

TCK
Solar

All-electric
energy solutions.



We believe in lasting relationships and 100% customer satisfaction.

The time for solar is NOW. Soaring electricity prices demand home and business owners consider alternatives. An investment in solar can cut power bills, and deliver cost savings in the tens of thousands, paying for itself financially and environmentally.

TCK Solar delivers the best solar systems in the world to the Australian market. With our unconditional pursuit of quality, the systems outperform and outlast all others. Precision-engineered, they have been designed for optimum durability and performance.

It's an investment you can't afford to miss. TCK Solar, simply the best solar solution under the sun.

We believe that focus on detail gives you peace of mind for decades.

TCK Solar solutions are simply as good as they get. From small things like the stainless steel cable ties, 25 year UV guaranteed HD-conduit, German plugs, solar cables, DC-switches and Schletter mounting, to the unique SunPower panels combined with Enphaser micro-inverters or SolarEdge inverters, there is nothing left to chance: each and every component is of the highest possible quality.



Such exacting attention to detail and engineering excellence equals superior performance and longevity. TCK Solar systems outperform others by up to 30%, and are designed to last for 30+ years.

TCK Solar's dedication and commitment to delivering superior quality products is underpinned by their supplier's extensive research and development. Every component undergoes rigorous testing, simulating 30 years of extreme weather conditions. As a consequence, every component of the system doesn't just meet industry standards, but exceeds them by at least a factor of two.

SunPower manufactures the most advanced solar panels in the world with >22% efficiency

We believe that quality makes the difference.

At TCK Solar we pride ourselves on finding the best products on the market, such as the SunPower solar panels. Besides being the most efficient solar panels, the cells also deliver an unmatched reliability over the lifetime of your solar system.

SunPower

Since 1985 SunPower has been leading global solar innovations. They produce the world's highest efficiency solar panels featuring the SunPower Maxeon™ cell, and own more than 200 patents.

Highest efficiency

Delivers highest efficiency in a solar panel at >22%.

Flexibility

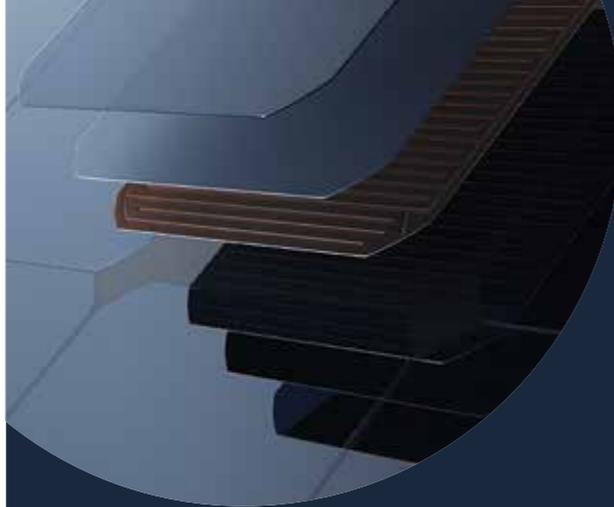
Future expansion to increase energy production is easily done.

Peace of mind

Best combined 25-year power and product warranty on 92% output.

Most energy from less space

Ideal for roofs where space is limited, as one panel supplies 44% more energy than conventional panels.



SunPower solar panels are designed to generate the most energy in demanding real-world conditions, in partial shade or hot roof-top temperatures.

Engineered with the newest and most powerful Maxeon™ technology, the X-Series brings unmatched power and performance to your home. It's the only solar cell built on a solid copper foundation, which makes it virtually impervious to corrosion and resistant to cracking that degrade conventional panels.

