

Financial Support • Engineering Design • Grid Connections • Approvals Assistance

Specific Project Application Solutions • Product Supply



YOUR COMPLETE GUIDE TO SOLAR COMMERCIAL PV PROJECTS

**1STOP** Warehouse

*Be Clean, Be Green*

# Guide to Commercial Solar PV Projects



## Key Partners

One Stop Warehouse is proud to be Australia's largest wholesale distributor of solar equipment, however our support base goes beyond product supply. We can offer you beginning to end project assistance thanks to our trusted partners.



### Solar Design Solutions:

*Highly reputable design solutions & consulting firm*

Solar Design Solutions is an experienced consultancy firm specializing in providing solar PV project scope of works from technical bidding/tendering right through to grid connection approvals. Based in Sydney NSW who have guided many installers all over Australia and can be your one stop engineering service provider for your commercial projects. Solar Design Solutions are also experts for grid connection approvals having liaised with all 16 DNSP's across Australia.



### Greenbox Solutions:

*Innovative Grid Protection Box Specialist*

Greenbox Solutions is a grid protection solutions specialist for C&I solar projects. They have supplied more than 600 systems Australia wide and provide tailor made grid protection box's to cater for all types of installations. Dedicated to the industry, Greenbox proactively collects feedback from the field to make sure their products are seamless to install.

### Gamcorp:

*Leading Structural Engineering Certifier/Consultant*

Gamcorp is a structural engineering consultancy that was established in 1975 providing consultation, advisory, and third-party compliance certification for manufacturers and installers of support structures. They specialize in supporting the Commercial Solar Power industry, specifically with compulsory C&I solar PV roof structure assessments and are very well known amongst the solar community certifying over 400MW worth of solar PV. Gamcorp's engineering team takes the time to fully understand the requirements of each installation and provides you the most cost-effective solution."



### GreenDeal:

*STC Aggregator and SPV Platform Provider*

GreenDeal is an all in one solar business platform partnering with the Clean Energy Regulator that deploys high tech software and cloud application to streamline your business, including but not limited to STC trading, SPV (Solar Panel Validation), and access + navigation of AEMO's DER register. Their dedicated team of professionals with many years of experience in the solar industry have designed this platform with an easy interface for any user to excel.



### Discover Energy:

*Smart Electricity Retailer and VPP Provider*

Discover Energy was established in early 2018 with the vision to accelerate smart and sustainable energy principles such as better reporting and monitoring of your energy usage, solar and battery management, Virtual Power Plant (VPP) technology and energy trading.

Organization	Solar Design Solutions	Gamcorp	Greenbox Tech	Green Deal	Discover Energy
Proposal, System Design and Financial Return Analysis	✓				
DNSP Requirements and Approval Assistance	✓		✓		
RPEQ Sign-off (Only in QLD)	✓				
Structural Assessment		✓			
Mounting Structure Engineering Certificate		✓			
Grid Protection Board Design			✓		
System Commissioning Assistance	✓				
Injection and Power Quality Test			✓		
Engineering Design and As-Built CAD Drawing	✓	✓			
STC Certificate Aggregation				✓	
SPV Validation Service				✓	
Electricity Service Provider					✓
DER Register Access				✓	





## German Design and Development



Q CELLS provides affordable and smart energy solutions through technology and innovation to create a sustainable future for the planet. Established in 1999 and No. 1 Market Share Holder in premium PV markets such as Germany, US and Japan, Q CELLS is a part of the Hanwha Group, a 68-year strong South Korean conglomerate and a Fortune Global 500 Listed Company. Q CELLS' Executive and Manufacturing Headquarters is located in Seoul, South Korea and Tech & Innovation Headquarters in Thalheim, Germany. Q CELLS boasts over 9 GW of in-house cell production and over 9GW of module production.

### Key features

- Offer Product Warranties up to 12/15/25 year and 25 year Performance Warranty.
- Own and operate manufacturing facilities in Korea, Malaysia and China from cell-to-module, no OEM.
- 21+ years of German Engineering R&D ensuring quality and reliability.
- Pioneering technologies to combat common degradation effects including PID, LID, and LeTID.
- Proven reliability under harsh conditions, through extensive Australian extreme climate testing.
- Australia committed since 2009 with 20 full-time employees in Sydney's head office – longer than any other PV manufacturer currently on the market.





