

A Global Leading Solar Products and Integrated Solution Provider

PHONO

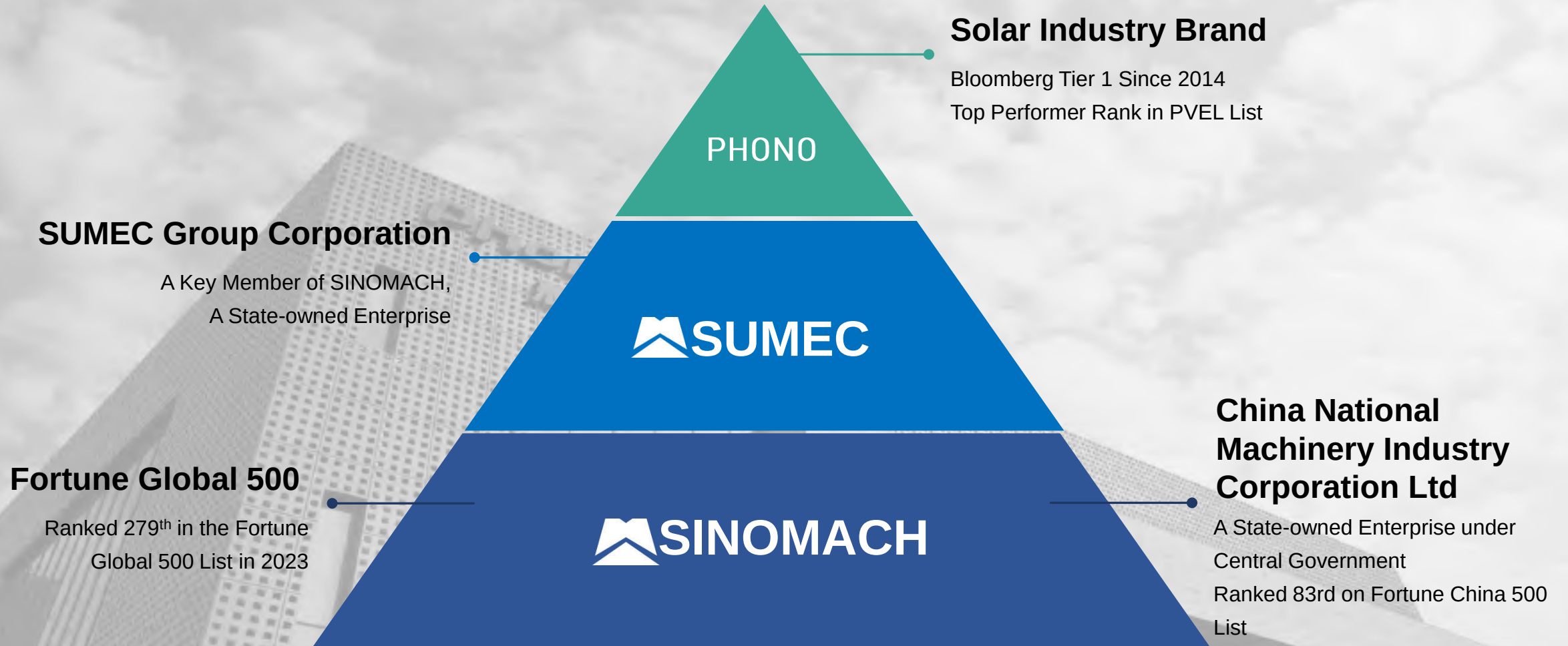
Innovative Reliable Sustainable

A dark, low-key photograph of a tea plantation. The tea bushes are silhouetted against a slightly lighter background, creating a sense of depth and texture. The leaves are elongated and pointed, typical of tea plants.

01 About us

SINOMACH-SUMEC-PHONO

History & Background





State-Owned

Backbone Enterprise
Under The Direct Control
of the Central Government



500

Rank No. 279
Fortune Global 500



29+13

29 Wholly
Owned Subsidiaries
13 Listed
Subcompanies



ENR 28

Rank No.28
**Top 250 Largest
International
Contractors**



300+

Overseas Service
Subsidiaries and
Agencies



130000+

Global Employees



SUMEC Group Corporation

FORTUNE
Global
500

ESG

Golden Bull Award
Top 50 Central
Enterprises

97th

2023 Fortune China
Top
500 listed enterprise

146th

2024 China's top 500
enterprises with most
valuable brand

1st

2023 Jiangsu top 100
service industry
enterprises

1st

Total import and export
volume among key
enterprises in Jiangsu

47 Years

Established in 1978

**16.5^{USD}
Billion**

Operating Revenue

AAA

Credit Rating

16000+

Global Employees

Diversified Industry of SUMEC



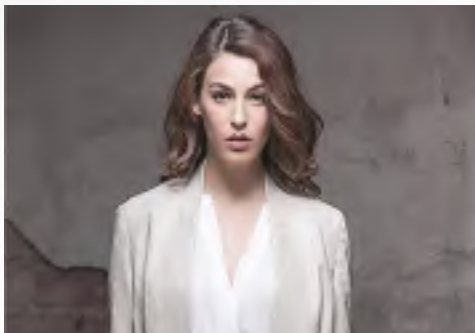
With 46 years of development, the reform and opening-up of China, and the process of global economic integration, SUMEC has 12 subsidiaries, business scope covers power tools, power generating equipment, automobile wheel hub, high-speed rail parts, textile products, energy engineering, shipbuilding, bulk commodity etc.



Power Tool



Power Generation Equipment



Garments



Household Textile



Bulk Commodity



Electronic Equipment Import



Rail Transit Parts



Maritime Engineering



Clean Energy



Engineering Contracting

- 1**
FIELD
Based on the renewable energy
- 2**
MARKETS
Provides high-quality products, projects and services for both domestic and overseas markets
- 3**
CORE BUSINESS
PV Products, Energy Engineering, Comprehensive Energy
- 8**
BUSINESS SCENARIOS
Modules, Equipment & Materials Trade, Renewable Energy+, O&M, Electricity Retail & Carbon Neutral, Power Plant Investment, Utility-scale & Distributed Projects



