

Resource Adequacy in Ameren Illinois Footprint

November 19, 2015

Why We Are Here Today

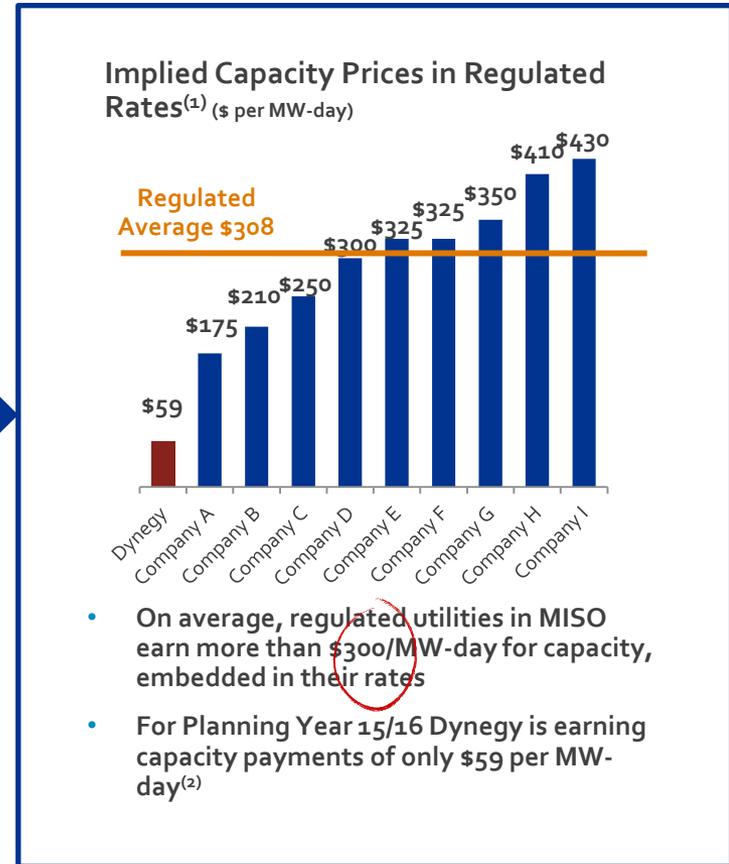
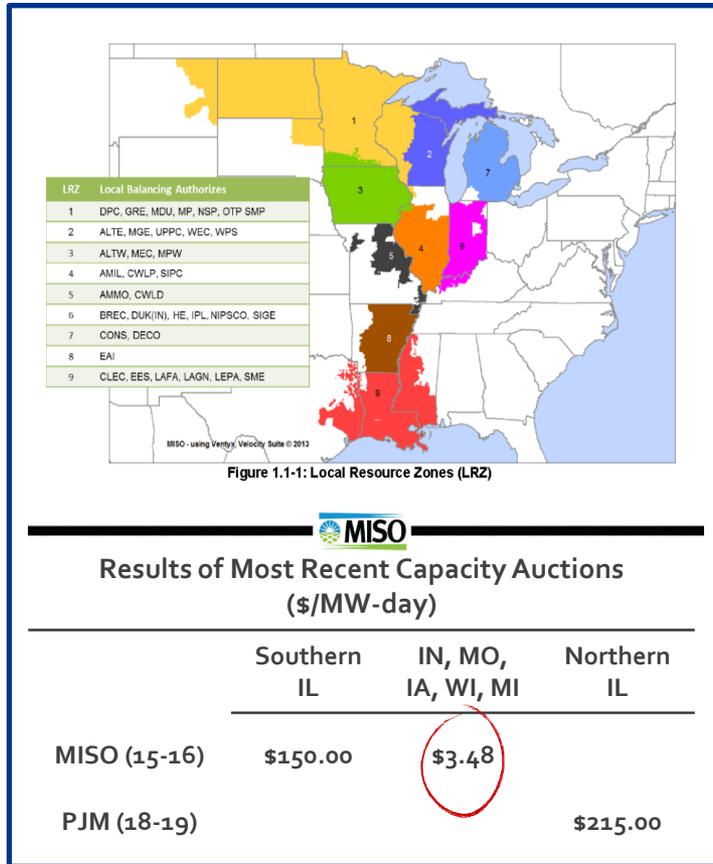
- 1). Generation **is disappearing and will continue to disappear** from Zone 4 - Dynegy has already announced the planned retirement of the Wood River power station in Alton, which was projected to lose upwards of \$100 million over the next 5 years;
- 2). The current capacity construct in MISO results in the states surrounding Southern Illinois (MISO Zone 4) **distorting** the MISO capacity market, putting Illinois jobs and commerce at risk;
- 3). MISO's Southern Illinois zone is the only competitive zone of the fifteen MISO states and does not belong in MISO.

