

Chicago Fed Letter

Midwest infrastructure: Shaping electricity policy

by Richard Mattoon, senior economist

A recent Chicago Fed conference on electricity policy highlighted the importance of investment in generation and transmission capability. Furthermore, moving toward a less regulated and more market-oriented system will require the coordinated development of a regional transmission infrastructure. Developing or adapting institutions to guide this regional approach is a clear challenge to policymakers.

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On January 17, 2002, 150 participants from business, government, and academia gathered at the Federal Reserve Bank of Chicago to discuss the status and prospects of electricity policy in the Midwest. This conference was the first part of a Chicago Fed initiative to study the infrastructure of the Midwest economy. The program focused on policy issues that will require multi-state regional cooperation. Federal, state, and industry representatives provided perspectives on how to create the proper regulatory environment to encourage needed investment in generation and transmission facilities.

In his opening address, Michael H. Moskow, president and chief executive officer of the Federal Reserve Bank of Chicago, underlined the importance of electricity policy in promoting the health of the region's economy. Moskow noted that there are few things as basic to an industrial- and information-based economy as the terms on which we acquire our electric power. However, he added, many analysts feel that an uncertain regulatory climate and volatile financial conditions may be discouraging needed investment in basic electricity infrastructure. In particular, Moskow noted that promoting an efficient electricity grid and the movement toward a less-regulated and

more market-oriented system requires the coordinated development of regional infrastructure that addresses interstate transmission and interconnection. Developing or adapting institutions to guide this regional approach is a clear challenge to electricity policymakers.

Next, Robert Dixon, deputy assistant secretary for the U.S. Department of Energy, suggested that the energy industry will need to make significant capital investments in the next ten to 20 years to replace aging infrastructure and meet rising demand. Given that these investments are in long-lived capital assets, it is critical that the best technology choices are made to ensure that the most efficient, clean, and reliable electricity is produced. Although most electricity policy decisions are made at the state level, Dixon argued that the Department of Energy has a lead responsibility for developing a national energy plan. An important element of the plan favors revising federal electricity law to reflect changes in the marketplace. In particular, this would require revisions to the Federal Power Act and the Public Utility Holding Company Act, both originally enacted in 1935.

Dixon identified the following core federal policy issues relating to electricity: regulation of interstate commerce,

electricity transmission, ensuring reliability, protecting against the use of market power, consumer protection, defining the role of federal electric utilities, reforming existing electricity laws, and defining regulatory jurisdiction.

Developing emissions policies

The next presenter, Brian McLean, director of the Clean Air Markets Division of the U.S. Environmental Protection Agency (EPA), focused on the development of emissions policies. The generation of electricity is a major source of such air emissions as sulfur dioxide (SO₂), nitrogen oxides (Nox), and mercury. Current policies favor individual strategies for addressing each type of pollutant; however, the EPA is developing new policies that favor a more comprehensive multi-pollutant strategy. This could help reduce costs by consolidating regulations, increasing flexibility for meeting standards, and creating a predictable regulatory outlook for emissions sources.

Adopting market-based incentives is an important part of moving to a multi-pollutant strategy whose goal is to cut SO₂, Nox, and mercury emissions from power generators by 70% to 80%. In particular, this means establishing a national emissions trading and banking program for these pollutants. The EPA has had great success with the acid rain trading program, as evidenced by a 50% reduction in SO₂ emissions from 1980 levels with a compliance rate of nearly 100%. Compliance costs for the acid rain program have been low, and the program has created incentives for innovation. According to EPA estimates, a multi-pollutant program would lead to savings of \$3 billion per year by 2020 over the current emissions program.

Restructuring the industry

The next conference panel provided a perspective on electricity restructuring from the point of view of the power industry. John Rowe, president and co-chief executive officer of Exelon Corporation endorsed the continuing efforts to increase competition and restructuring in electricity markets, despite the challenges raised by the California

energy crisis and the bankruptcy of Enron. As evidence that restructuring has made progress, Rowe noted that between 1999 and 2001 more than 65,000 megawatts of new generating capacity was built. He also cited the development of wholesale power markets. Rowe argued that utilities, customers, and competitors do not want a return to the days of monopoly utilities and urged continued progress on the regulatory front. Utilities need to know what is expected of them in order to develop their strategic business plans. In particular, Rowe urged the Federal Energy Regulatory Commission (FERC) to continue its efforts to help establish regional transmission organizations (RTOs) in order to ensure smooth and fair access to the transmission grid. This is critical to the healthy development of competitive markets.

