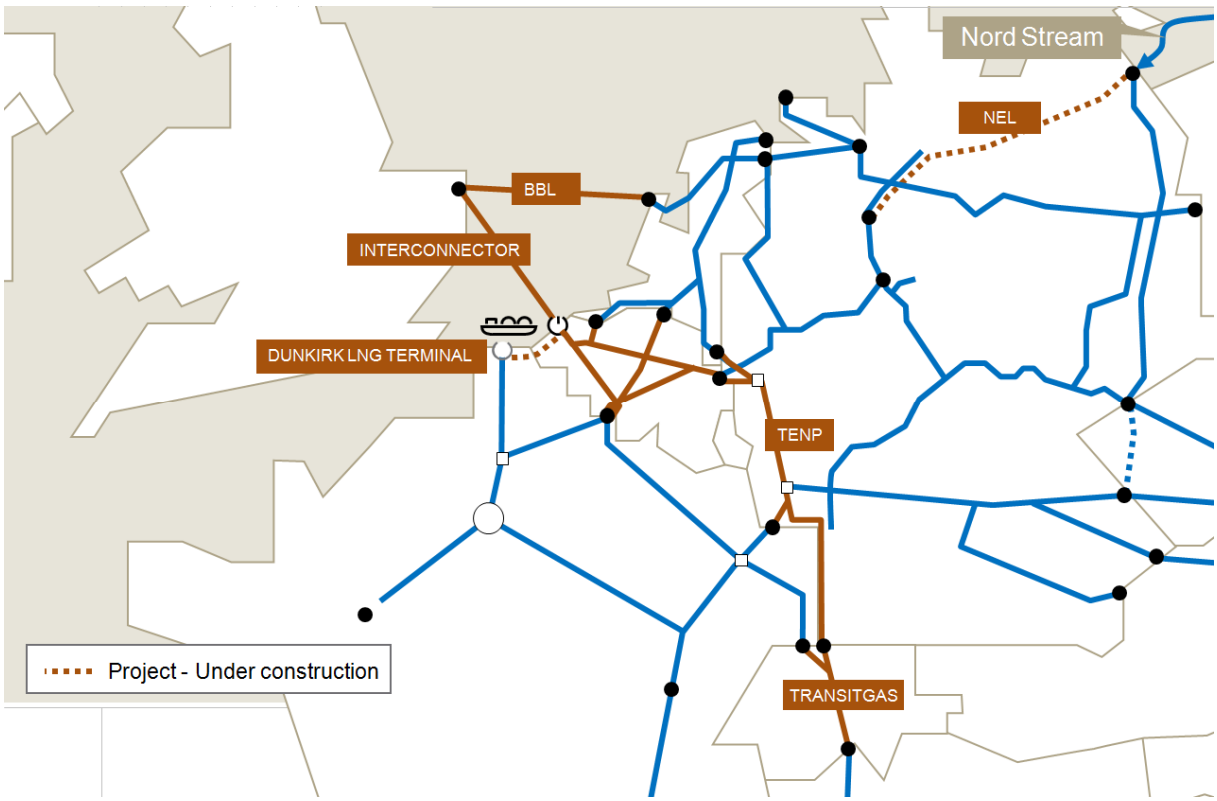
But even if long-term commitments and regulatory stability and stimuli for investment are in place, there is still the challenge of external financing to tackle. As it goes, in the disturbed and volatile financial markets of today, funding new investments through external financing has become extremely difficult. The banks have become increasingly reluctant to support industrial risks, even in the regulated infrastructure business which was traditionally considered as a safe haven. Bringing them round the table and getting commitments for important tickets is more challenging than ever.

As a result, gas infrastructure companies in recent years have privileged other financing sources such as private and retail bonds, equity and pension funds etc... as more practical

and accessible funding alternatives. But these alternative sources in all probability will turn to higher yield profiles upon economic recovery. While at the same time we will have to wait a long time before seeing the traumatized bank sector reverting back to its basic role of sustaining the real economy.

