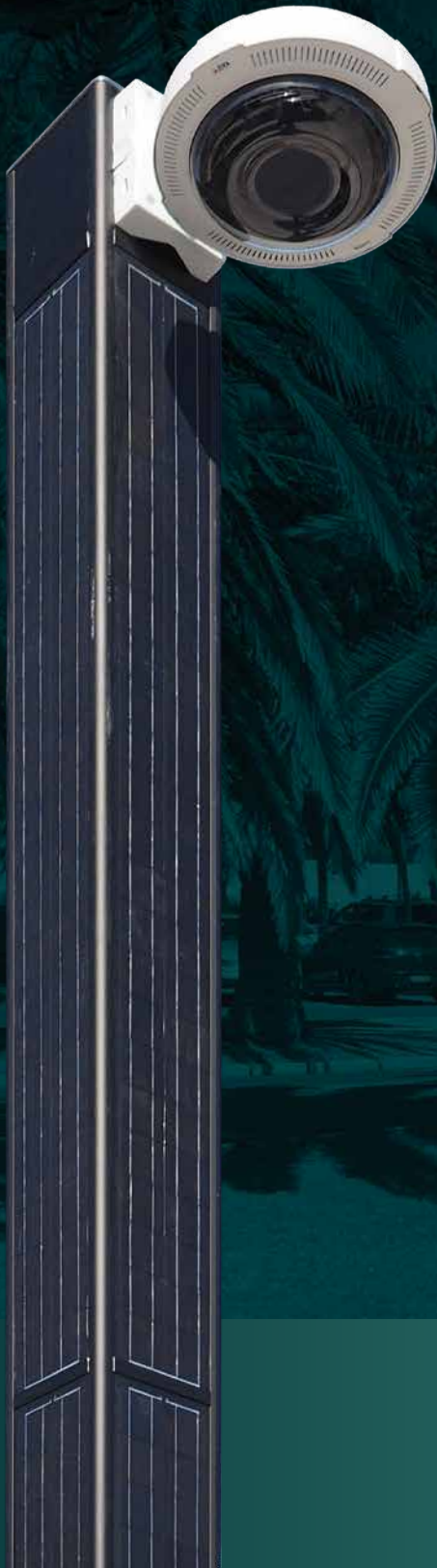


POWERSTACK™

Security Solutions



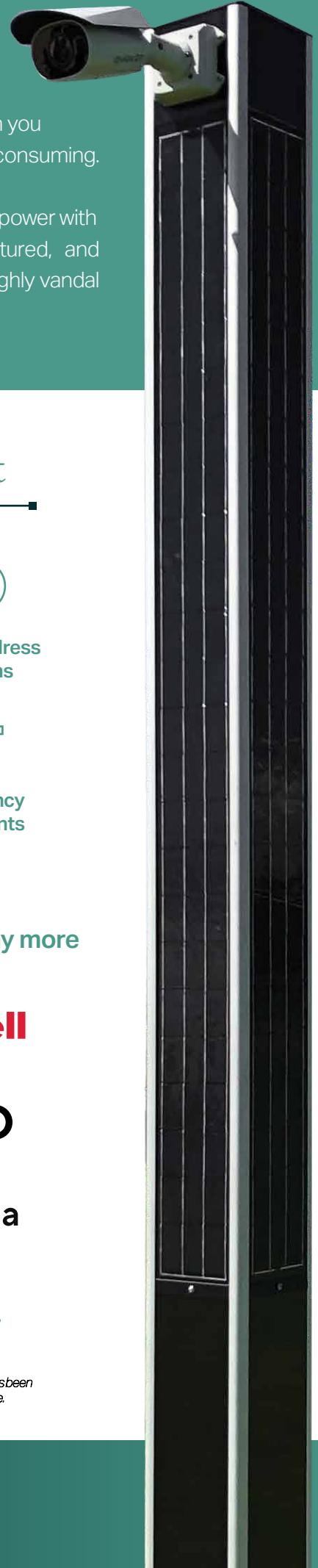
Powering 100% off-grid solutions
for the security industry.

Solar Reimagined.

What is PowerStack?

When deploying security systems in areas without metered power, or when you need to deliver on a deadline, accessing grid power is expensive and time consuming.

PowerStack removes those issues, delivering durable, 100% off-grid solar power with no need for utility approvals, cabling or trenching. Locally manufactured, and featuring a reliable 5 day power backup, 10 year limited warranty*, and a highly vandal resistant design, PowerStack is solar, reimagined.



