



**Spring 2009
Edition**

Natural Gas TODAY



For Municipal Gas Systems

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2009 IMGA
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**2009 Annual
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Inside This Issue...

Page 2A

- * Risk Management (Continued)

Page 3A

- * Model Integrity Management Plan (Continued)
- * What State Uses the Lowest Amount of Energy Per Person?
- * Snapshots
 - Natural Gas Storage Graph
 - Rig Count Graph
 - Seasonal Temperature Map
 - Price Per MMBtu Graph

Page 4A

- * Risk Management (Continued)
- * Energy Saving Tips for Cooking

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Risk Management



This is a continuation of the Risk Management series from the Winter edition of the Natural Gas Today. This edition will focus on the role the market plays for each member of the gas industry. All information in this series is courtesy of the NYMEX.

How Futures And Options Can Help You

U.S. natural gas prices are now largely determined by the forces of supply and demand. Technical factors, such as pipeline capacity, as well as fundamental factors, such as industrial use, influence prices. Price risk and competition have also been driven all the way from producers to resellers to the retail level. In some parts of the country, for example, homeowners now have the opportunity to lock in prices through long-term contracts.

Meanwhile, now that wellhead prices are no longer set by regulators, the futures market has become the major universally disseminated reference price for natural gas. Prices are posted virtually instantaneously, giving buyers and sellers a real-time view of market conditions, including trading volume. The futures contract also facilitates the pricing of many other gas transactions - including those in which neither party actually uses futures - by serving as a price reference index, or as a benchmark to evaluate the competitiveness of short- and long-term deals.

The futures market allows industry marketers to lock in a purchase price for gas they have committed to deliver, or to lock in a selling price, including a profit margin, for gas they have committed to buy. Other market participants have also been able to lock in purchase or sale prices without assuming the risks of a fixed-price contract. The market is a liquid one, giving participants the ability to enter and exit positions readily without disrupting prices in the broader market.

Pricing in a volatile market makes it difficult to maintain flexibility when planning. Without futures, market participants must accept fixed-price contracts, which can prove disadvantageous, as New York

State regulators learned in 1997 when they placed price caps on gas sold through local distribution companies. The futures market provides flexibility in forward planning. This flexibility is further enhanced by the options market which provides participants with, among other things, the ability to set price floors and ceilings, hedging against adverse price movements while retaining the ability to participate in favorable ones.

Let's look more specifically at some of the ways futures and options are used to address the needs and risks of six important groups: producers, gas processors, interstate pipeline companies, local distribution companies (or LDCs), marketers, and end-users. Even those companies choosing not to use futures or options can benefit from the price discovery offered by futures markets by tying the price of their cash market transactions to the futures price.

Producers

The gas industry has evolved from a stable environment in which a producer could expect to sell any gas he found to one that has had a persistent surplus for many years. Although supply and demand now appear to be fairly well balanced, there is still a risk of seasonal as well as long-term downturns in price. New York Mercantile Exchange futures and options can help mitigate the new risks faced by producers. For example:

- When abnormal weather, concerns about storage levels, or other factors cause natural gas spot prices to strengthen, that strength will frequently be reflected in prices paid for futures contracts deliverable some months

Continued on page 2A.

Model Integrity Management Plan Under Development

By John Erickson of the American Public Gas Association

Later this year the Pipeline and Hazardous Materials Safety Administration (PHMSA) will put out a final rule requiring all distribution operators to develop and follow a written Distribution Integrity Management Program (DIMP) plan. Anticipating that the rule would place a heavy burden on small utilities, the APGA Security and Integrity Foundation (SIF), with PHMSA funding, began developing a web-based DIMP plan development tool called SHRIMP (Simple, Handy, Risk-based, Integrity Management Plan).

Developing a DIMP plan requires that each utility use its knowledge of the construction, inspection and maintenance history of the distribution system to assess whether any of eight threats require additional action above and beyond the maintenance and inspection requirements in pipeline safety rules. These eight threats are: Corrosion, Excavation, Natural Forces, Weld or Material Defects, Equipment Failures, Inappropriate Operations, Other Outside Force and Other. This article will focus on Corrosion and how SHRIMP will assist users to assess this threat.

