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LOWERING THE EFFECTIVE COST OF CAPITAL FOR GENERATION PROJECTS:

Physical Clearing for Capital Efficiency

The NECC Consortium

IntercontinentalExchange (ICE)

The Clearing Corporation (CCorp)

Credit Suisse (CS)

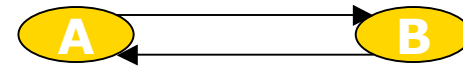
North American Energy Credit and Clearing Corp (NECC)



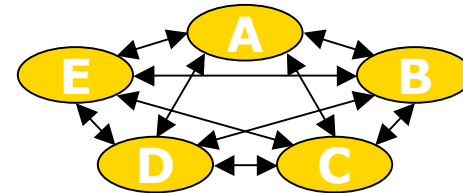


Clearing Services Reduce Capital Requirements in Many Commodity Markets

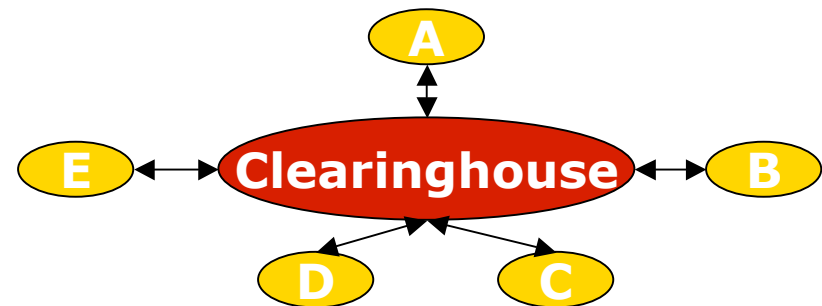
- 'Clearing' provides more efficient use of collateral
 - Reduces collateral up to 80% through effective 'netting' of all trades to a single net long or short position
- Clearinghouses stand behind the obligations of buyers and sellers as a central counterparty holding assets to support defaults
 - Reduces credit risk
- Clearinghouses provide simultaneous access to many counterparties
 - Increases overall market liquidity



Bilateral netting is limited to trades between bilateral counter parties



When transacting with many counterparties collateral requirements to support both long and short positions become cumbersome and excessive.



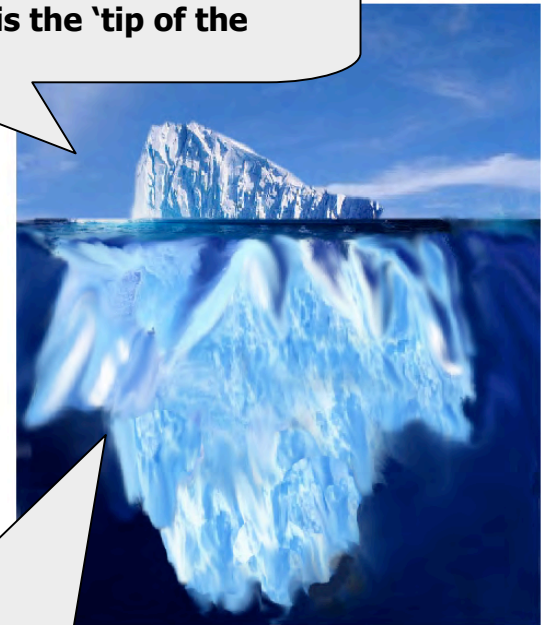
Clearinghouse can net all positions of each participant as central counterparty to all transactions cleared



Credit Risk Driving Collateral Capital Requirements in Physical Energy Markets

- **Potential exposure** relates to forward positions given changing market prices
 - If market price increases relative to a buyer's fixed price position, buyer is exposed to potential replacement costs for failed delivery
 - If market price decreases, sellers are exposed to lost revenues should buyer fail to take delivery
- **Current exposure** is the risk that buyers fail to pay on delivered energy
- **Current exposure is often bigger** in physical markets -- most seller's capital (and risk) is tied to current exposure (Accounts receivable from buyers and Accounts payable to fuel suppliers)

In physical energy markets, potential (mark to market) exposure is the 'tip of the iceberg'



Current exposure often is the majority of the iceberg in physical energy markets



Physical Clearing Improves Capital Efficiency

- The protection of traditional clearing
 - All positions fully secured
 - Layers of additional protection
- Extended from forward transactions through delivery and settlement
 - Greater protection
 - Maximized 'netting'
 - Power and gas
 - Pre-delivery and post-delivery (Potential and Current exposure)
 - Between multiple counterparties

Enhanced liquidity, capital efficiency, risk management



Physical Versus Financial Clearing

Traditional Exchange Products

Cash settlement prior to delivery – manages mark -to-market, CFD and basis settlement exposure —the tip of the iceberg

NECC's Physical Clearing Solution

As a counterparty through delivery – manages the full notional risk from forward mark to market through delivery and payment





Physical Clearing Reduces Capital Needs of Merchant Generators

- Two generators (gas and renewable) with \$100 million of accounts receivable from power sales
- “With” and “Without” physical clearing
- Physical clearing frees up significant capital by reducing collateral requirements
- **Lower capital requirements for generators means lower prices for Californians!**

