



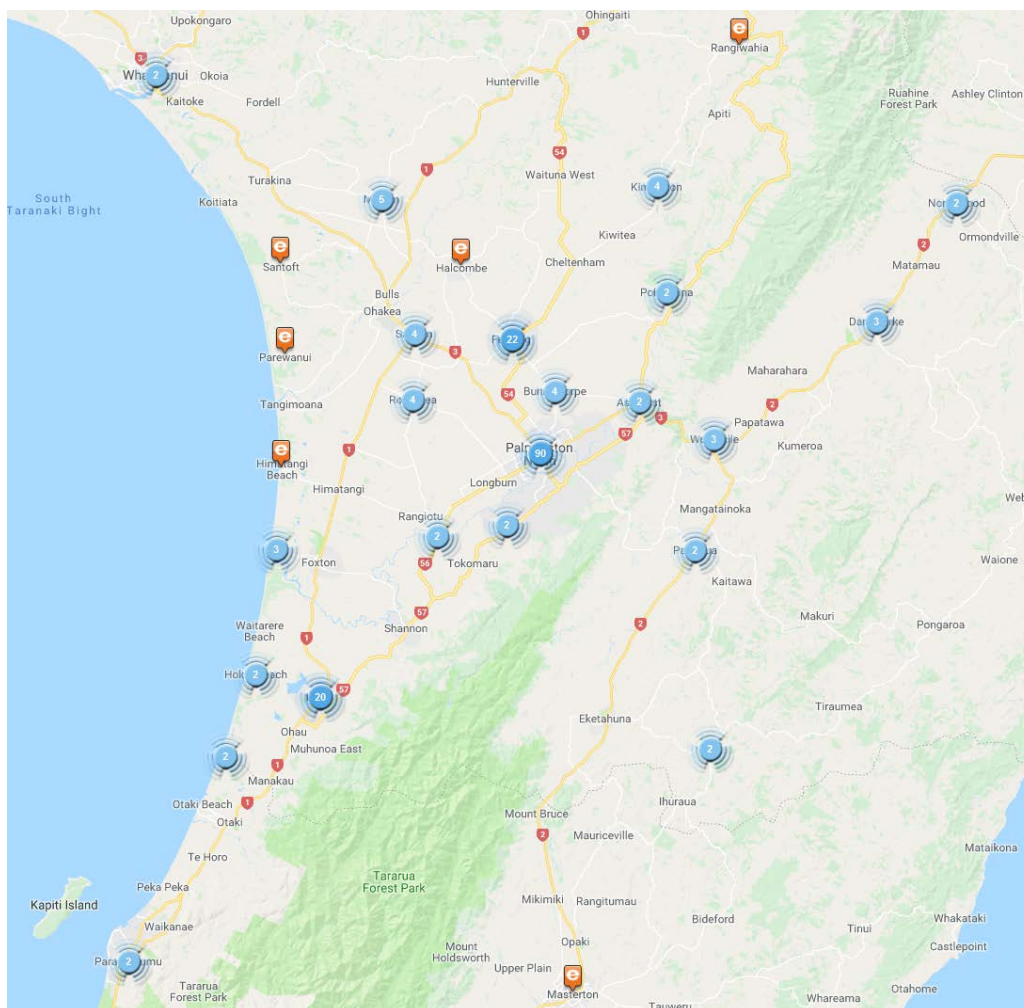
Enphase  
Preferred  
Installer

# Inverters

McNae Electrical Solutions recommends and installs Enphase micro inverters in nearly all installations. The reasons for this are two-fold. First, because of the inherent advantages of micro inverter technology, and second, because of our huge buying power, we can install a micro inverter system at no more cost than a string inverter system.

McNae Electrical Solutions is one of the most experienced installers of Enphase micro Inverters in New Zealand, and we are the largest installer of Enphase Systems in the lower North Island. Our competitive pricing is supported by a dedicated engineering team with over 300 Enphase micro inverter installations completed.

Enphase systems are now right across New Zealand. McNae Electrical Solutions is proud to be playing a major role in the uptake of solar power in the lower North Island. Enphase have recognised McNae Electrical Solutions' record of superior customer service and quantity of installs and has granted us Preferred Enphase installer status. This ensures that you get the right advice, system design and technical support.