PV
Products



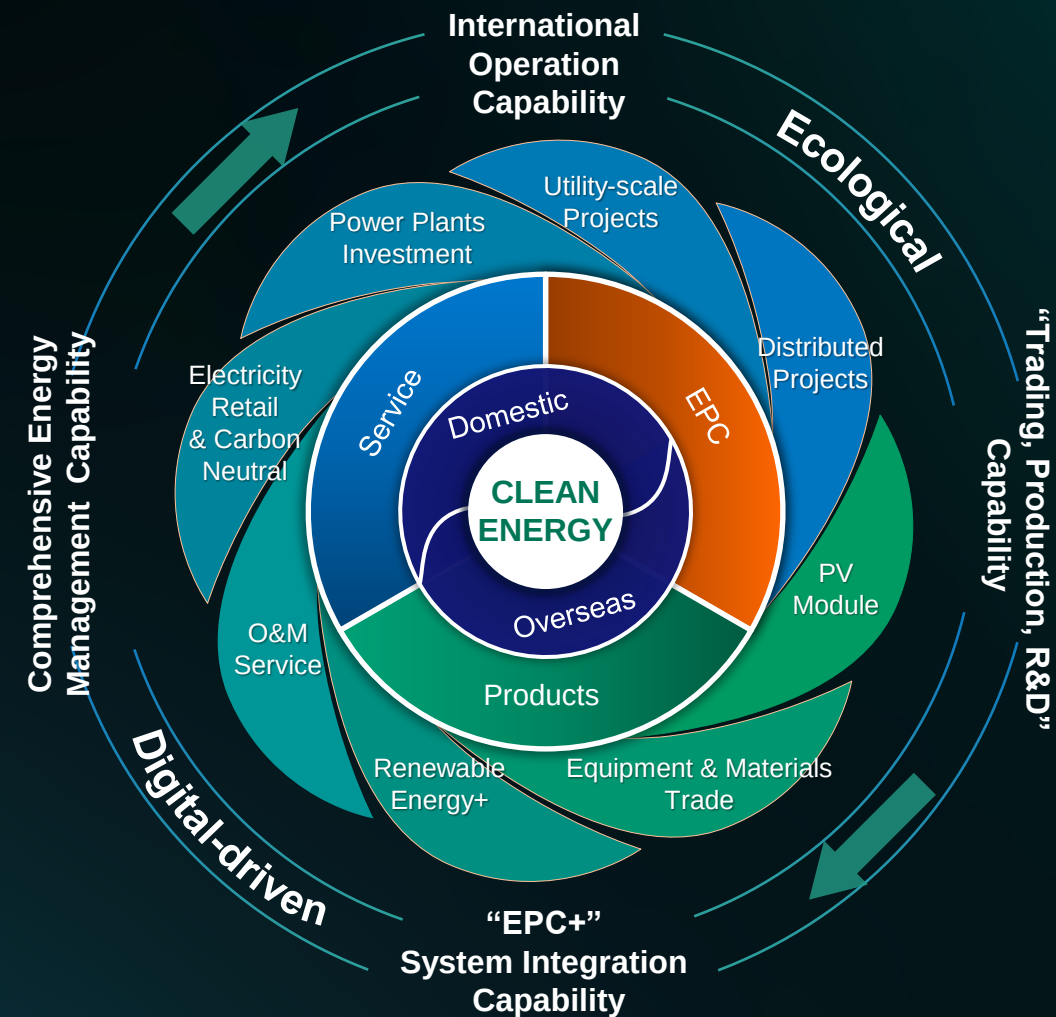
Energy
Engineering



Comprehensive
Energy



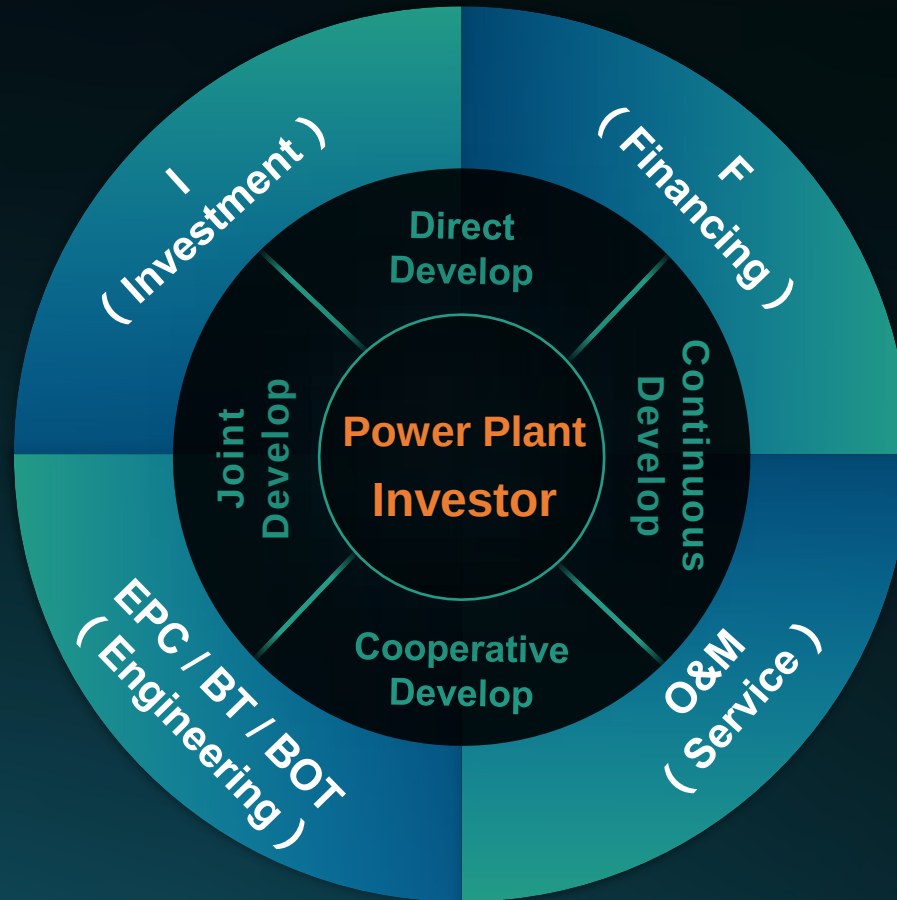
Asset
Operation



SUMEC Group—Energy Engineering



Provide customers with a **lower LCOE** and a **higher ROI**, while continuously creating **sustainable social, economic and ecological value**. It accumulatively develop, design and construct solar projects over **3 GW**.



On Oct 31st 2024, the **100 MW** fishery photovoltaic complementary project in Lianyungang was successfully connected to the grid for power generation

Comprehensive Energy

Smart O&M



3 GW+



700+ Plants



500+ Employee



O&M



Preventive
Test



Performance
Test



Electricity
Retailing



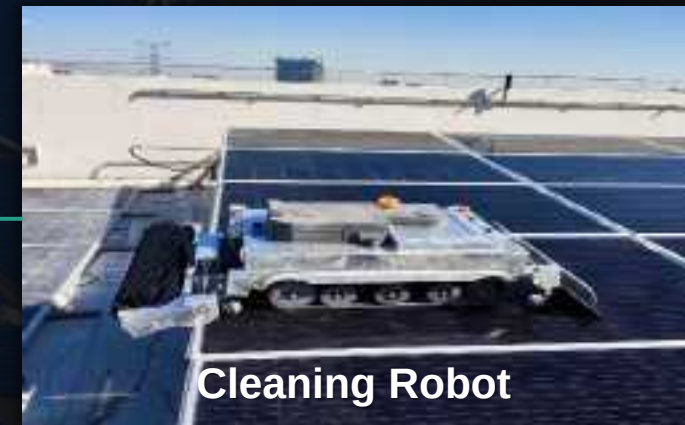
Drone Inspection



Remote Monitoring Platform



O&M Management Platform



Cleaning Robot

SUMEC PHONO-Leading Global Module Brand



PHONO



Best Value
Solar Panel Manufacturers



PHONO is Continuously Ranked as

“ TOP PERFORMER ”

in DNV-GL PV Module Reliability Test



Best Solar Panel Brands



PHONO is Continuously Ranked as

“ Safe Zone

Supplier ” by SINOVOLTAICS

PHONO

Global Leading Solar
Products and Services
Provider

PHONO is a state-level high-tech enterprise,
focusing on research and development,
manufacturing of photovoltaic solar modules,
which has developed into a leading global solar
products and services provider.

