



Market Monitoring and Wholesale Power Transmission Issues



*William F. Hederman, Director
Office of Market Oversight and Investigations
Federal Energy Regulatory Commission*

**Presented to:
Carnegie Mellon University
Pittsburgh, PA
December 16, 2004**

WH-12-16-04

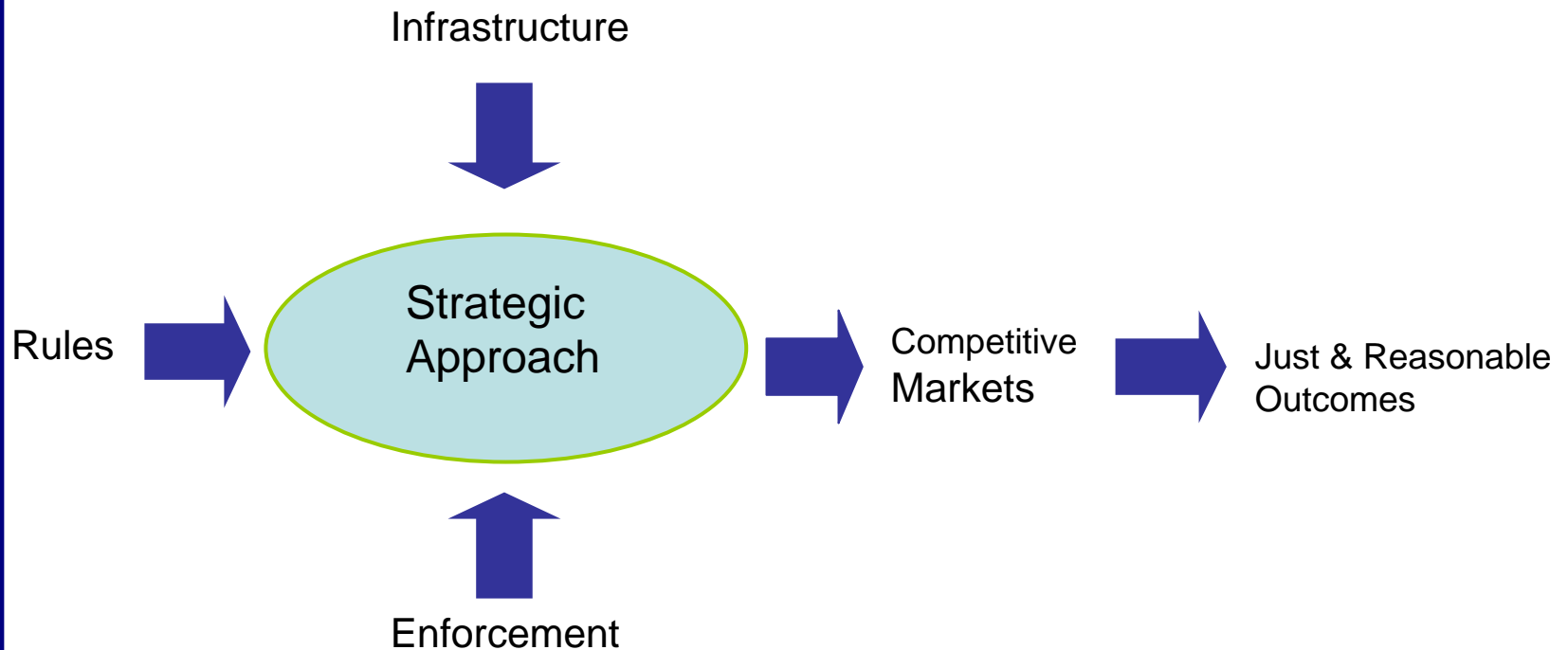


Outline

- Introduction
- The Legacy of Legacies
- Transmission Challenges
- Monitoring Agenda
 - Organized Markets
 - Other Areas
- Conclusion



The FERC strategy to provide dependable, affordable energy through sustained competitive markets has 3 elements.





Background: This difficult transition suffers from a legacy of legacies.

