



**Constellation Energy**

# Wholesale Power Markets

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The way energy **works.**





## Wholesale Power Markets

- Competitive power markets have flourished by allowing energy companies to use market based rates instead of tariff rates
- FERC's implementation of open access tariffs and market based rates aided the development of wholesale power markets
- Organized spot markets ensured nondiscriminatory transmission and market access
- While creating new opportunities and beneficial opportunities, risk managers faced a changing set of structural and market parameters



## Overview

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Developments and changes in energy markets have changed the way risks are managed

New risks faced have been as a result of changes in:

- Structural Market
- Energy Trading Market
- Regulatory Environment



## Structural Market Changes

As ISO markets began implementing LMP based markets, several structural market changes occurred

- PJM addition of AEP, COMED, and Dominion
- LMP Markets use of Dual Settlement
  - Arbitrage between the two markets helps ensure efficiency
- Creation of Centralized Markets
  - Virtual daily markets
  - Longer term congestion hedging markets
- Implementation of Ancillary Service Markets
  - Tier 2 Spin, Regulation, Demand response spin reserve
  - PJM combining reliability councils - Reliability First



## Structural Market Changes - Operational Changes

Moving the control of transmission systems to ISO's with centralized markets has resulted in new risks

- Least cost dispatch of generation resources leading to more efficient operations and different new build incentives
- Centralized ISO LMP models monitoring different transmission facilities, TLRs no longer tool of choice for TO/ISO to control congestion
- Use of Operating Reserves/Uplift to make generators whole
  - MISO FERC order
  - PJM summer of 2005

Overall, ISO's with centralized markets have been able reduce costs of providing electricity



## Energy Trading Markets

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With the increased transparency of ISO markets there has been many changes in the way risk can be managed

- OTC brokered markets
- Electronic market trading platforms
- ISO sponsored markets

And the participants have changed also

- Vertically integrated incumbents are not the only game in town
- Financial players are no longer faced with the hold-up problem of bilateral energy markets
- Full service merchant players expanding into new areas



## Energy Trading Markets - Risk Management Products

The products available to risk managers has grown

- ICE offering increased financial settling products
  - Oil and gas 'futures' - financially settling
  - Gas and oil derivatives (swing and combo swaps)
- ISO's virtual and FTR markets

Financial market participants use of risk neutral trading strategies has also increased the products used to manage risks

- Heat Rates
- Temporal and commodity spreads
- Customized risk management solutions offered by financial and merchant players



## Energy Trading Markets - Financial Instability of Participants

- Many market participants with troubled financial statements have continued to participate in energy markets and several new participants are now enabled
- Financial insolvency and lack of financial statements has led to the increased reliance on ISO sponsored markets which require lower credit and collateral
  - Organized exchanges utilizing their risk profiles to offer clearing services (ICE and NYMEX)
  - Created opportunities for companies with strong financial statements



## Regulatory Impacts on Energy Markets

Regulatory developments and changes are increasing the uncertainty of wholesale energy markets

- PJM's Reliability Pricing Model for capacity
- Load auction/RFP rate increases
  - Maryland rate increase cap
  - Illinois potentially holding rates down
- PJM Mitigation Settlement
  - Potential for higher Imp's
  - This past summer's experience was that the volatility of the spot prices increased
- PJM RTEP (Regional Transmission Expansion Planning)



## Summary Page

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- The development of ISO's with centralized markets has created new opportunities and new risks
- Risk managers who understand the changes are positioned to benefit
- New risk management products can help traditional market participants greatly reduce risks they face
- Regulatory changes are the wildcard to markets - instability and non-rational economic behavior create increases uncertainty



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## Constellation Energy Commodities Group

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North America's largest wholesale power supplier

- A key player in global gas, oil and coal markets
- Optimizes fuel and power supply logistics to maximize value of energy investments
- Leverages world-class risk management skills and well-diversified portfolio of physical and contractual assets
- Customers include some of the world's largest producers and consumers of energy
- A subsidiary of Constellation Energy, a Fortune 200, integrated energy company