Power what you need, where you need it



Dome



PTZ



Bullet



Security Lighting



Public Address Systems



Access Control



WIFI



Cellular



Wireless Sensors



Emergency Help Points

PowerStack can be used to power all these brands and many more



Third party manufacturer brands indicate that PowerStack has been tested with specific devices to confirm working integration, and/or has been used with a brand's device in an active installation. Use does not represent third party endorsement of the PowerStack brand or product line.
*Please refer to current PowerStack warranty documentation for full terms and inclusions.

POWERSTACK™

Delivering real world security solutions

From government buildings, to public parks and transit hubs, PowerStack is delivering sustainable, cost-effective monitoring systems and communications. All just using the power of the sun.



Security cameras and lighting for metro transport stations in Texas, USA.



Marina park safety infrastructure using PowerStack in Australia.



Camera incident detection facilities in NSW offering minimised camera deflection in high wind areas.



Remote power for bushfire monitoring cameras with IR and cloud communications in Victoria, Australia.



On campus security with dual camera and communications at UOW.



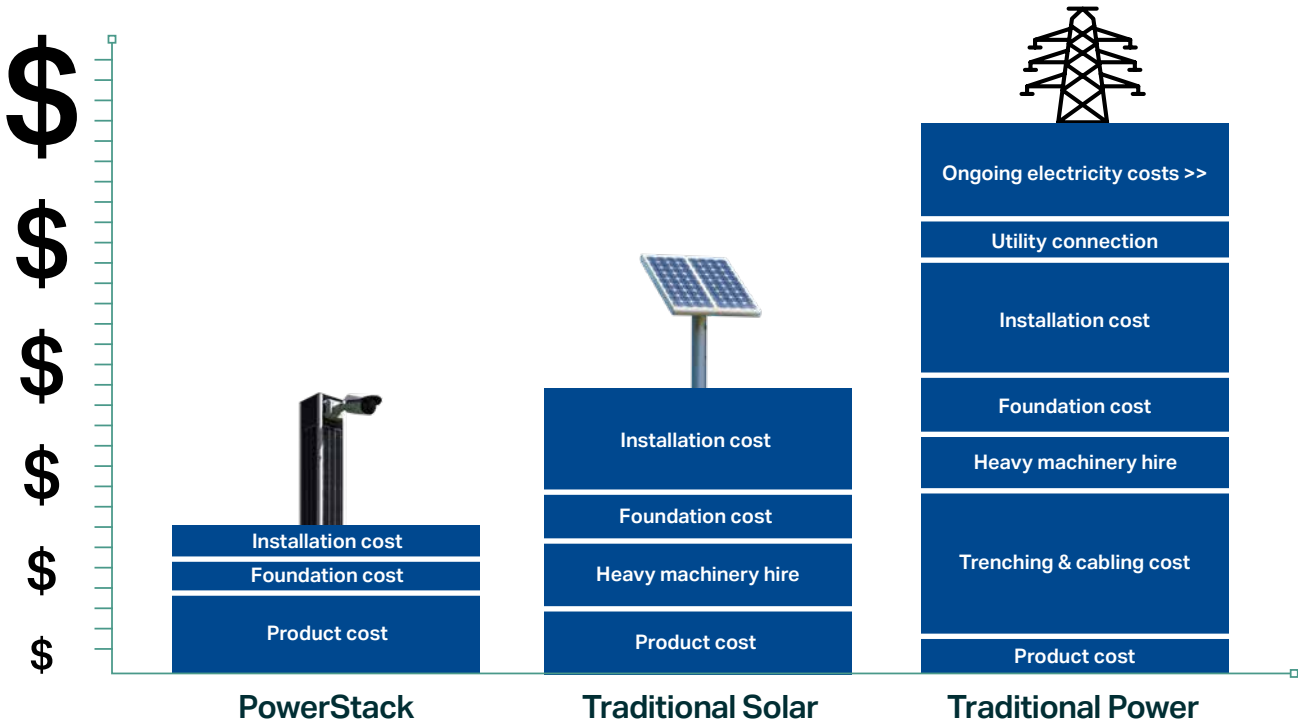
EPA illegal dumping monitoring with number plate recording in Shellharbour.

Solar Reimagined.