- 44% HIGHER EFFICIENCY
- AT LEAST 20% MORE POWER GENERATION OVER 25 YEARS
- MORE POWER FROM SMALL SPACES
- EASY TO ADD MORE PANELS
- 92% GUARANTEED OUTPUT OVER 25 YEARS
- NO LIGHT-INDUCED DEGRADATION
- BETTER LOW-LIGHT AND SPECTRAL RESPONSE
- BEST PERFORMING PANEL AT HIGH TEMPERATURES (POWER TEMP COEF $-0.29\%/^{\circ}\text{C}$)





SunPower Maxeon 5AC Modules work hard from dawn till dusk

Homesolar that works harder. And smarter.

SunPower’s solar panel modules — a combination of panel and microinverter that is fundamentally different. And better.

The SunPower Maxeon 5 AC an Performance 3 AC modules combine the world’s most powerful home solar panels with advanced microinverter technology from Enphase. These inverters maximise the individual potential of each module bringing you 50% more energy than a conventional solar system over 25 years. And to top things off, they wake up early and stay late every day.

Independent for more power

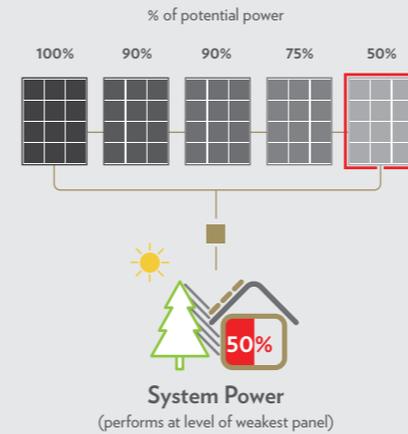
Each Maxeon 5 AC module functions independently, making your whole system more reliable, and your rooftop more productive. With conventional technology, the system performs only as well as its weakest panel. This

can dramatically reduce output due to shade or other real-world challenges, even small debris like leaves.

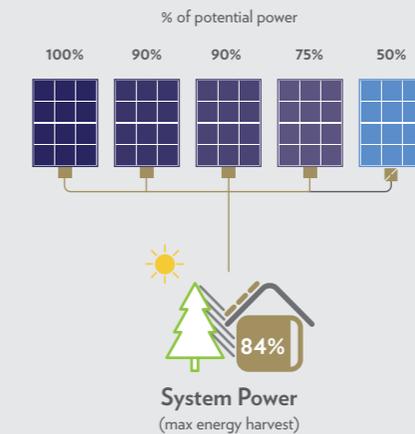
What does the Enphase microinverter do?

A microinverter is a small electronic device that sits beneath each solar panel. It’s main task is to convert direct current (DC) electricity from your solar panels into alternating current (AC) electricity that you can use in your home or export to the grid. As each Maxeon 5 AC module with the Enphase microinverter functions independently, it maximises the potential of each module and brings you the most power you can get, while also minimising the risk of lower output. This also means you need less panels to generate the same amount of energy than you used to.

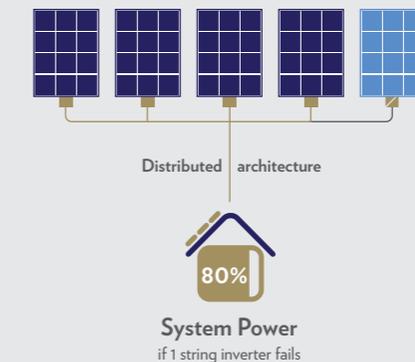
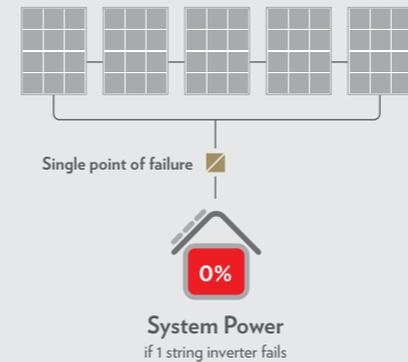
String Inverter System



Maxeon 5 AC Module System



As the panels deliver their power independently, the output can stay much higher despite shading or other minimising factors.