2008

Established

4GW

Global
Capacity

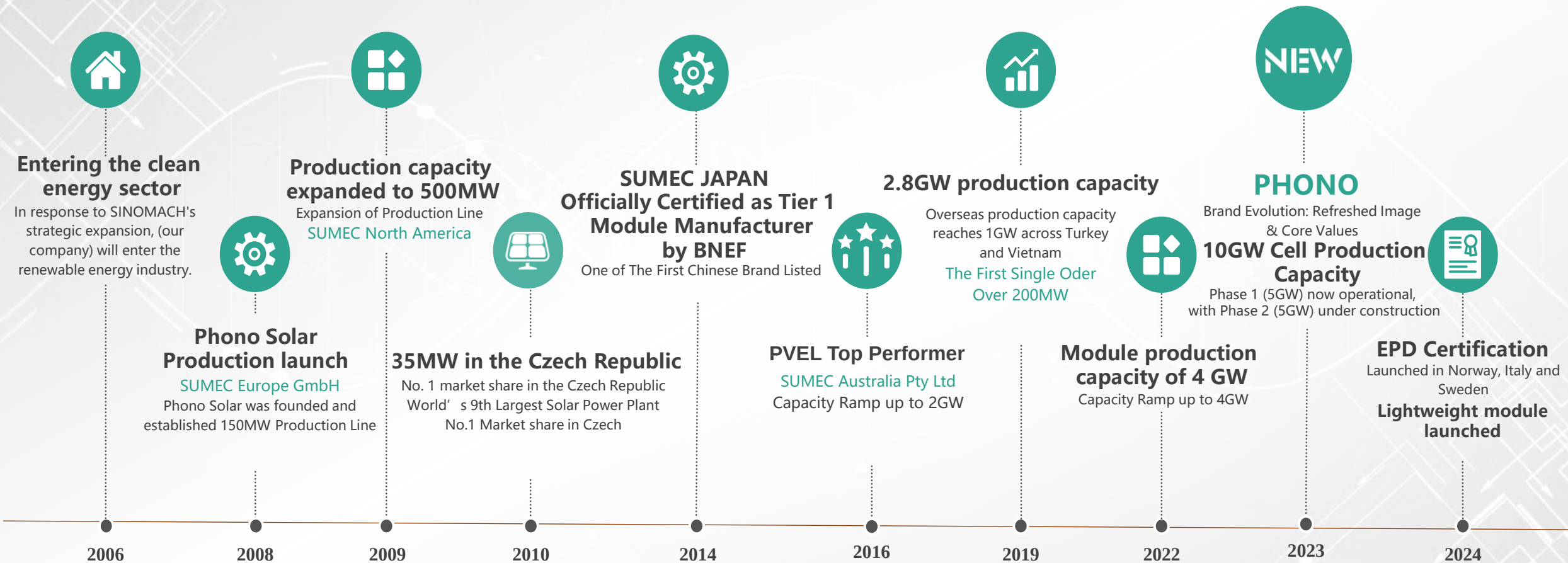
30GW

Global
Shipment

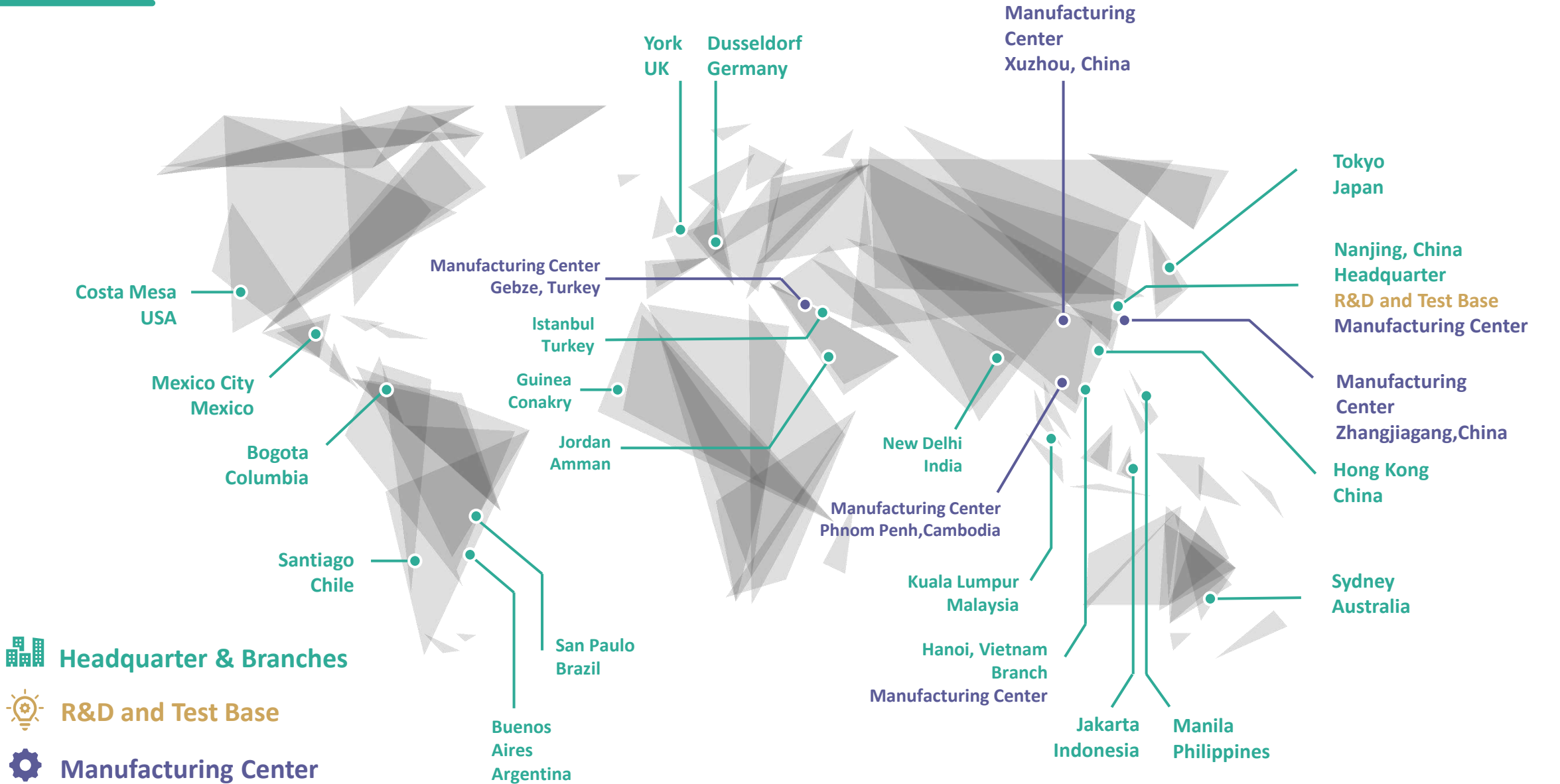
20GW

TOPcon Cell
Capacity

Milestone

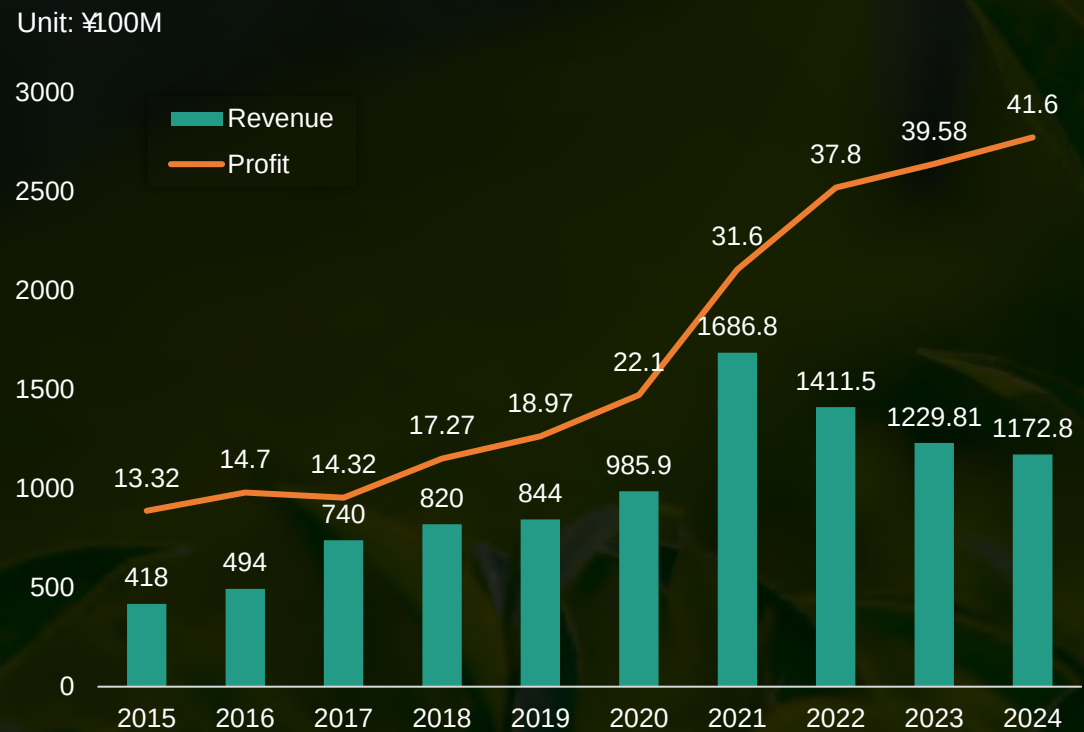


Global Network



02 Recent Achievement - SUMEC PHONO

Revenue & Profit



Gross Export-Import Volume

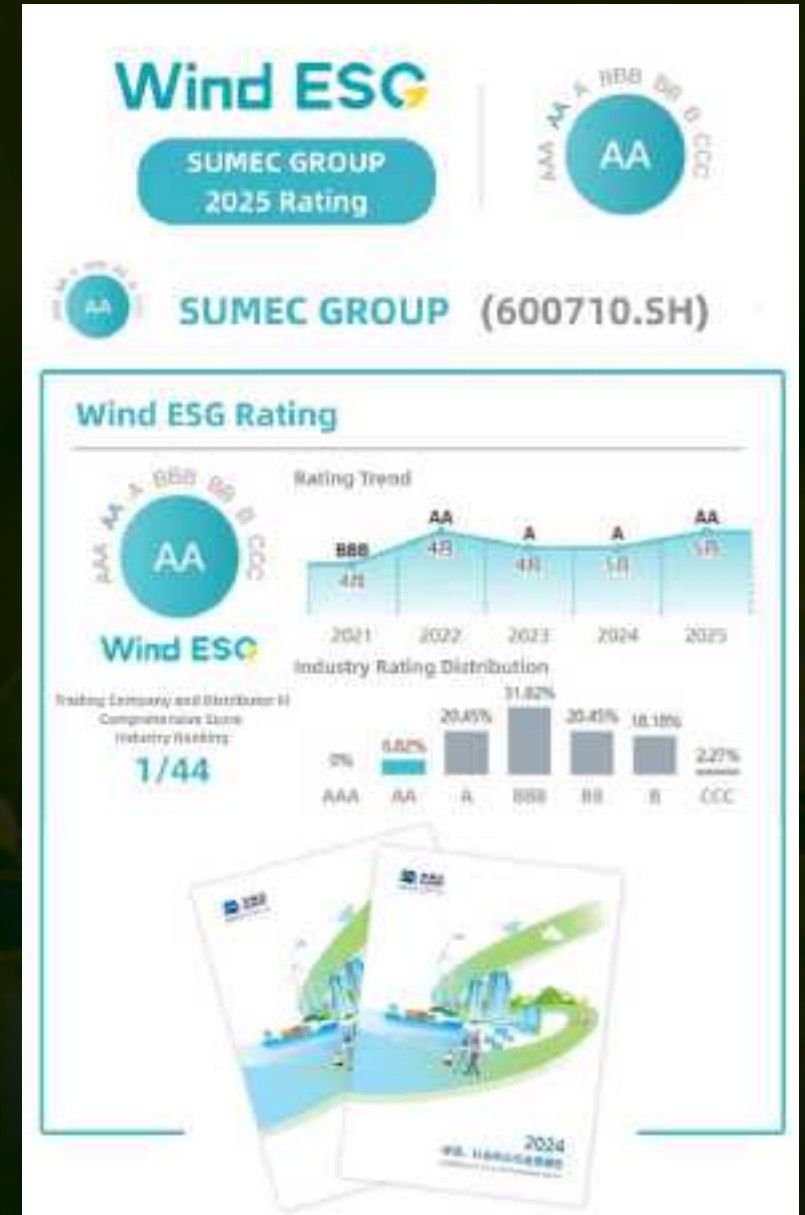


SUMEC Group — Steady Growth

PHONO

ESG RATING

SUMEC Group (PHONO's parent company, stock code: 600710) has achieved an upgrade from an A to AA ESG rating by Wind ESG, with an outstanding score of 8.55 that ranks first in its industry. This prestigious recognition places SUMEC **1st** in its sector, ranking among the top **6.82%** of companies in the industry



Recent achievements

PHONO

Q3 2025 PHONO keeps BNEF Tier 1

Table 1: PV module manufacturers meeting BNEF's tier 1 criteria as of 3Q 2025

Manufacturer	Annual module capacity, MW/year	Manufacturer	Annual module capacity, MW/year
Zhejiang Suntech	90,000	Longyi	120,000
Zhejiang / Tantai	1,000	Jawa Solar	120,000
Tongji	98,200	Jin Solar	100,000
TH Silicon Power	3,000	Huatai Solar	10,000
Wuxi	92,000	GC Systems	28,500
VSL	4,000		
Vision Solar	3,000		
Trina	100,000		
Tongwei/TW Solar	85,000		
TCL/Moson/TCS	26,400		
Sunee/Phono Solar	4,000	GAH Solar	5,000
Suntech	50,000		
Sanyo	53,000		
Wan Energy	48,000		
Renew Photovoltaics	5,400		
Renova	5,000	Alko Solar	20,000
Greaf/Huatai/Greaf	11,200	Adara/Sunova	4,000
Nee Solar Power/SURECO	1,800	Total	887,200

Source: BloombergNEF. Note: Methodology (http://www.bloomberg.com/energy/2025/09/01/pv-module-manufacturers-meeting-bnefs-tier-1-criteria-as-of-3q-2025/). Tier 1 criteria: A company for which at least one Kiwa PVEL (formerly PV Evolution Labs) Product Qualification Program has been initiated in the past 18 months. Contact info@kiwa.com for access to the reports. (Disclaimer: a module manufacturer that has initiated or completed technical due diligence testing with RETC within the last 18 months. For further inquiries, contact info@retc.co.uk. Results are shown in reverse alphabetical order. Companies can download the dataset of BloombergNEF.

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Suntech	50,000		
Sanyo	53,000		
Wan Energy	48,000		
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Q1 2025 Listed in Tier 1 Q2 2025 Listed in Tier 1

Kiwa PVEL 'TOP Performer'

ALL 7 TESTS



Kiwa PVEL TOP performer 2025

Green Development

In 2024, we signed a contract to supply a **74MW** fixed-tilt solar mounting structure for a project in Congo. The delivery was completed. Following this success, we have now secured a larger **370MW** fixed-tilt contract for another Congo project, with shipment scheduled for 2025. These deals demonstrate our growing role in supporting renewable energy development in Africa.



15MW Power Plant Supplies At Georgia

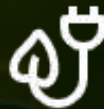
Ongoing Project: 100MW



Fences
Secure the power plant
perimeter.



AC Cables
Transmit AC electricity
to grid.



DC Cables
Transmit DC electricity
from panels.



Solar Panels
Convert sunlight into
electricity for power.



Inverters
Convert DC electricity
from panels to AC.



**Mounting
Structures**
Securely hold solar
panels in place.





23MW Projects in Turkey

In 2024, **38.46 million kWh** had been settled with a completion rate of **114%**



83MW Projects in Philippines

In 2024, the PR reached **84%** exceeding the feasibility of **2%**

In 2025, Noor Ouarzazate , **Morocco** , south of Casablanca,

SUMEC has been involved in the **200MWh Molten Salt Energy Storage** project for the **Solar Thermal Plant** power station.



Molten Salt Storage Tank



Mirror Array of Solar Thermal Plant

A dark, low-key photograph of a tea plantation serves as the background. The image shows rows of tea bushes with their characteristic pointed leaves, though the details are softened and the colors are muted into deep greens and blacks. The lighting is dramatic, highlighting the texture of the foliage.

03 SUMEC PHONO

Products & Services

SUMEC Kit Services

PHONO



Solar Modules PHONO

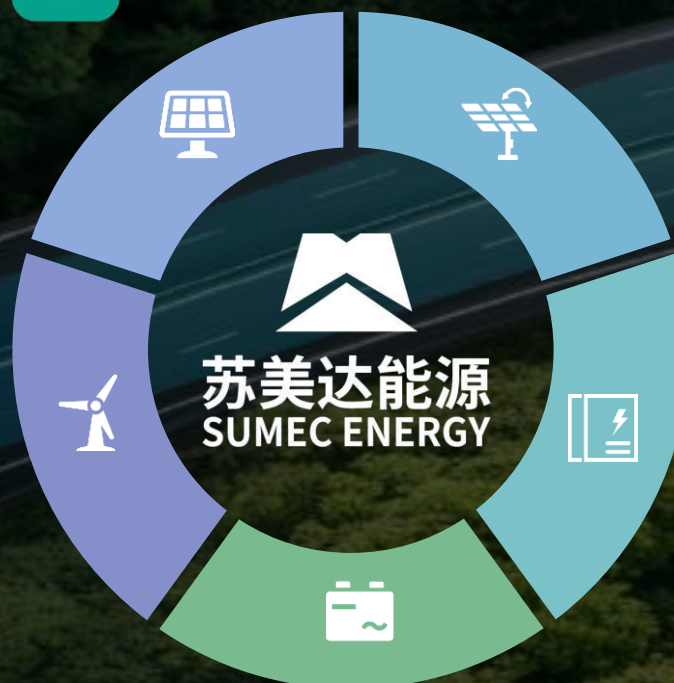
Cables



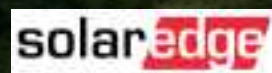
PV-WPC fencing



Wind Turbine, Hydrogen



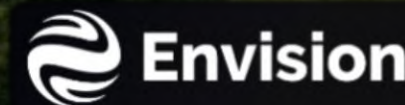
Inverters



PV-Carport
Mounting & Tracking system



Battery Energy Storage



Courtyard Smart Solar Solutions

PHONO

List of Products

**Scutum-Solar Carport
solution**
(Optional-charging piles)

Quasar - BC Modules
(Mounting system)

PV-WPC fencing

Solar cables

Yard Force- Mover

Inverter/BESS

Solar-LED Light

Solar table

.....

