



Summer 2006 Storage Overview

Item No.: A-3
June 15, 2006

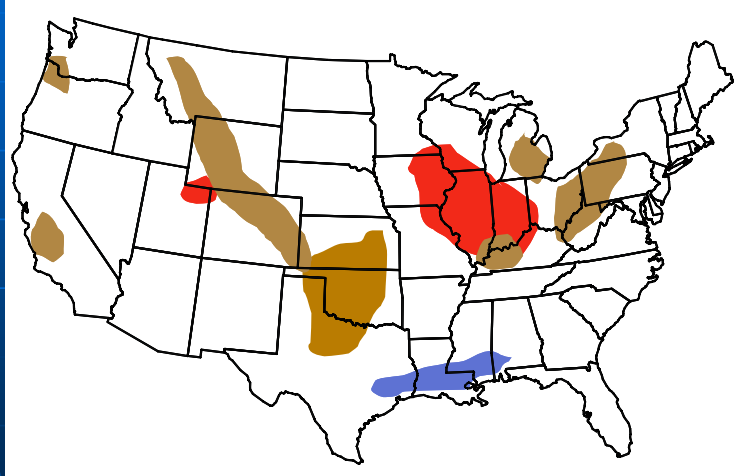
Good morning Mr. Chairman, Commissioners.

My name is Jeff Wright and along with Steve Harvey we would like to take a look at natural gas storage in the U.S. in light of your consideration of the Notice of Proposed Rulemaking in item C-2 entitled, "Rate Regulation of Certain Natural Gas Storage Facilities". First, I will speak to the existing and potential storage infrastructure in the U.S. In addition, I would like to address the prudence of increased levels of storage in relation to the developing world market for natural gas. Then, Steve will explain how to create market-based proxies for valuing storage and show how they've increased over the past few years.

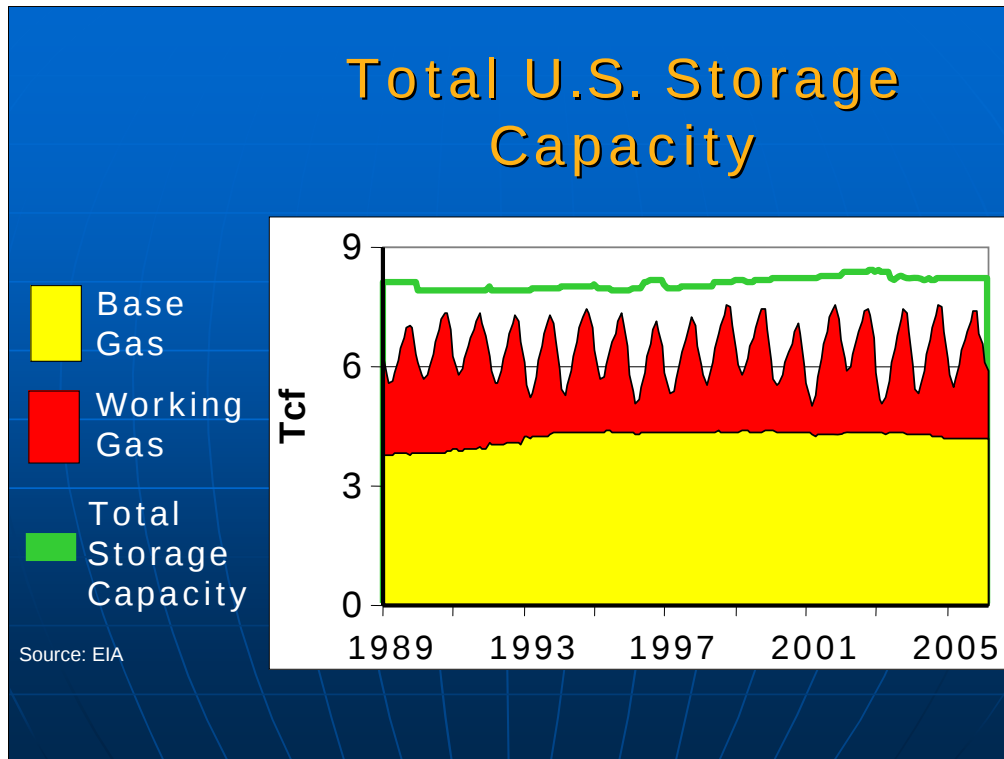
Underground Gas Storage in the U.S.

