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Summer Committee Meetings

Gas and Electricity Committees

Hedging and Long-Term Contracting:

What Does it All Mean?

Moderators

Hon. Diane Burman, NY

Hon. Lamar Davis, Arkansas

Panelists

Dr. Craig Pirrong, Univ of Houston

Orlando Alvarez, BP Energy

Tim Sherwood, AGL

Hon. Eric Skrmetta, Louisiana

The Whys & Hows of Energy Hedging

Craig Pirrong

Bauer College of Business

University of Houston

What is Hedging?

- Hedging is a financial policy intended to reduce risk, usually price risk
- "Bona fide" hedges reduce price risk: other kinds of hedges can reduce other kinds of risks, e.g., quantity risks, credit risks
- Hedging makes the highs not so high and the lows not so low: financial lithium
- Many hedging strategies involve the use of derivatives such as futures, forwards and swaps

A Vanilla Hedge

- Hedging typically involves taking a derivatives position opposite native exposure
- For instance, a gas utility is hurt by higher NG and helped by lower NG prices: it is a natural "short"
- To hedge a short position, you take a long position that benefits from higher prices, and is hurt by lower prices
- For instance, buy gas forward at a fixed price. Profit (lose) if spot price of gas exceeds (is less than) contract price. These gains/losses offset impact of gas prices on purchase costs, resulting in lower variability in purchase costs

Please Don't Let Me Be Misunderstood

Delta Air Lines Earnings Hit by Fuel Hedging Costs

By Paul Ausick January 19, 2016 8:10 am EDT

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Delta Air Lines Inc. (NYSE: DAL) reported fourth-quarter and full-year 2015 results before markets opened Tuesday. The airlines reported diluted quarterly earnings per share (EPS) of $1.25 on revenues of $9.5 billion. In the same period a year ago, Delta reported EPS of $0.78 on revenues of $9.65 billion. Fourth-quarter results also compare to the consensus estimates for EPS of $1.19 on revenues of $9.61 billion.

For the full year, Delta reported GAAP EPS of $5.63 on revenues of $40.7 billion, compared with 2014 EPS of $3.31 on revenues of $40.36 billion. Analysts were looking for EPS of $4.64 on revenues of $40.82 billion.

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Delta's adjusted EPS for the quarter totaled $1.18 and includes mark-to-market adjustments totaling $1.29 billion, including fuel hedging and restructuring costs, plus the company's equity investment in Virgin Atlantic.

Please Don't Let Me Be Misunderstood

- Roughly half the time a hedge will lose money in an accounting sense, and as a result, roughly half the time the stories will bemoan losses from hedging
- Interestingly, although roughly half the time a hedge makes money in an accounting sense, stories trumpeting the gains from hedging are much rarer
- ACCOUNTING IS NOT ECONOMICS
- Hedges are intended to achieve the economic effect of reducing risk
- Losing money half the time on a hedge is a feature, not a bug!
- NO FREE LUNCHES

How Accountants See Hedges

How You *Should* See Hedges

If You Can Predict the Future You Wouldn't Need to Hedge and This Could be Yours!

The Only Perfect Hedge

How to Evaluate Hedges

- The only perfect hedge is in a Japanese garden
- Hedges don't eliminate risk, they reduce it
- Quantify the risk reduction that hedges achieve
- Correlation between the price of the price you pay for physical supplies and the price of the hedging instrument
- Variance of the "basis" (difference between the price you pay and the price of the hedging instrument)
- Likelihood of extreme basis moves

Choice of Instrument

- Choice of hedging horizon: can be from days to years
- Longer horizon: more likely to experience large and persistent accounting profits—and losses—that can lead to political controversy (municipalities that hedged interest rate risk)
- Liquidity: financial derivative positions can be adjusted more cheaply than other ways of getting long exposure (i.e., reserve purchases) and don’t lock you into a single (or a few) supply sources: count on the market for security of physical supply
- Financial instruments allow you to unbundle price risk management from physical supply management
- Flexibility valuable when needs and exposures are uncertain

Don’t get caught in a Roach Motel!