In a conventional setup, one inverter controls the output of a whole solar array, a design with a single point of failure. As Maxeon 5AC Modules each have their own inverter the risk is distributed throughout the whole system.

Powerful

- Most powerful residential panel on the market
- More power in smaller area and unlimited configurations
- Industry leading shade performance

Durability & Reliability

- 25 years warranty for panels and inverters
- Redundant pathways for energy to flow
- POS premium repaid over time while ensuring reliable system output for double the time

Future Proof

- Remote access for future regulations
- Easily expand system to support home electrification, AC storage or adding panels

Safety

- Low voltage on roof
- Rapid shutdown is standard
- Minimum risk of system failure risks outside of warranty due to microinverter technology

Solar for business

Save business costs by investing in solar. The only investment you will ever make that pays for itself. From 10kW to 100kW and beyond, we'll get it on your roof.

Running a business is a lot of work and getting a solar system may not be something you feel you have time for. We at TCK Solar know how to get things started, installed and done without minimum involvement from your end, yet keeping you in the loop at all times. Maybe that sounds too good to be true. It is not. You can talk to any of our clients about their experience with us. We believe in honesty, transparency and trust and are always here to answer your questions.

TCK Solar is all about quality and we understand that price plays an important role when running a business. The products we have selected for solar for business do both. They are good quality at industry comparable prices. We go a step further, though, and will provide you with a high-quality installation done by certified solar installers. We pride ourselves in not only picking quality when it comes to panels and inverters, but also down to the smallest cable to last in the powerful Australian sun. True to our motto, **Do it once. Do it right.**

Our systems work from dawn to dusk. During the sunny months, you will be able to completely rely on your system to power you through the day. On not so bright days and during the months with less sunshine, you will still be able to get a good amount of energy from your system and might add some energy from the grid. Overall, you will still be saving.

