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pv magazine webinars

Growing the solar pie: how BIPV unlocks new growth opportunities

23 September 2024

2:00 pm – 3:00 pm | CEST, Berlin, Paris

8:00 pm – 9:00 pm | AWST, Perth

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Apricum

Welcome!

pv magazine webinars

Do you have any questions? ❓ 🙋

Send them in via the Q&A tab. 👉 We aim to answer as many as we can today!

You can also let us know of any tech problems there.

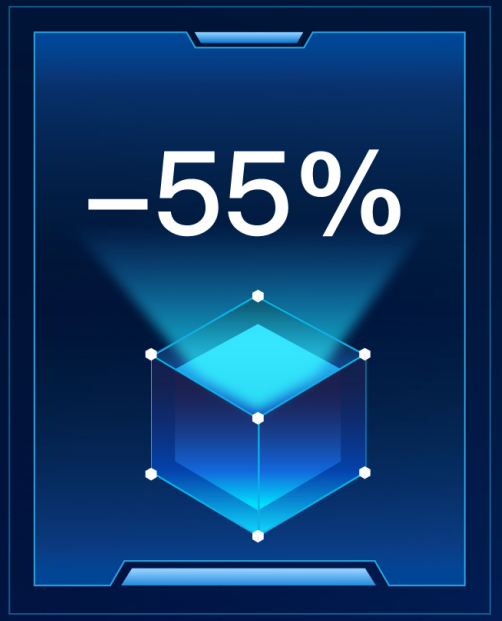
We are recording this webinar today. 📹

We‘ll let you know by email where to find it and the slide deck, so you can re-watch it at your convenience. 👀 💡

BIPV NECESSITY IN EUROPE
WHY THERE WILL BE MORE AND MORE PV ON BUILDINGS

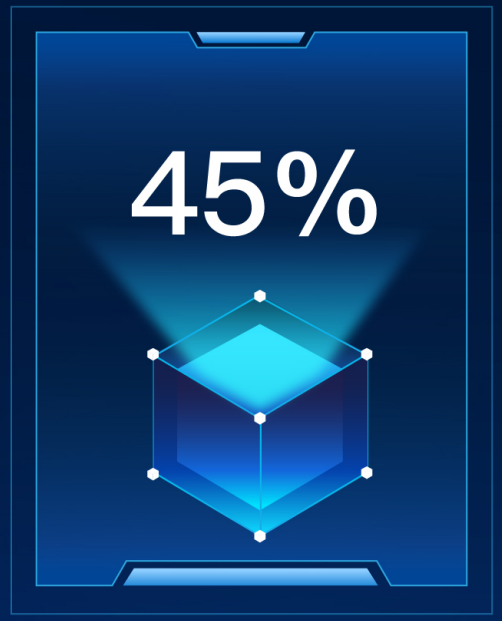
Yann Usseglio, GoodWe Europe

EU SETS AMBITIOUS 2030 CLIMATE GOALS TO BE ON TRACK TO BE CARBON NEUTRAL IN 2050



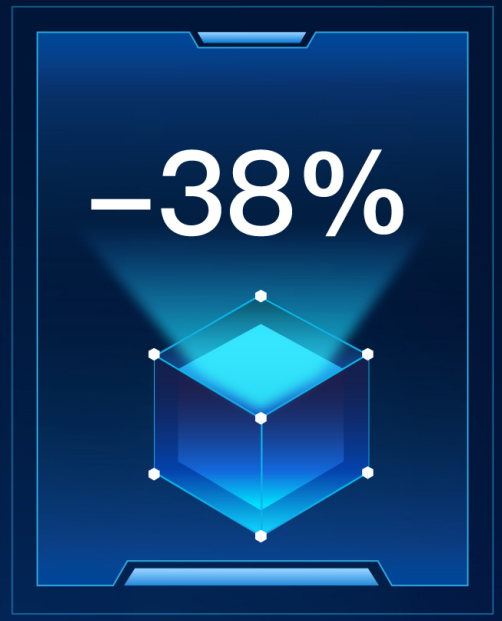
–55% of GES compared to 1990

Fit for 55 (2021)



45% of renewable energy in the European energy mix

Fit for 55 (2021) and REPowerEU (2022)



–38% of final energy consumption compared to 2007 levels

New Energy Efficiency Directive (2023)

Source : European Commission

BUILDINGS ARE THE SINGLE LARGEST ENERGY CONSUMER IN EUROPE & ARE THE TOP EU PRIORITY

131M building stock

40% of EU energy consumption

36% of GEG emissions

Source : European Commission & RICS

THE REVISED 2024 ENERGY PERFORMANCE BUILDING DIRECTIVE DEFINES 2030 TARGETS & INTRODUCES COMPULSORY SOLAR FOR BUILDINGS

–16% in residential buildings

16% of the worst energy efficient non–residential buildings to be renovated

SOLAR OBLIGATION

- on new commercial and public buildings by 2026
- on commercial and public buildings that undergo a relevant renovation by 2027
- on new residential buildings by 2029
- on existing public buildings by 2030

Source : European Commission

PRIVATE COMPANIES WILL HAVE TO CONTRIBUTE THROUGH CORPORATE SUSTAINABILITY REPORTING DIRECTIVE

The Corporate Sustainability Reporting Directive (CSRD) sets the standard by which nearly 50,000 EU companies will have to report their climate and environmental impact with defined targets

Category	Publicly Listed Companies	Non-Publicly Listed Companies	Publicly Listed SMES	Non-Publicly Listed SMEs	Publicly Listed Micro-Enterprises	Non-Publicly Listed Micro-Enterprises
Applicability	All companies (no specific criteria)	Companies exceeding 2 of the 3 following criteria:* €50M turn-over * €25M balance sheet * 250 employees	All companies (no specific criteria)	Companies exceeding 2 of the 3 following criteria: * €10M turnover * €5M balance sheet * 50 employees	Companies exceeding 1 of the 3 following criteria: * €900K turn-over * €450K balance sheet *10 employees	Not concerned

- **January 2024:** CSRD applies to large public interest companies (over 500 employees).
- **January 2025:** Applies to large companies that meet two of the three criteria: €40M turnover, €20M balance sheet total, or 250 employees.
- **January 2026:** SMEs, small and non-complex institutions, and captive insurance companies are subject to the CSRD.
- **January 2027:** Application for non-European companies generating net turnover of more than €150M in the EU if they have a branch or subsidiary.

