Federal Energy Regulatory Commission

XII Repsol YPF – Harvard Seminar on Energy Policy

"Recent Lessons on Liberalization and Regulation in the United States"

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U.S. Federal Energy Regulatory Commission

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LESSONS FROM THE CALIFORNIA EXPERIENCE

- **Regulators must insist on good market design**
- **Grid operation and planning must be done by Regional Transmission Organizations**
- **Regulators must have sharp market intervention tools and use them quickly and decisively**

MARKET DESIGN ELEMENT: Appropriate Hedging Instruments

- **Do not rely too much on spot markets**
- **Must have balanced portfolio of supply instruments – futures and forward contracts**

MARKET DESIGN ELEMENT: Assurance of Adequate Generating Capacity

- **Avoid significant fluctuations of price and availability**
- **Ex ante reserve requirements on load serving entities**
- **Allow adequate new generation to be sited**

MARKET DESIGN ELEMENT: Uniform Interconnection Standards

- **Location decisions should be based on economics**

MARKET DESIGN ELEMENT: Congestion Management

- **Promote efficient use and location decisions**
- **Locational marginal pricing works well**

MARKET DESIGN ELEMENT: Demand Responsiveness

- **Mitigates price increases and market power**
- **Customers must:**
  - **See prices before making consumption decisions**
  - **Have reasonable means to adjust consumption in response to prices**
- **Demand side bidding (“negawatts”)**

MARKET DESIGN ELEMENT: Ex Ante Price Mitigation

- **A circuit breaker on extreme price increases**
- **Example: bid mitigation under certain conditions**

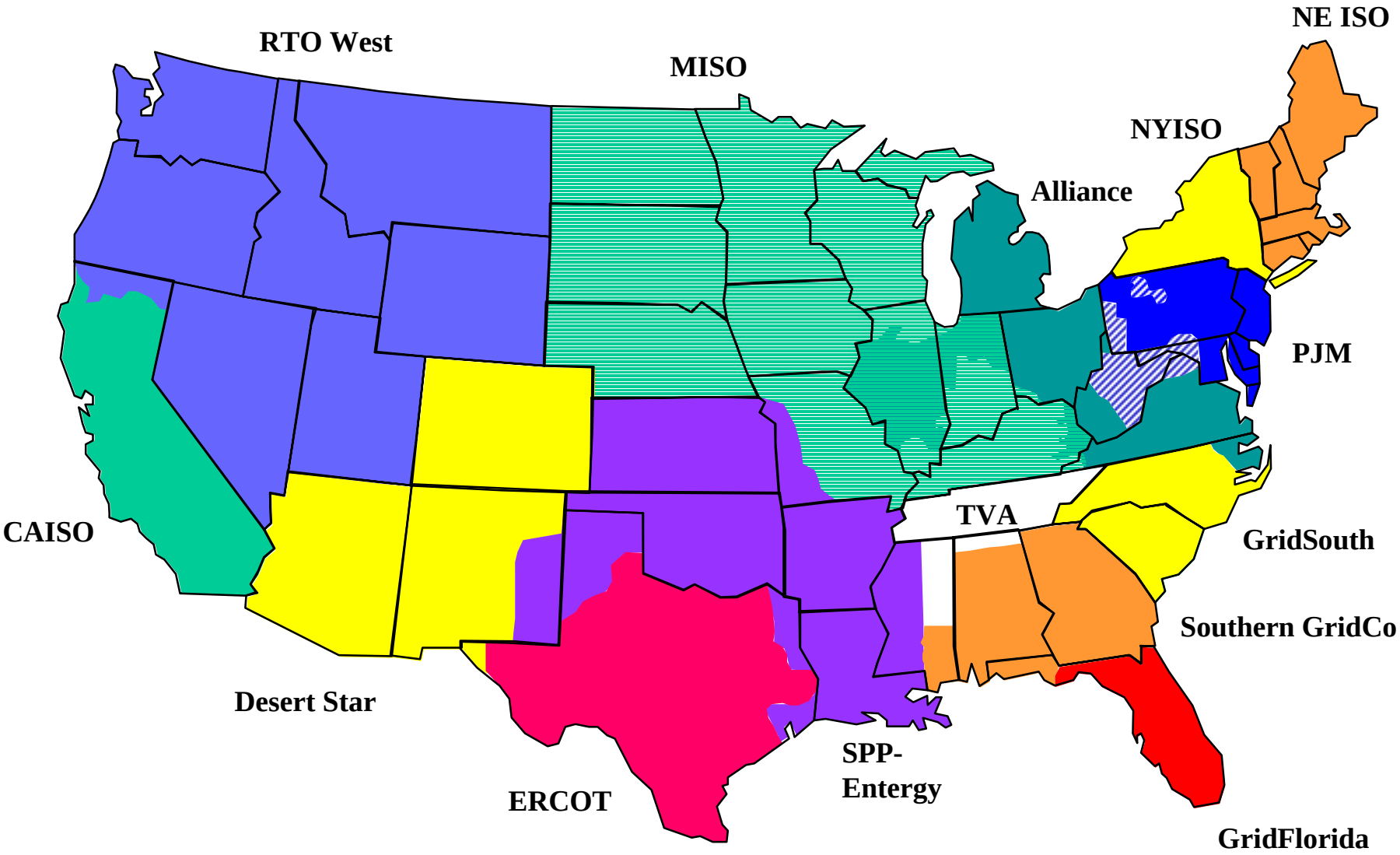
GRID MANAGEMENT PROBLEMS IN THE UNITED STATES