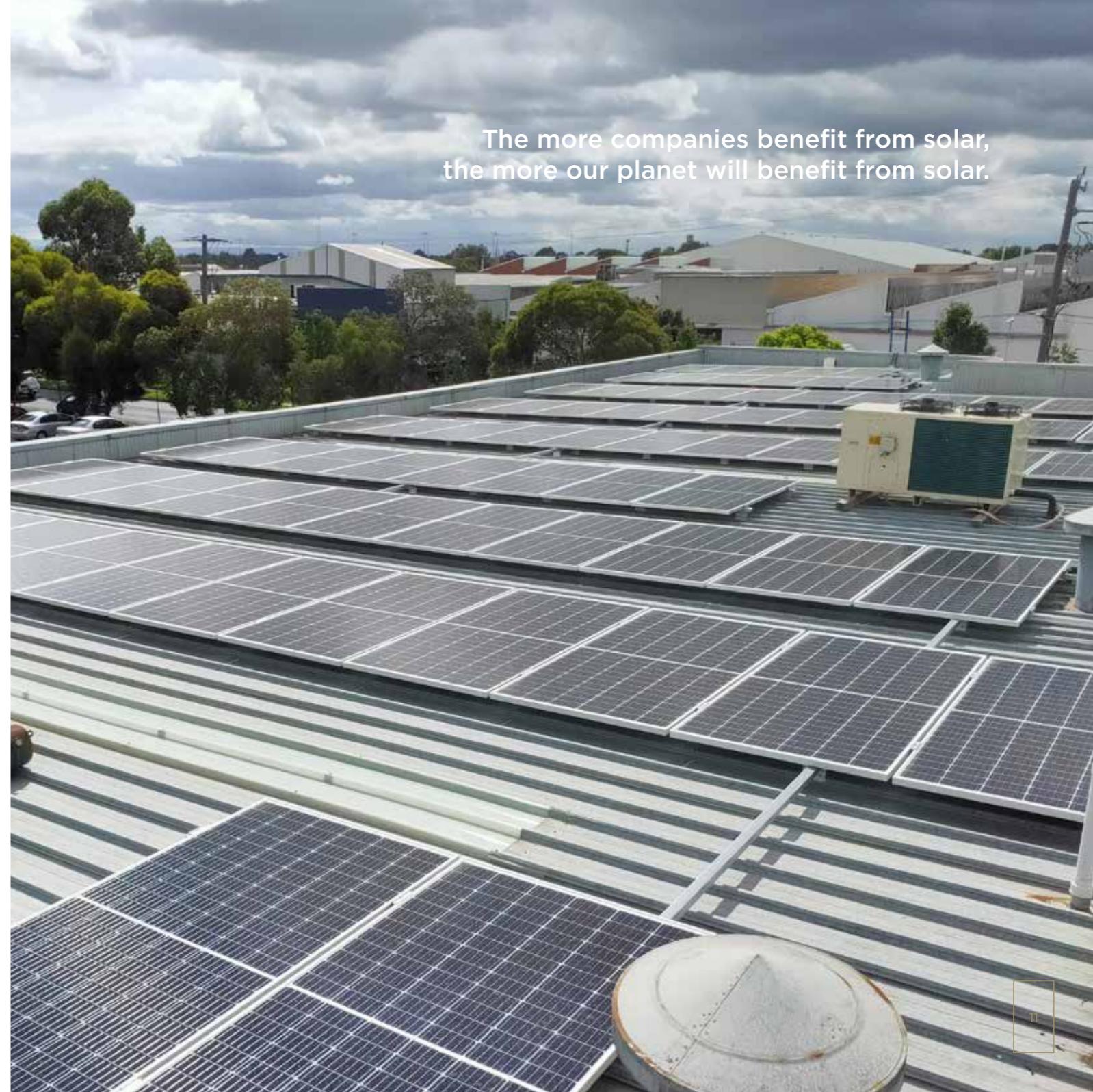
Rebate for Solar for Business

Solar Victoria is now offering a rebate for solar for business. You can get \$3500 towards a new system, which definitely helps with the upfront costs. As businesses use a lot of energy during the day, the return on investment is considerably faster than residential solar. From the moment it has paid for itself, you are earning from the energy you produce. Your bottom line will thank you.

PPA or how about a system for free?

If you are looking into a system that is bigger than 50kW, TCK Solar can offer you to be part of a PPA, a Power Purchase Agreement with Greenpeak Energy. You do not pay for the solar system up front, but you pay for the electricity it generates. This is how you pay it off over the years. It is a way for you to install solar easily and benefit from it without the costs.

The more companies benefit from solar, the more our planet will benefit from solar.



Inverters

TCK Solar offers both SolarEdge Inverters with optimisers and Enphase microinverters separate or as part of the SunPower Maxeon 5AC modules or the brand-new SunPower P3 AC modules which have integrated Enphase inverters. Both are great options and equally popular on the market.

TCK Solar will guide you and help you make the best decision as to what is right for your bespoke system.



SolarEdge inverters are widely known for their quality and innovation. They are the most efficient and safest with their unique panel optimiser technology when it comes to inverters.

Enphase microinverters come with an unheard of 25-year warranty, when they are part of a module. They are the best and most durable microinverters on the market today.



Monitoring

Nearly every solar system TCK Solar installs is supplied with an innovative monitoring solution.

SolarEdge offers 24/7 remote monitoring via their app or their website.