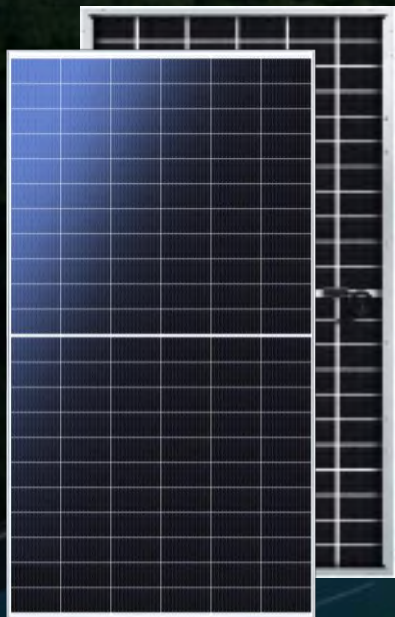


PHONO Solar products



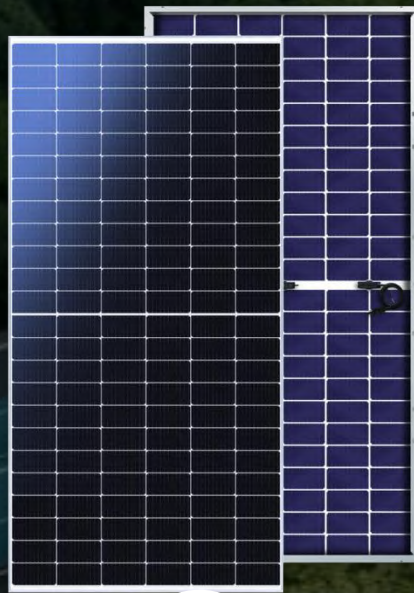
Meteor Series

Lightweight Module
TOPCon 445-510W



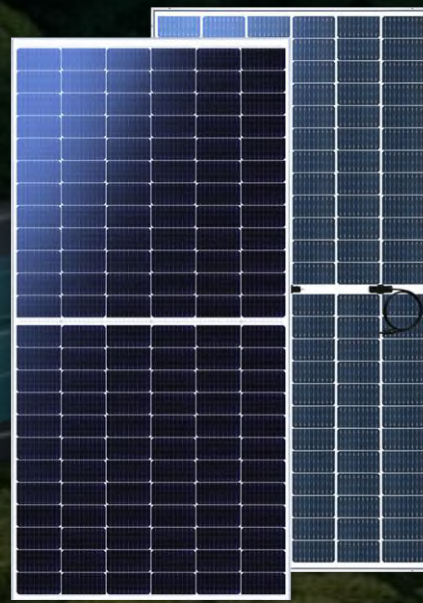
Helios Series

N-HJT
Max to 730W



Draco Series

N-TOPCon
440-720W



Bifacial TwinPlus Series

p-Perc

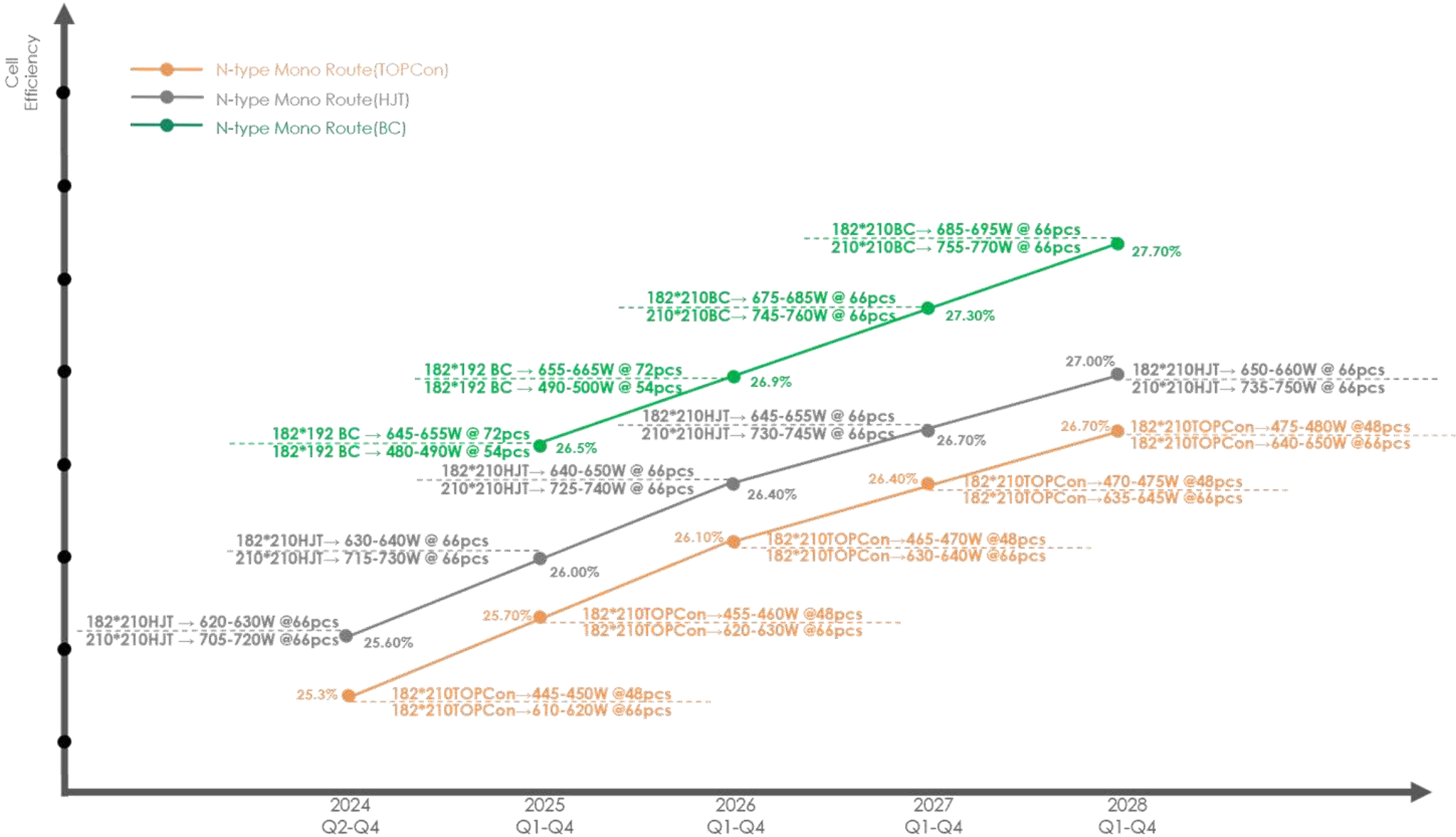


Quasar Series

N-BC
465-665W

High Efficiency Solar Modules

Roadmap of Products

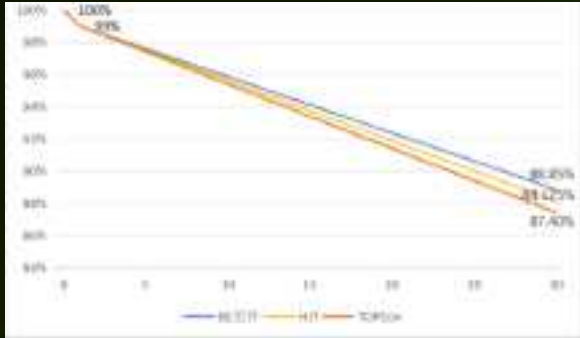


Advantages of BC Cells over TOPCon Cells

PHONO

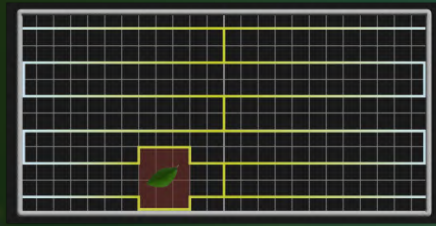
Low Annual Degradation

- 1st-year Degradation: 1%
- Annual Degradation: 0.35%/Year

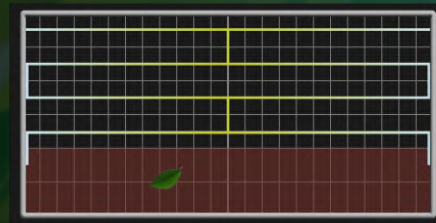


Improved Power Generation for Shielding

- BC: Single-cell shielding → self-bypass function operation (minimum output effect of whole series string)



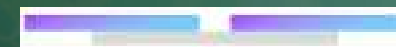
- TOPCon: Single-cell shielding → entire series string bypass (with large output loss)



Higher Security

- Single-sided soldering: Change from traditional double-sided welding to full back welding to eliminate the risk of battery edge damage
- 3 times increase in welding tensile strength → significantly reduce the risk of microcrack occurrence

Traditional Welding



BC Welding

Higher Generation Performance

Achieved 6% ~ 9% higher power output than TOPCon in the same area

BC Power	655	665	675
TOPCon Power	610	615	620
Higher than TOPCon	45	50	55

Quasar Back Contact (BC) Module Types



Module Dimension (L × W × H)	Glass	Color	Rated Power (Pmpp)	Available Time
1722×1134×30mm	Single/Double	Full-Black	460-470W	Coming soon
1762×1134×30mm	Single/Double	Full-Black	470-475W	Coming soon
1800×1134×30mm	Single/Double	White/Full-Black	475-495W	By End of July
2382×1134×30mm	Single/Double	White	645-660W	By End of June

Lightweight Module

PHONO

Lightweight Module

6.8Kg/m²

Traditional Module

35%
Lighter



Moving Vehicle Roof



Low Bearing Roof

Lightweight Module Features

- ✓ Aesthetic appearance design
- ✓ Extremely light
- ✓ Easy to install, and no damage to the existing installed roof
- ✓ Products can be customized according to customer installation conditions
- ✓ Extremely low surface light reflection, no light pollution and glare problems



15-year Product Warranty

25-year Linear Performance Warranty

Light weight Module



Module Size	48 -182*210-half 1762*1134*26 (mm)	54-182*210-half 1961*1134*30 (mm)
Cells Size	182*210	
Cells Type	N-TOPCon	
Power Output	445-460 (W) - 48pcs	495-510 (W) - 54pcs
Encapsulated Type	Single Glass	
Weight	13.8Kg (6.9Kg/ m²)±0.5kg	15.8Kg(6.9Kg/m²)±0.5kg
Schematic Diagram		



15-year
Product Warranty

25-year
Linear Performance Warranty

Customized Size Modules

- The small size module can be customized to fit a variety of roof shapes.
- It is lightweight and easy to transport and install.
- It is an excellent N-type module with a very low LID, and the weak light effect is stronger.
- High quality and reliable. It has a wind load of 2400 Pa and a snow load of 5400 Pa.