Stack the odds in your favour

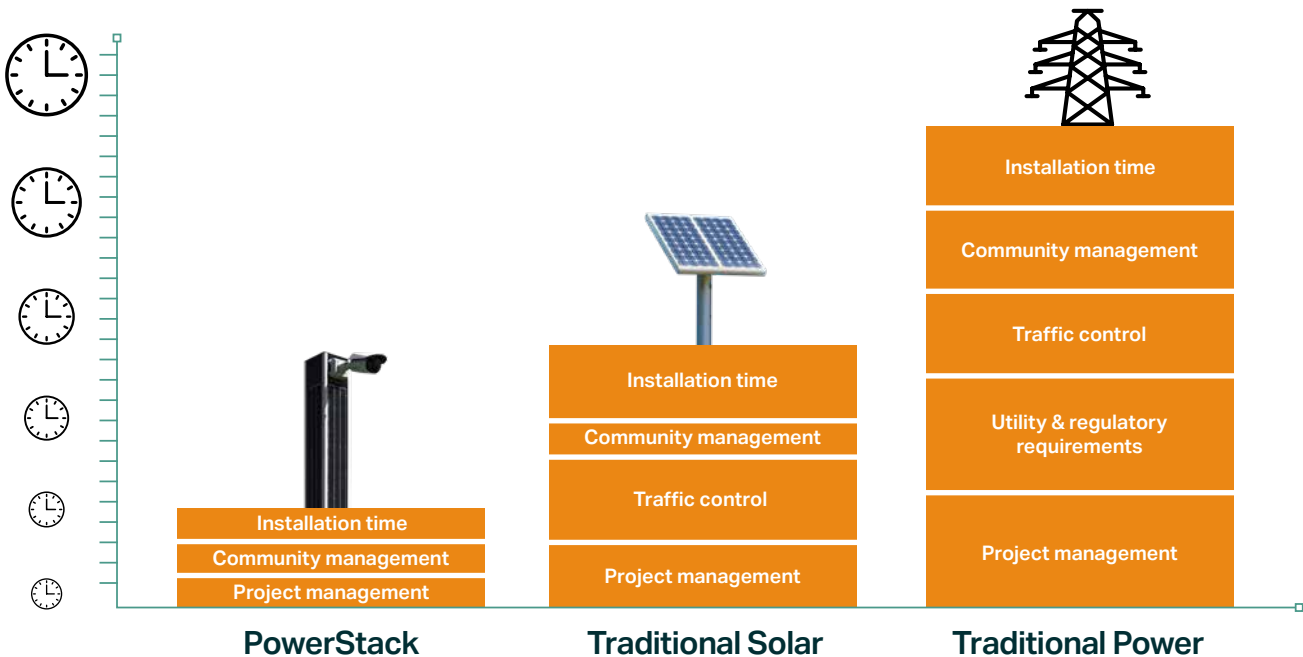
How PowerStack compares on cost (\$)

- **PowerStack** has a higher product cost, but much lower installation cost
- **Traditional Solar** has a medium to high product cost, but much higher installation cost
- **Traditional Power** has a lower product cost, but much higher overall project cost



How PowerStack compares on time (hrs)

- **PowerStack** can be installed in under an hour with no heavy machinery or concrete foundation required
- **Traditional Solar** requires time-consuming onsite assembly and foundation installation
- **Traditional Power** requires utility compliance, trenching and cabling, and has the highest project management demands



Enabling projects with green energy

Projects are often removed from the end user's budget due to the costs of trenching, underground wiring and trying to avoid existing infrastructure.

"Accessing grid power for infrastructure is costly and time consuming"

- James Vincent, Southern Region Waste Program

Remove the headaches of running underground cabling with green infrastructure from PowerStack. Highly cost-effective, clean energy, and just as reliable as the grid.



Increase Revenue



Repeat Business



Reliable & Green

Your customer is already asking for sustainability. Think like them: create a solar division and increase your offering with PowerStack.

- ✓ *Installs in minutes, with no trenching, cabling or heavy machinery*
- ✓ *No coal fired power, helping clients with Net zero goals Australian*
- ✓ *manufactured, renewable that's reliable*
- ✓ *Enabling you to offer \$0 ongoing utility costs for the client*



10 year warranty



5 day battery backup



Solar Reimagined.

Technical specifications

General

| | |
|----------------------------|----------------------------------------------------|
| Energy Source | Solar Power |
| Operating Temperature | -30°C to +60°C |
| Height | 1m to 8m |
| Cross-Sectional Dimensions | 180mm x 180mm |
| Warranty | 10 Year Limited* |
| System Design Life | > 12 Years |
| System Voltage | 12/24 V _{DC} , 48V & PoE available |
| Wind Resistance | > 250km/hr wind |
| Pole Material | T6 6000 series aluminium extrusions (6%+ recycled) |

Solar Panel

| | |
|------------------|----------------------------------|
| Technology | Monocrystalline cells |
| Encapsulant | Shatterproof glassless polymer |
| Life Expectancy | >15 Years |
| Solar Efficiency | 17-19% |
| Connection | Waterproof 30A connection system |
| Voltage | 28V _{OC} |