SHRIMP asks the user questions about the construction of the system and its inspection and maintenance history. Operators can answer based on their knowledge of the system, written records or preferably both.

The first question is "Do you have metal pipe (e.g. steel, cast iron, copper, etc.)?" Since plastic doesn't corrode, if the system is all plastic a "No" answer to this question ends the corrosion threat assessment - corrosion is not a threat. If the system does have metal pipe, SHRIMP asks questions such as:

- Have corrosion leaks occurred on the system?
- Are cathodic protection levels adequate?
- Have exposed pipe inspections found corrosion?

Based on the answers given, SHRIMP will ask further questions to determine the risk of corrosion on all or on various parts of the system and recommend additional actions the operator might take to address this risk. For example, additional actions could be more frequent leakage surveys, augmenting the cathodic protection system, rehabilitating the pipe or replacing the pipe that is at risk from corrosion. A paragraph explaining why corrosion is or is not something requiring action on all or parts of the system, will be written into the operator's DIMP plan, along with a description of any additional actions the

Continued on page 3A.

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Risk Management Continued

ahead. This presents opportunities to lock in attractive forward selling prices. Producers who sold futures contracts during the period of supply restrictions following Hurricane Andrew in 1992 could have achieved effective gas prices of \$2.50 and \$2.15 for their January and February 1993 production, respectively, both about \$.50 higher than actual spot prices for those months.

- The natural optimism of producers can make the decision to lock in a price a difficult one with the inability to participate in price increases above that level. At times when prices are comfortably high but further upside movement is a reasonable expectation, producers may prefer to set a price floor rather than a price level. This can be accomplished by purchasing put options.
- Producers can earn additional revenue in flat markets by selling call options on their reserves.
- In general, financial institutions are more willing to lend against hedged reserves than unhedged reserves and, in some cases, hedging is a prerequisite for borrowing. Either the sale of futures or a put options purchase is considered a suitable instrument for hedging gas still in the ground.

Gas Processors and Refiners

Natural gas processors, positioned between the producers and the pipelines, provide a valuable service by making the gas suitable for shipment by pipeline. The processors take the "wet" natural gas as it comes from the well, extract propane, butane, and other liquids, and send the resulting "dry" gas to pipelines for shipment to market.

Gas processors account for about half of U.S. propane supply and about three quarters of total U.S. liquefied petroleum gas (LPG) supply, which also includes ethane, butane, isobutene, and natural gasoline

Processors are often affiliated with natural gas producers or pipelines, but typically established as separate operating units. There is also an independent

segment of the industry whose primary business is gas processing.

Even though LPG is derived from natural gas, the markets are different and therefore prices often move independently. Gas processors can use natural gas and propane futures to hedge the price risk of processing gas to extract propane. For example,

- Natural gas processors who buy natural gas and sell propane at spot market prices can use the fractionation or "frac" spread to lock in attractive processing margins. To hedge, a processor would buy natural gas futures and sell a Btu-equivalent number of propane futures. Should the fractionation margin narrow, the gas processor will have an offsetting gain on his frac spread.
- Processors who want to expand their market share by offering customers fixed price contracts for propane can still ensure attractive margins by purchasing natural gas futures to lock in their input cost.
- Conversely, gas processors offered attractive natural gas purchase contracts can sell propane futures to lock in a fractionation margin.

Interstate Pipelines

In years past, interstate pipelines tended to be both transportation companies and gas merchants. They not only transported gas, but bought the gas and then negotiated a delivery price with their customers. In the wake of the FERC order that deregulated the pipeline business and the rise of new marketers in the gas industry, interstate pipeline companies have increasingly focused solely on the transportation side of their business. Their role as merchants who bought gas at one end of the pipeline and sold it at the delivery point has declined sharply - or else is conducted through separate business units operating at arm's length from the transportation business. Today, pipeline companies operate more like railroad or trucking companies which transport goods but do not own those goods.

Even without their merchant's role,



2009 IMGA Annual Meeting



The 2009 IMGA Annual Meeting will be held on Tuesday, April 28th at the Northfield Inn and Suites in Springfield, Illinois.