- Depleted Fields
- Salt Caverns
- Aquifers

Source:
Energy
Information
Administration

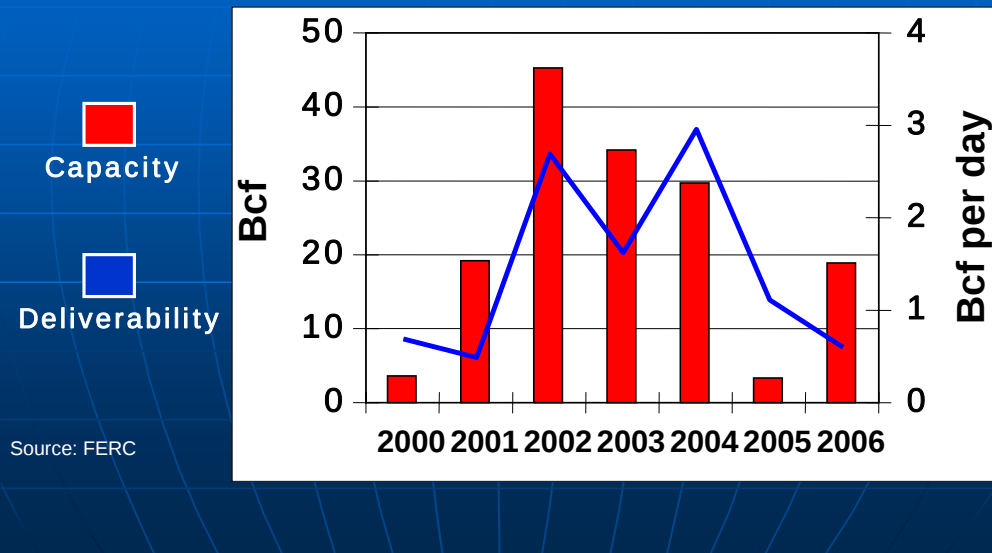


First, let me briefly summarize the U.S. gas storage situation. There are over 390 underground storage facilities in the U.S. according to the Energy Information Administration or EIA. These storage fields are generally located in the areas shown on the map. Approximately 205 of these fields are under Commission jurisdiction.