Energy Storage System

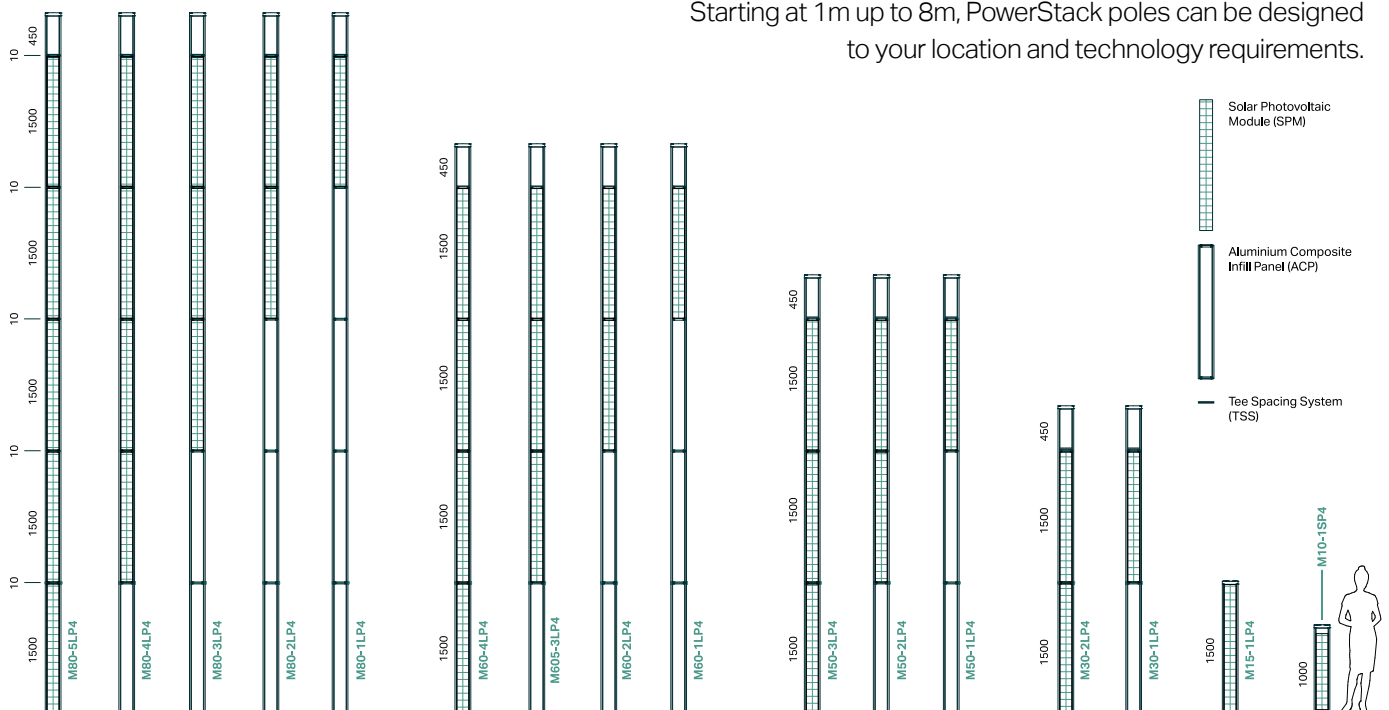
| | |
|--------------------|----------------------------------------------|
| Technology | LiFePO ₄ (Lithium Iron Phosphate) |
| Battery Management | Proprietary battery management system |
| Power Backup | 5 days |
| Battery Life Cycle | 10,000 cycles |
| Thermal | Insulation Protection |
| Connection | 1.5mm copper strip |
| Replacement | >12 Years |
| Battery Capacity | 3.5 time maximum load |
| Battery Voltage | 13.6 V _{DC} |

Energy Distribution Centre

| | |
|--------------------|-------------------------------|
| Material | Powder coated gal sheet metal |
| Terminal | Wago 2022 series |
| Isolation | Lever blade isolation |
| Control System | Maximum power point tracking |
| Voltage | 12/24V Auto sense |
| Circuit Protection | Mini blade fuse |

Model Range

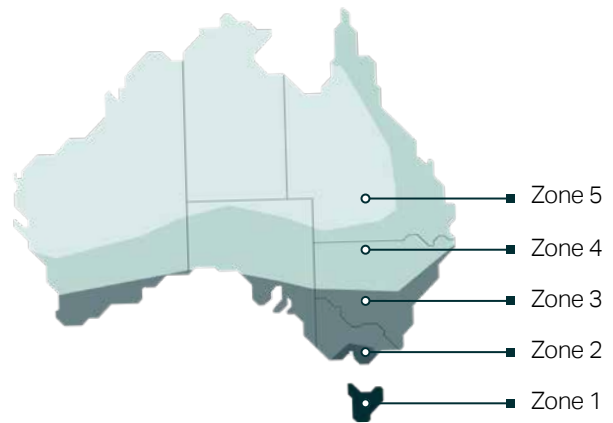
Starting at 1m up to 8m, PowerStack poles can be designed to your location and technology requirements.