Resource Adequacy and Capacity Market Comparison

Market Results

vs.

Regulated Rates



Unlike IPPs, vertically-integrated utilities do not rely on the MISO market for their capacity revenues.

⁽¹⁾ Calculated through rate base charges for maintenance, depreciation and capital, Source: publicly available filings; ⁽²⁾ Weighted average capacity price earned by Dynegy in MISO including auction, bilateral sales and generation that did not clear the auction (auction revenues + bilateral sales/all Dynegy MW in MISO footprint)

In Summary

Problem

- Illinois is the only truly competitive state within MISO
- The vertically-integrated utilities in neighboring states don't rely on the market to recover costs, fund investment, etc.
- As a result, wholesale capacity prices are artificially suppressed/depressed for Southern Illinois

Why it Matters

- Revenue likely will not be sufficient to allow for further investments in plants, including those necessary to meet the litany of environmental regulations around coal ash, water and Clean Power Plan
- Otherwise competitive generation in Southern Illinois will retire if unable to receive appropriate levels of compensation
- These retirements will result in loss of tax revenue and jobs
- States all around southern Illinois will build new generation at the expense of rate payers and economic development in Illinois

Solutions

- MISO comprehensively redesigns the capacity market for Southern Illinois
- Southern Illinois joins PJM
- Illinois procures needed capacity through the IPA

While price suppression may seem to benefit consumers in the short term, it will have very adverse long term effects, including plant retirements, which in turn will raise prices, harm Illinois' economy and and threaten reliability

Potential Solutions

- **MISO comprehensively redesigns the capacity market for southern Illinois to promote efficient investment and retirement decisions, by implementing a sloped demand curve, supplier and consumer protections, and a forward commitment period of three years**
 - MISO has the authority under its tariff to do so
 - Currently the design for northern Illinois/PJM
 - A sloped demand curve will appropriately value excess generation
 - Sloped demand curve has been recommended by the MISO Independent Market Monitor
- **Illinois implements a robust long-term contracting plan through the Illinois Power Agency**
 - Would require new legislation
 - Would need to value excess generation
- **Southern Illinois moves to PJM, bringing Illinois under a single ISO**
 - Current IL law permits Ameren to decide

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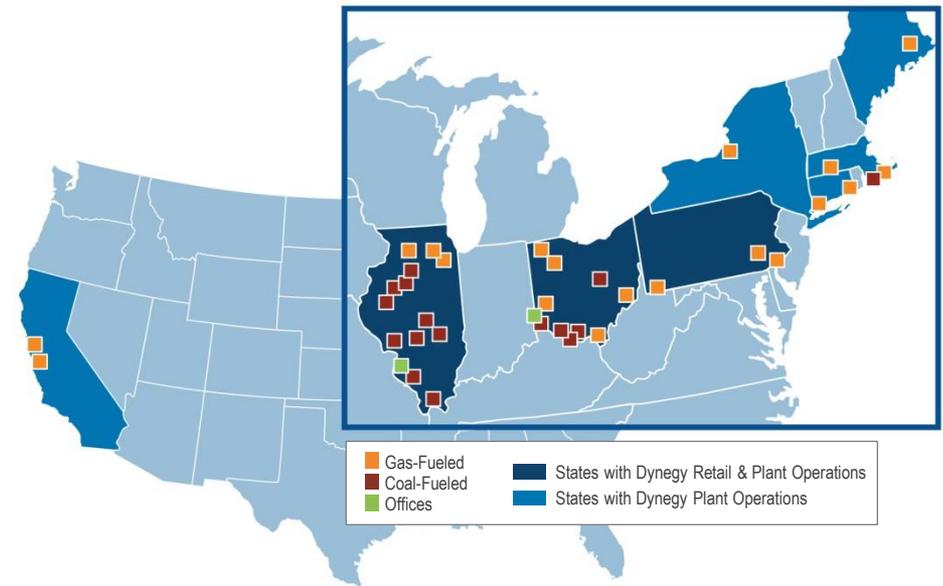
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Appendix

