

Phono Solar

A Global Leading Solar Solutions Provider

PHONO SOLAR

SHARE THE SUN, POWER THE FUTURE!

May 2021



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Worldwide Proven Projects Reference Including Residential, Commercial and Utility

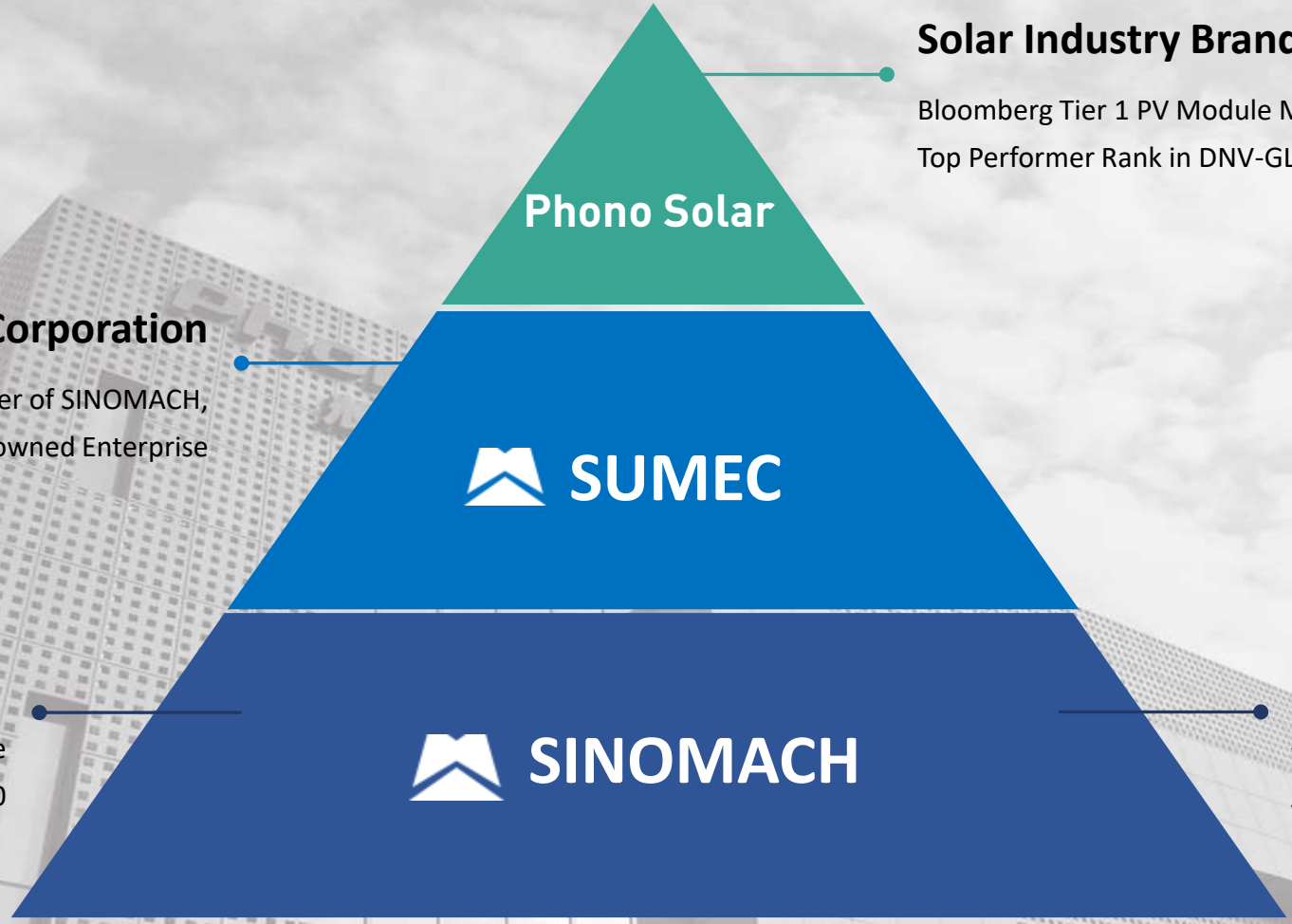


01 ABOUT US

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

History & Backing

Phono Solar



Solar Industry Brand

Bloomberg Tier 1 PV Module Manufacturer

Top Performer Rank in DNV-GL List

SUMEC Group Corporation

A Key Member of SINOMACH,

A State-owned Enterprise

Fortune Global 500

Rank 281st in the Fortune Global 500 List in 2020

China National Machinery Industry Corporation Ltd

A State-owned Enterprise under Central Government

Top 100 Enterprise in China

SINOMACH



State-Owned

Backbone Enterprise Under The Direct Control of the Central Government

500

Rank No. 281

Fortune Global 500

27+13

27 Wholly Owned Subsidiaries

13 Listed Subcompanies

ENR 19

Rank No.19

Top 250 Largest International Contractors

180+

Overseas Service Subsidiaries and Agencies

150000+

Global Employees