Next, Karl McDermott, vice president of National Economic Research Associates and formerly on the Illinois Commerce Commission, observed that there is a mismatch between power industry objectives and the regulatory paradigm. The regulatory model still favors an insular approach, while what is needed is a more multi-state strategy, which recognizes that electricity is an industry of interdependence. McDermott argued that two policies would help to align industry and regulatory goals—using performance-based regulation that provides benchmarks and incentives for electricity provision and increasing the use of real-time metering in order to send price signals to customers and get the demand side of the electricity market working better. He concluded by suggesting that FERC should take responsibility for infrastructure siting decisions pertaining to transmission. This would promote a better planned national grid and reduce the local opposition that often accompanies transmission projects where the primary benefits flow to another state.

The final presenter on this panel, Robert Schainker, product manager for the Electric Power Research Institute, emphasized that investment in electricity infrastructure is falling behind. On an annual basis, demand growth exceeds

generation expansion by 30%. Transmission expansion is less than half the rate needed to meet forecast demand growth. As a result, electricity generation capacity margins have fallen from 25% to less than 10% over the last two decades. This has also led to increased transmission congestion, jeopardizing the ability to execute wholesale power contracts. Changes in the electricity infrastructure are also needed to improve reliability. Schainker noted that the costs of electricity disruptions are very high for a digitized economy. He argued in favor of a national electricity policy that would include national reliability and operating standards and eliminate transmission bottlenecks that prevent the seamless movement of power from electricity generation centers to electricity load centers. Schainker proposed the federal highway system, which relies on government-guaranteed loans, as a model for financing the national grid.

Focus on the Midwest

In his keynote address to the conference, Patrick Wood, chairman of FERC, emphasized the regulator's continuing desire to promote the development of an improved national transmission grid through the formation of RTOs. Wood said he was optimistic about recent developments in the Midwest, and suggested that this region would be the focus for electricity policy. In particular, he noted FERC's recent approval of the Midwest ISO (MISO) as the regional grid operator, which aims to promote fair and smooth access to the electricity grid and bolster the development of the wholesale market.

Wood stated that FERC is not looking to over-run state authority but, rather, to actively partner with state utility commissions in promoting policies that support local customization. FERC aims to optimize the performance of the nation's electricity grid and believes that this can only be accomplished through a more regional approach. In carrying out this policy, FERC is setting the standards for grid performance and establishing operating targets. However, FERC is not attempting to suggest what type of RTO structure is best for meeting

these standards; any number of organizational structures or business plans are permissible as long as the standards are met.

Wood also noted that FERC has recently revised its test for determining market power by electricity providers. Suppliers are only allowed to charge market rates for electricity if they demonstrate that they do not have market power. He acknowledged that this new market power test is controversial and has already led to the removal of market pricing authority for three large utilities. Wood suggested that protecting the wholesale market from market power abuse is a fundamental function of FERC.

The afternoon session got underway with a presentation by John Catlin, director of client relations for MISO, which was approved by FERC as the nation's first RTO on December 19, 2001. MISO's current geographic footprint includes 15 states and one Canadian province, consisting of more than \$9 billion in transmission assets. Catlin characterized MISO as a confederation of transmission and non-transmission owning members that is actively interested in partnering with other organizations. In addition to merging with the Southwest Power Pool, MISO is investigating an agreement with PJM Interconnections and has developed a memorandum of understanding with the federal Tennessee Valley Authority.

Catlin noted that as of December 15, 2001, MISO's operations included security and maintenance coordination, operations and long-term planning, market monitoring, dispute resolution, generation interconnection agreements, and scheduling.

On the final panel of the day, state public utility commissioners discussed electricity policy in the Seventh District. Of the five district states, Illinois and Michigan have been aggressively pursuing restructuring, while Indiana, Iowa, and Wisconsin have adopted a more cautious approach.

First, Ken Rose, senior economist with the National Regulatory Research Institute (NRRI) noted that recent events

in electricity markets, such as the California energy crisis, have cooled enthusiasm for certain aspects of restructuring. According to the most recent NRRI survey, four U.S. states have delayed restructuring efforts. In addition, Rose noted that the number of competitors in the retail market has shrunk and therefore reduced the retail choices available to customers in states that have restructured. Rose concluded by posing two questions to the panel. First, has California's failed experiment in restructuring affected their own state's plans? Second, has the slow development of retail competition in states that have restructured influenced electricity policy?