Dynegy's Geographic and Fuel Diversity

Dynegy Quick Facts

- **Business:** Dynegy is an independent power producer, with no captive customers or ratepayers
- **Footprint:** Located in 8 states (California, Connecticut, Illinois, Ohio, Massachusetts, Maine, New York and Pennsylvania)
- **Generating Capacity:** 26 GW, capable of supplying more than 21 million households
- **Power Plants:** 35
- **Retail customers:** 830,000 residential customers and 23,000 commercial, industrial and municipal customers served through our Dynegy Energy Services and Homefield Energy companies
- **Annual Revenues:** \$5.5 billion approx.
- **Employees:** 2,730 professionals, including approximately 1,380 union members
- **NYSE listed:** DYN



CAISO

- **Moss Landing Energy Facility**
Moss Landing, CA
- **Oakland Energy Facility**
Oakland, CA

MISO (IPH)

- **Coffeen Power Station**
Montgomery County, IL
- **Duck Creek Power Station**
Canton, IL
- **Edwards Power Station**
Bartonville, IL
- **Joppa Power Station**
Joppa, IL
- **Newton Power Station**
Jasper County, IL

MISO (CoalCo)

- **Baldwin Energy Complex**
Baldwin, IL
- **Hennepin Power Station**
Hennepin, IL
- **Havana Power Station**
Havana, IL
- **Wood River Power Station**
Alton, IL

PJM

- **Conesville Power Station**
Conesville, OH
- **Dicks Creek Energy Facility**
Monroe, OH
- **Elwood Energy Facility**
Elwood, IL
- **Fayette Energy Facility**
Masontown, PA
- **Hanging Rock Energy Facility**
Ironton, OH
- **Kendall Energy Facility**
Minooka, IL
- **Killen Power Station**
Manchester, OH
- **Kincaid Power Station**
Kincaid, IL
- **Lee Energy Facility**
Dixon, IL
- **Liberty Energy Facility**
Eddystone, PA
- **Miami Fort (CT) Power Station**
North Bend, OH
- **Miami Fort Power Station**
North Bend, OH
- **Ontelaunee Energy Facility**
Reading, PA
- **Richland Energy Facility**
Defiance, OH
- **Stryker Energy Facility**
Stryker, OH

- **Stuart Power Station**
Aberdeen, OH
- **Washington Energy Facility**
Beverly, OH
- **Zimmer Power Station**
Moscow, OH

