Getting Power to a Rural Property in NZ

Have you just purchased a lifestyle block? Maybe you're moving onto family land that has no services? Getting power to a rural property is usually the first task, so that you can progress all your other work!

You've got two main options: a mains grid connection or going off-grid.

If you want to get connected to the grid, you can contact the local lines company and get a quote for the cost of getting power connected to rural property – to the gate, as well as out to where you will have buildings on the property. Then, you can decide whether grid-tied or off-grid is the most economical option is for you.

How do you get a quote for getting power connected?

These are the lines companies to contact in your area:

North Island List:

- Far North: Top Energy
- Northland: Northpower
- Auckland: Vector
- South Auckland and North Waikato: Counties Energy
- West Waikato: Wel Networks
- East Waikato and BOP: Powerco
- Southwest Waikato: Waipa Networks Ltd
- South Waikato and North Manuwatu-Wanganui: The Lines Company

- Eastern Bay of Plenty: Horizon Energy Distribution
- Gisborne and North Hawke's Bay: Eastland Network
- Rotorua through Hastings: Unison Networks
- Hawke's Bay south: Central Lines
- Dannevirke and surrounds: Scanpower Ltd
- Taranaki, Manuwatu-Wanganui and Eastern Wellington: Powerco
- Foxton through Paekakariki: Electra
- Wellington West: Wellington Electricity

South Island List

- Marlborough: Marlborough Lines
- Nelson: Nelson Electricity
- Tasman: Network Tasman Ltd
- Northern West Coast: Buller Electricity
- Canterbury (N of Chch): MainPower NZ
- West Coast: Westpower Ltd
- Canterbury to Rakaia River: Orion New Zealand Ltd
- Rakaia River to Rangitata Rivers: EA Network
- South Canterbury: Alpine Energy Limited

- North Otago: Network Waitaki Ltd
- East Otago: OtagoNet
- West Otago, Milford Sound and Dunedin: Aurora Energy
- Southland: The Power Company
- Invercargill and Bluff: Electricity Invercargill Ltd
- Stewart Island: Stewart Island Electrical Supply Authority

How much does it cost to get power connected to rural land?

This cost can vary wildly, from just a few thousand to over $100,000. In some cases where the connection is simple, you might be looking at a connection cost of $2-10,000 dollars, but this price may be much higher in different situations.

If the company needs to do significant work on your property like adding transformers or running long lines, if the lines in the area are already connected to many properties with no room for expansion, or if there is no infrastructure anywhere near your boundary, you could be looking at a quote anywhere from $25k to $100k+. In some cases, you may even find that they won't connect you for those reasons!

In our case, the estimate to connect a property in the Kaipara and then run powerlines 2km up the driveway (from the gate to the building site) was $45-90,000. There were already power lines along the road with neighbouring properties connected.

This cost also does not cover future power usage charges, which will continue as long as you are connected to the mains. Get in touch with the locals now and find out how much power bills cost in the area, as some regions are much more expensive than others.

Being connected to the grid also means being subject to power cuts, which are typically more frequent and longer-lasting in rural areas.

What can you do if the power company won't connect you? What if the cost of getting power connected to a rural property is too high?

If the cost to connect your rural property to the mains is too high, or the power company won't connect you, you can set up your lifestyle block with off-grid power sources and use power very similarly. These sources include a generator, an off grid solar power system, wind or water electricity generation, and non-electric alternatives like LPG.

There's a very high chance that the cost to get power connected will be close to or more than the solar power off grid cost to install - the key difference is ongoing costs. Mains power requires paying a monthly power bill, while off-grid power doesn't, though there may be some minor maintenance costs down the line, discussed below.

How much does it cost to run a generator?

The cost of running a generator varies greatly depending on your usage and fuel prices. A generator uses approximately 0.12L of petrol to generate 1000Wh of electricity (about the amount needed to run only a fridge for 24 hours) but the exact usage varies across models.

Running a generator is a great way to get power in the early days of being off-grid, as the power is on-demand and not weather dependent.

However, having to pay for fuel to run a generator can make it an expensive option for power full time and long term. The other drawbacks of a generator are the maintenance (refilling fuel, oil, servicing) and the loud engine noise – "silent" models still create some noise, and they are more expensive.

They're great for part-time use (such as running power tools that are only used for a few minutes at a time), or topping up a solar battery bank, but almost all off-gridders agree that they're not great to run 24/7.

What is off-grid solar? How much does solar power off grid cost?

Off-grid solar is the best option for powering a rural property, and it's slightly different to the solar you might be used to seeing in residential areas, which is known as "grid-tied solar".

