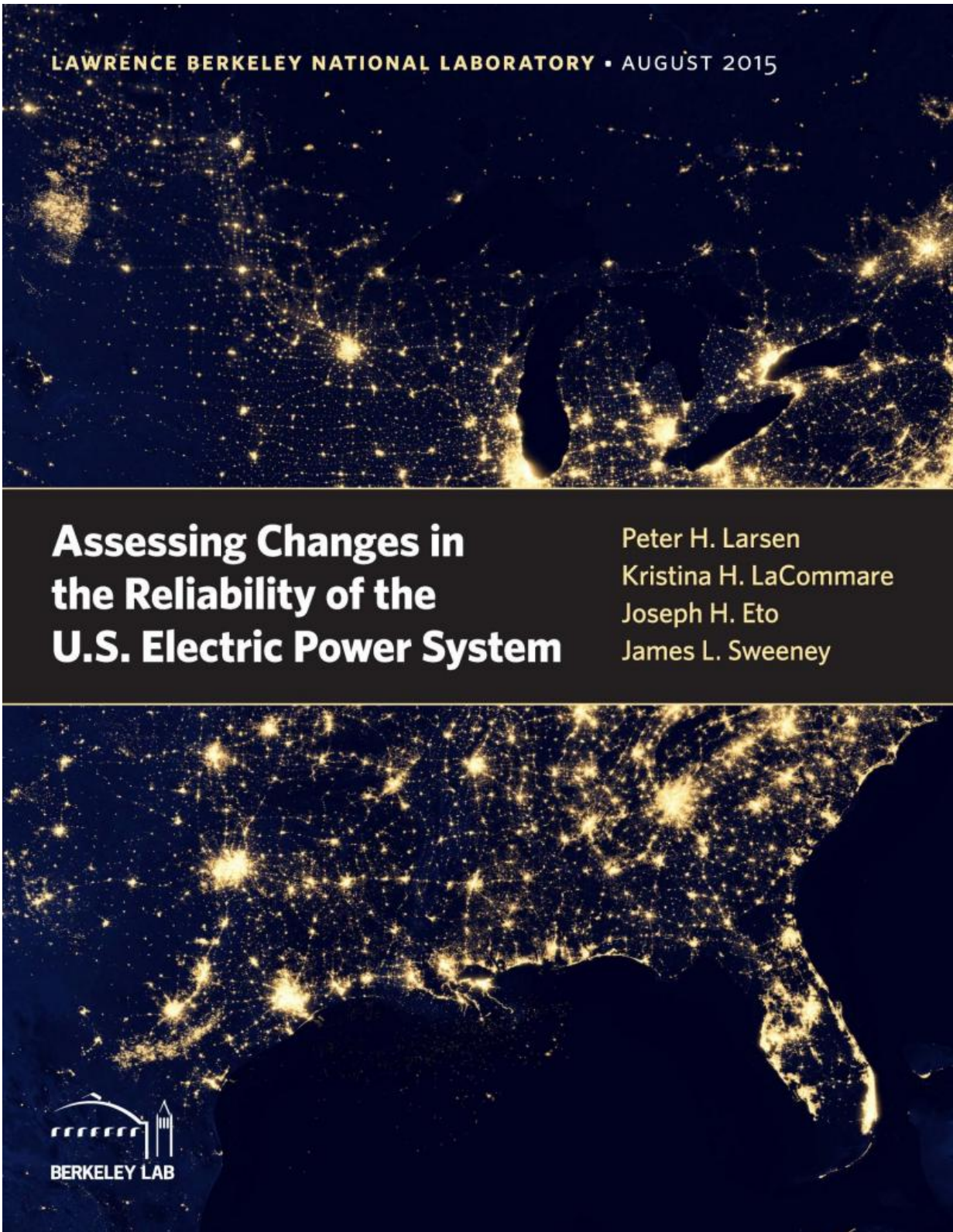


Berkeley Lab releases most comprehensive analysis of electricity reliability trends

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In the most comprehensive analysis of electricity reliability trends in the United

States, researchers at Berkeley Lab and Stanford University have found that, while, on average, the frequency of power outages has not changed in recent years, the total number of minutes customers are without power each year has been increasing over time. Credit: Berkeley Lab

In the most comprehensive analysis of electricity reliability trends in the United States, researchers at Lawrence Berkeley National Laboratory (Berkeley Lab) and Stanford University have found that, while, on average, the frequency of power outages has not changed in recent years, the total number of minutes customers are without power each year has been increasing over time.

The researchers pinpointed what utilities and their regulators refer to as "major events," or events generally related to severe weather, as the principal driver for this trend. "This finding suggests that increasingly severe weather events are linked to a 5-10% increase in the total number of minutes customers are without power each year," said Berkeley Lab Research Scientist and Stanford PhD candidate, Peter Larsen, the lead author.

The researchers analyzed reports for a large cross-section of utilities representing nearly 70 percent of U.S. electricity customers spanning 13 years from 2000 to 2012. Their report, "Assessing Changes in the Reliability of the U.S. Electric Power System," is available at: <http://emp.lbl.gov/publications/assessing-changes-reliabi>

Although a 2013 White House report noted that major [power outages](#) and [severe weather](#) events are increasing, this study is the first of its kind to use econometric analysis techniques to statistically correlate these events with electricity reliability. Most studies of reliability have relied on information that reflects only the largest power outages. Yet, over the

course of any given year, the largest events typically account for no more than 10 percent of all power outages. This study, by relying on information for all power outages, both large and small, conclusively identifies a trend that is linked directly to these larger [events](#).

One surprise was that the study did not find a consistent link between reliability and utility transmission and distribution (T&D) expenditures. "We expected to find that increased spending on T&D would lead to improved reliability, but it is possible that a combination of proactive versus reactive utility maintenance policies may be off-setting this effect on [reliability](#)," Larsen said. He anticipates that future research will be able sort this out through more detailed analysis of utility spending practices.

Provided by Lawrence Berkeley National Laboratory

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