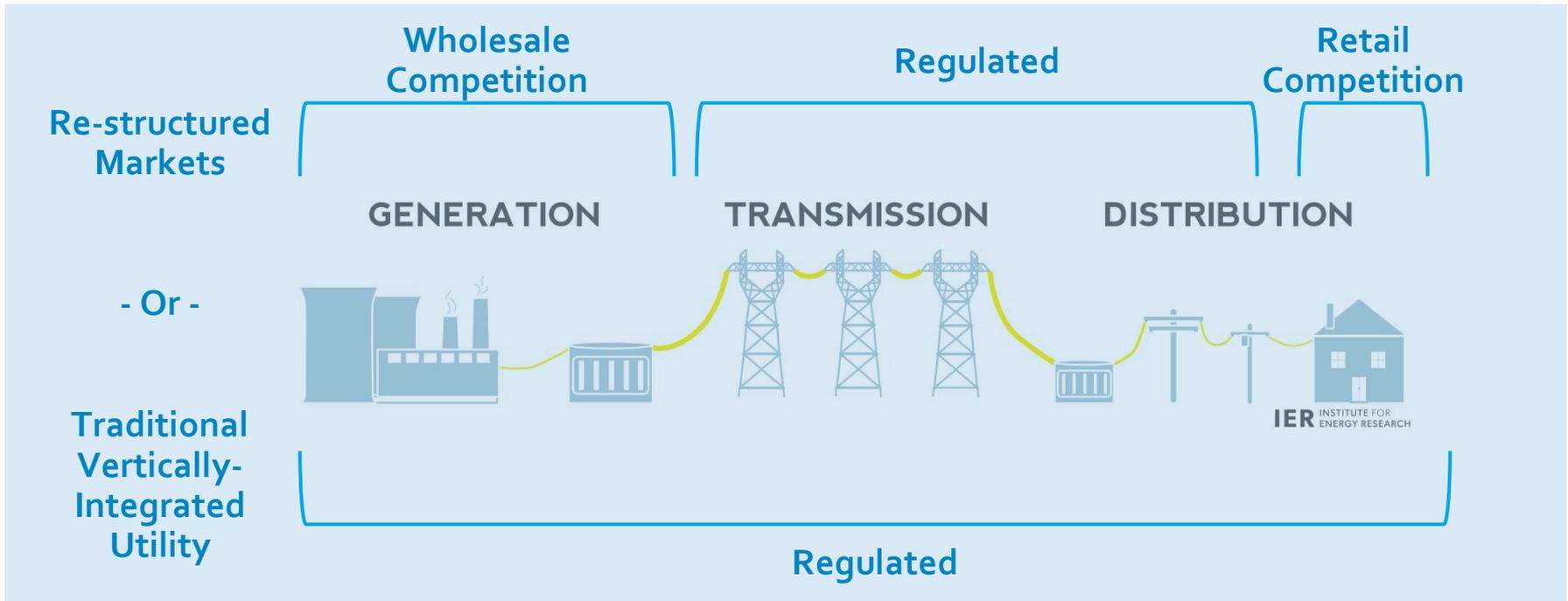
ISO-NE/NYISO

- **Brayton Point Power Station**
Somerset, MA
- **Casco Bay Energy Facility**
Veazie, ME
- **Dighton Energy Facility**
Dighton, MA
- **Independence Energy Facility**
Oswego, NY
- **Lake Road Energy Facility**
Dayville, CT
- **Masspower Energy Facility**
Indian Orchard, MA
- **Milford Energy Facility**
Milford, CT