We have a great line up of speakers from the Natural Gas Supply Association discussing the US Natural Gas Supply Outlook, BP presenting the Natural Gas Price Outlook, the Illinois Commerce Commission with a DIMP update, and APGA with a SHRIMP demonstration (see the Model Integrity Management Plan Under Development on Page 1A). And you won't want to miss the great prime rib buffet luncheon!

Contact us at 217-438-IMGA to get registered!

IMGA has reserved a block of rooms at a special rate of \$69. If you need a room please contact the hotel directly at 866-577-7900.

Their website is www.northfieldinn.com. Once again this year, the annual meeting will be free of charge, except for hotel costs.

We hope to see you there!

however, pipelines can still be subject to occasional pricing risk, especially when a competing pipeline can deliver gas to a common market area at a lower price. Or the pipeline may find itself in a situation where an alternative fuel, such as oil, is less expensive, and the cost of gas transportation is a critical factor in determining the competitiveness of the delivered price of gas. In that event, the pipeline could employ an intermarket spread.

Local Distribution Companies

Local distribution companies (LDCs), the gas utilities, have evolved into aggressive purchasers and marketers and, to a growing degree, transporters. They are beginning to emerge as one of the more significant forces in the natural gas industry. Many, in fact, have created separate marketing companies which buy and sell gas for other LDCs. In states which now permit competition to supply gas to residential customers, numerous LDCs are competing with each other for retail business.

When it comes to obtaining supplies, LDCs have choices. They can purchase gas from producers or marketers; they can buy at spot prices; or they can nego-

tiate short-, medium- or long-term contracts. However, since many of an LDC's larger customers may also have access to all of these supply possibilities, the LDC must be nimble if it intends to be a competitive merchant of natural gas.

LDCs are also exposed to interfuel competition, and this risk can loom large when industrial users and electric utilities form a significant part of the LDC's business.

Before an LDC can consider any hedge, however, it will want to be assured that its public service commission will allow hedge gains and losses to be equally offset against gas acquisition costs. In states which have adopted this policy, LDCs can use futures and options to maintain price flexibility in a variety of ways:

Just as a strong spot market will tend to strengthen futures prices for several months ahead, creating an opportunity for producers to lock in delivery prices, so too will a soft market afford buying opportunities for LDCs. By having purchased April, May, and June futures in February 1993, for example, LDCs could have lowered their average gas acquisition costs by about \$.50 per million Btus.

- Although an LDC may have an agreement with its state regulatory agency that hedge losses will be treated the same as hedge gains, a large decline in spot prices leaving the LDC locked into prices well in excess of the market could create a politically awkward situation for both the LDC and the public service commission. Should the risk of a large downward price move be considered significant, it may be preferable for the LDC to purchase call options to set a ceiling price for its gas purchases.

- LDCs concerned about their ability to recover the cost of storage gas in a competitive market could use a short futures or long put options position, or could even sell options calls to recover some of the cost. In July, for example, the North Shore Gas Company calculates expected gas demand for August, September, and October and realizes that it will have very high storage costs because demand will be low. To offset its costs, the company buys futures and then sells puts - which give it the right but not the obligation to sell the underlying futures contract - in November. If prices have risen by November, as expected, the company can recoup its storage costs by the profit on the puts, and then replace its supply at current prices.

- To compete with producers and marketers for gas sales to their highly price-

Continued on page 4A.

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Model Integrity Management Plan Continued

operator will take and performance measures to measure the effectiveness of these actions. An obvious performance measure for corrosion is monitoring the number of corrosion leaks - the number should decrease if the program is working. In cases where the operator is al-

ready doing something to address a known corrosion problem, such as an ongoing replacement program, SHRIMP allows the user to include those activities in its DIMP plan rather than try something new. The operator must periodically review its corrosion leak experience to determine if the DIIMP plan is working to reduce corrosion problems.

What State Uses the Lowest Amount of Energy Per Person?