*Please refer to current PowerStack warranty documentation for full terms and inclusions.

Modular solar designed for your location

1. Find the relevant zone on the map that matches your install location.
2. Determine your payload requirements.
3. Select your PowerStack design. Below are some typical design examples, but there are many more technology combinations available.



| Technology Payload | Zone 1 | Zone 2 | Zone 3 | Zone 4 | Zone 5 |
|-----------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| 1 x Dome Comms | M60-3LP4-15LFP 6m PowerStack | M50-2LP4-10LFP 5m PowerStack | M50-2LP4-10LFP 5m PowerStack | M50-2LP4-10LFP 5m PowerStack | M50-2LP4-10LFP 5m PowerStack |
| 2 x Domes Comms | M80-5LP4-25LFP 8m PowerStack | M60-4LP4-20LFP 6m PowerStack | M60-3LP4-15LFP 6m PowerStack | M60-3LP4-15LFP 6m PowerStack | M60-3LP4-15LFP 6m PowerStack |
| 3 x Domes Comms | - | M80-5LP4-25LFP 8m PowerStack | M60-4LP4-20LFP 6m PowerStack | M60-4LP4-20LFP 6m PowerStack | M60-4LP4-20LFP 6m PowerStack |
| 1 x Bullet Comms | M60-3LP4-15LFP 6m PowerStack | M50-2LP4-10LFP 5m PowerStack | M50-2LP4-10LFP 5m PowerStack | M50-2LP4-10LFP 5m PowerStack | M50-2LP4-10LFP 5m PowerStack |
| 2 x Bullets Comms | M80-5LP4-25LFP 8m PowerStack | M60-4LP4-20LFP 6m PowerStack | M60-3LP4-15LFP 6m PowerStack | M60-3LP4-15LFP 6m PowerStack | M60-3LP4-15LFP 6m PowerStack |
| 3 x Bullets Comms | - | M80-5LP4-25LFP 8m PowerStack | M60-4LP4-20LFP 6m PowerStack | M60-4LP4-20LFP 6m PowerStack | M60-4LP4-20LFP 6m PowerStack |
| 1 x PTZ Comms | M80-5LP4-25LFP 8m PowerStack | M60-4LP4-20LFP 6m PowerStack | M60-3LP4-15LFP 6m PowerStack | M60-3LP4-15LFP 6m PowerStack | M60-3LP4-15LFP 6m PowerStack |
| 2 x PTZ's Comms | - | - | M80-5LP4-25LFP 8m PowerStack | M80-4LP4-25LFP 8m PowerStack | M80-4LP4-25LFP 8m PowerStack |

Power output is indicative for each zone, please speak to your sales representative for full performance details. Other models and running profiles are available for applications such as architectural lighting. Poles shown are minimum size required for location, poles up to 8m are available.

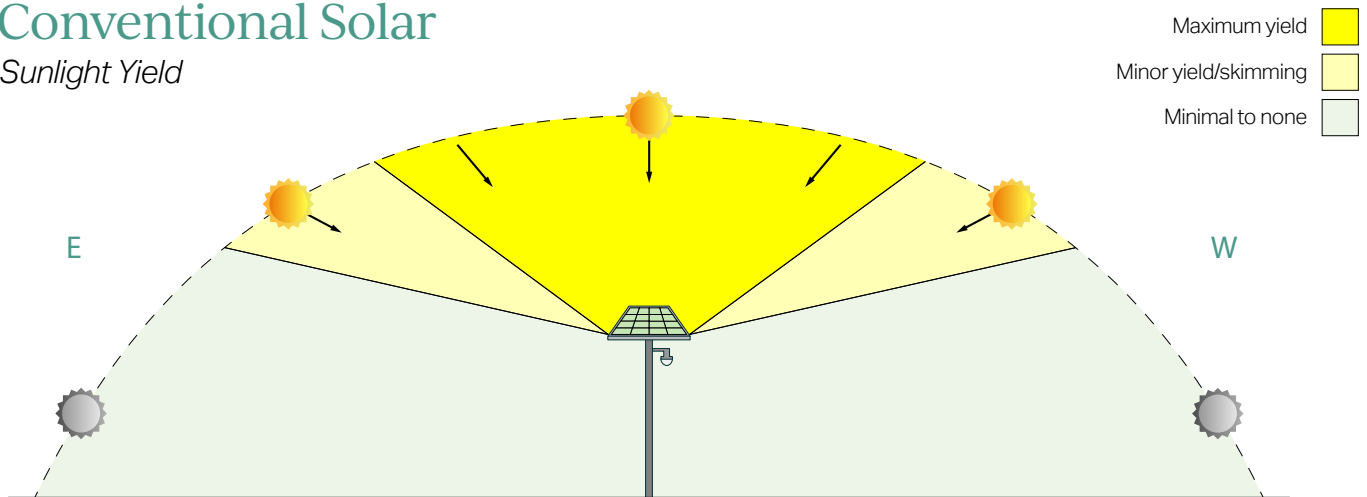
Why vertical solar?

