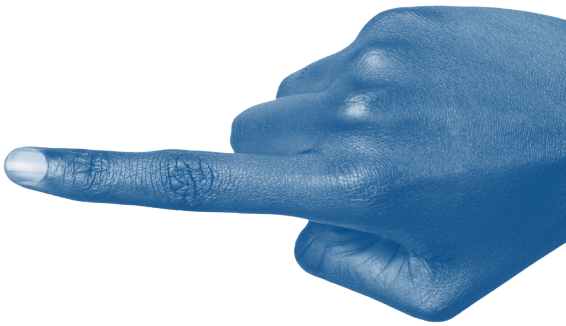
Plug in: to going off-grid



With solar and batteries cheaper than ever, you might be thinking of going off-grid. Here's what to consider, what to look out for, what questions to ask and how to make the right choice for installing an off-grid system.

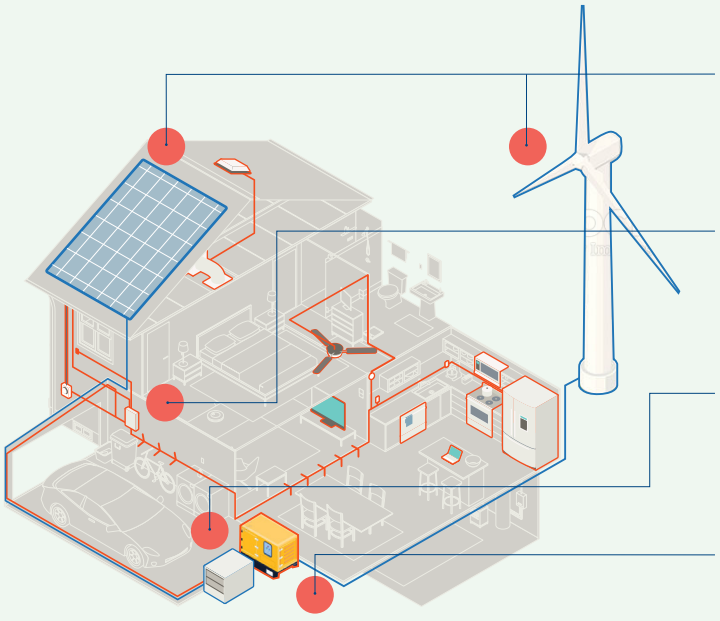
1

Step 1: Understanding if going off-grid is right for you.

What is going off-grid?

Going off-grid means not being connected to the energy grid that traditionally brings people power. To do this successfully, you need to have the right equipment to produce all the electricity you need, and that can make it available when you need it.

Even with a big system of solar, wind and battery storage, this may not always be possible. For times your off-grid system can't produce and store enough energy, you'll need a backup generator to provide essential power.



1. **Solar panels convert sunlight, and a turbine converts wind, into electricity.**
2. **Inverters convert solar and wind power into the right type of electricity for your home.**
3. **The battery stores excess solar and wind energy to power the house when the solar and wind can't.**
4. **Petrol or diesel generators create backup electricity when your solar or wind system can't create enough.**

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1 What are the benefits of going off-grid?

Saving grid connection fees:

In remote regional areas, sometimes it's very expensive to connect a property to the electricity grid. In these cases, it might be cheaper to install an off-grid system.

This is unlikely to be the case if you are in an urban area or already have a grid connection.

Saving ongoing energy costs:

By being off-grid and generating all your own electricity, you don't need an energy retailer and so won't receive an electricity bill.

Your ongoing costs will be what it costs to maintain your off-grid system.

Energy independence:

Going off-grid means you can provide your own electricity without relying on energy companies.

But there are some disadvantages too:

- Limited supply: an off-grid system can only supply a certain amount of electricity. If you suddenly need more than the system's capacity to produce or store, you will need a backup generator (and its capacity at any given time also has limits). It may mean you need to avoid running lots of energy intense appliances at once.
- Wasted clean energy: if you're off-grid there is no grid to export your unneeded solar power to – you can only store so much, any extra goes to waste, and you can't earn a feed-in tariff for it. If your system is big enough to power your home in winter (when there is less sun), there'll be lots of wasted electricity in summer when energy generation increases.
- A big responsibility: you'll need to maintain and manage your system yourself, and if part of it breaks down you might have little or no power until it's fixed.

Going off-grid means you have to be more careful about how you use energy. It's not for everyone!

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Is going off-grid right for me?

To be able to go off-grid, you need solar panels, wind turbines, or another way to produce enough electricity every day and a battery system to store whatever you'll need overnight or on cloudy days. To strike this balance, you'll also need to reduce your electricity usage through more efficient appliances, and be more mindful about how and when you use electricity.

Taking your home off-grid is unlikely to be cheaper than being on-grid, unless it will cost you a lot of money to connect to the grid.

Some things you should consider before going off-grid:

- Lifestyle change: your household situation could change. In the future you might grow your family, start working from home, add a pool or get an electric car, and this could impact your ability to power your property off-grid. You'll need to consider what these changes could mean for your electricity generation and use.
- Ongoing costs: you'll save money by not having to buy electricity from an energy company, but regular servicing by an accredited electrician is essential – plus fuel for your generator. Both of these incur costs.
- Property value: an off-grid home may attract some buyers and discourage others – consider the potential buying market for when you come to sell your home. Also check what's allowable within your home insurance, council restrictions and estate covenants.
- Medical equipment: if you have life support or other medical equipment, you should carefully consider your need for uninterrupted power – the risks of going off-grid may be greater for you.

