

# Power Beyond Solar

Leading the way in smart PV and energy storage solutions and  
facilitating the transformation of new power systems for a net-zero future





**Solar Energy for All**





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# Company Profile



Founded in 1997, Trina Solar Co., Ltd. (stock symbol: Trinasolar; stock code: 688599) is mainly engaged in PV products, energy storage, system solutions and digital energy service. On June 10, 2020, Trinasolar was listed on the Science and Technology Innovation Board (STAR Market) of the Shanghai Stock Exchange (SSE). It is the first PV and energy storage company that has gone public on the STAR Market providing PV products, energy storage, system solutions and digital energy service. In 2025, Trinasolar is undergoing a strategic transformation toward integrated solutions. Focused on customers and guided by scenarios, Trinasolar is integrating full value-chain capabilities and embedding digital and AI technologies, to serve various application scenarios, including distributed, centralized, and emerging energy application cases. By enhancing coordination across generation, grid, load, and storage, the company offers highly targeted, differentiated solutions that seamlessly integrate products, solutions, services, and financing. We are committed to leading the way in smart PV and energy storage solutions and facilitating the transformation of new power systems for a net-zero future.

Four major businesses: 1) PV Products: R&D, production and sales of PV modules; 2) Energy Storage: A wide range of energy storage solutions for utility-scale power plants, commercial and industrial applications, and residential use; 3) System Solutions: including trackers, distributed generation systems, centralized power plants, and other related businesses; 4) Digital Energy Service: comprising new energy O&M services, on/off-grid microgrids, solar-storage-charging integration, solar-storage-load coordination, virtual power plants, electricity trading, and other services.

With innovation-driven development as its most important strategy and core driving force, Trinasolar has established a comprehensive and leading science and innovation system. Its State Key Laboratory (SKL) has so far set or broken 35 world records in PV cell conversion efficiency and module output power. Trinasolar ranked among China's Top 500 Enterprises in 2023 and was selected as one of the Top 100 Energy Transition Innovators by Reuters, standing out as the only Chinese company on the list. It was also included in the 2023 Forbes China ESG Innovative Enterprise list. The company has received a 100% financing rating from Bloomberg New Energy Finance (BNEF) multiple times. It has consistently been listed as a BNEF Tier 1 PV module manufacturer and has topped the Tier 1 energy storage manufacturer list for six consecutive quarters since its launch in January 2024. Trinasolar has also been featured in the Fortune China 500, Forbes Global 2000, Forbes China's Top 50 Most Innovative Companies, Forbes China's Top 50 Globalized Enterprises, and Fortune China's Top 500 Listed Companies. It is the only Chinese company named in Reuters' Global Top 100 Energy Transition Innovators. Trinasolar has published cutting-edge research in sub-journals of Nature, and its core products in modules, energy storage systems, and trackers have obtained Environmental Product Declarations and carbon footprint certifications. The company has received multiple Gold Awards in global Corporate Social Responsibility (CSR) assessments and has won numerous international design awards, including the Red Dot Design Award, IDEA, German Design Award, and G-Mark.

Globalization is regarded as Trinasolar's main corporate strategy. Trinasolar began to build up its global presence from its inception. The Company was founded in Changzhou, Jiangsu Province, China, where its global headquarters is based. In 2022, Trinasolar established its international headquarters in Shanghai. It actively strengthened the building of global teams. In recent years, the Company has recruited international high-level management and R&D talents from more than seventy countries. It has set up regional headquarters in Zurich (Switzerland), Silicon Valley and Miami (USA), Singapore, and Dubai (UAE), offices or branches in Madrid, Mexico, Sydney, Rome, etc., as well as manufacturing bases in Indonesia and UAE, exploring a new model for glocalization and promoting localization operation for the cooperation partner in U.S., with operations in more than 180 countries around the world. By the end of 2024, its cumulative shipments of PV modules had exceeded 260GW, which is close to the installed capacity of 12 Three Gorges Dam power stations and equivalent to the carbon reduction effect of planting 19.1 billion trees worldwide. The total shipments of 210mm modules have consistently ranked first globally.