Offices

- Houston, TX
- Collinsville, IL
- Cincinnati, OH

Background : Markets vs. Traditional Cost-of-Service

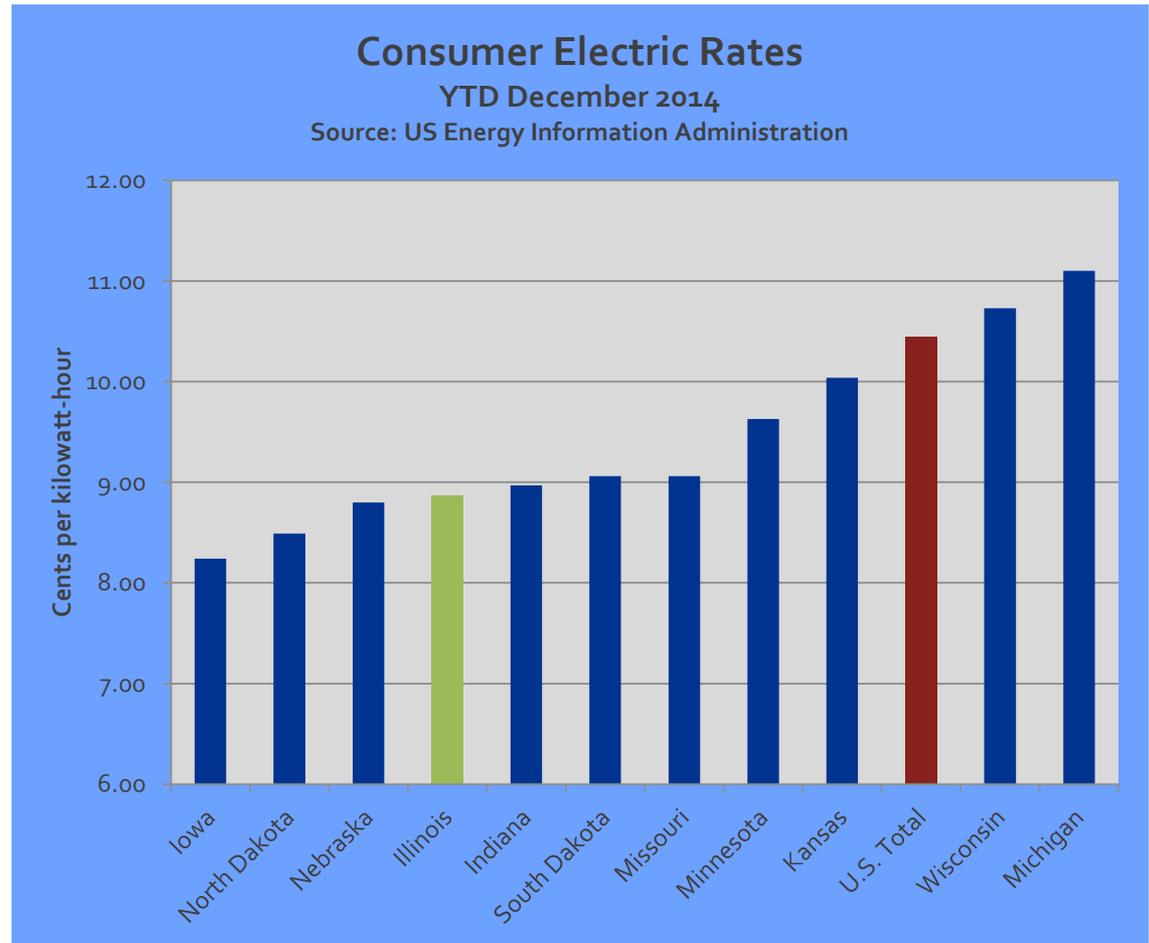


- Under a traditional, cost-of-service electric utility model, the utilities demonstrate their costs to the regulatory body, which then approves their rates
- In comparison, under a market-based approach, the utilities retain ownership of the transmission and distribution system, but suppliers compete to generate and sell the electricity
 - Wholesale Competition: Generators, also known as Independent Power Producers (IPPs), compete to sell electricity into the power grid
 - Retail Competition: Alternate Retail Electric Suppliers, also known as ARES, compete to sell electricity to end-use customers

Benefits of Competition

Power Facts:

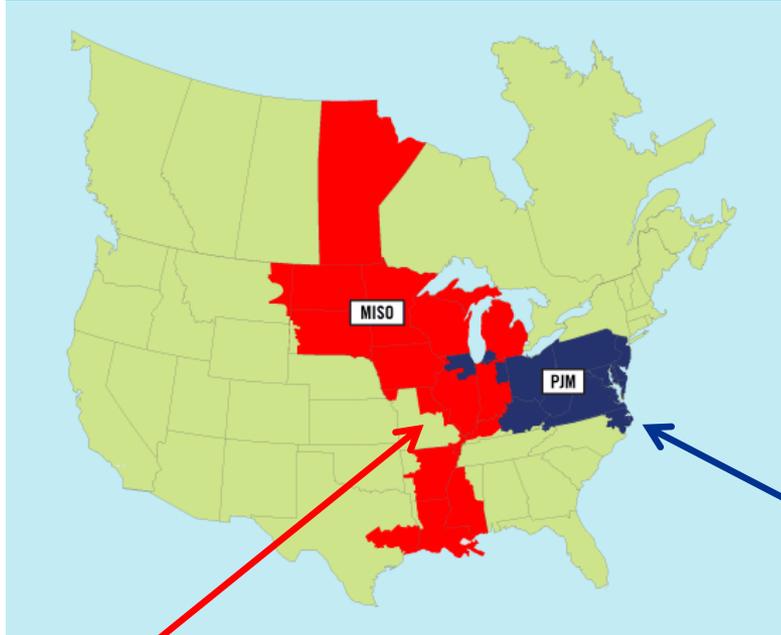
- Competition lowers rates for consumers - from 1997-2014, the all-sector electric rates have decreased 1.3% across the restructured states, while rates increased 9.8% across non-restructured states ⁽¹⁾
- Competition provides consumers with choices and options
- Competition shifts investment risk from captive utility customers to private investors