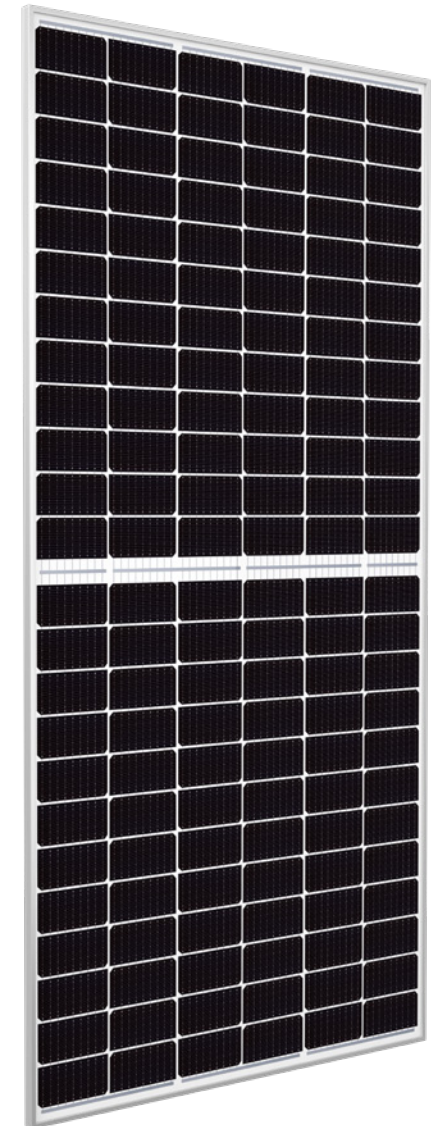


## Versatile and Strong

Canadian Solar was founded in Ontario in 2001 and has since grown to be a leading global solar solutions provider. Canadian Solar pride themselves on delivering the best price/performance ratio and highest module quality on the market, as verified in a 2016 IHS survey. Having shipped over 52GW of solar modules, and with 60+ local experts serving the Australian market, Canadian Solar has the expertise and the wide range of quality commercial and utility scale panel solutions to meet your solar needs.

### Key features

- Large and diverse range of PV modules using cutting edge technology.
- Leaders in poly-crystalline solar cell production, with world record cell efficiency.
- 411 quality control points tested on all PV modules for quality you can rely on.
- Proven utility and C&I experience, with an in-house team of solar experts in Australia.
- High wind pressure loading capability making it suitable for coastal/strong wind region sites.







*Solar*  
**JinKO**

## Innovative and Efficient

JinkoSolar is one of the world's largest Solar PV manufacturing companies sustaining the world's bestselling solar panels title since 2016 in Australia's rooftop market. They were established in 2006 and have 9 different manufacturing facilities globally with 14 overseas subsidiaries. With a market share of 12.8% and deploying a cumulative PV capacity of 70GW JinkoSolar is recognized as a trusted and top tier manufacturer which has vertically integrated solutions for all applications.

### Key features

- Contributed 2.4GW to the Australian market, equivalent to powering 480,000 homes. (#1 in STC market).
- Achieve high panel power densities through TR, tiling overlapping, HC and N-type technologies.
- First to achieve 450+W & 500+W panel power and delivered Australia's first bifacial solar farm.
- Strong local support team and advanced performance warranty period for N-type models.
- Extensive experience across 30 countries globally and 5 years PVEL top performer in a row.