Keep It Simple . . . And Beware of Bankers Bearing Gifts

- You have a lot more choices than vanilla. Many “exotic” hedges that embed all sorts of options (caps, floors, triggers, volumetric)
- There are many bankers who would be more than willing to put you in a sporty new hedging model with all sorts of snazzy features
- Which is exactly why you should beware: they can value these things, and you likely can’t
- Many of the “hedging” horror stories relate to governments & companies entering into complicated contracts they didn’t understand, and encountering nasty surprises
- Keeping it simple is usually the right thing to do, and get expert advice when entering something more exotic

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Volatility is not dead

Orlando Alvarez / July 25 2016

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Participants should seek their own advice and guidance from appropriate legal, tax, financial and trading professionals when making decisions as to positions to take in the market.

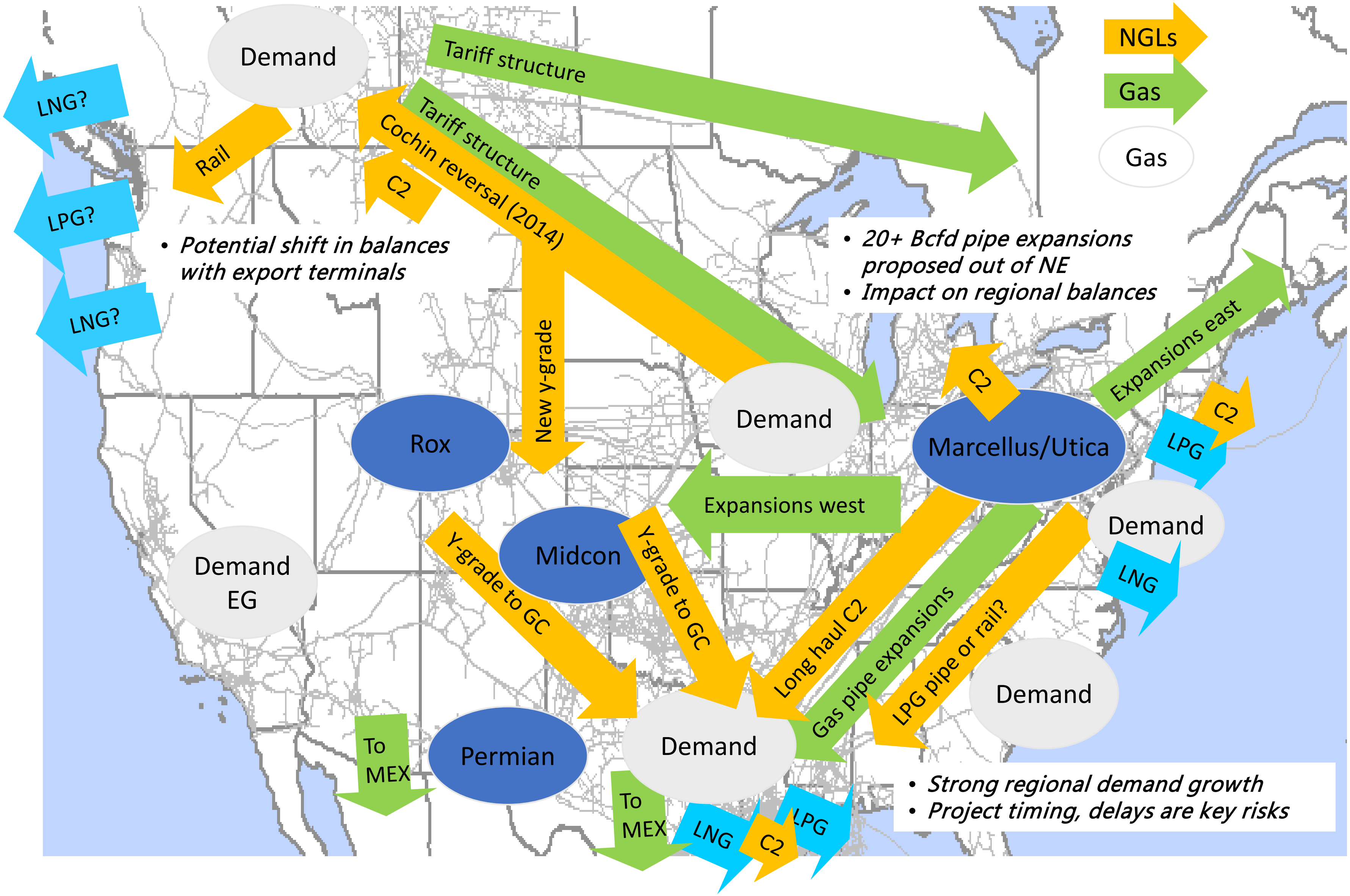
Witnessed significant change in energy fundamentals over last five+ years…