Answer: Rhode Island

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According to the U.S. Energy Information Administration's State Energy Data System, Rhode Island - followed closely by New York - has the lowest energy consumption per person of any state. This is not a measure of overall energy consumption, but a ranking of energy use per unit of population. Other low energy users are Massachusetts, California, and New Hampshire. Most of the lowest energy users were Eastern states, with Arizona and Hawaii joining California as the only Western states in the top 10.

Energy use among states varies widely. In 2006, Rhode Island and New York both used about 204 million British Thermal Units (Btu) per person. This is about 40% less than the nation-

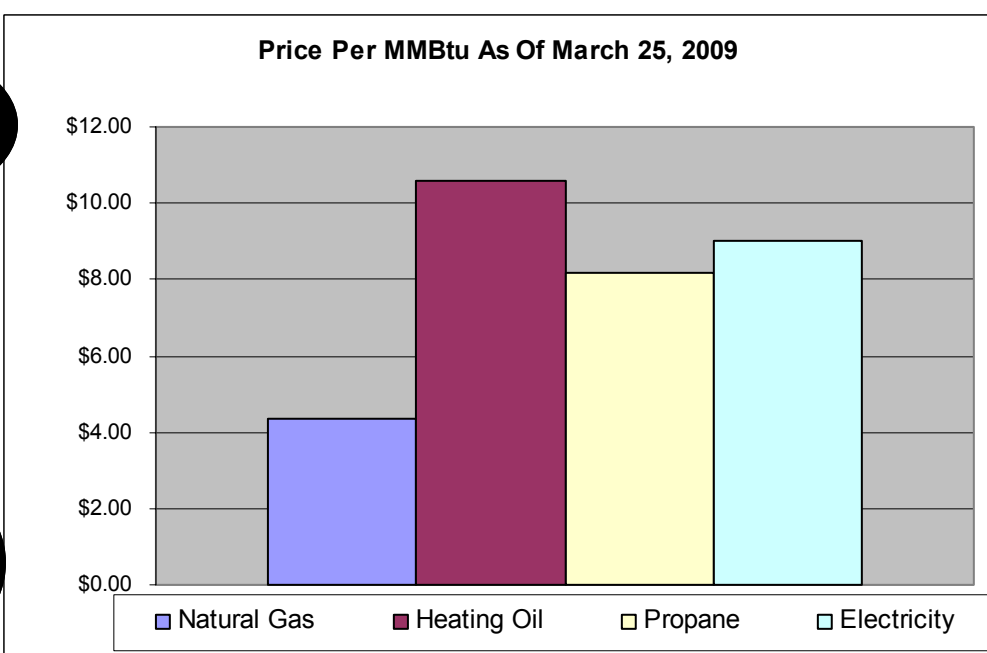
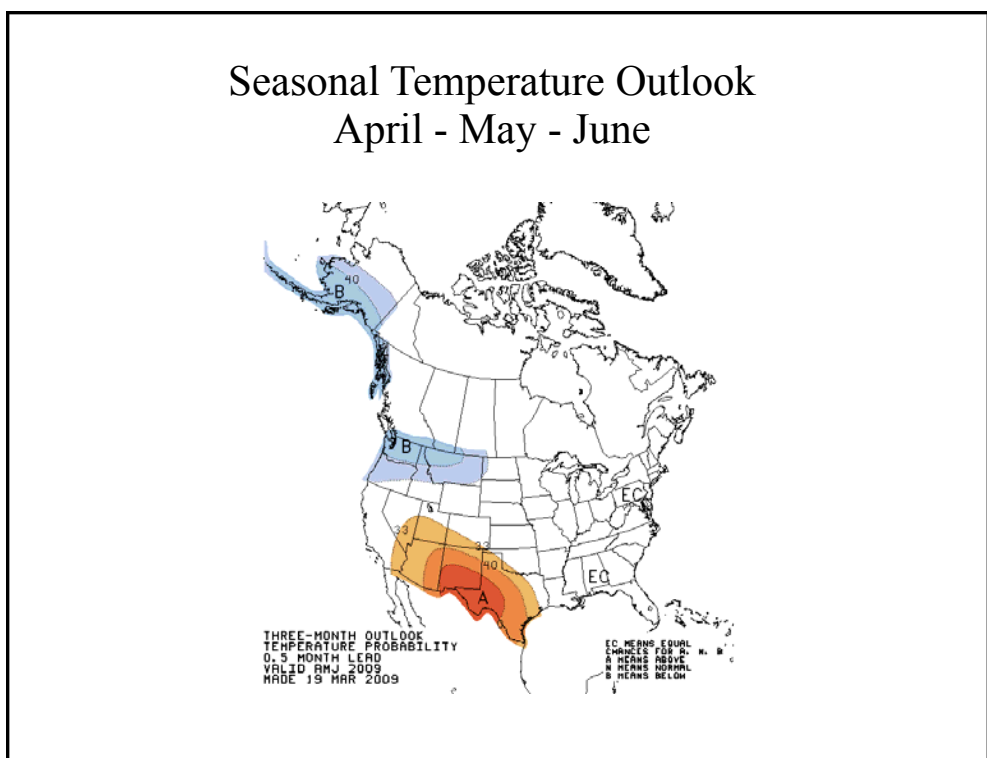
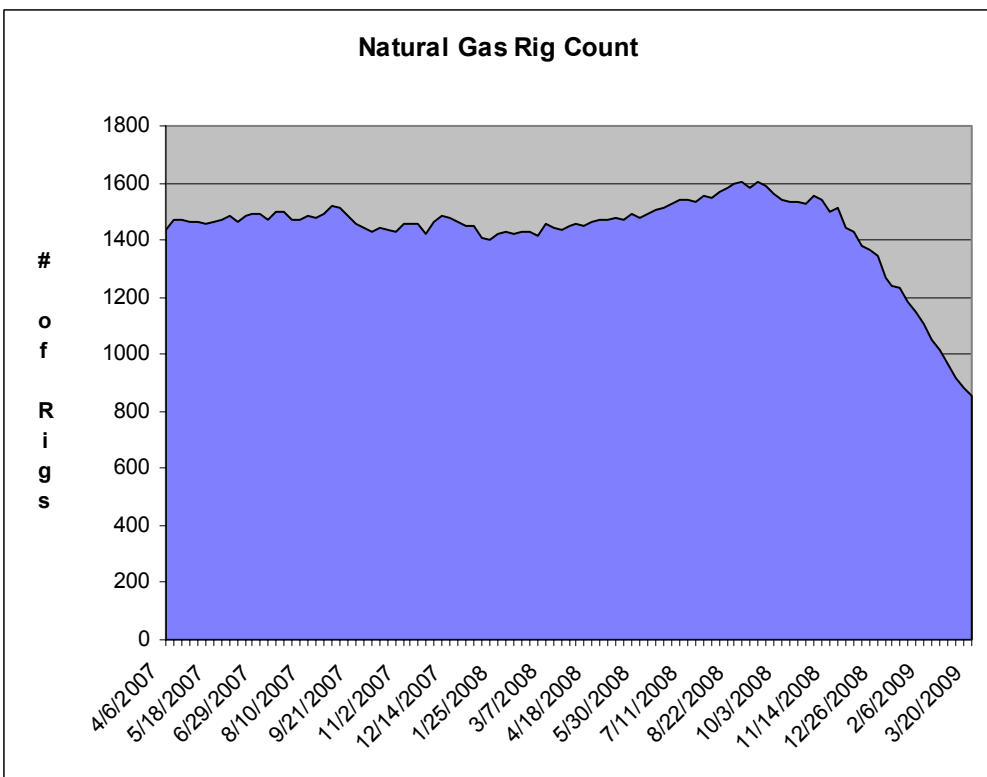
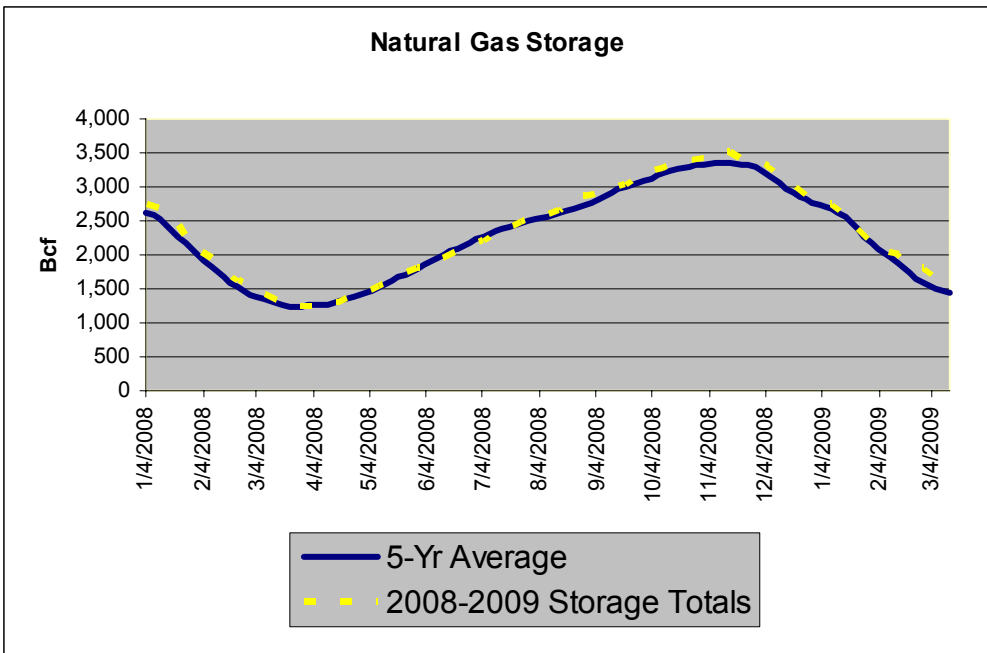
wide average of 333 million Btu. On the other hand, Alaska - the largest energy user among states - consumes more than three times the per capita national average.