*Solar*  
**JinKO**







**LONGi**

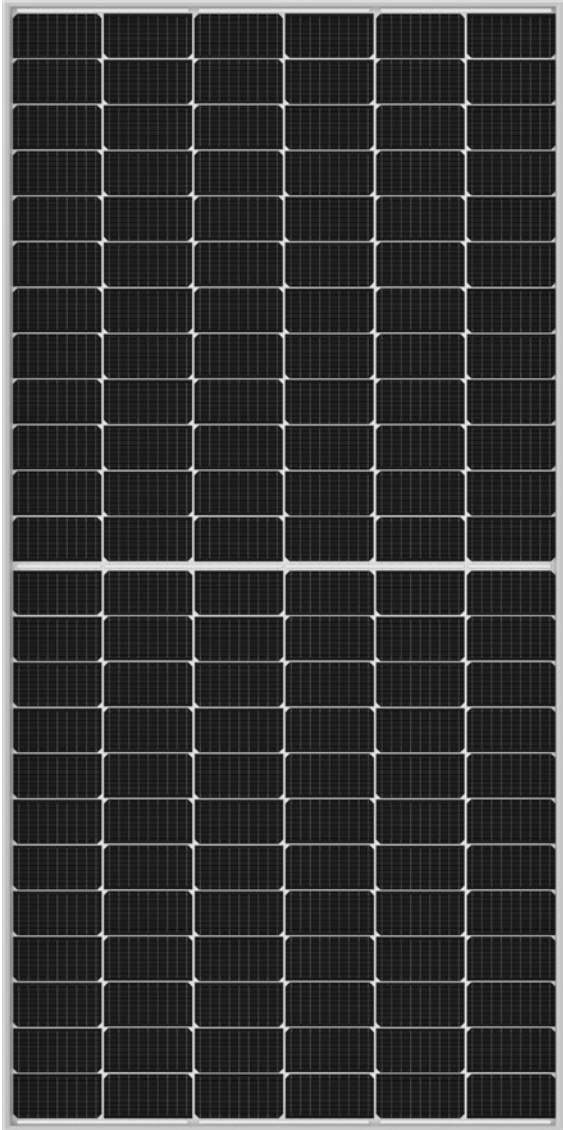
## Global Capacity Leader

LONGi leads the Solar PV industry to new heights with product innovations and breakthrough mono-crystalline technologies. They deliver more than 30GW of high efficiency solar wafers and modules worldwide yearly (about quarter of global market demand) and aim to reach mono-crystalline silicon wafer production capacity of 74GW. Established in the year 2000 and now has grown to over 40,000 employees and 630 R&D professionals with a local office in Sydney Australia. Currently #1 listed in the PV manufactured capacity for the 2020 Tier 1 BloombergNEF list.

### Key features

- Gallium doped p-type cells for anti-LID/LeTID performance and ultra-high efficiency.
- CEC enhanced listing for various types of tests (MAST backsheet, salt mist, ammonia, PID, etc).
- World's most valuable solar technology company supplying 25% of global market.
- Long output DC leads with common staubli connector for ease of installation.
- Largest supplier of mono-crystalline modules globally with industry leading low degradation.

**LONGi**







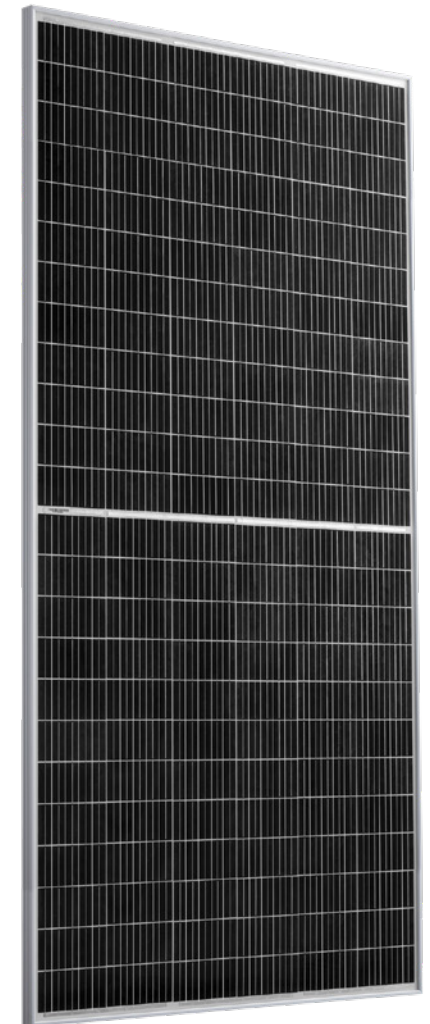
## Proven C&I Contributor



Risen Energy (Australia) is a well-established solar panel manufacturer and project developer, especially in Australia. They have an array of solar farms and thousands of grid-connected projects commissioned worldwide and have over 10,000 employees globally. In Australia, they own 2 solar farms and have supplied their panels for numerous other solar farm projects. Risen was established in 1986 and established their presence in Australia in 2008. They are one of the largest manufacturers in the world and are capable of 12.6GW+ of module capacity per year. They are also top 5 BloombergNEF listed in terms of annual manufacturing capacity for 2020.