SUMEC



1978

Established in 1978,

43 Years History

$14.1 Billion

Primary Business Revenue

State-owned Enterprise

Listed Company

NO. 121

Rank No.121 in

Fortune China 500

In 2020

$7 Billion

Annual Credit Lines

Strong Financial Stability

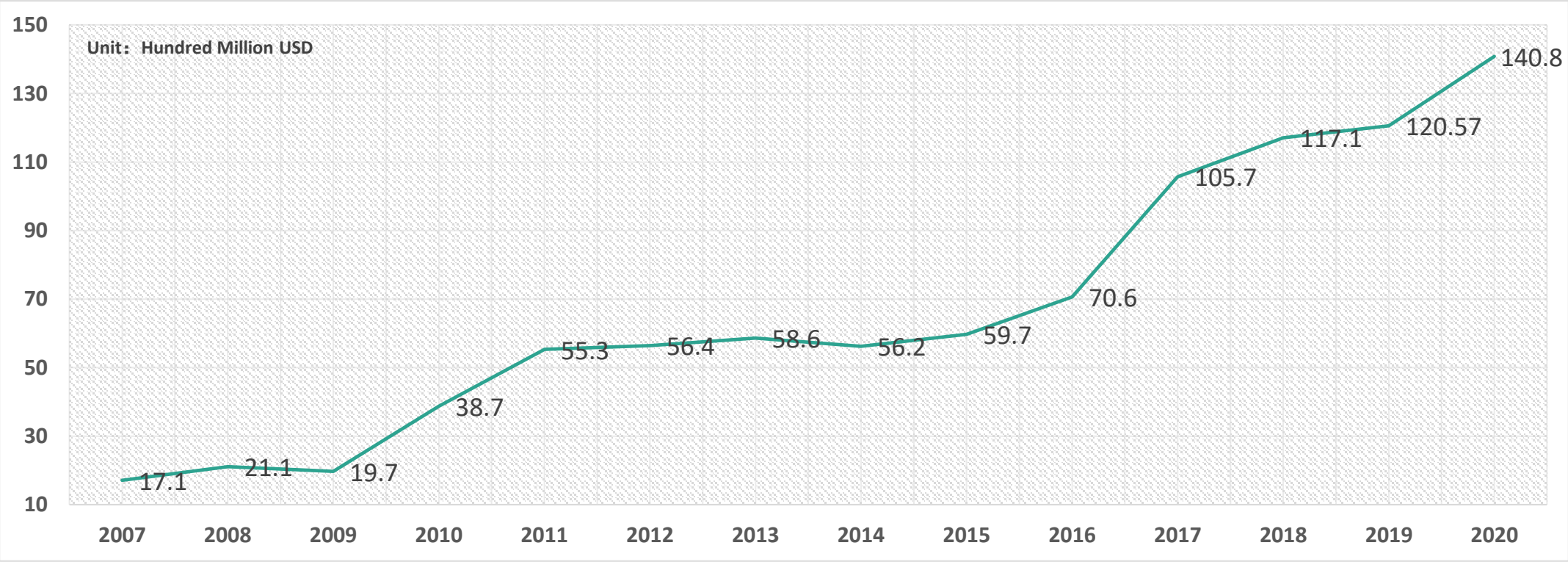
22000+

Over 22000 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 2020, the primary business revenue was nearly 14.08 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 11 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

Brand Values

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

2008
Phono Solar was founded

2.8GW
Global Capacity

Tier 1
Bloomberg PV Module Tier1 Manufacturer

7GW
Global Module Shipment

DNV-GL Top Performer
Ranked “Top Performer ” in DNV-GL Module Reliability Test for Consecutively Years



Phono Solar

Global Leading Solar Products Manufacturer

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 energy product provider

Milestones

Phono Solar

2006 — Established

Phono Solar Was Established In 2006, Started PV Business With Wafer And Cell Trading

