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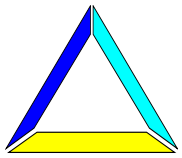

V12 Technical note

Gas storage tariffs along the export route to EU markets

Ukraine's gas storage facilities account for a total capacity of around 34 bcm or 21% of the total European gas storage working capacity. In the frame of the January 2006 gas agreement, which specified the terms of gas deliveries to Ukraine, the monopoly gas importer to Ukraine RosUkrEnergo has been granted a tariff of USD 2.25 per tcm for storing up to 15 bcm in Ukraine. Both, the level of this tariff as well as the concession to keep it unchanged until 2030 have received fierce criticism. In this note we intend to provide a first judgment of this tariff level.

Due to the strong seasonal demand profile, storage of natural gas is of high strategic importance for securing gas deliveries during peak winter seasons. While the pure physical costs of gas storage are rather low, its value mainly depends on its proximity to markets with high and seasonably different demand levels where consumers are willing to pay higher peak prices. While a full assessment of economically reasonable tariff levels requires a sophisticated modeling of consumers' willingness to pay higher prices at different locations, a first assessment can be done by comparing storage tariffs in Ukraine with those charged for the use of other facilities with comparable positions. As such we selected gas storages in the Czech Republic, located along the same export route from Russia via Ukraine to EU markets, and in Germany, on of the main destinations of Russian gas deliveries.

Czech Republic

In the Czech Republic RWE Transgas operates key storage facilities and provides related services such as injection, storage and gas withdrawal.

The storage capacity is primarily offered in standard bundled units, i.e. as a combination of working space, injectability and deliverability. Standard bundle unit have the following characteristics:

- working gas volume – 650 000 tcm
- withdrawal capacity – 10 000 tcm a day
- injection capacity – 7 375,887 tcm a day

An annual fee to store such volume of gas with such withdrawal/injection capacities is about USD 71.86 m, or approximately **USD 110 per tcm**. This price however is not legally bound but indicative only. Exact prices are determined in every case separately.

Germany

In Germany, the company BEB operates three significant underground natural gas storage facilities. A representative bundle unit includes:

- working gas volume 20,4 bcm
- withdrawal capacity 10 204 tcm/h
- injection capacity 10 000 tcm/h

The storage charge for this storage service is around USD 1.7 bn, or **USD 87 per tcm**.

Comparison to Ukraine

Of course, the tariff of USD 2.25 per tcm cannot be readily compared to those quoted here for the Czech Republic or Germany as e.g. bundle units, time horizons etc are different. Nevertheless, the very significant difference strongly suggests that storage tariffs in Ukraine are implausibly low. Accordingly, storage tariffs in Ukraine should be more appropriately assessed and renegotiated. However, such an assessment requires the use of more advanced modeling approaches rather than simple comparisons as it has been done in this note.

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