



SUN LABS

SOLAR MANUFACTURERS REPRESENTATIVE

In Exclusive Partnership with



ZNSHINESOLAR

COMPANY INTRODUCTION



www.sunlabs.solar

www.znshinesolar.com



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Company Profile

About Sun Labs



- | Sun Labs is the exclusive partner for ZNShine Solar on the West Coast.
- | Sun Labs is a high-tech enterprise focused on Renewable Energy with five Business Divisions: Photovoltaic Modules, Utility Scale Power Plant, Mounting System, Energy Storage, and Hydrogen Energy.
- | As a new energy provider, Sun Labs will continue to promote new energy development with both premium quality and cutting-edge technology to lead the green energy revolution.



18 Years

Founded in 2006



BNEF Tier 1

BloombergNEF

About our Partner ZNShine

- | Founded in 1988, ZNShine Solar is a high-tech PV enterprise based in Changzhou, Jiangsu. Specializing in R&D, production, sales, and construction services for solar modules, the company is dedicated to making the solar power the most economical clean energy in the world.
- | With 12GW capacity comprising 4 production bases in Changzhou, Suqian Yunnan and Indonesia.
- | ZNSHINE products and services cover more than 80 countries and regions through its sales and support network of 30+ subsidiaries around the world.
- | ZNSHINE has been recognized as the BNEF Tier 1 PV Module Manufacturer, PVEL Module Reliability Scorecard Top Performer, as well as a Most Influential PV Module Manufacturer and EPC Enterprise.



36 Years

Founded in 1988



BNEF Tier 1

BloombergNEF



Integration of Four Dimensions Strategy



Diversified High Efficient PV Products

- Develop and promote lightweight, flexible modules, low carbon composite frame modules, OBB modules, etc.
- High efficiency cells and graphene coating modules to achieve high power generation efficiency

LEAN Management

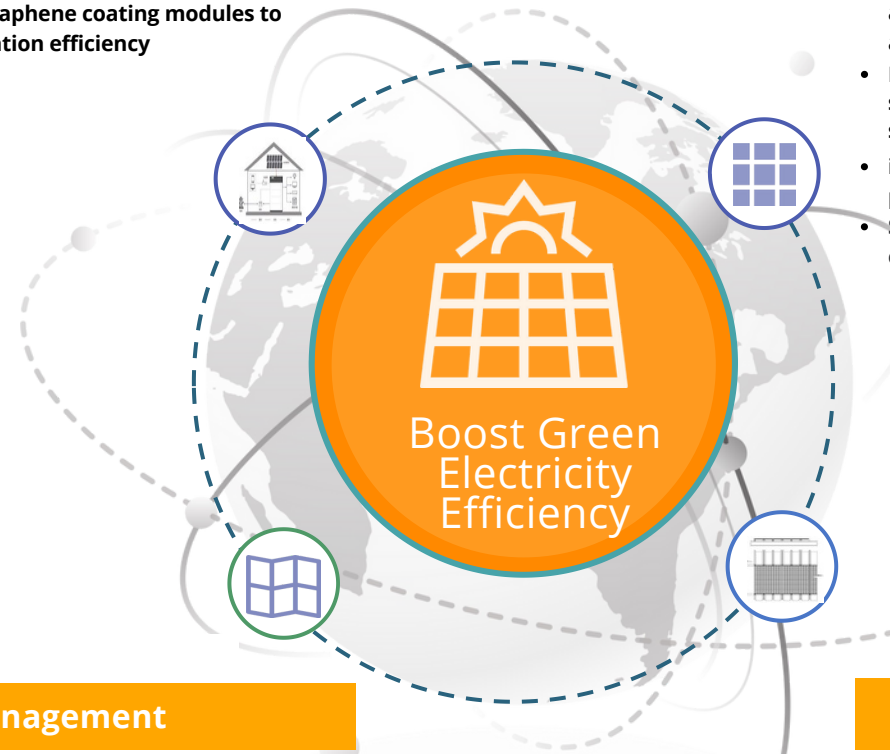
- Optimize the supply chain structure and develop vertically integrated industrial chains to implement Lean management
- Incremental productive capacity of TOPCon and HJT cells to 10 GW
- TOPCon production capacity will be added to 10GW in 2024

Standardized System Advance the EPC Services Services

- ZNShine Green Energy Cloud - Make green electricity more safety via the advancements of high power tile products and waterproof tile products.
- Development and promotion of SRS integrated rooftop system to maximum the installation and standardized system advantages
- increase the development of large scaled utility power stations
- Strengthen cooperation with state-owned enterprises to seize the residential market

PV + BESS, PV + Hydrogen

- Strategic cooperation with energy storage and hydrogen energy industry partners
- Consolidate the development of PV + energy storage and PV + hydrogen production solutions to realize high conversion efficiency



Intelligent Quality Made



Sun Labs / ZNShine Solar products meet ISO9001, 14001 and 45001 standards



High-efficiency crystalline silicon solar cells and modules – inspected and certified by Hebei Engineering Laboratory



Comprehensive smart management system to stringently control the whole manufacturing cycle



Fully automated modular manufacturing enhances product reliability, with the use of digital, systematic and standardized leading-edge technology and advanced process control ensuring excellent product quality

