



Understanding RTOs

What Regional Transmission Organizations Mean for Arkansas

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OVERVIEW

Recently, Entergy Arkansas, Inc. announced its plan to join a regional transmission organization (RTO) when it exits the System Agreement in December 2013. Media coverage of this announcement and discussion at the Arkansas Public Service Commission has raised the visibility of RTOs among the general public. Over the next several years, Arkansans are likely to hear more about this topic. This issue brief reviews the background of RTOs and summarizes the current RTO structure in the United States.

HISTORY OF RTOs

In the early days of electric utilities, independent operations would often band together to form a larger company and take advantage of shared resources. Over time, these companies were able to construct larger generation facilities, enhance transmission, and offer electricity to un-served areas. As the needs of customers grew and changed, utility companies evolved to meet new demands and plan for future changes.

Regional Transmission Organizations were initially established as Independent System Operators (ISO) in response to a growing number of independent, non-utility, electricity generators that began popping up across the country. In order to provide these generators with equal access to the transmission grid, the FERC suggested utilities and generators band together under an ISO. This operator would run the transmission and exchange of energy across the grid.

The Federal Energy Regulatory Commission (FERC), upon viewing the success of ISO's, took additional measures to ensure that members had non-discriminatory access to their combined assets and encouraged the voluntary formation of regional transmission organizations. These RTO's would coordinate and operate electrical grids on a regional basis throughout North America (including Canada). Additionally, RTO's would ensure utility and co-op members provide adequate infrastructure, balanced market rules, and market monitoring.

In response to the FERC's order, utilities across the country, including some in the South, began working together to form regional transmission organizations. Although several successful RTO's resulted from the FERC's order, and still exist today, a number of others never came to fruition. The failure to establish

these RTO's is attributed to local officials who inhibited the process because they feared these organizations would increase costs for transmission and administration, and lead to higher rates for customers. One such failed attempt to establish an RTO took place in 2001 by a group of southeastern U.S. utilities, including Arkansas. The utilities ended their efforts to form the SeTrans Regional Transmission Organization when they realized it would be highly unlikely they could gain consensus support and acceptance for the RTO from state and federal agencies.

ADVANTAGES OF RTOs

Membership in an RTO presents numerous advantages for a utility and its customers, including efficiency and reliability. RTOs help their members analyze and plan transmission upgrades and the construction of new facilities. Because an RTO has the ability to plan regional transmission on a larger scale than a single utility company, it makes electrical distribution more efficient by building transmission infrastructure for all customers in a region.

RTO membership also leads to significant cost benefits for utilities' customers, resulting from the geographic and fuel diversity that exists within a large-scale RTO such as the Midwest Independent System Operator (MISO). Many RTOs span across multiple states (e.g. MISO, PJM Interconnection), or a large geographic region (e.g. the California Independent System Operator), and usually include a variety of climates and fuel sources. When an RTO's service area is large enough to include climates that experience seasonal peak energy usage during different times of the year (i.e. cold winters in the North and warm summers in the South), the generation assets are distributed more efficiently, creating greater reliability and dispatch efficiency. Additionally, when an RTO has a surplus of generating capacity, supply and demand dictates competitive energy prices for the ratepayers of its member utilities.

RTOs also offer members a variety of products and services to ensure that individual utilities can take advantage of the best prices.

Day-Ahead Markets

Some RTO's in the United States are equipped with a more advanced structure for ensuring that member-utilities are able to economically meet the energy demands of their customers. These structures are known as Day-Ahead (or Day-2) Markets. The Day-Ahead Market allows utilities to anticipate their energy needs for the following day and utilize a competitive bidding system to acquire required energy in advance. This means that ratepayers are assured the best possible price for energy on a day-to-day basis.

The Day Ahead Market is the latest development offered by RTO's. Each day, fuel generators independently offer power by the hour into the following day's market, along with their request for bids to meet their hourly load forecast¹. All the offers from all the market participants are then stacked for each hour in order of cost and a clearing price is established². The entire day-ahead market is cleared hourly, and all generators are paid the price needed to serve the market load for that hour and for that

¹ How the Midwest Independent System Operator Day 2 Market Works.