**NO.1**  
210mm module  
global shipments



**No.1**  
Perovskite solar cell  
patent applications



**180+**  
Countries



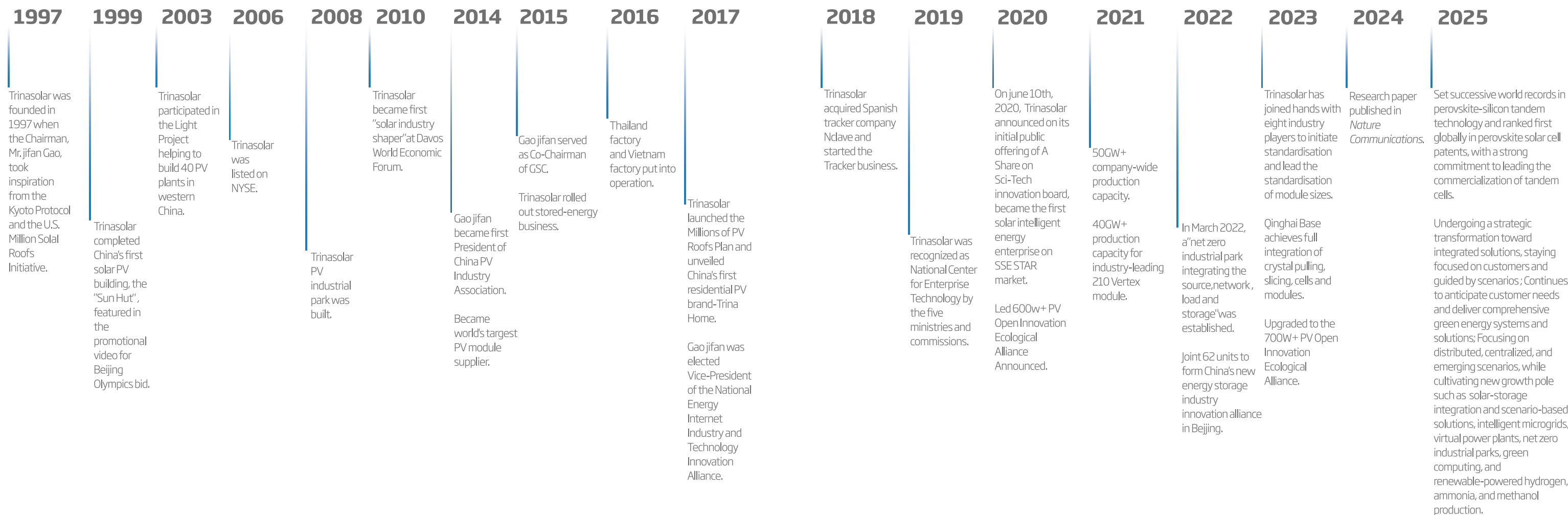
**70** Countries  
Global employees



**7**  
Global and  
regional headquarters



# Milestones







## Globalization

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### Global and Regional Headquarters

- Changzhou, China (Global Headquarters)
- Shanghai, China (International Headquarters)
- Miami, USA
- Silicon Valley, USA
- Dubai, UAE
- Switzerland
- Singapore

### Sales and Operations Agencies Worldwide

- Beijing, China
- Abu Dhabi, UAE
- India
- Republic of Korea
- South Africa
- Germany
- UK
- Spain
- Italy
- Mexico
- Colombia
- Brazil
- Chile
- Turkey
- Japan

### Manufacturing Bases Worldwide

- Changzhou, Yancheng, Suqian, Yiwu, Chuzhou, Huai'an, Xining, Yangzhou, Deyang, and Inner Mongolia, China
- Indonesia
- UAE
- Brazil
- Spain
- Saudi Arabia



# Financial Soundness



2024  
Operating income

**RMB 80.282 billion**



2024  
Total Assets

**RMB 123.935 billion**



2024  
Total Module Shipments

210mm module	<b>170</b> <sup>NO.1 Globally</sup> <sub>GW+</sub>
Tracker	<b>27</b> <sub>GW+</sub>
Storage	<b>10</b> <sub>GWh+</sub>