- **Vertically integrated grid operators**
  - **Conflict of interest in providing access; discrimination**
- **Grid management is fractured among more than 100 operators**
  - **Markets are regional but grid management is sub-regional**
  - **Multiple transmission rates keep markets too small**

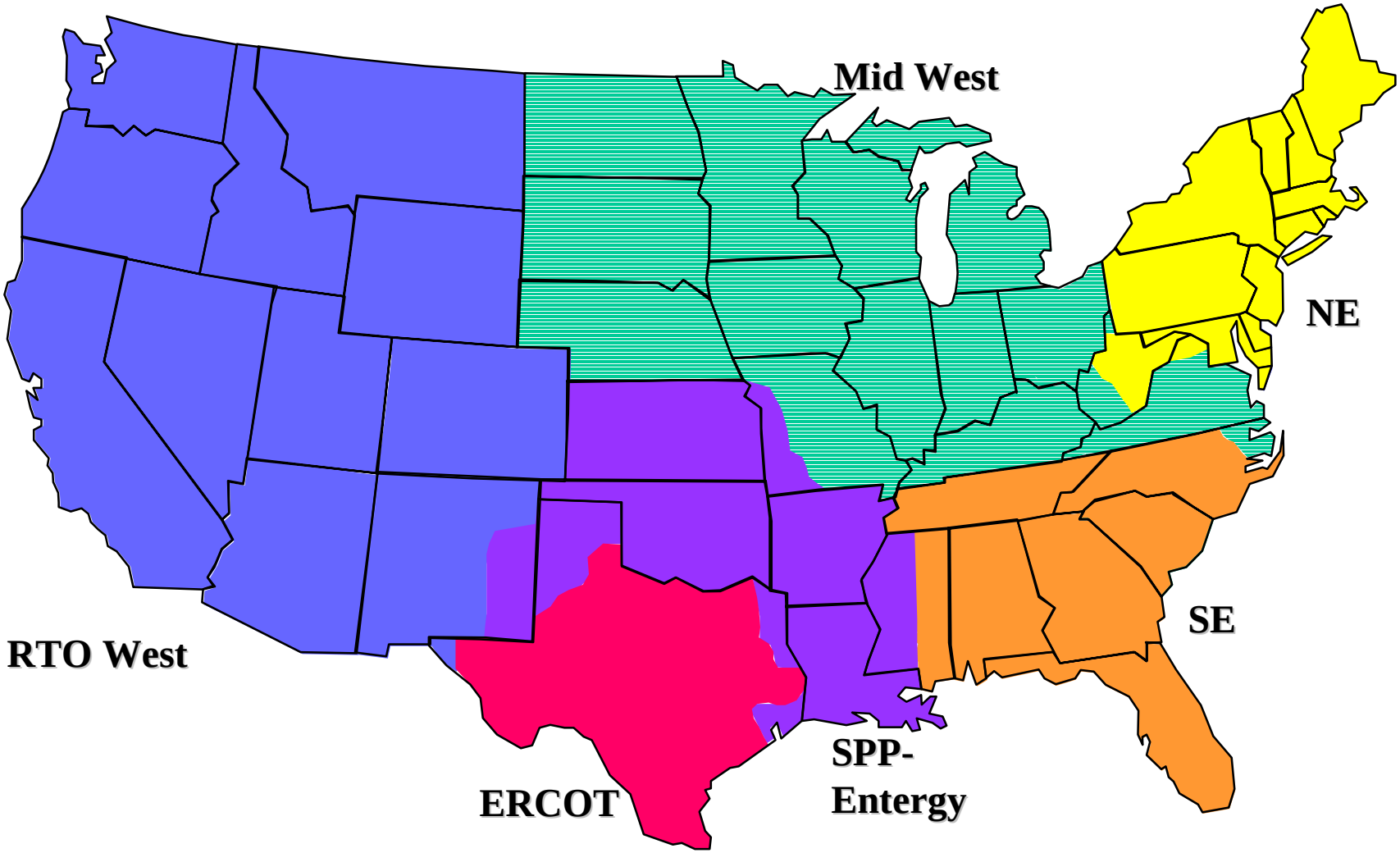
REGIONAL TRANSMISSION ORGANIZATIONS (RTOs)

- **Grid manager for large region that is independent of merchant generation interests**
- **Benefits**
  - **Eliminate conflicting incentives**
  - **Streamline interconnection procedures**
  - **Enlarge markets through improved transmission pricing and congestion management**
- **Must be regional in scope – large and well-shaped**

Proposed RTOs



Possible Consolidated RTOs



REGULATORY INTERVENTION

- **Regulators must have sophisticated analytic tools**
- **Regulators must develop clear standards of acceptable behavior**
- **Regulators must intervene aggressively when markets are dysfunctional**