“Central Counterparty Clearing of Nodal Contracts”
Nodal Exchange Overview

- Cash-settled electric power and natural gas futures exchange launched April 8th, 2009
  - Over 50 signed Participants, 10 clearing members, 9 brokerages
  - Quarter over quarter growth every quarter since launch
- Providing ability to trade power on >1,800 hubs, zones, and nodes across six organized markets: ISO-NE, NYISO, PJM, MISO, ERCOT and CAISO
  - Monthly terms with a rolling four years on >90 locations and one year for all others
- Natural gas contract for Henry Hub available over-the counter (OTC) permitting cross margining of power and gas
- Two platforms:
  - Daily auction
  - OTC negotiated transactions (e.g., broker) submission for clearing
- Central counterparty cleared market for all transactions through LCH.Clearnet
  - Only cleared market for over 1,750 locations
  - Margin based on positions, not auction orders
  - Value-at-Risk (VaR) based margining methodology providing substantial efficiencies for portfolios relative to SPAN margining
Nodal Exchange Board Members

- Paul Cusenza
  - Chief Executive Officer, Nodal Exchange, LLC
- Mark Maisto
  - President Commodities and Retail Markets, NextEra Energy Resources, LLC
- Benjamin Preston
  - Head of Power Trading, Macquarie Energy, LLC
- Robert J.S. Roriston
  - Partner, Lindsay Goldberg
- James P. Smist
  - President, Dean & Company Strategy Consultants
- Andrew J. Stevens
  - Managing Director, DC Energy
- Dean L. Wilde II
  - Managing Director and CEO, DC Energy
Nodal Exchange Product Set

• Nodal Exchange offers ~1,800 contract locations covering all of PJM, MISO, NYISO, and ISO-NE
  – All hubs, load zones and generation nodes are represented
  – Locations historically showing more than a 99.995% pricing correlation are grouped into single contracts
• Nodal Exchange offers CAISO contracts on 35 locations including hubs, zones, key pricing points, key scheduling points and high volume generation nodes, and the 4 ERCOT hubs as well
• All Nodal Exchange contracts are defined by location(s) and class (Peak or Off Peak)
  – If multiple locations are listed in a contract definition, simple average of pricing at locations is used to settle the contract
• Contracts settle against Day Ahead or Real Time Power
  – Full Locational Marginal Price (LMP) for better hedging (includes energy, congestion & loss)
• All contracts trade in units of 1MW x number of hours in the month for peak or off-peak
• All contracts have a monthly term
  – Current month contracts trade against their full settlement value during the settlement month
Where are we on financial reform legislation?

• Dodd-Frank bill signed into law in July 2010
• Many areas were left for regulators to define via rule making
• Rulemaking process at CFTC, SEC and other agencies has begun
  – Initial set of draft rules on most topics is now available from the CFTC
  – Comment period now open on most of these rules
  – Final rules in later spring/early summer
  – CFTC/FERC Memorandum of Understanding expected later this month
Why are we here?

Counterparty Risk

• The AIG bailout wasn’t about credit default swaps, it was about the **counterparty risk**

• “I view derivatives as time bombs, both for the parties that deal in them and the economic system… Unless derivatives contracts are collateralized or guaranteed, their ultimate value also depends on the creditworthiness of the counter-parties to them … ”
  
  – *Warren Buffett, 2002*
  
  *Berkshire Hathaway Annual Report*

**Proposed Solution:**
Centrally Clear as many derivatives as possible taking the risk out of the counterparties to a deal, and placing it in the hands of a regulated independent central clearinghouse.
What is in the Dodd-Frank Act to address systemic risk?

• Emphasis on central counterparty clearing and margining
  – Required for contracts accepted for clearing by regulated clearinghouses
  – Regulators can require margin be held for uncleared transactions, reducing systemic risk from OTC markets
  – End users hedging commercial risk may be exempted from both of the above

• Transparency for Over-The-Counter Transactions
  – Require OTC transactions be exchange traded and cleared to extent possible
  – Brings OTC commodities transactions into the regulatory purview of CFTC
  – Transaction reporting to the CFTC

• Restrictions on financial institutions
  – Banks must place desks handling agricultural, energy and metals swaps, equity swaps, and uncleared credit default swaps into separately capitalized holding companies.
Clearing more derivatives is a global objective, not just the US government’s

The G-20 Leaders in September 2009 concurred that:

• “All standarized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest.”