  
Forbes Global 2000

  
Boston Consulting Group  
Global Tech Challenger  
Top 100

  
Fortune China  
Top 500

  
Forbes (China) Top 50  
MULTINATIONAL COMPANY  
In China

  
China Green Factory

  
China Industry Award

  
Nation Technological  
Invention Award

  
100% Bankability  
World's Most Bankable  
Module Brand

  
China's Industry Top 500

  
United Nations Blue Sky  
Award for  
Leading Technology

  
Red Dot Design Award

  
PV Module  
Reliability Scorecard  
Top Performer

  
REUTERS  
Top 100 innovator  
For Energy Transit

  
Forbes China Top 50  
Sustainable Development  
Industrial Enterprises

  
Forbes China ESG  
Innovative Enterprise  
Selection List

  
2023 Bloomberg Green  
ESG 50 list Bloomberg  
Green ESG-Enterprises

## Brand Reputation

Trinasolar consistently adheres to six key strategies: innovation, branding, globalization, platform development, smart technologies, and synergy between the financial and industrial sectors. The company is driving industry growth in terms of standards of innovation, economic returns, product quality and environmental safety. Thanks to its outstanding technical innovation capabilities, the unparalleled extent of its global expansion, and its contribution to the healthy development of the industry, Trinasolar has built a peerless brand reputation and collected numerous domestic and international awards.





## Innovation Platform

Trinasolar has set or broken world records 35 times in solar cell conversion efficiency and module output power. The company has also been honored with a series of prestigious awards, including the China Industry Award for Industry—known as the “Oscar” of the industrial sector and the highest honor in the field—making it the only company in the photovoltaic industry to receive this distinction, as well as the National Technological Invention Award and the China Patent Silver Award.

In June 2024, Trinasolar published a paper in Nature Communications, an international top academic journal, proposing a solvent engineering method for scalable fabrication of perovskite/silicon tandem solar cells in the air for the first time.

Trinasolar is the only Chinese company selected for Reuters’ Global Top 100 Energy Transition Innovators. It has also been recognized in major domestic and international innovation awards, including the Forbes China Top 50 Sustainable Industrial Enterprises, the Forbes China ESG Innovative Enterprises, the Forbes China 50 Most Innovative Companies, and the Top 10 New Energy Technology Innovation Enterprises.



# R&D Capabilities

Rely on National Enterprise Technology Center,Trinasolar has increased its R&D investment, established an efficient and productive R&D innovation management model, and actively promoted the strategy of“going global and bringing in” to attract talents. It has established partnerships with outstanding enterprises and universities both domestically and abroad in an open and cooperative manner, and leveraged the advantages of multiple parties to tackle bottleneck problems in industry technology. To date,Trina-solar has undertaken and participated in 80 projects such as National 863 Program,National 973 Program, National Key R&D Projects and Provincial Science and Technology Commercialization, etc. Trinasolar’s SKL has set or broken 35 world records in terms of PV cell conversion efficiency and module output power.






By the November 2024, Trinasolar has filed more than 6600 patents and software copyrights, and has been granted more than 3000 patents, continuing to be the leading position in China’s PV and energy storage industry. Meanwhile, the compa-ny has led Chinese PV and energy storage enterprises to partici-pate in the development of international standards and become the innovation leader and standard setter in the global solar industry.





## Formulation of Standards

-  Industry standards led on or participated in **230**
-  Standards issued **155**
-  First to propose and publish **IEC international standards**

## Laboratory Accreditations

-  World's first **TÜV Rheinland IEC certified witness test laboratory**
-  World's first **CNAS accredited test laboratory**
-  Industry's first **TÜV SÜD TMP Witness Test Laboratory**
-  CQC's first **Storage WMT Witness Test Laboratory**
-  CQC's first **UL1642 Witness Test Laboratory**

## R&D Results

-  Patent and software copyright applications **6700+**
-  Granted patents **3000+**