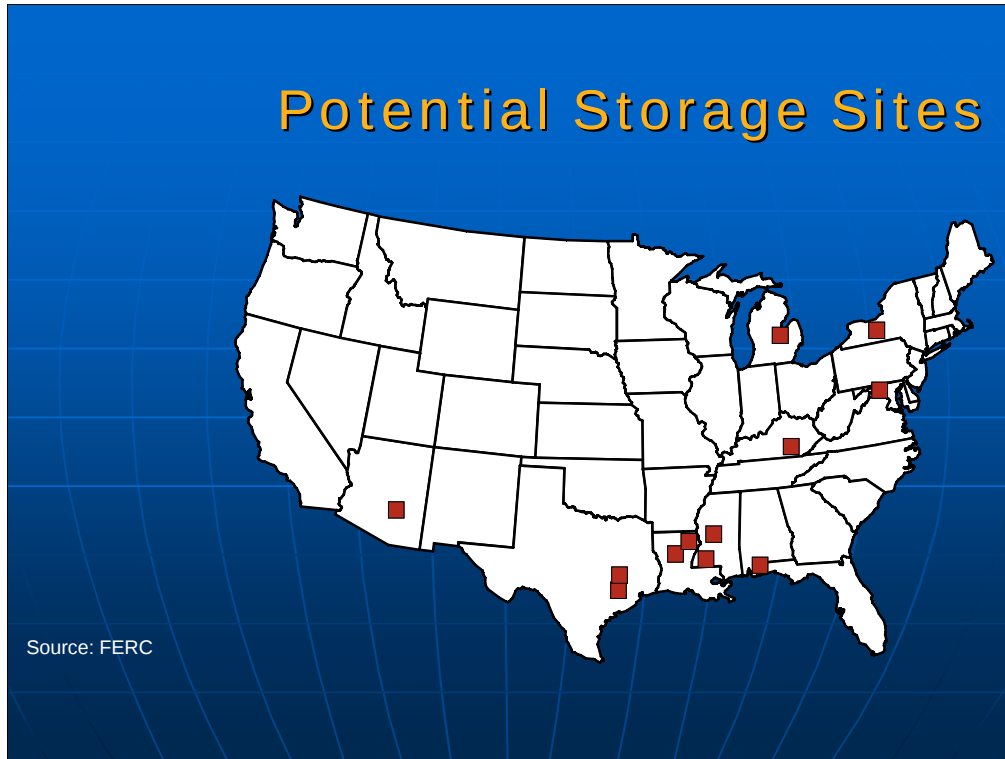
This chart shows the levels of storage in the U.S, both jurisdictional and non-jurisdictional. The green line at the top shows the total storage capacity on a monthly basis from 1989 until March of this year. This is an incredibly stable amount; in fact, the total U.S. storage capacity has increased by only 1.4% over that time period as evidenced by the fairly flat line. The base gas, or the gas that needs to stay in place in the storage field to provide the pressure necessary to extract the working gas also has been fairly constant over this period, varying between 3.8 Tcf to 4.2 Tcf. The working gas, the gas that is being stored and withdrawn, naturally varies over the course of the year, generally hitting a peak in October at the beginning of the heating season and its low point in April at the end of the heating season. During this time period, the maximum amount of working gas in storage at the beginning of the heating season was about 3.5 Tcf in 1990. Over this time period, the peaks do not vary much. The “valleys” do tend to vary year-to-year and this can be attributable to a number of variables, chiefly the weather during that winter or withdrawal period. Commission staff has estimated, based on its analysis of historic data, that approximately 5.2 Tcf of the total storage capacity and 2.5 Tcf of the working gas capacity is under Commission jurisdiction.

Storage Additions 2000-2006



Since 2000, the Commission has approved projects totaling 263 Bcf of capacity and 12.4 Bcf per day of deliverability. These seem to be large numbers, but when one looks at the Nation's storage capacity and working gas capacity, it is apparent that these approvals do not have an overwhelming impact on the overall totals. It is also noteworthy that Commission certification of storage capacity and deliverability has trended downward since 2002. In fact, there is only one pending storage project – Bobcat Gas Storage in Louisiana that would add 12 Bcf of storage capacity and 1.2 Bcf per day of deliverability.

Potential Storage Sites



What does the future hold for storage projects at the Commission? This map shows the location for potential storage projects totaling 148 Bcf of capacity and the ability to deliver 4.7 Bcf per day. Again, not exciting numbers. One point of interest is the location of the potential storage. A good proportion of the potential storage capacity is located in the Southeast, particularly in the Gulf Coast area. This is no coincidence as the vast majority of approved and proposed liquefied natural gas projects are located along the Gulf Coast as well.

On Today's Agenda: More LNG Capacity

- 3 New Sites: Creole Trail, Crown Landing, Port Arthur
- Expansion of an Existing Site: Cove Point
- Expansion of an Approved New Site: Sabine Pass
- 8.2 Bcf per day of initial new capacity increasing to 9.7 Bcf per day

At previous Commission meetings, we've discussed that the additional storage infrastructure that is expected to result from policies adopted in the Storage NOPR will increase customer alternatives and mitigate price volatility. What also needs to be emphasized is the synergies that will take place between LNG and storage. On the agenda later in this meeting are three new sites for LNG terminals – two of which are on the Gulf Coast, an expansion of an existing terminal and an expansion of an approved terminal in the Gulf that is currently under construction. This will add 9.7 Bcf per day of deliverability prior to 2010. Of this amount, the Gulf sites account for 7.7 Bcf per day. When combined with the seven new LNG terminals approved in the Gulf area that total 11.2 Bcf per day of deliverability, there will be a total of 18.9 Bcf per day of regasified LNG looking for a home in the Gulf region. The perfect place for this gas that is not immediately sent to meet consumer demand would be underground storage.

