

Natural Gas Hedging



Introduction

Many industries rely on huge amounts of energy to produce various products. Whether your company is in the business of manufacturing products or processing existing products, **industrial businesses consume an estimated 43% of the natural gas produced.** This means that the price volatility of natural gas can potentially impact every sector of the global economy.

If your company requires large amounts of natural gas to operate, you may have noticed the prices for natural gas have been extremely volatile. A recent ice storm in Texas had a huge impact on shipping of all products out of Houston, a critical port for imports and exports of not only natural gas but also all commodities. If your company was affected by the natural gas price volatility, this article's aim is to help you understand not only the natural gas market but also **how to hedge against price volatility to prepare your business for the future.**

What Industries Use Natural Gas?



As mentioned at the very start, natural gas is used in many critical industries. While you might use it in your home for heating and cooking, natural gas is a critical ingredient in the production of paper pulp, chemicals, refining petroleum to make cleaner-burning gasolines, steel manufacturing, plastic and glass processing, and even food processing in some cases.

The prices of the products that end users pay might change depending on not only the market price of natural gas but also whether a company properly hedged their natural gas position. To help prepare for the discussion about hedging, let's discuss what factors affect the price of natural gas.

What Factors Affect the Price of Natural Gas?

Natural gas shares some of the same risk factors associated with other commodities, and most of them center on supply and demand.

On the supply side, natural gas can experience price volatility from an **over-production by producers, the amount of natural gas in storage tanks, and the volumes of natural gas that are imported or exported.**

On the demand side, natural gas is affected by both **excessively hot or cold weather, economic growth, and whether other fuels may be available at better prices.**

For Mexico, while the country does have natural gas reserves of its own, it is a net importer of natural gas. **96% of those imports come from the US** according to the country's Energy Information Administration (EIA). More specifically, **the imports come from the Houston Ship Channel.**

The Houston Ship Channel is the most used route by natural gas carriers (or gas tankers) to get in and out of the various terminals outside of Houston. Since most of the natural gas going to Mexico comes from the US via Houston, **the Houston Ship Channel is another factor that can affect the price of natural gas.**

Although the Houston Ship Channel closes for short periods of time due to weather conditions, the ice storm in February shut it down for weeks, causing extreme volatility. Since natural gas requirements in Mexico did not stop, it had to be acquired from other sources. This caused a dramatic increase in the prices of other imports due to unusually high demand.



Who Needs to Hedge Natural Gas?

If natural gas is a critical component to your business, you may want to consider investing in personnel who can implement an effective hedge. Sometimes, the CFO of a company, as well as his staff, will be responsible for this. Some companies have entire departments devoted to not only protecting profits but also generating some as well.

It's important to separate the supply side from the demand side. If your company is more at risk on the supply side – meaning you're a producer or seller of natural gas – then you would hedge differently than a company who might be at more risk on the demand side.

BP, for instance, employs thousands of people in their trading desks, one of which is devoted to capturing profits in natural gas markets. Their jobs are to focus on specific market information and position the company to reduce heavy losses, such as when the ice storm struck Texas in February. Some companies like BP might be able to operate in a speculative capacity, but **hedging is not a means for profit – it is protection against market risks** mentioned earlier in this article.

Alternatively, **there are companies that specialize in assisting businesses with hedging.** They will not only help develop the right strategy for the business needs but also helping the company implement the strategy. They can help provide tools to monitor the positions as well.



How Is Natural Gas Hedged?

The instruments used to hedge can range from relatively simple to extremely complex. On the simple side, you may be able to implement a hedge by simply using the **NYMEX Henry Hub natural gas futures**. Not only is this the third-largest commodity futures market, but the markets are easily accessible to anyone from retail traders to institutional investors.