## Industry-University-Research Collaborations

-  **Fudan University**
-  **IES-UPM** (The Institute of Solar Energy at Universidad Politécnica de Madrid)
-  **A\*STAR**
-  **Nanyang Technological University**



# New Leading Technology



## 210 Vertex Ultra-High Power modules



210mm silicon wafer



Multi-busbar (MBB)



Innovative arrangement and nondestructive cutting mode



High-density packing



## n-type i-TOPCon large-scale mass production



National Key R&D Programme projects



Patents of cells and modules **500+**



Maximum module power up to **760W**



## Advanced HJT technology reserves



Working on **863 national projects**



Patents applied for **30+**



highest efficiency **27.08% (the new world record)**



## Perovskite/Silicon Tandem Module Technology Leadership



Patent applications **481** NO.1 Globally



Lab efficiency of large size two-terminal tandem cells **30.6%**



World's first **841W Perovskite/Silicon Tandem Module** of 210mm standard industrial size

2011-2025  
World records

for PV cell efficiency & module output





# Our Business



## PV Products

Research and Development

Production

Sales of PV modules



## Energy Storage

A wide range of energystorage solutions forutility-scale powerplants, commercial andindustrial applications,and residential use



## System Solutions

Trackers

Distributed generation systems

Centralized power plantsand other related businesses



## Digital Energy Service

New Energy O&M Services

New Energy PowerGeneration and Other Businesses



# Vertex 210 Ultra-High Power Modules



## Ultra-High Power Modules Significantly reduce LCOE

Featuring the core advantages of high power, high efficiency, high energy yield and high reliability, Trinasolar's Vertex modules significantly reduce LCOE of power stations and are widely used in all scenarios, including utility, C&I and residential projects. Compared with regular modules on the market, Vertex modules can reduce LCOE by 4.1%, and BOS costs by up to 6% based on report of third party. The Vertex modules also passed the static mechanical load test and five other rigorous tests, and provide excellent mechanical performance in extreme weather conditions such as snowstorms and gale-force winds.

Trinasolar has been ranked as a Top Performer by PVEL (PVEvolution Labs) for eleven years in a row and named a RETC Overall High Achiever for four consecutive years. The Company has been on the list of BNEF Tier1 PV module manufacturers for many years.