Source : European Commission

APRICUM

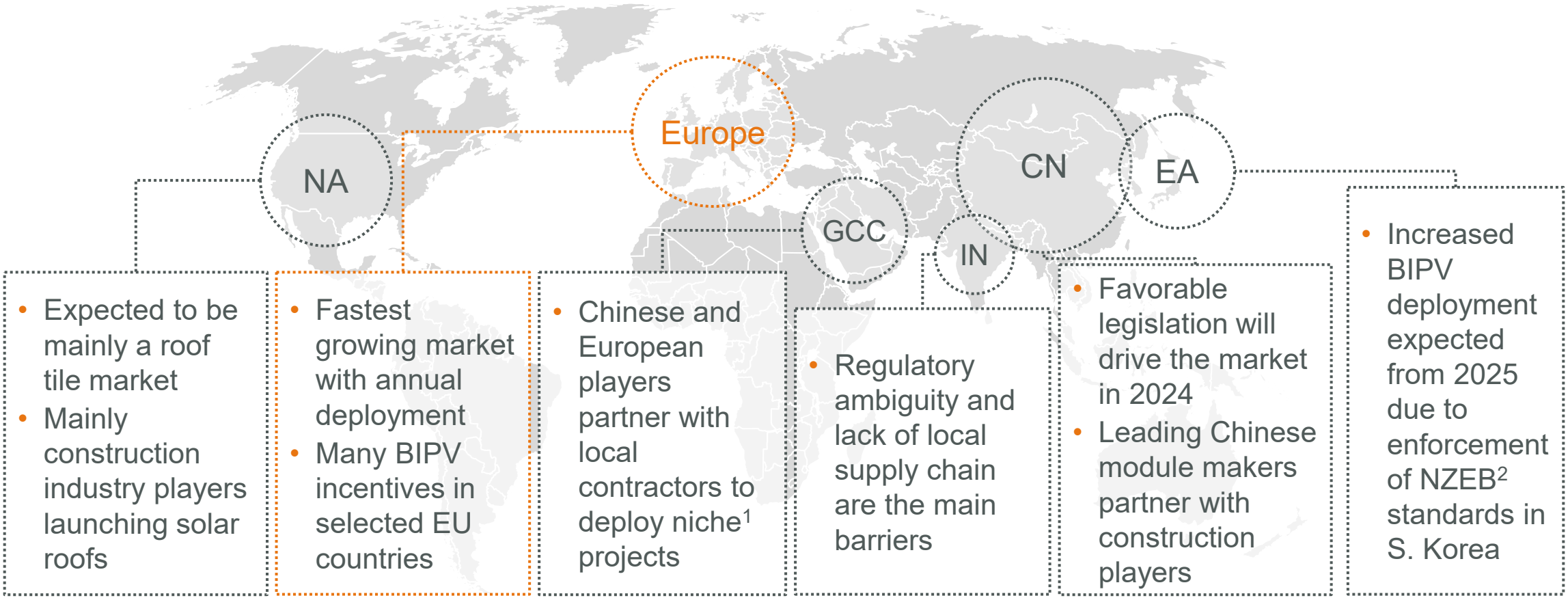
THE CLEANTECH ADVISORY.

[pv magazine Webinar:
Growing the solar pie: how BIPV unlocks new growth opportunities]

September 23, 2024

The global BIPV market is at early stages, but favorable tailwinds are supporting the market take-off.

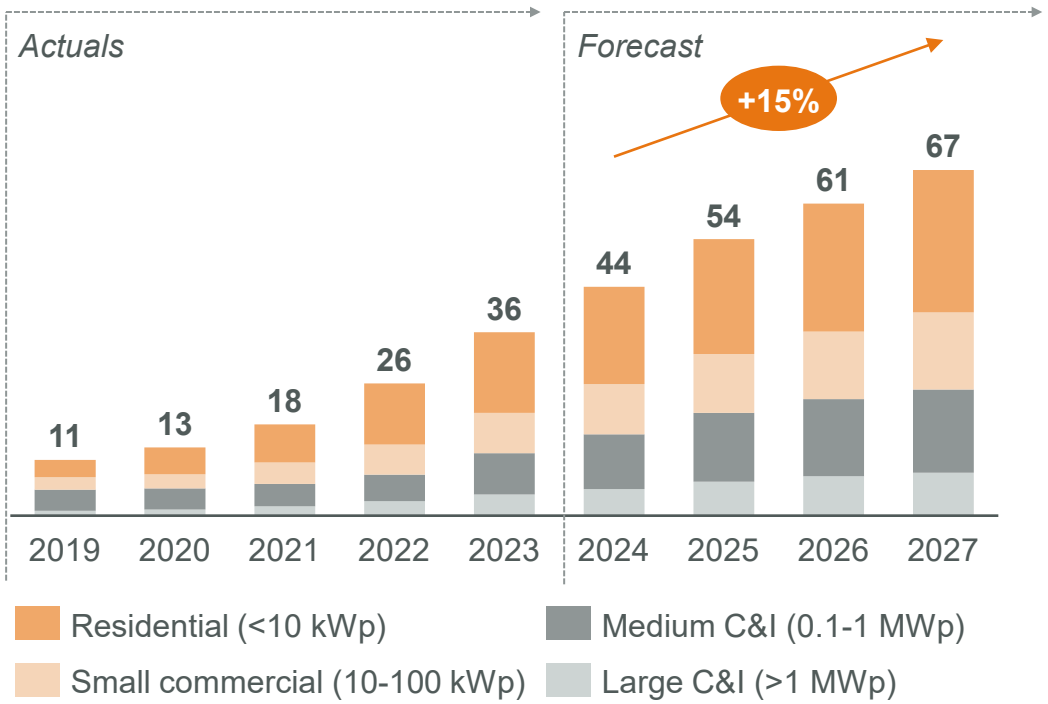
Selected global trends in the BIPV market



Source: Apricum analysis; 1) Niche projects include that of exhibition buildings; 2) Net zero energy buildings

In Europe BIPV is still a niche sector today but is forecasted to grow faster than the decentralized[1] market in the coming years.

Annual decentralized[1] PV installations [GWp] 2019–2027



BIPV KPIs

<1% Current estimated market share of BIPV in the EU decentralized market

>20% Forecasted CAGR for BIPV in Europe until 2027

Source: Apricum analysis, SPE, HEPI, European Commission | 1: Decentralized markets are PV plants close to the point of consumption, e.g., unlike large utility-scale PV

In order to succeed, BIPV will require the right conditions to materialize, starting with appropriate regulations & incentives.

Key success factors for BIPV

Cost decrease

Favorable regulation & incentives (e.g., streamlining building insurance)

Solar facades

Solar roof tiles

Innovation, scalability and mass customization

Solar roof slates

Prefabricated solar roof

Close collaboration between suppliers, architects & clients

Growing public acceptance & importance of aesthetics

Source: Apricum analysis

Close collaboration between all players of a BIPV project will be key to succeed and to bridge the knowledge gap for new builds.