Micro inverter technology allows each panel in a solar system to work independently from the other panels, ensuring maximum output of clean renewable energy for your household or business. Micro

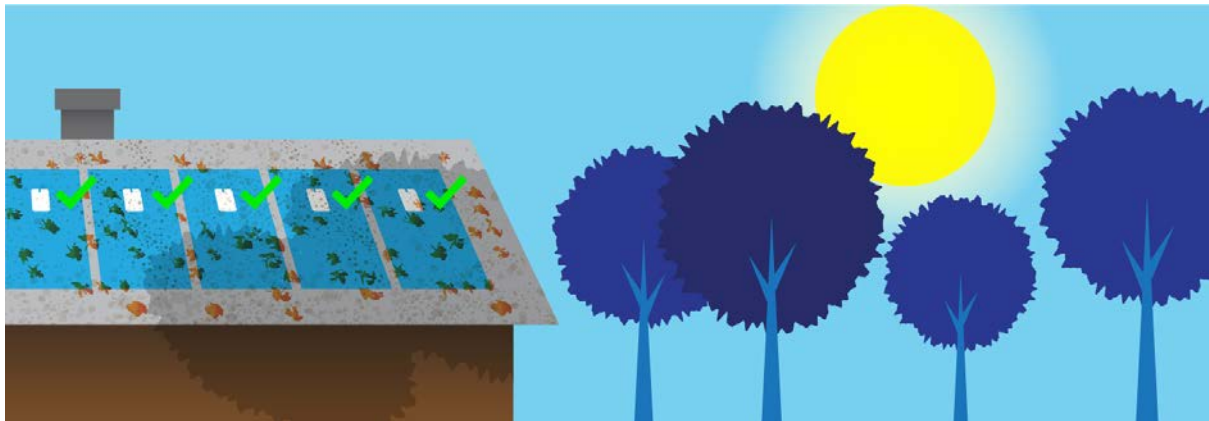
inverters help avoid common roadblocks that stop a solar installation on many houses such as patchy shade and small roof areas.

An Enphase micro inverter system uses a small DC to AC inverter under each panel. This means that each panel's performance does not affect any other panel's performance – this is of particular use when there are shade issues, or when you need to face panels in two or more directions.

## Why Choose Enphase?

The smarter choice in solar technology.

Higher production, best savings

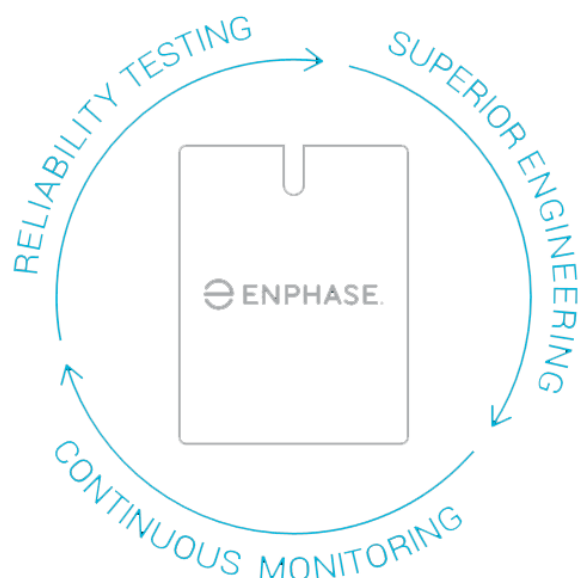


Enphase micro inverters are proven to produce more energy than other technologies.

- Micro inverters operate independently, so each panel performs to its fullest. One shaded or dirty panel won't affect the rest of the system.
- Burst technology lets micro inverters produce more at dawn, dusk, and in low-light conditions, for a longer solar day.
- Higher production, no matter what nature brings. Maybe your roof isn't shaded, so you think micro inverters aren't for you. Well, think again. First, shading is only a part of the story. Think dirt, leaves, scratches, snow... Second, even if you keep your panels spotlessly clean, wear and tear won't happen uniformly, and temperature differences occur naturally. No matter what, you'll deal with panels operating at different levels of efficiency (an occurrence known as module mismatch). And if you've got micro inverters, you'll maximize your production in spite of it.

