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Session III:

Regulating Financial Energy Markets

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7TH US-EU ENERGY REGULATORS ROUNDTABLE

Presentation By

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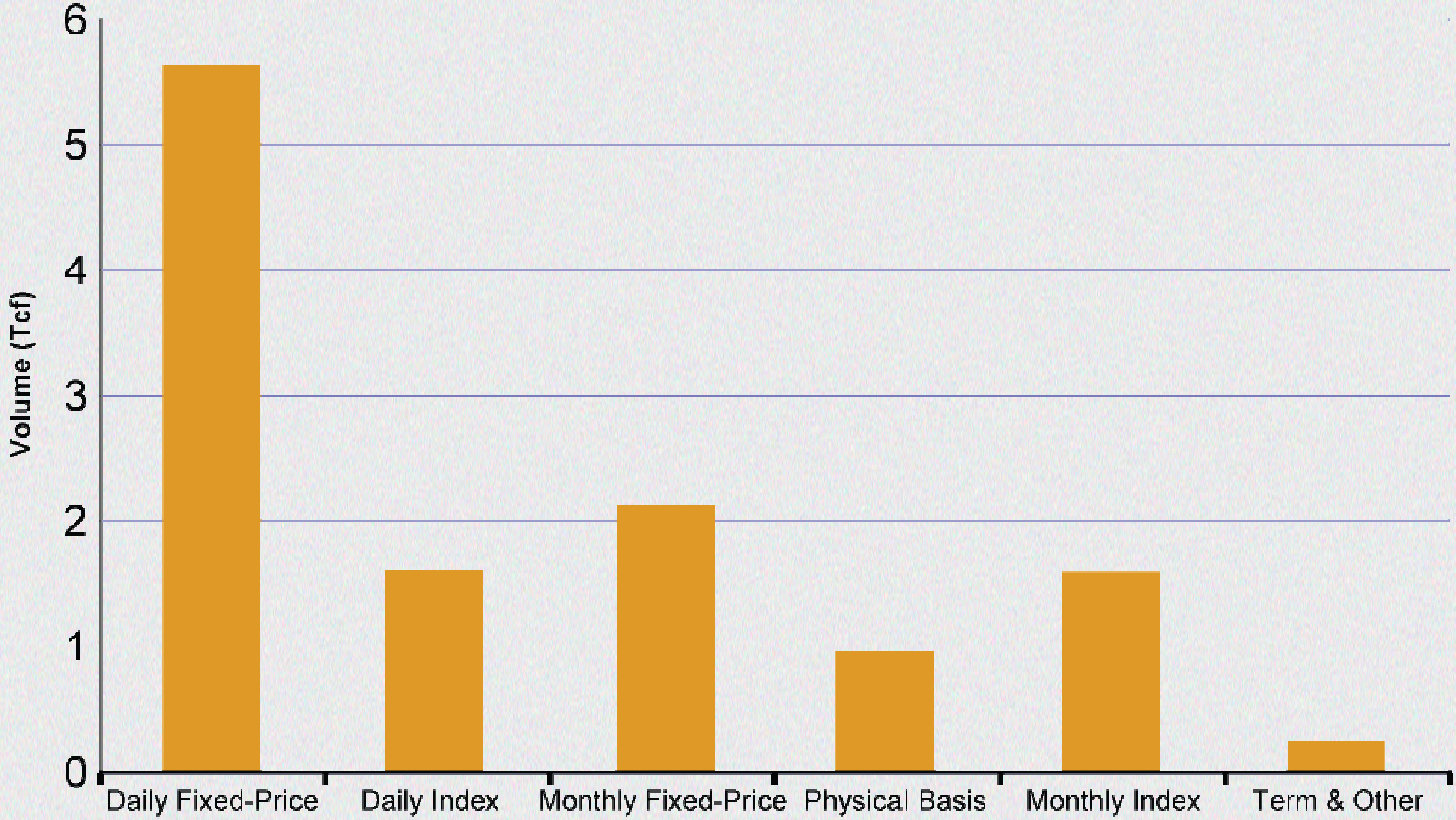
Energy as a Commodity