2008 — Production Launch

Established 150MW Production Line

SUMEC Europe GmbH

2009 — Capacity Expansion 500MW

Expansion of Production Line

SUMEC North America

2010 — 35MW Czech Republic

The World's 9th Largest Solar Power Plant

No.1 Market share in Czech

2014 — Bloomberg Tier 1

One of The First Chinese Brand Listed

SUMEC Japan KK

2016 — DNV GL Top Performer

Capacity Ramp up to 2GW

SUMEC Australia Pty Ltd

DNV-GL TOP Performer

2019 — 2.8GW Capacity

Outside China Capacity 1GW in Turkey & Vietnam

The First Single Oder Over 200MW

Bloomberg NEW ENERGY FINANCE Tier1

Global Network

Phono Solar





02 WHAT WE DO

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



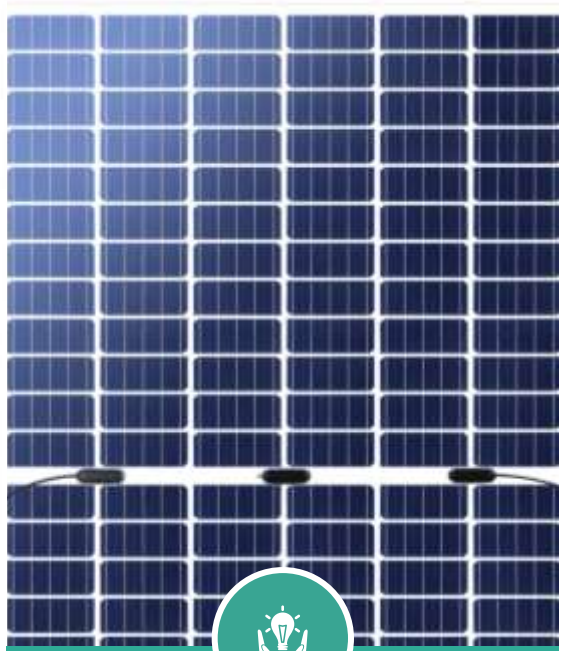
Premium Series

Full Cell Mono &
Poly Modules



TwinPlus Series

Half Cell Mono Perc
Poly Perc Modules



Bifacial Series

Full Cell &Half Cell
Mono Perc Modules



Smart Series

High Efficiency Mono
& Poly Smart modules

High Efficiency Solar Products



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 corrasion 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

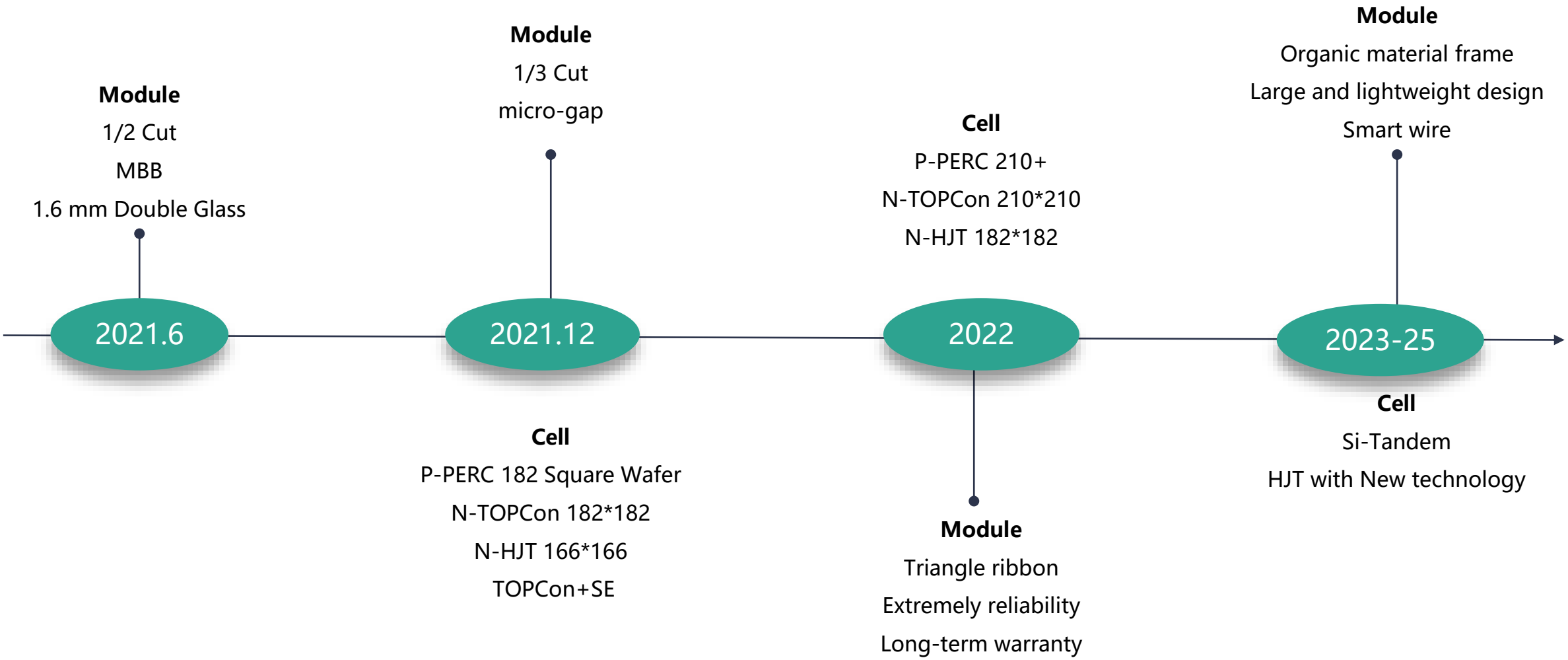
Excellent mechanical load resistance: wind loads (2400Pa) & snow loads (5400Pa)

