

# GAO@100 Highlights

Highlights of [GAO-21-274](#), a report to congressional addressees

## Why GAO Did This Study

Hurricanes pose significant threats to the electricity grid in some U.S. coastal areas and territories and are a leading cause of major power outages. In recent years, hurricanes have impacted millions of customers in these areas. Adoption of technologies and other measures could improve the resilience of the grid so that it is better able to withstand and rapidly recover from severe weather; this could help mitigate the effects of hurricanes.

This report examines (1) measures utilities in selected states have adopted to enhance grid resilience following major hurricanes since 2012 and any challenges utilities face funding such measures; and (2) federal efforts to support the adoption of measures to enhance grid resilience to hurricanes and any opportunities that exist to improve these efforts. For this report, GAO assessed agency and industry actions; reviewed relevant reports, policies, and documents; and interviewed federal, industry, and local officials.

## What GAO Recommends

GAO recommends that DOE (1) establish a plan to guide its efforts to develop tools for resilience planning, and (2) develop a mechanism to better inform utilities about grid resilience efforts at the National Laboratories. DOE agreed in principle with these recommendations, but its proposed actions do not fully address GAO's concerns.

View [GAO-21-274](#). For more information, contact Frank Rusco at (202) 512-3841 or [ruscof@gao.gov](mailto:ruscof@gao.gov).

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## ELECTRICITY GRID

### Opportunities Exist for DOE to Better Support Utilities in Improving Resilience to Hurricanes

## What GAO Found

Since 2012, utilities have taken steps to improve grid resilience to severe hurricanes, such as (1) implementing storm hardening measures to enable the grid to better withstand the effects of hurricanes; (2) adopting technologies to enhance operational capacity and help quickly restore service following disruptions; and (3) participating in mutual aid programs with other utilities and training and planning exercises. For example, utilities have implemented storm hardening measures that include elevating facilities and constructing flood walls to protect against storm surges. Utilities have also adopted technologies that enhance communication capabilities and monitor systems to detect, locate, and repair sources of disruptions. However, these utilities reported challenges justifying grid resilience investments to obtain regulatory approval, and some utilities have limited resources to pursue such enhancements.

#### Example of Hurricane Resilience Improvement: Elevated Substation



Source: Public Service Enterprise Group, agent of Long Island Power Authority. | GAO-21-274

Various federal agencies can provide funding for efforts to enhance grid resilience to hurricanes, including the Department of Agriculture (USDA) and the Federal Emergency Management Agency (FEMA). However, eligibility for most federal funding for grid resilience, including some USDA and FEMA funding, is limited to publicly owned utilities and state, tribal, and local governments. The Department of Energy (DOE) does not provide direct funding for grid resilience improvements, but it has efforts under way, including through its National Laboratories, to provide technical assistance and promote research and collaboration with utilities. DOE has also initiated preliminary efforts to develop tools for resilience planning, including resilience metrics and other tools such as a framework for planning, but DOE does not have a plan to guide these efforts. Without a plan to guide DOE efforts to develop tools for resilience planning, utilities may continue to face challenges justifying resilience investments. In addition, DOE lacks a formal mechanism to inform utilities about the efforts of its National Laboratories. Such a mechanism would help utilities leverage existing resources for improving grid resilience to hurricanes.