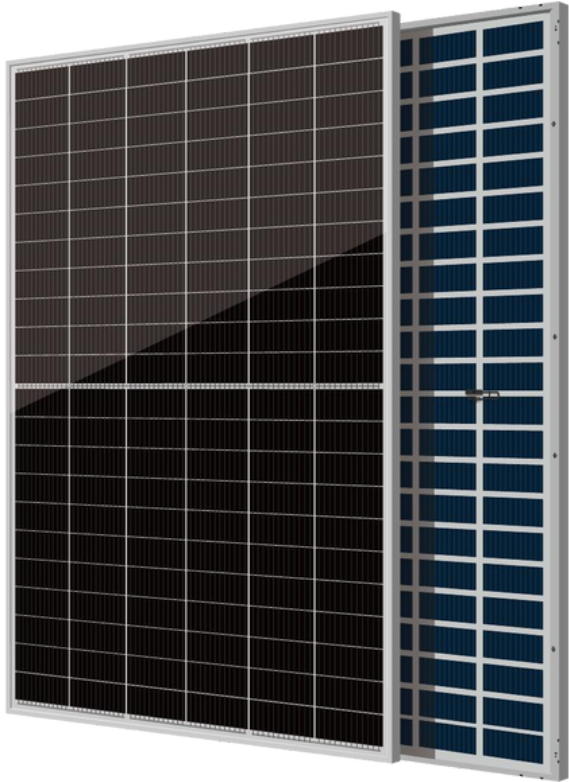
6S MES ERP

The use of digital, systematic, standardized manufacturing and leading-edge technology and advanced manufacturing process control ensure excellent quality of products



Diversified High Efficient PV Products

High Efficient PV Products



High-efficiency & Intelligent Modules

166mm | 182mm | 210mm

- ✓ MBB Tech ✓ Non-destructive Cutting Tech
- ✓ High-density Encapsulation Tech
- ✓ SMBB TOPCon & HJT Tech
- ✓ Low Carbon PU Composite Frame

- Substantially lifts module efficiency, reduces micro cracks taking place during manufacturing process and subsequent handling throughout life;
- Based on MPPT, mis-match is avoided and power output is optimized;
- MBB modules reduce BOS costs and improves installation speed;
- Meets the NEC 2014 Standard with design of single route circuit break, and improves complete system management.

N-TOPCon Pro+ Series

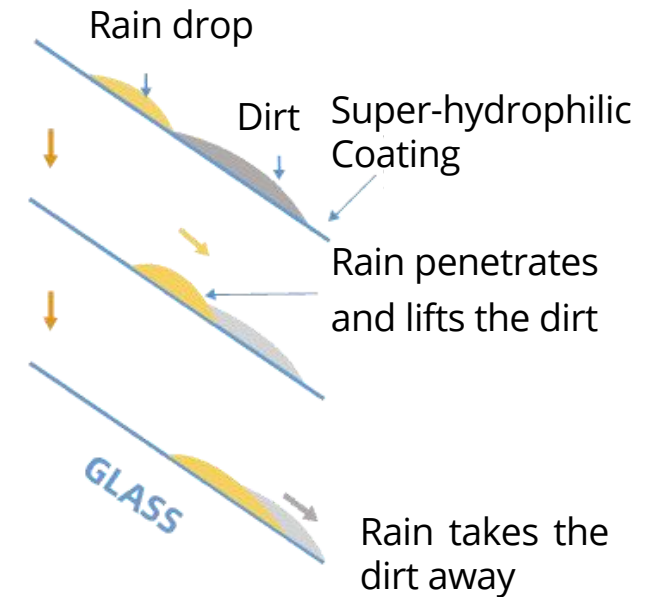
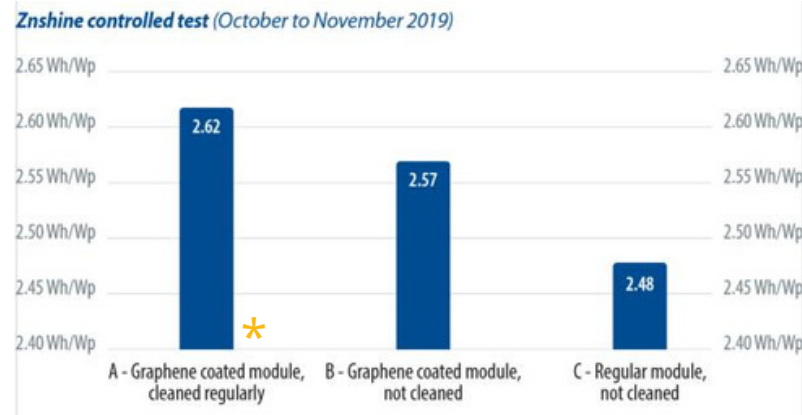
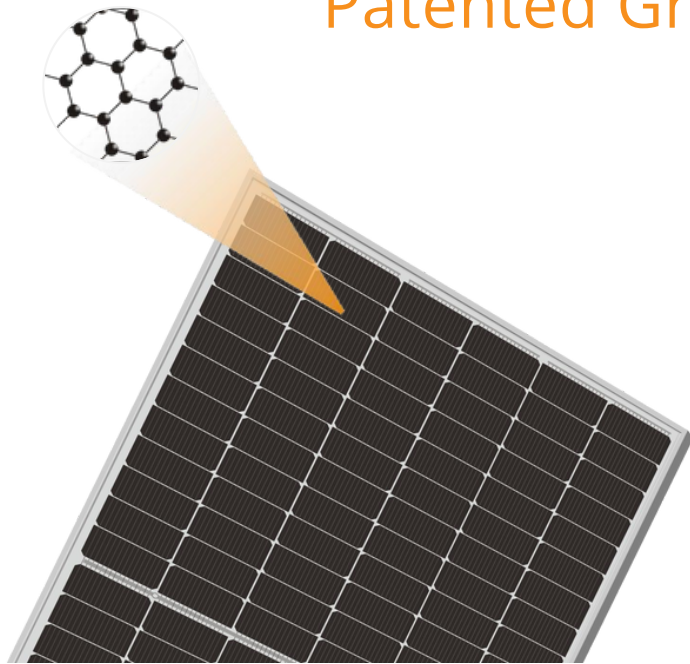
435~620Wp



- Power Increased by 7%
- PR Ratio Increased by 3%
- Transportation Reduced by 8%
- LCOE Reduced by 8%

Self-cleaning Module

Patented Graphene-coating- 2% energy yield boost



Proved by PV Magazine Module Benchmark Test,

ZNShine Solar's Graphene-coating modules demonstrated impressive energy yield with 2% boost.