Customized Small Size Module

130W

Dimension 955x798x30mm

Customized Small Size Module

125W

Dimension 798x770x30mm

Customized Small Size Module

130W

Dimension 955x798x30mm

Customized Small Size Module

130W

Dimension 955x798x30mm

Customized Small Size Module

260W

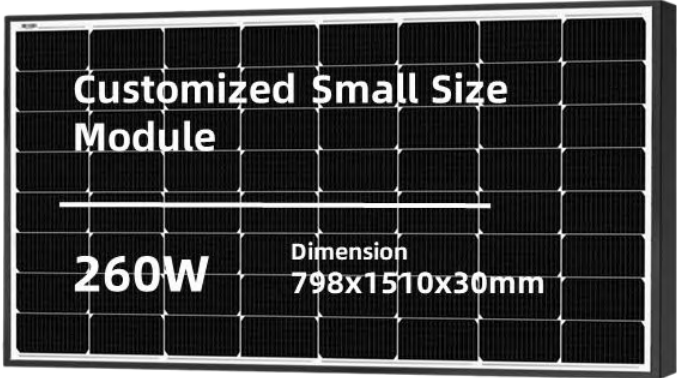
Dimension 798x1510x30mm

Customized Small Size Module

130W

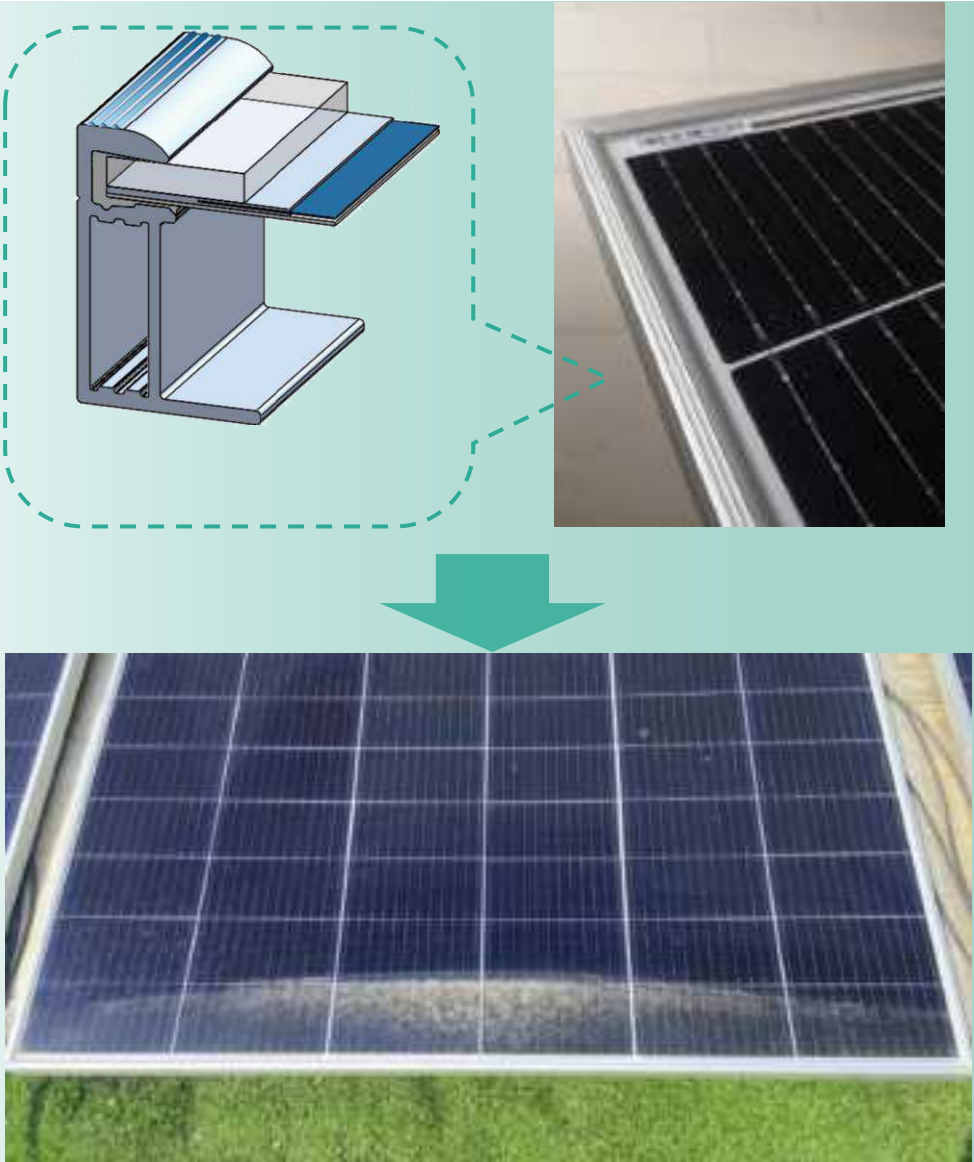
Dimension 955x798x30mm

Size(mm)	Output(W)
798×770×30	125
955×798×30	125
1134×977×30	235
1134×986×30	235
1510×798×30	250
1542×770×30	250
1722×767×30	295
1762×767×30	300
1334×1134×30	340
1352×1134×30	345



Anti-Dust Accumulation Module

Module Size (mm)	48 cells - 1762*1134*30 66 cells - 2382*1134*30
Cells Size	182*210mm-Half
Cells Type	N-Type TOPCon
Power	440-470 (W) - 48cells 610-640 (W) - 66cells
Encapsulated Type	double-glass Bifacial
Schematic Diagram	



Anti-glare Module

PHONO

Anti-glare Module

Reduce reflective
intensity by more than

50%

Protect flight safety

50%

Anti-glare Module

Anti-glare Technology

- Reduce reflective intensity by more than 50%
- Suitable for airports, highways projects

Ultra-light

- 35% weight reduction

Microcracks Resistance

- Minimized risk of microcrack and snail trail

Anti-aging

- Without attenuation of module color and light transmittance, ensuring system reliability

Stable Investment Returns

- Reliable design and excellent performance ensure stable investment returns

Easy to Clean

- Flat surface design, less dust accumulation

High Quality Reliability

- Optimized electrical design reduces hotspot risk and operating current
- Module rigidity improves transportation safety

High-Light-Transmittance Module

PHONO

Agriculture Greenhouse

Vertical
Installation

Solarium

The High-Light-Transmittance Module can be applied to a variety of scenarios such as agricultural greenhouses, vertical applications, and solarium, and can also provide customized services based on the specific requirements of the customer's size and transmittance.

High-Light-
Transmittance
Module

Greenhouse

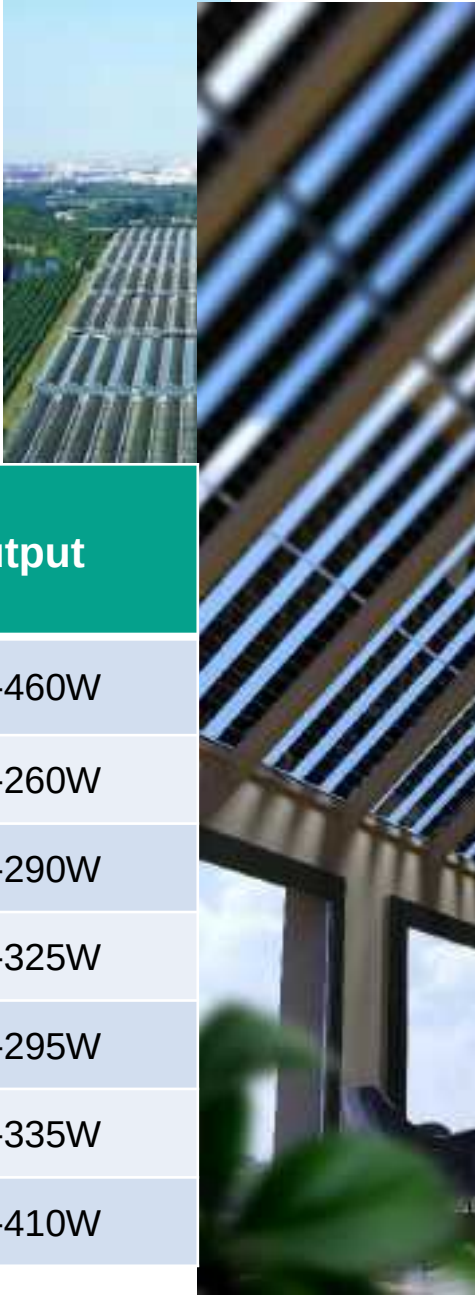
Vertical Installation

Solarium

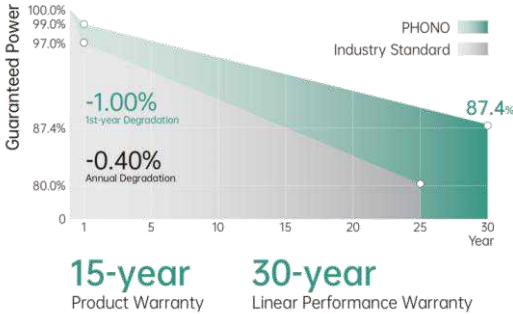
High light transmittance solar modules

Product Characteristics

- Suitable for agricultural projects with special need of light
- Optimizable cell type & arrangement & glass to achieve best environment for plants in different areas and match the structure well.

