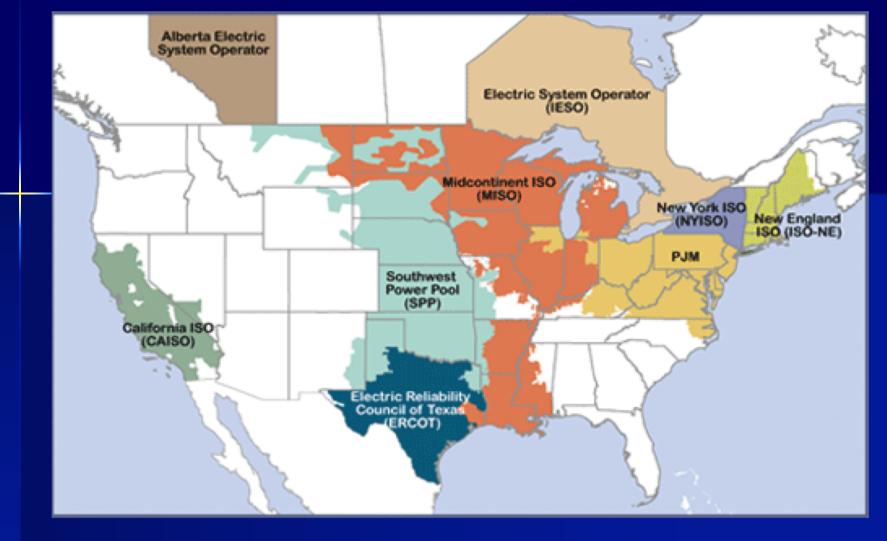
FERC Order No. 2000 Revisited



Pat Wood, III Harvard Electricity Policy Group April 20, 2021



Today's RTO/ISO Markets

Key FERC Power Market Formation Orders

- 888: Open Access
- 889: Real Time Open Access Same-Time Info Systems
- 2000: Regional Transmission Organizations
- 2003/2006: Large/Small Generation Interconnection
- 890: Open Access Tariff Reform, Planning
- 745: Demand Response (2011)
- 1000: Transmission Planning, Cost Allocation
- 841: Storage
- 2222: Distributed Energy Resources

RTO Characteristics

Independence
Scope, Regional Configuration
Operational Authority
Short-term Reliability

RTO Functions

- Tariff Administration and Design
- Congestion Management
- Parallel Path Flow
- Ancillary Services
- OASIS and Total/Available Transmission Capacity
- Market Monitoring
- Planing and Expansion
- Interregional Coordination

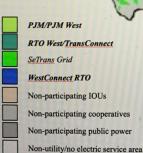
Order No. 2000 RTO Filings



Regional Transmission Organizations

Utility Participation as of February 2002





Note: Bold type denotes approved RTOs; bold italics denotes proposed or partially approved RTOs; italics denotes RTOs under development; italics with asterisk denotes RTOs under discussion; and plain text denotes denied RTOs. Map reflects transmission-owning and TDU-customer membership participation. For Canadian participation, see Crescent Moon RTO, East Coast Transmission Organization, Midwest ISO, and RTO West maps for details. Nation-wide IOU service territories overlap non-IOU service territories. © 2002 Edison Electric Institute. Service territory data source: <u>POWERmap</u>, 2nd quarter 2000 release, © Platts, a Division of the McGraw Hill Companies.

California 2000-2001



THE CALIFORNIA ELECTRICITY CRISIS

JAMES L. SWEENEY

Standard Wholesale Market Design

- Regional independent grid operator
- Regional transmission planning
- Single network transmission service (no rate pancaking)
- Market power mitigation/monitoring
- Congestion revenue rights
- Security constrained locational-marginally-priced dayahead and real-time energy markets
- Ancillary service markets
- Resource adequacy requirement
- Demand response

2003 Northeast Blackout



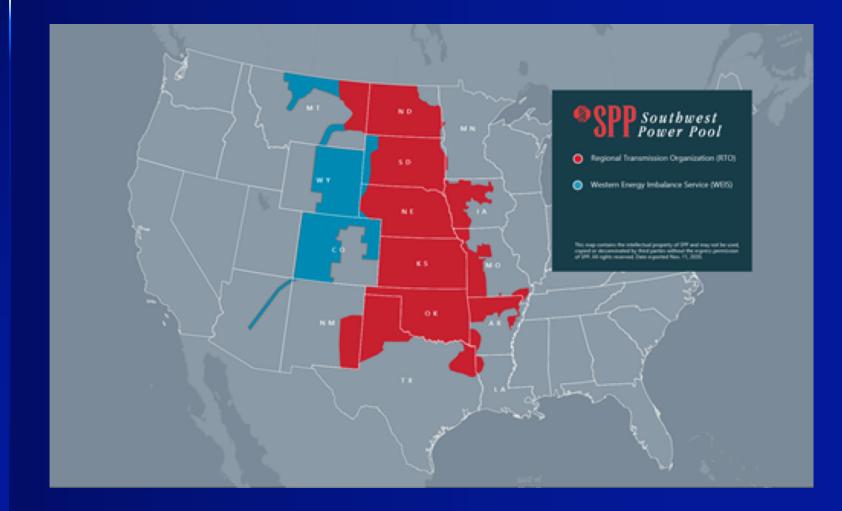
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Western Energy Imbalance Market



SPP Western Energy Imbalance Service



Southeast Energy Exchange Market



Will We Find The Bone?