Atlantic Basin LNG Dynamics

- Underground storage in Spain and the UK is a small percentage of consumption
- Spain has too much supply for summer
- U.S. an LNG “dumping” ground in summer?

A quick look at the current LNG situation in the Atlantic Basin makes this clear. Spain is now “oversupplied” to such an extent that it is causing delays in shipping (as LNG tankers cannot be emptied fast enough). This is to our gain. Any excess cargoes that can come to the U.S. are doing so. However, this will be a short-term – that is, summertime – phenomenon. Eventually cold weather will come to Europe and gas demand there will increase and I will highlight two countries in particular – Spain and the United Kingdom – that will affect LNG imports to the U.S.

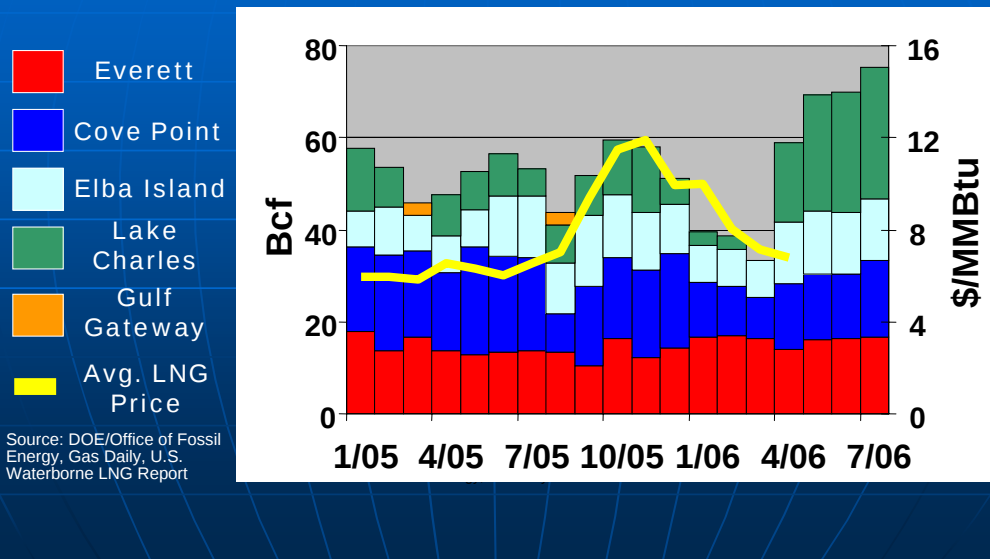
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According to the most recent information available from the International Energy Agency, Spain's working gas in storage comprises 8 percent of its annual consumption. In comparison, the U.S. ratio of working gas to consumption, stands at about 17 percent. Spain also has a daily regasification capacity of approximately 3.4 Bcf with an additional 1.8 Bcf per day of capacity coming on line in the near future. Looking at the U.K., we see that its working gas to consumption ratio stands at 3 percent. Further, the U.K. has recently become a net importer of natural gas as its indigenous gas production has steeply declined. As an answer to its supply needs, the U.K. inaugurated LNG service in 2005 at the Isle of Grain with 0.4 Bcf per day of deliverability. Plans are in the works to expand the U.K.'s LNG deliverability by 3.6 Bcf per day at the Isle of Grain and at other new LNG terminals. These are substantial amounts when you consider that Spain and the U.K. have annual gas demands of about 1 Tcf and 3.5 Tcf, respectively, as compared to U.S. annual consumption of around 22-23 Tcf. What this means is during the winter season, the U.S. will face considerable competition from Spain and the U.K. for LNG – a significant component of these two countries' gas supply.