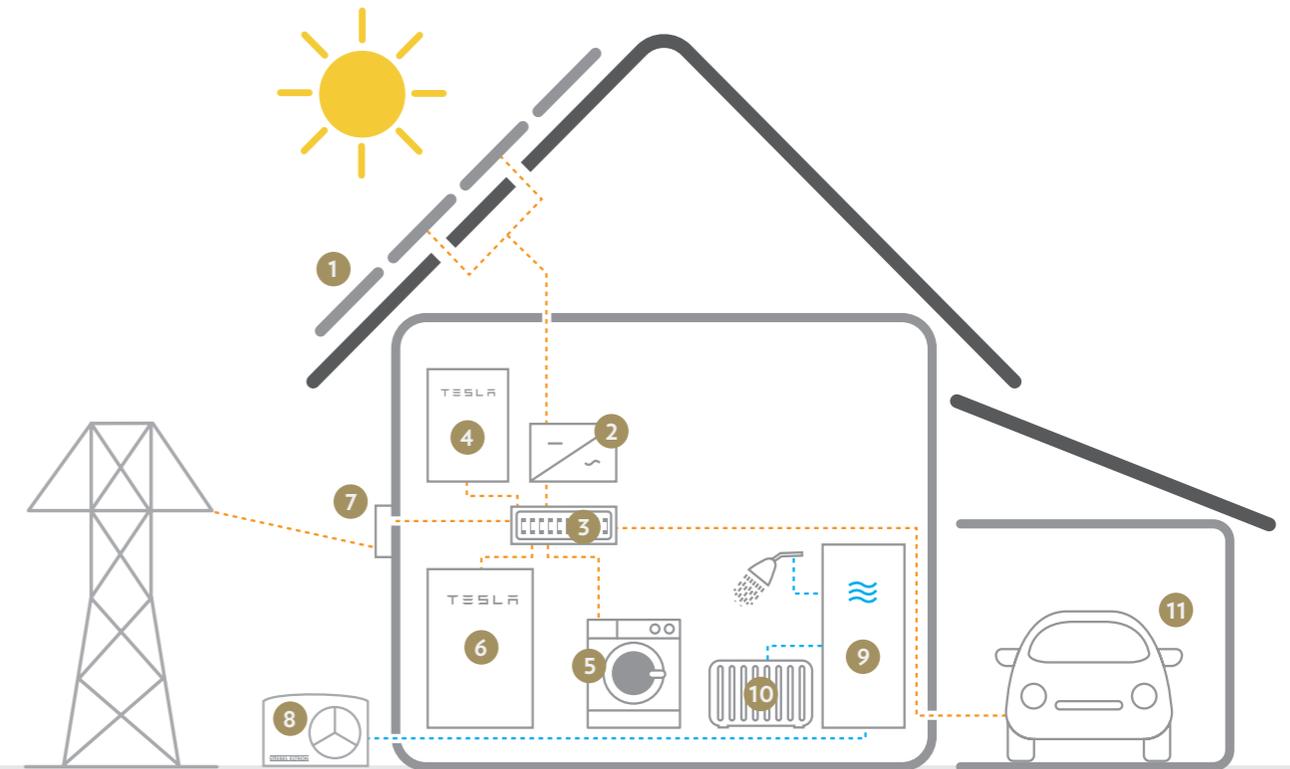
Enphase's Enlighten Manager offers panel-level monitoring and consumption monitoring via your smartphone and online.



Cables, plugs & switches

Saving money on components no one can see is easy to do but comes at a loss in efficiency, safety and durability. With our uncompromising focus on quality we only source the best components available which often comes at a premium.

TCK Solar all-electric energy solutions



- | | | |
|-------------------------|--------------------------------|---------------------|
| 1 SunPower solar panels | 5 Household energy consumption | 9 Hot water tank |
| 2 SolarEdge inverter | 6 Tesla Powerwall battery | 10 Hydronic heating |
| 3 Switchboard | 7 Electricity meter | 11 Electric car |
| 4 Tesla Gateway | 8 Stiebel Eltron heat pump | |

World class inverter technology

	SolarEdge	Enphase
Energy production	Both produce additional output due to module-level optimisation	
Cost	\$\$	\$\$\$
Warranty	25 years for optimisers 12 years for inverter	25 years
Battery option	DC coupled (with special inverter) or AC coupled	AC coupled
Future extension	Likely to need new inverter if expanding the system or a DC coupled battery	Very easy to expand or integrate into AC coupled battery
Monitoring	Live energy production monitoring, with options for consumption and panel level monitoring	Panel-level energy production and consumption monitoring included
		

What to choose?

