# The STATES, FERC, and MISO

## Regulation of Competitive Electricity Markets

NARUC Energy Regulatory Partnership Program

The Public Services Regulatory Commission of Armenia
and The Iowa Utilities Board


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# Regulation of Competitive Electricity Markets

- Regulatory Jurisdiction
  - IUB
  - The Federal Energy Regulatory Commission (FERC)
- Why Competition
- History of Promoting Competition
- The Midwest Independent System Operator (Midwest ISO)
- Market Monitoring
- Organization of MISO States (OMS)

# IUB – Retail Regulation

- Retail – sales to "end user"
- Electricity - siting (all) and rates (except consumer owned, merchant)
  - Includes Generation, Transmission (siting), Distribution, Service Issues, Safety
- Gas – permitting and rates

# FERC – Wholesale Regulation

**What**

- Wholesale – (Interstate) sale for resale
- Interstate water power generation facilities (dams)
- Interstate electric transmission rates & reliability
- Wholesale electricity sales
- "Backstop" electric transmission siting
- Wholesale gas sales
- Gas transmission line siting
- LNG facility siting
- International wholesale electricity, gas
- Does not assume control of grid

**How**

- Sets market rules through tariffs
- Controls RTOs and participants through tariffs, enforcement actions
- Monitors (at high level) wholesale prices
- Interacts with RTO / ISO market monitors
- Conducts confidential investigations
- Penalizes violations of tariff rules
- Grants or denies market based rate authority to generation owners, LSEs
- Rules on complaints filed by market participants, State Commissions, State consumer advocates and public
- Independent quasi-judicial agency
- Does monitor all direct real time RTO data

# Why Competition

- 1960's and 70's – period of high inflation, higher nominal interest rates and increasing electricity prices.
  - According to FERC, average residential electricity prices more than tripled in nominal terms, and increased by 25% after adjusting for general inflation. Average electricity prices for industrial customers more than quadrupled in nominal terms over the same period and increased 86% after adjusting for inflation.
- 1970's and 80's – bigger not better (price of each incremental unit of electric power exceeded the average cost); advances in generating technologies (combined cycle units/circulating fluidized bed boilers) provided economies of scale.
- PURPA – increased entry into wholesale power generation markets but traditional vertically integrated utilities still did not provide open access to third parties and favored their own generation
- Further, actions to deregulate airlines, railroads, trucks, and barges had led to lower prices, better service, and improved safety.

# History of Competition in Electricity Markets

- **The Energy Policy Act of 1992**
  - Effort to encourage development of wholesale electricity market
  - Eliminated constraints posed by discriminatory conduct by transmission owners (TOs)
- **FERC Order Nos. 888 and 889 (1996)**
  - Created Open Access Transmission Tariff (OATT)
  - Unbundled wholesale power services (G&T)
  - Independent System Operators (ISOs) Encouraged - utilities encouraged to re-organize and place control of transmission facilities with ISO
  - Created Open Access Same-time Information System (OASIS)
    - all public utilities establish or participate OASIS
    - Prescribed rules of conduct
  - Also, applied the open-access requirements to the transmission in interstate commerce of electricity to be sold at retail

# History of Competition in Electricity Markets

- **FERC Order 2000 (2000): RTO Development**
  - Encouraged formation and joining of RTOs
  - Defined RTO characteristics (independence, scope and configuration, operational authority)
  - Established Minimum Functions (tariff, congestion, flow, ancillary services, OASIS, market monitoring, planning and expansion, interregional coordination) decision-making, authority
- **FERC's Standard Market Design (2002) (ultimately superseded by WPMP)**
  - Establishment and operation of energy markets
  - Independent Market Monitor
  - Congestion Management (LMPs, FTRs)

