

Phono Solar

A Global Leading Solar Solutions Provider

PHONO SOLAR

SHARE THE SUN, POWER THE FUTURE!

Aug. 2022



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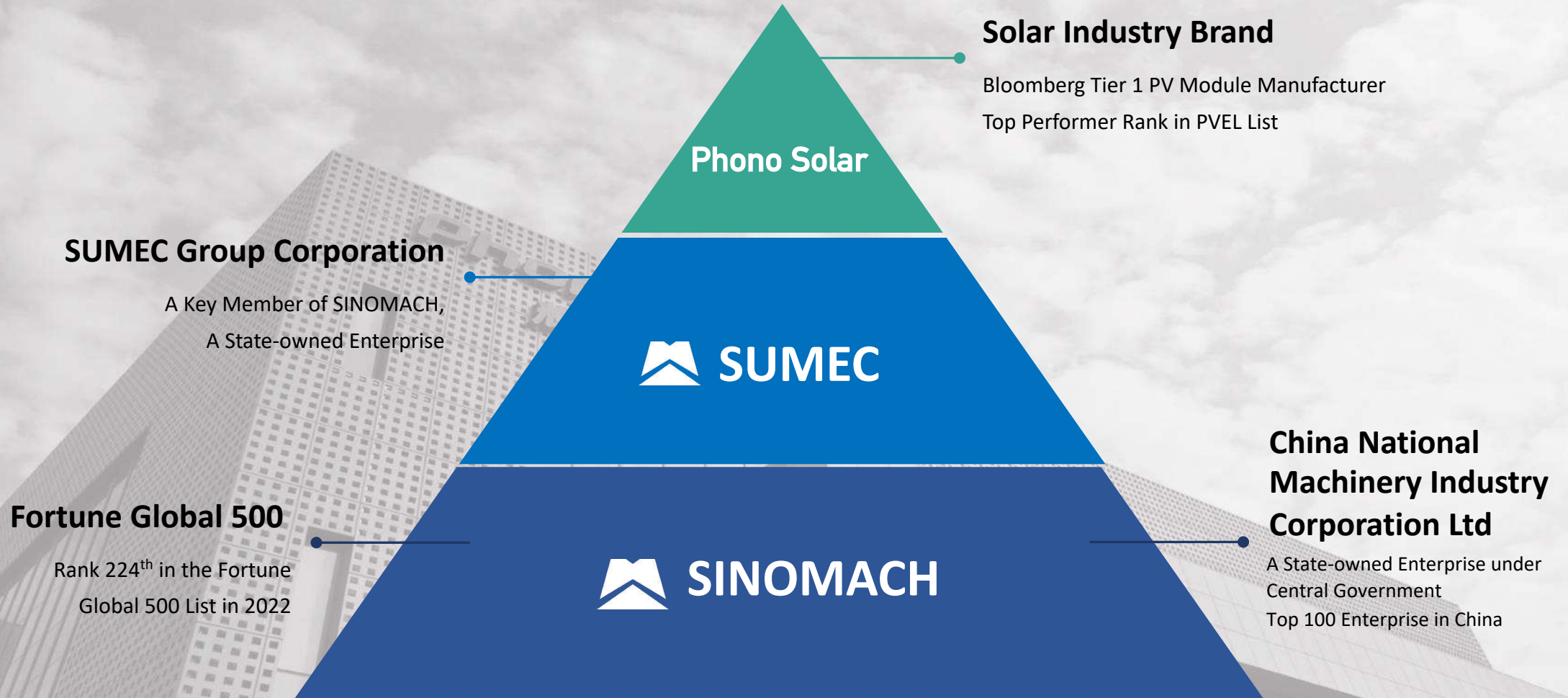
PROJECT REFERENCE

Worldwide Proven Projects Reference Including Residential,
Commercial and Utility

An aerial photograph of a vast solar farm during sunset. The sun is low on the horizon, casting a warm orange glow over the landscape. The solar panels are arranged in neat, parallel rows that stretch across the field. In the background, there are rolling hills and a few buildings. The sky is a mix of orange, yellow, and blue.