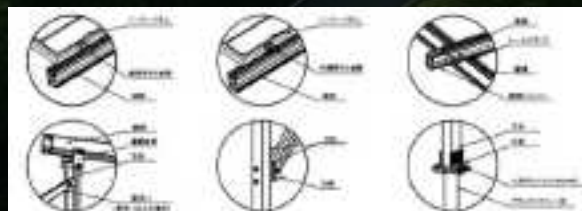
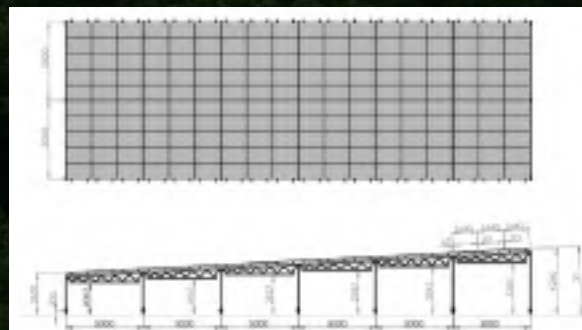


Size	Cell	Amount	Transmittance	Output
2094×1134×30mm	TOPCon	88(4×22)	34%	340-460W
2278×1134×30mm	TOPCon	64(4×16)	57%	250-260W
2278×1134×30mm	TOPCon	72(4×18)	52%	280-290W
2278×1134×30mm	TOPCon	132(4×20)	47%	315-325W
1762×1134×30mm	HJT	64(4×16)	34%	285-295W
1960×1134×30mm	HJT	72(4×18)	34%	325-335W
2382×1134×30mm	HJT	88(4×22)	34%	400-410W



Agriculture – Greenhouse solutions

PHONO



1-Customized panel designs

Adjustable: size, arrangement of cells, transmittance, output, frame design, glasses...

2-Structure & Layout Design

Reduction of System design cost

Better match of Panels & Greenhouse structure

3-Integrated System

ALL-in-ONE solution:

Panels, Structures, Inverters, Cables

Battery Energy Storage System...

4-Suitable for different Plants & Climates

Generate higher yield due to better temperature coefficients in hot climates.

Vertical Installation PV & Cases

PHONO

1-Better energy yield generation curves, more revenue, less energy storage needed

The power generation curve of the vertical PV system displays a "dual-peak" characteristic, which facilitates staggered power supply and yields higher electricity revenue during periods of high market value.

2-Higher space utilization

Vertical installed PV modules offer higher space utilization with their close-to-zero projected area. It does not alter the terrain, allowing improved land utilization like for agriculture areas.



3-Easier maintenance and less cleaning

Prevent modules from accumulating dust, eliminating the need for frequent cleaning and avoiding snow cover.

4-Higher comprehensive utilization rate of solar energy

Vertically installed modules will redirect reflected light solar energy onto nearby plants or other photovoltaic arrays.

5-Reduced environmental noise

The coated glass used in PV modules has a microstructure of porous silica, which can absorb a portion of sound waves, thereby reducing environmental noise.



Mounting System Solutions - Design & Manufacture & EPC

PHONO

SUMEC PHONO can provide standard & customized design and product supply of various mounting systems including PV Carport, GreenHouses, Ground mounting, Tracking systems and Vertical installation, attached with Selectable Functions.

Scutum – Carport Solution

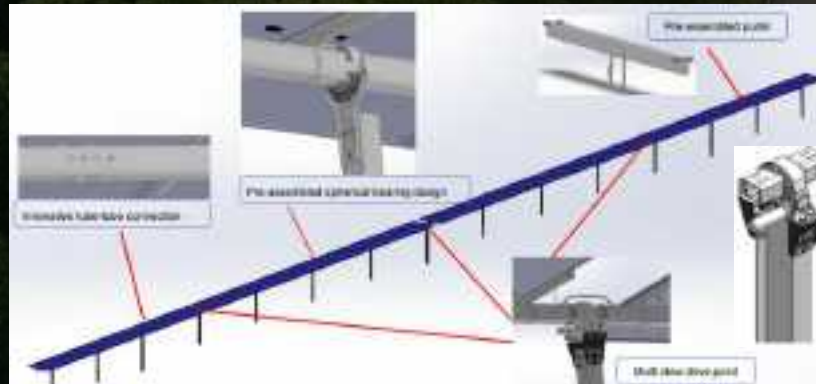


L - type



Y - type

Tracking system



1P Horizontal Single Row Tracker
2P Horizontal Single Row Tracker



Roof& Fixed mounting

Design for Various ground types & weather conditions



Mounting Structure Products



Roof Mounting Systems

- Diverse Compatibility**
Products suitable for both flat roofs and color steel tile roofs.
- Easy Installation**
Modular and pre-assembled component design.
- Lightweight Structure**
Made of coated zinc-aluminum-magnesium material to reduce roof load.
- Safe and Reliable**
Designed to meet snow/wind load and fire resistance standards.



Tracking Systems

- Multiple Configurations**
Available in 1P, 2P, and other forms.
- Synchronized Multi-Point Drive**
Enhanced structural integrity and wind resistance.
- Intelligent Tracking Algorithm**
Increases overall power generation by 10-20%.
- High Adaptability**
Compatible with modules of different sizes and power outputs.

Fixed Mounting Systems

- Customizable Materials**
Options include steel or aluminum materials.
- High Installation Efficiency**
Highly standardized and easy to install.
- High Flexibility**
Adaptable to various installation scenarios.
- Strong Compatibility**
Suitable for screw piles, driven piles, and concrete foundations.



Vertical Mounting Systems

- High Land Utilization**
Suitable for agricultural fencing applications.
- Enhanced Module Compatibility**
Displays a "bimodal" power generation trend for higher output.
- Simple Design and Installation**
Minimal components for easy installation and maintenance.
- Noise Reduction**
Ideal for use along fences and highways.



SINGLE AXIS TRACKER-1P



ENHANCED TERRAIN ADAPTABILITY

- Updated mounting system
- Reduces damage from uneven foundations with self-adaptation of up to 15% north-south slope

SIGNIFICANTLY IMPROVED STRUCTURAL SAFETY

- Patented shrinkage process
- 10-wire clearance design offers greater safety and stability compared to traditional hoop methods



SUPERIOR DESIGN FLEXIBILITY

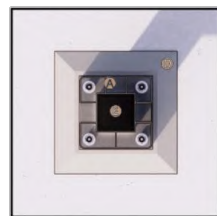
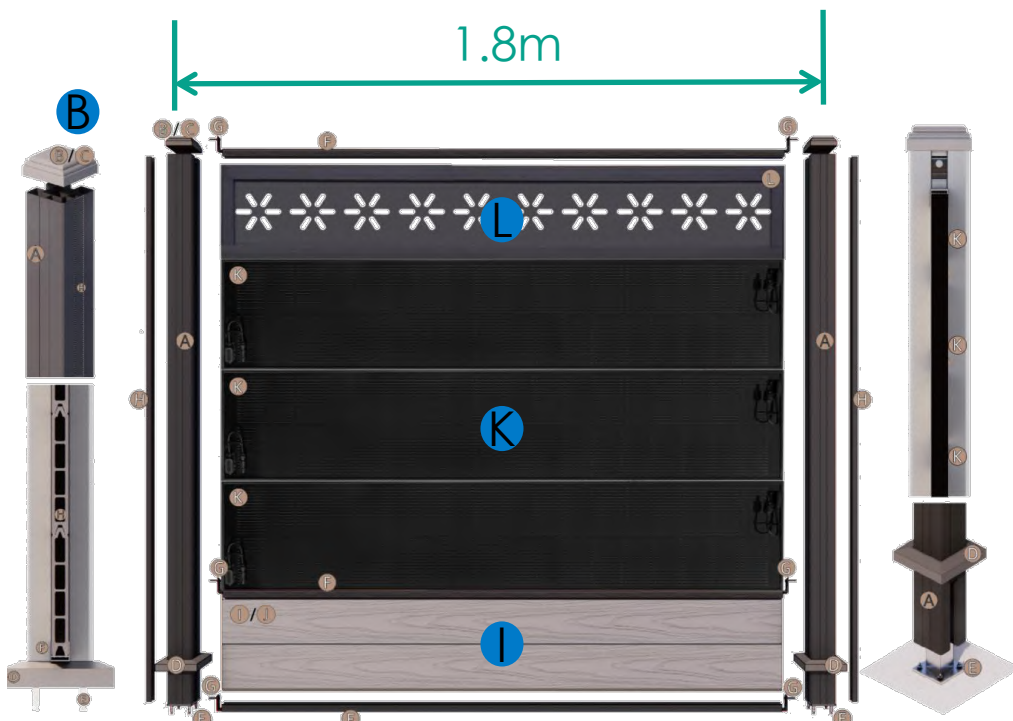
- Compatible with all module types
- Optimized layout for various configurations

MAXIMIZED POWER GENERATION

- Solar tracking algorithm
- Advanced AI algorithm boosts energy output by an additional 1-3%



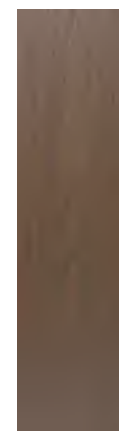
PV-WPC (woodplastic) Fencing



1.8×1.8m Classic PV-WPC FENCING

Customizable design

1. "K" PV Modules: Selectable quantity (1/2/3 units).
2. "L" Pierced Panels: Optional accessory with multiple pattern choices.
3. "I" Boards: Custom-configured based on selections of "K" and "L", color options are available.
4. "B" Solar Night Light (Optional): Sunlight-powered auto-illumination triggered by outdoor darkness.
5. Extra component makes 1760-1793mm adjustable length, making best match with the existing fence frames.



PV-WPC Fencing Module



PHONO PV-WPC Fencing - Solar Module

P _{mpp}	140-150W
Length	1760mm/1768.25mm/1776.5mm /1784.75mm/1793mm (69.29/69.62/69.94/70.27/70.59inch)
Width	400mm (15.75 inch)
Height	20mm (0.79 inch)
Weight	6.2kg (13.67 lbs)

- **12-year**
Product Warranty
 - **-1.00%**
1st-year Degradation
- **25-year**
25-year Linear Performance Warranty
 - **-0.40%**
Annual Degradation
- **IP 68 Rated**
Junction Box



PV-Cables - FAR EAST cables

Both Top Chinese Machinery Enterprises, SUMEC is Strategic Partner with FAR EAST cables.



×



苏美达能源
SUMEC ENERGY

As a part of solar system, We provide varied reliable solar cables for customers to meet any request.