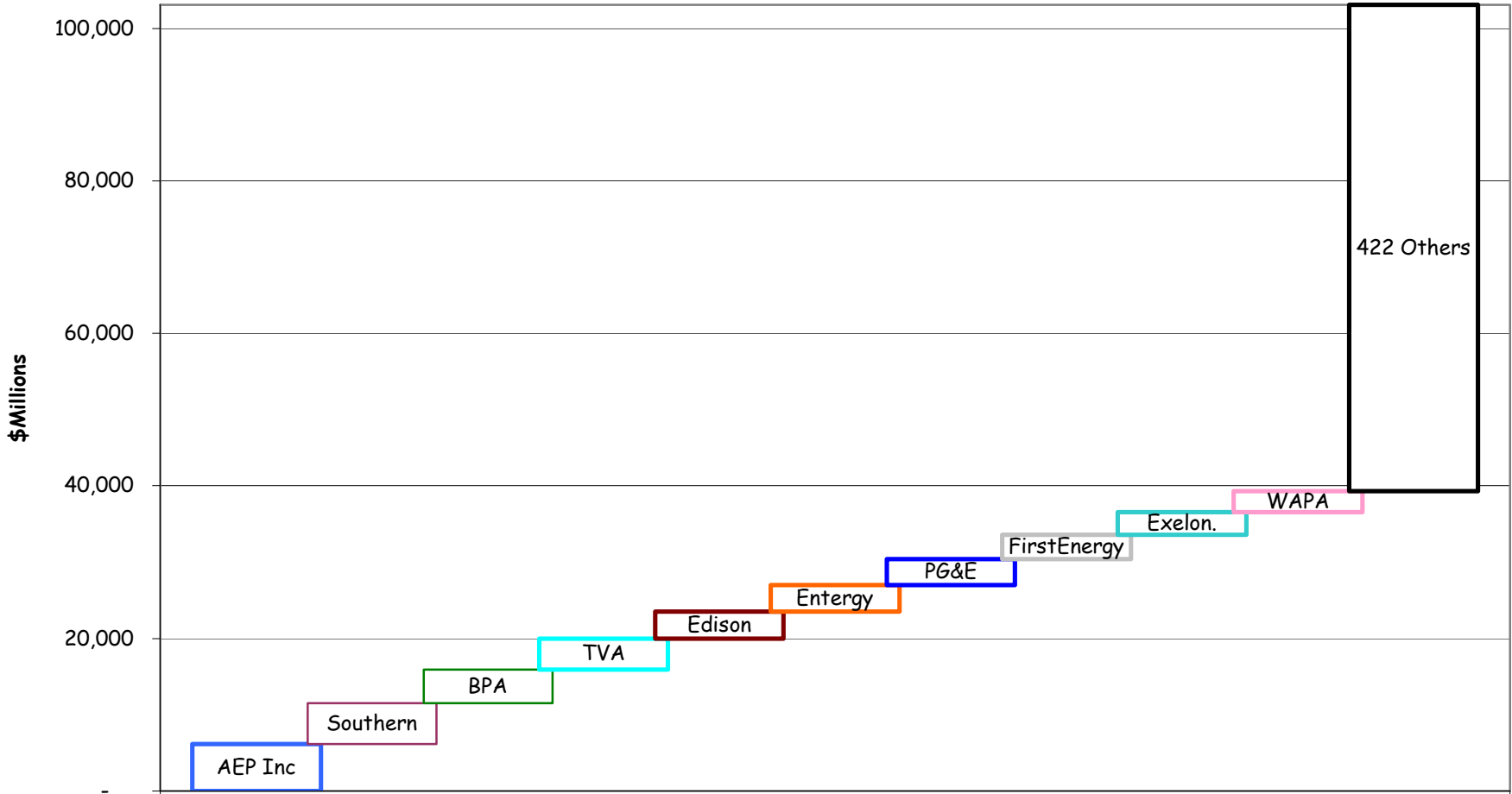
- Inadequate interconnections (reliability driven, not market driven)
- Patchwork of laws/regulations/responsibilities (assumed service areas)
- Many entrenched interests with varying objectives



