6 CRUCIAL STEPS TO RELIABLE BACKUP POWER

(#5 could save you $1000's)

Prepared by HCES Electrical, servicing Wangaratta and the Alpine Valley

WHY DOES THIS GUIDE EXIST?

The fact is. Power outages aren’t rare anymore!

Every summer, increased demand on Victoria’s power grid leads to more frequent blackouts — leaving homes in the dark, food spoiling, businesses shutting down,
and critical systems offline. The good news is a simple generator backup system can get the lights back on and appliances running in no time.

This guide exists to help you understand how these systems work.
Inside, you’ll learn:

✅ How to size your generator correctly
✅ How changeover systems really work
✅ How solar affects backup power
✅ Manual vs automatic explained simply
✅ The most common (expensive) mistakes
✅ What you actually need — not what salespeople push

No jargon.
No upselling.
Just straight advice from electricians who install these systems every week.

STEP 1. Understanding what you actually want to power.

The options for generator sizes and accessories are endless.

So to cut through all the noise you must first ask yourself what your specific backup needs are when the power goes out.

- Do you simply need the lights, power points?
- Will you need to run your air-conditioning system?
- What about electric cooking appliances?
- Pressure pumps?
- Hot water?
- Do you require 3 phase power?

By getting clear on what is crucial to your backup system you can save big $$ on your generator purchase.

Now with your specific loads in mind, you can turn the page!

STEP 2-GENERATOR SIZING ISNT GUESS WORK

Generators are rated in kVA's, not watts.

Watt the hell is KVA?

kVA = how much electrical load your generator can safely supply.

Too small → overloads, shutdowns and damaged equipment

Too big → wasted money, higher fuel use!

Typical ranges:

- Basic light and power 3-5kVA
- 3-4 bedroom home: 5–8kVA
- Larger homes/commercial spaces: 8–15kVA
- Industrial spaces: 15kVA+

This is NOT something you eyeball.
Correct sizing requires:
✔ Load calculations
✔ Starting currents
✔ Future allowance
✔ Phase balancing
Best to liase directly with an electrician before forking out $1000's for the wrong sized generator

STEP 3- Manual vs Automatic Changeover

What is a changeover system?
A changeover system safely disconnects your generator from the grid and vice-versa. This prevents unsafe grid back feeding and damage to your generator when the power comes back on!

Manual Changeover
You start the generator yourself, plug into your provided inlet and flick the changeover switch.
- ✓ Cheaper
- ✓ Simple
- ✓ Reliable

Best for homes and small businesses.

Automatic Changeover
System starts automatically when power fails.
- ✓ Seamless
- ✓ No manual intervention
- ✓ Ideal for critical operations

Used for medical, commercial, or industrial setups.
Neither is “better” — only what suits YOUR situation.

Step 4- Solar + Generators: The Hidden Trap

Without a battery system installed, your solar panels cannot run your home when the grid fails.

To connect a generator to a home which has an existing solar system requires a few extra steps by your electrician.

If wrongly installed you can cause major damage to your solar inverter and your generator!

It is best to make note of your solar system and where it connects to your home. Your electrician will want to know this!

A professional changeover system, installed by a licensed electrician safely separates solar from generator supply.

Dont DIY!!

Step 5- time to gear up!

Now you know your what you want to power, you know what size of generator you need.

From here you can set out to purchase your generator and organise your installing electrician!

At HCES we highly recommend name brands when buying a generator. Stay clear of cheap imitations. Buy the right generator the first time.

You cant go wrong with Honda, Cummins, Kubota and the likes

Other important considerations

- Ensure the outlet size on your generator matches the kVA rating
- Run time requirements and fuel efficiency ratings
- quiet operation

Too many times we have been asked to install inlet systems for an 8kVA generator (32A changeover system) only to find that the generator that has been supplied with multiple 15A inlets. This means that the maximum usage of the new generator is limted by 45%

Step 6- Professional installation is not an option

Generator changeover systems are:

⚠ High-risk electrical installations

⚠ Regulated works

⚠ Insurance sensitive

DIY or incorrect installs can:

- Backfeed the grid (dangerous + illegal)
- Destroy appliances
- Void insurance
- Create fire risk

Licensed electricians ensure:

✓ Correct isolation

✓ Legal compliance

✓ Safe operation

✓ Piece of mind

The team at HCES electrical can help

Contact our friendly team today!

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