### Key features

- 15 years product warranty for rooftop applications.
- Preferred utility supplier with 400 + MW utility installations across Australia.
- Co-marketing support to customers and installers.
- Industry leader in product R&D and facilities for large format (210mm) and HJT cells.
- Vertically integrated supply chain for panel manufacturing with 80% of it's construction made by in-house materials.
- Offices in Melbourne and Brisbane with 40 staff, localized support.







## Solar Skin for any surface



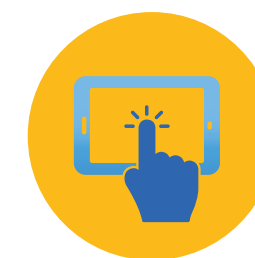
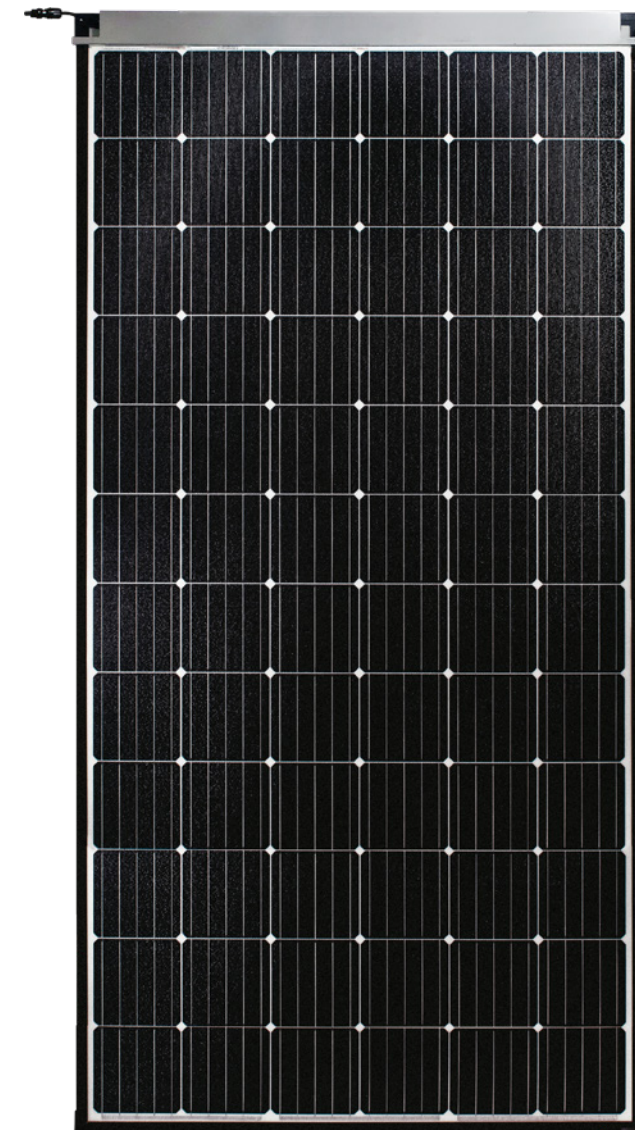
Sunman Energy is a technology company founded by a group of industry veterans delivering the future of Solar. Through the research and development of composite materials, Sunman has successfully commercialised the world's first glass-free, lightweight and flexible Panel – eArc. Replacing glass completely, eArc brings solar power to markets and applications scenarios that were previously impossible.

Sunman is the brainchild of pioneering energy scientist and entrepreneur Dr. Zhengrong Shi. In 2000, Dr. Shi founded Suntech Power, a pioneering solar panel manufacturer that listed on the New York Stock Exchange. As an academic, Dr. Shi has published more than 100 papers and is the owner of 60 patents. Dr. Shi is also a professor at the University of New South Wales and an academician in the Australian Academy of Engineering.