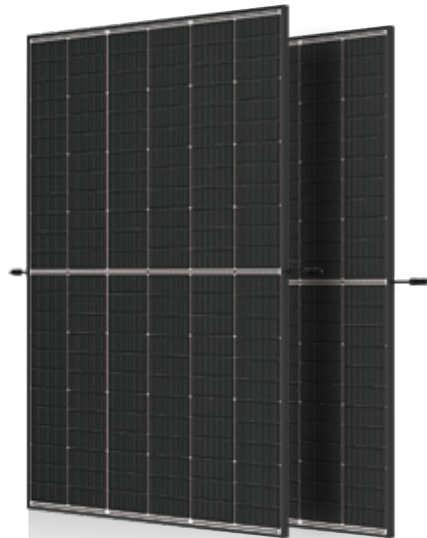
**NO.1**

World's largest 210mm  
module shipment

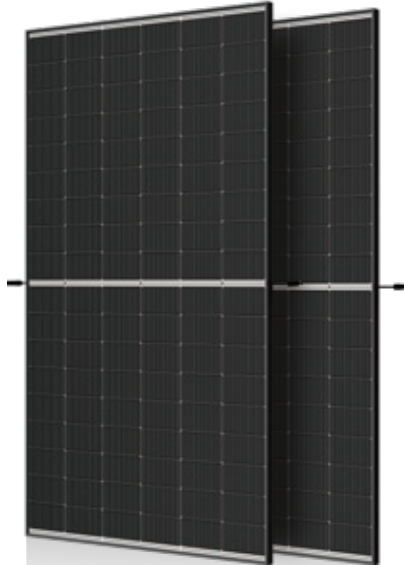


**500+**

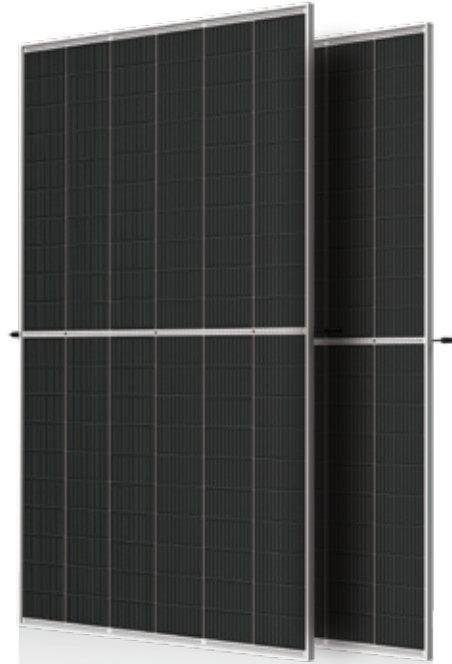
Cell and module patents



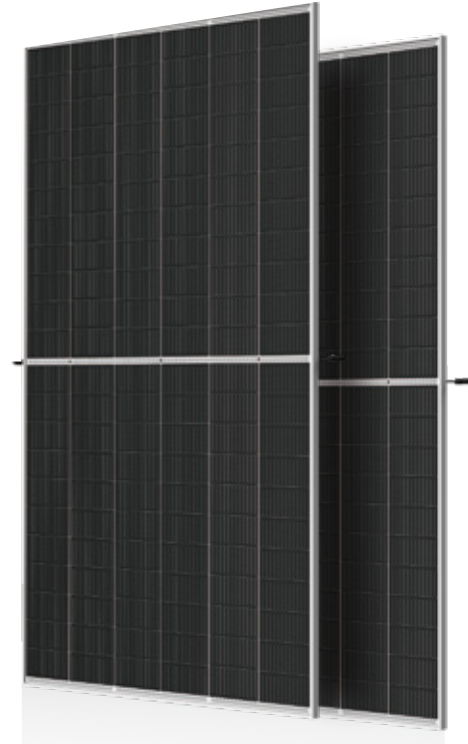
Vertex S+  
460W



Vertex S+  
515W



Vertex N  
630W



Vertex N  
720W



wide product range for multiple settings



By the end of 2024,  
210mm modules had been shipped

**Over 170GW**

Business around the world includes the full  
range of large-scale ground power plants  
and distributed scenarios.