Sources: EIA (March 2015 data), NYMEX

- NYMEX **June 2010** settle: *$4.16/MMBtu*
- U.S. dry gas production: *57 Bcfd*
  - *Northeast: ~3 Bcfd*
- Canadian imports: *8.9 Bcfd*
- Mexican exports: *~0.7 Bcfd*
- LNG ***imports*** estimated at 4 Bcfd by 2020
- U.S. NGLs production: *2.1 MMbd*
- U.S. LPG net ***imports:*** *48 kbd*

- NYMEX **June 2016** settle: *$1.96/MMBtu*
- U.S. dry gas production: *74 Bcfd*
  - *Northeast: ~20 Bcfd*
- Canadian imports: *7.5 Bcfd*
- Mexican exports: *3.4 Bcfd*
- LNG ***exports*** estimated at ~9 Bcfd by 2020
- U.S. NGLs production: *3.5 MMbd*
- U.S. LPG net ***exports***: 735 *kbd*

Billions of dollars invested in infrastructure: Unprecedented shift across all regions



Key insights

- North American **market works**: price works to balance supply and demand
- Lower commodity prices **affecting pace of E&P investment**
- **Significant infrastructure** expansion and shift in flows underway
- Structural **demand changes** are coming: new industrial plants, generation capacity, export facilities
- **Regulatory / policy changes** could impact investments across value chain
- *Volatility is not dead: Risk management is critical*

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LDC Perspective on Hedging

Tim Sherwood, Vice President – Gas Supply

Agenda

- Southern Company Gas Overview
- Hedging at Southern Company Gas LDCs
- Critical Considerations for LDC Hedging
- Long Term Contracts as Hedging Tool

Southern Company Gas Distribution Utilities

4.5 million customers in seven states

- Atlanta Gas Light (1.55 million)
- Chattanooga Gas (62,000)
- Elizabethtown Gas (285,000)
- Elkton Gas (6,200)
- Florida City Gas (106,000)
- Nicor Gas (2.2 million)
- Virginia Natural Gas (273,000)

Southern Company Gas LDC Hedging

- Atlanta Gas Light Company
  - All Georgia customers served by Certificated Marketers
- Chattanooga Gas Company
  - No hedging program in place
  - 41% of throughput served by storage
- Elizabethtown Gas
  - 24% of normal winter sales hedged with financial instruments (rolling 12-24 month forward program)
  - 38% of normal winter sales served by storage
- Elkton Gas
  - 35% of normal winter sales hedged with fixed-priced, physical forward purchases
  - 14% of normal winter sales served by storage

Southern Gas LDC Hedging

- Florida City GasCompany
  - 9% of throughput hedged through 6-8 month fixed forwards
  - <5% of throughput served by storage
- Nicor
  - 70% of estimated Sales hedged via storage and financial products (7-36 month program)
  - Approx. 50% of winter throughput served by storage
- Virginia Natural Gas
  - 20% of throughput hedged via a 6-8 fixed forward contracts
  - 30% of throughput served by storage

Critical Aspects of a Hedging Program

- Clearly established objectives of hedging program
  - Mitigation of volatility in purchase costs
  - Protection from extreme price spikes
- Regular communication with Regulators
  - General agreement with objectives
  - Transparency in implementation plans
- Feedback process to re-evaluate program
  - Periodic review of objectives
  - Documentation of implementation actions

Long Term Contracts as a Hedging Tool

- Long Term Supply Contract vs Long Term Fixed Price
  - Most suppliers will provide long-term supply at index pricing
  - Financial markets have low liquidity past 36 months
  - Long Term fixed price contracts share price risk between counterparties
- Current low price / lower volatility market appears to present opportunity
  - Buyers perspective is low prices will continue
  - Supplier perspective is higher prices will materialize soon
  - Balancing these perspectives can make long-term agreement challenging

Long Term Contracts as a Hedging Tool

- Credit risk management is an important consideration
  - Failure to perform with insufficient credit coverage
    - Credit facilities make deals unattractive to Suppliers
  - Ownership of gas in the ground without production capability

Questions?