PowerStack's vertical design overcomes many of the limitations of traditional solar. When the sun is lower in the sky, PowerStack is harvesting maximum sunlight throughout the day with its modular, 4-sided design.

This gives you increased flexibility and reliable power, meaning you can install PowerStack almost anywhere and deliver 100% self-sustaining powered infrastructure.

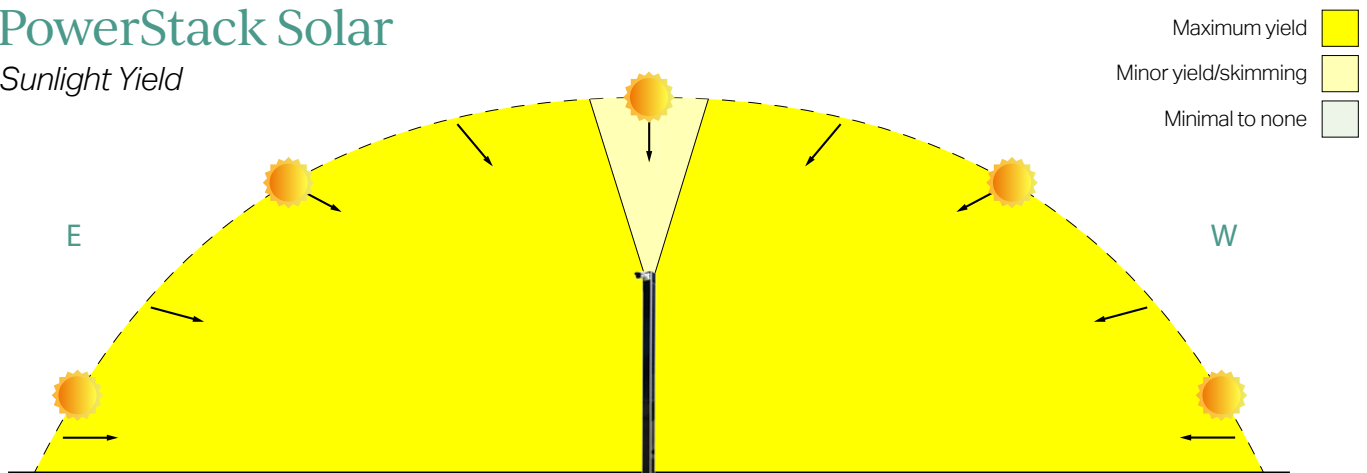
Conventional Solar

Sunlight Yield



PowerStack Solar

Sunlight Yield



Benefits of Vertical Solar



Fully integrated design. No heavy steel pole, unsightly panel or battery box on top of pole.



Low profile. Vertical vastly reduces wind drag so no structural or vibration issues.



Modular 4-sided design. Captures sunlight in all directions, add panels as required.



Designed for mid-winter conditions. Vertical panels optimise harvest when the sun is at its lowest in the sky.



Easy install. Lightweight, installed with hand operated tools, no working at heights required.



Animal Proof. Vertical design limits bird droppings and nesting that obscure traditional flat panels.

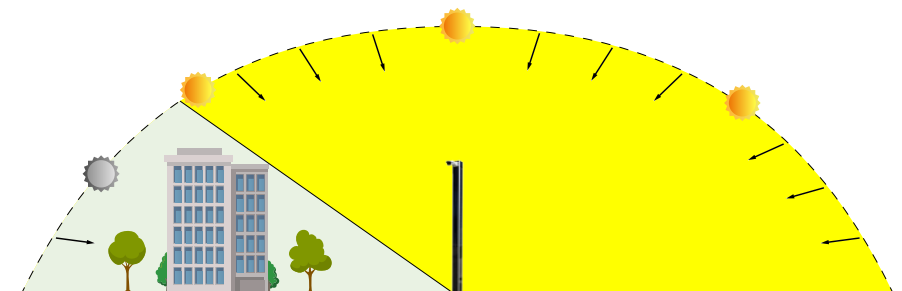
Use everywhere from cityscapes to rural sites

Without the bulky flat panel, external battery box and heavy foundations required with traditional solar, PowerStack can be used everywhere from urban sites to farmland.