Simplified BIPV project deployment process for new buildings

	BIPV module maker	Façade material suppliers	Façade construction companies	Architects	Building financier owner
Typical pain points	• Lack of visibility on future projects to reach manufacturing scale (typ., capacity >200 kWp / project)	• Lack of knowledge around PV façade materials and technical planning skills	• Mostly limited knowledge in BIPV project such as energy yield assessment • Cost overruns due to poor procurement strategy	• Unsuccessful projects due to limited BIPV knowledge could tarnish their track records • Knowledge gap to explain to local authorities product fit to their regulations	• Lack of understanding of project economics and how to value it for their customers

Source: Apricum analysis

BIPV will become a common view and we will see more landmark buildings harnessing the sun's power in creative ways.

Outlook

Global move towards net zero buildings will further push public acceptance

More incentives, regulations & landmark buildings will further grow the public's acceptance

Mass manufacturing will be designed to enable building customization

BIPV will compete with other façade materials

BIPV suppliers will strive to reduce costs and PV losses

Aesthetics will no longer be the only driver

New types of customers will enter the market that are driven by the commercials

We expect 2 main customer groups (aesthetic and commercially driven ones) that might overlap

New builds will be the main target market in the short-term

Retrofitting buildings with BIPV may be complex in the short-term

GOODWE

GOODWE'S BIPV TECHNOLOGY PORTFOLIO

Barbara Terreni, GoodWe Europe

GOODWE

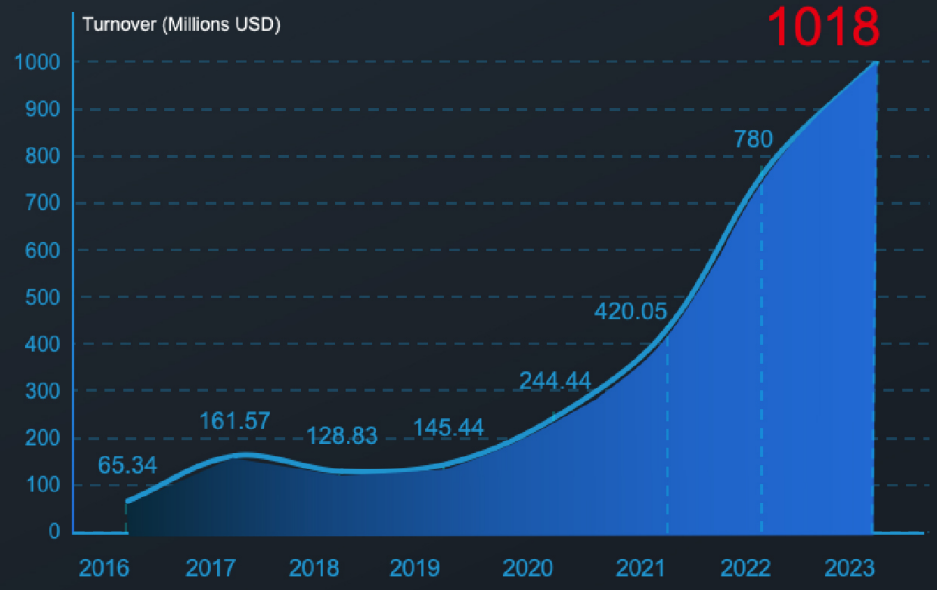
GOODWE FAMILY

5000+
Total number of employees

1000+
R&D staff

150+
Overseas employees

GLOBAL SALES REVENUE

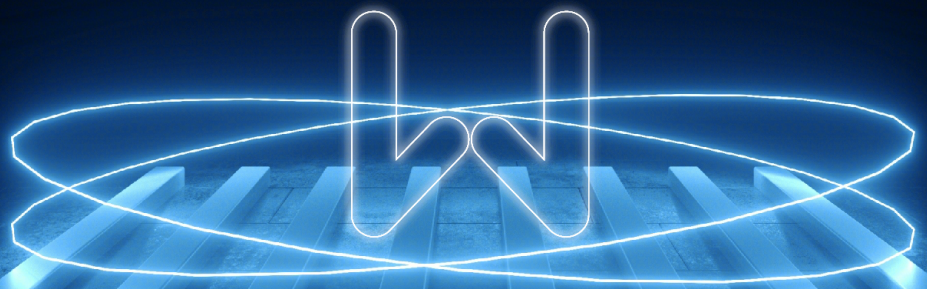


SOLARISE EVERY BUILDING

GoodWe BIPV Solutions is the PV Building Materials Business Unit of GoodWe, dedicated to advancing PV building materials to the public. Its BIPV products show great strengthes on swift and hassle-free installation, unhindered architectural styles, active electrical safety protection in all scenarios and compa-rable building lifetime, better than traditional PV materials.

GOODWE

THE FLAT ROOF USE CASE



GOODWE'S BIPV TECHNOLOGY PORTFOLIO

MORE THAN 30% OF EU ROOFS ARE FLAT ROOFS. THEY WERE NOT ALL DESIGNED TO SUSTAIN THE ADDTIONAL PV LOADS

The construction methodology for roof (EU+UK).

	TILTED ROOF		FLAT ROOF	
Years of construction	Level of presence	Level of insu-lation	Level of presence	Level of insulation
Before 1945	87%	8%	13%	0%
1945–1969	70%	17%	30%	1%
1970–1979	50%	21%	50%	33%
1980–1989	50%	42%	50%	41%
1990–1999	53%	50%	47%	44%
2000–2010	55%	40%	45%	40%
Post 2010	55%	36%	45%	42%

