



Monitoring Cross-border Transactions and Regional Market Monitoring in the US

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ACCRA, GHANA

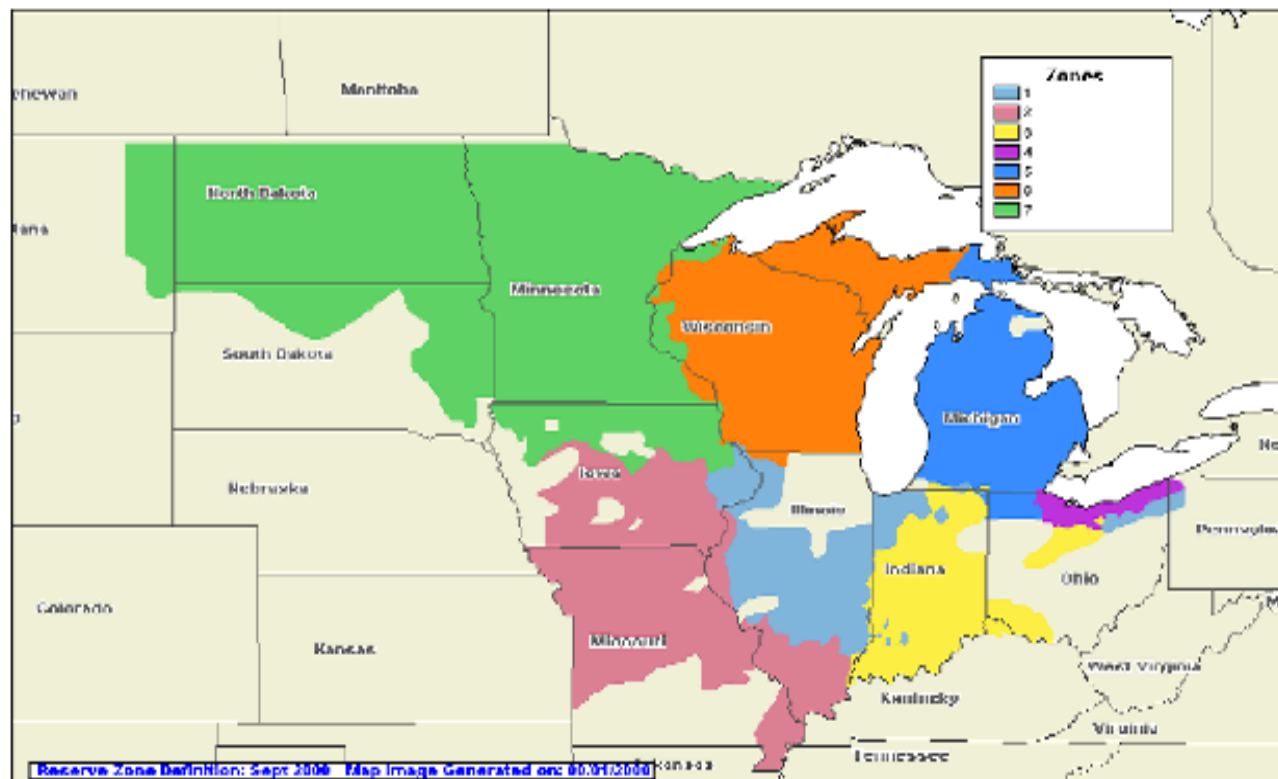


“Cross-border” issues between zones within just one State (Ohio) in MISO

- Purple zone is defined by reactive power requirements
- Other Ohio zones are defined by generators having a significant impact on the flow gates into an area for potential contingencies.
- Light blue band to the south and east of Cleveland is actually a null zone.
- Yellow zone to the south of Toledo has generation that impacts the flows east across the neighboring state of Indiana.
- Dark blue generation zone south and west of Toledo has significant impacts on the flows in or out of the neighboring State of Michigan.



Quarterly Reserve Zone Mapping Results – Partial XML file





One of the ways to relieve congestion is to encourage new investment for “deliverability” among “zones”





Commission decisions to encourage intra-zonal or cross-border investment in upgrades to network capacity have the potential to:

- Relieve congestion
- Improve deliverability
- Allow more efficient use of existing generation
- Increase potential for competitive pricing of the commodity (energy/MWh)
- Increase access to supply in areas with less generation
- Provide opportunities to optimize a financial return on existing generation investments by widening the customer-base across borders



Traditional Generation, Transmission and Distribution “clusters”

- In the past generation and transmission have formed into formal planning and operating hierarchies (footprints)
 - Regional reliability councils
 - Transmission and generation sub-areas
 - Control areas
 - Load serving entities