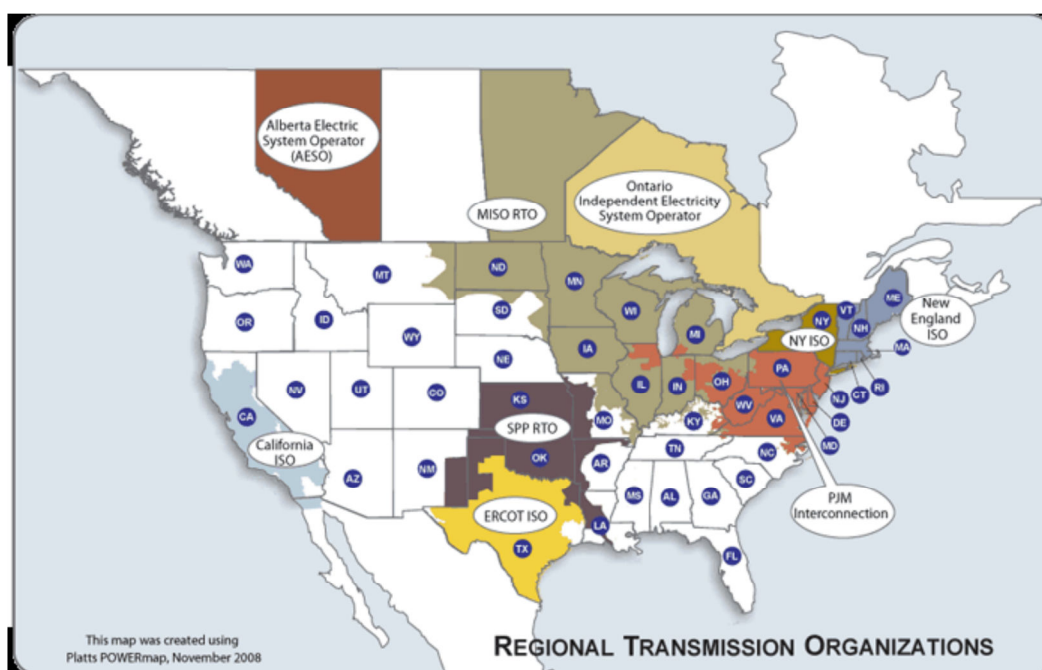
<http://talkbusiness.net/assets/files/Schedin-TheSecondDayMISOMarketHandout.pdf>

² Ibid

location, regardless of what it actually costs a generator to run³. Similarly, each utility must bid its hourly load into the market and pay the hourly market clearing price for fulfilling its energy needs⁴.

CURRENT RTOS

There are currently seven RTOs and ISOs operating in the United States. According to the ISO/RTO Council, these seven organizations serve two-thirds of electricity consumers in the United States.⁵



- New York Independent System Operator (NYISO) – New York State
- ISO New England, Inc. (ISO-NE) – Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
- Midwest Independent Transmission System Operator, Inc. (MISO) – Wisconsin and portions of Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Missouri, Montana, North Dakota, Ohio, Pennsylvania and South Dakota
- Electric Reliability Council of Texas (ERCOT) – Texas
- Southwest Power Pool, Inc. (SPP) – Kansas, Oklahoma and portions of Arkansas, Louisiana, Missouri, Nebraska, New Mexico and Texas
- California Independent System Operator Corporation (CAISO) – California
- PJM Interconnection, L.L.C. (PJM) – Delaware, Maryland, New Jersey, Virginia, Washington DC, West Virginia and portions of Illinois, Indiana, Kentucky, Michigan, North Carolina, Ohio, Pennsylvania and Tennessee

CONCLUSION

³ Ibid

⁴ Ibid

⁵ ISO/RTO Council website. www.isorto.org

Regional Transmission Organizations can offer many advantages for utilities, independent power producers, and utility customers. From more efficient dispatch of electricity to enhanced reliability and improved planning, RTOs have shown their benefits over the past decade. With a wider footprint, more diversity of generation and well-developed markets, RTOs ensure that individual utilities can take advantage of the best prices and best planning processes. For many utilities in Arkansas, and elsewhere, RTO membership is a proven commodity that delivers value to the company and for customers.

About Progress Arkansas: Established in October 2008 under the leadership of Bob Lamb who serves as voluntary chairman, Progress Arkansas is a coalition of business and community-based leaders dedicated to moving Arkansas forward. Our mission is to build consensus and support for economic energy and environmental policies that will support growth and prosperity for the State of Arkansas. Visit Progress Arkansas on the web at www.progressarkansas.com