

# Using generators for back-up power

## Keeping you and your property safe

A generator can supply electricity to some of the circuits at your property in the event of a power outage, enabling you to keep things like fridges and freezers, telephones, or water-pumping appliances running until the main power supply is restored.

Because of the risk of electric shock or electrocution, you must take appropriate safety steps when installing, operating and maintaining your generator.

### Purchasing a generator

There are many types of generators, including inverter, single phase, three phase, diesel or petrol options, with power outputs ranging from five watts to five kilowatts. Some are ideal for portable power, and some are better for permanent situations, e.g. for backup power.

The type and size of generator you need will depend on the number and type of electrical appliances you'll be running at any one time. As well as catering for the running power of the appliances, the generator will also need enough output to cover the initial surge of power appliances draw when they first switch on.

Some electronic equipment, such as TVs, computers and phones, are very sensitive to fluctuations in power supply. If you are powering these devices with a generator, you may need a special type that provides 'clean' power, e.g. without power surges, spikes or line noise, to avoid damaging the equipment.

Speak to a generator specialist or licensed electrician to determine the best generator for your needs. Always purchase from a reputable dealer who will provide you with a warranty and after-sales-service, in case you have any issues with the generator at a later stage.



### Installing a generator

If you want to connect a generator as back-up power for your home or business, you must hire a licensed electrician to do the installation and undertake any necessary alterations.

There are significant safety risks associated with installing generators, including electric shock to the person attempting to do the work, or potential death for anyone working on the electricity supply in the area.

Severe penalties apply if your system does not comply with the appropriate electrical safety standards (AS/NZS 3000:2007). Your electrician must give you a certificate of compliance to verify the work has been performed correctly and is safe for you to use.

When installing a generator, the licensed electrician must install a changeover switch to ensure the generator and the normal electricity supply can't operate at the same time. Where needed, the electrician must also:

- install an inlet for connection into the property's electrical installation
- consider the current rating of any flexible connection.

## Using a generator

Before using your generator, make sure you read the user manual and fully understand the operating procedures. Ask your licensed electrician to explain it to you, if you need help.

Hazards when running a generator include:

- carbon monoxide poisoning
- electric shock
- electrocution
- fire.

You should also consider the environmental effects of using a generator, including noise, fumes or fuel spills.

Your generator will need regular testing and servicing to ensure it will operate correctly when you need it. Check the manufacturer's instructions to determine how often your generator needs servicing.

## Connecting appliances to a portable generator

- Only use extension cords approved as safe to use in Australia.
- Make sure extension cords are in good condition and that they are protected from any potential damage.

## Generator tips

- **Never modify an extension cord to make a temporary connection to a generator.**
- Protect the generator from moisture and ensure its cables are suitable for the environment it is in.
- Always fully unwind the power cable when operating the generator, as coiled cables can get very hot.
- If the generator stalls when you try to start it, turn off the appliances, start the generator, then turn the appliances on one at a time.
- Generators can get very hot – never operate one near combustible material, as it is a fire risk.
- Liquid fuel (diesel or petrol) and its vapor is highly flammable. Store extra fuel for your generator in a separate location and ensure the generator is sufficiently cool before refuelling it.
- Different brands of fuel may perform in different ways, so talk to your supplier about how long you can store liquid fuels before compromising their performance. Fuel in an equipment tank may start to deteriorate after three weeks.
- Speak with your local council and your property insurer to find out about restrictions on the amount of fuel you can store and type of storage tank you can use.

## Carbon monoxide safety

Carbon monoxide is a colourless, odourless, tasteless and highly poisonous gas that is produced when petrol, natural gas or LPG burns. The human body doesn't recognise when carbon monoxide is present, which means it can easily kill you.

- Do not use portable generators inside, including in your house, garage, shed or any other closed in space, due to the high risk of carbon monoxide poisoning.
- Ensure the generator is away from open windows, vents and doors, to prevent carbon monoxide gas coming inside.

*This safety information was developed by the Office of the Technical Regulator, with input from SA Power Networks.*

### For more information

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