Buying Energy in Today’s Market - Maximizing Effective Risk Management

Glenn Barrett
SUPERVALU, Director of Energy Management

ENERGY & TECHNICAL SERVICES CONFERENCE
SAVE ENERGY & REDUCE CARBON FOOTPRINT
OMNI ORLANDO RESORT AT CHAMPION’S GATE, ORLANDO, FLORIDA. SEPTEMBER 7-10, 2008
Energy Market Dynamics

- Natural gas costs drive electricity prices
  - US - 20% of all electricity is generated from Natural Gas
  - Coal, Nuclear serve the base load and Natural Gas provides for the peaks

- What causes increased natural gas prices?
  - Crude oil prices – when crude oil increases, fuel switching for industrials to natural gas occurs (supply / demand)
  - Competition for limited resources – for example, natural gas has other uses (e.g., to obtain hard to reach oil reserves [tar sands])
  - Damage to supply infrastructure – Hurricanes Rita and Katrina 2005

Bottom line: NYMEX natural gas commodity prices drive electric utility cost up
Energy Sector Commodities

- Market forces are applying upward pressure on energy commodities.

- Gas futures rose to record levels
  - Natural gas price surged 78% – peaked above the levels of post Katrina
  - Gas storage declined to the lowest level since 2004
  - Declining gas imports from Canada
  - Continued build out of natural gas electric generation because of favorable environmental impact compared to coal
  - LNG imports down about 1 bcf per day due to global demand
Energy Sector Commodities

• The Price of Oil has risen 80% since Sept. 18 2007
  – Crude oil surpassed $147/bbl despite healthy inventories
  – Citibank revised their 2008 and 2009 forecast upwards for oil futures
  – Oil prices have an inverse relationship with the value of the dollar

• 49% of US electric generation is based on coal.
  – Coal price increased 112% year to date.
  – 90% of US coal production is used for electric generation.
  – US is the 2nd largest producer of coal in the world.
  – Coal accounts for 40% of total world electricity generation.
Energy Market – Futures Drivers

Good
• Increase in Supply
• Slow economy may limit demand
• Profit taking by traders
• Hydroelectric generation, renewable subsidies

Bad
• Value of the dollar
  – World price of oil is in dollars
  – Traders buy oil futures as a hedge against inflation caused by weak dollar
• Increased speculative trading of Commodities
• Natural Gas storage levels
• Political unrest

Wildcards
• Summer temperatures
• Hurricane activity
  – Colorado State University predicts an above average year for hurricane activity
• Grid reliability
  – Aging infrastructure relies on transmitting power through the grid and from surrounding states
Different Regions of the Country Rely on Different Fuel Mixes to Generate Electricity.

Across the United States, a diverse mix of fuel is used to generate electricity. Several factors influence an electric company’s decision to use particular fuels. These include the price and the availability of supply. This map, arranged by census region, illustrates the diversity of fuel use and shows how the electricity generation mixes in various regions of the country differ. The map further demonstrates that major changes in the generation mix could have economic and reliability impacts, especially on a regional basis.

*Other* includes generation by agricultural waste, batteries, cements, geothermal, hydrogen, landfill gas recovery, municipal solid waste, non-wood waste, solid, purchased steam, sulfur, wind, wood, and solar.

What is Direct Access?

- Ability to purchase electricity and natural gas directly from a supplier as a commodity
- Regulations and rules change on a state by state basis
Deregulated Bill Breakdown – Mid Atlantic

Billing Charges - Negotiable vs. Nonnegotiable

- Commodity Charge (negotiable) 64%
- T&D (regulated charge) 16%
- Ancillary Fees* (regulated charge) 16%
- Misc. & Taxes 4%
Procurement Options to Manage Cost

• **OPTION 1** - Fixed price offer, lock in 100% now
  – Electrical cost for fixed pricing would be ~10% higher per mWh
  – Budget certainty
  – Carries premium to shape load

• **OPTION 2** – Index Only (Short Term)
  – Total load would ride on the Day Ahead and Real Time Index market
  – Traditionally lower overall cost but carries with it high risk and volatility
  – Risk that market could go up from here

• **OPTION 3** – Managed approach (Block and Index)
  – Purchase some percent of our total electricity needs in the forward market and let the remainder of the power float on index
  – Provides cost control and flexibility to monitor market and purchase forward blocks during downturns in the market to offset risk from short term index volatility
Managed Approach
“Portfolio” Purchase Strategy (example)

Off Peak
50% Forward Purchase

On Peak
75% Forward purchase(s)

Off Peak
Day Ahead Market purchase
• 25% On-Peak, 50% Off-Peak

Layer in” blocks of power at fixed prices to take advantage of downward market movement and mitigate future risk of upswings in the market.

