The Balance between Long- and Short-term LNG Supplies in the European Gas Industry

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The European Gas Industry in Turbulent Times

The gas industry has been on a rollercoaster ride in recent years. From 2007 until mid-2008, we saw rising energy prices and euphoric markets with a seemingly bright future. The globalisation of gas markets was within reach. The vision two years ago encompassed huge LNG demand growth in the Atlantic Basin and a shift of Middle East LNG from the Pacific to the Atlantic Basin.

However, the financial crisis and the subsequent worldwide recession have removed huge volumes of demand from the market, causing an oversupply situation that was even augmented by the US unconventionals. As a result, the global gas industry and hence the European gas industries find themselves in turbulent times which are characterised by a shift from long-term to short-term supplies.

Economic Growth and Gas Consumption

Economic growth in Europe has suffered disproportionately from the financial and economic crisis. 2009 saw the largest decline in consumption in the history of the European gas industry, with the majority of this decline occurring in the industrial and gas-to-power sectors. The expectations for 2010 and beyond are a little better. Many experts in Europe predict a stabilisation and a slow recovery over the medium term and, for the long term, a full recovery of demand.

Despite the substantial decrease in current demand, the European region will maintain its global importance (see Figure 1).

Notwithstanding the low Compound Annual Growth Rate of 0.8 percent in Europe, consumption – at 651 bcm in 2030 – will still be in a similar order of magnitude as in China, India and Other Asia combined. The main reason is that – at 25 percent – Europe's natural gas share in primary energy consumption is much higher than in Asia. China, for example, is dominated by coal. Natural gas only accounts for 3 percent of primary energy demand, and even in Japan its share is only 16 percent.

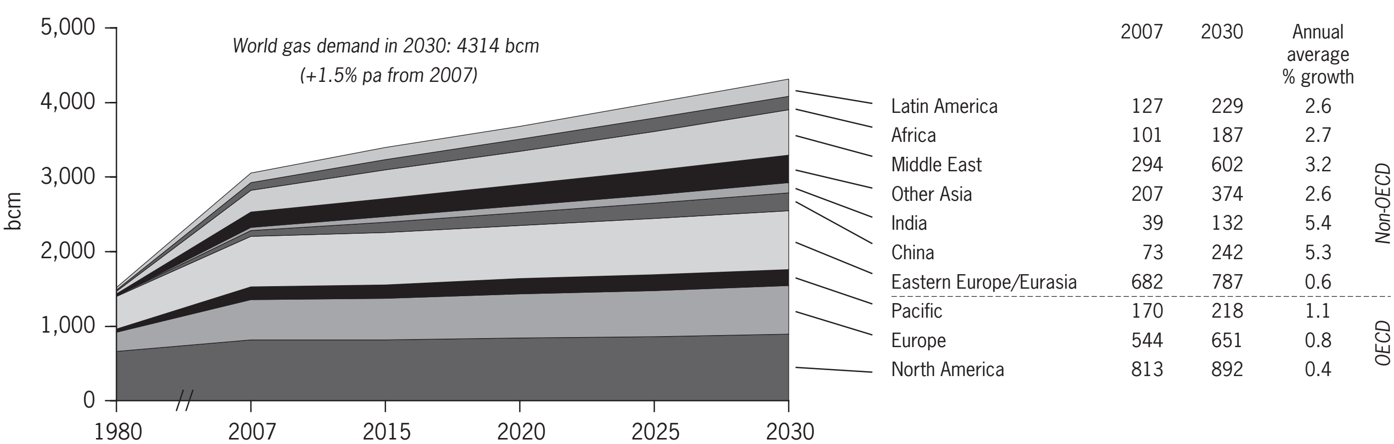
The strongest growth in gas consumption is clearly outside the OECD, particularly in India and China where consumption will quadruple from 2007 to 2030, though from a rather modest level. Both in Europe and Asia the majority of the incremental natural gas demand will come from the power sector.

Natural Gas Supplies and Europe's Main Players

Figure 2 shows contracted volumes including contract extensions with Norway, Russia and Algeria – the main gas exporters into the EU. It is a well diversified supply portfolio based on the current long-term contracts (LTCs), and there are sufficient supplies to meet demand until 2015.

