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Upgrading the power grid could lead to lower prices

By Frank A. Wolak

Calls for expanding the electricity transmission network in the wake of the blackout in the Northeast have emphasized reliability and security. There's another reason to invest in the power grid: It will make electricity cheaper for consumers. This is because it increases the geographic size of the market, which increases the competitiveness of the market, and a more competitive market leads to lower prices.

What makes markets larger is the ability to move more products around the country at a lower cost. California provides a historic example. The transcontinental rail network dramatically expanded the size of the market for California fruits and vegetables, benefiting not only farmers here, but also consumers throughout the United States.

The same is true for electricity. The towers and wires of the transmission system are like the train tracks. A transmission network with lots of capacity can bring electricity to consumers from far away. The power from afar might be produced less expensively than local power, or it might come from wind farms on the plains, instead of oil-burning plants near cities.

The recent blackout in the eastern United States demonstrates that an inadequate transmission network can also impose enormous economic harm, just as an overcrowded railroad network can leave fruit rotting in boxcars and create supply shortfalls that cause prices to spike.

The current structure of the U.S. electricity industry has created an urgent need for additional transmission capacity. An increasing share of the electricity consumed is purchased from a wholesale market, instead of being provided by a utility from its own power plants. During the monopoly regime that existed until very recently, the same entity that sold electricity to final consumers owned the generation units that produced it, the transmission facilities to transport it and the distribution network to deliver it to consumers.

In today's wholesale market, the transmission network is operated by an entity independent of power producers and consumers. If the transmission system is robust enough to carry electricity produced by a number of suppliers to all customers, wholesale electricity prices should decline because of vigorous competition.

The existing U.S. transmission network was designed to serve a vertically integrated industry that no longer exists. The national transmission network must be dramatically expanded, just as the U.S. expanded its transportation network to facilitate the enormous growth in trade during the 20th century. The cost of upgrading the U.S. transmission network should be more than paid for by the economic benefits to consumers produced by more competitive wholesale electricity markets.

Unfortunately, electricity industry restructuring has effectively severed the incentive to undertake transmission upgrades from the ability to do so. Generation-unit owners profiting from congestion have no incentive to support the upgrade. Electricity retailers bundle

congestion charges into their cost of purchasing wholesale electricity. Transmission owners receive a regulated rate of return on their network investments. Only consumers would like economically beneficial upgrades to occur, but individually they have little incentive to participate in the process.

Like the interstate highway system, an improved transmission system begins with the federal government. Only a concerted national policy can ensure sufficient transmission capacity across state boundaries to establish competitive interstate markets for electricity. States also have a major role to play by ensuring that the networks in their boundaries are adequate to ensure effective competition among suppliers. Taking the example of California, the revenues that result from raising transmission charges by 0.1 cent per kilowatt-hour could easily fund enough transmission upgrades to produce a far more competitive wholesale market throughout the West. For a household consuming 800 kilowatt-hours per month, this would raise the monthly bill by 80 cents. Average retail prices could ultimately fall as a result of these upgrades because of the increased competition and lower wholesale electricity prices facilitated by these upgrades.

This sort of cost/benefit calculation should be taking place throughout the United States in order to deliver the full benefits of electricity re-structuring to consumers.

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