A number of factors may contribute to the varying energy consumption per person among states. A study published in the early 2000s by the American Council for an Energy Efficient Economy (ACEEE) indicated that the presence of strong statewide energy-efficiency programs as well as strict energy building codes were significant factors. The degree of urbanization and the presence of energy-intensive industries appeared to play a role. Climate, however, did not appear to make much of an impact.

State	Per Capita Energy Consumption in Million Btu	State	Per Capita Energy Consumption in Million Btu
Rhode Island	203.7	Idaho	351.6
New York	204.3	New Mexico	351.8
Massachusetts	229.9	Delaware	352.5
California	232.3	Minnesota	353.5
New Hampshire	238.7	Nebraska	373.8
Connecticut	242.8	Tennessee	380.8
Arizona	248.3	Kansas	381.3
Florida	255.3	South Carolina	394.4
Maryland	259.3	Iowa	406.2
Vermont	263.7	Arkansas	407.4
Michigan	296.8	Mississippi	419.3
Colorado	299.6	Oklahoma	448.1
North Carolina	299.8	Montana	453.2
District of Columbia	299.9	Indiana	454.1
New Jersey	300.6	West Virginia	458.5
Oregon	301.2	Alabama	466.3
Utah	304.7	Kentucky	468.7
Nevada	307.6	Texas	501.7
Illinois	308.8	North Dakota	644.1
Pennsylvania	317.1	Louisiana	896.1
Washington	322.2	Wyoming	937.9
Wisconsin	326.3	Alaska	1112.2
Missouri	327.7	United States	333.1
Virginia	333.1		
Georgia	336.8		
Ohio	339.6		
South Dakota	344.9		
Maine	348.2		

Source: U.S. Energy Information Administration State Energy Data System

Snapshots



You're paying how much for natural gas!?!?

Not receiving quality risk management service and timely information from your natural gas supplier?

As a leader in the municipal arena of natural gas \$ risk management, IMGA has assisted municipal gas systems in the Central and Midwest United States by providing innovative risk management strategies that stabilize and lower natural gas prices.

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Tired of trying to guess the natural gas futures market yourself?

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Risk Management Continued

sensitive customers, some LDCs are now offering futures- and options-based pricing alternatives.

- Whether acting as supplier or simply transporter to a dual-fuel capable customer, an LDC is at risk from falling oil prices. By using a long natural gas/short crude oil spread, the company could potentially maintain the competitiveness of its delivered price.

