

Transmission congestion threatens to clog nation's power grid

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Inadequate investment in the power grid transmission network remains the Achilles heel of the nation's electric system, an engineer who specializes in utility policy at the University of Illinois at Urbana-Champaign says.

The electric industry and government regulators have addressed the immediate problems that led to the nation's worst power failure three years ago on Aug. 14, 2003, said George Gross, a U. of I. professor of electrical and computer engineering. This includes mandatory reliability standards for the industry, which were passed by Congress as part of the 2005 Energy Policy Act.

But the broader problems of transmission congestion and bottlenecks continue to threaten the reliability of the grid, particularly during periods of peak demand.

"The August 2003 blackout was a wake-up call for the country to upgrade its transmission grid system," Gross said. "But the truth is that very few major transmission projects have been constructed and, as a result, transmission capacity has failed to keep pace with the expansion of power demand."

In the period between 1988 and 1998, for example, growth in electric demand grew by 30 percent, but growth in transmission capacity was just 15 percent, Gross said.

The 2003 blackout prompted calls for spending of up to \$100 billion to reduce bottlenecks and increase capacity of the transmission lines that carry electricity from power plants to homes and businesses.

Instead, investment has lagged behind both power-plant generation and growth in demand for electricity. "Demand growth is forecasted to be 20 percent between 1998-2008, but the increase in transmission capacity is still below 5 percent," Gross said.

"The need to strengthen the existing transmission infrastructure, to expand it and to effectively harness advances in technology constitutes the single most pressing challenge for the country's electricity system."

Gross recommended the introduction of incentives to spur utilities and transmission companies to increase capacity. In addition, state regulatory agencies should show more initiative in encouraging new power networks that cross state lines and serve a regional rather than strictly local purpose.

The August 2003 blackout left more than 50 million people without electricity in Canada and the northeastern U.S. and cost at least \$10 billion in lost economic activity.

A heat wave in California this week has resulted in cutbacks in electrical use by government agencies and businesses to avoid the kind of rolling blackouts that plagued the state in 2000 and 2001.

Source: University of Illinois at Urbana-Champaign

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