Self-cleaning



Longer Lifetime



More Power Generated



Better Low-light Performance

Lightweight-reinforced Module

Product Characteristics



Lightweight Design

Optimized composite materials are up to 70% lighter at the same power capacity.



Flexibility

Utilizing industry-leading composite materials and unique encapsulation tech make lightweight strengthened modules flexible and fit perfectly with curved surfaces.



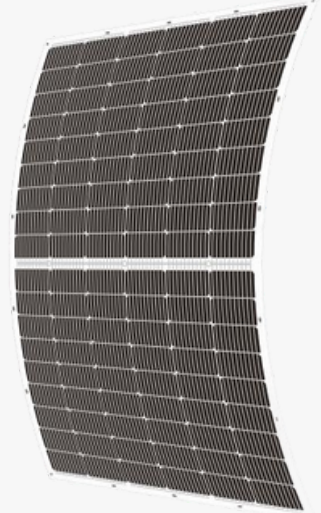
Easy Transportation and Installation

The original design significantly reduces transportation and installation costs.



Customization

Offering customized designs tailored to different scenarios.



Product Characteristics



Enhanced Safety

Eliminated the risk of self-detonation, providing a safer and more reliable solution.



Elegant Aesthetics

Smooth surface ensures distortion-free aesthetics without any visible spots.



Ultra-Lightweight

Achieved exceptional lightness without compromising mechanical durability.



Diversified Installation Methods

Choose between mechanical fixture fixation or adhesive fixation for versatile installation options.

Ultra Low Carbon Module

Product Characteristics



Ultra Low Carbon



Ultra Black Vision



Corrosion Resistant



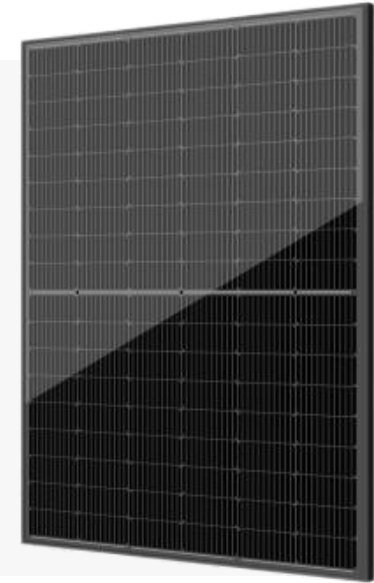
High Anti PID



High Insulation



High Anti-Glare



Product Application Field



Resistant to corrosion and salt spray
Applicable to offshore PV stations



Suitable for different colors of
distributed residential and C&I roofs



High strength and exceptional
weather resistance suitable for
large ground PV power stations.



Standardized System
Advance the EPC Services

Standardized System Advance the EPC Services



Commercial Rooftop

- 0 High power generation efficiency
- 0 High reliability and durability
- 0 Cost-effectiveness



EPC

- 0 Standard customized services
- 0 Commercial aesthetics
- 0 High power generation efficiency



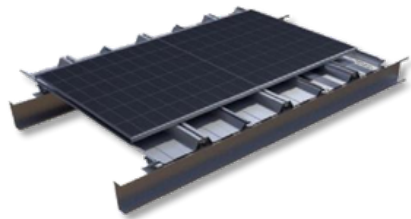
Residential Rooftop

- 0 Customized size
- 0 Ultra-low carbon lightweight reinforcement
- 0 Elegant aesthetics

ZNS Power Tile System– Quick installation

“New Roof BIPV”

BIPV High Power Tile System



- High-efficiency and highly reliable 600W+ photovoltaic modules.
- Customized by ZNShine, the "high-aluminum zinc magnesium, high-weather-resistant coating" continuous roof tiles.
- Rail-free lightweight design.
- "Snap" quick-installation clips with tool-free, bolt-free, and block-free design, ensuring a swift and efficient 30-second installation.
- 360° upright locking edge waterproof design, combined with roof eaves and drainage troughs, effortlessly handling heavy rainfall (intensity $\leq 200\text{mm/h}$).



“BAPV on Existing Roofs”

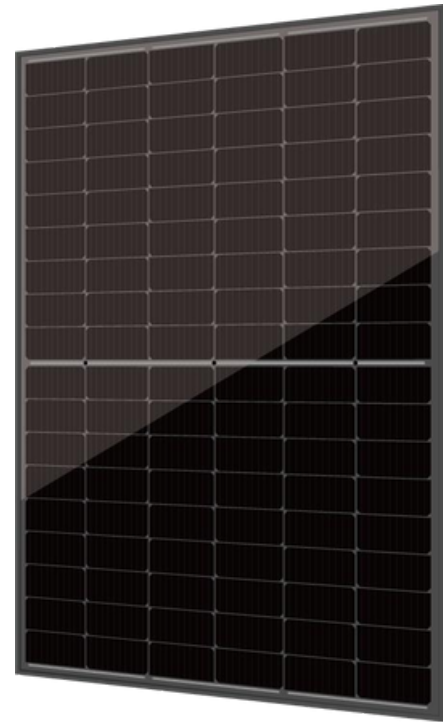
BAPV Waterproof Tile System



- ZNShine customizes seamless "High-Aluminum Zinc Magnesium High-Weather-Resistant Coating" roof tiles, enhancing overall leak resistance.
- Innovative cross-shaped pressing design boosts system load and wind uplift capacity.
- Industry-leading "Vertical Beam Reinforcement" design reduces water leakage risk.
- Special "T-pushnut" installation clips offer excellent vibration resistance.
- Compatible with diverse roofs, PV modules, and grounding components.