Transmission Policy Challenges

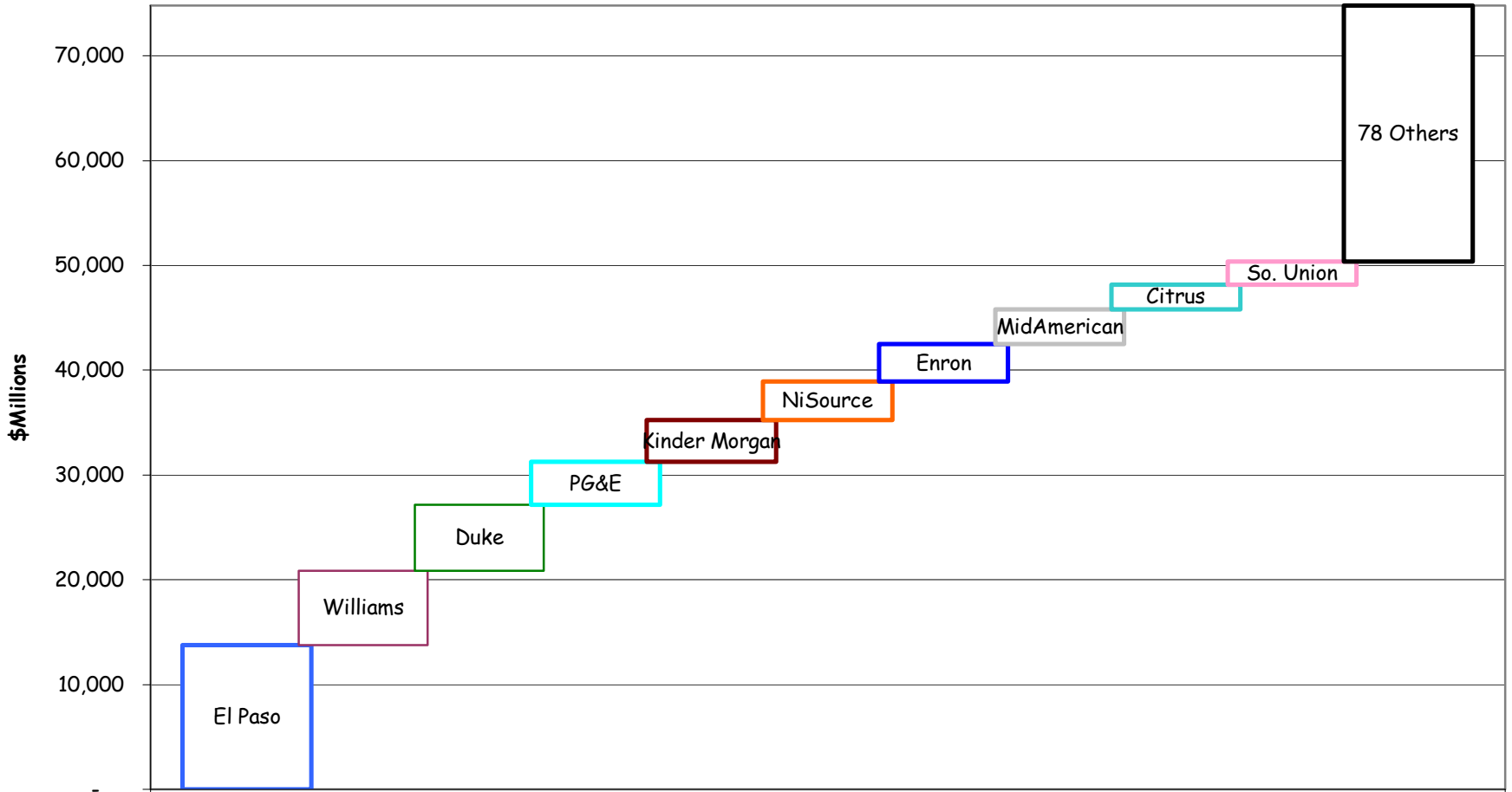
- Market Power
- Regional Planning
- Reliability
- Investment
- Innovation
- Transitions

Ownership of Electric Transmission (US Total, Top 10 Companies Indicated)