### More reliable

- Because they function independently, micro inverters are inherently more reliable:

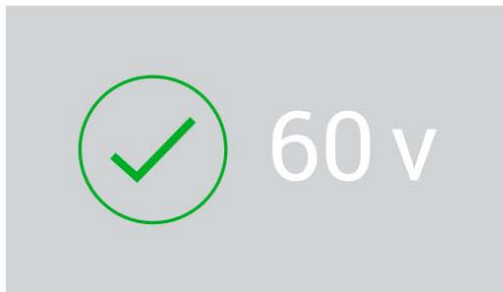


there's no single point of failure in a micro inverter system.

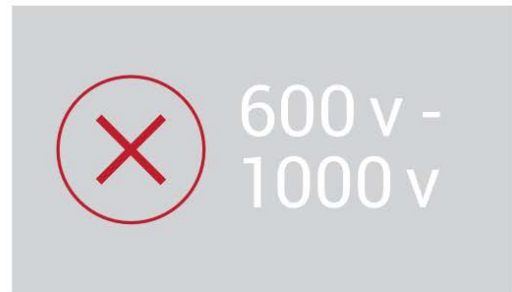
- In the unlikely event that something goes wrong with one of the panels or micro inverters, the rest of the system is unaffected and so will still be operational. This allows for less down time and allows you to continue to generate solar power during a warranty claim or service check.
- Enphase micro inverters undergo the most rigorous product testing in the industry with more than 1 million hours of testing.
- McNae Electrical Solutions stands by these inverters because they have the industry's highest warranties with full replacement, so you are not out of pocket.

## Safer

When safety counts, the choice is clear.



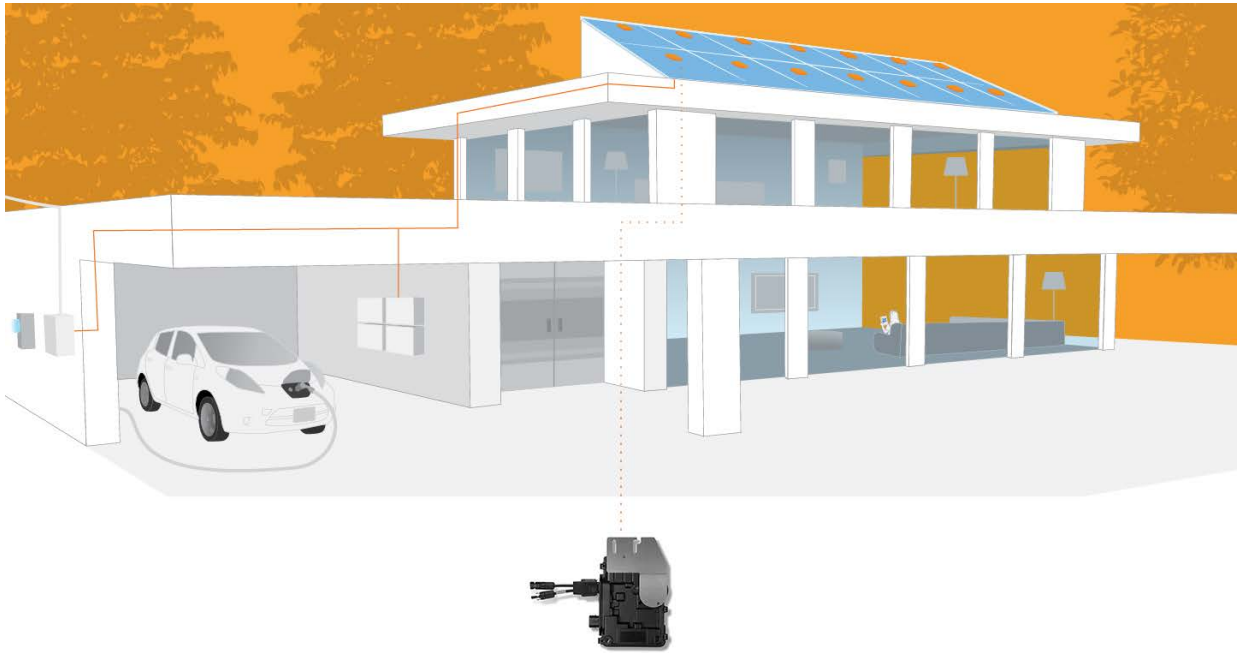
Low-voltage DC never exceeds 60 volts



Up to 1,000 volts DC on roof

Micro inverters are safer than other inverter technologies.

- An all-AC system means no high-voltage DC power on your roof.
- Enphase micro inverters are commonly chosen for schools since they meet even the strictest government safety requirements.