Source : EURAC

GALAXY
A MODULE DESIGNED FOR LOW-BEARING ROOFS

GOODWE

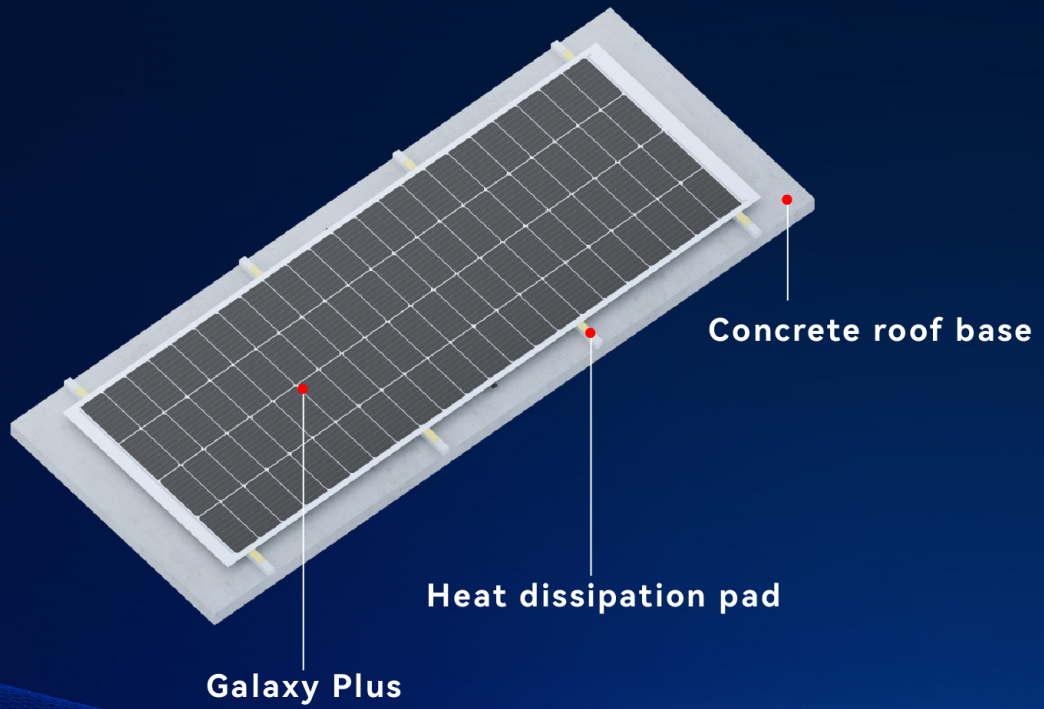
Galaxy Series 335Wp

Feather-Light, Steel-Tough

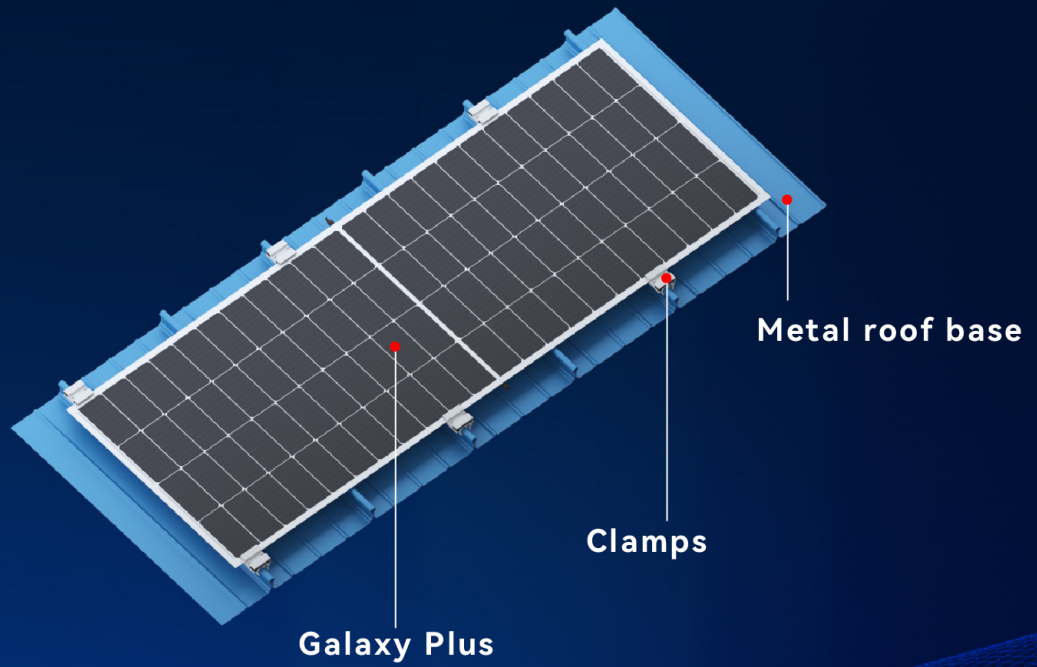
	BMT-G4/088A
Dimension	2116 x 777 x 3.5mm
Weight per m²	5.6kg
Upper surface	1.6mm tempered glass
Maximum power	335W
Module Efficiency	20.4%
Hail impact test	25mm (7-8g) 23m/s

