WHY POWER INTERRUPTIONS OCCUR

PLANNED INTERRUPTIONS
Distributors undertake regular, scheduled network maintenance to minimise unplanned disruptions to service. These are known as planned outages and customers receive advance notice so they can plan ahead.

UNPLANNED INTERRUPTION
Unplanned interruptions result from unexpected incidents, such as a car knocking over a power pole, or major weather events (storms, bushfires, floods). Advance notice of such events is rare.

LARGE SCALE POWER SYSTEM EVENTS
These occur if power supply to a particular area is not sufficient to meet demand, or if the power system becomes insecure due to equipment failure. When this happens, the Australian Energy Market Operator (AEMO) instructs transmission companies to reduce customer supply; a process known as load shedding. Load shedding arrangements are pre-determined in agreement with state authorities to avoid interrupting critical power supplies.

RESTORING POWER AFTER AN OUTAGE

When restoring power supply, transmission companies and distributors always address priorities in the following order where feasible:

1. Fix life threatening hazards
2. Restore critical services (e.g. hospitals, water and sewage pumping stations, emergency services)
3. Restore high voltage lines supplying large groups of customers (sometimes required before step two)
4. Restore low voltage lines
5. Address individual customers

POWER INTERRUPTION CHECKLIST
If a power interruption occurs:

✓ Ensure the safety of staff and visitors.
✓ Implement shutdown processes or confirm that back-up systems are working.
✓ Determine if the cause of the problem is on your premises by checking your switchboard and by ascertaining whether neighbouring premises are affected.
✓ If the problem is not confined to your property, report it to your distributor.
✓ Check that your business continuity arrangements are deployed.
✓ Once you know how long restoration is likely to be, ensure that sufficient back up is in place.

HOW TO PROTECT YOUR BUSINESS

PREPARATION
To prepare for the possibility of unexpected power supply interruptions:

✓ Know your distributor and have their emergency number or faults phone line handy.
✓ Know your building or property manager and have their contact number handy. They are likely to have up-to-date information about power supply interruptions.
✓ Create a business continuity plan that identifies critical areas of your business requiring support during power supply interruptions. Back-up power supplies (e.g. uninterruptible power supplies (UPS) or stand-by generation) may be appropriate.
✓ Train your employees to implement your business continuity arrangements.
✓ Undertake regular electrical infrastructure inspections and maintenance (this includes testing back-up power supplies and replacing diesel in back-up generators). See the ESG Diesel Fuel and Back-up Generation paper at www.tisn.gov.au.

POWER INTERRUPTIONS:
INFORMATION FOR BUSINESSES

This document provides some basic information about how power is supplied to businesses, what businesses can do to be well prepared should an interruption occur, and why power interruptions occur.
## Transmission Lines

Transmission lines carry electricity long distances.

## Zoned Substation

Zoned Substation converts high voltage electricity to low voltage for distribution.

## Distribution lines

Distribution lines carry low voltage electricity to consumers.

## Terminal Station

Terminal Station converts low voltage electricity to high voltage for efficient transport.

## Power plant

Power plant generates electricity.

### HOW ELECTRICITY IS SUPPLIED

The electricity supply chain involves large and small generators, transmission businesses, distributors and retailers.

Energy produced by large generators is transported via the transmission network along high voltage lines to substations where it is converted to a lower voltage.

From there, it is transported via the distribution network along low voltage power lines and underground cables to homes and businesses.

### WHAT TO DO WHEN A POWER INTERRUPTION OCCURS

<table>
<thead>
<tr>
<th>INTERRUPTION TYPE</th>
<th>WHAT HAPPENS</th>
<th>WHAT TO DO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planned interruption.</td>
<td>Distributors undertake regular, scheduled network maintenance to minimise unplanned disruptions to service.</td>
<td>You will receive advance notice. Implement any preparations necessary to ensure business continuity during the interruption period.</td>
</tr>
<tr>
<td>Unplanned interruption limited to your own premises.</td>
<td>An electrical fault occurs on your premises (i.e. on your side of the electricity meter). Implement your business continuity arrangements.</td>
<td>Contact a registered electrical contractor to undertake repairs.</td>
</tr>
<tr>
<td>Minor unplanned interruption to the distribution network.</td>
<td>Supply to the street (or part of the street) is interrupted. Implement your business continuity arrangements.</td>
<td>Contact your distributor to let them know you are affected and check their website for further information.</td>
</tr>
<tr>
<td>Major unplanned interruption to the distribution network.</td>
<td>A substantial part of the distribution network fails. Distributors are responsible for restoring supply.</td>
<td>Implement your business continuity arrangements. Contact your distributor to let them know you are affected and check their website for further information. Check for media updates, or contact your distributor directly.</td>
</tr>
<tr>
<td>Major unplanned interruption to the transmission network.</td>
<td>Widespread damage has occurred and there are outages to high voltage transmission infrastructure. Transmission companies are responsible for restoring supply and updating distributors whose networks have been affected.</td>
<td>Implement your business continuity arrangements. Check for media updates. Jurisdictions have arrangements in place to advise on restoration progress.</td>
</tr>
<tr>
<td>Large scale power system event: Supply to a particular area is not sufficient to meet demand.</td>
<td>Businesses may be taken &quot;off supply&quot; to reduce electrical load so the power system remains secure. AEMO advises the media, government, electricity industry and key stakeholders. Load shedding is rotated, so businesses may experience multiple interruptions.</td>
<td>Implement your business continuity arrangements. Check for media updates.</td>
</tr>
<tr>
<td>Large scale power system event: The power system becomes insecure due to equipment failure.</td>
<td>There is usually limited notice of these situations. AEMO informs the energy industry via a market notice. Load shedding is rotated, so businesses may experience multiple interruptions.</td>
<td>Implement your business continuity arrangements. Check for media updates.</td>
</tr>
<tr>
<td>Mandatory restrictions.</td>
<td>If there is a sustained shortage of supply over a reasonably long period (several days or more), each jurisdiction can invoke mandatory electricity restrictions. Businesses will be advised on how the restrictions will affect them.</td>
<td>Implement your business continuity arrangements. Check for updates. Jurisdictions will provide advice on how power will be used in your area.</td>
</tr>
</tbody>
</table>