

# Natural gas storage: a market driver changes horses

Given the importance of natural gas storage figures to energy market traders and analysts, a change in the provider and timing of the data release is an event of some significance. Software provider Logical Information Machines reports

On May 1, after eight years of weekly reports, the American Gas Association (AGA) issued its final estimate of the level of working US natural gas underground storage as of the previous Friday.

Back in October 2001, the AGA had said it intended to discontinue its weekly report. This led to a storm of protest from traders and analysts alike, who had come to rely on the weekly update as a valuable fundamental input into the market price for natural gas.

In December 2001, the Energy Information Administration (EIA) – the US Department of Energy’s statistical agency – agreed to take over the task of assessing storage levels among the country’s 110 storage operators, which run more than 400 underground storage facilities. Underground storage facilities may include reservoirs in depleted oil and gas fields, aquifers or salt caverns.

The new EIA survey is based on mandatory reporting and uses a larger sample than the previous AGA report, in which involvement was voluntary. The AGA made no secret of its concern

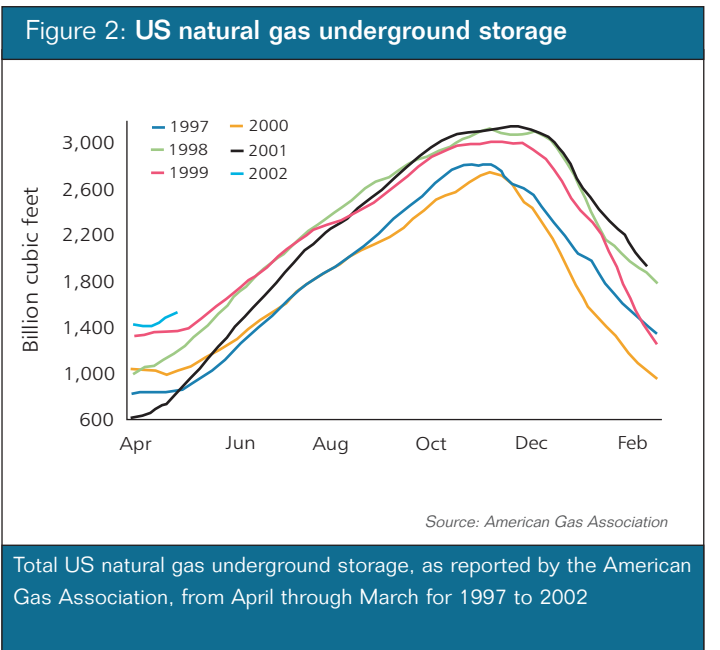
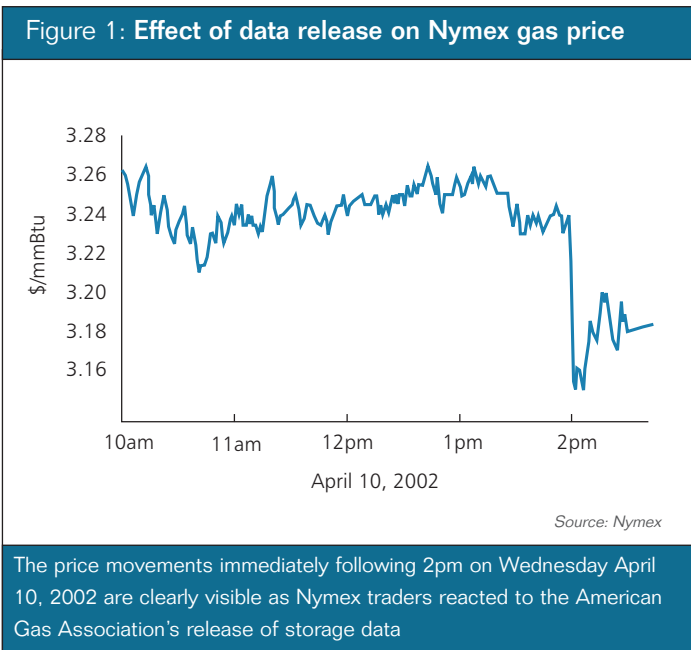
that the effort involved in collecting the data and then making sure any corrections were made had become too costly for them (see *EPRM* May 2002, page 19). The government’s involvement is a strong indication of how important this market information is considered to be for a transparent market-place.

The new EIA report is released on Thursdays at 10:30am, whereas the AGA’s release had been made on Wednesdays at 2pm. The first EIA report was released on Thursday May 9, 2002.

There has been controversy over the timing of the release of data. The EIA releases – like the AGA’s did – occur during market trading hours of the New York Mercantile Exchange (Nymex) natural gas Henry Hub futures contract, which underpins the natural gas pricing structure in North America. The AGA experience led many to believe that releasing sensitive data during open-outcry trading on Nymex was disruptive of trading.

In comments on the proposed timing of the release, Nymex asked that the information be released “while the market is open and transparent”. On the other hand, the American Public Gas Association (APGA), which represents hundreds of municipal utilities, wanted the report released after the close of business on a Friday so that it would not affect regular or after-hours trading, and criticised the report’s substantial and largely unwarranted impact on market volatility. In the end, the Nymex view prevailed and the release timing is set to match its suggestion of 10.30am on Thursdays.

