harrisons solar

Beginners **Guide to Solar**

Slash your power bill and save your wallet

Save the planet

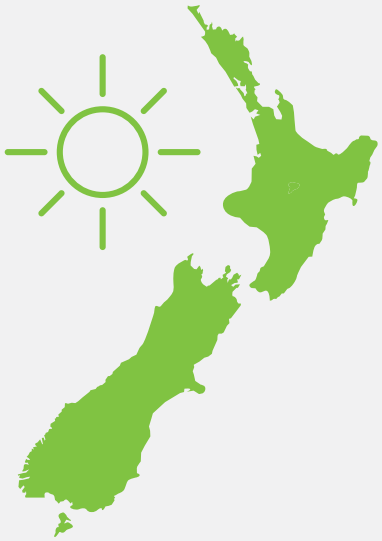
Self-reliance from your power company

Increase the value of your home by an average of $35k+

Contents

Why it's time to choose Solar

There is a massive movement towards **sustainable living** and homes, the ban of single-use plastic bags, rising power costs, and how New Zealand needs to change to be **energy efficient by 2030**. In a nutshell, **our future generations depend on it**.



Is New Zealand a good place for Solar?

Absolutely! New Zealand is abundant with sunshine and generates between **1700 and 2100 sunshine hours** annually. Some areas, like Nelson and Gisborne, receive as much as 2400.

Solar Panels don't require sunshine to function; they require daylight, so **Solar Panels work year-round**, even in the lower South Island.

Solar is more affordable than ever

Residential, farm, school and commercial customers are taking advantage of Solar more than ever before, building themselves a sustainable future as well as financial savings. Power costs are only ever going to go in one direction, right?

Furthermore, Solar technology has improved in leaps and bounds, especially with Solar batteries and energy storage. That means the potential return on investment is also greater than ever before.

#1 in New Zealand

Harrisons is the #1 installer of residential Solar in NZ, bringing you Solar Panels and a battery system at the best prices from trusted brands backed by up to a 25 Year Warranty.

The benefits of going Solar

Financial

How going Solar saves you money

Saves you money

Most people who go Solar on their homes or business do so primarily for financial benefit.

Reduces or even eliminates your electric power bills

Electricity costs make up a large portion of your monthly expenses, especially in winter. With a Solar panel system, you'll generate free power for your system's entire 25+ year lifespan.

It generally takes around 7-9 years to pay off the initial cost of Solar Panels. After this period, your power is essentially free!

Avoid rising energy costs

Every year, electricity prices continue to increase throughout the country. By investing in a Solar System now, you can lock in the price you pay for electricity today to protect against future increases in electricity costs.

Increases your property value

Here at Harrisons Solar, we teamed up with **homes.co.nz** to analyse thousands of homes where we have installed Solar to see what impact installing a Harrisons Solar System has on the value of a home.

We compared the houses sold after Solar Systems were placed with the other comparable homes in the area and found out that, on average, Harrisons Solar increased the home's selling price by 4.4% or $35K. The Top-10 houses increased by an average of 45%; the lowest ten still increased by an average of $10,000.

Here's an example from a Harrisons Solar customer

We installed a 3.7kW solar energy system in a relatively typical Kiwi family home in Auckland. They typically had a $200 power bill each month.

They now pay next to nothing on power bills each month; they sometimes need to top up using the national grid when using lots of heating in winter.

As retail power prices continue to rise, they will save more than $50,000 within the next 25 years of using their system!

The benefits of going Solar

Environmental

How going Solar saves the planet

The second primary reason people install Solar is for the environmental benefits

Solar energy is a renewable option, so it doesn't deplete natural resources

When we use Solar energy, we are taking pressure off power grids that don't use renewable energy sources. While most electricity (currently about 84% and counting) in New Zealand comes from renewable sources, our power grid is still responsible for depleting some non-renewable resources such as coal or oil. It's undoubtedly better for the Earth to use power sources that won't run out!

Solar power reduces pollution

The Solar Systems don't release compounds that harm the environment and our health. Coal, oil and other fossil fuels release harmful greenhouse gases that damage our ozone layer, contribute to global warming and pollute our local air. By using Solar power, you are not relying on energy sources that damage the environment or human health. Moreover, a typical residential Solar System will eliminate three to four tons of carbon emissions each year—the equivalent of planting over 100 trees annually.

1
residential solar panel system

=

3-4
tons of carbon emissions eliminated each year

=

100+
trees planted annually

Solar energy reduces water and land usage

Although hydropower and nuclear power are renewable energy options, both require a lot of water to produce electricity. Also, hydropower usually requires dams, altering the local natural ecosystem and destroying land-based habitats.