3.3. Fluxys' approach and results

Implementing its strategy of investment in Belgium and cooperation with other gas infrastructure companies abroad, Fluxys now links through its assets and capacity the markets of the United Kingdom, Belgium, the Netherlands, Luxemburg, France, Germany, Switzerland and Italy. And there is huge potential for further connecting markets and provide for easy gas transfers between the gas trading places in the Northwest and the South of Europe.



3.3.1. Contributing to security of supply at competitive price

In Germany Fluxys has become partner in the project to build and operate the NEL pipeline. The NEL pipeline will bring up to 20 billion cubic metres of Russian Nord Stream gas per year into Northeastern Germany, from where it can also be moved to Belgium, the Netherlands, France and the UK.

In Belgium works have started to build a second jetty at the Zeebrugge LNG terminal and Fluxys envisages further investments that could add import capacity of up to 3 billion cubic metres of natural gas per year.

In France Fluxys has become partner in the project to build and operate an LNG terminal in Dunkirk. The terminal will create a new entry point into the North-West European market, strengthening security and diversification of supply with an import capacity of 13 billion cubic metres of natural gas per year.

All these projects contribute significantly to security of gas supply, and they do so at a competitive price because Fluxys management sees to efficient use of capital expenditure, close monitoring of operational expenses and quality of service at competitive price. And this is where our tariffs speak for themselves: despite Fluxys' huge investment programme the company's tariffs for both transmission, storage and LNG terminalling remain among the lowest in Europe.

3.3.2. Combining pipe gas infrastructure and LNG infrastructure

A closer look at the Dunkirk LNG terminal project shows that it also brings along the construction by French TSO GRTgaz and Fluxys of a pipeline linking Dunkirk with the Zeebrugge area, creating additional flows into the Fluxys system and making gas available for adjacent markets and beyond. The pipeline also strengthens the unique feature of the Zeebrugge Hub as gas trading place in Europe, namely combining pipeline gas and LNG, offering the community of traders additional possibilities for arbitrage.

3.3.3. Connecting markets and trading places

Fluxys has stepped up its cooperation with German and French TSOs Open Grid Europe and GRTgaz to offer cross-border capacity products. Today the community of shippers can book with a few mouse clicks capacity to make gas flow between either the NetConnect Germany virtual trading point or the PEG Nord spot market and the Zeebrugge Hub.

In addition, the company has also built up its stake in the Interconnector pipeline connected into the Zeebrugge area to strengthen its position in accomodating east/west flows between two of the largest markets in Europe, Germany and the United Kingdom.

Fluxys has also acquired a substantial interest in the German TENP and the Swiss Transitgas pipelines. With assets providing capacity to flow gas between Germany and the United Kingdom, between the Netherlands and the United Kingdom, and from Zeebrugge or the Netherlands to France, the company added with the TENP/Transitgas link the possibility to move gas between the North and the South of Europe as well. Fluxys now links through its assets and capacity the markets of the United Kingdom, Belgium, the Netherlands, Luxemburg, France, Germany, Switzerland and Italy.

And this holds ample prospects for the future. As it goes, Fluxys fully backs the investment project underway to turn the TENP and Transitgas pipelines into an infrastructure moving gas not only from North to South but also from South to North. Through these investments the company's aim is to establish a fully functional market providing for easy gas transfers between the gas trading places in Germany, Italy, Belgium, France, the Netherlands and the United Kingdom. It is also our firm intention to further increase cooperation with other gas infrastructure companies, both in the Northwest and the South of Europe, to look into the development of new services to promote and facilitate transfers between those gas trading places.

4. Summary/Conclusions

Against the multiple movement of market structure change, changing supply patterns and uncertainty of future demand, natural gas infrastructure companies need to move forward. As the Fluxys case shows, close cooperation between gas infrastructure companies is paramount to jointly address the risk of over- and underinvestment and arrive at closely interconnected markets and gas trading places. In parallel, the gas industry must insist on its message towards policy makers that natural gas has an important role to play in the future European energy mix and that choosing for renewables is choosing for natural gas.