2

Step 2: Choosing an installer

How do I find a good off-grid installer?

Off-grid systems are not very common, so there aren't many businesses that install them. These systems also need to be custom designed to meet your specific needs – so look for a company that asks you a lot of questions about how you live and what appliances you use.

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How do I find a good off-grid installer?

Once you have found a few off-grid installers you like, you can compare their quotes to find the offer that best suits your needs.

Find other people with off-grid systems and ask them about their experiences with off-grid system designers and installers.

Ask installers about how many systems they have installed, and if you can speak to other customers of theirs about their experience.

Look for installers that are members of a best practice industry scheme (such as the Approved Solar Retailer program run by the Clean Energy Council). Some state government rebate programs will require you to use one of these suppliers.

What should I look out for in my quote?

In your quote, a good installer will give clear information about:

- ☐ The total amount of energy in kWh (kilowatt hours) and power in kW (kilowatts) the system should provide on a typical day at different times of year, how this compares to your expected usage, and an estimate for how often you'll need to run a backup generator. It's really important to have this documented in case there are problems with the performance of your system.
- ☐ The different components of the system – energy production (solar panels, wind turbine, etc.), storage (batteries), inverters, backup generator, and so on – and a plan of where they will be installed on your property.
- ☐ The brand, cost, and warranties of the various components. Warranties might be for a number of years, number of cycles (fully charging and fully using a battery's charge once), or 'energy throughput' (how much electricity in total a component will provide over its lifespan).
- ☐ What rebates or subsidies you will be eligible for – noting that some state government rebates are only available for on-grid systems.
- ☐ The installation warranty period (including the timeframe during which the installer commits to carrying out repairs or adjustments free of charge), and how much they will cost if needed after the end of the warranty period.

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What should I look out for in my quote?

- ☐ The total cost and running costs of the system over its working life (including maintenance and generator fuel), and how this would compare to the cost of being connected to the energy grid (if this is an option).
- ☐ What sort of energy monitoring system is included, so you can see how your system is performing.
- ☐ The cost of replacing or upgrading any components after the warranty ends.

Questions to ask suppliers when getting a quote:

- Are there any factors that will affect the cost of installation on my property?
- How long will installation take?
- Am I eligible for any rebates or subsidies? If so, how much will they reduce the cost of the system by? How do I access these rebates?
- What are the warranties on components and installation? For how long do the warranties apply?
- Will the performance of the system decrease over time? How much?
- For how long will the battery storage power us if our system can't produce electricity (due to poor weather or a fault)?
- For how long will the backup generator power us before it needs to be refuelled?
- What should I do if the system stops working?

Signing the contract and paying for your off-grid system.

Once you have reviewed some quotes and found the best installer for you, you will be asked to sign a purchase contract.

A good installer must:

- ☐ Give you a contract that is clearly written and not full of technical language.
- ☐ Explain the contract to you and point out any specifics you should be aware of.
- ☐ Detail the payment process to you and what happens if the contract needs to be ended. For example, whether your entire deposit will be refunded or only part of it.
- ☐ Explain what happens on the rare occasion that an issue is discovered on installation day; this should also be detailed in your contract.

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After you have signed your contract, there will be a few options for paying for your system.

You could pay up-front; you might redraw on your mortgage or get a loan from the bank. The installer may offer financing, so you pay in instalments. You should check what option best suits your financial situation.

Before accepting financing from your off-grid installer, ask:

- Is the total cost different if I accept financing?
- How much is the interest?
- Are there any additional fees?
- Are there any payment terms or conditions that I must meet?
- Are there any additional fees I'll be charged if I fail to meet terms and conditions?
- Will this affect my credit rating?
- What happens if I have trouble making a payment?

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Step 3: Getting your system installed

What happens on installation day?

Your installer will have nominated a day for installation to start and let you know if there are any changes to the date or timeframe.

For installation, your off-grid installer will:

- Arrange for safe delivery and installation at your property.
- Tell you about any problems that occur and what it will cost to fix them.
- Give you clear instructions for how to use your system, and information sheets or manuals for all the components. Make sure you keep this information somewhere safe because you will need it if you have a warranty claim.
- Clean up when they are done.

On rare occasion, an installer may find a significant issue on site that changes installation requirements. In these situations they should offer to vary or terminate the contract and refund you some or all of your deposit if it is terminated.

Once your system is installed, the installer will test and activate it. A good installer will inform you of anything you are required to do as part of this process.

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How do I start using my system?

A good supplier will:

- Give you clear information about how to safely use, maintain and get the most out of your system – including a maintenance and service schedule and information about the costs of the periodic checks and services that your system requires.
- Show you how to use information from your monitoring system to find out:
  - how much electricity it is producing and storing
  - how much you are using and when.

Having an off-grid system designed and installed at your property can be complex but rewarding. Use this as your step-by-step guide.

Already have an off-grid system? Check out our guide ‘Plug in: to being off-grid’ to find out about your rights, consumer protections and how to get the most out of your system.

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