On the 11th Nov 2020, On behalf of the Australian Government, the Clean Energy Finance Corporation invested USD\$7 million through the Clean Energy Innovation Fund into Sunman.

### Key features

- Offer 60 & 72 cell solar panels weighing from 5.6-6.9kg, 70% lighter than conventional glass panels.
- Front mounted junction box including inbuilt cable management and panel earthing (image attached)
- Through “quick-bonding” installation, eArc requires no penetration, reduces time on roof by 40% and eliminates the use of mounting hardware.
- eArc is the first glassless module to pass the same durability tests as conventional glass modules, including IEC 61215:2016 and IEC61730:2016.







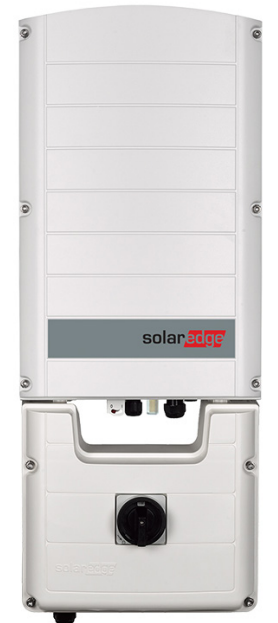
## Class-leading Safety & Yield



SolarEdge was established in 2006 and revolutionized the way we harvest photovoltaic energy using their DC optimized module level MPPT fixed string voltage topology. They always deploy a relentless focus on innovation and delivering optimization, safety, maximized yield and comprehensive system monitoring. Since 2010 over 2.5 million inverters and more than 60 million power optimizers delivered worldwide, equating to approximately 21GW+ of inverter capacity. They also boast an industry leading standard inverter product warranty of 12 years with extension options still available. With offices worldwide in all major continents and large presence in over 133 countries SolarEdge is dedicated to deliver sustainability to the whole world and continue to follow a smart energy mindset for the future.

### Key features

- Leading 12-year standard product warranty.
- Module level MPPT and monitoring for maximized energy yield and vision.
- Optimizer reduces panel voltage to 1V when DC side switched off from inverter for roof safety.
- Free online SolarEdge design tool to check layouts, string configurations and much more.
- Wide range of commercial inverter size options.
- Easily manouverable and lightweight commercial inverters including the modular synergy range.







# FIMER

## Italian Made

FIMER is a European inverter manufacturer with its head office in Italy. FIMER was established in 1942 and has grown to over 1100 employees after acquiring the ABB solar business in early 2020. Their string inverters are designed and manufactured in Italy, and have three R&D facilities and produce over 11GW+ of inverter capacity per year delivered to 26 different countries. Their focus is primarily solar but also develop electric vehicle charging technology and have installed 23,500+ across the globe, FIMER will have this range available in Australia in 2021. FIMER has a strong local team, based in Sydney, Melbourne and Brisbane with an abundance of technical support personnel that can support every stage of your solar plant. FIMER have a new three-phase range coming out in Q1 2021, offering a 10 kW, 12.5 kW, 15 kW, 20 kW, 30 kW and 33 kW.

# FIMER



- All FIMER's string inverters are designed and manufactured in Italy, for a quality product every time.
- Utilises dual-stage topology enabling greater energy production from the start, allowing a faster ROI and enable more savings over the life of the system.
- Cover locks and hinges throughout their range allowing for a simplified O&M and sleek look.
- Advanced digital features on WebUI monitoring interface.
- Mobile app for installers allows 70% quicker commissioning on up to 50 inverters at once.