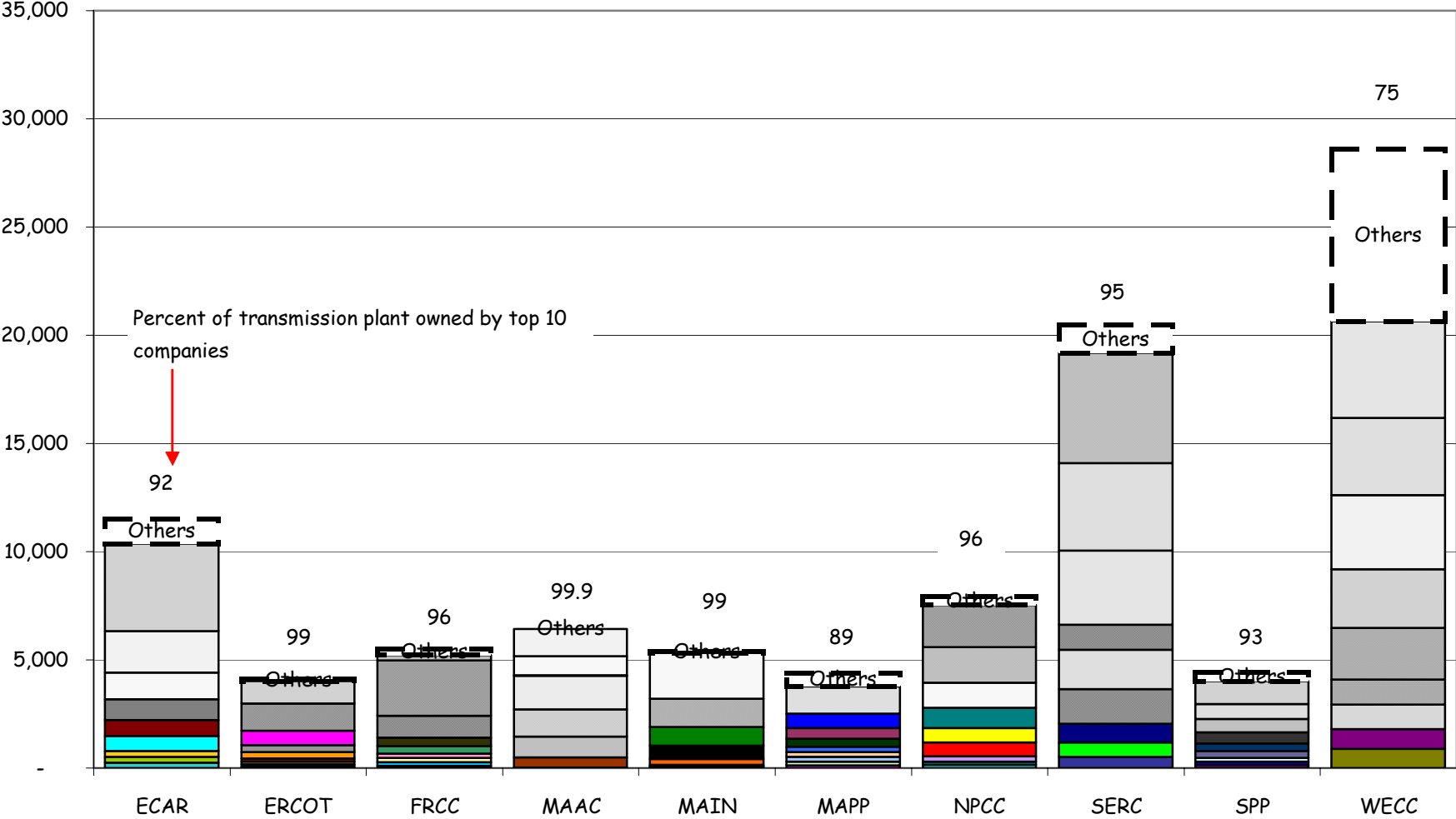
Source: RDI PowerDat, Financials, Balance Sheet, End of Year 2003 Transmission Plant in Service

**Ownership of Gas Transmission
(Total US, Top 10 Companies Indicated)**



Source: RDI GasDat, Financials, Balance Sheet, End of Year 2002 Transmission Plant in Service (adj)

Regional Ownership of Electric Transmission Top 10 Companies Per Region



Source: RDI PowerDat, Financials, Balance Sheet, End of Year 2003 Transmission Plant in



Investments We Need

- Hardware
 - AC and DC lines
 - Substations, capacitors, sensors
 - FACTS

- Software
 - State estimators
 - System monitoring, evaluation, visualization, information sharing