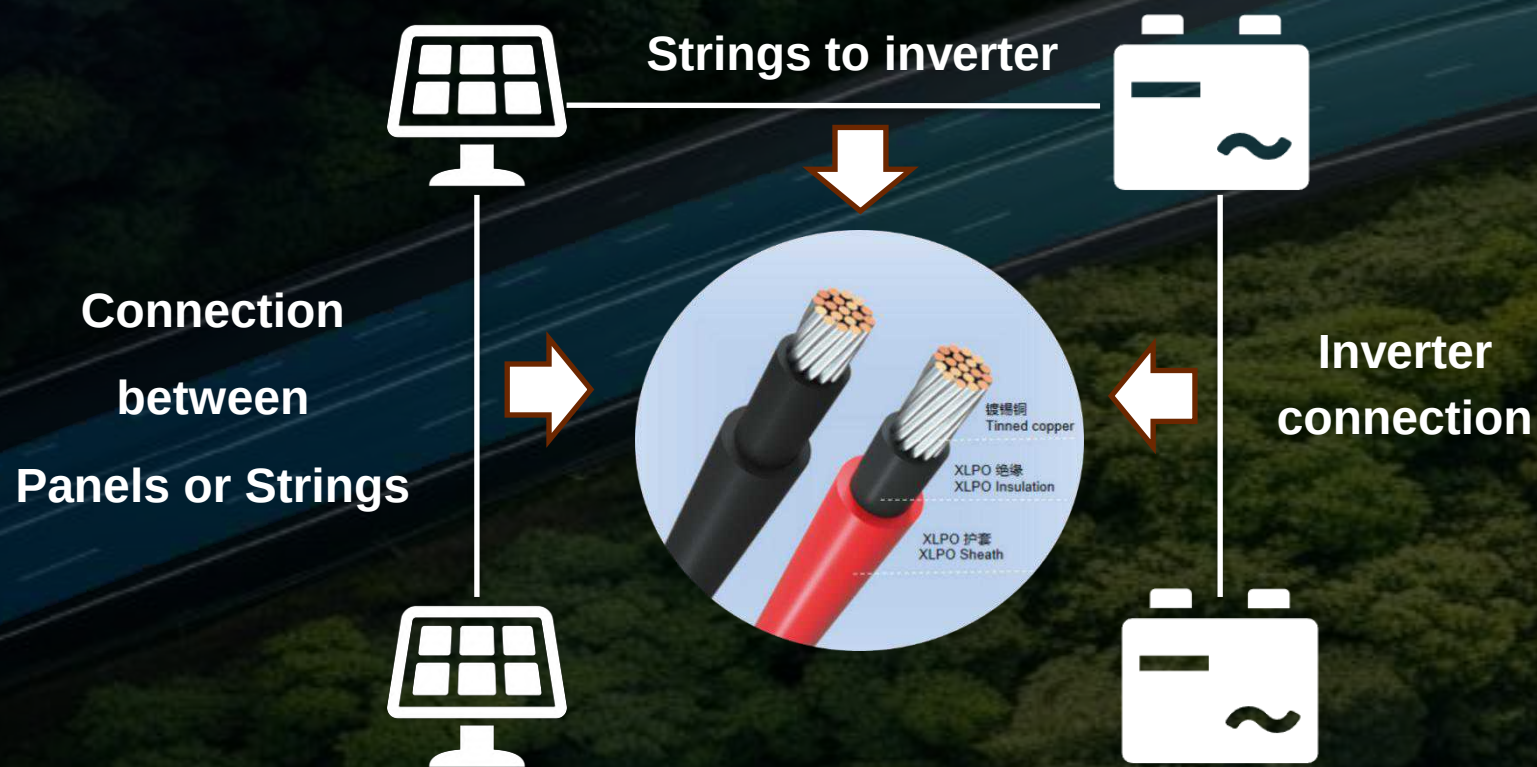
Top 100 Enterprises
of China Machinery
Industry



PV-Cables products

PV cable for DC side, including the connection between the panels, strings and inverters.

- Standard includes TUV, EN, IEC, UL, JCS, CEEIA B218, NB/T, CQC.....



PV-Cables products



Single-Core cable series for PV Modules

Cable Structure Diagram

1.PV1-F PV Cable

Model	Dimensions	Rated Voltage	Applicable Standard
PV1-F	1.5mm ² ~35mm ²	AC(0.6/1)0.6/1 kV DC 1.8 kV	ZHS 1189/08.2007



2.H1ZZZ2-K PV Cable

Model	Dimensions	Rated Voltage	Applicable Standard
H1ZZZ2-K	1.5mm ² ~240mm ²	AC(0.6/1)1.8/1.8 kV DC 1.5 kV	EN 50518-2016



3.62930 IEC 131 PV Cable

Model	Dimensions	Rated Voltage	Applicable Standard
62930 IEC 131	1.5mm ² ~420mm ²	DC 1.5kV	IEC 62930/2017



4.GF-WDZEER PV Cable

Model	Dimensions	Rated Voltage	Applicable Standard
GF-WDZEER	1.5mm ² ~240mm ²	DC 1.8kV	GBA 8216-2012



5.PV 1500DC-AL Aluminum Alloy PV Cable

Model	Dimensions	Rated Voltage	Applicable Standard
PV 1500DC-AL	4mm ² ~240mm ² 16mm ² ~420mm ²	DC 1500V	APP 11039A-2019



6.UL PV Cable

Product Name	Dimensions	Rated Voltage	Applicable Standard
/	19 AWG ~ 410 AWG	DC 600V	UL 4703, UL 44



DC combiner series

Copper Core/Aluminum Core DC Combiner Cables

Model		
GTDC-VV6	GTDC-VV6W22	GTDC-GTDC-VV6W22
GTDC-VV6E2	GTDC-GTDC-VV6	GTDC-GTDC-VV6W22



Multi-Core Cables series for PV Modules

Cable Structure Diagram

1.Two-Core Parallel PV Cable

Model	Dimensions	Applicable Standard
PV1-F 0.6/1kV DC 1.8kV	2x1.5~6mm ²	ZHS 1189/08.2007
H1ZZZ2-K DC 1.5kV	2x1.5~6mm ²	EN 50518-2016
62930 IEC 131 DC 1.5kV	2x1.5~6mm ²	IEC 62930/2017
GF-WDZEER DC 1.8kV	2x1.5~6mm ²	GBA 8216-2012



2.Multi-Core Cables for AC Side of PV Systems

Model	Dimensions	Applicable Standard
PV07AC-F AC(0.6/1)0.6/1kV	2,3,4 Core 0.75~16mm ²	ZHS 1189/12.19



Special series

Cable Structure Diagram

1.Rodent and Termite Resistant PV Cables

Model	Dimensions	Rated Voltage
PV-PDR-06/PV-PDR-0005/PV-PDR-0020	1~50mm ² 1.5mm ² ~10mm ²	DC 1000V



2.Waterproof PV Cables

Model	Dimensions	Applicable Standard
AS-WDPV-006	1.5~240mm ²	Q/CSG002002141-2014
PS-PS-006	1.5~240mm ²	Q/CSG002002141-2014
PV1500-006	1.5~420mm ²	ZHS 11039A-2019
PS-CH/PS-148	1.5~30mm ²	Q/CSG002002141-2014



Scutum PV Carport | Solution Composition

Mounting

PV Modules

BESS

EV Charger



Intelligent Space
Management



Meteorological
Warning

All-in-one Customized Solution
for integrated PV, Storage and Charging Scenarios

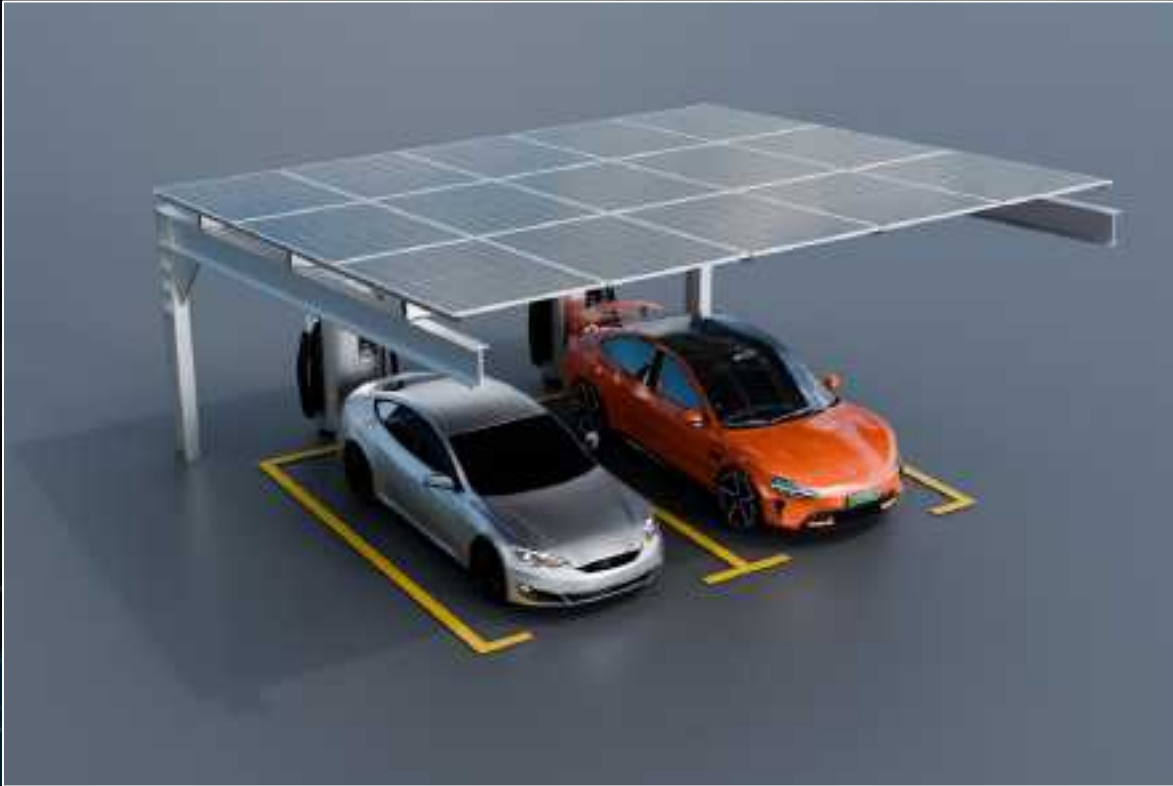
Scutum PV Carport | N/W Type

- For enterprise parks, distribution channels, and household customers.
- Simple components for easy storage, transportation, and installation