A COMPLETE SET OF INSTALLATION METHODS

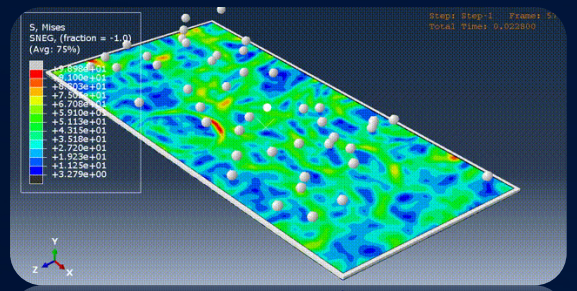
Adhesive Gluing



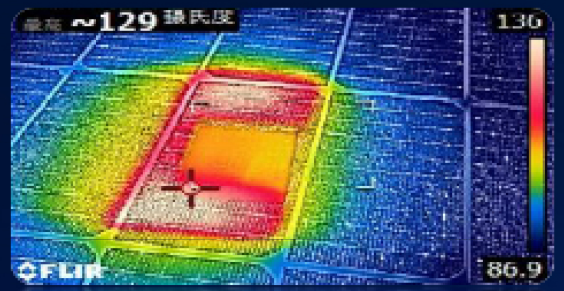
Clamps Fixing



GLUE STRAIGHT ON THE ROOF, NO PENETRATIONS



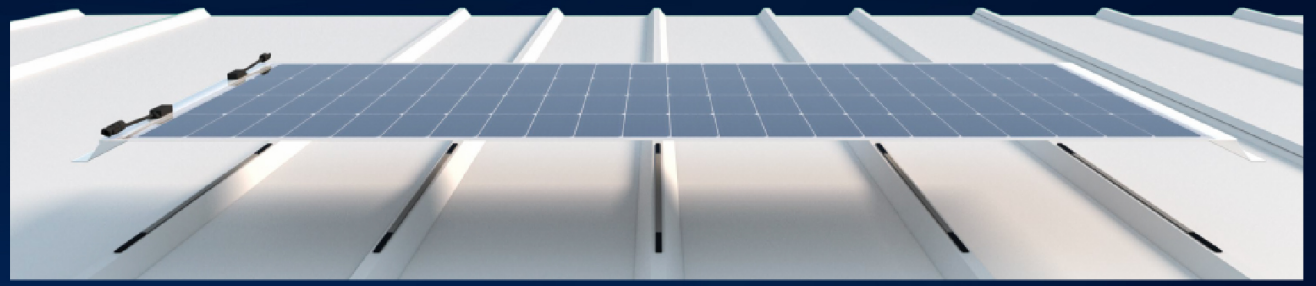
Hail resistant

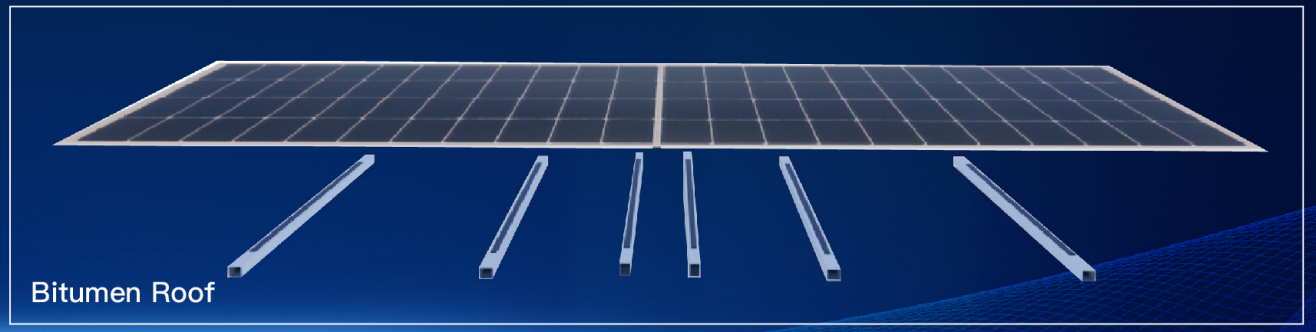


Hotspot resistant

High load capacity

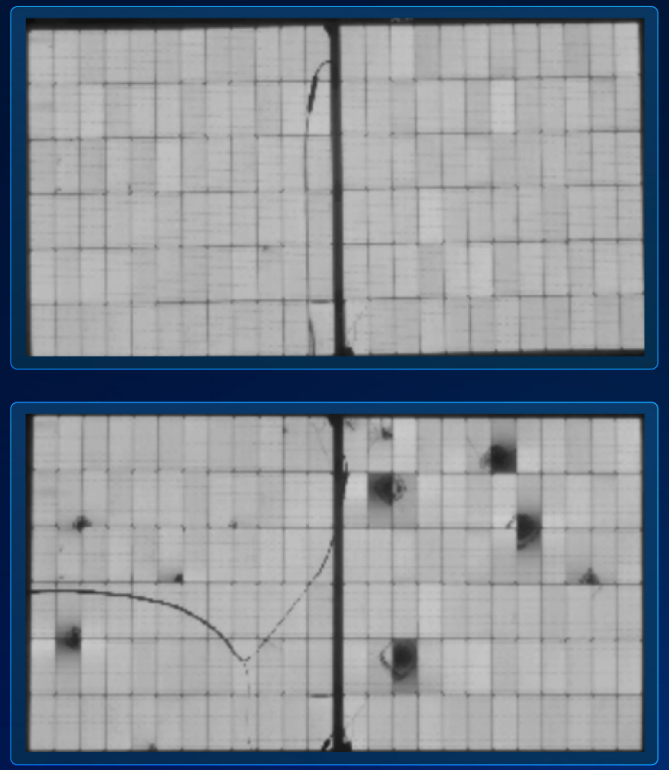
With rubber bars underneath, the ventilation is as good as traditional panels. Moreover, they prevent panels sinking in the water during the heavy rain.





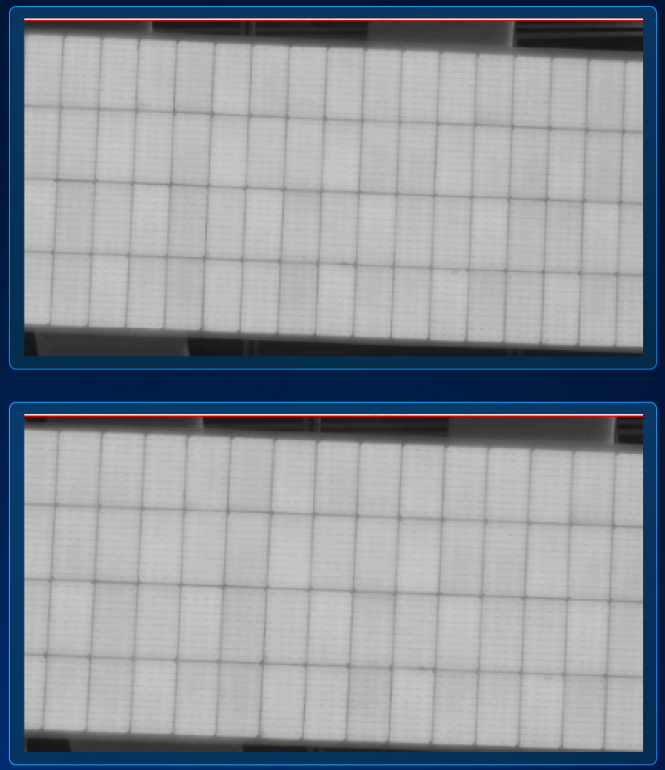
GALAXY MAKES A DIFFERENCE: HAIL RESISTANCE