01 ABOUT US

Phono Solar is a global leading solar products solutions provider. It is affiliated to SUMEC Group which is the subsidiary of SINOMACH Group, one of the Global Fortune Top 500 companies





SINOMACH



State-Owned

Backbone Enterprise Under
The Direct Control of the
Central Government



500

Rank No. 224
Fortune Global 500



28+13

28 Wholly
Owned Subsidiaries
13 Listed Subcompanies



ENR 35

Rank No.35
**Top 250 Largest
International Contractors**



300+

Overseas Service
Subsidiaries and Agencies



130000+

Global Employees



SUMEC



国机集团



1978

Established in 1978,
44 Years History



\$26.5 Billion

Primary Business Revenue
State-owned Enterprise
Listed Company



NO. 80

Rank No.80 in
Fortune China 500
In 2022



\$12.5 Billion

Annual Credit Lines
Strong Financial Stability



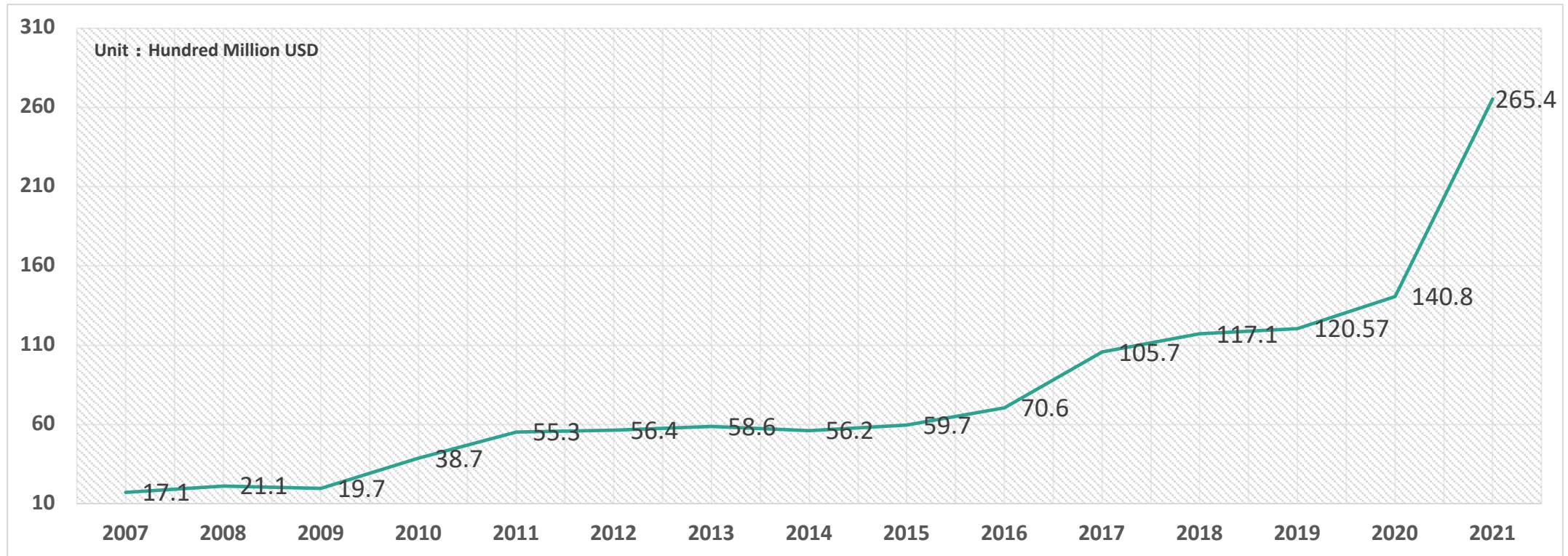
24000+

Over 24000 Global
Employees

Stable Operation

Under the guidance of SINOMACH, SUMEC Group has adhered to the concept of high-quality development, actively response and hard work to achieve steady development. In 2021, the primary business revenue was nearly 26.54 billion USD dollars.

Primary Business Revenue



Diversified Industry

Phono[®] Solar

With over 40 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

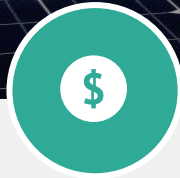


Clean Energy



Engineering Contracting

PHONO SOLAR



Stability

Strongly backed by SINOMACH and SUMEC Group, the state-owned corporation and Global Fortune 500 company, Phono Solar can always stand with clients



Reliability

Phono Solar has the commitment to our customers over the entire 25-year lifespan of their solar projects.