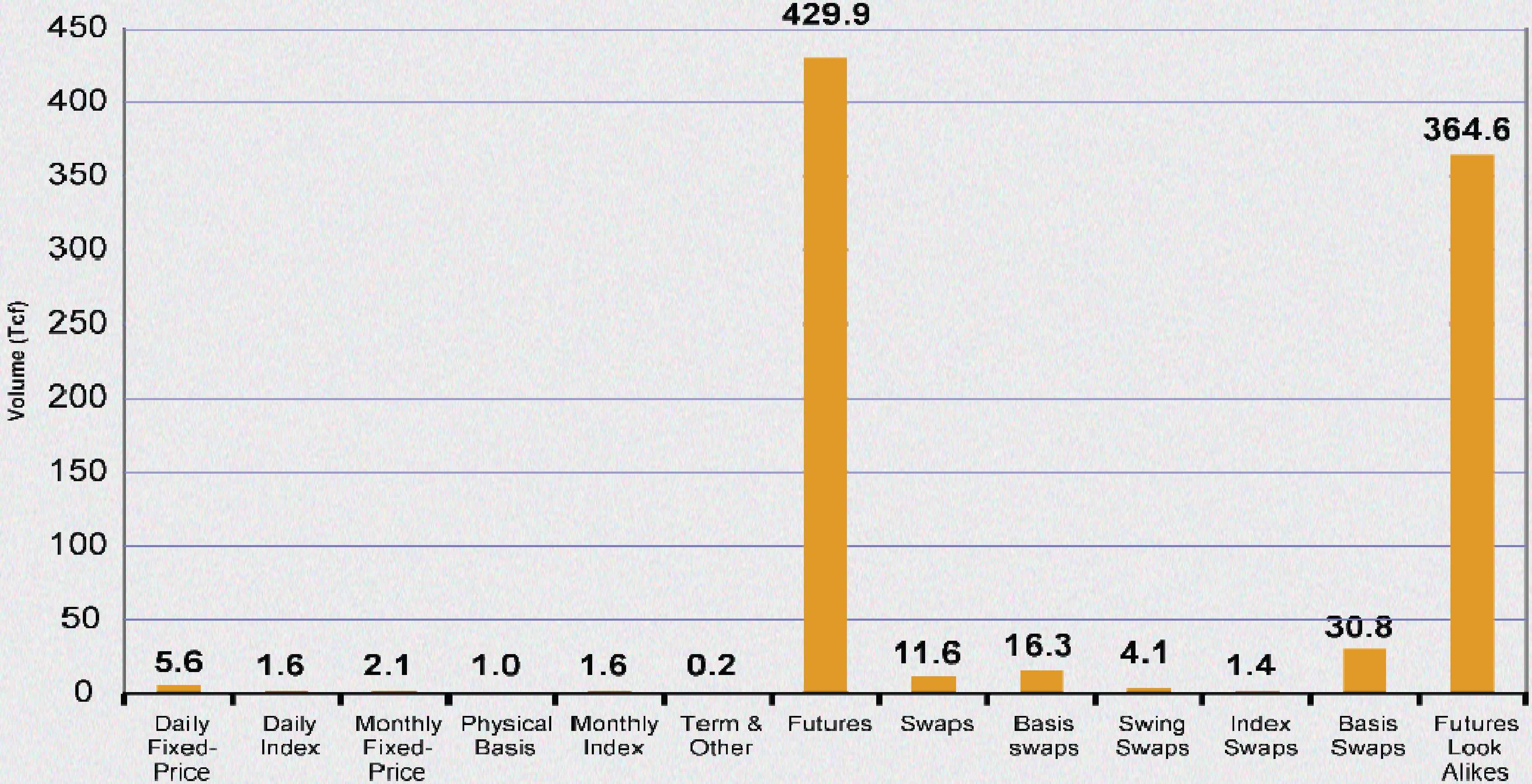
- For a given time and place, electricity and natural gas are each roughly homogeneous goods.
- Treating energy as a commodity facilitates development of financial energy products by leveraging off existing market architecture for other commodities.
- Market participants can use established exchanges and clearinghouses.
- Examples of Financial Energy Products
  - Day ahead commitments in organized electricity markets
  - Financial natural gas and electricity
  - Financial Transmission Rights (FTRs)
  - Virtual electricity load and generation bids

Physical Bilateral Products



Source: IntercontinentalExchange - Bilateral Broker Data

Physical Bilateral & Financial Natural Gas Products



Source: IntercontinentalExchange and NYMEX

Benefits of Increase in Financial Energy Products

- **Facilitates hedging to mitigate:**
  - Price risk
  - Electricity transmission costs in organized markets
  - Natural gas transportation costs
- **Facilitates arbitrage in physical energy markets**
  - Virtual electricity bids
  - Basis swaps
- **Uses capital efficiently**