Standard Rooftop Solution– Highly Efficient System


SRS- Simpler, More reliable and Faster (Save up to 30% of installation time)



Specialized EPC Development



• EPC Service

Professional EPC- “Engineering, Procurement, and Construction”

Established in 2016, wholly-owned subsidiary Shaanxi Qinpu Construction Engineering Co., Ltd. specializes in photovoltaic EPC, electromechanical installation EPC, architectural decoration, renovation, and other construction projects.



End-to-End Development

- Comprehensive Online and Offline Coverage,
- High Flexibility, Coordination, Fast Processes, and Diversified Collaboration



Project Management

- Five Big, Six Small Shortlist,
- Reliable Professional Operations



LEAN Management

Module Manufacturing Bases

12GW Automated Manufacturing

Changzhou Manufacturing Base:

- **Capacity: 2GW**
- Module Type: 166mm/ 182mm and TOPCon modules

Suqian Manufacturing Base:

- **Capacity: 6GW**
- Full automatic production lines of the world-class equipment and control system

Yunnan Manufacturing Base:

- **Capacity: 2GW**
- Full automatic production lines of the world-class equipment and control system

PT ZNSHINE TECHLAN RENEWABLE ENERGY INDONESIA:

- **Capacity:** 500 MW in the first phase, with an overall plan to achieve a total capacity of **2 GW**,
- 18X and up to 220mm cells size, compatible with 182 and 210mm PERC, 182 and 210mm TOPcon process solar cells module production.

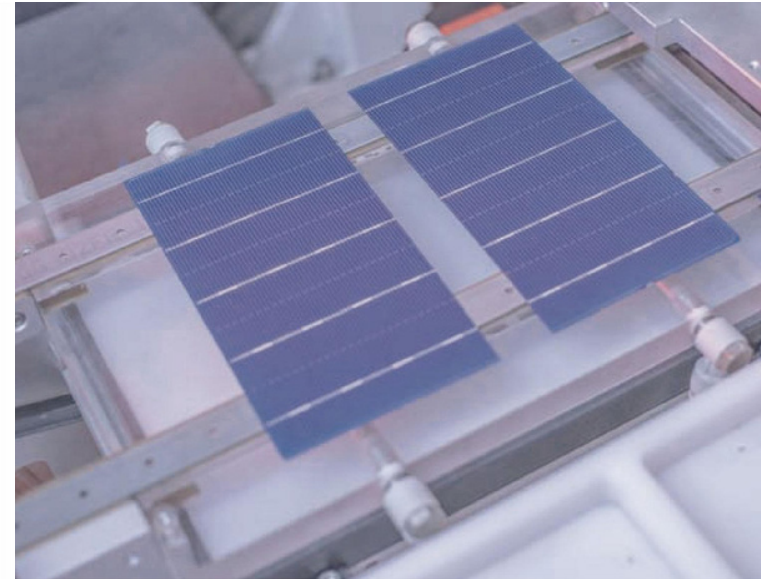


Cells Manufacturing Base

10 GW TOPCon Cells Capacity

Changzhou Manufacturing Base:

- 3- 4 GW in the first phase,
- with an overall plan to achieve a total capacity of **10 GW**,