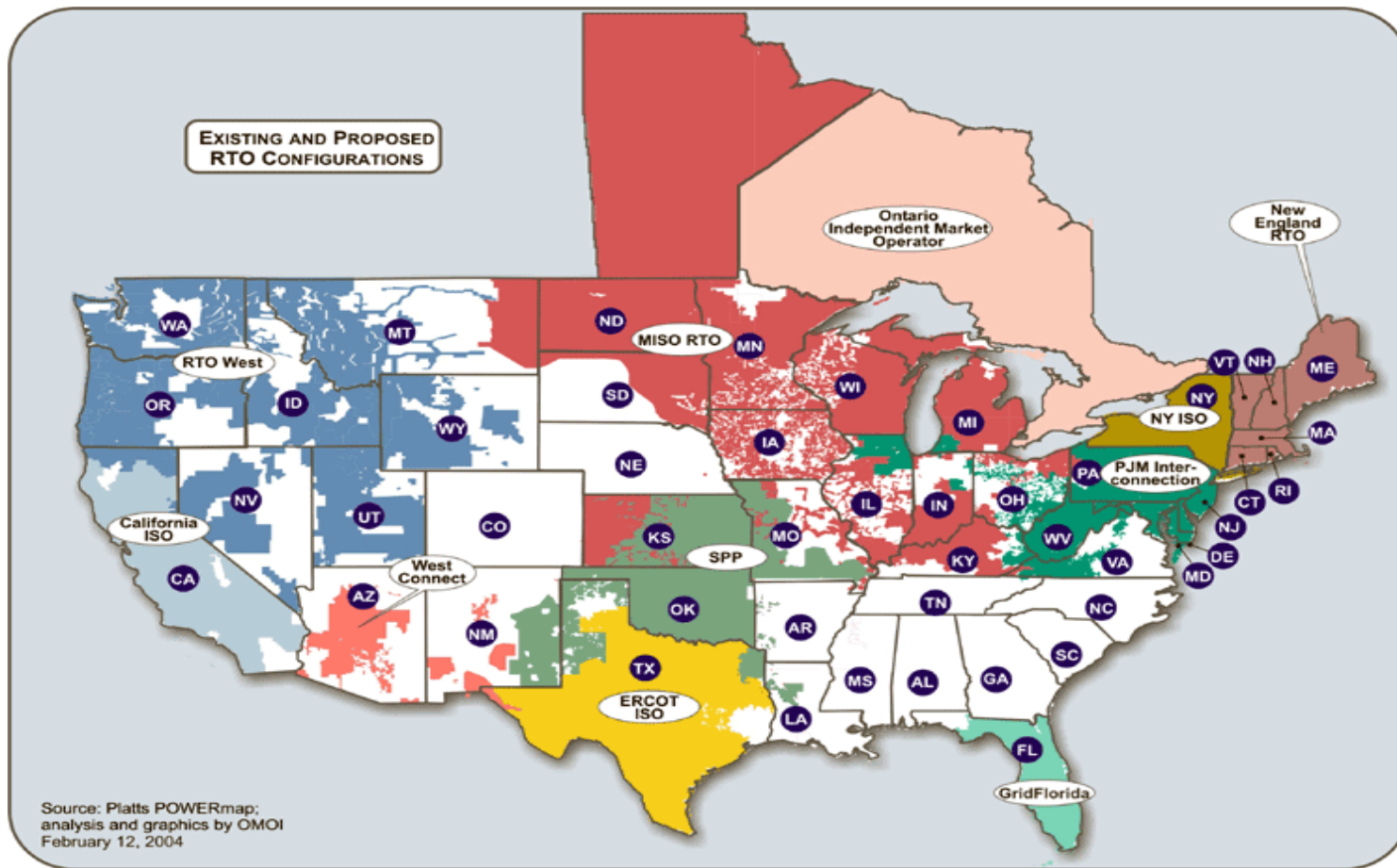


The North American Electric Reliability Corporation (NERC)

- The North American Electric Reliability Corporation (NERC) is the electric reliability standard-setting body under the jurisdiction of the U.S. Federal Energy Regulatory Commission (FERC)
- NERC is encouraging “comprehensive” planning for network capacity that will take into account potential for generation resources
- Member agencies of the Ohio Power Siting Board joined with our municipal and rural cooperatives in “Combined Comments” to FERC requesting that “comprehensive” planning include all these entities in the planning activities with the traditional vertically-integrated utility companies.



RTOs/ISOs and non-market areas in the US



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Looking for Deliverability Solutions for the “wholesale” Market

- Regional transmission organizations (RTOs), independent system operators (ISOs), and federal public hydropower producers in the Eastern Interconnection have opened a series of discussions for working together on a high voltage “overlay” network system across half of North America
- Network would improve deliverability – especially of renewable and alternative energy that many state governments now require.



Looking for Deliverability Solutions for the “wholesale” Market (cont’d):



This “overlay” plan also may include some direct current (DC) electric “pipelines” to carry wind energy from the Great Plains of the Midwest to customers on the East Coast--with reduced dependence on voltage support.