By the end of 2024




# TrinaTracker




## A leading smart tracker solution provider

**3%-8%**  
Higher power generation with smart tracking control system

**2.4%-4.5%**  
Lower electricity cost per watt-hour compared with traditional trackers

**30%**  
Adjustable tilt angle enabled by patented spherical bearing

**High safety and stability**  
Wide applications, resilient to extreme weather conditions

## Global project design, capacity planning and service

**27GW+**  
Global volume

**10GW+**  
Production capacity

**20YEARS**  
Industrial experience

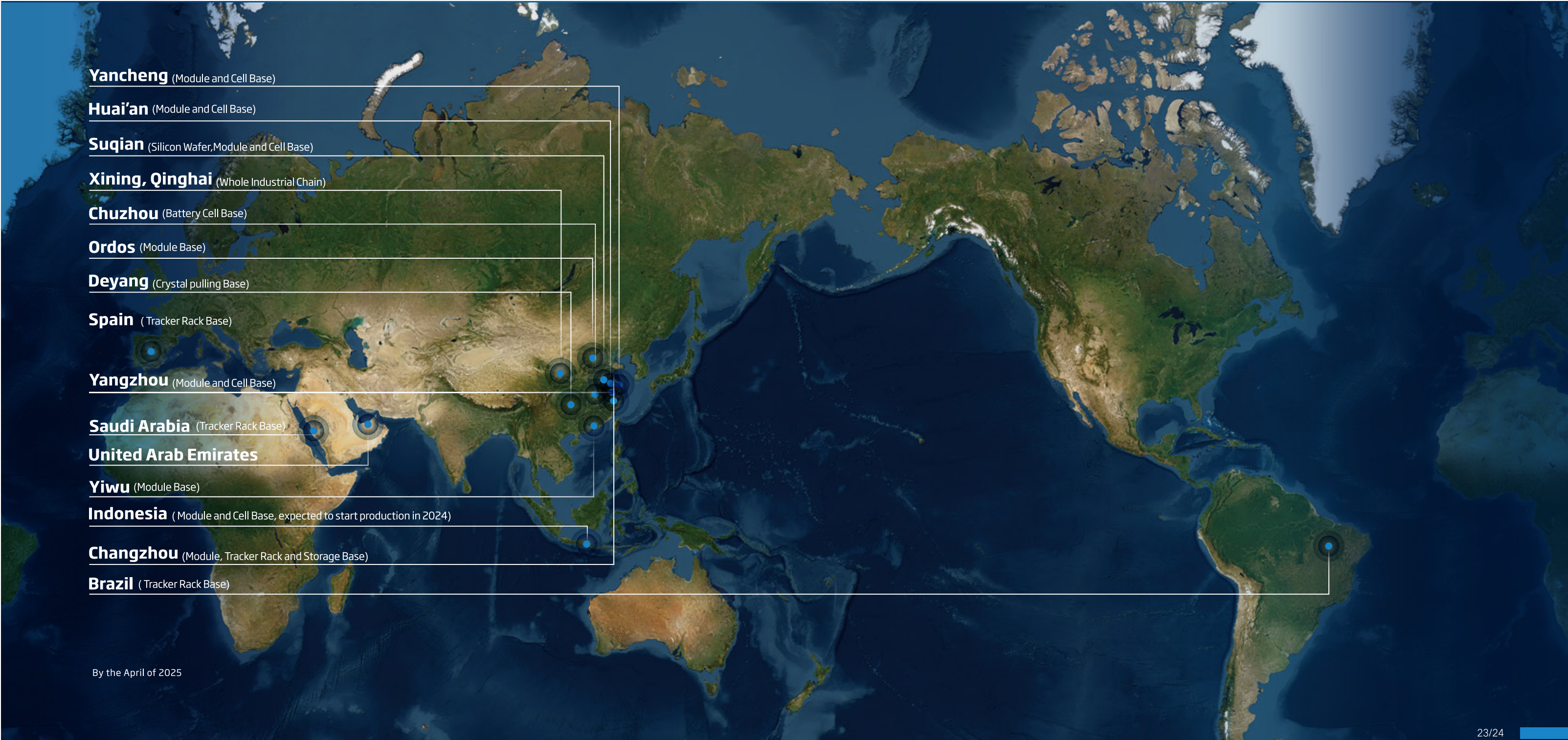
**60COUNTRIES**  
Projects across the continents

By the end of 2024



# Base Information

As one of the founders of the 700W+ Eco-Alliance for Open PV Innovation,Trinasolar has built eight 210mm module production bases (i.e., Changzhou, Yangzhou,Yancheng, Suqian, Huai'an, Yiwu, Ordos, and Qinghai) in China.



By the April of 2025

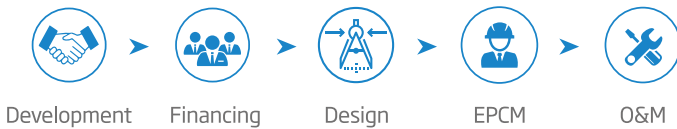


# Utility Projects & EPCM

Against the new historical backdrop of price parity,Trinasolar has remained true to its original aspiration and committed to leading the way in smart solar energy solutions for a net-zero future,continuing to strengthen its business system centering on core products such as PV modules and batteries, expanding solutions for the entire PV system, and providing better services to end users. After over two decades of unremitting efforts,Trinasolar has become a world-leading developer of PV power plants, providing clients with development,financing,design,construction,operation and maintenance, and one-stop system integration solutions.



## One-stop Power Station Solutions





# A Vertically Integrated & Bankable BESS Solution Provider

Trinastorage is a business unit of Trinasolar, a company with 28 years of solar experience. Trina Storage combines deep technical expertise, quality, safety and agility to meet the unique needs of every customer. We help our clients to build large scale solar+storage and standalone storage projects that are highly bankable, highlyflexible,and cost-competitive.