Sustainability

Being globally oriented, we are always creating sustainable social and ecological value for all the clients



Phono Solar



Phono Solar is Continuously Ranked as
“TOP PERFORMER”
in DNV-GL PV Module Reliability Test



Phono Solar

Global Leading Solar Solutions Provider

Phono Solar 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.



Established

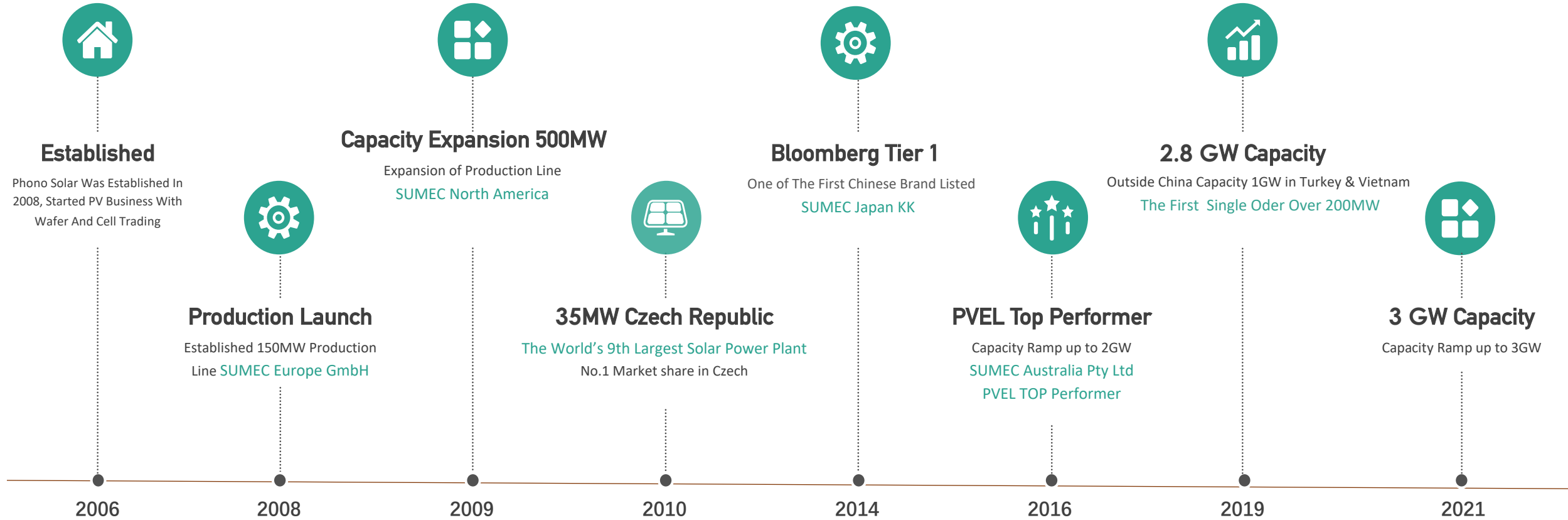


Global Capacity



Global Shipment

Milestones



Bloomberg Tier1
NEW ENERGY FINANCE

Global Network

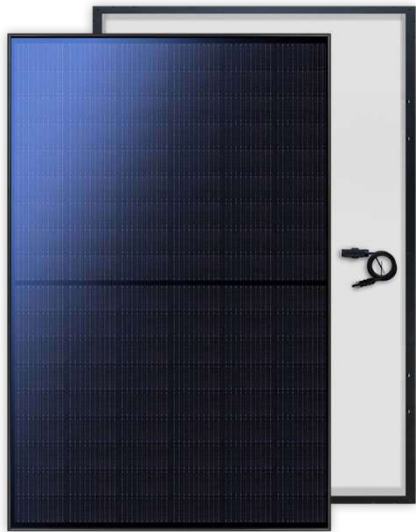
Phono[®] Solar



An aerial photograph of a vast solar farm during sunset. The sun is low on the horizon, casting a warm orange glow over the landscape. The solar panels are arranged in neat, parallel rows that stretch across the field. In the background, there are rolling hills and a few buildings. The sky is a mix of orange, yellow, and blue.

