

National Transmission Grid:

Basin Electric helps shape vision for the future

By Erin Huntimer

President Barack Obama was welcomed into the oval office in January by a deepening recession and rising unemployment. In this cloud of uncertainty, however, lies opportunity.

In his first weekly address on Jan. 24, Obama said he recognizes “promise in the moment:” a chance to accelerate the creation of a clean energy economy. Part of the vision, he said, is investment in the country’s transmission system. It would require a concerted effort, much like when the country rallied to construct the Interstate highway system so many years ago.

Imagine having a hand in shaping that future. It’s an exciting, daunting prospect, yet one suited for a cooperative with nearly 50 years of experience moving power across the wires.

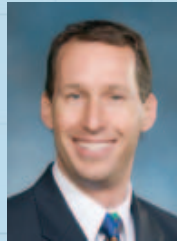
Basin Electric is not leading the effort to form a national grid; rather, the cooperative is serving in a consulting role, responding to a request by U.S. Sen. Byron Dorgan to share our thoughts on how a national grid might be developed. The political stars have aligned for national discussion and debate to begin, and Basin Electric has created a white paper outlining those thoughts. The paper summarizes concepts that should be considered if Congress were to move forward with a national grid.



Mike Risan

Mike Risan, senior vice president of Transmission for Basin Electric, wrote the white paper with assistance from

Mike Eggl, senior vice president of External Relations and Communications.



Mike Eggl

Eggl says Obama has specifically mentioned the creation of a national grid to move renewable power out of states like North Dakota to load centers.

U.S. Sen. Harry Reid has introduced legislation for renewable energy zones and associated transmission. Dorgan plans to introduce National Transmission Grid legislation. The U.S. Department of Energy (DOE) has started a public process to examine ways to relieve congestion on the nation’s transmission system.

Transmission bottlenecks are a major impediment to renewable energy development. Eggl says there is a great deal of national interest in creating paths to move renewable energy from rural areas where the resources are available, to urban centers where the power is needed. Renewable energy projects have a difficult time building the transmission capacity necessary to move their energy to market on their own. “Wind projects with excellent capacity factors range in the low 40 percent. This means that if a developer built associated transmission strictly to match the full nameplate capacity of the project, that transmission would be 60 percent underutilized. Financially, this does not work,” he says.

The Federal Energy Regulatory Commission (FERC) had initially started a process to open the patchwork of transmission facilities in the country through a series of orders starting around 13 years ago. Orders 888 and 889, issued in 1996, established the rules regarding opening the bulk electric system to wholesale competition. Order 2000, issued in 1999, pushed FERC-jurisdictional utilities to voluntarily join regional transmission organizations, or RTOs.

“There was an expectation that opening up the transmission system to wholesale competition would drive down costs to consumers by making

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Mike Risan, Basin Electric

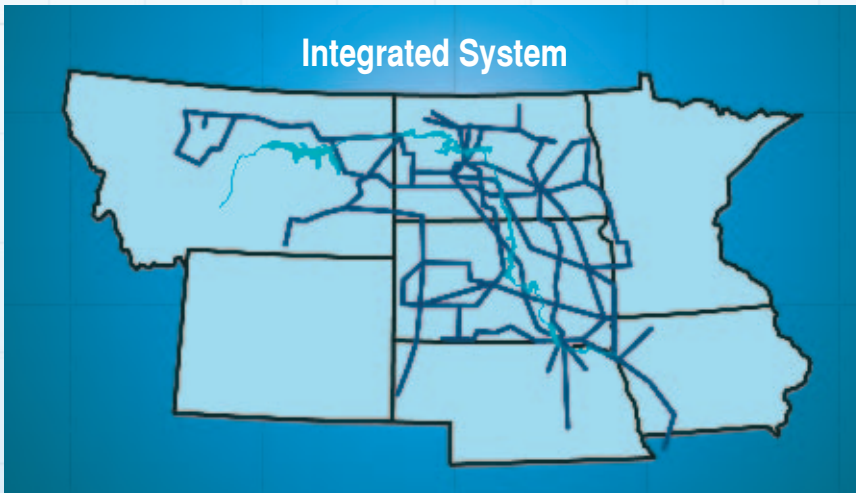
additional sources of generation available; however, that objective has led to a patchwork of bureaucratic processes,” Risan says.

Risan says the principal obstacle to the creation of a National Transmission Grid is the pricing of transmission on a local basis. “This leads to endless debate on cost allocation whenever new regional transmission facilities are considered,” Risan says.

Basin Electric is a long-time advocate of region-wide average pricing for the high-voltage system. Under this model all users pay a pro-rata share for usage of the bulk transmission system.