Scutum PV Carport | L/Y Type

- For large-scale utility parking lots, ensuring parking convenience



Core Advantages - Modules



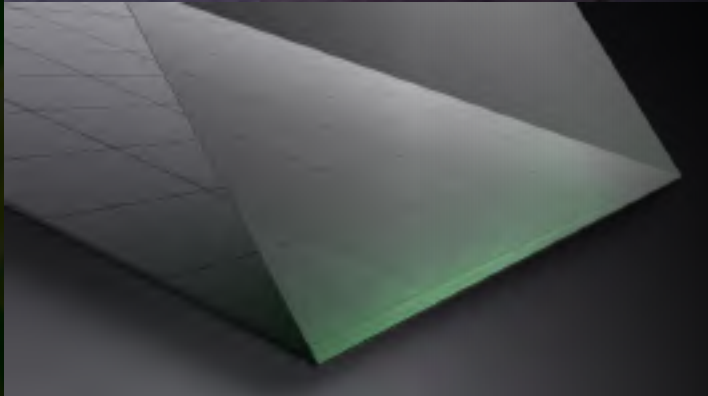
DIN EN 12600 Impact

Resistance to impact under harsh weather conditions



DIN EN 18008-1 Mechanical Load

Ensures structural integrity under extreme loads



DIN EN ISO 8510-2 Adhesives Peel

Tests bonding strength and long-term aging resistance



DIN 4102-1 Fire Resistant

Validates flame-retardant and fire-resistant properties



DIN ISO 12543-4 Anti-aging

Maintains stable power generation efficiency under prolonged UV exposure

Core Advantages - Structure

PHONO

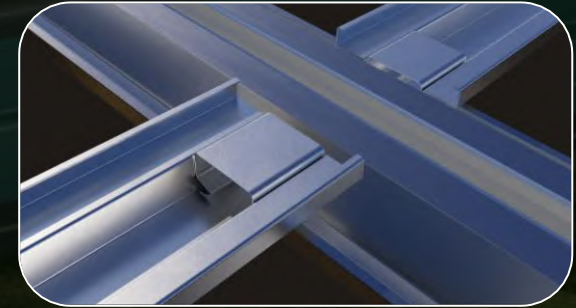
**Single Column
Convenient Parking**



Lightweight



**Structural
Waterproof**



Modular Design



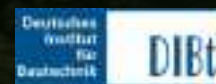
**High Strength Materials
Safe and Reliable**



**Quick Installation Design
No Welding Required**



Authorized Certifications
CE | DIBT | MCS | ETN | DNV



PV Carports Project – Germany

The project has approximately 53,000 PV modules and will be built in a 20-hectare hop field. This area is used by BLG LOGISTICS as a vehicle terminal, where vehicles are stored and transferred.

The used PHONO PV modules meet the special requirements of parking lot roofs and are certified in accordance with the latest standards. Meanwhile, all the other equipments such as inverters, supports and cables are provided by PHONO.



A symbolic groundbreaking ceremony was held to install PV modules on the roof of the car park in July, 2025.



PV Carports Project - Spain

The Greening Spain SEAT 26MW project is a PV carports project. SEAT is the largest car company in Spain which is a subsidiary of the Volkswagen Group now. Among them, 8MW has been delivered.



PV Carports Project – SUMEC Office Area



Produce Green Electricity
130,000 kWh/Year

Standard Coal Consumption: **38.8** tons

Reduce CO₂: **89.25** tons/year

Reduce SO₂: **800** Kg/year

Equivalent annual emissions of **25** cars

Equivalent to **1620** trees

Case Reference - Commercial Parking Lots in the U.S.

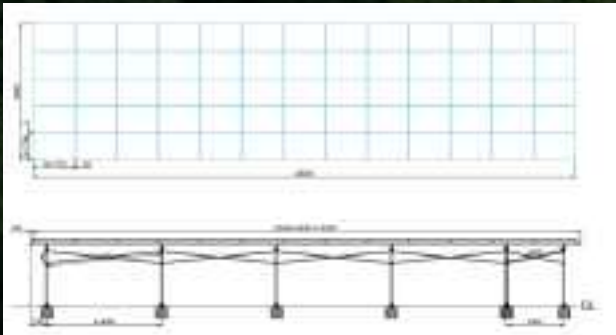
PHONO



Location	Construction Time	Parking Unit	Capacity	Annual Average Generation	Initial Investment	ROI
Fresno, CA, US	2023	1,680	5.7MW	8,691,300 kWh	€6,796,000	4 Years

Case Reference - Commercial Parking Lots in Cyprus.

PHONO



Location	Construction Time	Parking Unit	Module type	Capacity
Nicosia, Cyprus	2025	16	435W 1722×1134×30mm	5.7kW

Turnkey Solution

PHONO

We help overseas clients comply with local incentive policies to build or upgrade overseas local production capacity, **including engineering, finance, technology training, operation management** and it covers the manufacturing plants of **ingot, wafer, cell and module**.

-  Factory Planning and Engineering
-  Process Design
-  Equipment Package Procurement
-  Financing, Financial Scheme
-  Operations Management



04 Why PHONO

PHONO has obtained the ECS Carbon Footprint Certification under the new PPE2 standard, and achieved EPD-Italy, EPD-Norway and International EPD System.



Social Responsibility: SA8000

PHONO



PHONO has successfully passed the SA8000 social responsibility management system audit and obtained the **SA8000:2014 Social Responsibility Certification**.

The SA8000 Standard is based on internationally recognized standards of decent work, including the Universal Declaration of Human Rights, ILO conventions, covering the standard elements of child labor, forced labor, health and safety, discrimination, working hours, remuneration, etc.



Female Employees
Constitute 67% of Total
Workforce



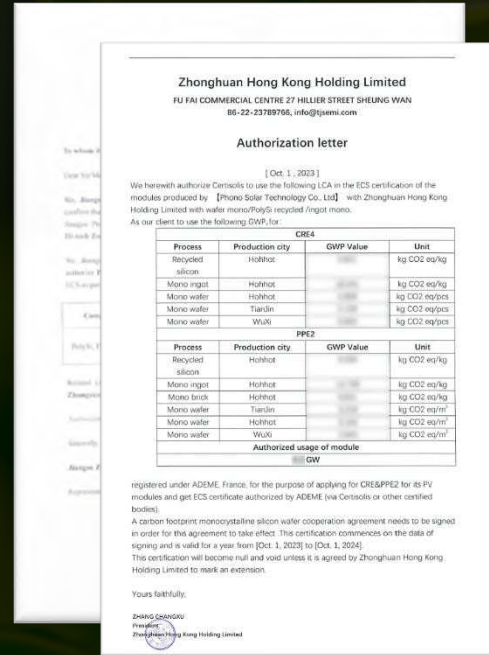
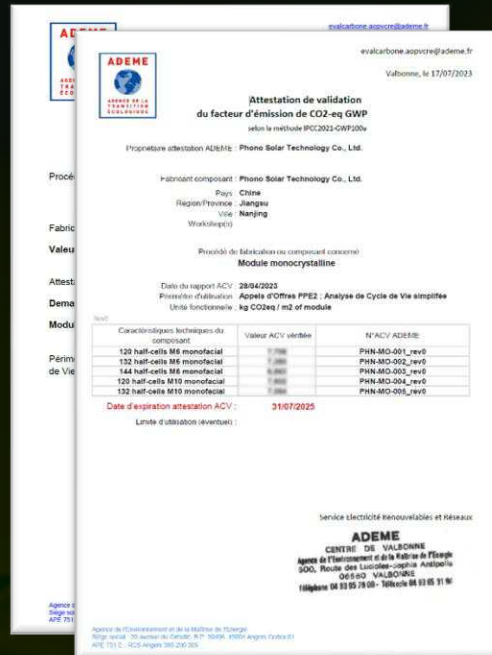
Social Welfare
Project



Employee Welfare
and Care



Volunteer
Service



Factory Audit

Completion of Factory LCA Audit
Obtained CRE4 and PPE2
Two algorithm certificates

Supply Chain Authorization

Acquisition of upstream silicon materials and wafers
Manufacturer Carbon Authorization
Tap into French carbon footprint supply chain

Product Certificate

Mainstream products achieve ECS certificate

INTELLIGENT MANUFACTURING

Advanced equipment including **Automated Production Lines**, laminating machines, stringers, solar simulators, and **Real-time Interaction System** such as MES “smart workshop” to create a “green and smart” photovoltaic manufacturing group, equipped with the production line with leading manufacturing capability in the industry.



Guaranteed Quality

- 38 steps quality control and inspection process
- Up to 30-year performance warranty



Rigorous Control

- Stringent triple IEC test
- FQC 100% material inspection, 2*100% EL test, OQC delivery inspection



Management System

- Certification of ISO9001 quality system
- ISO14001 environmental management system
- ISO45001 occupational health and safety management system



Qualified R&D Center

PHONO

- Total **250,000** Sqm full functioned R&D center
- A R&D team of **80** people
- National and provisional certified R&D institute (CNAS)
- Satellite Lab for Intertek and TUV SUD



PV Cells



PV Modules



Energy Storage



Renewable Energy System

Rigorous Testing Ensure High Quality

PHONO

Up to **38** Different Quality Control and Inspection Process
and **324** inspection items above industry standard

PHONO owns a world leading PV testing center, we put a selection of PV modules through extreme environmental testing to ensure reliability and superior performance.

✓ UV Preconditioning

✓ Thermal Cycling Test

✓ Damp Heat Test

✓ Humidity Freeze Cycling Test

✓ PID/LID/LeTID Test

✓ Hot-spot Test

✓ Thermal Cycling

✓ Outdoor Exposure Test

✓ Static/Dynamic Load Test

✓ Hail Test

✓ Highly Accelerated Stress Test

✓ Insulation Test

Third-party Recognition

PHONO



Bloomberg Tier 1

PHONO has been rated as Tier1 PV module manufacturer by Bloomberg New Energy Finance, a world-renowned financial institution since 2014



PVEL "Top Performer"

PHONO was named "Top Performer" by PVEL the world's largest independent energy expert and certification body for many years



EUPD "Top Brand" PV Module

PHONO has been awarded "Top Brand" PV Module by EUPD Research 6 years in a row

Widely Recognized by Third-party Authorities

Strict quality control system and product testing system ensure the quality of each module of PHONO. The products have passed international certifications such as TUV, IEC, UL, etc., which provide professional and reliable guarantee for customers.



05 Project Reference

An aerial photograph of a large-scale solar farm during sunset. The solar panels are arranged in neat, parallel rows across a field, reflecting the orange and yellow light of the setting sun. In the background, a small town is visible, and a road runs horizontally across the lower portion of the image. The sky is a gradient of orange, yellow, and blue.

35 MW
Pražský, Czech

CZECH PROJECT POWER PERFORMANCE

PHONO

Data Updated by May 2024

PROJECT OVERVIEW

 **Czech** Veprek, Czech Republic

 **2010** Grid Connected
in May 2010

 **35MW** Installed Capacity

 **9th** Largest PV Station
in year 2010

 **19%** Excess Power Generation
than designed plan



600,000,000

500,000,000

400,000,000

300,000,000

200,000,000

100,000,000

Achieved Performance (kWh)

538,223,109

Designed plan (kWh)

450,653,084

Grid Connected

Excess Power Generated

87,570,025 kWh

19.4% more than designed plan

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

2020

2021

2023

2024

Solar Farm Project

PHONO

18 MW, 31176 PHONO Panels
Annual carbon reduction of more than 8,750 tons
Address: Delfzijl, the Netherlands



Utility Scale

PHONO



Utility Scale

PHONO





C&I Rooftop

PHONO



Residential Rooftop

PHONO





THANK YOU !

SHARE THE SUN, POWER THE FUTURE !

✉ info@phonosolar.com

🌐 www.phonosolar.com