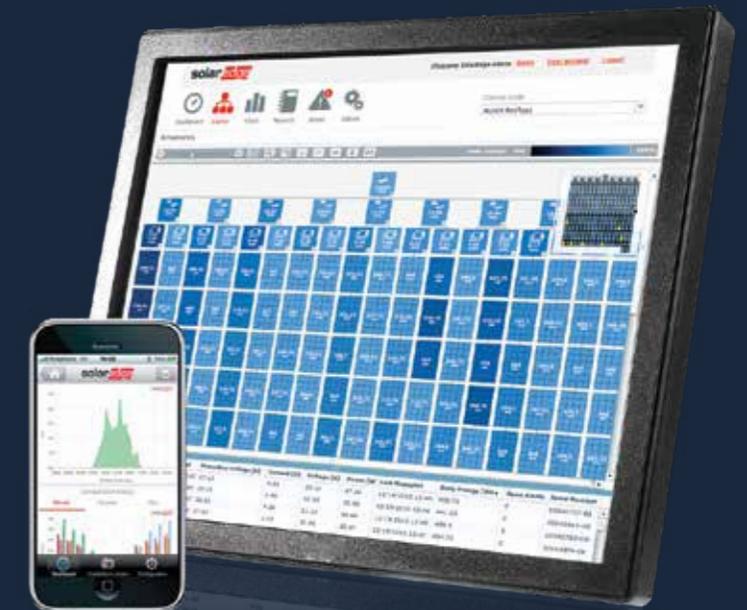
Either one can be the solution you are looking for. There are various components to consider, i.e. system size, shading and more. This is why TCK Solar will take

a good look at your house or business to make sure, we can supply you with some options that will work best for you, your family and/or your business.



- 24/7 remote monitoring
- 12 year warranty on SolarEdge inverters
- 25 years warranty on power optimiser
- 25 years warranty on Sunpower with Enphase inverter modules

- Much better performance
- Safest solar solution
- Easy maintenance



We believe in value for money and that your money matters.

You like the idea of solar electricity but you can't see the point as you are not home for most of the day? Sizing the solar system properly to your needs is important but that still leaves you with selling excess power back into the grid instead of using it yourself. Storing power in batteries is a growing industry, but still quite expensive. Why not use your solar system to provide you with hot water for your house and/or pool instead?

Why not use a cost effective & highly efficient alternative to store energy on site?

Solar hot water is widely known but more and more questioned in regards to its effectiveness, reliability and longevity. Traditional hot water systems contribute to a significant portion to household's energy costs. Taking control of the situation starts with seeking the most efficient hot water system on the market and installing it in conjunction with a TCK Solar system to power it.



Pool heat pump with titanium heat exchanger & inverter technology.

Sun > Excess solar electricity > Hot water

Energy savings with the Sanden hot water heat pump

Industry-leading refrigeration technology is used to utilise the ambient temperature and transferring it into heat. An Ozone friendly refrigerant (CO₂) is used in this process eliminating the need of a backup element. No, it doesn't involve cold showers!

Got a pool but don't like cold water?

In Victoria some sort of pool heating is needed and traditionally large areas of roof are covered with black rubber tubes to achieve that. Noisy & energy hungry pumps are pushing the pool water through those tubes. These days highly efficient titanium heat pumps can do the same job by using less electricity without having those tubes on the roof. Modern inverter technologies are improving the heat pump performance by around 30%, reducing the noise level, improving longevity and giving you the flexibility to heat your pool when you/your kids want it and not just in the middle of summer.

Less energy, less impact on the environment, more savings

Sanden's "Eco Plus" Hot Water Heat Pump technology uses 1kW of energy to generate 5kW of heat; this is 80% less energy compared to traditional hot water systems. Around 2.5 hours running time at only 37db is needed to supply Australian households with their daily hot water needs.



