

Aged national power grid leaves US vulnerable to outages from spring storms

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(Phys.org) —With one storm system moving east from the Great Plains, midwest, and south this week—leaving tens of thousands without power—and yet another storm system expected next week, attention is once again turning toward the vulnerabilities of the nation's power grid.

"As we move into the warmer months and the chance for stronger storms increases, we'll again witness the impact these [weather patterns](#) have on an aged and exposed power distribution and transmission system," said Gregory Reed, University of Pittsburgh associate professor in the Department of Electrical and Computer Engineering and director of the Electric Power Initiative in the Center for Energy of Pitt's Swanson School of Engineering.

"In parts of the U.S. where the grid system is 'out in the open' and exposed to the elements—especially in our older cities—the risk increases for widespread power outages and lengthy, costly repairs," Reed explained.

"Since these storm systems are only expected to intensify, this should be a clarion call for a nationwide discussion for greater grid resiliency, investments in underground infrastructure, and moving toward a direct-current [grid system](#). The majority of our distribution system was built between the 1930s and 1970s and is growing less capable of handling natural disruptions and is less efficient at meeting the needs of our [power-electronics](#) culture."

Reed is available to comment on the U.S. power grid as it relates to energy, infrastructure, and economic value. He is also able to comment on the following issues:

- Power electronics using high voltage direct currents (HVDC), flexible AC transmission systems (FACTS), and control technologies;
- [Renewable energy systems](#) and integration;
- Smart grid technologies and applications;
- Direct Current (DC) technology and research;
- Energy storage systems and developments;
- [Energy efficiency](#) and energy management; and
- Power quality.

Provided by University of Pittsburgh

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