It is important to clarify that hedging is done differently depending on whether your company is on the supply side or demand side. Sometimes, larger companies manage this via their finance department headed by the CFO, but more often than not the **hedging is handled by a third-party company that specializes in corporate hedging, such as a commodity broker.**

Example:

Demand Side

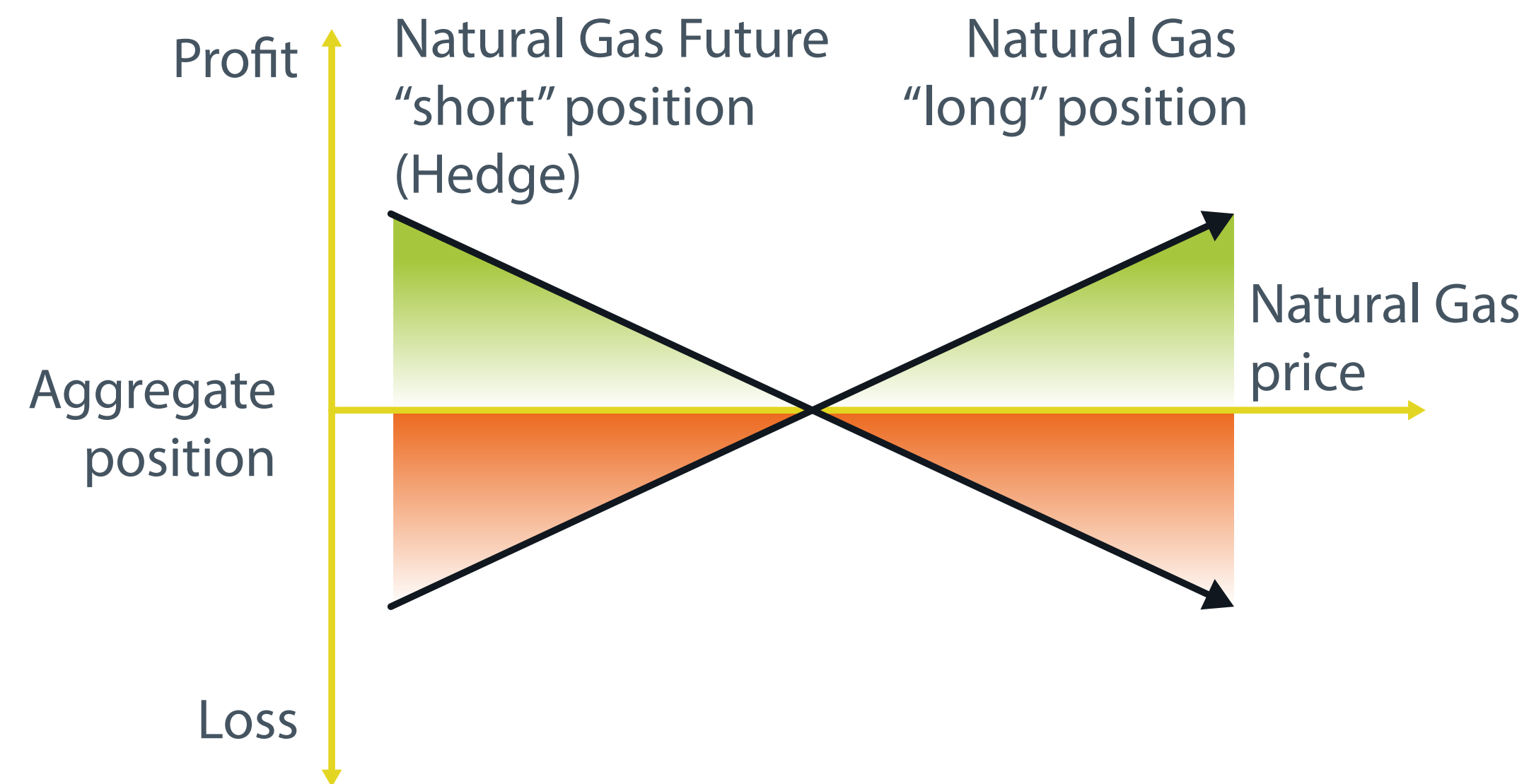
If your company is on the **demand side**, then you are a consumer of natural gas. Hedging can help lock in a certain price allowing businesses to secure profit margins. In this case, you may consider a long hedge to protect from potential higher natural gas prices.

