

# GOVERNING

## A Crucial Step for Securing a Threatened Grid

To recover quickly from a major outage, electric utilities should be stockpiling critical equipment. Regulators can help make that happen.

[HTTP://WWW.GOVERNING.COM/GOV-INSTITUTE/VOICES/COL-CRUCIAL-STEP-SECURING-ELECTRIC-GRID-STOCKPILING-EQUIPMENT.HTML](http://www.governing.com/gov-institute/voices/col-crucial-step-securing-electric-grid-stockpiling-equipment.html)

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As various federal agencies, Congress and the utility industry grapple with how to make our electric grid more robust and resistant to a natural disaster or a physical or cyber attack in the long term, sensible and cost-effective fixes are available today that could make the grid significantly more resilient -- that is, better able to recover and restore service quickly. It's time for state regulatory agencies and electric companies across the country to seriously consider important resilience investments before disaster strikes.

The economic, human health and public safety consequences of a large-scale grid shutdown are enormous and clear: The relatively short two-day Northeast blackout of 2003 cost approximately \$10 billion, and the cost of the ongoing effort to restore the grid in Puerto Rico after last year's hurricane is estimated at more than \$100 billion.

The first line of grid defense is enhancing our ability to spot incoming threats and deflect or prevent damage in the first place. Threat detection and mitigation is, however, an evolving field and, following the logic of the adage that the best defense is a good offense, enhancing our national ability to bounce back quickly from a major grid disaster is good common sense.

One issue in particular poses significant challenges to quickly restoring the grid: significant damage to key electric transmission equipment, and in particular to large, hard-to-find transformers. Replacing grid equipment might seem simple but, in reality, during a widespread disaster such equipment is generally not available for purchase off the shelf, nor is equipment that is ready to install usually in close proximity to where it is needed. In some cases, specialized transformers or circuit breakers will have to be manufactured, a process that can take many months to more than a year. Hurricane Harvey in Houston and Superstorm Sandy in New Jersey and New York provide stark illustrations of power-restoration challenges that involved lengthy delays in accessing major equipment.

An important solution for making the grid more resilient is buying and pre-staging such critical equipment. The wisdom of stockpiling has been recognized by Congress and the U.S. Department of Energy, which last year issued [a report](#) supporting the creation of an industry-based "Strategic Transformer Reserve" to dramatically increase the number of spare transformers available for transport and installation.

Some utility companies are already joining efforts to purchase and pre-stage critical transformers, circuit breakers and related equipment. For example, a group known as Grid Assurance LLC, of which Berkshire Hathaway, American Electric Power and National Grid are members, recently announced that six utilities with transmission facilities in 26 states had committed to joining its transformer and circuit breaker reserve consortium. Another program, based on sharing existing equipment through mutual assistance, was started in 2015 by a group of smaller utilities.

Regulatory agencies across the country must seriously consider supporting the vitally important infrastructure investments represented by such programs. Utility companies do not make major investments without advance regulatory assurance that their "prudently incurred" costs will be recouped in electric rates. In today's world of repeated FBI and Homeland Security warnings about threats to the grid, enhancing resilience by purchasing and pre-staging critical equipment is clearly prudent.

On the cost-effective side, pooling costs among participants in a guaranteed spare-parts program is less expensive than trying to find and buy costly, hard-to-find equipment in the

midst of an emergency. The pooled-resources approach allows equipment investments to be spread across multiple parties initially; when a utility needs the equipment, it is immediately available at a normal, non-emergency cost, and pool participants are reimbursed for their investment. It's a win-win for everyone, especially electric ratepayers who will see their power restored more quickly and at a more predictable cost.

Federal and state electricity regulators across the nation expect utility companies to engage in long-term planning and risk mitigation. It seems both fair and prudent for those regulators to support critical equipment programs that can clearly help utility companies plan against the inevitability of natural disasters or man-made attacks and be capable of restoring power more quickly and cost-effectively.



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