

The Ukraine Crisis - could gas supply disruptions affect Europe?

As tensions between Russia and Europe have increased over the situation in Ukraine, very real concerns have emerged regarding the security of gas supplies. Whilst there is a longer-term question of whether Europe should consider reducing European dependence on Russian gas, in this Point of View, Pöyry examines the potential short-term impacts of a curtailment in Russian gas supplies through Ukraine over the next winter.

Russia supplies around 25% of annual European gas demand and around 40% of this is supplied through Ukrainian transit pipelines. If Russia acts on its intention to insist that Ukraine 'pre-pays' for its gas then it is possible that either gas destined for Europe is off-taken and consumed in Ukraine or that Russia curtails supply. Either way, gas flows to Europe could be significantly reduced, resulting in a supply deficit.

If supplies are curtailed over the coming summer then the impacts should not be significant for Europe as a whole. Gas demand is naturally lower in summer and following the relatively mild winter, gas storage stocks are relatively full.

The question is then, what are the potential impacts over the next winter period due to a significant 90 day curtailment of supplies through Ukrainian transit routes? Utilising our Pegasus global gas market model we have been able to examine the capability of gas storage, other pipeline sources and LNG to meet a supply deficit in a much colder than average winter like that experienced in 2009/10.

LOSS OF UKRAINIAN TRANSIT GAS

If we assume that Russia curtails supplies to Ukraine for the coldest 3 months over next winter and that this disrupts supplies to Europe then we could see a loss of supply in excess of 12.5bcm. This loss of Russian supply from mid-December to mid-March is shown in Figure 1 and Figure 2.

In order to provide some support for Ukrainian gas demand we have assumed some reverse flow through interconnections with Slovakia, Poland and Hungary. However this would not be nearly sufficient to meet Ukrainian gas

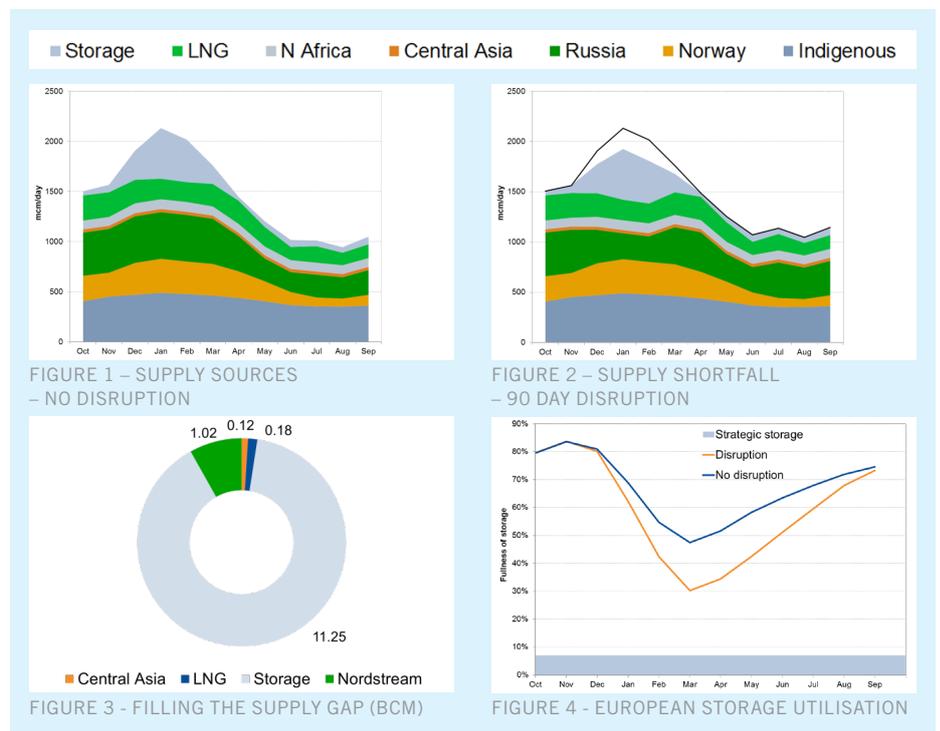
demand and some interruption should be expected.

CAN UKRAINIAN TRANSIT GAS BE REPLACED?

Our analysis shows that the supply deficit can be met through a combination of other sources as shown in Figure 3. Gas storage makes up the most significant element of this additional supply with extra deliveries of LNG playing a minor role. An additional 1bcm of gas is delivered from Russia via Nordstream and a small volume of Central Asian gas is delivered through other Russian pipelines. In addition to this, the lower overall European gas demand expected for winter 2014 as compared to that during the previous Ukrainian supply disruption in January 2009 means that the supply tightness is less.

We have reflected the current lower levels of gas storage capacity bookings by assuming that storage facilities are only 80% full by the start of the winter. Figure 4 shows the depletion of European storage stocks for all storage over the period both with and without the supply disruption.

From this we can see that there is sufficient storage capacity and deliverability throughout the period of the supply curtailment. Stocks of strategic storage, although low at an overall EU level, should not be needed during the supply curtailment. However, it should be noted that an earlier supply curtailment that resulted in lower storage stocks at the start of the winter or a longer duration may result in storage being exhausted.



WHAT OTHER RISKS SHOULD BE CONSIDERED?

The analysis has only considered the loss of Russian supplies delivered through Ukrainian transit pipelines. We have assumed that there is no catastrophic breakdown in relations between Europe and Russia and that limited economic sanctions are in place so that other Russian supplies to Europe are not curtailed. Additional supplies may be delivered through Nordstream but are limited to the maximum of known contractual volumes. We have not considered whether higher domestic demand in Russia due to colder than average weather may affect the volumes available for export to Europe and this is another factor that may come into play.

If relations between Europe and Russia were to deteriorate further resulting in the curtailment of other gas supplies then the ability of storage to ensure security of supply may be uncertain.

Other potential risks include disruptions due to unexpected supply outages or infrastructure failure at interconnection points, storage or LNG terminals. Combinations of additional supply shocks, depending on severity and duration, could inhibit that ability of supplies to meet demand for short periods.

EUROPEAN COOPERATION

In order that demand can be met in European gas markets we see changes in the pattern of gas flows. An increased use of interconnections and reverse flow between adjacent countries allows LNG, pipeline gas and gas from storage to flow to those markets where it is needed.

This assumes full cooperation between countries to ensure that national interests are not placed above European security of supply interests i.e. all gas that can flow to interconnected markets will do so and is not withheld from the market.

If storage were to be withheld from the market in order to protect national security of supply interests then it may not be possible to meet demand in all countries during the supply curtailment.

If storage stocks are reasonably high, there is cooperation between European states and other Russian supply routes are unaffected then Europe should be able to cope with a 90 day disruption to Ukrainian transit gas flows.

It is vital, however, that European governments ensure that they are fully able to offer mutual support to neighbouring gas markets and should ensure that any barriers to cooperation and unrestricted gas flows are minimised.

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