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LNG Imports Increase Under Favorable Conditions



There is an upside for the U.S. to the LNG situation in the Atlantic basin and that is more LNG is available to the U.S. due to the traditional decline in demand for gas during the summer months. An additional benefit is that natural gas prices have fallen from their recent fall and winter levels. The yellow line in the chart above was derived from data provided by the Office of Fossil Energy of the Department of Energy and shows the decrease in the weighted average price of LNG delivered to the U.S. through April of this year. In April, the weighted average cost was \$6.77 per MMBtu. The Henry Hub price, which is comparable to the LNG price, has now dropped below the \$6 level. The reaction to the availability of the LNG and the favorable pricing is evident as LNG imports have soared and, according to the U.S. Waterborne LNG Report, are expected to set record monthly levels in July.

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So, what does this LNG discussion have to do with storage? Well, we know that we need LNG to meet future gas demand as domestic and Canadian production flattens. An excellent way to meet the need for more gas supply during periods of high demand is to construct more gas storage. This allows not only domestically-produced gas to be put underground for cold weather consumption, but also LNG, which can be delivered, regasified and stored during those months when LNG is not in high worldwide demand, especially in the Atlantic Basin, and prices are, hopefully, at lower levels. Given the high level of working gas in storage coming out of last winter, it will not take long to fill up the remaining capacity. At that point, the U.S. will not be able to take advantage of the cheaper, plentiful supply of LNG.

An increase in the amount of storage capacity will allow U.S. LNG capacity holders to take advantage of market developments and be in a better position to meet gas demands during the heating season at less volatile and, hopefully, lower prices. Now I'll turn the presentation over to Steve.

Storage Value: More Supply Flexibility

- Shifts supply from when it is not needed to when it is
 - **Summer to winter**
 - **Weekend to weekday**
- Shifts supply from when it is not valued to when it is

Thanks Jeff.

I'm going to spend a few minutes discussing how we assess the market value of storage, look at recent storage values compared to history, and consider what recent increases in storage's market value might mean – particularly in light of current record storage inventories.

The bottom line is that gas markets are signaling that gas in storage is currently quite valuable to customers, despite the fact that storage inventories are much higher than usual for early summer. While customer value is certainly not the only factor in making investment decisions, market signals of strong current customer value is certainly an incentive to storage facilities investors.

How do storage customers value storage services?

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Natural gas storage is useful to them because it takes supply out of the market at certain times and returns it at other times. That ability can be used to enhance reliability by moving supplies from, say, summer when gas demand tends to be lower to winter when demand increases. Local natural gas distribution companies (or LDCs), by far the largest user of wholesale storage services in the United States, tend to use storage in this way.

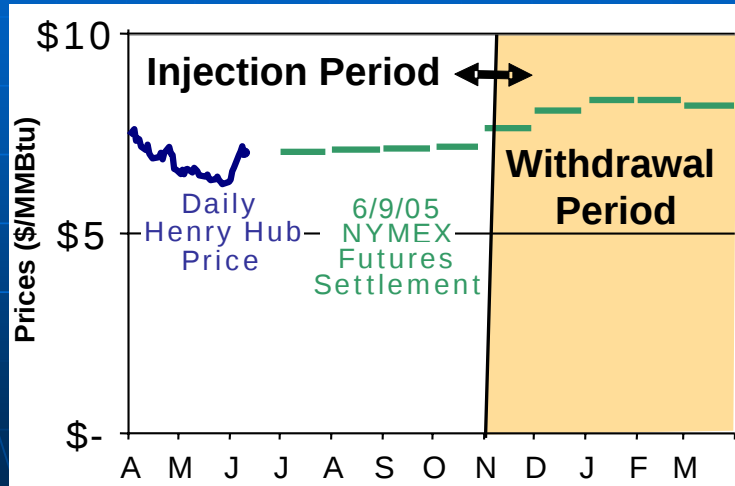
At the same time, other companies can use storage to create value by moving supply from times when prices are low to times when prices are high. That means injecting gas into storage whenever that company expects prices to rise in the future. If a company using this strategy hedges its sale in the future, using, for example, the NYMEX futures market, then the risks associated with the strategy are low.