Countries in the European Union only have a small domestic production and will depend on imports even more in the future. Demand growth – by nature – encompasses a certain degree of uncertainty since especially the long-term effects of the economic crisis and the gas volumes used in the power sector are difficult to predict. In any case, after 2015, a supply gap will emerge, which will have to be filled by new supply sources. While part of this gas will be pipeline supplies, the share of LNG will rise significantly in Europe

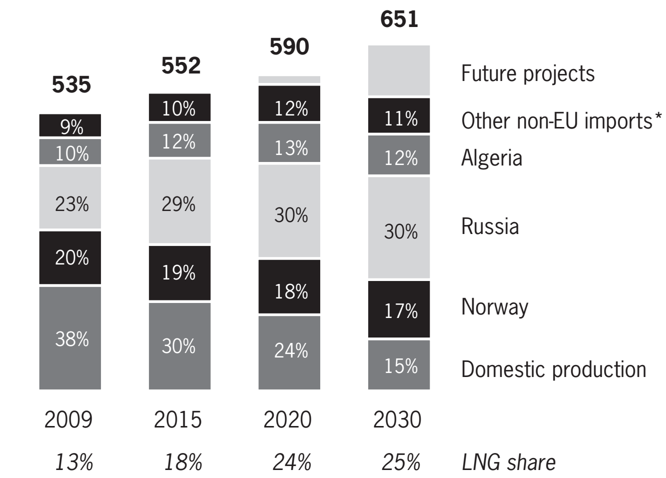
Figure 1: Natural Gas Demand by Regions



Source: IEA World Energy Outlook – Reference Scenario

Note: In this article, gas volumes are referred to in bcm/a (billion m³ per annum) of natural gas or mtpa (million tons per annum) of liquefied natural gas. 1 mtpa corresponds to 1.3 bcm/a.

Figure 2: Natural Gas Supplies in Europe, bcm



Basis for imports: contracted volumes and prolongations
Demand forecast according to IEA World Energy Outlook 2009
* of which: Qatar 4%, Egypt 1%, Trinidad 1%, Nigeria 2% (2009)

from today's 13 percent to 24 percent in 2020.

The main importers and market leaders in Europe are German E.ON, the French-Belgian GdF Suez Group and ENI of Italy, all of which sell comparable quantities of gas, i.e. between 100 and 120 bcm/a. What is more interesting than the overall volumes is the distribution of supplies. Most European gas companies base their portfolio on various sources and on LTCs – the backbone of the European gas business. LTCs support long-term investments in the supply chain on the buyers' and the sellers' side and hence typically have a duration of between 25 and 30 years. Consequently, companies have a limited number of LTCs. E.ON, for example, Europe's largest gas supplier, sources its gas on the basis of approximately 35 LTCs which provide more than 90 percent of its gas portfolio.

There are two complementary compelling forces for European gas companies to build a material LNG business in addition to their pipeline imports:

- First, to strengthen their gas supply position. While in Northern Europe the replacement of declining indigenous production is the main issue, Southern Europe is mainly trying to limit the exposure to incumbent gas suppliers. All of the European importers are looking to use LNG as a means to actively manage their portfolios.
- Second, to enter a new growth segment with global opportunities. LNG provides more options than the rather inflexible pipeline business. Consequently, European gas companies try to leverage their traditional business by making use of the flexibility LNG offers. Furthermore, they are desperate for the opportunities a global unregulated business provides.

New Global LNG Market Environment

There are plenty of reasons why LNG challenges traditional supply patterns in North West Europe and why LNG connects global markets.

Global liquefaction capacity has increased by more than 30 percent over the last two years and a large number of additional projects are still under construction, creating an oversupply situation with favourable conditions for buyers. LNG cargoes, even if bought under LTC conditions, provide new flexibilities for the producers on the one hand and the importers on the other.

So, the question remains: 'Where will these flexible LNG volumes be heading?'

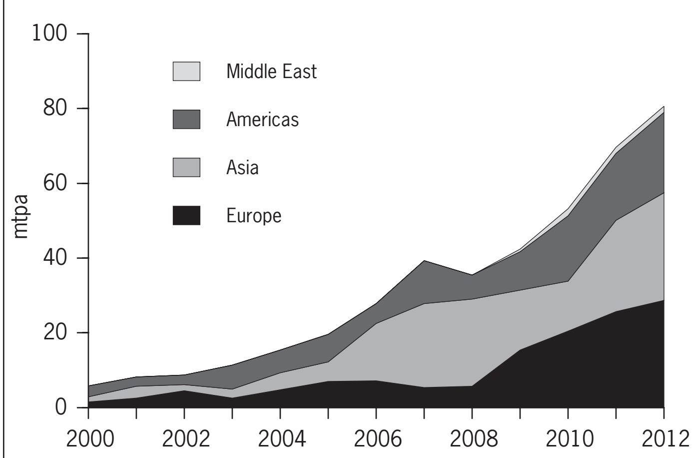
- The United States has sufficient import capacities to take large LNG quantities, but the shale gas revolution, which has resulted in high indigenous production and low import requirements in the country, has changed the parameters at least for a decade. Qatar, the world's largest LNG exporter, for instance, may end up exporting just 6 mtpa of LNG to the USA after diverting as much as 20 mtpa away from there to other countries. Consequently, regasification projects are delayed and even liquefaction projects are under consideration in North America. Those would offer attractive export opportunities and an additional outlet for US natural gas production.
- Asia and Southern Europe will slowly recover from the economic crisis.
- Northern Europe, however, could be an outlet with premium price conditions. If the current suppliers can overcome the temptation to pump too much gas into the markets, the price level will remain favourable for the producers – due to the oil linkage.