In our example, your company's expected consumption is 100,000 MMBtu for the next month based on customer needs. You may want to consider hedging to lock in the current rate of \$3.416/MMBtu (as an example).

Since each futures contract is worth 10,000 MMBtus of natural gas, you would buy 10 futures contracts to accomplish this.

Let's look at two cases - both for move higher and lower in natural gas prices. If the price of the NYMEX natural gas contract goes up to \$4.00/MMBtu next month when you decide to sell your contracts, then your business expenses will have increased and total natural gas expenditures will be \$58,400 higher with respect to the initial planned cost.

However, you locked in a rate of \$3.416/MMBtu with your futures contracts, which is a price improvement of \$0.584/MMBtu and a monetary gain of \$58,400.



Subtracting this from the commercial loss experienced by the company, helped by the hedge, the company will see a neutral effect on higher natural gas price.

Now consider the scenario where **price decreases**. If the natural gas price decreases by the same \$0.584/MMBtu then your business expenses will be \$58,400 lower with respect to the initial planned cost.

However, you locked in the rate of \$3.416/MMBtu with your futures contracts, which results in a loss in the futures contract value of \$58,400.

This illustrates the neutral effect of hedging and the reason companies should hedge. If you plan your business around a certain cost for a critical commodity like natural gas, you can **lock in a rate from month to month, regardless of where price goes**, by hedging.



Example: Speculator

A speculator's job is to simply make money by buying or selling when they think the market will go up or down. If a speculator thinks there is an oversupply of natural gas in the market, they'll sell futures, perhaps with a stop order to limit a runaway increase against their position.

If the speculator sells at the same \$3.416 price and it falls to \$2.832 in the next month, the speculator makes the same \$58,400 profit assuming they sell ten contracts as well.

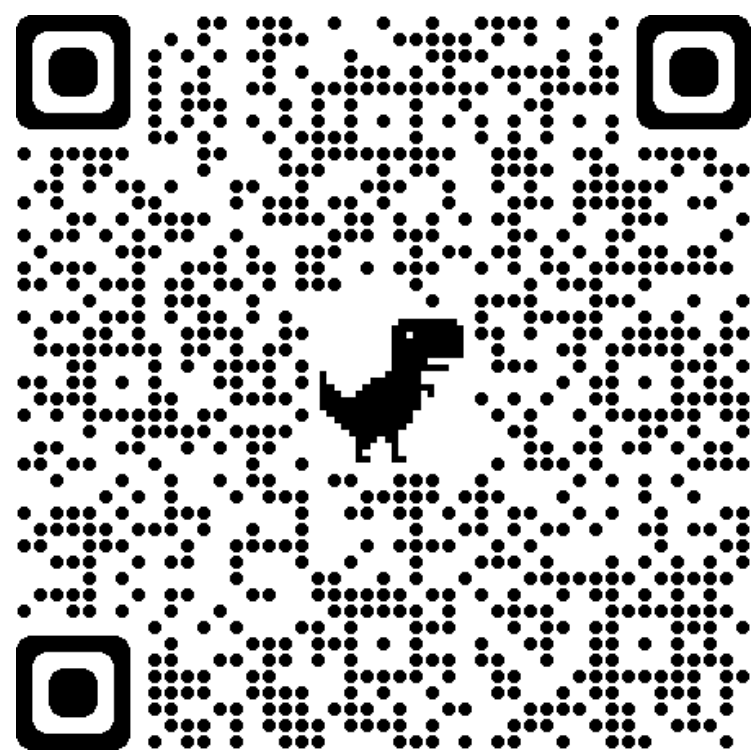
Conclusion

Natural gas hedging is a method of locking in the price of a commodity over a certain period of time in order to remove the complications that come with highly volatile price movements. This was especially helpful for those companies that were correctly hedged during February when the Houston Ship Channel was closed and natural gas was costing as much as \$180/MMBtu. Hedging is extremely beneficial to companies which rely on not only a steady supply of natural gas but a more stable price for acquiring it.



References

**MERCATUS
ENERGY ADVISORS:**



NATURALGAS.ORG :