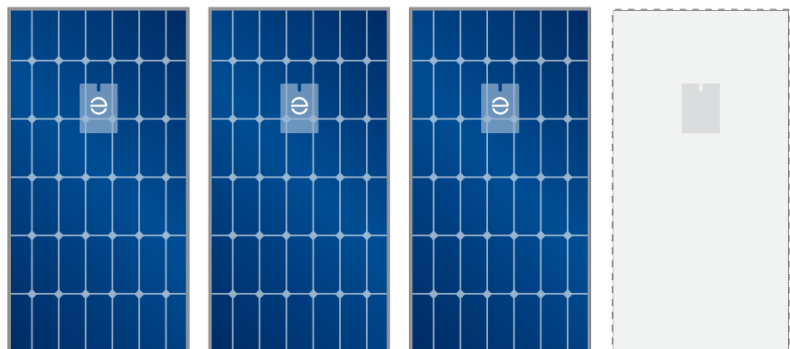
### More cost-effective

- In addition to the greater energy savings from higher production, Enphase micro inverters are just a better long-term investment.
- Enphase micro inverters come with a 10-year warranty; string inverters need to be replaced at least once in the lifetime of the system.
- Streamlined components make for quicker and less costly installations.
- High-quality materials and remote problem-solving save money on repairs.

### Easy to expand

A system that fits your needs, now and later.

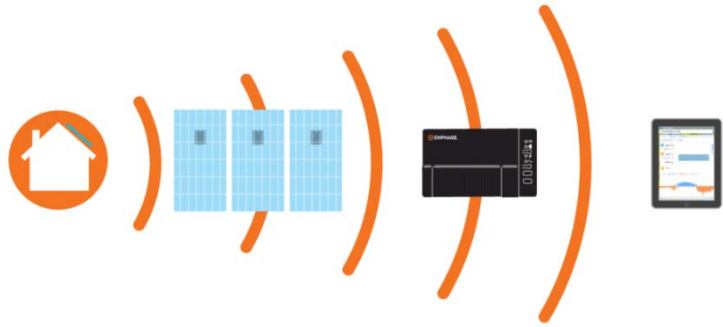
- Micro inverter systems are expandable, so you can design a system to fit today's budget and energy needs, and expand it later, limited only by your roof space, as your needs evolve.
- McNae Electrical



- Solutions can install as many additional panels as you like, and we don't need to match the panels to your existing array. This allows you to take advantage of any technology gains over the next few years.
- With a string inverter, you need to match the inverter size to the panel array to ensure high performance. This means that adding panels normally requires the inverter to be replaced. The other limitation is that we need to match the panels in order to add panels to a string. This limits the upgrade window to around a year or so, as trying to find old stock is close to impossible due to the fast advances in technology. With micro inverters, it's no problem.

## Remote Technical Support

- Both Enphase and McNae Electrical Solutions as your installer have access to live, real time monitoring of every panel. In the event of a fault, McNae Electrical Solutions receives an automated message to alert us to the issue. In some cases, the firmware can be updated by Enphase technicians and the problem fixed remotely.



## Single Phase vs. Three Phase Power

- If you're in a rural area, chances are your property has a three-phase electrical supply. If you are a commercial customer, you'll definitely have a three-phase supply. This means that you'll need an expensive three phase string inverter to generate power evenly across all the phases in your property. If you try to install a single-phase string inverter, you'll only get the benefit of solar applied to a third of your power needs.
- With an Enphase micro Inverter system, there is no additional cost for you if you have three-phase power. This is the best option from a technical viewpoint, because the micro inverters are spread across the three phases.



## Want to know more?

Visit the [Enphase Homeowner Overview](#) for more.

## So does this mean you don't install string inverters?

McNae Electrical Solutions does install string inverters in larger installations. Commercial solar power is more cost effective when large three-phase string inverters are deployed. Some larger residential installations also may benefit from a string inverter. When a string inverter is recommended we will supply quality brands like Fronius or ABB.



For off grid solar we recommend and install premium systems that include Outback Power, Victron, or Selectronic inverter-chargers. We are authorised Fronius and Selectronic Service Partners.

<https://enphase.com/en-au>

<https://www.fronius.com/en-au/australia/photovoltaics>

<http://www.outbackpower.com/for-owners>

<https://www.victronenergy.com>

<http://www.selectronic.com.au>

