

Is your building blackout ready?

Over 1 million people across England and Wales were affected by [last week's catastrophic power failure](#), with transport services paralysed, traffic lights down and businesses plunged into chaos. In May 2019, [Virgin Mobile blamed power cuts for more than 10 hours of service disruption](#). A [March 2018 power failure](#) affecting a single London data centre knocked multiple cloud service providers and communications companies offline, causing havoc further down the line.

Major power outages may be infrequent, but their effects are devastating in an increasingly interconnected world. What are the root causes behind such power failures? Can you trust that your building is resilient enough to weather such a storm?

What causes power failures?

Electrical energy is delivered to the consumer in multiple layers – power generation, high voltage long distance transmission, medium voltage local distribution and low voltage delivery to consumers. Each layer contains potential points of failure that can affect the final consumers in the form of power outages.

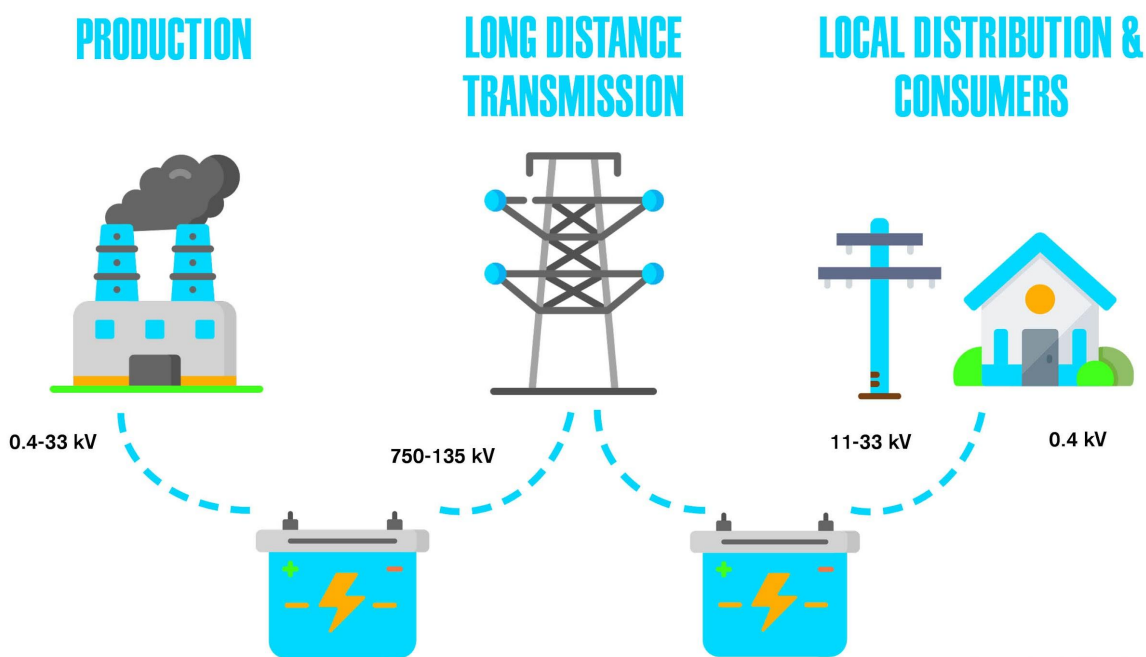


Illustration by WiredScore

Layer	Most Common Causes of Failure
Production	Mechanical or electrical failure of power plant equipment
Long distance transmission	Physical damage due to extreme weather conditions

Local distribution	Physical damage due to construction/roadworks
Building	Short circuits, overloading individual circuits

Every country and national energy distribution company has contingency plans and emergency power plants in place for these scenarios. However, as this weekend has shown, while total power failures may be rare, they affect the widest audience and can cause country-level disruption.

What this means for people and business

Power outages have always cost businesses money, but today, the stakes are exponentially higher. The vast majority of today's employees simply can't work at all without power or internet. Businesses rely on an interconnected web of IT services, communications, digital products, software licences, and more – a power failure in one business affects many more.

The more interconnected the business, the larger the losses. Based purely on lost revenue, a 2013 power outage cost Google over \$100,000 per minute (Google.com, YouTube, Google Drive, and Gmail were down for 5 minutes at a cost of \$545,000.)

Lost revenue is the consequence we can most easily quantify. More elusive, yet more crucial, is lost customer trust. Both business and end-user customers choose service providers based on their reliability. On a long enough timeline, service failure is inevitable. Minimisation of impacts and swift recovery [increase customer trust and loyalty](#), while frequent, poorly handled service failures make frustrated customers look elsewhere.

What can you do as a landlord?

Looking at the most common causes of power outages, it's clear that addressing the root causes is not an option for business and consumers. However, there are multiple options at the building level to mitigate power failure risk.



Illustration by WiredScore

Multiple power feeds are highly effective for increasing resilience at the local distribution level, where damage from construction or roadworks is the most common cause of disruption. Uninterruptible power sources (UPS) provide instantaneous (but short-duration) backup power as soon as the electricity goes down, indispensable for safely shutting down protected equipment or bringing other power sources online. Backup generators and large-scale batteries can keep the lights on over longer durations.

Buildings are at risk from several types of power failures, from sub-second disruptions to multiple day outages due to extreme weather events. Select and combine technologies to provide protection from multiple potential causes of disruption to exponentially increase electrical resilience of a building.

According to Ofcom, the statistical reliability of the power network in the [UK is about 99.99%](#). Nevertheless, in practice this means that every single user experiences about an hour of downtime each year. The average length of a power cut is about [36 minutes](#), but can be significantly higher or lower at the consumer level. Ultimately, this means that power outages cannot be eliminated – the best course of action is to mitigate their consequences.