Security control of the upstream supplier management

LEAN Management- Quality & Innovation

99.9%

Product
Yield Rate

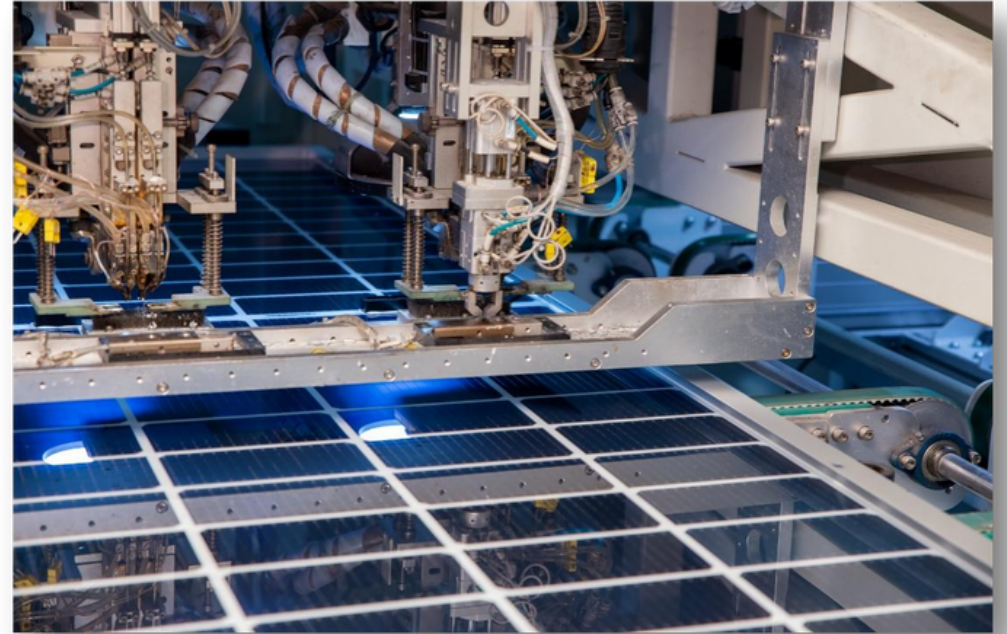
24H*7

Production
Monitored

100+

R&D
Patents

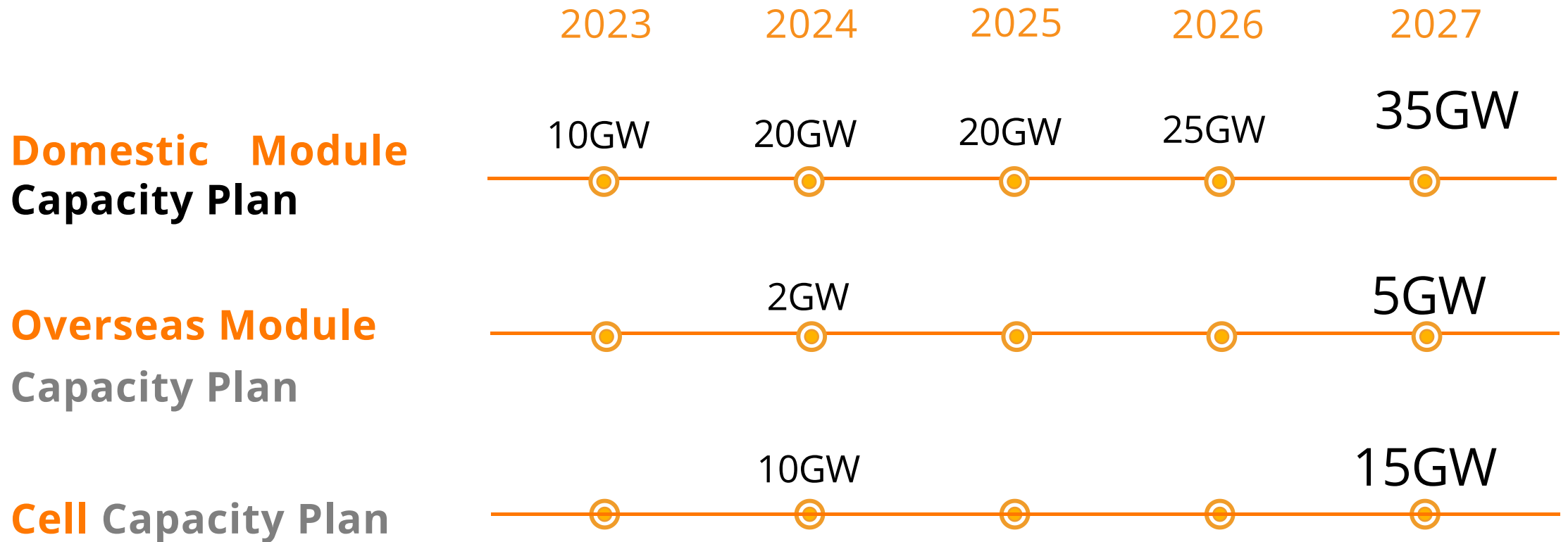
- **Advanced Manufacturing Equipment** Automated Production Line
- **Non-destructive Cutting Tech** High density / Overlap Tech
- **Multi-sharding technology** 18X/210mm cell manufacturing compatibility
- Maximum 720W module applicable



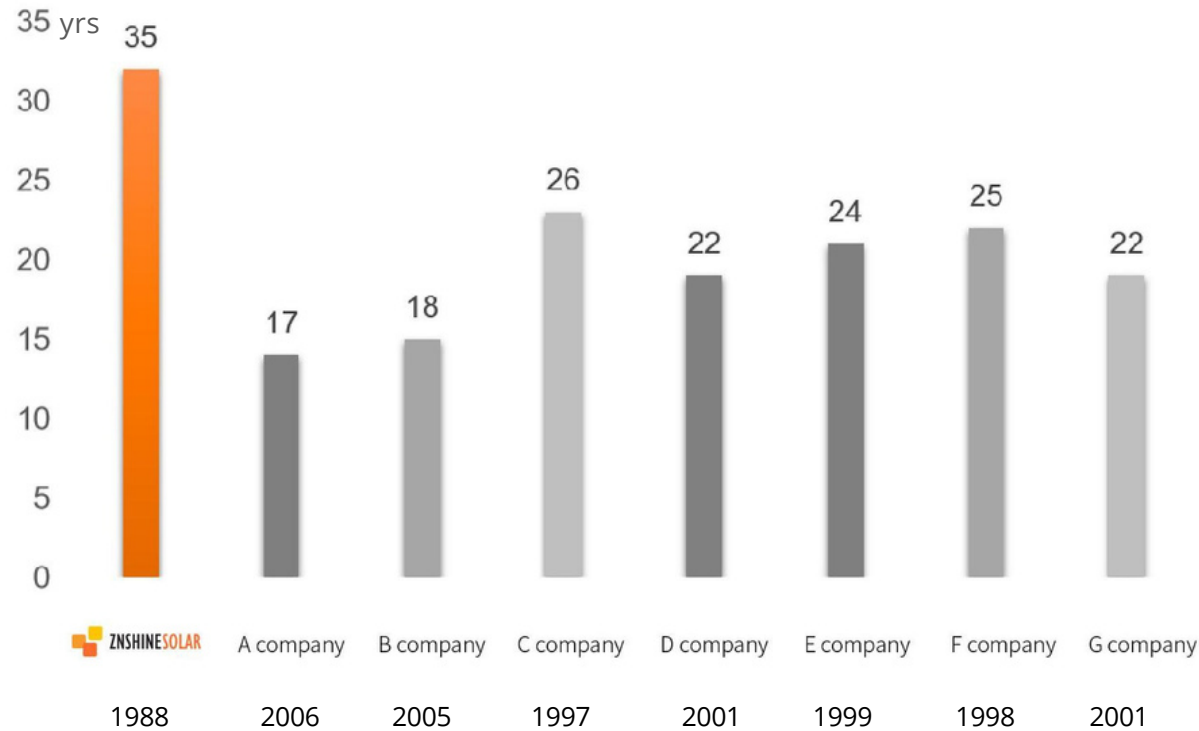
Intelligent Workshop – 100% Traceability - EPD
- Environmental Product Statement