Analysis of the data shows that there was good cause for this controversy. Logical Information Machine’s (LIM’s) XMIM query language allows



analysts to isolate the Nymex natural gas trading data around the time the AGA storage report is released. Figure 1 shows clearly how the 2pm release affects the price of natural gas.

LIM also calculated the historical impact of the release of the AGA storage estimates at 2pm over the past four and two years respectively.

Over the past four years, the historical volatility of five-minute periods of trading between 2pm and 2.15pm on AGA report days was an average of 11.2% compared with 7.4% for the same trading period on all non-AGA report days.

In the past two years, market action has intensified, with historical volatility in the same 15-minute period rising to 17.2% on AGA report days versus 9.4% for non-AGA report days.

Trading is clearly disrupted by the release of the numbers as the market factors-in the new information.

As the information provided by the AGA became increasingly critical to the natural gas trading community, so the association grew concerned about the accuracy of its voluntary collection mechanism, especially when it had to make a succession of large corrections following mis-reporting by its members.

### Gas storage

But what are the gas storage numbers and why are they so important to the market?

Injection of natural gas into storage, particularly in the consuming regions, is carried out every year during periods of lower demand – typically the summer – so that that natural gas can be called on to help meet peak demand during the winter heating season.

Figure 2 shows seasonal storage levels, as reported by the AGA. The build-up of storage during the spring and summer is clear.

Underground natural gas storage is not used exclusively for meeting the volume demands of the winter peak months. There are often financial incentives for injecting gas into storage during periods of low demand when the price is low and withdrawing and selling that same gas during the colder winter months for a profit.

For example, during spring 2002 in North America, a clear incentive emerged for speculators to buy spot gas and inject it into storage. This was because the shape of the forward curve in the natural gas futures market made it possible to hedge the ‘storage play’ by selling higher-priced forward contracts against which traders will be able to deliver the cheaper gas they are injecting today. Figure 3 shows the comparative forward curves for 2002 and the year 2000.

One result of this ‘storage play’ phenomenon is that open interest for November delivery, during the first four months of the year, was

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significantly higher in 2002 than it had been in previous years (see figure 4).

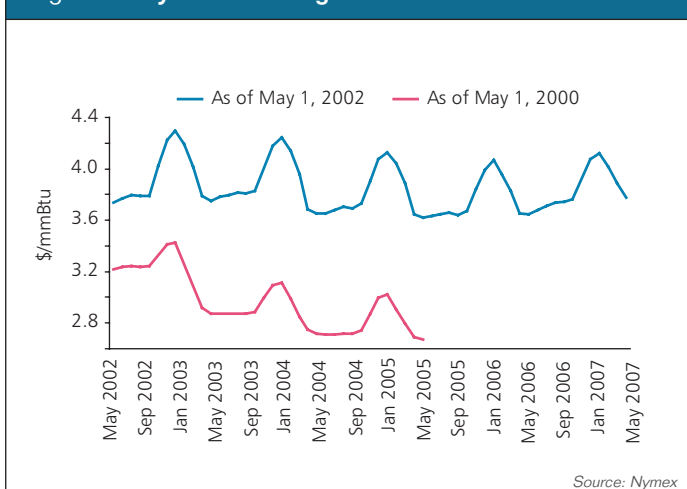
The distance between the producing regions for North American natural gas and the consuming regions where the gas is needed, means that storage close to the market is an important physical risk management tool for natural gas marketers, and also one of significance to analysts and speculators.

The impact of a more accurate and independent, EIA-supervised reporting mechanism for underground gas storage will in time become evident. But for now, Nymex natural gas traders face the prospect of a busy start to their day on Thursdays and more peaceful Wednesday afternoons. **EPRM**

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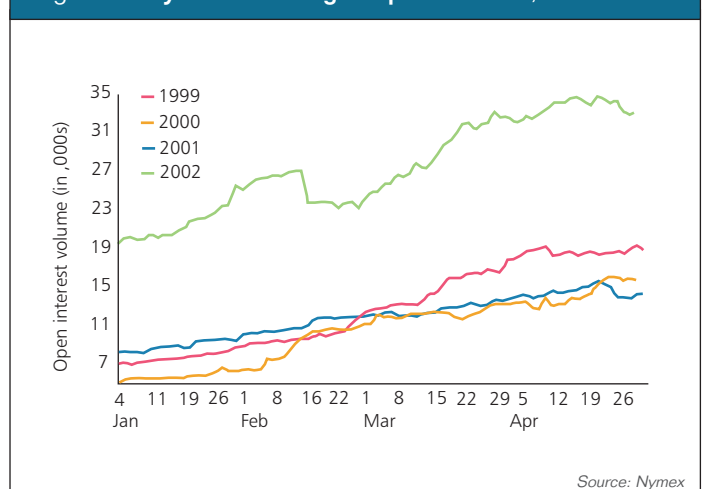
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Figure 3: Nymex natural gas forward curves



The forward prices for the winter season in the 2002 curve carry a distinct premium over the spring and summer, whereas the curve was much flatter in previous years, such as 2000

Figure 4: Nymex natural gas open interest, 1999–2002



Open interest in the November Nymex Henry Hub natural gas futures contract between January and April over the four years from 1999 to 2002