Even in locations with shading, the 360° sun capture means reliable energy for powered infrastructure.

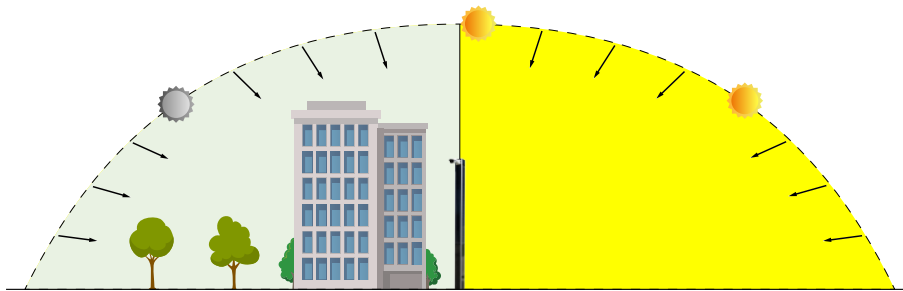
Shading diagrams

 Full sun, maximum yield  Blocked sun, minimal to no yield



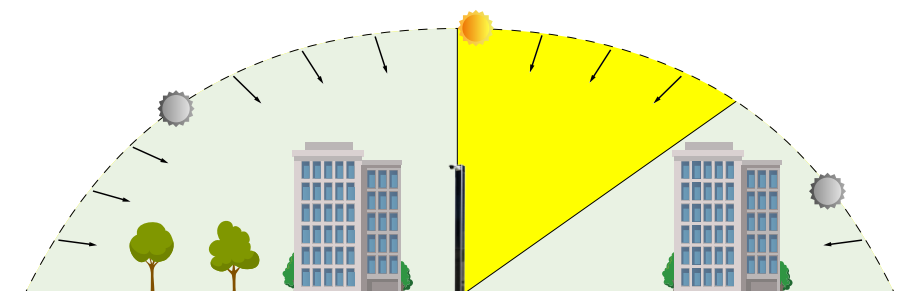
3/4 Sun

In this situation we have the option to increase the number of solar panels required, or decrease wattage or run time by a quarter.



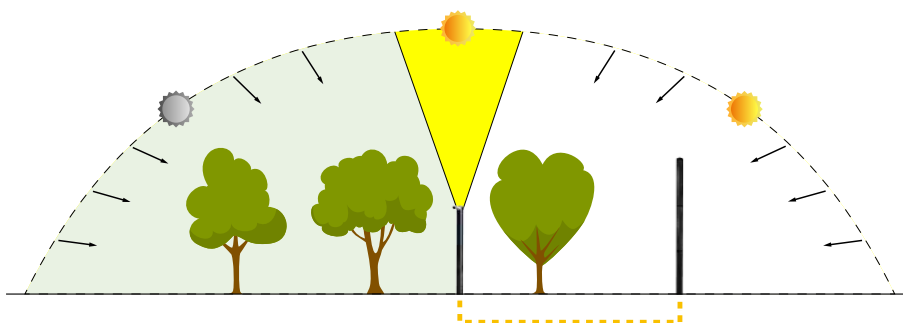
1/2 Sun

In this situation we have the option to increase the number of solar panels required, or decrease wattage or run time by half.



1/4 Sun

In this situation we have the option to increase the number of solar panels required, or decrease wattage or run time by three quarters.

