

A Gas Hub for Ukraine

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For many years, when natural gas was mentioned in conjunction with Ukraine, it meant nothing but trouble. But at the very moment when Ukraine's territorial integrity is at stake, natural gas could become part of the solution. Due to its massive storage potential, namely one-third that of the EU (or seven-times that of the UK), Ukraine is a natural candidate for an eastern European gas hub. Becoming an integrated part of the European gas market has economic and political merits – both for Ukraine and the EU.

The transition to hub-based pricing

In order to complete the Internal Gas Market the European Commission is trying to establish interconnected and liquid regional wholesale markets throughout the EU. These trading points, also referred to as ‘gas hubs’, should be able to reflect the short-term equilibrium between gas supply and demand (CEER, 2011). This implies reducing the share of natural gas that is traded under long-term, typically oil-indexed contracts and increasing the volume of hub-priced gas, i.e. increasing the share that is traded on wholesale markets. Establishing functioning, competitive gas markets will require investment in infrastructure. This includes extending the grid (e.g. building new interconnectors), enabling reverse flows and possibly building additional storage sites or demand-response in order to limit price volatility and increase supply security.

Grid extension and enabling reverse flows are well under way. Short-term demand-response is typically low in the gas sector due to the significant investment and long lead times required for a fuel switch (different power plants, different heating systems, etc.). Storage sites are very costly and therefore not widespread. Currently, the overall amount of gas that can be stored¹ in the EU28 amounts to roughly 96.5 bcm (Eurogas, 2013), corresponding to nearly 22% of the annual gas demand in the EU28 (BP, 2013). Could Ukrainian storage sites facilitate the establishment of a functioning gas hub in Eastern Europe?

¹ This is typically referred to as ‘working gas volume’.

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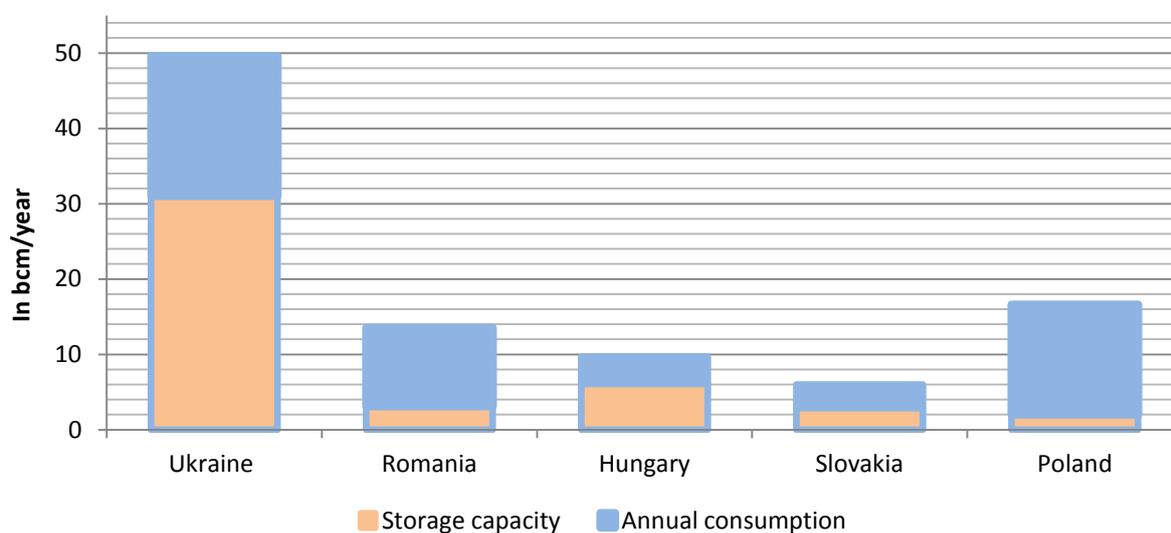
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The potential of Ukrainian storage

Indeed, Ukraine has a storage potential of 31 bcm (see Figure 1), distributed among 12 storage facilities. After Russia, Ukraine has the biggest working storage capacity in Europe. It is noteworthy that the bulk of this capacity (i.e. 27 bcm) is concentrated in five storage sites located in the western part of the country.² This volume is nearly twice as big as the total volume of all storage facilities located in Romania, Hungary, Slovakia and Poland (i.e. 14 bcm) and amounts to a third of the combined storage capacity of the EU28. Moreover, being the main gateway for Russian gas flowing into the EU, the Ukrainian gas transmission system has an input capacity of 288 bcm and an output ability of nearly 179 bcm (Naftogaz, 2014). With the deployment of additional reverse flows with neighbouring EU member states, Ukraine could emerge as a natural candidate to host an eastern European gas hub.

Figure 1. Consumption of natural gas & capacity of storage sites in selected CEE countries



Sources: BP 2013, Eurogas 2013 and Ukrtransgaz's website.

A well-supplied Ukrainian gas hub

A Ukrainian gas hub could be fuelled by gas supplies flowing from different sources. Whereas the country is a net importer of natural gas,³ domestic production maintains a stable level, never having fallen below the level of 17 bcm/year in the last decade (BP 2013). Yet the volume of domestically produced gas could increase in years to come as Ukraine holds considerable reserves of unconventional gas, mainly shale gas and coal-bed methane. By 2030, the country could produce from 30.2 bcm/year to 46.7 bcm/year of both conventional and unconventional gas (IEA 2012). If the latter scenario were to be achieved and robust energy efficiency measures⁴ implemented, Ukraine could become a net exporter of natural gas within 15 years. Alternatively,

² Namely in the Pre-Carpathian region, neighbouring Romania, Hungary, Slovakia and Poland (Energy Charter Secretariat 2010).

³ In 2012, Ukraine relied on imports for 66.4% of its gas consumption (BP 2013).

⁴ The World Bank estimates that Ukraine's level of energy intensity is three-times higher than the EU's. Ukraine could reduce its gas consumption by roughly 30% through improvements in energy efficiency (World Bank, 2011).

domestic production could be supplemented with supplies from Russia or imports of conventional and unconventional gas from neighbouring EU member states, namely Romania and Poland. Moreover, the construction of the regasification terminal in the port of Yuzhny⁵ will create a gateway for LNG imports from other sources.

For Ukraine, energy could become the engine behind its integration with the EU. This would be not only due to its role as a transit country for Russian gas supplies flowing into the EU, but, more importantly, to its unique storage capacity combined with a prime geographic location. Indeed, with an enhanced business climate and necessary infrastructure improvements, Ukraine could meet all the preconditions for hosting a major gas hub in the CEE region.

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⁵ Ukraine plans to build a LNG terminal in the port of Yuzny (Odessa province) by 2016. The terminal's initial regasification capacity will be of 2 bcm/year, progressively expandable to up to 10 bcm/year (IEA Ukraine).