Remaining power is purchased in “Day ahead” and/or “Real Time” index market.
Types of Risks

- Budgetary
  - Development of and adhering to
- Regulatory
- Market
  - Market and Regulatory Risk must be understood and minimized in an integrated manner or each effort will fall flat separately
Budgetary Risk

- Forecasting process
- Tracking performance
- Link energy market volatility to budget impact
- Establish metrics and progress reporting structure
Managing Regulatory Risk

• Membership in industry advocacy groups
  – IRMA, DACC, CRA

• Participation in Regulatory Process
  – Comments on general rate case filings, testify at the Public Utility Commission
  – Specialized legal expertise and participation - California “Albertsons Rule”

• Understanding the regulatory environment in each jurisdiction
  – Review of Periodicals
  – Consultants
  – Natural Gas and Electricity Suppliers
  – Utility Account Representatives
Managing Market Risk and Reward – Typical Year

PJM West HUB Wholesale Electricity comparison
Day Ahead VS. Forward Block ($/mWh)

- Single event forward block purchase
- Typically, the Day Ahead Market beats the Forward Market prices
- Value of $30.44/mWh in Day Ahead market prices
- Occasionally the Day Ahead price higher than Forward price
Managing Market Risk and Reward – High Volatility Year

- Price Volatility Caused a change in price relationship
- A single purchase made in August would have outperformed the Day Ahead Market prices
Managing Market Risk

- Senior Management Buy-in – Increase your company’s ability to execute
- Discipline
- Active Participation in managed purchases
- Flexibility
- Information Access
- “Regulated” Market Risk Considerations
Senior Management Buy-in (Ability to Execute)

Fact - *You can design the best risk management strategy in the Universe - but if you can’t execute you are just as exposed as if you had no strategy*

Principles of gaining Senior Management buy-in:

1. Education of Sr. Management team
   - Current costs, scope of facilities
   - Market factors – controllable VS. uncontrollable
   - Options – what are the basic choices

2. Present the “Call to Action” proactively - don’t wait till the cataclysm occurs to ask management to react!

3. *Call to Action* – Present alternatives and recommend solution

4. Present the solution in the language of Senior Management
   - Establish and perform sensitivity analysis to show impacts and pain points under various market conditions
   - Track performance
Discipline

• The overall strategy once prepared and accepted by Senior Management, must be adhered to and executed
  – Set reasonable Targets
  – Allow for adjustments and fall back positions should conditions change
  – **DO NOT BOTTOM-FEED**
  – Don’t count on “timing” the market

• Deviations require prior approval

• Patience!!
  – Do not make long term decisions in times of crisis
Active Participation

• Ensure that you, or some partner of yours, has the ability to execute in the marketplace
• Understand liquidity issues
• Anonymous
• Transparency
• Monitor benchmarks and targets
Flexibility

• Be sure that the procurement vehicle you drive has every option required to act as an effective risk management tool
  – Index Pricing
  – Day - Ahead Pricing
  – Block Pricing
  – Financial Options
  – Return to the Utility if appropriate

• Allow for competitive bidding where possible
  – Both with suppliers and when making wholesale purchases

• Invest the time to thoroughly understand corporate policies and procedures

• Sometimes a test case or a trial period, with clearly defined objectives, will work to “get your feet wet”
Information Access

• Understand your load profile
  – Load factor
  – Monthly/annual consumption
  – Anticipated changes in consumption

• Database of utility information
  – account numbers, address of record, utility “mumbo-jumbo” assignments

• Trade Press
• Access to wholesale trading floor
• Reports on your position
• Reports on the market
• Weather Data
Regulated Market Risk Considerations

• Risk IS present in regulated environments
  – Fuel adjustment charges, utility general rate case adjustments, added surcharges
• Investigate rate and tariff options
• Participate in the regulatory process – let your voice be heard!
• Investigate Market Risk mitigation through physical or financial hedging