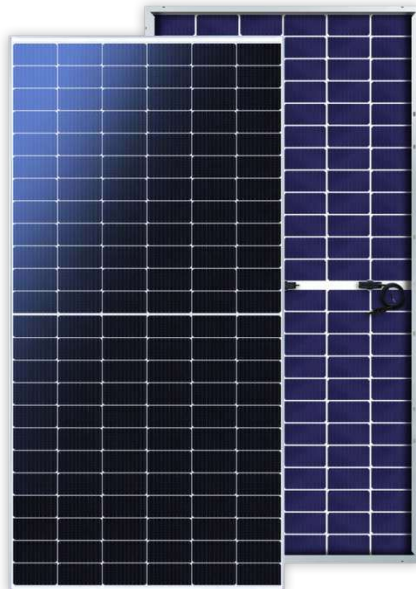
02 WHAT WE DO

As a global leading solar products solutions provider, Phono Solar provides high efficiency solar products for residential, commercial and utility systems



TwinPlus X Series

Cutless Half-Cell Technology
Square Mono Wafer



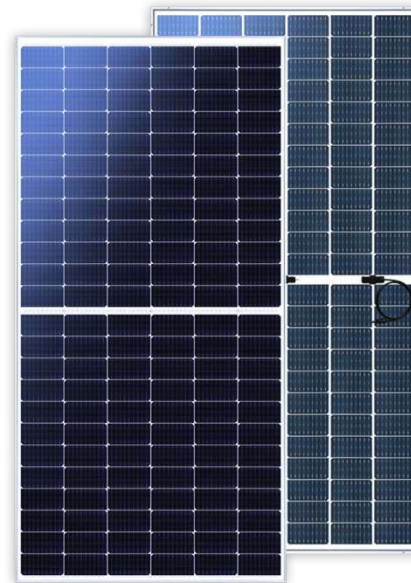
Draco Series

N-TOPCon



TwinPlus Series

Half Cell Mono Perc



Bifacial TwinPlus Series

Half Cell Mono Perc
Dual Glass Technology



Premium Series

Full Cell Mono

High Efficiency Solar Modules



Key Features of Products

0 1 | High Module Efficiency

Advanced processing techniques ensure outstanding module efficiency

0 2 | Positive Tolerance

Positive tolerance delivers higher output reliability

0 3 | High Reliability

Successfully passed various strict tests· salt mist corrosion test ammonia corrosion test· PID test

0 4 | Stable Power Output

Excellent performance even under low-light settings, such as dawn, dusk and cloudy day