Marketers

As natural gas market participants become increasingly sophisticated, marketers are coming under greater pressure to provide added value. Marketers are in the unusual position of competing with their own clients. Producers, LDCs, and end-users sometimes deal with one another directly, so marketers must offer innovative pricing and risk management ideas in order to attract business. Marketers must also cope with the high level of risk that comes with being an intermediary, exposed on both the buy and sell sides. In fact, even when a marketer manages to negotiate both sides of a transaction at the same time, chances are good that the price index or the contract timing will not be a perfect match, and the marketer will have some remaining risk to manage.

Marketers can use natural gas futures and options in a variety of ways. They provide flexibility in forward planning, which is the key to an effective marketing strategy. For example, here is how a marketer could use futures to provide "added value" to a client, enabling him to lock in the current spot price:

Assume an LDC would like to lock in a current spot price for a three-month supply of gas, and a marketer agrees to provide the gas at that price plus a marketer's fee. To acquire the gas, the marketer contracts with a producer for a three-month supply at spot prices, which are going to vary over the period. At the same time, the marketer hedges by purchasing futures with corresponding de-

livery months. If spot prices increase during the three months, the gains in the futures contracts can offset the increased expense of the gas. The marketer can provide gas to the LDC at the agreed-upon price without the risk of losing money if prices actually rise during the period.

A growing number of gas buyers and sellers are interested in using gas price ceilings or floors, but at times do not wish to pay the implicit or explicit options premium associated with these arrangements. Many marketers are therefore offering their customers so-called costless collars (more accurately called no-premium collars since there is an opportunity cost associated with their use).

Collars allow the reduction or elimination of the options premium by trading off participation in a favorable price move beyond a certain level. For market participants who expect prices to remain within a trading range yet need some protection against an adverse move, collars have considerable appeal and constitute an effective competitive tool for gas marketers.

Marketers can also hedge against risks they face in their normal course of business:

- Assume a marketer has purchased gas from a producer but has not yet struck a deal with any buyers. The marketer is concerned that prices may fall before he can sell the gas, so he sells futures to lock in his sale price.
- A marketer has agreed to sell natural gas to a chemical company at the spot price plus a transportation charge and marketer's fee. The marketer has not secured supplies, and is concerned that the market may tighten, forcing him to buy at higher prices. He buys futures to lock in his purchase price.

End-Users

Large industrial consumers often have a myriad of suppliers to choose from and some possess the ability to switch to an-

other fuel. Yet they cannot afford to be complacent. Dual-fuel users do not want to be locked in too tightly, even to a contract with market sensitive pricing, because they will lose the advantage of fuel switching. But the end user who is too reliant on the spot market can suffer as well if there is a price spike or a local supply shortage. Futures and options can help to address these risks and potential opportunity costs by:

- Protecting against sharp price spikes caused by occasional pipeline congestion which results in shortages or delivery slowdowns. Assume a large West Coast sawmill and plywood manufacturer relies on natural gas to fire its kilns as it prepares wood for shipment to Eastern Europe under a "just-in-time" delivery contract. A week of unusually cold winter weather causes gas prices to jump because the pipeline cannot move enough gas to meet demand. The plywood company will be heavily penalized, however, for failing to make product delivery if it refuses to meet current natural gas prices. To protect against having to pay a premium for natural gas, the company could have bought a strip of natural gas futures which would have locked in its price over a period of months, no matter what problems the pipeline company may have encountered.
- Protecting against falling electricity prices: Assume a paper manufacturer, which has cogeneration facilities and a contract to supply some of the local utility's electricity needs, has contracted with a marketer to purchase a six-month supply of natural gas at an attractive price. Two months into the contract, however, the company becomes concerned that a cool summer will mean declining electricity prices. The company, which has a fixed gas cost, is thus exposed on the electricity market. But the company could potentially off-set some of this power generation cost by establishing an intermarket spread - long natural gas futures/short electricity futures or options - for the remaining four months of the contract.