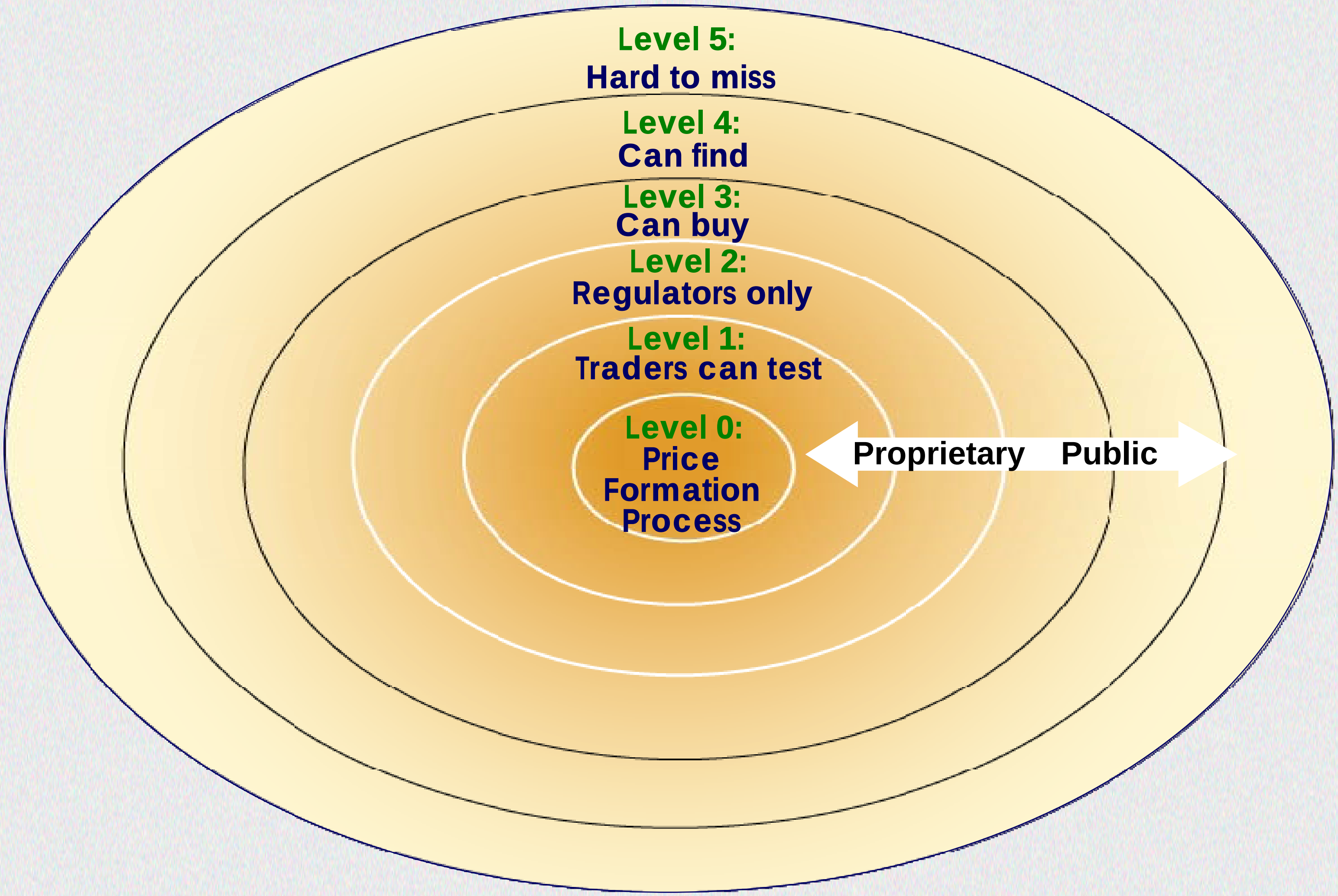
Regulatory Challenges Relating to Financial Energy Products

- **Prospect of speculation**
  - Leverage
  - Low costs of entry

- **Complexity of evaluating market participant behavior**
  - Variety of complex products requiring sophisticated modeling
  - Incentive to manipulate related to combined physical and financial position

- **Lack of Transparency**
  - No central depository of positions or open exposures
  - Lack of direct jurisdiction complicates information gathering

"Levels" of Information Availability



Bridging the Information Gap

- **Subscription service for consummated transaction data**
- **Memorandum of Understanding with CFTC to get transactions and position data**
- **Industry outreach and Enforcement Hotline**
- **ISO/RTO market monitors**
- **Information gathered through staff investigation**

Case Study: Amaranth

- **Staff pre-event hypothesis**
  - Identified interaction of physical and financial pricing
  - Outlined potential manipulative schemes

- **Specific Allegation: Amaranth allegedly manipulated the price of physical natural gas futures to benefit larger financial positions.**

- **Investigation steps**
  - Coordinated masked identity trading behaviors with the CFTC
  - Identified masked market participants of interest
  - Sent data requests for company specific trading behavior
  - Coordinated investigation with the CFTC

Implications of Recent Financial Crisis

- Electricity is highly capital intensive industry
- There is a need for tremendous investment in U.S. electricity infrastructure - generation, transmission, distribution - up to $1.2 trillion by some estimates
- Financial sector firms have a major role in U.S. electricity and natural gas markets - trading and asset ownership
- Transparency of RTO markets provide confidence in counter-party risk
- Financial crisis:
  - restricts access to capital, raises cost of capital
  - has greater impact on independent power producers than utilities
  - Has resulted in limited number and scale of defaults

Conclusion

- Electricity and natural gas have the characteristics of commodities
- U.S. financial energy markets are large and growing
- Financial energy products facilitate hedging
- Use of financial energy products adds complexity to evaluation of market participant behavior
- Lack of jurisdiction over financial energy products complicates enforcement and oversight
- Several ways to bridge information gap