

Opinion **Utilities**

America must act to protect its power grid

Electrical infrastructure is vulnerable to cyber attack and extreme weather

JAMES WOOLSEY



When Hurricane Maria struck the US territory of Puerto Rico, the entire island lost power © AFP

James Woolsey OCTOBER 28, 2018

In March, the FBI revealed that the US's electrical grid is under constant threat of [cyber attack](#) by Russian actors. Every day, sophisticated hackers attempt to disrupt water processing plants, air transport and other critical infrastructure that Americans rely on for basic services.

And the country is not prepared to protect itself against it.

The threat of Russian hackers is the latest example of the vulnerability of the US's electrical grid and it shows how a cyber attack, or even a [natural occurrence](#), could wreak havoc on the American way of life.

We already know what a large-scale blackout on US soil could look like: in September last year, when Hurricane Maria struck the US territory of [Puerto Rico](#), the entire island lost power.

Without functional treatment centres, raw sewage flooded into the water. Without refrigeration and fresh water, food supplies vanished. In the months following the hurricane, [2,975 deaths](#) were attributed to the conditions caused by the storm, 46 times as many as the 64 who died during the storm. Even now, half a year later, thousands of US citizens still lack electricity and even more continue to experience intermittent blackouts.

Without electricity, our way of life is untenable. We rely on an uninterrupted supply of power to bring food to our supermarkets, water into our homes and prosperity to our citizens.

Even minor blackouts, like that which occurred at the airport in Atlanta in December, cause severe disruption. Yet the critical infrastructure on which society depends has been built for efficiency, not for resilience. It is fragile.

The US grid is threatened by cyber attacks, hurricanes and earthquakes, solar storms, terrorist strikes and electromagnetic pulses. And the odds are not in America's favour.

Each decade, the US faces roughly a one in 10 chance of losing much of its grid to a solar storm — a burst of radiation from the sun that could affect the earth's atmosphere by compromising the power grid or disrupting radio communications. In fact, Lloyd's of London concluded that such a storm is so likely, and its effects so devastating, that it refuses to offer insurance against one. The entire grid can be shut down by destroying just nine critical transformer substations, like the one crippled in minutes by a team of armed attackers near San Jose in California in 2013.

It is only a matter of time until one of these events triggers a catastrophic blackout in the US. Experts estimate it would result in the loss of trillions of dollars in economic value and millions of American lives — many times greater than the losses from Hurricanes Harvey, Sandy and Katrina combined. And with no outside force to rescue us, a countrywide blackout could last more than a year and would be next to impossible to recover from.

This tragedy is preventable. We know how to defend our electrical infrastructure and we can afford to do so. More intelligent federal resilience standards, a greater density of micro-grids and individual state action to harden infrastructure would offer enough protection to turn an existential catastrophe into a minor disaster. In a sweeping blackout, the difference between

30 per cent electrical coverage and zero per cent could prove the difference between an enduring civilisation and none.

We have sat on this knowledge for years without acting. The American government first learnt of the threat from electromagnetic pulses in the 1960s. In 1989, a small solar storm left millions of people without power in Quebec. In Ukraine, cyber attacks have cut power to hundreds of thousands of homes twice since 2015. To this day, Hurricane Maria is showing how difficult it can be to restore electricity after an outage, even to a small and contained area.

It often takes tragedy to drive change. If we wait until after a cyber attack, solar storm or earthquake has plunged part of the US into chaos, it will be too late to act.

That is why I chose to work with the Helena Group and California Senator Robert Hertzberg to pass a bill, the first of its kind, creating a plan to harden California's critical infrastructure.

We are now calling on the other 49 American states to follow our lead. The federal government must do the same. The US Congress, the White House and the Department of Homeland Security have the authority, the ability and the duty to solve this problem.

They must stop trying to pass the buck and move. Now.

The writer is a member of the Helena Group and a former CIA director

Get alerts on Utilities when a new story is published

Get alerts

[Copyright](#) The Financial Times Limited 2018. All rights reserved.

Latest on Utilities

Follow the topics in this article

James Woolsey

Natural disasters

US politics & policy

Utilities

Cyber warfare

How easy or hard was it to use FT.com today?

Leave feedback