Stay friends with your neighbours — Sanden heat pump — whisper quiet operation

Hydronic heat pump

Hydronic heat pumps are easily installed outdoors to harvest energy from the air and turn it into comfortable heating for your home. Their quiet operation make them ideal even for dense neighbourhoods. And, even some cooling is possible for summer.



Easy and inexpensive heat out of thin air

TCK Solar is expanding its sustainable energy offerings to include Stiebel Eltron's premium quality hot water heat pumps. They utilise free natural energy from the air around us to create hot water. And they provide an energy-efficient, environmentally responsible solution for year-round generation of hot water using minimal energy.

Cosy warmth from the air

The air source hydronic heat pumps are a great hydronic heating solution to assist with the transition to an all-electric household. With a COP of around 5.0 you will notice the savings on your power bills straight away. It is ideally suited for under floor heating but radiators with up to 65°C flow temperature are possible too. The energy efficient inverter technology enable such temperatures even on cold winter days. The units have an ISG fitted for remote after sales care.



How does it work?

Air contains warmth, even if it's freezing outside. A hot water heat pump can extract this extra energy out of the air, down to a temperature of -20°C. A fan draws the air through an evaporator to a liquid refrigerant causing it to change into gas. This gas is then drawn into a compressor which increases the pressure and, as a result, increases the temperature. A heat exchanger then transports the gaseous refrigerant around the outside of the water cylinder. As the refrigerant cools and turns back into liquid, the water heats up. The cooled liquid refrigerant is then returned to the evaporator to start the process all over again.

We believe in putting you back in charge.

Batteries are the hot topic in the renewable energy sector. Storing the excess electricity from your own solar and using it when needed has been the missing link. Hundreds of manufacturers around the world are working hard to continuously improve the battery technologies to offer affordable, long lasting and safe storage solutions. We have chosen the most experienced and innovative manufacturer we could find.

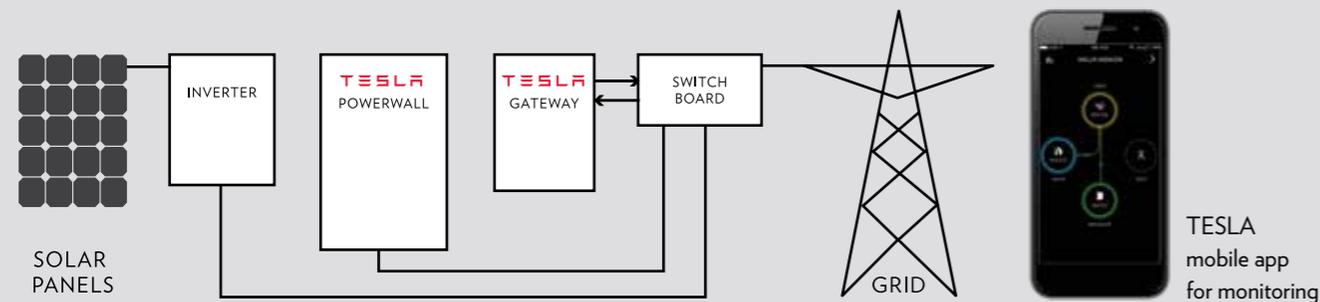
Tesla

Ever since Tesla was founded in 2003, its mission is to accelerate the world's transition to sustainable energy.

Tesla Powerwall

Powerwall is a rechargeable home battery system that stores energy from solar or from the grid and makes it available on demand. It can power your home during the night or back up your home in the event of a power outage. With its built-in battery inverter, Powerwall is compact and easy to integrate into your home.

The Tesla Powerwall system



Self-powering your home

When solar is producing more power than the home is using, Powerwall captures and stores that energy. When the home is consuming more energy than solar is providing, Powerwall discharges enough energy to offset home usage. If solar is producing more than Powerwall can store, or the home needs more than Powerwall can provide, the remainder is automatically exported or imported from the grid respectively.