0 5 | Excellent Durability

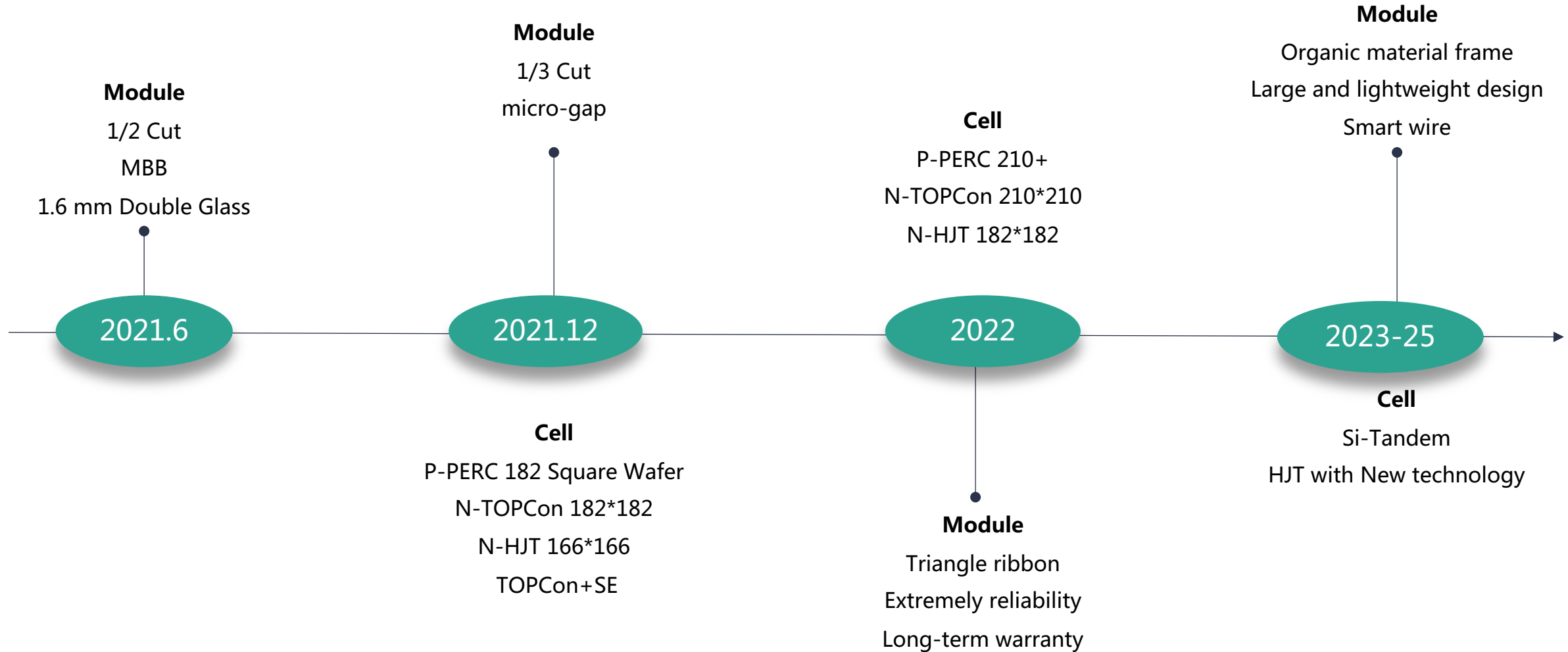
Excellent mechanical load resistance: wind loads (2400Pa) & snow loads (5400Pa)

0 6 | Outstanding Appearance

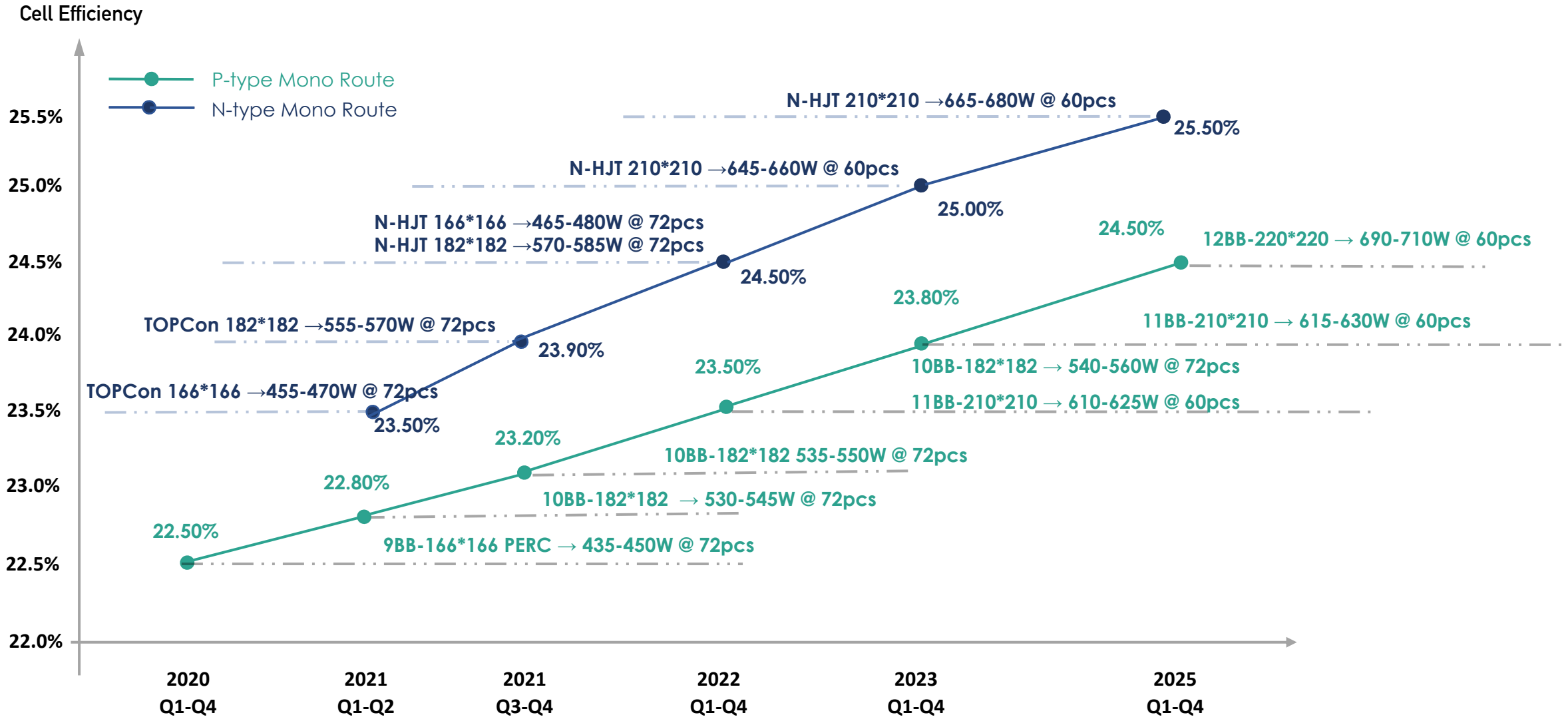
True black high efficiency module and dual glass module