5 Years Plan

40GW Module + 15GW Cell



Risk Control Management- 36 Years Experience | Munich RE



- US Standard & Poor's
Ranking: : **AAA**
- US A.M. Best
Ranking: **the Highest Claim Payment Capacity A++ (Outstanding)**
- **The Best Insurance Company in Asia 1998**, rated by the most authoritative insurance magazine "Asian Insurance Insight"
- **FORTUNE 500**



Quality Management- Worldwide Certification



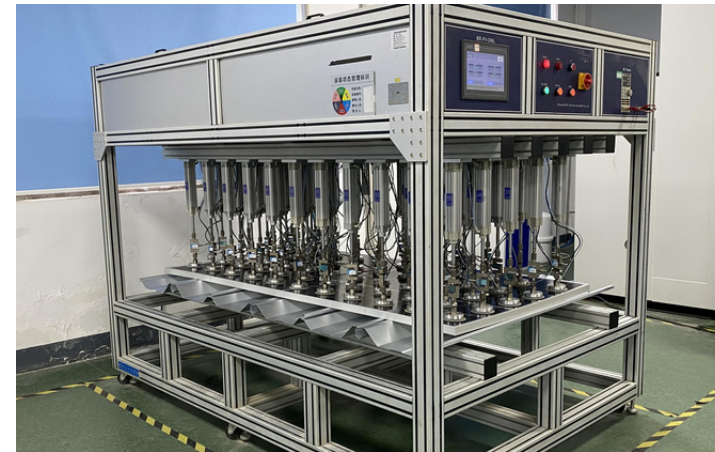
fully certified by world-class independent testing and notifying bodies

LAB Management- Innovation





ZNSHINE prioritizes product quality and innovation with 100+ patents, including a world-leading graphene coating technology.



-  **Exclusive global graphene coating technology patent.**
-  **CNAS Certified Laboratory**
-  **100+ Patents**
-  **100+ R&D Engineer**



Network Management- Global Network

-  Headquarter
-  Manufacturing bases
-  Branches
-  Warehouse

Global Network

ZNShine's business footprint covers more than 80 countries around the world with more than 30 branches.



Brand Management- BNEF Tier 1



ZNSHINE BloombergNEF Tier 1 PV Module Manufacturer

Table 4: PV module manufacturers meeting BNEF's Tier 1 criteria as of 4Q 2023

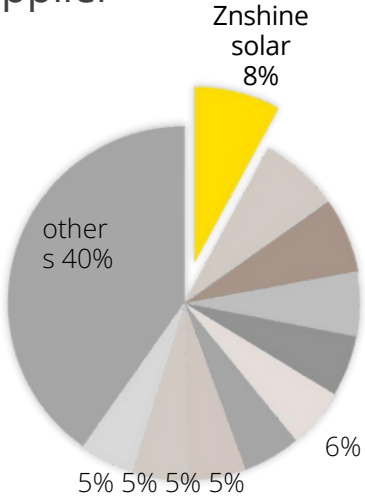
Firm/brand	Annual module capacity, MW/year	Firm/brand	Annual module capacity, MW/year
★ ZNShine*	10,000	Jetion	2,500
Yingli*†	15,000	JA Solar*†	85,000
Ulica Solar	3,000	HT-SAAE*	5,000
Trina*†	95,000	Heliene*†	950
Tongwei*	55,000	Hanwha Q-Cells*†	12,400
Suntech*	16,500	Hansol Technics	600
Sunpro Power / YH Sunpro	2,000	Hanersun	1,000
Sunova Solar/ Thornova*	4,200	Haitai Solar	10,000
Sumec/ Phono Solar*	4,000	GCL Solar	25,000
Solarspace*†	6,000	First Solar*†	12,300
Sharp	210	Exiom Group	2,000
Seraphim†	12,000	ET Solar Inc / Elite Solar*	3,500
Runergy/ Hyperion	21,000	Eging*	10,000
Risen Energy*	25,000	DMEGC*	12,000
Renesola	5,000	DAS Solar*	20,000
Recom	1,200	Chint/ Astronergy*†	55,000
Neo Solar Power/ URE	1,800	Canadian Solar	51,000
Maxeon*	10,100	Boviet Solar*	3,000
Luxen Solar	3,000	Anhui Huasun*	20,000
Longi Green*†	95,000	Anhui Daheng (DAH Solar)	2,000
Leapton Energy*	3,000	Akcome*	12,600
Jinneng/ Jinergy*	4,000	AE Solar*	2,000
Jinko*†	95,000	Adani / Mundra*	4,000
		Total	838,860

Source: BloombergNEF Note: Methodology [here](#). * Denotes a company for which technical due diligence reports are available from PV Evolution Labs, PVEL. Contact Tristan.erion-lorico@pvel.com. † Denotes manufacturers upon which RETC has recently conducted or is conducting technical due diligence. Contact info@retc-ca.com for details. Brands are shown in reverse alphabetical order to avoid giving the impression that position in the list is significant. Companies can download the dataset of financings [here](#).

Brand Management- Brand Recognition

- India-NO.1

ZNSHINE Solar
2018- 2022, India **TOP 1** modules
Supplier



Indian Market Share 2022



ZNSHINE
Recognition

- Brazil-TOP 10

2023, Ranked **7** among the
top 10
module brands in Brazil

2022, **TOP 10 module suppliers** in
Brazil, The most recommended PV
module brand

2017, **Exclusive** Chinese photovoltaic
company settles in Malaysia, Brazil

- Poland- Laurel Awards

The Most Trustworthy Brand

Laurel Awards



Cooperation Management- Partners

China



Europe



SEA



ME



LATAM



India



Core Competence



Unique Product Features

Graphene-coating, QIS, BIPV/BAPV, High power output module 670W



36 Years | Munich RE

Founded in 1988

Munich RE provides reinsurance support



BNEF Tier 1

BloombergNEF Ranking



100+ Patents

R&D, 100+ Patents



Quality & Innovation

Product Yield Rate: 99.8%

Focus on R&D



Global Network

Global sales and service network



Worldwide Certification

TUV, PV CYCLE, CE and etc.