## Vertical integration

Capabilities set up along the whole industrial chain:

- R&D capability** with strong talent team, advanced research platforms and testing facilities
- Manufacturing capability** for comprehensive product range
- Integration capability** of pack, rack and product



## Bankability

- Ranked among Top 5 bankable system integrators by Bloomberg NEF
- Recognized on BloombergNEF Q1& Q2 2024 Tier-1 Storage Integrators list.
- Passed DNV Technical Due Diligence Test
- High technical bankability with qualified grid services
- Financial bankability with stable financial operation capability



## Key advantages

- Always Customer Orientated
- Excellent Product and fully wrapped System Solution
- Outstanding Project Delivery Capability
- Reliable service offering



## Elementa 2

- 4.073MWh/ 5.015MWh @ 1500V DC
- Trina Storage Elementa 2 is a new generation, cutting-edge, grid-scale battery storage system built from the ground up using Trina ´s vertically integrated LFP cells. The new design incorporates advanced features including a unique pack design, precise thermal management enabled by smart liquid cooling technology, and a robust fire mitigation and suppression system
- Engineered for adaptability, rapid deployment, and smooth operational and maintenance processes, the product not only minimizes project costs but also enhances overall system performance



### High-Efficiency ESS



### Intelligence



### Highly Integrated & Flexible Solution



### Comprehensive Safety





# New Scenario-Based Solutions

## Focused on Customers, Oriented by Scenario

### Green Computing Power Solutions

Building Green Data Centers with Continuous PUE Optimization for Enhanced Energy Efficiency