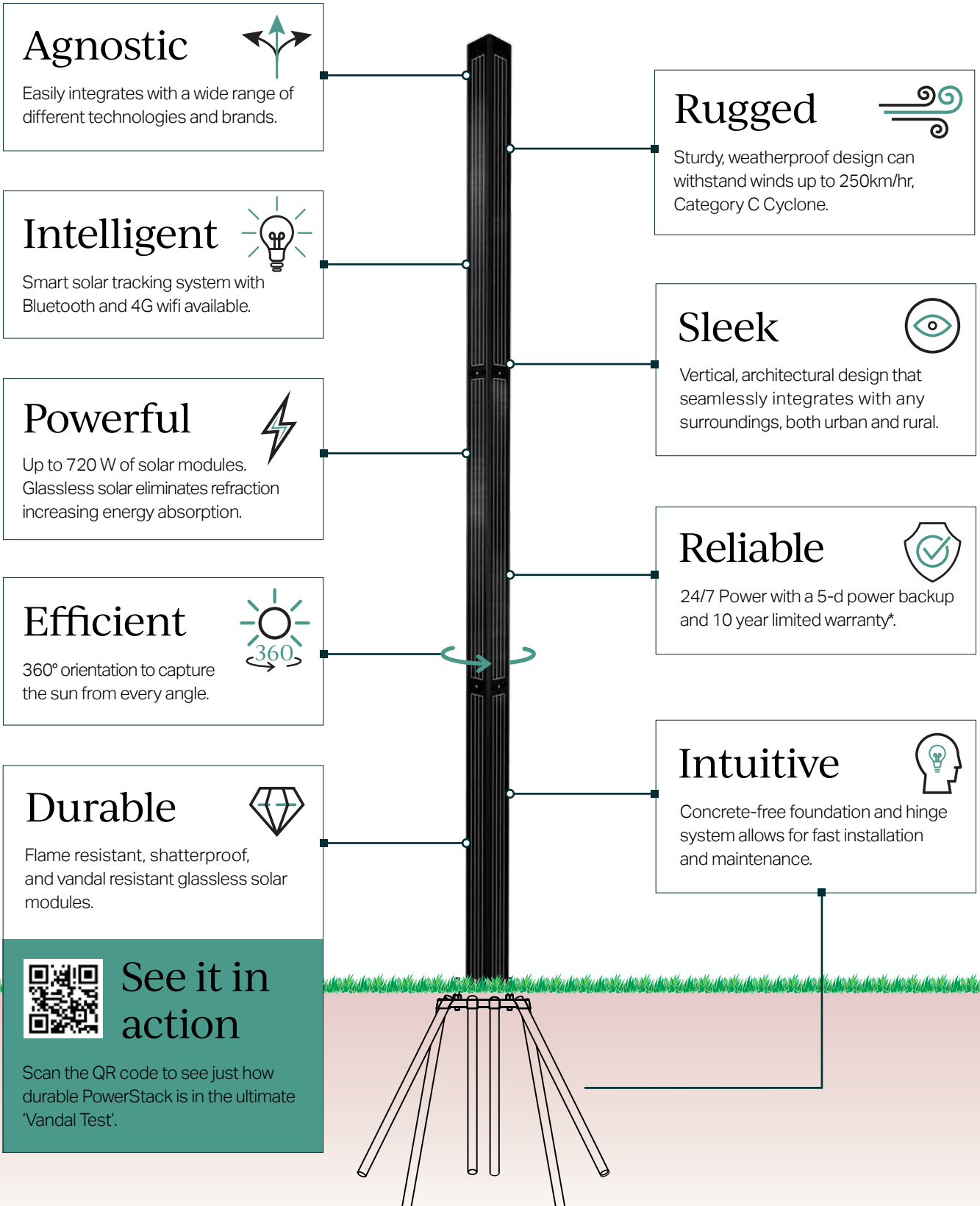


Minimal Sun

In this situation, we can deploy the payload pole connected to a remote power station pole, harvesting full sunlight. This solution uses ELV cable run at shallow depth.

Solar designed differently

Fully integrated, built to last and using best in class materials, each element of the PowerStack system has been designed to deliver maximum performance and quality.



Locally manufactured, quality assured

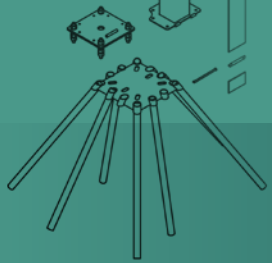


PowerStack is manufactured in Australia using best in class components, and where possible, uses recycled materials. The local approach means no hold-up when it comes to delivery of product, and quality is ensured through skilled labour and design right here in Australia.

We're proud to create a sustainable product that helps the environment and creates opportunities for our local communities.



- 2023** PowerStack team expands to grow existing and new markets
- 2022** Australia and USA offices expand production capability to meet market demand
- 2021** Series A funding finalised, business scales
- 2019** Company rebrand as PowerStack
Over 2000 PowerStack poles deployed
- 2017** First APAC PowerStack systems deployed in Hobart, Tasmania, Australia
- 2016** First USA PowerStack systems installed, Austin Texas, USA
- 2015** Glassless solar modules developed
Unique, shatterproof, solar module development finalised
- 2012/13** Valen Energy brand launched
North American manufacturing facility opened up
- 2010** Vertical solar vision concept started
- 2009** Started development of off-grid solar lighting technologies



Solar Reimagined.

Want to use PowerStack in your projects?

As a manufacturer, we like to work on development and production, so we've built a trusted network of resellers and distributors you can work with.

Reach out to our team for more details on available retail partners for your region. We're also here to help with any specification questions or requirements you, or your end customer, may have.



**GOOD
DESIGN
AWARD®**
GOLD WINNER

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