Polymer Front Sheets– Before and After Hailstorm



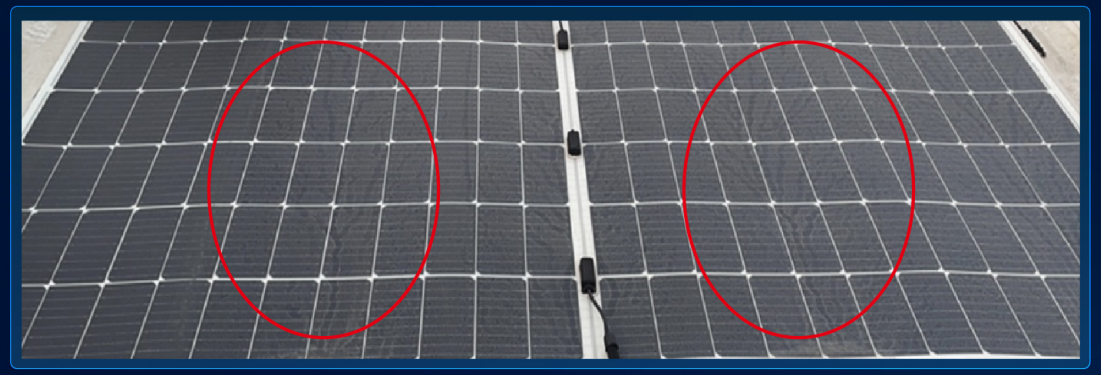
Degradation rate: –1.83%

Galaxy Glass Front Sheets – Before and After Hailstorm



Degradation rate: –0.237%

GALAXY MAKES A DIFFERENCE: INSTALLATION



Deformation of polymer materials leads to dust accumulation

Galaxy Products Stay Rigid and Firm

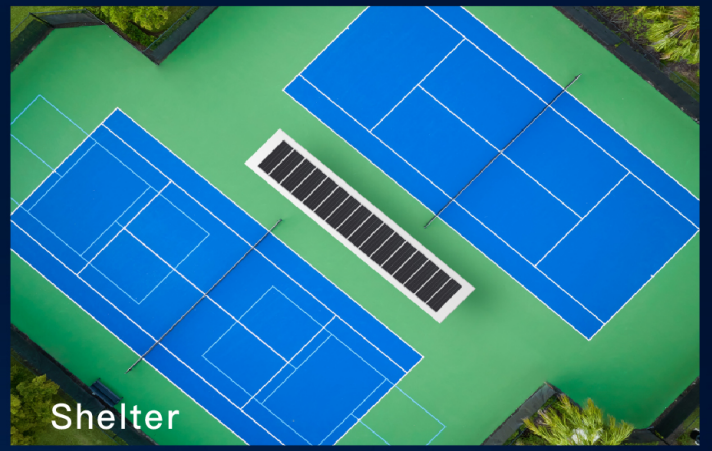
GALAXY MAKES A DIFFERENCE: JUNCTION BOX POSITION

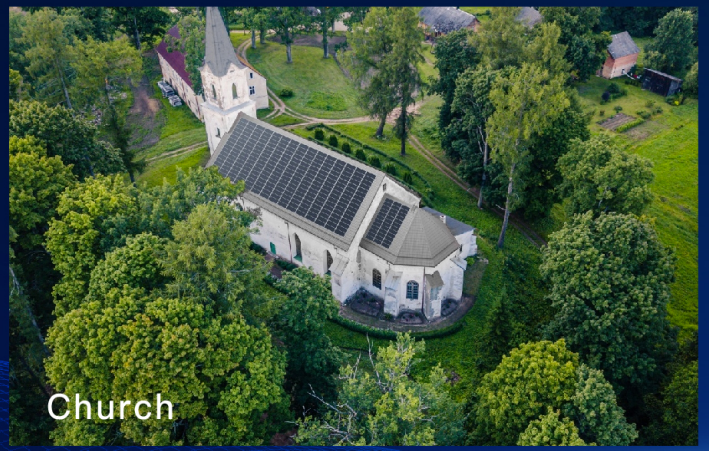
Front Junction Box

- The junction box will gradually age under sunlight, leading to product failure.

- To prevent aging, additional metal components are needed to cover the junction box, result in the increasement of construction material and cost.

MULTIPLE APPLICATION SCENARIOS





GALAXY – MELBOURNE ALSPEC 50kW

Melbourne, VIC, Australia

System Power: 50 kW
Annual Power Generation: 66.968MWh
Equivalent Reduction in CO_2 Emission: 1102t
Equivalent Trees Planted: 10322

GALAXY – GOLD COAST AM Solar 30kW

Gold Coast, QLD, Australia

System Power: 30kW

Annual Power Generation: 48,921 kWh

Equivalent Reduction in CO_2 Rmission: 805tons

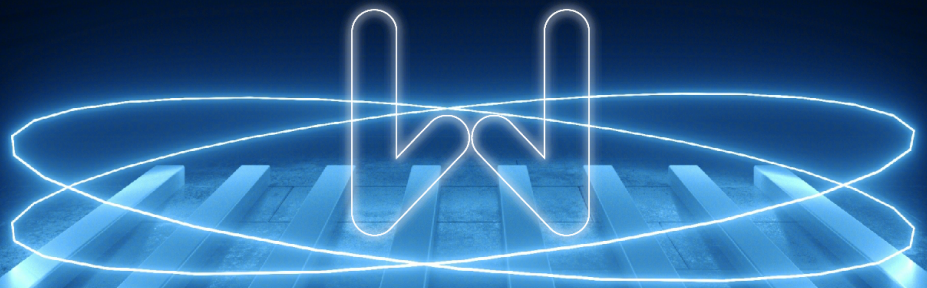
Equivalent Trees Planted: 7540

GALAXY – SYDNEY ALSPEC 500kW

GALAXY–DENMARK BITUMEN ROOF 11.4kW

GOODWE

THE CARPORT USE CASE

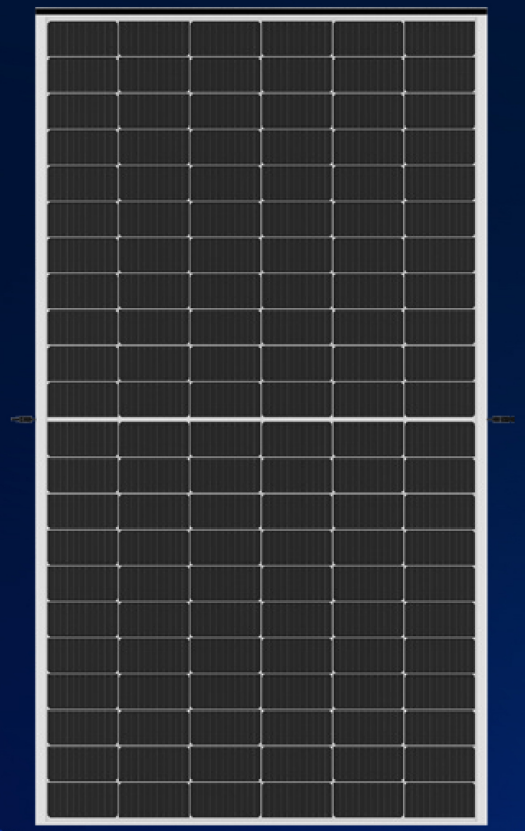


GOODWE'S BIPV TECHNOLOGY PORTFOLIO

SOLAR CARPORTS ARE PROGRESSIVELY BECOMING MANDATORY BUT HAVE DRAWBACKS WHEN DESIGNED WITH STANDARD MODULES

Water leakage

Unattractive



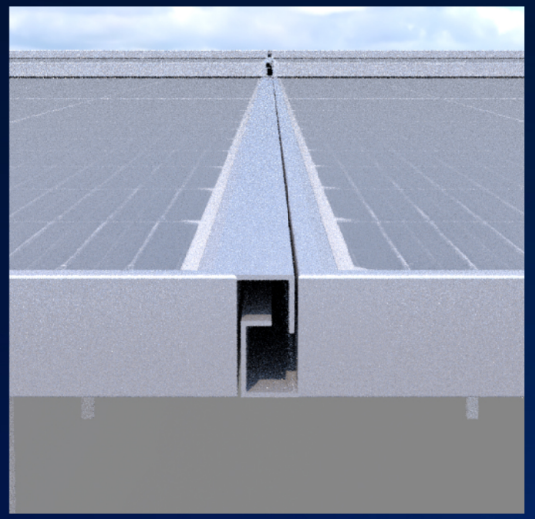
Polaris Series 530W

Solarise Your Drive

	BMT-P2/132A (Hoop)
Dimension	2142 x 1160 x 29.6mm
Weight	30±0.5kg
Cell Type	N-Type TOPCon Half Cells (132pcs)
Maximum power	530W
Module Efficiency	21.3%

