Strategies for Energy Purchasing

Oregon Energy Conference
June 8, 2017
Challenges of Energy Purchasing

• Nobody understands it
• Natural gas priced at multiple delivery points, multiple terms, hard to compare offers
• Electricity trades on an Over-the-Counter Market (OTC), not transparent
• Managing contracts with multiple suppliers containing varying terms and conditions and settlement language
• Energy purchasing often subjected to “durable goods” type RFP processes

• WHAT IS THE REAL ISSUE?

If you do **everything right** – no one notices
If you do anything wrong – Everyone **SCRUTINIZES** and **SECOND GUESSES** your decision making
World Class Risk Managers
Identification and Management of Risks
**CONCLUSION:** An actively managed purchasing program is needed to address these risks over time.
Historical View - Natural Gas Risk

Prompt NYMEX Natural Gas Prices

- Hurricane Katrina & Rita
- Super Spike - Technical Trading
- Feb/Mar '03 Surprise Cold Snap
- Hurricane Ivan
- Record Summer Inventories
- Shale Era
- Record Warm Winter & High Inventories
- Record Cold Winter & Low Inventories
- Mild Summer & Record Injections
How do you know...

- When to buy?
- What term to buy?
- How much to buy?
- How well your program performed?

Answers are guided by two key factors

1. Your Organization’s Risk Tolerance and Objectives
2. Understanding Past, Present and Future Market Trends
Risk Management Process

- Risk Assessment
- Strategy Development
- Strategy Execution
- Market & Regulatory Analysis
- Performance Reporting
- Monitoring & Adjustment

Key Questions:
- When?
- How Much?
- What Term?
Utilize Cutting Edge Tools
MONTE CARLO ...SIMULATION

Used to address complex problems whose solutions can’t be derived by a single calculation because of the multiple variables involved:

- EPA – Modeling adverse health effects from exposure to hazardous materials
- Transportation Departments – Predicting traffic delays from accidents
- Pharmaceutical Industry – Researching efficacies of proposed new drugs
- Picking Super Bowl winners and forecasting election results
Risk Management Process

Key Questions

- When?
- How Much?
- What Term?
- What?

Risk Assessment

- Monitoring & Adjustment
- Performance Reporting
- Market & Regulatory Analysis
- Strategy Development
- Strategy Execution
Cost-at-Risk modeling using Monte Carlo simulation produces the cost at risk and amount of potential reward associated with your energy footprint.

Since each regional energy market is unique, the analysis is performed for each individual trading hub and/or utility delivery point.

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<th>TOTAL LOAD</th>
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<td>CURRENT CONDITION</td>
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Strategy Development

Past, Present, and Future Market Trends

How do you know what term to buy?

How do you know when to buy?
Past, Present, and Future Market Trends

How do you know how much to buy?

Zone: PJM-FE-SES-DA
Start: 1/1/2010
End: 1/1/2017

ON PEAK

OFF PEAK

7Yr Index Range 7 Yr Index Avg 5 Yr Index Avg 3 Yr Index Avg

7Yr Index Range 7 Yr Index Avg 5 Yr Index Avg 3 Yr Index Avg
Strategy Development

Potential Outcomes

National Spending

- 2019 Oregon Bay Plan 100% Index
- 2019 Oregon Bay Plan 75% Standard
- 2019 Oregon Bay Plan 50% Standard
- 2019 Oregon Bay Plan BASE Plan 40% Standard
- 2019 Oregon Bay Plan 25% Standard
- 2019 Oregon Bay Plan 10% Standard
- 2019 Oregon Bay Plan 40% Standard
- 2019 Oregon Bay Plan 60% Standard
- 2019 Oregon Bay Plan 50% Standard

Graph showing potential outcomes for national spending with different scenarios.

On Peak

Off Peak

Graphs showing energy usage in MW with different scenarios for on peak and off peak periods.
Risk Assessment

Monitoring & Adjustment

Performance Reporting

Market & Regulatory Analysis

Strategy Development

Strategy Execution

Key Questions

When?

What Term?

How Much?
Strategy Execution

**Market Order**

**Layered Hedges**

**Open Order Trigger**

**Stop Loss**
Market & Regulatory Analysis

- **Daily Power and Gas Price Summaries**
  *Macro overview of daily natural gas and electricity price movement*

- **Weekly Market Update**
  *Weekly update on natural gas inventories & other key weekly headlines in the energy commodities*

- **Monthly Regulatory Update**
  - Covers key changes in utility and RTO tariffs by market
  - Discusses strategy around changes to the regulatory environment on a national and regional level
  - Provides contact information and suggested action items for customers to promote their positions in regulatory and legislative circles
Performance Reporting

**How well** your program is performing?

How is your consumption settling versus your contract volumes?

What is your projected spend for this/next year?

How much of your load is fixed each month?

How much are you paying for your index MWhs?

How does each cost component factor into your total price?
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Key Questions:
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- Term?
A golfer that tracks his/her handicap has an expected outcome for the round beforehand.

Scoring below his/her handicap is generally deemed a successful performance!
The ultimate goal of establishing and maintaining a disciplined risk management program is to transform the energy purchasing process into a competitive advantage for your organization.
Gaining a Competitive Advantage
Questions & Answers