- Fixing short-term fuel costs: End users may sometimes look for extra protection against seasonal price spikes or may want to lock in their near-term fuel costs for some other reason. For example, assume that a machinery manufacturer receives a large order and must complete production within three months. The company would like to protect its profit margins on the sale by locking in as many of the variable production costs as possible, including fuel costs. The manufacturer could buy futures contracts for those months. Alternatively, the manufacturer could buy call options in order to benefit from increased margins if spot prices decline.

- Locking in an attractive spot price: The end-user who finds the current natural gas spot price attractive can use the

futures market to lock in that price for at least 36 months. Or the end-user can purchase call options to set a ceiling purchase price for gas. These are the same strategies that end-users can use to lock in prices for a short period of time, as discussed above.

- Hedging storage gas: End-users who have put gas into storage can hedge against falling prices by selling futures, buying puts, or even selling calls against their stored gas.

The Market Needs One More Participant: The Investor

Natural gas market participants may compete with one another, or sit on opposite sides of the negotiating table, but they are all commercial hedgers and they share many of the same risks. A broad spectrum of commercial participation helps ensure that all available supply and demand information is incorporated into the futures price, making it the most efficient indicator of the commodity's value. In addition, broad commercial participation helps ensure that price risk can be laid off on either the long or short side of the market. But experience has shown that if a futures market is to be sufficiently liquid and efficient to provide hedging opportunities, another type of participant is necessary: the investor.

Investors trade with risk capital.

They have no position in the underlying commodity and no desire for one, so they have no vested interest in whether the price moves up or down. What they are concerned about is price movement per se; investors seek to profit by correctly anticipating price changes. The more often prices move significantly, the greater the number of potential profit opportunities for the investor.

Active investor participation ensures that commercials can lay off risk as required. Floor traders called locals, who trade for their own account seeking to profit on minor price movements, and investors, who seek to profit by speculating on price direction, keep bid/ask spreads narrow and allow large trades to be made without price disruption. The resulting liquidity leads to increased commercial participation, which generates still greater liquidity.

The natural gas futures market provides investors with many attractive opportunities. Demand for gas is highly seasonal, but the seasonal impact on pricing is unpredictable. Variables include the severity of the winter weather, inventory levels, producers' needs to generate cash to cover their expenses, unexpected changes in demand for gas-generated electricity, transportation prices and constraints, and the cost of natural gas versus the cost of other fuels. The last variable in particular can provide investors with numerous trading opportunities in the form of intermarket spreads, such as the natural gas/heating oil, natural gas/crude oil, and natural gas/propane spreads.

Energy Saving Tips for Cooking

- ≡ When possible, cook in oven-safe glass or ceramic pans. These allow you to set your oven temperature 25 degrees lower than a recipe calls for.
- ≡ Turn off the oven about 15 to 20 minutes before the end of cooking time. The leftover heat in the oven will finish the job, if you don't open the door.
- ≡ Cover your pots and pans with properly fitting lids. Lids hold heat in and food cooks faster.
- ≡ Use the right size pot or pan for the right size range element. Exposed elements or burners radiate their heat into the air, not into the pan.
- ≡ Resist the temptation to open the oven door to check on food while it's cooking. Each time you open it, 25 percent of the oven's heat is wasted.
- ≡ Turn your stove and range down to a simmer as soon as food or water begins to boil. This lower setting maintains cooking temperature, cooks food more evenly and saves energy.
- ≡ To reduce the amount of energy it takes to boil water, start with water that's already hot from the tap. Also, use minimum amounts of water in cooking to save both energy and food nutrients.
- ≡ When shopping for a new gas range, consider buying one with a pilotless ignition system, which uses about 30 percent less gas than the models with continuously burning pilots.

Stay Informed With The IMGA Evening Report

The IMGA Evening Report is an excellent way to stay up to date on NY-MEX prices, weather, gas storage, and industry news. Each issue includes the days closing market prices for natural gas futures and crude oil, as well as a short commentary on market movement and industry related news.

The IMGA Evening Report is distributed electronically daily and is com-

plimentary to all of our members. If you are not an IMGA member, but would like to receive the IMGA Evening Report, please contact Charlene Howard at choward@imga.org or 217-438-4642. The IMGA Evening Report fee for non-members is \$150 per year, or become a member today for a one time fee of \$250.

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