Brand Recognition

30+ Overseas Point of Sales | 80+ Countries and Regions



5

PV+ BESS
PV+ Hydrogen

Solar+ BESS

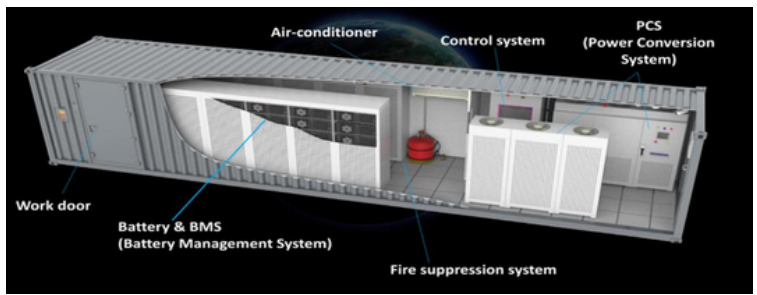
Integrated Solar + ESS Solution

Commercial & Industrial Integrated Solutions

Residential Energy Storage Management



Rooftop +
ESS Solar Kit
Solution Provider



One Battery Module
5.12kWh ESS



Dual Battery Module
10.24kWh ESS

ZNShine Hycean



IKKEM Innovation Laboratory



ZNSHINE SOLAR (NEEQ Stock Code: 838463)

Guided by the national needs, IKKEM Innovation Laboratory has established hydrogen and fuel cell project groups to support the RD&D of major hydrogen energy equipment.

National R&D support

- || Professional technical research team. Continuous investment in training and basic R&D.

Innovative team

- || Deep understanding of industry and customer. Provide the industry's best solutions and continuous technical support.

Core Team



Chief Technology Officer-NING LI

PV module R&D, production, sales, construction services, and provide one-stop product application solutions of high-tech enterprises.

Global sales and service channels

- || 30+ overseas sales branches
- || 80+ global business network

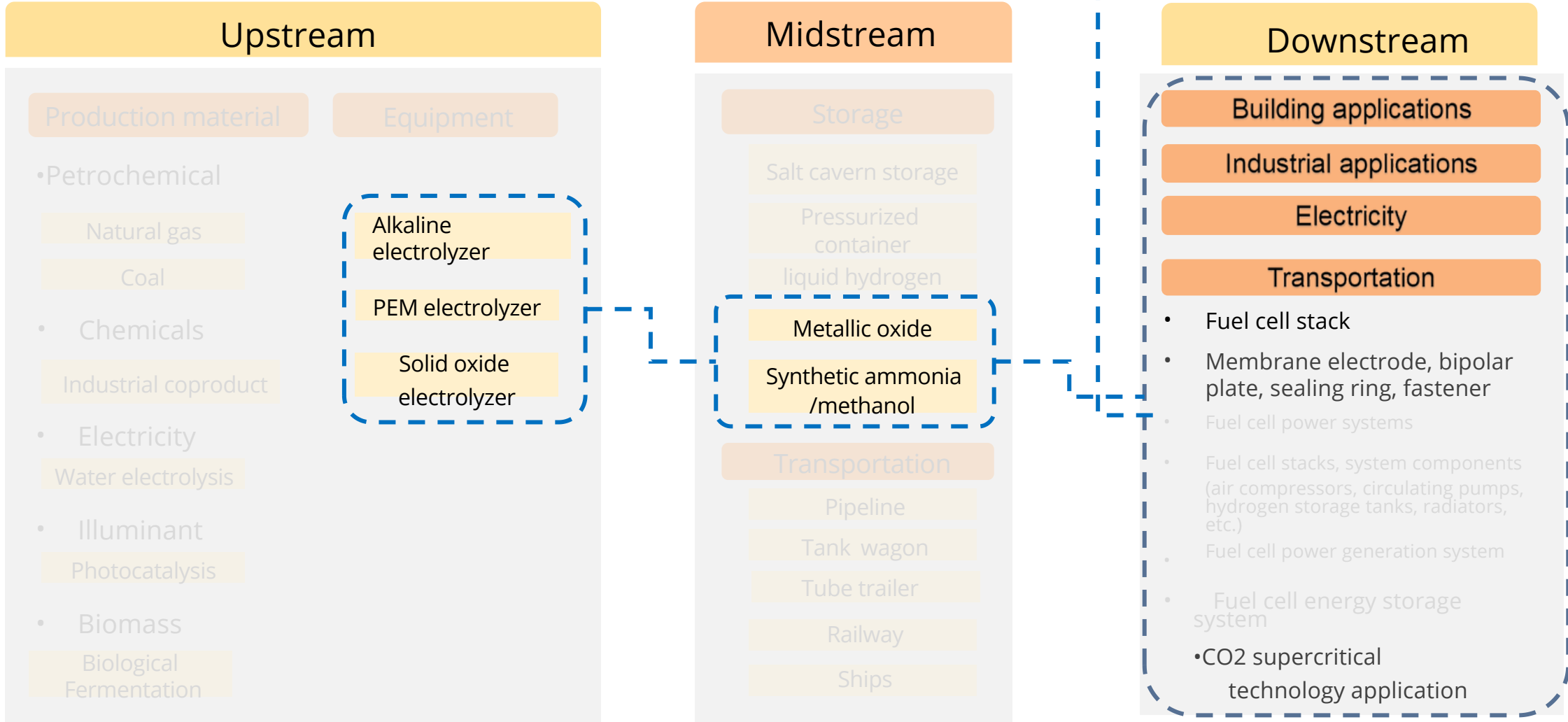
International brand awareness

- || Top 10 component suppliers in Brazil
- || The brand has been established for many years, BNEF global Tier-1 component manufacturer

