

# Looking for the best solar PV system for your home?

Canadian Solar modules and Enphase battery storage solutions



[www.warmandcool.co.nz](http://www.warmandcool.co.nz)

# Helping New Zealanders create energy efficient homes and businesses

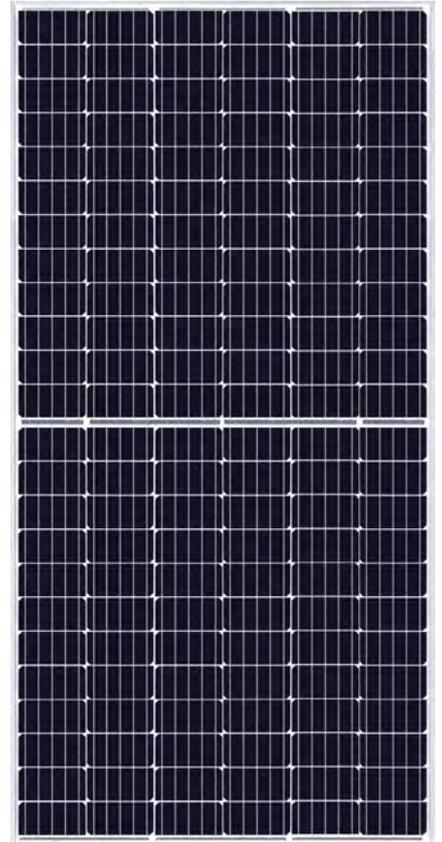
## Canadian Solar KuMax High Efficiency Mono Module



With Canadian Solar's industry leading mono-PERC cell technology and the innovative LIC (Low Internal Current) module technology, we are now able to offer our global customers high power mono modules up to 380 W.

The KuMax mono-PERC modules with a dimension of 2000 x 992 mm, close to our 72 cell MaxPower modules, have the following unique features:

- **Higher** power classes for equivalent module sizes
- **High** module efficiency up to 19.15 %
- **LOW** hot spot temperature risk
- **LOW** temperature coefficient (Pmax):  $-0.37\% / ^\circ\text{C}$
- **LOW** NMOT (Nominal Module Operating Temperature):  $42 \pm 2\text{ }^\circ\text{C}$



More power output thanks to low NMOT:  $42 \pm 2\text{ }^\circ\text{C}$



Low power loss in cell connection



Safer: lower hot spot temperature



Heavy snow load up to 5400 Pa, wind load up to 2400 Pa



Low BoS cost with 1500 V<sub>DC</sub> system voltage



Linear power output warranty



Product warranty on materials and workmanship

### How does Photovoltaic Solar work?

Photovoltaic solar harnesses light, converting it to electricity through silicon crystals. The silicon crystals are man-made as single faceted crystals (mono-crystalline) or multi-faceted crystals (poly-crystalline). Polycrystalline crystals are more expensive to make but have slightly better efficiency, but new production methods have closed the gap. You will generally pay around the same price per watt produced from either type.



**Request a Floor Heating or a Heat Recovery & Ducting**

# The Enphase<sup>®</sup> Home Energy Solution



The Enphase Home Energy Solution combines solar, storage, and powerful monitoring software into an all-in-one energy system. Each component is built to work together to provide your home with reliable energy that maximizes your savings while you're busy living your life.

## The Enphase Microinverter System with IQ



## Enphase<sup>®</sup> IQ 7 and IQ 7+ Microinverters

Enphase is a United States company with a high tech research and development facility in Christchurch, New Zealand.

Solar panels may get all the glory, but it's the inverter that does all the work in a solar energy system. Tucked beneath each solar panel, microinverters convert the direct current (DC) power collected from the solar panels to alternating current (AC), the form of electricity your home can use.

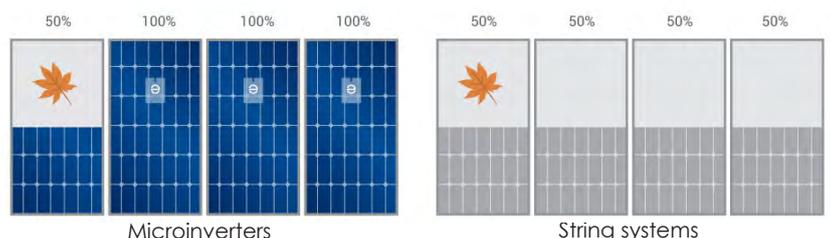
Choosing the right inverter technology for your system is one of the most critical decisions to make when going solar. Enphase Microinverters offer the most advanced inverter technology on the market, which means higher production, greater reliability, and unmatched intelligence.



### In an Enphase system, there's no single point of failure.

Think of solar panels like bulbs in a string of holiday lights. In conventional inverter systems, when one panel fails, the whole system goes out. Or when one panel's output drops -- thanks to fallen leaves, a passing cloud, or some other unavoidable factor -- the system's overall performance drops to match that lowest-performing panel. With microinverters, each panel operates independently -- so no matter what happens to any one panel, the rest of your system keeps shining bright.

Microinverter better suited for future expansion of your system



# Enphase® Envoy® Communications Gateway™

The Envoy is the communications and control center behind your energy system. This small device is the networking and command hub of your system, and it's responsible for monitoring your system's performance by collecting real-time data from your microinverters.

The Envoy also employs bi-directional communication, meaning that it delivers system updates from the Web to your microinverters, allowing you or your installer to pinpoint performance issues and resolve them remotely before they get in the way of your system's performance.

If your system has storage, the Envoy also manages charge and discharge of the AC Batteries.



## Enphase® AC Battery™

If you choose to store the energy that you produce, your system may include the Enphase AC Battery. The AC Battery solves the basic dilemma of solar energy - while your system produces the most energy midday, most households use the most energy in the morning and evening. With storage, you can save the energy you produce during the day and use it when you need it most.

The Enphase storage solution is modular, which means that smaller systems may have two or three AC Batteries, while larger systems will have more. The modular approach means that you can start small and add AC Batteries if you want to expand your system down the road.



## Our Hot water Heat Pump Central Heating can be powered from your Solar, this has several advantages

### Complete Air-conditioning

Our floor and radiators radiant systems can be combined with fancoil radiators to provide year round comfort – with the ability to heat or cool from the one system. Solar panels can largely power your homes cooling system over the summer, and reduce your heating bill over winter.

### Domestic Hot Water Heating

You can use your solar power in conjunction with our air to water heat pumps in the middle of the day to heat your homes hot water. 1kW solar power will give you over 3kw of water heating.

### Ecological

Because South Island electricity is derived primarily from green hydro and wind generation, the CO<sup>2</sup> emissions are almost nil. There are no pollutants given off from heat pumps, just air – and we employ non-ozone depleting, environmentally friendly R 410A or R32 gas.

### Hybrid homes combining solar collectors with your heat pump powered heating and hot water.

The same technology employed in air to air heat pumps delivers even higher efficiency and extraordinary economy through air to water systems. Even at sub-zero temperatures, athermal operational efficiency remains very high.

### Simplicity

Our heat pumps are simple to operate. Our systems are easily programmed and tells the heat pump exactly what to do and when to do it. We can fit a device to turn on loads in your home so you do not export back to the grid.

## Ask us for a central heating brochure

Showroom 223 Kaikorai Valley Road, Dunedin.

Open 9am to 5.00pm or by appointment

56 McNulty Road, Cromwell

Servicing Otago, Southland & South Canterbury for over 26 years

[www.warmandcool.co.nz](http://www.warmandcool.co.nz)

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