0 6 Outstanding Appearance

True black high efficiency module and dual glass module

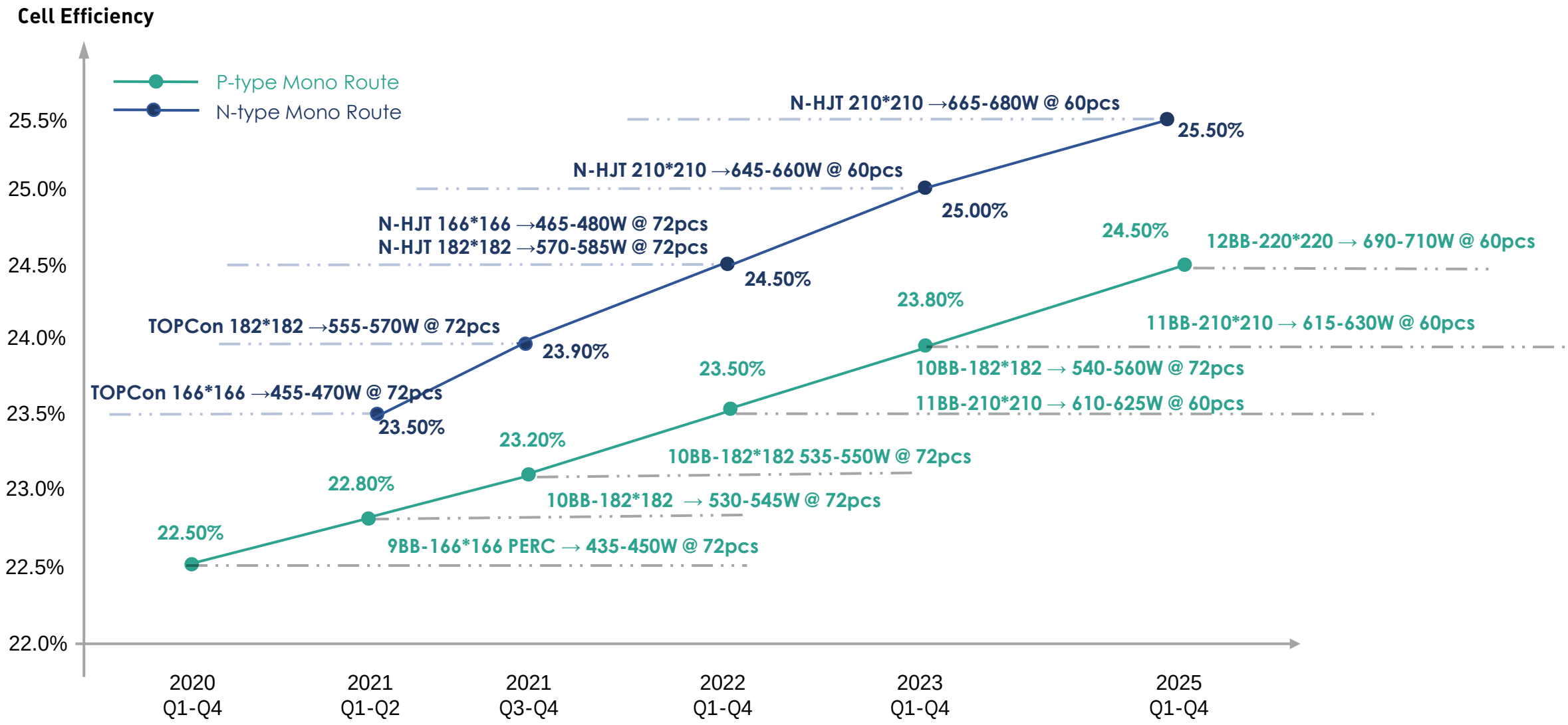
Technology Roadmap

Phono Solar



Production Roadmap

Phono Solar





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 Solar

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.

Trustworthy Quality

Phono Solar

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 IS09001 quality system
- IS014001 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

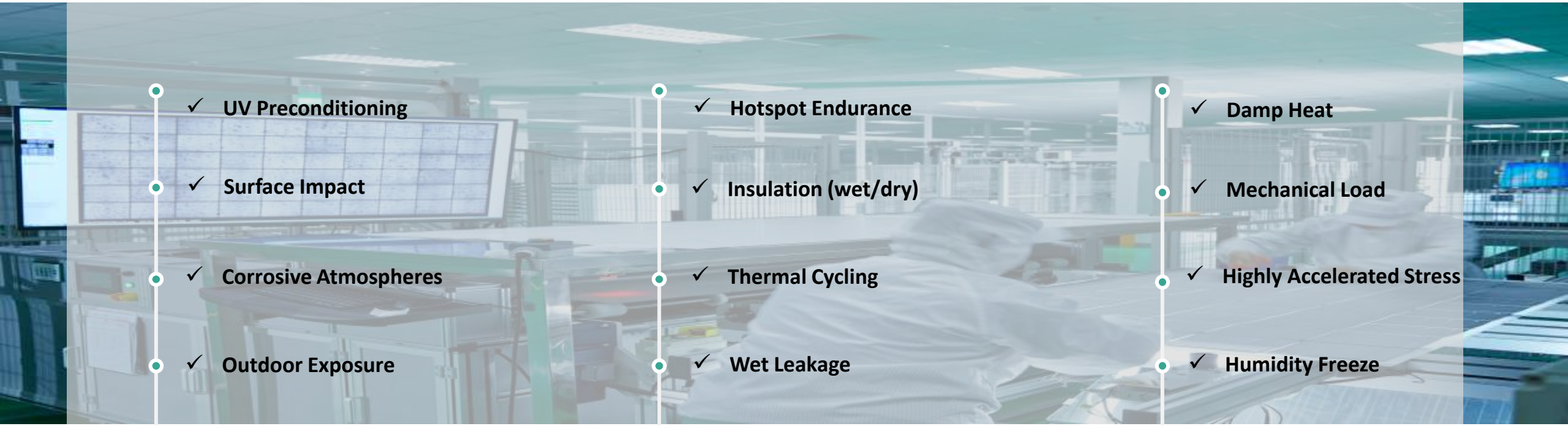


PV Cells | PV Modules | Energy Storage | Renewable Energy System

Rigorous Testing Ensure High Quality

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

Excellence in Reliability

Phono Solar

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 DNV-GL, 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 three 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.



04 Project Reference

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



35 MW

Veprek, Czech Republic


Phono® Solar
5 MW
Galten, Denmark



6 MW
Trecasali, Italy


Phono Solar
8.5 MW
Nauroth, Germany


Phono Solar
6.5 MW
Dnipropetrovsk Region, Ukraine


Phono Solar
28 MW
Jekins, Georgia, USA


Phono Solar
2.2 MW
Hrazdan, Armenia


Phono® Solar
14 MW
North Carolina, USA


Phono Solar
36 MW
Various Sites, Las Turcas, Pitio, Chile


Phono Solar
20 MW
Tsukuba, Japan


Phono Solar
1.02 MW
Northern Victoria, Australia


Phono Solar
3.8 MW
Northern Victoria, Australia


Phono Solar
60 MW
Perak, Malaysia


Phono Solar
1.1 MW
Kangwon , Korea


Phono Solar
80 MW
Zhejiang, China


Phono® Solar
50 MW
Jiangsu, China


Phono Solar
THANK YOU!
SHARE THE SUN, POWER THE FUTURE
www.phonosolar.com