Retail Gas Market Overview

February 10, 2019
Outline

• Major supply functions
• Pricing overview
• Risk and risk management
• Commodity & capacity planning
Main Supply Functions

Pricing
- Pricing philosophy and process
- Cost components

Risk Mgmt.
- Risks
- Load forecasting
- Hedging

Commodity and Asset Mgmt.
- Process
- Supply reliability
- Term
- Spot

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Pricing Philosophy

- Two main objectives
  - Capture all costs and risks in the price
  - Try to develop a price that’s attractive to the market
- Bottom up pricing
  - First, all costs to serve a customer are calculated and then a margin is added to arrive at the price that’s offered
- Many cost components are either market or tariff based
- Use of risk premiums is a point of differentiation among suppliers
  - Covering volumetric changes
  - Cashout/penalty risk
- Some suppliers buy their supply components (financial hedges, physical supply, assets) in advance. Others wait until after the customer is signed
## Components

<table>
<thead>
<tr>
<th>Market Based</th>
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<th>Risk Premiums</th>
<th>LDC</th>
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</thead>
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- **LDC**
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InterContinental Exchange (ICE)
What is Risk

**Risk** is the exposure to unpredictable expenses and revenues resulting from the change in value of an underlying asset or liability.

**Risk Management** is the continuous process of identifying and capitalizing on appropriate opportunities while avoiding inappropriate exposure in such a way as to maximize the value of the enterprise.*

Primary Retail Supply Risks

- Changing commodity prices

- Changing customer usage
  - In some cases this can be managed contractually, but many times suppliers just wear this risk
  - Residential usage can change by as much as 40% over a couple of days
Main Risk Management Tools

• **Usage forecasting**
  – Term hedge volume
  – Usage sensitivity to weather
  – Key part of commodity and capacity planning
  – Must understand utility delivery requirements
    • Can differ by utility and customer class

• **Hedging activities**
  – Transacting financial hedges
  – Transacting physical gas
  – Asset utilization
  – Many times it’s a combination of all of the above
Gas Supply Process

Long
- Initial hedging exercise
- Hedge fixed price and basis exposure
- Identify assets needed to serve customer

Seasonal
- Look at seasonal weather forecast and market fundamentals
- Review storage plan
- Rebalance asset portfolio

Short
- Review utility requirements
- Review assets and positions
- If necessary, rebalance asset and supply portfolio
- Transact financial hedges as needed
- Determine least-cost method for satisfying requirements
Commodity/Capacity Planning

• Two main risks
  – Changing supply obligations
  – Changing market prices
• Manage having to transact in the daily market
• Look to create supply flexibility
• Market liquidity of delivered supply
• Different instruments may be used to manage supply and/or price risk
  – Financial hedges
  – Physical supply
• Done over different periods
  – Multiple months
  – Just one day
Commodity/Capacity Planning (contd.)

- What level of demand
  - Is there a comparability requirement
- Does the utility allocate capacity
- When buying capacity multiple factors need to be considered
  - Term
  - Price
  - Fundamentals
- Look for optionality
  - Ability of asset to serve multiple purposes
- Do you buy primary firm, secondary firm, or interruptible
- Many suppliers will plan over 3 different terms (long, seasonal, and short)
APPENDIX
The Natural Gas Production, Transmission and Distribution System

Source: U.S. Energy Information Administration.
Natural Gas Pipelines

Legend
- Interstate Pipelines
- Intrastate Pipelines

Source: Energy Information Administration, Office of Oil & Gas, Natural Gas Division, Gas Transportation Information System
Physical Markets

- Market participants are trading the actual commodity

- Major types of transactions
  - Cash (spot) – transactions for immediate delivery
    - Next day delivery
    - Balance of month
    - Intra-day
  - Forward – transactions for delivery more than one month out

- Can be bought fixed price or linked to different indices
  - Indices are either NYMEX or some regional index

- Agreed upon conditions
  - Price, volume, term, delivery point
Financial Markets

- These markets exist primarily for price discovery and risk management
- There is no transfer of physical gas
- Contracts are settled financially
- Financial pricing is often derived from physical pricing
- A variety of products are traded in these markets like futures contracts, options, and swaps
- These products are traded on established exchanges and over-the-counter (OTC) markets
  - NYMEX, ICE
- Market has moved towards more standardized products
Utility and Pipeline Interactions

Pipeline

- Open season and/or capacity release
- Managing collateral
- Issue resolution

Utilities

- Asset allocation
- Managing collateral
- Receiving delivery targets
- Issue resolution
- Program design