Technology Roadmap

Phono[®] Solar



Production Roadmap



An aerial photograph of a vast solar farm during sunset. The sun is low on the horizon, casting a warm orange and yellow glow over the landscape. The solar panels are arranged in neat, parallel rows that stretch across the field. In the background, there are rolling hills and a few buildings. The sky is a mix of blue and orange, with some light clouds.

03 WHY PHONO

Phono Solar is a global leading solar products solutions provider. It is differentiated across three categories, stable state owned company, reliable high quality products, and sustainability management & development.

Phono 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
- 12-year product warranty, 25-year performance warranty (30-year for double glass products)



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[®] Solar

– 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[®] Solar

Up to **38** Different Quality Control and Inspection Process in 24 Hours Per Day

Phono Solar 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

✓ Surface Impact

✓ Corrosive Atmospheres

✓ Outdoor Exposure

✓ Hotspot Endurance

✓ Insulation (wet/dry)

✓ Thermal Cycling

✓ Wet Leakage

✓ Damp Heat

✓ Mechanical Load

✓ Highly Accelerated Stress

✓ Humidity Freeze



Bloomberg Tier 1

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



PVEL "Top Performer"

Phono Solar 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 Solar has been awarded "Top Brand" PV Module by EUPD Research five 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 Solar. The products have passed international certifications such as TUV, IEC, UL, etc., which provide professional and reliable guarantee for customers.



An aerial photograph of a vast solar farm during sunset. The sun is low on the horizon, casting a warm orange glow over the landscape. The solar panels are arranged in neat, parallel rows that stretch across the field. In the background, there are rolling hills and a body of water. The sky is a mix of orange, yellow, and blue.

04 Project Reference

Phono Solar consistently provides affordable and stable solar energy to create a sustainable future for our planet.

35 MW
Veprek, Czech Republic



5 MW
Galten, Denmark

Phono® Solar

6 MW
Trecasali, Italy

Phono[®]Solar

8.5 MW
Nauroth, Germany



Phono[®] Solar

6.5 MW

Dnipropetrovsk Region, Ukraine





28 MW
Jekins, Georgia, USA



2.2 MW
Hrazdan, Armenia

Phono[®] Solar

14 MW

North Carolina, USA



36 MW

Various Sites, Las Turcas, Píto, Chile

Phono[®] Solar



20 MW
Tsukuba, Japan



1.02 MW

Northern Victoria, Australia



3.8 MW

Northern Victoria, Australia

60 MW
Perak, Malaysia



1.1 MW
Kangwon , Korea



80 MW
Zhejiang, China

50 MW
Jiangsu, China



Phono[®] Solar

THANK YOU!

SHARE THE SUN, POWER THE FUTURE

www.phonosolar.com