Solar Systems do not use water to run and are generally installed on established buildings, requiring no extra land.

What makes up a Solar System

The main components of your Solar System are the **panels**, the **inverter**, and, sometimes, the **battery**. Each component must work together, with no element compromising the performance, safety or life expectancy.

Panels

Solar Panels on roofs of homes and businesses generate clean electricity by converting sunlight into usable electricity. This conversion takes place within the Solar cells and is a process that requires no moving parts.

Solar Panels may look the same, but they can differ significantly. Low-quality Panels typically generate less power, so remember to ask what the estimated monthly and annual production in kW/h of a brand is before you buy.

Inverter

A Solar inverter is one of the essential elements of the system. It converts the energy generated by the Panels (DC power) into electricity for the home (AC power) and is the system's brain.

Depending on how your system is set up, the electricity not used in your home is either fed into the grid via electrical power lines or stored in home batteries for later use. Long-lasting Solar systems for the New Zealand climate require high-quality inverters. Unfortunately, lower quality inverters and Panels have failed to perform under New Zealand conditions in vast numbers.

Battery storage

You can add Solar batteries to your Solar System to store Solar energy for nighttime use to save even more money. Batteries are essential during a powercut to keep the lights on and appliances running - no more food going to waste or puddles under the fridge.

How does a Solar System work

There are three main types of Solar Systems

On-grid Systems

It's what most people think of when they think of Solar energy. With on-grid Solar, your home produces Solar energy and only uses energy from the grid when required. When you have excess power, you can even sell it back to the grid for a credit! On-grid Solar is an excellent option if you're looking to help lower your electricity bill and you're not trying to supplement your home's energy use fully.

Hybrid Systems

They are also called 'Solar-plus-storage systems'. The Solar Panels are paired with a Solar battery to store energy for the home to use later on or during a power outage, and the house is also connected to the grid.

Off-grid Systems

There is no connection to the grid, and the home runs entirely off of energy generated and stored on-site.

How many Panels do you need?

The number of Solar Panels you need to meet the energy requirements of your household comes down to the three key factors to consider:

1. Your normal average daily energy consumption
2. The sun hours in your area
3. Your roof size

Average Energy Consumption

The average energy consumption is the essential guideline in determining the number of Solar Panels you need. A retired couple will have a different power consumption than a young family, plus pools, spas, electric cars can also impact energy requirements.

The amount of energy Solar Panels can generate depends on sun hours and is therefore affected by your location.

Your roof size is crucial because it determines the number of Panels that can fit on your roof, how much energy will be generated, and the cost.

Harrisons on-site inspection

Our Harrisons local business owner will visit your home in person for a site inspection, checking the roof position, discussing your electricity usage pattern, monitoring options and, where applicable, conducting a shade analysis to ensure the right quantity of the right panels are placed in the optimum position.

Looking at your usage we can also recommend adding hot water timers and power diverters to save you even more money.

Is my roof suitable for Solar Panels?

Thanks to advances in Solar Panel technology and tilt mounting, **most roofs can now benefit from a Solar power system** with excellent results.

Roof orientation

Roofs facing north, northwest or northeast have the best exposure as they will get most sunlight throughout the day, but your roof would still be suitable for Solar Panels if it faces east or west.

Roof pitch

The optimum roof pitch angle will depend on the latitude where you live.

The best tilt angles in New Zealand are between 23 and 36° in summer and 51 to 61° in winter. If your roof angle doesn't lend itself to those numbers naturally, Solar Panels can be mounted on Tilts to raise them to the best position.

Roof size

Ideally, you would want to have up to 24 m2 available – which is the equivalent of a parking space, but if you don't, you could use more efficient Solar Panels to compensate - this is something your Harrisons Solar expert will advise you on.

Shading on roof

Modern Solar Panels can cope with some level of shading, but to get good Solar energy production, they should be free of shade for most of the day. Trees, tall buildings and chimneys can all cast shadows and decrease the efficiency of your Solar panel system.

If you get any shade on your roof, the only way to ascertain how much of a problem it will be is to ask your local Harrisons Solar expert to do a shade analysis for you.

Roof Structure

The average-sized Solar System, including Solar Panels and mounting frames, can weigh about 275Kg. During the site inspection, it should be checked to determine whether additional roof support is needed.

Roofs will also be drilled into to secure mounting Solar Panels, so it is vital to ensure that its structural integrity won't be compromised.

