# White House calls for increased grid spending

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The cost of weather-related power outages is high and rising as storms grow more severe and the U.S. electric grid gets older, according to an Obama Administration report that calls for increased spending on the nation's electric power system.

Power outages cost the economy $18 billion to $33 billion per year, according to the report, a figure that has been rising steadily over the past 20 years. That can rise to $40 billion to $75 billion in years with severe storms such as 2008's Hurricane Ike and last year's Superstorm Sandy.

The White House report, released Monday, said spending to make the grid stronger and more flexible will save the economy "billions of dollars and reduce the hardship experienced by millions of Americans when extreme weather strikes."

The administration proposes spending on training and preparation, stronger equipment such as concrete poles, and more advanced sensing and diagnostic equipment that can predict failures, prevent them from getting worse, and restore power faster after it has gone out.

Seven of the ten costliest storms in U.S. history occurred between 2004 and 2012. Eleven times last year weather-related outages led to losses of $1 billion or more, the second most on record, behind 2011, according to the report. Climate scientists expect ever more intense and destructive weather as climate change increases global temperatures, adding more energy to storms and shifting patterns of drought and precipitation.

Storms cause most of the nation's power outages. Thunderstorms, hurricanes, blizzards and other extreme weather caused 58 percent of all outages studied since 2002 and 87 percent of outages affecting 50,000 or more customers.

At the same time, the U.S. electric grid is getting old. The average U.S. power plant is 30 years old and 70 percent of the grid's transmission lines and transformers are at least 25 years old, making them weaker and more susceptible to failure in storms.

The U.S. electric power system is a web of generating stations, high-voltage wires that transmit power over long distances, substations, and local wires and equipment that deliver electricity to homes and businesses.

U.S. customers lose power on average 1.2 times per year, for a total of 112 minutes, according to PA Consulting Group. Nine out of ten of those outages are the result of problems with local distribution systems, according to the Edison Electric Institute, an electric industry lobbying group.

In the years after the Northeast Blackout of 2003, the most widespread outage ever in North America, investment in major transmission lines and equipment increased. According to an analysis of spending on major transmission equipment by more than 200 utilities nationwide conducted for the AP by Ventyx, a software and data services firm that works with electric utilities, utilities spent an average of $21,514 per year on devices and station equipment per mile of transmission line from 2003 to 2012. From 1994 to 2003, spending averaged $7,185 per year.

The White House report says increased spending in recent years has still not matched the level of investment between 1960 and 1990. It suggests new spending should be focused on a few main areas, including, "hardening" the system by installing stronger equipment, building more transmission wires and energy storage systems to make the grid better able to absorb shocks, and installing more sophisticated technology.

The report does not suggest how much new spending was needed, where that spending would come from, or how much money would be saved by preventing some outages and making others less severe.

Major upgrades to the grid can be difficult to initiate. Utilities do not build or install new equipment without first getting approval from state or federal regulators to charge customers. Regulators can be reluctant to increase customer rates, especially if it means spending on relatively novel high-tech equipment, or to guard against weather that may or may not arrive.

Massoud Amin, an electrical engineering professor at the University of Minnesota, Minneapolis, who has long advocated increased spending on better grid technology, says the benefit to improving the grid far outweighs the cost of investment. He estimates that a modern, efficient grid would cost $21 billion per year for 20 years. He calculates savings resulting from a better grid would amount to $79 billion to $94 billion per year.

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