## High Tech & Simplicity

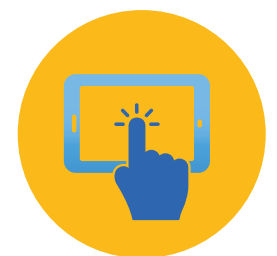


Huawei was founded in 1987 and has over 3 decades of digital information technology experience. They innovatively integrate technologies such as AI, IoT, big data and cloud computing with PV technology to enable customers and partners to lead in the intelligent world. They hold the No. 1 global rank in terms of inverter manufacturer shipments for 5 consecutive years (2015-2019), shipments totaling 130GW+. They are also ranked 49th in the global fortune 500 list. Australian offices opened in 2004 and have a strong support network for all customers



### Key features

- Active safety: AI powered active arcing protection.
- Higher yields: more MPPT's for more energy yields and built-in PID recovery to secure better module performance.
- Maintenance free: fan free, fuse free, and module touch free with online smart I-V curve diagnosis.
- 4G Dongle available for stronger and more reliable network performance.
- Global leadership in ICT bringing telecom level reliability to inverter products.
- When utilizing Huawei optimizer's achieve module-level monitoring, arc-fault pin-point and 0V shutdown.





SUNGROW

## Premium Quality & Performance

Sungrow was founded in 1997 by Professor Cao Renxian and is a leader in the research and development of solar inverters with over 1000 R&D staff with a total of \$90M invested in R&D alone in 2019. They are also one of the largest manufacturers with an overall cumulative installed capacity over 120GW worldwide and a production capacity of 50GW/year. Sungrow has achieved 15%+ global share reaching over 60 countries and was rated 2 times in a row 2019-2020 as The World's Most Bankable Inverter Brand by BloombergNEF.

SUNGROW



### Key features

- Fast, easy, simple, touch free commissioning process via iSolarCloud.
- Built-in PID recovery.
- C5 Anti-corrosion rating.
- DC protection cover (Free accessory, save costs and neater install).
- Allows flexible PV string designs, grid protection, extensive safety, and protection.
- 10s Live data monitoring and analytics.







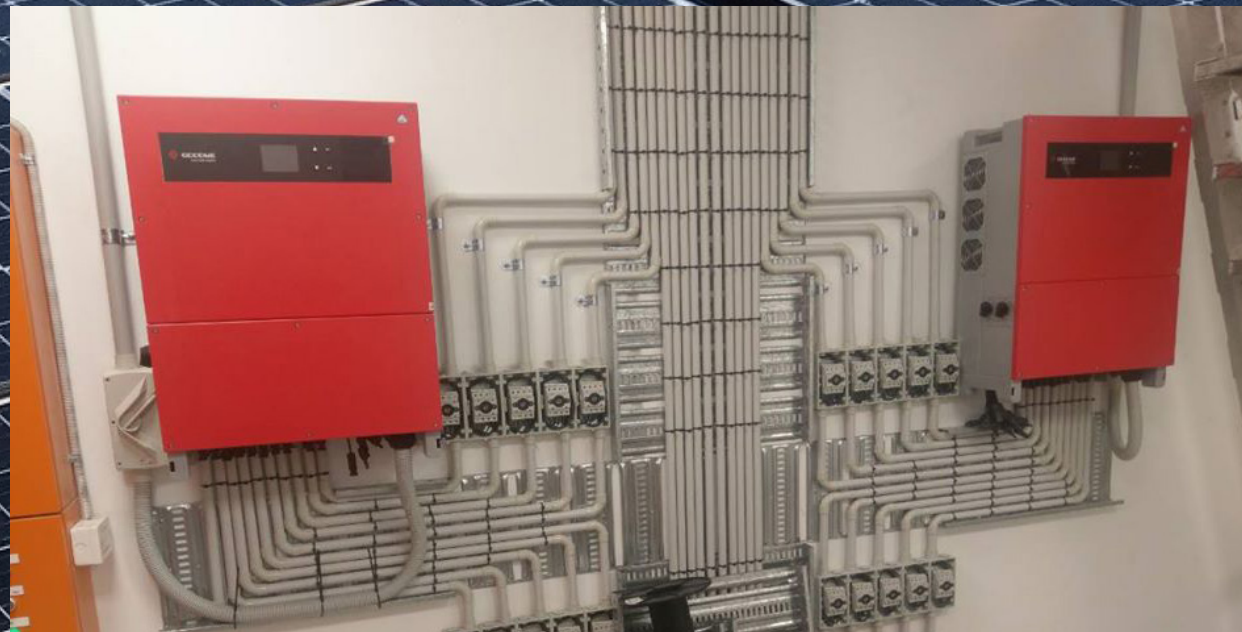
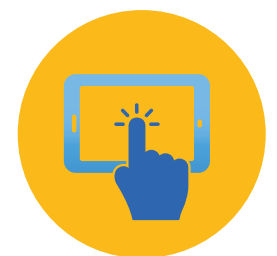
## Cost-effective & Advanced