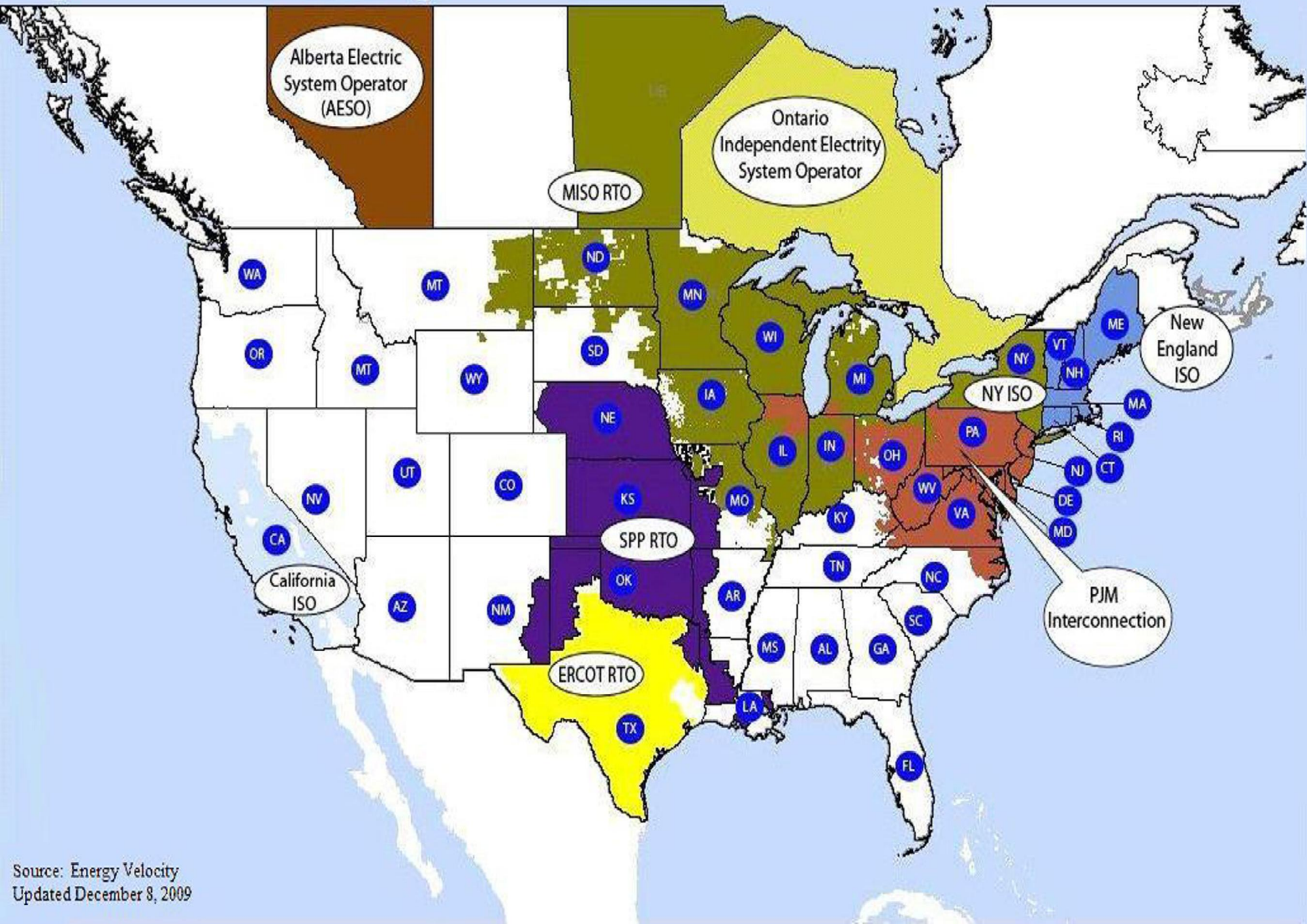
# OATT/OASIS

- OATT
  - Required all public utilities that own, control or operate facilities used for transmitting electric energy in interstate commerce to file open access non-discriminatory transmission tariffs that contain minimum terms and conditions of non-discriminatory service, and
  - Permits public utilities and transmitting utilities to seek recovery of legitimate, prudent and verifiable stranded costs.
- OATT Reform
  - September 16, 2005 – FERC sought further comments on whether to further reform OATT.
  - May 19, 2006 – FERC issues notice of proposed reforms to OATT in the areas of calculation of available transfer capability, transmission planning, and the terms and conditions of open access transmission service.
  - February 16, 2007 – FERC issues Order adopting certain reforms.

