Natural Gas Buying Strategy

Presented by
Bradley Mills
And
Gary Turner

Brad Mills
► BS - EE, Rose-Hulman Institute of technology
► MBA, Indiana University, Kelley School of Business
► 8 Years working in engineering/finance
► 17 Year trading commodities
► 5 years working in healthcare

Gary Turner
► Energy Professional with over 28 Years in energy project management, natural gas procurement and forecasting.
► Extensive background in “utility math”, having managed operations for both electric and natural gas energy projects while regional manager for unregulated subsidiary of large midwestern investor owned utility.
► President and owner of Pipeline Marketing Associates (natural gas marketing and consulting) and Energy Services, Inc., (Electric cost reduction consulting) both falling under the EnergyServicesPro.com umbrella.
Parkview’s Opportunity

- 8 Hospitals, 2 office buildings, hundreds of smaller clinics
- Focus on largest buildings first
- 4 purchased from LDC, others from various gas marketers
- LDC cost was the highest
- “Locked-in” $3.00, but paid $4.00 per dekatherm
- Used our size to work the best deal
- Had rivals pick apart the other’s invoices
- Used that knowledge to craft our future and minimize uncontrollable adders to the invoices

Pieces of the “puzzle”

- 25 year’s history of natural gas prices and deregulation
- The methods by which utilities and marketers charge natural gas fees - Deregulation details
- How do you budget?
- Potential options offered by marketers, Fixed Volume Fixed Price, Storage, Index, does portfolio diversity make sense for you?
- Gas Cost Components Pie Chart
- Taking advantage of the marketer’s storage purchase opportunities
- Bundling Facilities usage - Metering Consumption to Predict Consumption and deliver actual/accurate volumes to avoid cash-outs.
- Reasons for purchasing several years into the future - current market analysis.
Near Month Futures Contracts
Price per MMbtu/Dekatherm (NYMEX)

Natural Gas “Spot” or “Cash Price History
Henry Hub Daily (SPOT)
Weighted Average Price $/MMBtu
**Forward Price Curve**
**NYMEX Natural Gas Futures Contract Prices**

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**LDC Versus Commodity Charges**

- Your local utility (LDC) still must be involved in transporting the natural gas
- You will receive either a separate invoice for transportation, the charge will occur on the invoice from your marketer, or both marketer and LDC will bill on the LDC bill
- The fee from the LDC cannot be hedged, but is relatively stable and is regulated by each state’s utility regulatory commission
- The LDC will take delivery of the marketer’s supply at a connection to the interstate pipeline system called a citygate. Their delivery fees cover the cost to bring that volume of gas, less compressor fuel and shrinkage, to your meter.
- The marketer will usually bill for the commodity, interstate transportation costs (including pipeline fuel), profit, overhead and commissions - often defined as “basis”
- Marketer’s invoice will often breakdown costs into index priced gas, fixed price gas, storage and “swing” gas (over or under delivered gas)
NATURAL GAS Budget - how do YOU do it?

Most people asked answer like this:

“I take last year and add (X %, or whatever)”... or lately, “I just use last year’s numbers and hope for the best”.

Budget Management is not always about hedging risk...Maybe the better way is to evaluate market risks and accept some of it or maybe not...

The better way ALWAYS involves data and the understanding of natural gas market forces and the factors affecting those forces.

The better way requires an understanding of the methods available to fix prices and reduce risk.

The trickiest part of the better way requires predicting future volumes (consumption).

NATURAL GAS Budget - Predicting Consumption

• The first step in predicting total cost is to predict consumption (duh).

IT STARTS with understanding consumption patterns.

• Requires historic data of consumption, cost, etc. How much is heat load? How much is flat (non-heat) load?

• Existing facility consumption history. Use at least two year’s consumption and knowledge of changes in facility infrastructure, efficiency improvements, etc.

• Future changes in facilities through acquisition, new construction, or abandonment (do you still have to heat the building?)
NATURAL GAS Budget - Controlling Costs = UNDERSTANDING COSTS!

Delivered Gas Costs (excluding LDC)

This chart is a real representation of the DELIVERED cost of natural gas at market rates. The cost DO NOT include the local delivery cost of the utility (LDC). This clarifies the need to monitor and manage the commodity cost of natural gas to maximize savings and minimize risk.

Managing Volumes - Typical Process

- Marketer delivers daily estimated volumes to the LDC
- LDC reports consumption to the marketer either daily (larger accounts) or monthly
- Marketer buys more gas or sells off some gas to match the utility volumes (calculated to citygate)
- If not ACTIVELY managed, the “cash-outs” can be pretty ugly (particularly overbought)
- Gathering and understanding consumption data is key to managing balancing costs
Managing Volumes - **IMPROVED** Process

- Marketer delivers daily estimated volumes to the LDC **BASED ON REAL TIME METERING data**
- LDC reports consumption to the marketer either daily (larger accounts) or monthly. Marketer and customer have access to minute by minute consumption data
- Marketer buys more gas or sells off some gas **OR MOVES VOLUMES FROM ONE LOCATION TO ANOTHER (within same LDC)** to match the utility volumes (calculated to citygate)
- If not ACTIVELY managed, the “cash-outs” can be pretty ugly (particularly overbought). Cash-outs are eliminated or at least minimized
- Marketer uses lower cost storage gas “bank” to further balance winter consumption

**NATURAL GAS Budget - Historic Consumption**

Develop a Volume Profile and Risk Management/Cost Reduction Strategy

![Graph showing historical consumption data for natural gas](image)
NATURAL GAS Budget - Predicting Costs

- Predicting costs depends greatly on how the gas is bought - there is a big difference between predicting costs and controlling costs.