Richard Mathias, chairman of the Illinois Commerce Commission, provided an overview of the Illinois Customer Choice and Rate Relief Law that has guided the restructuring of Illinois' electric market. The law has phased in customer choice and competition over several years and will allow retail choice in May 2002. The state's utility industry has changed drastically; every investor-owned utility has been sold (or changed hands). Incumbent Illinois utilities still own generation facilities; however, these have generally been spun off to affiliated companies. This has narrowed the scope of companies that are under the regulatory authority of the Illinois Commerce Commission. Mathias noted that the real challenge in the Illinois restructuring effort will come in 2005 when the rate cap for retail customers expires and electricity prices are allowed to reflect market conditions. He stressed that a key to restructuring is realizing retail customers' strong desire for reliable power at stable prices.

Next, Commissioner David Ziegner of the Indiana Utility Regulatory Commission explained that Indiana is a relatively low cost state for electricity. The combination of good access to natural gas and coal supplies, regulatory policy, and the ability to attract new generation has allowed the state to maintain this advantage. Low-cost power is a critical aspect of the state's economic development policy, which has helped guide the state's restructuring efforts.

Indiana has welcomed competition in the wholesale electricity market. However, Ziegner said that retail competition should only occur once a fully functional wholesale market has been developed. He noted that experience with rail and telephone deregulation has made some state policymakers skeptical of restructuring. In a state with low electricity prices, expanding generation supply, and profitable utilities, it is unclear why one would want to change the current structure. Finally, Ziegner endorsed the work by FERC to create a regional transmission system and a standardized market design. Of particular importance, he added, will be the RTOs' ability to monitor electricity market activity and enforce market rules.

Iowa has also taken a cautious approach to restructuring, according to Diane Munns, chairman of the Iowa Utility Board. Munns noted that three legislative sessions failed to pass a restructuring plan for the state. The experience in California has made it unlikely that Iowa will undertake active restructuring in the near future, but Munns noted that the state does need to respond to changes in the electricity market. These changes include corporate mergers, which have led to fewer Iowa-based utilities, deregulation efforts in neighboring states, and the need to encourage investment in new generation and transmission. To improve the climate for

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new investment, Iowa has streamlined siting procedures for new transmission and generation facilities, established binding rate making principles during preconstruction of facilities, and tried to introduce more certainty into the regulatory process. Munns also noted that there has been a drive toward a more federal approach to electricity provision. She stressed that cooperation between the states and the federal government will be critical to success. However, she added, certain functions, such as service standards, consumer protection, and reliability should be primarily left to the states.

Chairperson Ave Bie of the Public Service Commission of Wisconsin explained that Wisconsin has been careful in its approach to restructuring because of its low power cost and an aging infrastructure that has led to concerns about the state's ability to compete in a less regulated market. Bie also said that Wisconsin's geographic isolation poses a challenge for increasing regional transmission opportunities. She noted that much of the state's electricity policy development has been driven by concerns over additional power shortages, following those during the summer of 1997. The primary catalyst behind the shortages was a lack of new capacity. In response, Wisconsin passed Act 204, aimed at adding generation capacity

while increasing certainty and streamlining the regulatory process. This included encouraging the development of independent power producers and transferring transmission responsibilities to an independent systems operator. The state has also passed reliability legislation.

In conclusion, Bie argued that taking an interest in the fiscal health of utilities is also an important commission function. Healthy utilities are in a better position to provide low prices to their customers. She also emphasized the need to develop enhanced regional transmission connections and suggested this will require regional cooperation.

The last speaker of the conference was Laura Chappelle, chairman of the Michigan Public Service Commission. Chappelle suggested that Michigan's approach to restructuring has fallen somewhere in between that of Illinois and Wisconsin. Like Illinois, Michigan has adopted a phased-in approach to deregulation with full retail choice available January 1, 2002. In preparation, Michigan has been running several pilot customer choice programs since the mid-1990s. Like Wisconsin, Michigan has been concerned about transmission constraints and increasing generation, particularly in its baseload. While interest on the part of merchant power

producers in Michigan has been favorable, most of this generation is designed only to serve intermittent needs during periods of peak demand. Michigan has also required 2,000 megawatts of new transmission capability.

Chappelle reported that since the retail market opened in January, only 1% of load has switched suppliers. She also identified several issues facing the commission. These include adopting a code of conduct for utilities, working with utilities to resolve disputes over performance standards, and making stranded cost determinations (determining value of investments in older facilities if utilities can not recover these costs through rates). Chappelle suggested that the real success of restructuring will depend on creating confidence that electricity markets will work.

Conclusion

The conference illustrated that the road to energy restructuring has been anything but smooth. However, there is reason for optimism that Midwest policymakers are willing to develop the regional arrangements that will be necessary to secure the region's electricity future. The development of key institutions, particularly related to enhancing regional transmission, will bear close watching.