Even in an oversupply situation, LNG is able to connect spot markets around the world. More and more LNG will flow into European markets forcing Norwegian and Russian gas suppliers to compete with LNG producers.

Short-term LNG Supplies

LTCs will remain the backbone of the European gas industry, but short-term LNG supplies will steadily increase their share – in global terms and also in Europe (see Figure 3).

Figure 3: Destinations of Short-term LNG Supplies



Source: IHS, CERA

Short-term LNG volumes include three types:

- Spot LNG, which is produced outside contractual volumes and is normally offered by the supplier to the highest bidder,
- Flexible LNG, which is procured under LTCs by aggregators with the ability to deliver to various destinations, and
- Diverted LNG, which is purchased by end users who have the right to divert that cargo to alternative markets.

As destination restrictions are being relaxed, short-term volumes are going to increase significantly. Europe in particular will grow its share for several reasons:

1. Huge regasification portfolio in Europe to absorb LNG volumes
2. Increasing liquidity in European downstream markets
3. Sellers' preference for short-term deals, so as to not lock-in prices well below oil price parity, which they would currently have to do due to the oversupply situation
4. Buyers' preference for short-term deals to phase out long-term take-or-pay obligations (pipeline and LNG)

In the following, we will investigate these four reasons in detail and, by doing so will come to understand the European LNG market a lot better.

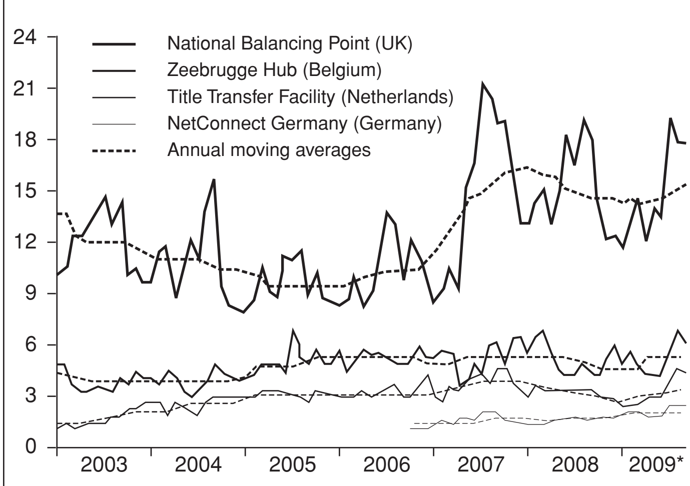
First, Europe's large regasification portfolio is able to absorb additional supplies mainly from Africa and the Middle East because it significantly increased its regasification capacity by 50 mtpa (~ 60 percent) between 2008 and 2010; another 30 mtpa of regasification capacity are currently under construction. In addition, the countries are fairly well connected via pipeline, including the UK and the Continent – hence the term 'single European gas market', in which importers can receive LNG through a UK regasification terminal and transport it via pipeline to the European continent, and vice versa. An optimal European regasification portfolio, combined with lower import requirements in the USA and larger global liquefaction capacities, results in LNG cargoes being re-routed to Europe. The largest volumes have traditionally been shipped to the Mediterranean countries, such as Spain and France, but now the UK is gradually receiving more and more LNG cargoes.

Second, growth in European downstream spot markets supports short-term deals (LNG and pipeline). Access to gas for new entrants and transparent pricing mechanisms are seen as critical elements in the development of liberalised gas markets. Consequently, many hubs, trading points and exchanges have emerged. Among these pricing points, the National Balancing Point (NBP) in the UK remains the dominant one in Europe. Over the past years there have been a number of initiatives – particularly by the European Commission and regulators – to drive liquidity in European spot gas markets. Zone mergers and simplified balancing rules have made it easier for market players to buy, sell and transport gas around the Continent. Considerable progress has also been made in reducing the number of hubs, particularly in Germany. Given the continuing increase in traded volumes and its growing market area, NCG (NetConnect Germany) may become the dominant pricing point for gas in Northwest Europe and may establish itself as a distinct European price benchmark as opposed to trading as a spread off the NBP. However, the creation of a true European benchmark will require the formation of a regional hub spanning more than one national market because simplifying the transit of gas over large regions and zone mergers should inherently support the growth of liquidity in a market by bringing together a larger number of active players.