These two strategies – reliability-based and market-based – look quite similar. Prices tend to be higher at the same time demand is higher. But the strategies are not the same. For example, an LDC using storage to ensure the reliability of its service may continue to inject even when prices are high – after last summer’s hurricanes for example – in order to have enough gas in storage to meet its obligations. Doing that might well increase prices, but the activity is completely reasonable for it to meet its business obligations. Market signals alone don’t, and shouldn’t, dictate storage behavior.

Depending on the technology used in building the storage that Jeff discussed earlier, a storage unit may be able to shift supplies from summer to winter, or even from day to day. Reservoir storage, built out of depleted gas fields, generally operates best on a seasonal basis – though investments in enhancements have increased reservoir storage flexibility significantly over the past few years. Salt cavern storage has far quicker in-and-out capabilities, making it possible to shift supplies over much shorter periods.

For reservoir storage, value tends to reflect seasonal price differences. For salt caverns, day-to-day market volatility is more important. For this presentation, I’ll use market information to value reservoir storage and review recent trends in that value.

Storage Valuation: Perspective 1 Year Ago



Sources:
Platts Gas
Daily,
NYMEX

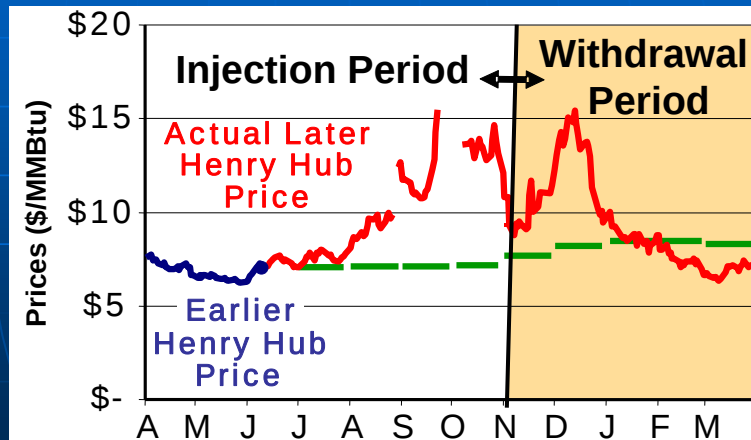
About one year ago, a reservoir storage customer knew several things about how to value gas through the next year. Those things included recent spot and futures prices. The storage customer could measure the value of storage under the assumptions that the customer could:

- Buy gas that day,
- Inject it into storage,
- Withdraw it in the future – we'll say during the typical U.S. withdrawal period from November through March and
- Hedge the future sale on the futures market.

This figure shows the key information at Henry Hub Louisiana as of one year ago last Friday. The difference between the average futures price and the actual price of gas that day was about \$1.20/MMBtu.

Futures Were Lower Than Realized Prices

Sources:
Platts Gas
Daily,
NYMEX



Of course, last summer and winter did not occur exactly as expected a year ago. So what would have happened if our storage customer had simply bought gas then, not hedged the sales price on the futures market, and then simply sold into the spot market day-to-day through the withdrawal period. In that case, the storage customer would have realized prices more than a dollar higher – \$2.24/MMBtu.

Last year, storage looked like a good investment early in the summer. If you didn't lock in its value early in the summer and simply accepted spot prices day-to-day through the winter, it turned out to be an even better investment.

Futures-Based Valuation Up Significantly in 2006

Storage Valuations as of June 9 (\$/MMBtu)

	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
NYMEX Futures	\$ 0.27	\$ 0.52	\$ 1.20	\$ 3.56
Realized Average	\$ (0.73)	\$ 0.37	\$ 2.24	

Sources: Platts Gas Daily, NYMEX

If we look back over the years at these calculations of customer value in each early June using both approaches – based on futures and on realized prices – we see a very strong recent increase in relative storage values. This last Friday, the futures market-based value of storage looked like a little more than \$3.56/MMBtu – almost three times what it was last year at this time. This value has been even higher in the recent past – it was higher than \$4.00/MMBtu a month ago. Over the past few years, these values as of early June have grown steadily. I didn't have the space to show earlier years, but generally the values jump up and down a lot – only these years have so clear a progression of increasing value. Still, during the 5 years before the beginning of this chart, no futures-based value was higher than \$0.60/MMBtu.