“Adoption of our transmission pricing philosophies will eliminate the cost allocation debate and

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The Integrated System includes the transmission systems of Basin Electric, Western Area Power Administration and Heartland Consumers Power District. Its successful pricing philosophies are echoed in the National Transmission Grid white paper.

ultimately could facilitate the development of a National Transmission Grid. It is consistent with our pricing philosophies within the Integrated System. It's a successful model that could be expanded," Risan says. The Integrated System includes the transmission systems of Basin Electric, the Western Area Power Administration and Heartland Consumers Power District.

The white paper suggests incentives for voluntary participation and forming a national grid over time, rather than a mandated, legislative approach. "This lays out an incentivized way to get there slowly over time, recognizing that getting there all in one shot probably isn't going to happen," he says.

In general, the white paper promotes consolidating the existing system's patchwork of facilities. It advocates

a region-wide average transmission pricing model for high-voltage facilities. It encourages a greater role of load-serving entities in the transmission planning process, common design and siting standards, and cooperation between states.

Dorgan's office has not said what the next step will be in formulating National Transmission Grid legislation. In the meantime, Risan has put his boots to the ground, sharing the white paper with Basin Electric's members, the National Rural Electric Cooperative Association, FERC, the Southwest Power Pool, the North Dakota Public Service Commission, the Midwest ISO, the Mid-Continent Area Power Pool and others in an effort to start the conversation.

Following is a summary of the concepts contained in the white paper:

National Transmission Grid: A vision for the future

The goals of a National Transmission Grid should focus on five key areas:

- Enhancing energy independence
- Enhancing national security
- Improving overall reliability
- Spurring economic development
- Enhancing environmental stewardship

Fundamental obstacles

The principal obstacle to the creation of a national grid is the pricing of transmission service on a local basis. The current pricing policies permit customers within an RTO to obtain the benefit of generation from a large region of the country while paying for transmission service based on the costs of only their local facilities. This creates a substantial disincentive to construct new facilities, especially ones to move renewable energy to distant load centers. This can be eliminated by pricing transmission service on a regional- and interconnection-wide basis.

The second greatest obstacle is the fragmented quality of the existing transmission grid. Utilities that are not RTO members should be given incentives to either join RTOs or to create regional transmission rate compacts that provide pricing on a non-pancaked basis. (Pancaking refers to multiple charges for transacting across multiple transmission systems.)

Specific proposals to overcome obstacles

Address the existing system's patchwork of transmission facilities:

- Congress or FERC should create incentives to eliminate pancaked rates between transmission systems and create a region-wide average transmission rate. The rate should be a highway/byway rate design that would use the region-wide average rate for the high-voltage system. The byway piece of the rate should be paid by the local customers who use only the local system.
- Incentives should be created for the voluntary development of new FERC-approved transmission rate compacts for transmission owners that are not RTO members, but want to adopt the highway/byway rate design.
- States should enter into multi-state regulatory compacts that allow recovery of the highway component of the regional rate and harmonize siting requirements.

Plan and allocate costs of reliability-based transmission additions:

- All transmission owners should continue to participate in regional transmission planning.
- Within the footprint of the RTO or transmission rate compact, the pricing of new transmission, built to enhance reliability and serve load, should be based on the highway/byway rate design.
- Large numbers of transmission interconnection requests for speculative projects have clogged the transmission queue, making it difficult to plan and construct facilities in a timely manner. Priority in the interconnection queue should be given to generators that can demonstrate they have power supply contracts with load-serving entities.
- New transmission facilities should be subject to a competitive bid process based on common design standards.

Plan and allocate costs of economic-based transmission additions:

- Transmission additions that eliminate regional congestion

and provide an economic benefit for the region or local systems should be planned on a regional basis and rolled into the highway-byway rate design.

- New transmission facilities should be subject to a competitive bid process based on common design standards.

Allocate the costs of other additions to project sponsors:

- The costs of additions that are not required for reliability standards and do not meet the regional/local economic benefit test must be considered speculative, and the costs of those additions should be borne by the project sponsors.

Moving the vision forward

The DOE should facilitate a National Transmission Grid overlay concept by identifying the transmission facilities that would be economically justified to incorporate additional renewable generation to meet state or national renewable requirements.

Facilities identified in the National Transmission Grid overlay concept should be considered highway facilities whose costs are allocated on an interconnection-wide basis. The DOE should identify a common set of design standards and open the construction of the facilities to a competitive bid process.

Tradable tax credits, credit security and low-cost loans should be provided by Congress to incentivize broad participation. The new National Transmission Grid facilities should be operated by the RTOs and/or regional rate compact organizations in which the facilities reside.