After establishing hubs and exchanges, European markets became increasingly liquid. The development of the NBP far exceeds the pace of change at any hub in Continental Europe, so it is likely to retain its dominant position. The key measure of liquidity in a market is churn, the ratio of traded volumes to physical volumes (see Figure 4). Churn at the NBP has exceeded 5 since 1998 and currently averages 14 (in other words, each unit is traded 14 times prior to delivery) compared with 5 at Zeebrugge in Belgium, 3 at TTF (Title Transfer Facility) in the Netherlands, and 2.5 at NCG in Germany. We have seen positive developments at established hubs, such as Zeebrugge and TTF, but churn at both hubs appears to have stabilised at current levels. There has been no material growth in churn in either market since the beginning of 2005. Growth at NCG – on the contrary – is now nearing the levels of TTF activity and is expected to continue, driven by further zone mergers that increase its geographic scope and attract new players. The German cabinet approved a plan to further reduce the number of market areas from the current six to a maximum of two by 2013 in order to boost access and transparency across the country's gas market.

Third, the sellers' behaviour is changing. The price chart (Figure 5) illustrates the disruption in the gas market. The NBP and 'Henry Hub' prices represent liquid trading points and are, by nature, more volatile than oil-indexed prices such as the 'Average German Import Price' or the 'Japan Average'. The 'Average German Import Price' has traditionally been linked to oil products and hence has a high correlation with crude oil. Until the end of 2008, the correlation between prices at liquid trading points (such as NBP and Henry Hub)

Figure 4: Churn Ratio at Major European Hubs



Source: IHS, CERA

and oil-indexed contracts had always been quite high. This changed with the economic crisis, lower import requirements in the USA and more LNG liquefaction trains coming on stream. Spot and oil-indexed prices decoupled. This market disequilibrium, which usually corrects itself very quickly in most commodities such as oil, can continue for years in the LNG industry. Due to this decoupling and oversupply situation, sellers are hesitant to positively sanction new projects in times of oversupply and low prices on the downstream markets. Buyers of long-term gas supplies from producing countries such as Russia, Norway and Qatar can expect lower oil indexation levels in the next five years. Consequently, sellers are shying away from concluding LTCs now because they would have to lock in prices well below oil price parity. The main question is whether the gas-oil spread shown in the graph is sustainable. Many experts predict that spot gas and LTC prices will re-couple in the medium/long run.

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Fourth, the buyers have also faced challenging times with downstream prices far below their purchase prices. As already mentioned, the prevailing global gas glut has heaped pressure on oil-indexed gas contracts because the recession has significantly reduced demand, forcing buyers to sell unused long-term contracted gas supplies for roughly half the price. That has swelled European spot markets and further undercut prices. In addition, the demand dive resulted in take-or-pay problems for most of the European gas importers. The likes of E.ON, GdF Suez, ENI, Econgas and BOTAS have renegotiated their LTCs with the major exporters to Europe, e.g. Russia’s Gazprom, Norway’s Statoil and Dutch GasTerra using standard price review clauses. Consequently, some level of indexation to cheaper spot gas prices was introduced into mainly oil-indexed LTCs. Furthermore various technical adjustments were made to reduce the price level of oil-indexed gas. Importers also succeeded to increase the volume flexibility in their contracts, i.e. a reduction of take-or-pay and daily minimum levels. All in all, the LTCs demonstrate that they are a highly suitable instrument for coping with the current, in some cases very difficult, developments in the gas market. They have enough levers for adaptation to the present situation. This underscores, firstly, the flexibility of LTCs and, secondly, their contribution to reliability and security of supply. However, short-term deals and spot indexation will become more relevant in the European market. Currently, European importers prefer term and spot deals, and are hesitant to take additional volumes on board because they prefer to phase out existing take-or-pay obligations first.

Summary and Conclusion

The European gas industry is well prepared to find its way through challenging times. European gas demand suffered from the financial and economic crisis. Europe has sufficient long-term gas supplies until 2015, but it will increasingly depend on imports (LNG).

Short-term LNG supplies will steadily increase their share with growing European influence. This trend is buoyed by the unconventionals in the USA, large regasification capacities in Europe, strong growth and liquidity in European spot markets, as well as some hesitation on the part of buyers and sellers to conclude LTCs.

European gas players have re-negotiated their pipeline LTCs to reduce their oil exposure via pricing and volume measures, but spot gas and LTC prices are still expected to re-couple. The following outlook seems reasonable: LTCs will remain the backbone of gas sourcing for most European importers, with the right mixture of various contract durations and price indexations being key. Consequently, the major players will optimise their portfolio (short/long-term) and hence mitigate future risks.

Figure 5: Spot Prices versus LTC Price Indicators