• “OTC derivative contracts should be reported to trade repositories.”

• “Non-centrally cleared contracts should be subject to higher capital requirements.”

_Congress and the Administration are working toward achieving these goals in the United States_
Dodd-Frank: some gray areas in definitions will be better defined as the CFTC sets final rules

<table>
<thead>
<tr>
<th>Category</th>
<th>Sufficiently Standardized?</th>
<th>Non-standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>To be cleared? To be Mandatorily cleared?</td>
<td>Non-standard</td>
</tr>
<tr>
<td>Major Swap Participant</td>
<td>Major Swap Participant?</td>
<td>Not a Major Swap Participant</td>
</tr>
<tr>
<td>Swap Dealer</td>
<td>Swap Dealer?</td>
<td>Not a Swap Dealer</td>
</tr>
<tr>
<td>Speculating</td>
<td>Hedging?</td>
<td>Hedging</td>
</tr>
</tbody>
</table>
Regardless of government mandate, there are benefits to clearing power transactions

1. Access to a wider range of market participants resulting in greater liquidity and better pricing

2. Eliminates need to manage and monitor counterparty risk, including credit downgrades

3. Total transaction cost, including default risk, is often lower than bilateral transactions that are not cleared

4. Clearing allows netting of positions across the portfolio, freeing capital that may be tied up
1. Cleared markets provides access to more counterparties

**Top 50 FTR Participants**
(Representing 95% of Volume)

- 44% Rated Investment Grade
- 5% Rated Baa3
- 7% Rated Below Baa3; Not Investment Grade
- 44% Not Rated

Source: Nodal Exchange Analysis, ratings from Moody’s Long Term Unsecured ratings as available and FTR Data is volume weighted from Monthly, Annual and Long-term Auctions in PJM, ISONE, NYISO, MISO, CAISO held June 2009 to May 2010
Access to more counterparties results in better terms

- “Companies that are able to identify and manage commodity risks effectively through dynamic hedging programs…are viewed more favorably than those that do not hedge.”
- “A number of large financial institutions have decided to exit the commodity trading markets”
- “Given the recent spate of counterparty exits, we believe that utilities will have fewer counterparties with which to trade”
- “The terms…may become more onerous than exist today”

Quotes taken from Moody’s Utility Outlook January 2009
2. Clearing avoids managing rating downgrades which can happen quickly, in large numbers and unexpectedly

Source: Moody’s ratings of long term unsecured debt or closest equivalent; 28 companies included were listed as the merchant wholesale power sector with significant merchant energy/commodity trading/non-regulated activity in Moody’s Special Comments Report October 2008

29% of sector is currently below investment grade
3. Transaction costs should include default risk

- Clearing requires margining in order to cover potential costs of defaults: Defaulter pays not the viable surviving entities
- Choosing to conduct bilateral transactions without similar margining/collateral levels exposes company to default risk
- Estimated average cost from counterparty defaults in bilateral transaction not cleared: 84 basis Points – more than the estimated costs of clearing in total
  - *Committee of Chief Risk Officers (CCRO)*
    “Market Clearing in the Energy Industry”
    February 2006

Category 5 Hurricanes can hit New Orleans; building a stronger levee system costs more in the short term, but less in the long term
Those involved in the April sinking of the Deepwater Horizon oil rig may now wish they had spent more to manage risk.
4. Clearing allows participants to efficiently net across positions, reducing exposure and required collateral.