STRUCTURAL WATERPROOFING & EASY TO INSTALL

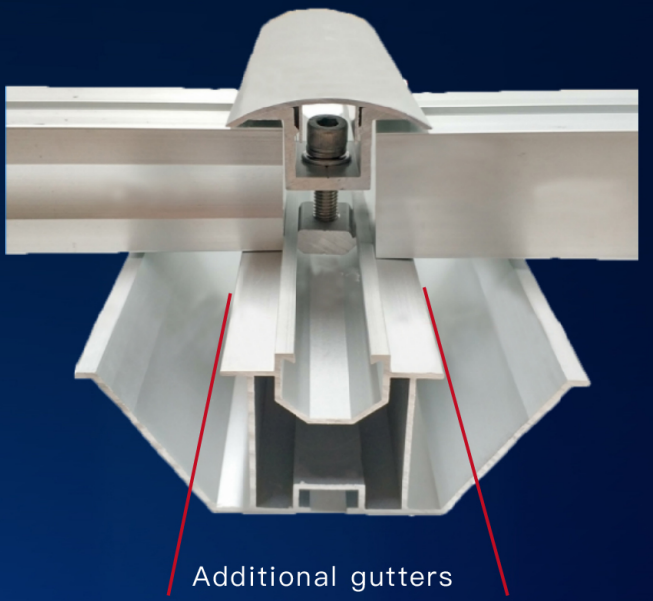
Single tile dispersion drainage



Polaris Series

VS

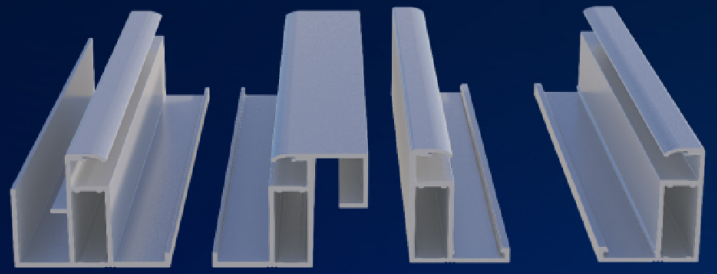
Confluent centralized drainage



Additional gutters

STRUCTURAL WATERPROOFING & EASY TO INSTALL

Integrated water guide frame

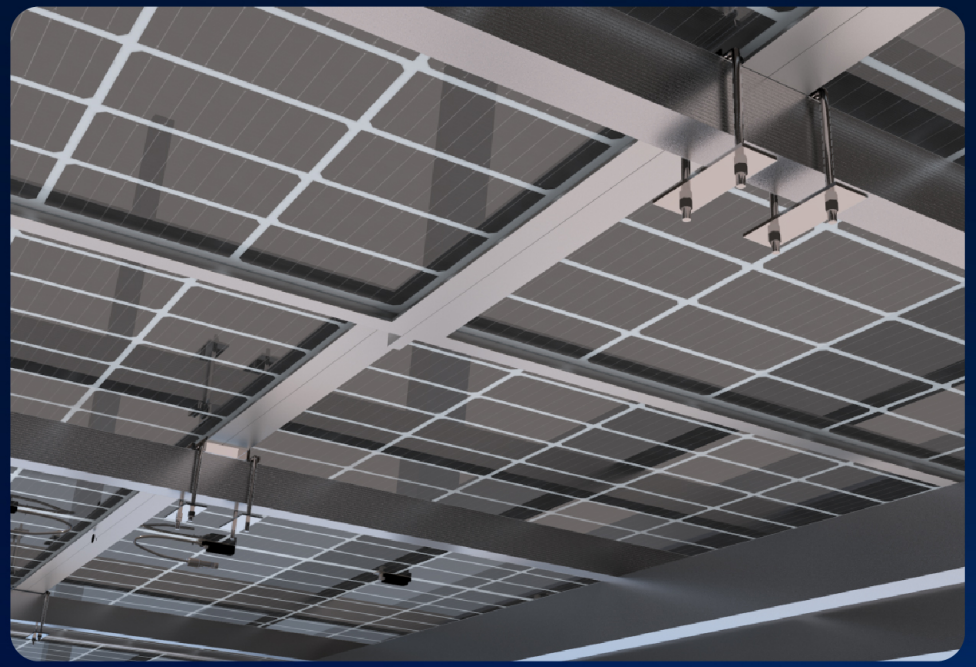


Polaris Series fixed with hoop

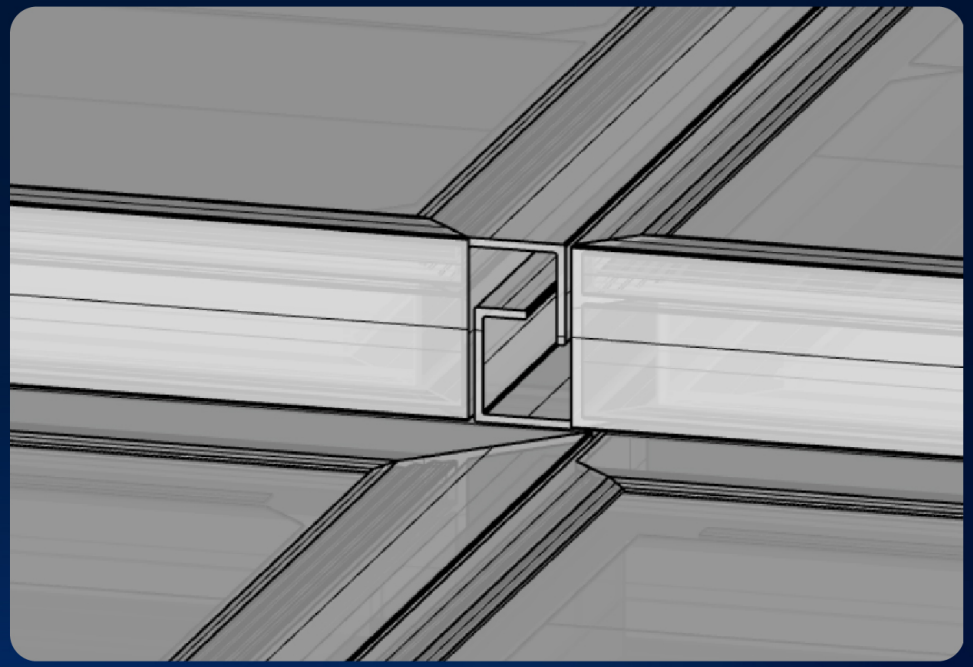
VS

Conventional PV module

STRUCTURAL WATERPROOFING & EASY TO INSTALL

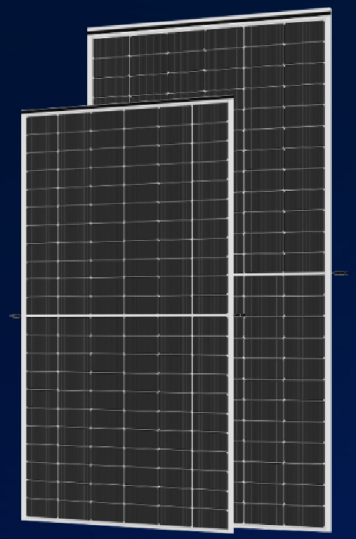


Polaris Series hoop installation



Overlapping detail

POLARIS ONE STOP SOLAR CARPORT



Polaris

Hybrid energy storage inverters

Lithium batteries

EV charger


11.6kW Polaris Waterproof
3 Cars' Solar Carport

POLARIS SERIES (550W)--SOLAR SHADE

Guangde Production Base Solar Shed

Sydney Display Center Solar Shade

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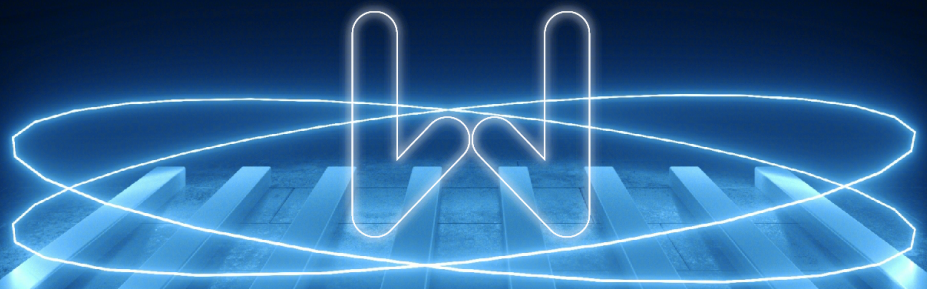
SOLAR BALCONY PV KIT



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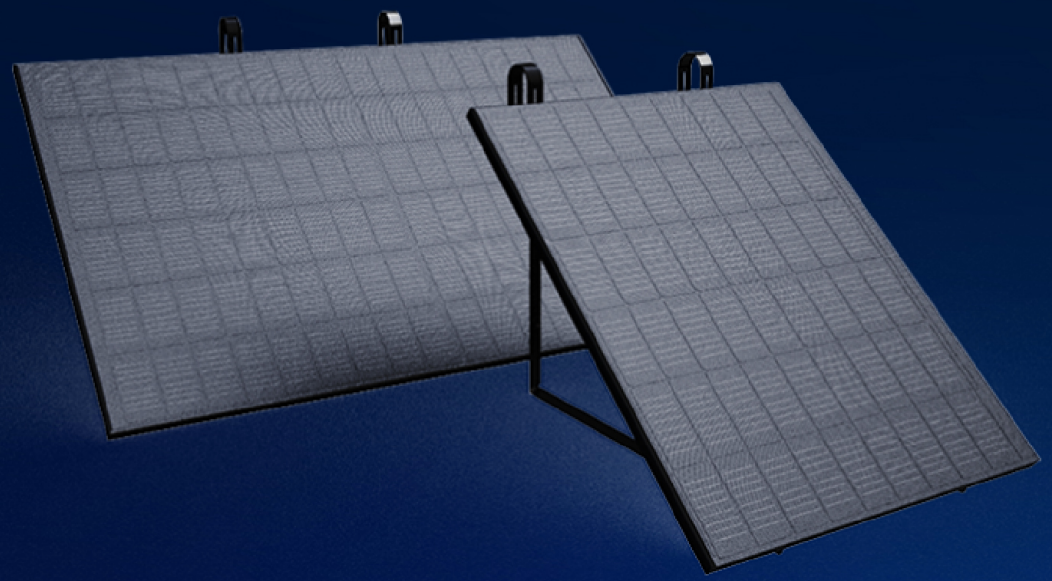
GOODWE

SUNCAKE SOLAR KIT

Enjoy Solar, A Piece of Cake



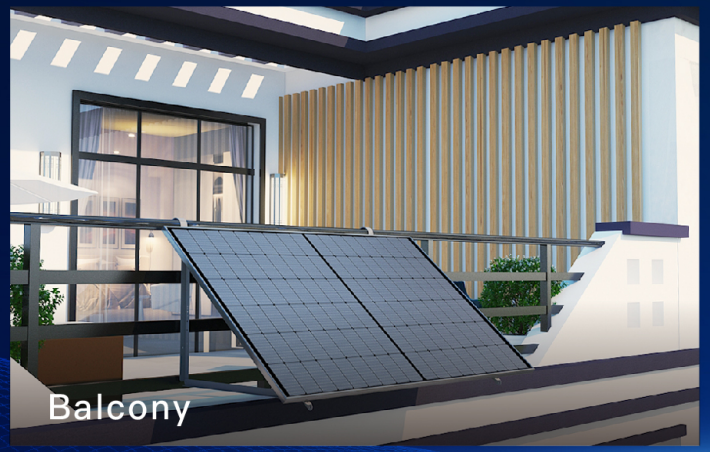
	BMW-K1/054A	BMW-K1/108A
Dimension	1133x915x30mm	1761x1133x30mm
Weight	8kg	15.5kg
Maximum power	200W	400W
Power per m^2	193W/m^2	200W/m^2
Fire Resistant Class	A	
Protection Class	II	

Adjustable Angles 0-90°

Expandable System

Anti-Glare Front Glass

MULTIPLE APPLICATION SCENARIOS

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Q&A

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Most-read online!

End of the line for a U.S. solar giant

by Ryan Kennedy

End of net metering not a threat to residential solar profitability

by Emiliano Bellini

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Coming up next...

Tuesday, 24. September 2024
10:00 am – 11:00 am EDT, New York City
4:00 pm – 5:00 pm CEST, Berlin,Madrid, Paris

Automating solar PV financial asset management

Wednesday, 25. September 2024
9:00 am – 10:00 am EDT, New York City
3:00 pm – 4:00 pm CEST, Berlin, Paris, Madrid

Future-proofing solar projects: Prioritizing reliability and optimizing efficiency

Many more to come!

In the next weeks, we will continuously add further webinars with innovative partners and the latest topics.

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Bella Peacock
Editor
pv magazine

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