

What happens when a power fault is reported?

The course of action taken to restore the electricity supply depends on the severity and impact of the fault, says energy provider SP Group. In cases where the cause is a cable fault within the power grid, outages can mostly be resolved through remote or manual switching processes. But in instances of more lengthy outages, mobile generators are deployed as a temporary measure to restore electricity supply.

CAUSES OF POWER OUTAGES



Network

Equipment failure, human error affecting the power grid network



Third party

Damage to power cables, overground boxes by external parties



Faults on consumer's side

Issues with electrical equipment on site



Power supply

Issues with the source of power supply, such as with power-generating units

ACTION TAKEN

1 Remote switching

When a power fault is detected, this first course of action disconnects the affected equipment from the network and reconnects it to an alternative supply source. Remote switching is done at SP Group's distribution control centre, the nerve centre of Singapore's power grid, and is able to restore power supply in a matter of minutes.



2 Manual switching

Manual switching requires officers on site to conduct the connecting/disconnecting process at the substation connected to where the fault has been reported. It is conducted when remote switching is unable to restore power supply. Power faults in low-voltage networks, such as damage to overground boxes that are used to transmit electricity to customers, are usually resolved through manual switching.



3 Mobile generators

These generators are deployed when power faults are reported and are used as a temporary solution while the network issues are being resolved. The type of generator deployed varies depending on the area affected by the outage. For example, a 1MVA generator (right) is able to power four Housing Board blocks for up to eight hours.



Approximately 100 households in one HDB block.

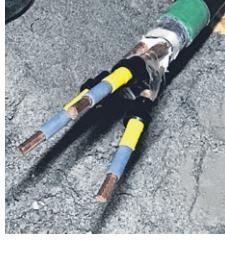


The 500 kVA generator (left) can restore electricity supply to two HDB blocks for up to eight hours.



4 Cable jointing

Cable jointing is conducted when remote switching and manual switching are unable to resolve the power fault and the mobile generators cannot access the substation where the fault has occurred. This process requires a longer time than remote switching or manual switching.



BY THE NUMBERS



Power restoration within one hour (past five years)
90%



Power restoration within two hours (past five years)
99%



Number of overground boxes
More than **28,000**



Number of substations
More than **11,000**



Length of cables that make up Singapore's electricity grid
27,000km



Number of mobile and portable generators
(Eight 1MVA, two 800kVA, four 500kVA, four 50kVA, four 20kVA, 12 6.5kVA)
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