**Multiple Bilateral Relationships**

- **Entity A**
  - Buys: 210
  - Sells: 120

- **Entity B**
  - Buys: 150
  - Sells: 90

- **Entity C**
  - Buys: 140
  - Sells: 210

- **Entity D**
  - Buys: 90
  - Sells: 180

- **Entity E**
  - Buys: 280
  - Sells: 20

**Multilateral Netting with Central Counterparty Clearing**

- **Entity A**
  - Buys: 60
  - Sells: 40

- **Entity B**
  - Buys: 40
  - Sells: 40

- **Entity C**
  - Buys: 20

- **Entity D**
  - Buys: 60
  - Sells: 40

- **Entity E**
  - Buys: 20
  - Sells: 40
What about FTRs?

- An FTR is a financial instrument that entitles the holder to receive compensation for certain congestion-related transmission charges that arise when the grid is congested and differences in locational prices result from the redispatch of generators out of merit order to relieve that congestion.

- FTR auctions provide a way for the RTO/ISO to pre-sell the congestion they will collect on the network via financial instruments that give participants the right to collect congestion revenues along a particular path.

- **FTR auction markets exist for two purposes:**
  - Congestion revenue distribution and
  - Providing RTO/ISO market participants the ability to hedge congestion.
Background: Clearing versus RTO/ISO Credit Management

- Clearing through an exchange
  - Novation by one central counterparty
  - Margining: initial and variation on positions held
  - Effectively eliminates default/counterparty risk
- RTO/ISO credit management
  - Bid collateral and initial collateral at time of award
  - Default risk shared by all trading participants
    - Exel/Poweredge default in PJM: $74MM counterflow portfolio resulted in higher payments than expected and left the RTO with a $51MM default in an annual auction with $448MM in revenues ($18MM was recovered in July 2010 in an out-of-court settlement)
Could we have third party cleared FTR markets? Yes!

FTR auctions continue as usual:

Participants

ISOs with FTR Auctions (FERC Oversight)

Participants have option to clear:

GCMs (General Clearing Members)

Optional novation of FTR positions to LCH.Clearnet; Nodal Exchange manages pricing and post-auction trading

Nodal Exchange with Central Counterparty Clearing by LCH.Clearnet (CFTC Oversight)
Recent statement from PJM about third party clearing

“…PJM has suggested that both regulators and the industry examine opportunities to reduce credit default risk in organized electricity markets by moving certain positions out of RTOs/ISOs to third party clearinghouses (registered with the CFTC). PJM is suggesting a voluntary model, mindful that costs to market participants resulting from mandating the clearing of ISO/RTO positions might not be justified by the risk mitigation realized. This model is dependent on further industry and regulatory evolution, including the realization of initiatives proposed in the FERC’s current Notice of Proposed Rulemaking on credit practices in RTO/ISOs.”

Vince Duane, General Counsel,  PJM “Inside Lines” newsletter, July 7th, 2010  
(emphasis added)
Creating optional central counterparty clearing of FTRs has multiple benefits

- Reduces systemic risk and creates an avenue to central counterparty clear FTR positions consistent with DFA
- ISO members protected from credit losses on cleared FTR positions
- Enables netting and cross-margining of FTR positions with cleared exchange positions
- Enables cross margining with natural gas and across ISOs (inter-ISO)
- Provides secondary market for trading positions
- Can be implemented with optional clearing (e.g., for “end users” doing hedging), but available to participants
- FERC continues to oversee FTR auctions providing revenue distribution and hedging on a very granular basis
- CFTC oversees central counterparty clearing process
- ISOs do not need to become a Derivatives Clearing Organization (DCO) or to invest in other capabilities that could be a distraction from managing the grid
What needs to happen to make voluntary 3rd party clearing a reality?

- ISOs/RTOs must be able to be the counterparty to the cleared transaction
- ISOs/RTOs cooperation with third party clearing entities, such as Nodal Exchange and LCH.Clearnet, in providing the offering
  - Establish procedures for third party clearing
- Clarification of any required regulatory elements (e.g., Tariff changes)
- Participants choose to clear FTRs
Thank you!!

Ann Sacra
President & COO
Nodal Exchange, LLC
Sacra@NodalExchange.com

Paul Cusenza
CEO
Nodal Exchange, LLC
Cusenza@NodalExchange.com

Aaron Osguthorpe
Director, Account Management
Nodal Exchange, LLC
Osguthorpe@NodalExchange.com