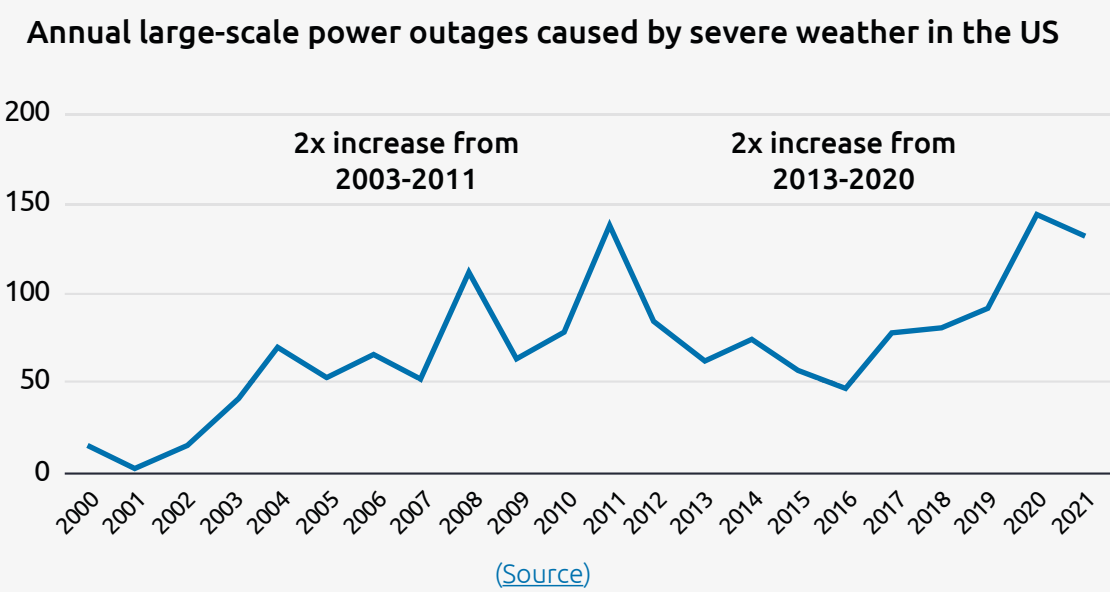


How utilities can prepare for weather-related power outages

Severe weather events are causing more frequent large-scale power disruptions.

\$18-\$70 billion From 2003 to 2012, weather-related outages [cost the US economy between \\$18 and \\$70 billion](#) annually.

Socially vulnerable communities [experience more frequent severe power outages](#) that disrupt daily life, close schools, and hinder emergency services.



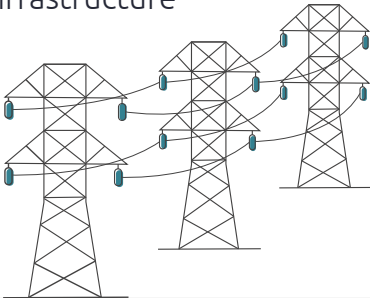
74% Global data [indicates that extreme weather events surged](#) by 74 percent from 2000 to 2019 compared to 1980 to 1999, accompanied by an 82 percent increase in global economic impact. **82%**

Chief risk officers, chief infrastructure officers, infrastructure engineers, and advanced technology providers play critical roles in strengthening infrastructure and improving grid resilience.

Utilities must prepare before the perfect storm strikes

Natural disasters pose a constant threat to power grids, but utilities can prepare through many strategies to mitigate damages. These include reinforcing power lines, upgrading substations, and burying cables underground.

The financial incentive is clear: the average US utility [faces roughly \\$70 million](#) in annual storm-related damages, whereas comprehensive infrastructure upgrades for a typical Southeastern utility would cost between \$700 million and \$1 billion. Utilities must prepare before the storms strike.



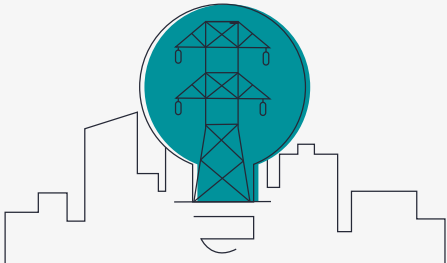
Sustainability in action

45% Florida Power & Light, the principal subsidiary of the largest power utility in Florida, moved **45 percent** of its power lines underground and invested [in strengthening power lines](#). The utility achieved a 40 percent increase in [service reliability](#) since 2006. **40%**

Microgrids enhance resilience and environmental impact

Microgrids, small sections of the power grid servicing universities, hospitals, and neighborhoods, are localized systems that can disconnect from the main grid during outages to ensure continued power supply. With this functionality, microgrids can operate independently or connect to the broader grid to reduce carbon footprints.

In the US, approximately 700 microgrids [have been installed](#), and each plays a vital role in local energy security. To operate seamlessly in response to severe disruptions, microgrids must be connected through advanced control systems.

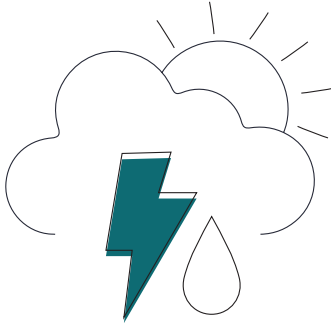


Sustainability in action

Princeton University operates a 15 MW microgrid encompassing both fossil-based and renewable energy sources. This microgrid [proved exceptionally resilient](#) during Hurricane Sandy, **15 MW** with Princeton experiencing only a brief 20-minute power outage while the broader region faced prolonged disruptions. **20min** This microgrid serves approximately **12,000** individuals within its network. **12,000**

Monitoring and rapid response are essential when disaster strikes

When storms hit, utilities must act quickly and safely to restore power to customers. They typically invest in advanced historical and predictive weather tracking to maximize their readiness for storms. By closely monitoring and assessing at-risk areas, utilities can significantly reduce response time to avoid large-scale outages. Creating scenario plans and conducting risk analyses is key to preparing for different types of storms and potential damage.



[Click here](#) to learn about our ongoing partnership with Venture Lab (powered by the Wharton School), and our work on advancing sustainable technologies. Ready to achieve your sustainability goals? Contact us today.

Tyler Williams
Deputy Head, Americas Sustainability
tyler.c.williams@capgemini.com

Farah Abi Morshed
Senior Growth Strategy Manager, Americas
farah.morshed@capgemini.com

Sazia Nowshin
Lead Sustainability Consultant, Americas
sazia.nowshin@capgemini.com