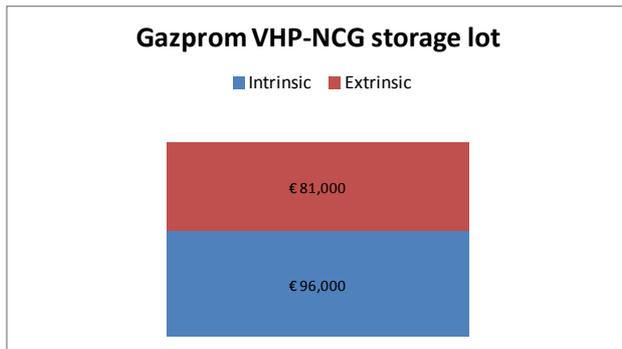


KYOS independent analysis

Gazprom VHP-NCG storage valuation

Via an auction arranged by Store-x, Gazprom offers virtual gas storage lots connected to NCG. The auction is on 18 February 2013. The storage period starts 1 April 2013 and ends 1 April 2014. KYOS values the storage at **177 000 € and 135 000 € per lot** assuming a discount factor of 0 and 5 %, respectively. Dividing by the working volume, this is 2.73 and 2.08 €/MWh.



Value per lot*	€ 177,000	
Value per MWh capacity*	€ 2.73	
of which intrinsic*	€ 1.48	
Lot size	64800	MWh
Injection rate	720	MWh/day
Withdrawal rate	720	MWh/day
Injection cost	€ 0.15	per MWh
Withdrawal rate	€ 0.15	per MWh
Cycling time	180	days

* assuming no financing cost.

The storage has a cycle time of 180 days. The value of the storage is primarily intrinsic (1.48 €/MWh), which can largely be locked in on the forward market. The extrinsic value is 1.25 €/MWh which could be realized by an active trading strategy in spot and forward markets. The extrinsic value is based on the current extremely low spot volatility in the market (around 30 % annualized spot volatility).

The calculated value is based on a spot trading strategy including forward hedges. See <http://www.kyos.com/gas-markets/software/kystore>. Forward prices are from EEX. At the time of valuation, 15 February 2013, the spread between Q1-14 and Q3-13 was 1.98 €/MWh. The spread is relatively small, and part of it is lost on the injection/withdrawal costs of 0.15 €/MWh and assumed trading costs of 0.20 €/MWh (bid-ask). Market prices are shaped to a monthly level (see www.pricecurves.com; graph below) based on which the KyStore model generates Monte Carlo simulations of spot and forward prices.

Gas : German Gas NCG

