Gas Hedging: Should Utilities Do Less and Do It Differently?

Ken Costello, Principal
National Regulatory Research Institute

NARUC Subcommittee on Gas

Los Angeles, CA

July 17, 2011

Topics

- Definition of gas hedging
- Rationale for hedging
- Historical overview
- Reasons for revisiting hedging
- Contentious issues
- Recommendations

Definition of Hedging

- “Hedging” is an economic activity in which a party tries to protect against potential adverse price fluctuations in a market.
- Analysts often refer to hedging as insurance.
- An example is a utility buying a futures contract today at a specified price and that expires at a specified future date. The utility locks-in a price that it is comfortable with, e.g., $6 per Mcf.
- For a gas utility, hedging mitigates its exposure to high natural gas prices.

Definition of Hedging – *continued*

- Hedging instruments come in both physical and financial forms.
  - Among the former are bilateral physical contracts with fixed prices and storage.
  - The latter category includes futures contracts, options, collars, and swaps.
  - Each hedging instrument has different features, effects, and costs.
  - The preferred instruments are utility-specific.

Definition of Hedging – *continued*

- Unlike a speculator, a hedger does not attempt to profit from price movements.
- Hedging has the risk of a utility and its customers paying above-market prices; hedging can also have counterparty risk and collateral obligations.
- Hedging resulting in higher prices (*ex post*) to consumers can still be regarded as successful and prudent.
- Regulators and utilities cannot expect hedging to lower the long-term price paid for natural gas.

Rationale for Gas Hedging

- Hedging is an integral part of open natural-gas markets.
- Both spot and forward prices generally exhibit high volatility and are difficult to predict.
- State public utility commissions have articulated the benefits of hedging, especially in managing the price spikes in spot gas markets.
- Customers can suffer non-trivial economic welfare losses when natural gas prices rise to unusually high levels.
- In the finance literature, firms hedge primarily to stabilize cash flow; but because of purchased gas adjustment (PGA) mechanisms, the biggest beneficiaries of utility hedging are customers.

Historical Overview of Hedging

- Gas utilities have actively hedged with financial instruments since the beginning of this century.
- Pressures from state regulators explain much of utilities' willingness to hedge.
- Several regulators have articulated that moderate price risk should be an objective of gas procurement and gas supply planning.
- A major motivator for utilities to hedge is protection against volatile gas prices for which regulators might hold them accountable (i.e., to minimize regulatory risk)

Reasons for Revisiting Hedging

- Events since around 2008 have raised questions about the future of hedging.
  - Projections of more stable gas prices should reduce the benefits from hedging.
  - The risk of dramatic increases in wholesale gas costs, except for short periods (e.g., “black swans”), appears lower than what it has been for most of the past ten years.
- Still, we should not place too much confidence in what we think we know today; several factors, for example, can affect long-term natural gas prices (*see* next slide).

Factors Affecting Long-Term Natural Gas Prices

- LNG
- Canadian imports
- Economic recovery and long-term economic growth
- Shale gas
- Depletion of conventional gas
- Growth rate of total natural gas consumption
- Offshore access to natural gas resources
- Correlation of oil and natural gas prices
- Gas-fired generation from new and existing power plants
- Global warming legislation
- Industrial consumption of gas

Reasons for Revisiting Hedging – *continued*

- The high losses of some utilities from hedging with financial derivatives — in the range of hundreds of millions of dollars — is an additional reason for regulators to revisit hedging.
  - Regulators should expect utilities to realize small losses from hedging in some if not most years.
  - The tough question is: *when do large losses or prolonged losses reflect events outside the control of a utility; and when do they reflect unreasonable or flawed utility actions that make some of these losses avoidable?*

Contentious Issues

- Rationale for hedging
- Hedging benefits and their relationship to hedging costs and risks
- Utility actions that might be preferable to hedging
- Effects of shale gas development on future hedging
- Regulatory oversight functions
- Capabilities and incentives of utilities to hedge effectively
- Mechanical vs. discretionary approach
- Interpretation of hedging outcomes for cost recovery and evaluating utility management

The Fundamental Question

- ***Does hedging protect against events that are consequential enough to warrant the costs and the potential risk from hedging itself?***
  - Hedging is a complex activity especially with financial instruments, requiring expertise and good judgment
  - We have really little idea what the benefits are to customers
  - We know from experience that the losses can be high
  - Benefits from hedging will likely be less than when utility hedging started to proliferate at the beginning of this century
  - Utilities, in my opinion, don't have good incentives to hedge in the mist effective way

Recommendations for Regulators

- Evaluate prospectively a utility's proposed hedging strategy; after all hedging directly affects customers.
- Determine, after-the-fact, whether the utility executed the hedging strategy in a reasonable and prudent manner; this task might simply include checking to ensure that the utility complied with its plan.
- The above recommendations ("partial regulatory commitment") offers a balanced regulatory policy by *giving the utility a great deal of certainty upfront without forfeiting the regulator's duty to question whether some of the costs actually incurred were imprudent and unreasonable.*

Recommendations for Regulators – *continued*

- Regulators should periodically review a utility's hedging activities.
  - When these activities consistently produce large losses, they should raise a "red flag".
  - Regulators should know the magnitude of losses and why they occurred.
  - Regulators should also determine whether utilities should hedge as much or use the same approaches in view of the dramatic changes in the gas supply sector since around 2008.