- Is it more important to know the cost in advance or get the very lowest price?

(Risk management vs. Cost Management?)
(Of course the answer to the above question is, “YES! BOTH!”)

Risk Management - Portfolio Approach

Diversity brings protection - but not always lowest prices.

Once, when discussing future fixed prices with a School Superintendent from northern Indiana, he questioned, “Why should my school corporation get involved in natural gas price speculation?”

The answer was easy,
“because you are, whether you want to be or not”.

Any price program - Virtually ALL pricing approaches involve some speculation that prices are either going to go up or go down, period.

Diversified Portfolio options include NYMEX fixed Price Futures, Index gas, and Storage Gas.
**NATURAL GAS Budget**

**Fixed Price Futures Contracts to Lock in Gas Costs**

2 Year FUTURES TRADING HISTORY for gas to be delivered in January 2020

This is considered a “Financial” Hedge

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2018 FUTURES TRADING HISTORY for gas to be delivered in January 2020

January 28, 2019 Market High in last year

January 2020 Gas at $3.23
Index Priced Gas is gas bought at market prices. The price is based on an index (like this chart of the NYMEX settlement prices for 2009-2017 futures contracts) with a markup or "basis" over and above the index to cover the balance of the costs to get the gas delivered as shown in the chart on a previous slide. This method poses the most risk for buyers since it is subject to market swings based on weather, price speculation, etc. Most LDC’s standard approved rates include a market based price option AND ALL include some market based component.
Fixed or “Locked” Pricing is, as the name implies, a tool used to manage or “hedge” the risks of market based pricing. Prices are fixed for some of your annual consumption your gas marketing company by buying natural gas futures for a specific month or months.

TIMING is EVERYTHING...
The most important aspect of this type purchase is timing the futures purchase for the best price. Your Natural Gas Professional should assist in this timing. Prices are set with a futures markup (basis) applied to the futures market pricing and your specific volume for the month(s) that prices are locked.

One important point about fixed pricing has to do with the methods some marketers use to sell gas... they call with a “great” fixed price that compares to your utility price - usually an unfair comparison. It is highly unlikely that the timing of a proposal coincides with the best market timing to fix the price of your gas.

Storage Pricing is a very effective method of hedging financial risk at a lower cost. Storage gas is purchased during summer months and injected into a FERC regulated natural gas storage facility.

The appeal of storage gas is that it is purchased at normally lower summer prices. It is simple to make a comparison at the time of the storage purchase between summer futures prices and winter futures prices in order to evaluate the cost effectiveness of the storage program.

Storage Gas is a “Physical” hedge in that the ownership of the hedged gas passes to the buyer when the gas is purchased.
Risk Management - Portfolio Approach Summary

Diversity brings protection

Diversified Portfolio options include (usually all of) NYMEX fixed Price Futures, Index gas, and Storage Gas, normally up to about 75% of a customer’s anticipated consumption.

The % mix of each is determined by discussions with your natural gas professional to achieve an understanding of your risk tolerance, budget, cash flow, future plans, etc.

INFORMATION is King and knowledge of your wants and needs, coupled with an in-depth understanding of market influences are critical in order to manage your costs and risks.
Risk Management -
Understanding Market Drivers

- Overall Net Supply - All Gas including imports and exports, LNG, etc.
- Production- Drill Rig Counts, horizontal, directional, etc.
- Wet/Dry Gas mix - How much production is wet gas versus dry gas can have a huge impact on NG prices
- Storage Gas - “Working Gas” in underground storage and daily production in specific regions can move markets quickly.
- Regional Production and Indices
Risk Management

Understanding Market Drivers

What makes the natural gas market move?

The fracking story....

Pennsylvania Natural Gas Gross Withdrawals (Million Cubic Feet)

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<th>Decade</th>
<th>Year-1</th>
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<td>77,114</td>
<td>76,451</td>
<td>73,835</td>
<td>73,545</td>
<td>82,735</td>
<td>84,722</td>
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<td>132,309</td>
<td>128,673</td>
<td>123,339</td>
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<td>131,500</td>
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<td>130,833</td>
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<td>159,827</td>
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Lots of fracking “plays”:

The Cost of Insurance

Volume risk
Price Risk
Usage Risk
Credit Risk

If you can get a marketer to accept all of these risks for you, you can achieve the best of all worlds.
How are things working out at Parkview?

- We exceeded our budget in the first summer, because we purchased gas long before it was consumed. This is a one-time “hit” that gets evened out in the following winter.
- We now enjoy significantly more predictable and overall lower natural gas costs.
- Annually, we make a determination as to the best time to re-extend the agreement for a “new” fifth year into the future.
- Our initial effort was in our larger buildings (Hospitals, Distribution Center, Corporate Offices). We will later look at a similar but smaller effort to lock in pricing for our hundreds of physician’s buildings across the system.
- We are not concerned with trying to time the market and get the lowest possible price. We make prudent decisions based on the information available at the time.

Brad Mills
Parkview Health System, Inc.
bradley.mills@parkview.com
Mobile: 260-452-4889

Gary Turner
Energy Services, Inc.
Pipeline Marketing Associates, Inc.
GTurner@EnergyServicesPro.com
Mobile: 260-705-0781