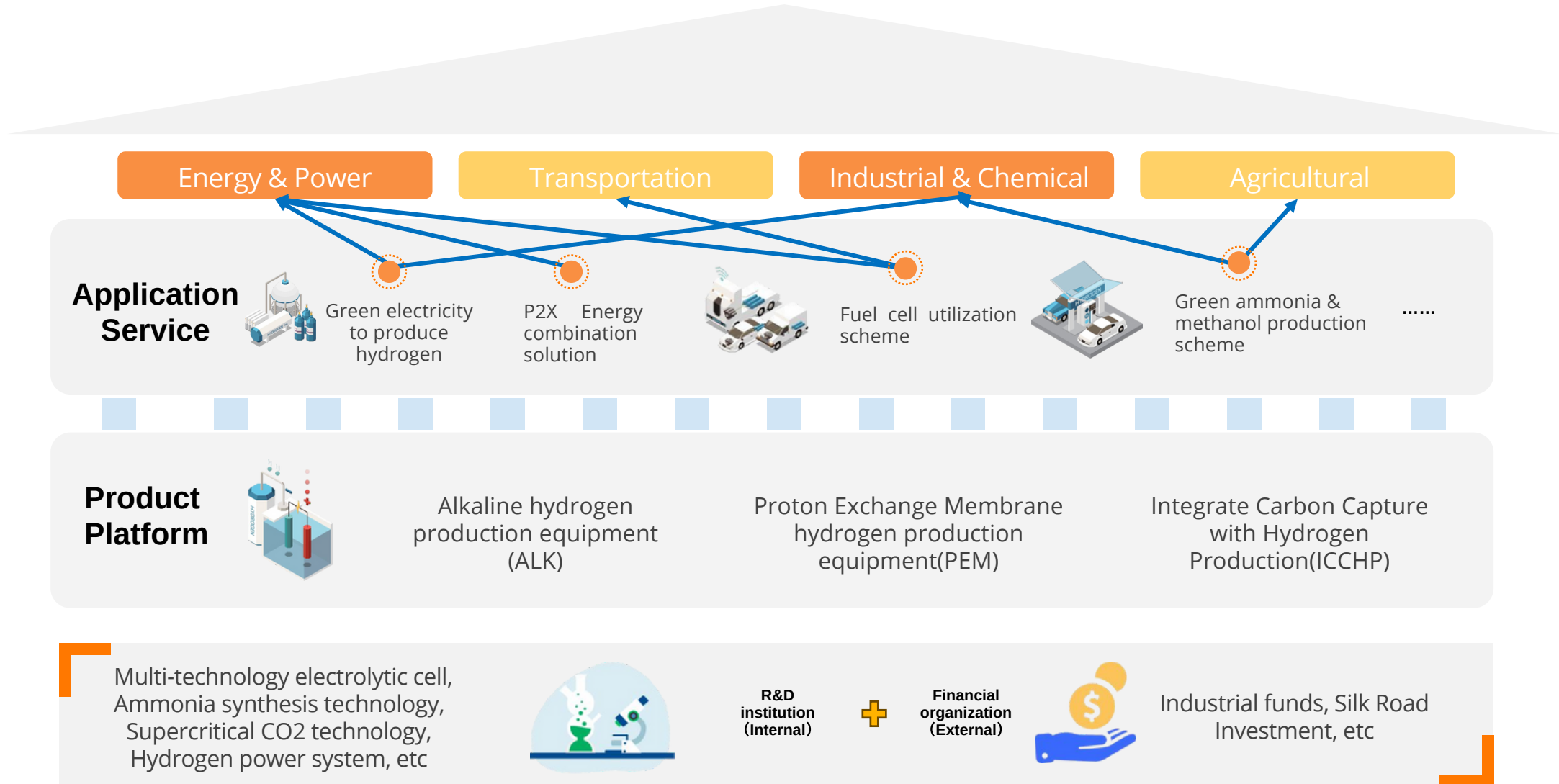
ZNShine Hycean

Technical Layout of ZNShine Hycean

R&D, manufacturing, and overall solution capabilities are targeted towards hydrogen applications.



ZNShine Hycean's Product and Service Architecture





Project References

Utility-scale Projects



Project: EPC in Denmark
Size: 23MW
Country: Denmark



Project: Solar Capital Orange Project
Size: 86 MW
Country: South Africa



Project: EPC in Greece
Size: 110MW
Country: Greece



Project: EPC in Brazil
Size: 6.5MW
Country: Brazil



Project: EPC in Bulgaria
Size: 11.42 MW
Country: Bulgaria



Project: EPC in Spain
Size: 10MW
Country: Spain



Project: EPC in Subawan
Size: 26.8MW
Country: Indonesia



Project: EPC for Huaneng Group Baoshan
Size: 60MW
Country: China



Rooftop Projects



Project: Commercial Rooftop

Size: 10MW

Country: Spain



Project: Commercial Rooftop

Country: Chile



Project: Subawan

Size: 500KWp, Total Size 2MW

Country: Panama



Project: Commercial Rooftop

Country: Medellín, Colombia



Project: Wujin Lakeside Commercial Rooftop

Size: 0.15MW

Country: China



Project: Aremon PV Carport

Size: 0.356MW

Country: China



Rooftop & Other Projects



Project: Lishui Commercial Rooftop- Waterproof Tile

Size: 1.4 MW

Country: China



Project: Residential Rooftop in Sao Paulo

Size: 5.5MW

Country: Brazil



Project: Agricultural PV Module in Shandong, China

Size: 51MW

Country: China



Project: Hyderabad floating PV system

Size: 2MW

Country: India





In Exclusive Partnership With



Thank you !