# OATT/OASIS

- OASIS - three basic provisions to ensure transmission customers have access to transmission information enabling them to obtain open access transmission service on a non-discriminatory basis
  - Standards of conduct – standards designed to ensure that a public utility's employees (or any of its affiliates' employees) engaged in transmission system operations function independently of the public utility's employees (or of any of its affiliates' employees) who are engaged in wholesale purchases and sales of electric energy in interstate commerce.
  - Create an OASIS - utilities are required to provide certain types of information on that electronic information system as to the status of their transmission systems and are required to do so in a uniform manner to open up the "black box" of utility transmission system information.
  - Standards and protocols established to ensure the OASIS system presents information in a consistent and uniform manner.

# Regional Transmission Organizations




Source: Energy Velocity
Updated December 8, 2009

# Midwest ISO Overview

**The Midwest ISO is an independent, non-profit 501(C)(4) organization. Serves as the reliability coordinator for the transmission of high voltage electricity via a security constrained economic dispatch across all or parts of 14 states and Manitoba.**

- Control centers in Carmel, Indiana and St. Paul, Minnesota

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- Reliability Operations since Dec. 15, 2001
- Tariff Administration and Scheduling Operations since February 1, 2002
- Energy Market Operations since April 1, 2005
- ASM Operations since January 6, 2009

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- Large footprint (~947,000 square miles)
- 133,000+ MW of generating capacity
- 97,000 miles of transmission lines
- Over $12 billion installed assets

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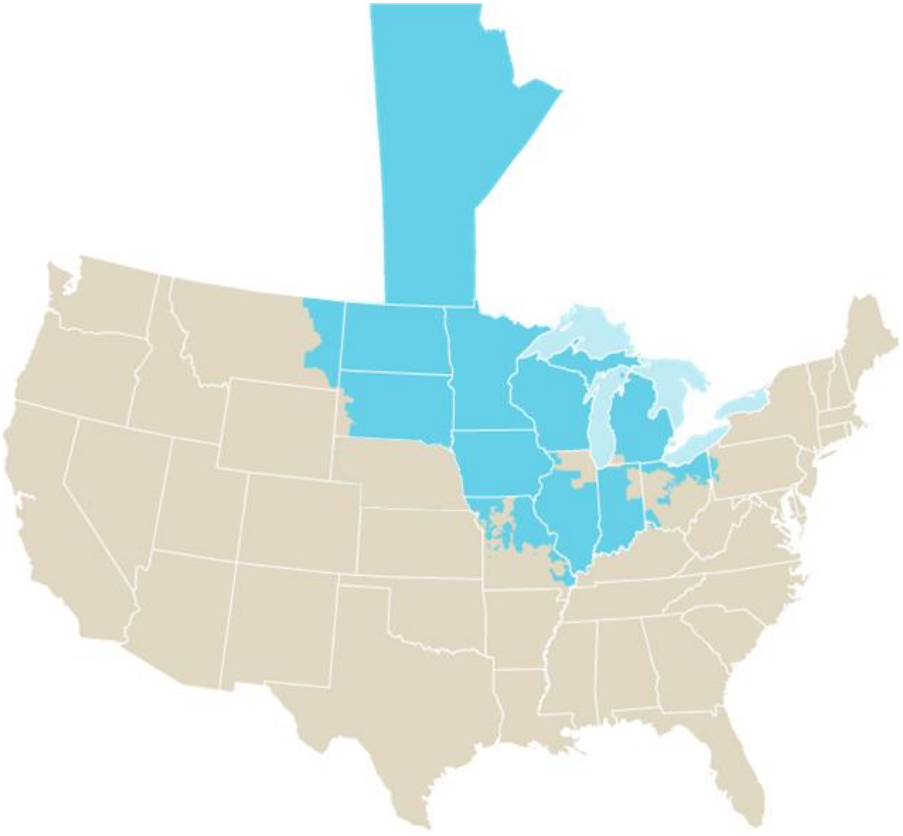
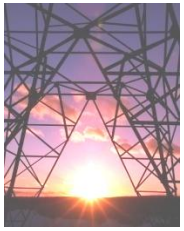
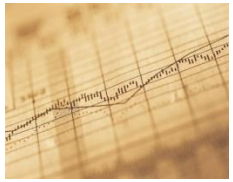
- Wholesale power transactions = $40+ billion (2008)
- Annual Budget = $250 million