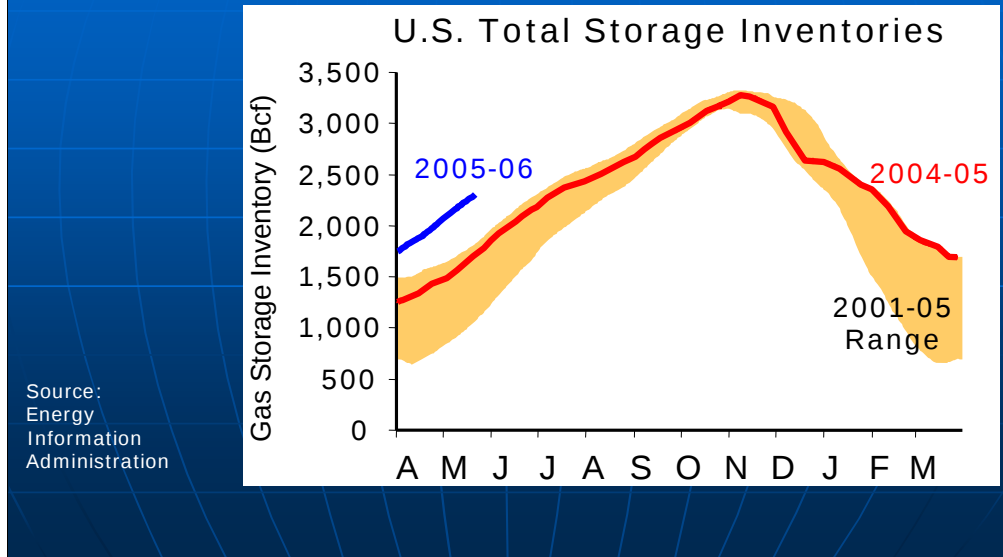
In addition, we can calculate the summer-winter price differences for the next few years in the futures market. As of last Friday, futures-based storage values for the next 4 years range from \$1.85 to \$1.95/MMBtu. Though lower than this year, those future values are, nonetheless, a strong signal of current expectations of strong storage value in the future.

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Thus, the incentive right now to inject into storage is strong for the market-driven customer; but let's switch the focus a back to the storage developer for a minute. The amount a customer will pay has clearly risen, but various investment costs have increased as well – costs like buying the base gas needed to create new storage fields as well as the rising interest rates needed to finance the investment. Also, storage facilities have long lives, and investment decisions have to reflect longer-term assessments value than what we can see in current market prices. Recent high storage price differentials do not guarantee high storage value in the future, but they are consistent with a positive market incentive.

Storage Inventories Above Historical Range



High recent customer value seems to mean more for an additional reason. Storage inventories are at record levels as well. As of last week's Energy Information Administration report, natural gas storage inventories are still almost 7/10ths of a trillion cubic feet above normal for this time of the year – far higher than levels for this time in U.S. experience. The blue line at the left of the figure that sits high above last year's levels and the 5-year range shows how distinctive the current situation is.

Another way to think about current storage levels is this: the current level is reached, on average, more than two months into the future. The fastest fill in EIA's historical data was at this level more than a month in the future.

The fact that natural gas markets are signaling a high value for injecting gas into storage at the same time that there is a record amount of gas in storage makes the customer value signal even stronger.

Market Signals Indicate More Storage Needed

- U.S. storage inventories much higher than in prior years
- Futures-based storage valuation close to all-time highs as well
- Market signal is that additional storage is valued

Despite record storage levels in the summer, the futures market is sending record strong signals to inject more as quickly as possible. There could be many reasons for the strength of this futures market-based signal – fears about gas use in electric generation this summer, fears of hurricanes, fears of international pressures on oil prices. Still, the strength of the November through March seasonal price spread in the face of huge existing storage inventories clearly emphasizes the fact that gas markets value storage right now at unprecedented levels.

Jeff and I would be happy to take your questions.