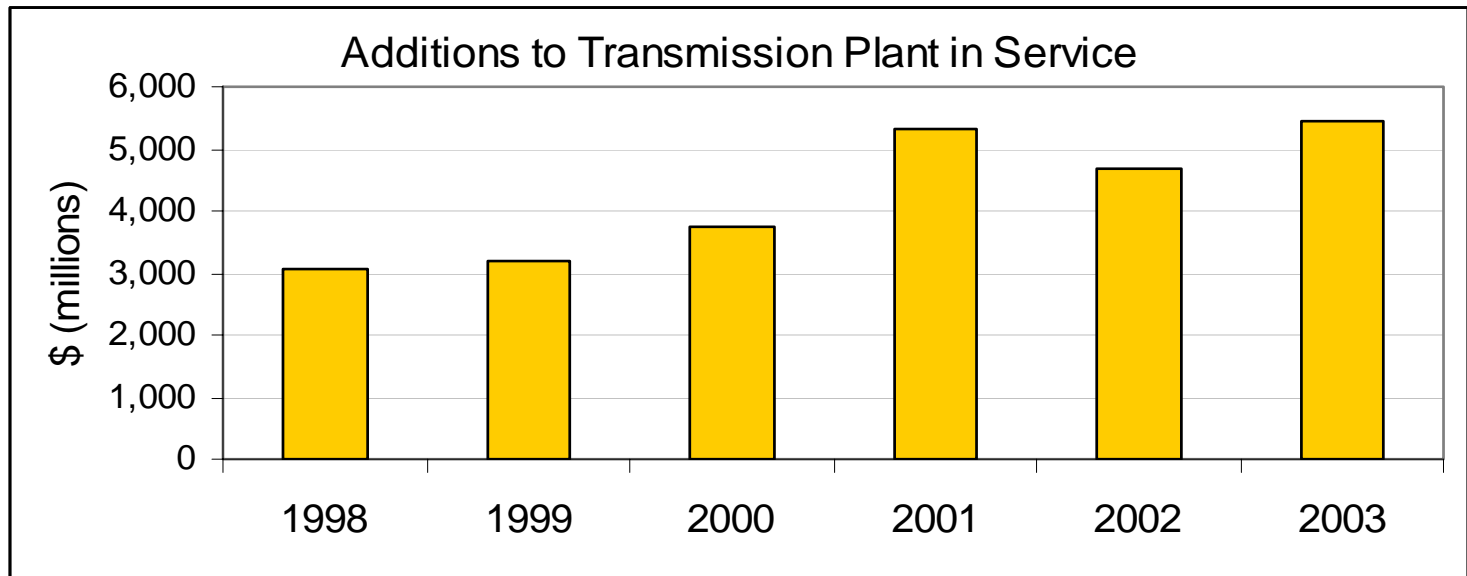
Wall Street Waits

“There is a cap on how much I can earn and no floor on how much I can lose”

J. Holzschuh, Managing Director
Global Power Group
Morgan Stanley



Transmission Investment



Source: Platts



Monitoring approaches differ significantly by market conditions.

Organized Markets

- Access assured
- Information rich
- Local monitoring
- Investment/mitigation challenges
- Seams

Opaque Markets

- Access problematic
- Affiliate issues
- Little information



Organized Markets Provide Options and Transparency

Table 1: Wholesale energy markets design, June 2003.

Legend: ■ = Yes ● = No ◆ = Not market based	Regions with organized markets					Regions without organized markets					Natural Gas	
	ISO-NE	NYISO	PJM	ERCOT	CAISO	South-east	Florida	Midwest	South Central	South-west		North-west
Services Provided	ISO-NE	NYISO	PJM	ERCOT	CAISO	South-east	Florida	Midwest	South Central	South-west	North-west	Natural Gas
Bilateral transactions	■	■	■	■	■	■	■	■	■	■	■	■
Active online physical trading (1)	■	●	■	■	■	■	●	■	●	■	■	■
Real-time energy market	■	■	■	■	■	●	●	●	●	●	●	●
Locational energy price	■	■	■	■	■	●	●	●	●	●	●	●
Hourly energy price	■	■	■	■	■	●	●	●	●	●	●	● (2)
Congestion price	■	■	■	■	■	●	●	●	●	●	●	●
Losses price	■	■	● (3)	■	■ (4)	●	●	●	●	●	●	●
Day-ahead energy market	■	■	■	●	●	●	●	●	●	●	●	●
Locational energy price	■	■	■	●	●	●	●	●	●	●	●	■ (5)
Hourly energy price	■	■	■	●	●	●	●	●	●	●	●	●
Congestion price	■	■	■	●	■	●	●	●	●	●	●	●
Losses price	■	■	● (3)	●	●	●	●	●	●	●	●	●
Ancillary services market	■	■	■	■	■	◆	◆	◆	◆	◆	◆	●
Capacity market	■	■	■	●	●	●	●	●	●	●	●	◆ (6)
Futures market	●	●	■	●	●	●	●	●	●	●	●	■
Regional transmission scheduling	■	■	■	■	■	●	●	■	●	●	●	●
Regional economic dispatch	■	■	■	■ (7)	■ (7)	●	●	●	●	●	●	●
Regional transmission planning	■	■	■	■	■	●	●	■	●	●	●	●
Regional interconnection process	■	■	■	■	■	●	●	■	●	●	●	●
Independent market monitor	■	■	■	■	■	●	●	■	●	●	●	●



Conclusion

- Structural solutions appear best.
- Effective rules plus monitoring and enforcement is a second-best solution.
- Relative lack of investment in transmission has FERC's attention.



FERC is addressing transmission challenges.

Initiatives include:

- Transmission policy
- Reliability Division
- Reactive Power conference



Market Integrity is Everyone's Business

FERC Hotline:
1-888-889-8030