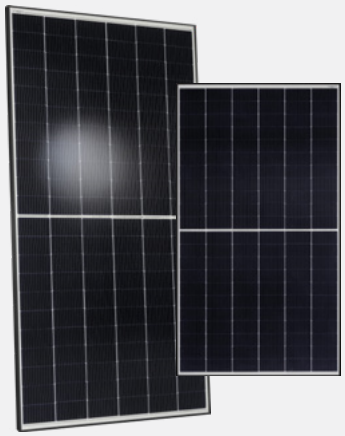
Calculate your roof's solar potential now!

How long do Solar Panels last?

Choosing the best Solar Panels

A Solar Panel is a relatively simple device with no moving parts; they require minimal ongoing maintenance if installed correctly. Worldwide, the most up-to-date Solar Panels generally have a warranty for operating at optimum productivity for 25 years, and it's infrequent for Solar Panels to 'go bad'. After 20-25 years, it is common to see the Solar Panel's electricity production decrease nearly 20% below their initial power output rating.

High-quality Solar Panels have been shown to degrade at a far slower rate, while cheaper Solar Panels degrade faster. Very low-cost Solar Panels with less UV stabilised backing sheets, cheaper sealants, and framing can fail in as little as two years.



To maintain maximum electricity output and extend the life of your Solar Panels for as long as possible:

- Keep your Solar Panels clear of debris, dust, dirt and pollen with a regular hosing down.
- Get a professional maintenance check every few years.
- Get your Solar Panels installed by a well known reputable provider in the first place who will be around for the 25+ year life of the system, so you can rest assured that they will fix any (unlikely) issues that do come up.
- Ensure your Panels are not placed beneath any branches or heavy objects that could fall in stormy weather.
- Regularly check that your Panels do not have birds or rodents nesting underneath, as this can damage the wiring and roof attachments.

Harrisons uses only quality brands

Harrisons have been Kiwi family owned and run since 1962. Harrisons only use top quality brands, long lasting brands like Q CELLS Solar Panels which are engineered in Germany and are the only Tesla Powerwall Certified Premium Installer in NZ.

How to choose your Solar installer?

Buying Solar System is a solid investment, so you need to make sure that you **choose the right one for you**. The market is flooded with installers who claim that they are the best.

If you don't know what to look for, you may get overwhelmed by all the information.
Here are some tips to help you through the process of Solar System installation.

The installer should be able to visit your home and check your roof on the **first appointment** to give you a full and accurate energy assessment to check the suitability of Solar for your home.

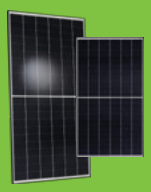
If the installer is not willing to take the time, evaluate your specific requirements, and physically check your roof, you will most probably not get the best installation.

Don't hesitate to ask the installer to provide you with references and testimonials from previous clients. If they have been in business for a while, they should not have a problem giving you references.

You should also do some research on the installer. The Solar installer should also be a member of the Sustainable Energy Association of New Zealand, or SEANZ.

You should be aware of what kind of **product warranty** the equipment comes with. The average warranty offered for cheap Solar Panels is around 12 years - so these aren't a great investment, and you won't get a long payback period.

These manufacturers will often rely on a 25 performance warranty - but in some cases, the product will not last long enough to perform for full 25 years.



Q CELLS
Engineered in Germany

Q CELLS solar panels are the best quality you can buy, engineered in Germany with up to 25 Years Product AND Performance Warranty.

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Questions to ask before you buy

Asking your Solar retailer a **few essential questions** may make a big difference to the service and benefits you receive.

Make sure you get the answers in writing.

1

What is my system's estimated annual production in kWh in its installation position?

2

What is the estimated Solar electricity production in the best and worst months?

3

Who will service and maintain my Solar system? Get an address and contact details.

4

What are the responsibilities of each party? Include the installer, manufacturer and consumer.

5

Who is responsible for connecting your Solar system to the electricity grid? Is it the installer or another subcontractor? When will it happen?

6

Who is responsible for your meter changeover? Is it you, the Solar system installation company or the electricity company? Make sure this is clarified. Quality installation companies usually offer to accommodate the whole job.

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At Harrisons Solar we are dedicated to **slashing your power bill and saving the planet by helping you go Solar.**

We've been **family-run since 1962** when Des Harrison first started his home furnishing and furniture company and are the #1 installer of residential Solar Panels in NZ.

The way we work means **you call the shots**: we will visit you when you want to check your roof and understand your homes power usage - we then tailor a highly efficient, delivering maximum Solar production year-round solution.

Slash your power bill and save the planet by **going Solar with Harrisons today!**

Book a free in-home
Solar assessment

0800 00 33 54
harrisonssolar.co.nz

BOOK NOW