Competition has allowed Illinois to realize some of the lowest electric rates across MISO

Wholesale Markets

Illinois is bifurcated between two wholesale markets – PJM and MISO



ISOs/RTOs operate the wholesale markets across North America. Two-thirds of the electric consumers in the U.S. and over half in Canada are served by ISOs/RTOs ⁽¹⁾

The Illinois Electric Service Customer Choice and Rate Relief Law of 1997 allowed utilities to choose which ISO they would join:

- Commonwealth Edison selected PJM
- Ameren selected MISO

PJM is predominantly re-structured competitive states

MISO is predominantly vertically-integrated states (14 of 15 are vertically-integrated, except for Illinois) ⁽²⁾

(1) <http://www.isorto.org/about/default>

(2) Michigan has limited competition – the wholesale side is mostly utilities, and the retail side is limited to 10% choice

How The Markets Compare

	PJM	ISO-NE	NYISO	MISO	ERCOT	CAISO
Scarcity Pricing	Green	Green	Green	Green	Green	Green
Capacity Market	Green	Green	Green	Green	Red	Red
Capacity Market Design	Green	Green	Yellow	Red	Red	Red
Stable Market Rules	Green	Green	Green	Yellow	Green	Red
Performance Incentives	Green	Green	Red	Red	Red	Red

Both PJM (Northern Illinois) and ISO-NE (New England) are leading the way with market designs that send appropriate price signals to address system stresses

How the Wholesale Markets Work to Achieve Reliability

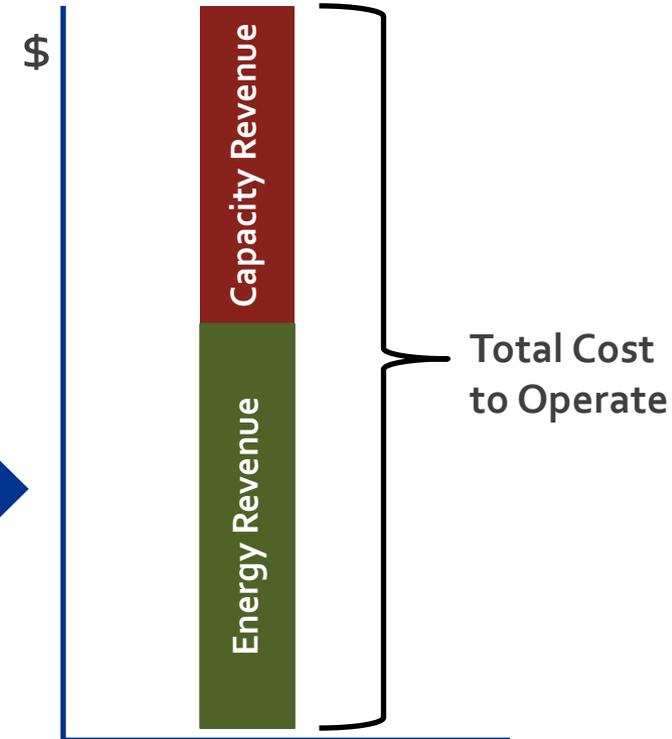
There are two primary metrics for power system reliability:

1. Resource Adequacy – Having enough resources (sometimes called “steel in the ground”) to meet future customer demand
2. Transmission Security – Operating those resources day-in and day-out to meet actual customer demand

<u>Need</u>	<u>Metric</u>	<u>Satisfied Via</u>
Having enough resources to meet future demand	Resource Adequacy	Capacity Market
Operating those resources reliably day-in-and-day-out	Transmission Security	Energy Market



Generator Compensation



Generators rely on both the capacity and energy market for the revenue required to operate and make investment