GoodWe was established in 2010 with their Australian offices opening in 2012 with a Melbourne Victoria head-quarter. They have set-up an integrated services system for pre-sales, in-sale and after-sales nationwide. This includes workshops which aim to offer technical support to all customers in their projects. In 2020, GoodWe was awarded the Top Brand PV seal in the Au market for the second consecutive year. This honour has been given by independent market research specialist EUPD Research.



### Key features

- Have 8 different commercial inverter models to choose from.
- Large Max DC Input Voltage allowing more panels per string.
- Wide MPPT Range and ultra-high efficiency of 98.8%.
- Able to oversize the inverters by 150% for maximum energy yield
- 10 years product warranty, matching premium brands.







## Solar Structure Professionals

Antaisolar was established in 2006 out of Zhangzhou China with extensive experience as an Aluminum profile manufacturer. They have 4 production bases located in Indonesia, Fujian, Jiangsu, Tianjin with a complete production chain for solar mounting products. Antaisolar has now shipped an accumulated 14.3GW worth of mounting system shipments worldwide. Antaisolar are dedicated to the solar industry and provide solar plant engineering services to support their customers with their projects.

### Key features

- Large product range covering all different types of installations and applications.
- Components to suite flush/tilt roof, different interfaces, ground mount, etc.
- High quality with 10 years warranty, 25 years' service life.
- 10 micrometer thick anodized coating.
- Complete production chain from raw aluminum material melting & casting to finished products.
- Rigorous quality assurance protocol and 500MW monthly production capacity.
- Large R&D team with over 75 engineers, provide professional project engineering service.



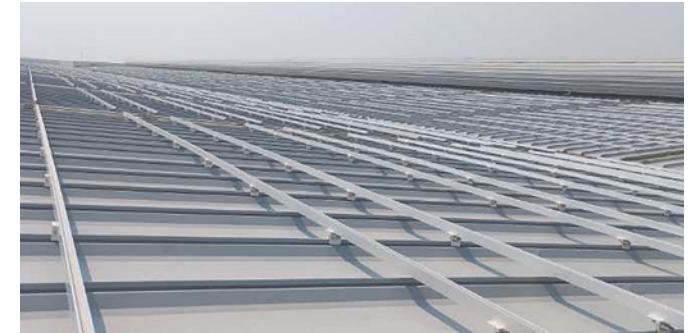




## Solar Mounting Specialist

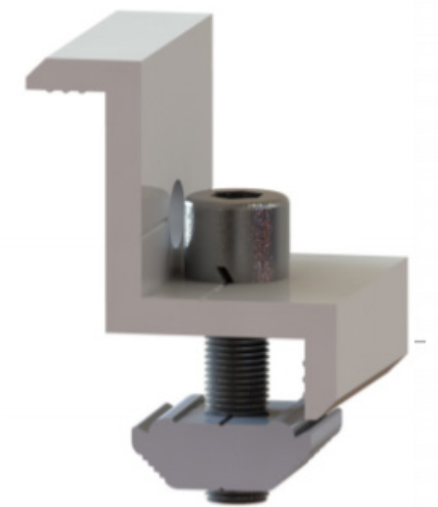


Titan Solar were established in 2008 in Jiangyin China and have manufactured solar PV mounting systems for the global markets including Australia, China, Europe, United States, Japan, Middle East and Asia Pacific. They heavily invest in R&D to ensure their products are to the highest quality in accordance with the most stringent quality standards and have delivered a cumulative system output of 4.8GW by the end of 2019



### Key features

- Large product range covering all different types of installations and applications.
- Components to suite flush/tilt roof, different interfaces, ground mount, etc.
- High quality with 10 years warranty, 25 years service lifespan.
- 10 micrometer thick anodized coating.
- General hardness of 15 degrees.
- Anodized coating on cutting face.







## Australia's #1 Wholesale Supplier of Solar

**1STOP** Warehouse

*Be Clean. Be Green*

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