Grid-tied solar is intended to supplement a mains power connection and reduce power bills - so a house can be powered by solar during the day, feed the excess power back to the grid instead of storing it, and then the house will draw power from the grid overnight. Most grid-tied solar homes will also be subject to the same power cuts as homes without solar (unless they have batteries installed, although most don't).

The main difference between grid-tied solar and off-grid solar is the connection to the main power grid – off-grid solar is a completely closed loop with no connection to the mains, so it's perfect for a situation where a mains connection is not feasible. Off grid solar works by storing the power generated by solar panels in a battery bank, so it can be used at any time of day and is unaffected by anything happening to the grid.

Solar power off grid costs can also vary, but for a typical 2–4-person household that's designed to be off-grid, you will likely be looking at $10,000-20,000 for the gear, depending on your power usage estimates. An off-grid solar set up like this is made for year-round usage – but if you only intend to be on the property using power during summer for example, your costs will be much less.

For example, our Freedom Kit is popular among small families, it costs $13,000, and it can run the following items over the course of a day as long as you're getting at least 3 clear hours of sunshine (winter average).

Installation costs for off-grid solar can vary – a DIY kit can save you a LOT if you do some or all of the installation work such as mounting the solar panels and components and running the cabling. You'll be looking at around $5000 for a complete install of a 2-person household sized kit, but that cost will drop down a lot if you're only asking the

electrician to do the final wiring for example.

Can I run my house using off-grid solar?

Yes! An off-grid solar power system can be wired into your home's distribution board and can be used for all your normal 240V household appliances; your lights, device chargers, kitchen appliances, a fridge, a TV and more. You do not need to buy any special 12V appliances or gas fridges (like you see in campervans).

There are a few exceptions to what you can run on solar energy: water heating like a hot water cylinder, cooking with an electric oven or stovetop, and space heating. While these things technically CAN be powered with solar, it's not economically viable, because they use A LOT of power quickly and will require a much larger, much more expensive solar power system.

We usually recommend switching these things to alternatives such as LPG/BioGas or woodburning, and occasionally running a generator. Some smart planning here can help you save a lot of money when powering your lifestyle block!

How do I get off-grid solar?

This is the easy part! We've created a range of off-grid solar kitsets that you can choose from – they're complete kits that come with everything you need to generate, store, and use power completely off-grid.

To help you pick the right one, we've created an example of one day's usage for each kit that you can compare your situation to - but it's also simple to calculate your specific needs if they're quite different. You just need to take stock of all the items that will require power on your rural property, then use our handy calculation guide to match that usage to one of our off-grid solar kits.

Our goal at GridFree is to help you learn everything to need to know to choose the right solar kit and get the best life out of it. We're here to answer all your questions and guide you through the process transparently; showing you what solar is capable of, what will work with your budget, and how you might need to adapt.

GridFree kits are also designed to be DIY-friendly, so you can install most of it yourself if you want. An electrician is required for any 240V AC work, which includes wiring it into your household switchboard and wiring in a generator. This means you can choose to install everything else yourself – mounting the panels, running the cables, connecting the components – as the kits come with full detailed instructions.

If you're not comfortable with any part of the installation, you can pass the instructions to an electrician to complete it - either one you choose or one of our recommended installers. Just make sure you get in touch with them before you start.

What are the maintenance costs of off-grid solar?

Off-grid solar has no monthly bill, though there are some maintenance costs to

prepare for down the line. The most common one will be a generator – we always recommend having a back-up generator when you live on off-grid power, because there will always be days with no sun! You'll need to account for fuel costs, though this should be low if it's only a backup power source.

The second is component replacements – most of these have a long lifespan. The solar panels should last about 25 years before you see a significant drop in power generation, and the charge controller and inverter (parts that go in between the panels and batteries) will last several years if they're kept weather tight and well-ventilated. The batteries are what will need replacing first.

Our standard battery, Gel, has an expected lifespan of 3-5 years. If you upgrade to the more expensive lithium battery, you will see a much longer lifespan of 10+ years before they significantly degrade, making them the most cost-effective long term. For some, it's more budget-friendly to start with Gel, and upgrade to lithium when the Gel batteries decline, as the price of lithium battery technology is expected to drop in the coming years.

Other than that, there are no maintenance costs, just a few simple tasks like cleaning the solar panels every 6-12 months.

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Getting power connected to rural property is not always easy or cheap, so more and more people are choosing to go off the grid with a GridFree solar kit.

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Learn More:

To learn more about off-gridding, especially solar, make sure you check out our knowledge base at: https://gridfree.store/blogs/how-to-articles/

Check out solar power options, from individual components to complete kits, on our website: https://gridfree.store/collections/complete-off-the-grid-solar-kits