MISO and the Illinois Market

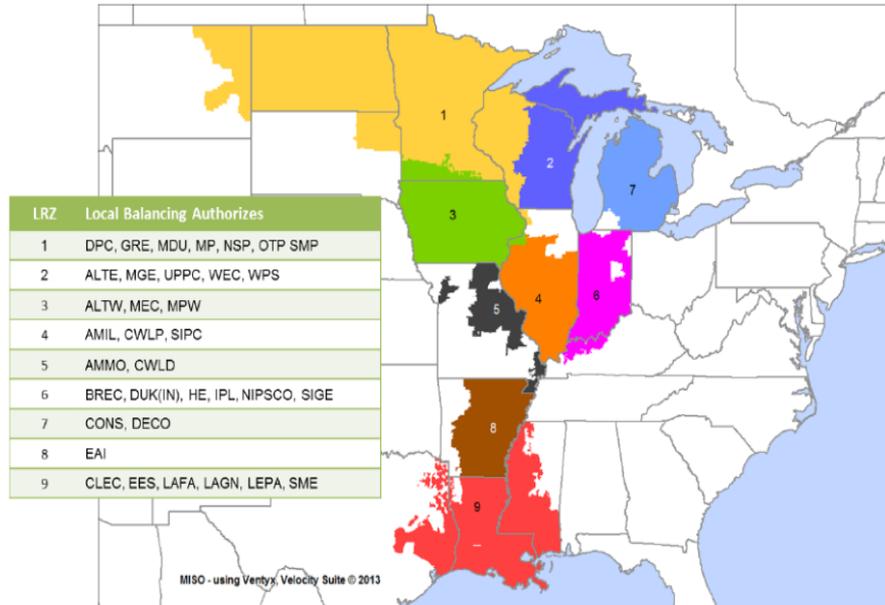


Figure 1.1-1: Local Resource Zones (LRZ)



- Resource Adequacy – the measure of having enough electric supply to meet future demand – is MISO's responsibility except where states have retained that jurisdiction
- This means that MISO has jurisdiction over resource adequacy for Southern Illinois (as PJM does for Northern Illinois)
- Resource Adequacy is met through capacity markets
- But in Southern Illinois the market outcomes are distorted by the 14 other vertically-integrated states, as illustrated on the next slide ...

The vertically-integrated utilities (and their states) in MISO don't rely on the market for revenues and as such the market is disjointed and distorted

Responsibility for Resource Adequacy

MISO Tariff:

This Module E-1 provides mandatory requirements to be met by the Transmission Provider (MISO), Market Participants serving Load in the Transmission Provider Region or serving Load on behalf of a Load Serving Entity (LSE), or other Market Participants, to ensure access to deliverable, reliable and adequate Planning Resources to meet Coincident Peak Demand requirements on the Transmission System. These requirements recognize and are complementary to the reliability mechanisms of the states and the Regional Entities (RE) within the Transmission Provider Region. Nothing in this Module E-1 affects existing state jurisdiction over the construction of additional capacity or the authority of states to set and enforce compliance with standards for adequacy. The Resource Adequacy Requirements (RAR) in this Module E-1 are not intended to and shall not in any way affect state actions over entities under the states' jurisdiction. To the extent that an LSE's Coincident Peak Demand is physically located within the Transmission Provider's Balancing Authority Area but is pseudo-tied out of the Midwest ISO Balancing Authority Area pursuant to the Transmission Provider's Business Practices Manuals (BPM), such Coincident Peak Demand is not subject to the RAR provisions if such Coincident Peak Demand is subject to another Balancing Authority Area's resource adequacy requirements. To accomplish these reliability requirements, Module E-1 includes provisions for: establishing Local Resource Zones and limits (i.e., Capacity Import Limits (CIL) and Capacity Export Limits (CEL)); determining the annual Planning Reserve Margin; annual Coincident Peak Demand forecasting; qualifying and quantifying Planning Resources; participation of Demand and Planning Resources in a Planning Resource Auction process; settlement provisions; and Planning Resource performance requirements.

PJM Tariff:

1.1 Overview of the PJM Capacity Market

The PJM Capacity Market is designed to ensure the adequate availability of necessary resources that can be called upon to ensure the reliability of the grid. In PJM, the capacity market structure provides transparent information to enable forward capacity market signals to support infrastructure investment. The capacity market design provides a forward mechanism to evaluate the ongoing reliability requirements in a transparent way to provide opportunity for generation, demand response, energy efficiency, price responsive demand and transmission solutions.

In other words, PJM has the responsibility for resource adequacy across all its states.

In other words, MISO has the responsibility for resource adequacy (where the states don't).