Backup power

In case of a power outage, the Backup Gateway immediately disconnects the home electrical system from the grid and restores power to the home. Backup Gateway manages the grid connection seamlessly.

Home energy monitoring

TCK Solar will set you up with the Tesla Mobile App, so you can monitor your solar, Powerwall and home energy.

Who should consider installing a battery?

- Medium to high power usage households/businesses.
- Properties with a medium to large solar system.
- People wanting grid independence despite payback periods of more than 10 years.



Detailed screen of Tesla monitoring app for your Powerwall and solar system.

Installation specifications

- Floor or wall mount. For wall mount, a structurally sound wall to hold 125 kg is needed. Or stack up to ten Powerwalls together on the floor.
- Water-resistant and dustproof for indoor and outdoor installation.
- Child and pet friendly with no exposed wires or hot vents.
- Operating temperatures between -20 to 50°C, optimum temperatures 0 to 30°C.
- Battery size (height x width x depth [mm]): 1150 x 755 x 155.



We believe in honesty.



Tesla

Ever since Tesla was founded in 2003, its mission has been to accelerate the world's transition to sustainable energy.

Elon Musk, one of Tesla's co-founders and product architects, has a clear vision in mind on how to change the way we use, generate and store electricity. Only once these three are happening in harmony, a sustainable future becomes possible.



SunPower

Since 1985 SunPower has been leading global solar innovation, owning more than 200 patents in the field. SunPower is based in Silicon Valley and is manufacturing their record breaking solar panels in Mexico.

SunPower produces the world's highest efficiency solar panels featuring SunPower Maxeon™ cell technology.



SolarEdge

Founded in 2006, SolarEdge established the DC power optimiser segment and is leading it with over 70% market share (7.5GW in >125 countries worldwide). With strategic partnerships from module manufacturers to integrators, SolarEdge installations can be found in five continents.



enphase

Enphase is based in Northern California and was founded in 2006. They design software driven home energy solutions that span solar generations, web-based monitoring via their envoy system and home energy storage. Enphase was the first to successfully commercialise microinverters on a global scale and is marketleader in this field.



Sanden

Sanden has more than 50 years of experience in the production and global supply of air conditioning compressors. It currently supplies some of the world's leading automotive brands, including VW, Honda, Ford, Audi, Rolls Royce, Peugeot, Citroen, Renault, Landrover, Fiat, Mercedes Benz and Kenworth.



Stiebel Eltron

Stiebel Eltron has been developing highly efficient electrical appliances since 1924. Their head office is in Holzminden, Germany, where they are constantly developing new sustainable energy solutions. They are a known brand worldwide with over 2,000 products in the fields of hot water systems, renewables, ventilation, air conditioning, room heating and water filtration.



Schletter

Schletter develops and produces state-of-the-art solar mounting systems, combining optimum structural dimensioning with maximum durability. Designed and produced in Bavaria and Asia, their 30 years of experience is matched only by their dedication to sustainability and innovation.

We believe in hassle free jobs and personal service at your door step.

When it comes to solar systems, one size does not fit all. To achieve the best possible results, careful consultation is required with each and every customer to assess the specifics of the project. From the positioning, type and size of the roof, to the individual's desired outcomes, priorities and budget, every solar solution we design and install is as unique as the houses we put them on.

It's a complex product that requires expertise at every stage of the process — from design to installation, to monitoring and maintenance. TCK Solar have the knowledge and experience to deliver the most efficient system, and their products are backed by global companies who have been in the solar business more than 30 years.

Director Timo Karnath, an Industrial Engineer, brings his considerable knowledge and experience to the business. Timo draws on his experience as production manager for SOLON in Berlin to now source and design the best solar systems and components for the Australian market.



Trust First.
Service Always.



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