**Midwest ISO's Reliability Footprint**

# The Midwest ISO's Role

| Midwest ISO Functions | | Benefits/Implications |
|---|---|---|
| • Provide Independent Transmission System Access |  | • All parties have equal and non-discriminatory access |
| • Deliver Improved Reliability Coordination |  | • Substantial regional reliability improvements |
| • Perform Efficient Market Operations |  | • Lower cost unit commitment, dispatch and congestion management |
| • Coordinate Regional Planning |  | • Integrated system planning |
| • Foster Platform for Wholesale Market Development |  | • Encourage infrastructure investment and facilitate regulatory initiatives |

# Midwest ISO

MISO Markets – the Energy and Operating Reserve Market consists of three components (Day Ahead Energy Market (LMPs), Real Time Energy Market, and Financial Transmission Rights Market (FTR)).

- Day Ahead Markets - utility demand is bid/offered into the market as well as generation availability. The scheduled demand is then met at a price that results from this economic dispatch model. This price is called the Local Marginal Price (LMP) and is comprised of three components; Energy Price, Congestion Charges, and Losses).
- Real Time Market - it is next to impossible to exactly match the day ahead schedule with the actual requirements of the demand. To meet this need there is a Real Time Market. This is the continuous process of balancing generation and demand at a least cost while recognizing current operating conditions.
  - Closes 30 minutes prior to the hour.
  - Prices are updated every 5 minutes and generator setpoint instructions are sent every 4 seconds.
- Financial Transmission Rights - this process provides a financial mechanism for market participants to manage the risk of congestion.

# Market Monitoring

## FERC's Office of Market Oversight and Investigation (OMOI)

- "charged with being 'the Cop on the Beat' overseeing and assessing the operations of wholesale electricity and natural gas markets and enforcing Commission rules and regulations." "... OMOI analyzes market data, measures market performance, recommends market improvements and prepares reports detailing the status of the electricity and natural gas markets."
  - Director Reports to Commission
  - Provides Guidance to Market Monitoring Units (MMU) (Independent Market Monitor (IMM))

# Market Monitoring

## Goals of Market Monitoring

- In deregulating wholesale markets, FERC has relied on market monitoring and mitigation to address market power concerns
- Consistent with the Commission's SMD requirements, the Independent Market Monitor (IMM) identifies:
  - Flaws in market rules that create inefficiencies or gaming opportunities;
  - Efficiency improvements; and
  - Market power abuses
- Market efficiency and market power generally receive equal monitoring attention

## Independence of the Market Monitor

- MISO IMM reports to the FERC and MISO's Board of Directors
- Independence allows the IMM to examine the RTOs operations

# OMS

- NGA and FERC called regional multi-state advisory committees
- OMS Formed in 2003
  - Coordinated participation in MISO's stakeholder process
  - Combined input to FERC (when possible)
  - Facilitate participation in MISO stakeholder meetings
  - Share information and analysis
- Market Monitoring
  - States do not have resources to perform IMM work
  - IMM meets with OMS quarterly to exchange information
  - States assist in remedying issues identified by IMM
  - Improve incentives for regulated entities and overall performance of the market

# Questions?

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