Green



Intelligent



Secure



Convenient



### Sustainable Buildings and Construction

**BIPV Product Solutions**

- Standardized Products
- Customized Design

**Comprehensive Design Consulting**

- Technical Design
- Solution Planning

**Project-Specific Solutions**

- EPC Services
- Turnkey Projects

### Net-Zero Industrial Park Solution

Carbon Reduction as the Core, Green Electricity as the Key Lever

Energy Management System

Smart Campus Operation Center

Integrated Solar and Storage Solutions

Carbon Management Services



### Sustainable Transportation Solutions

**Highway Transportation**

- Service Areas
- Toll Stations

**Rail Transit**

- Railway Infrastructure
- Rolling Stock


**Port Terminals**

- Inland Ports
- Marine Terminals


**Civil Aviation**

- Airports
- Work Zones


### Wind-Solar-Hydrogen-Ammonia Integrated Solutions




Wind Power




Photovoltaics



Hydrogen Production



Hydrogen-Ammonia Conversion



Ammonia Synthesis Technologies



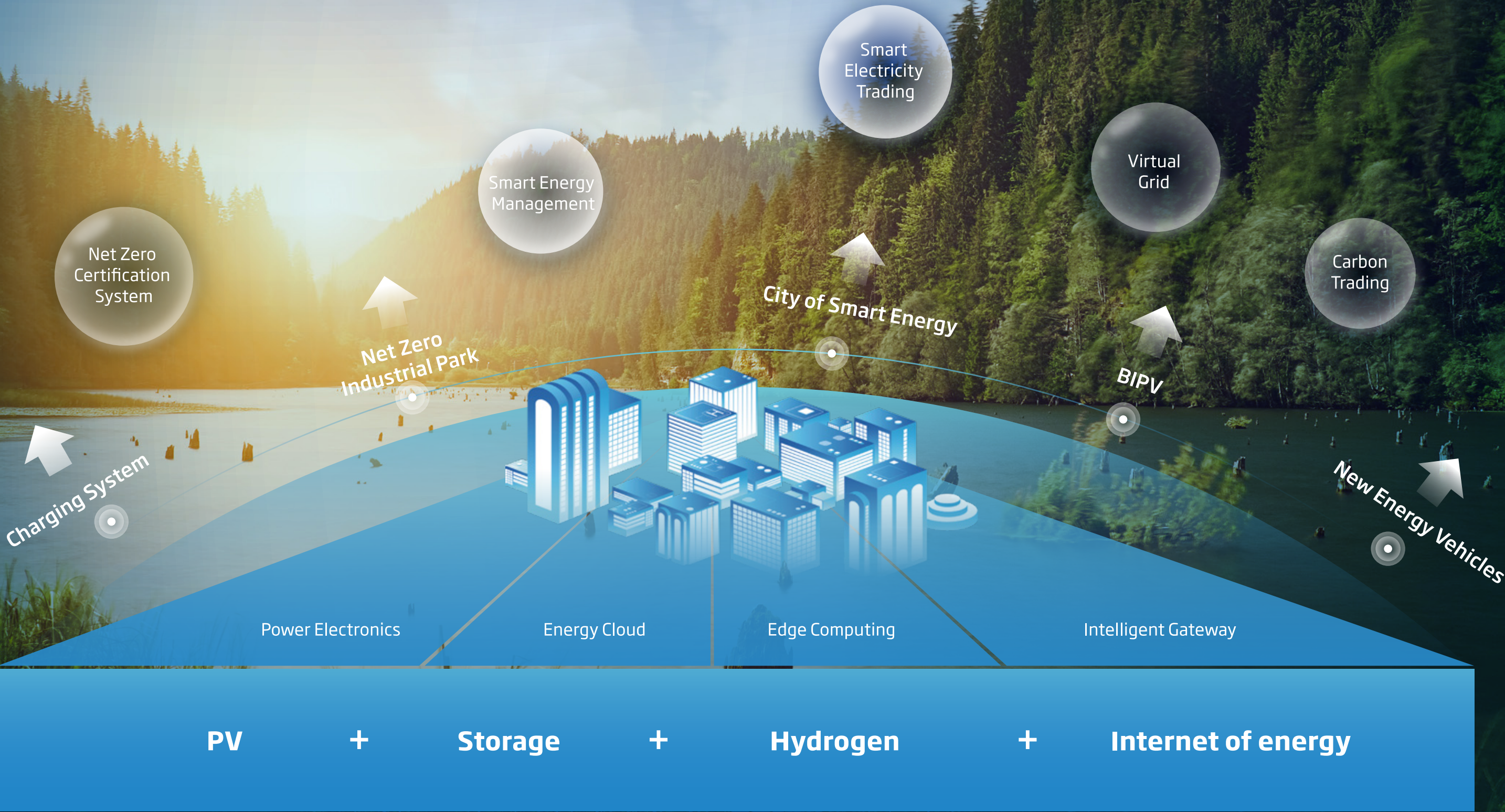
### Smart Microgrid Solutions for Islands, Off-grid Areas, and Mining Sites

- Power supply reliability enhancement
- Energy cost reduction and environmental burden mitigation
- Electrification support for off-grid regions
- Energy system resilience improvement

- Economic feasibility and scalability
- Intelligent control and dispatch system
- Design adaptability to complex environments
- Rapid self-healing and protection mechanisms
- Multi-energy complementarity and energy storage technology



# Building a Net-Zero Energy System





Solar Energy for All

million kWh

351,000

Green power generation

CO<sub>2</sub>emissions reduced by

349.95  
million tons

SO<sub>2</sub>emissions reduced by

10.53  
million tons

Smoke emissions reduced by

95.47  
million tons

Equivalent to planting

19.1  
Billion trees



Biodiversity protection at a solar farm in Dorset, UK

Donating PV modules to the Coral Academy of Science Las Vegas (CASLV)

Donating modules for an aid project in Libya

Haiti-Solar power lights the way

Donating PV modules to Msafiri Primary School in Tanzania

UN Conference on Sustainable Development (Rio de Janeiro, June 2012)

Donating PV modules to an earthquake-hit region in Nepal

Zhenxing international Exchange Scholarship

Siyuan Solar Entrepreneurs Foundation

supplying PV modules to the Child Development Center in Thailand

Potable Water Project in Ya'an

Green Benefits - Mekong-Lancang Cooperation Photovoltaic Off-Grid Power Generation Project

Social Responsibility

While achieving its own development, Trinasolar never forgets to give back to the society, or to undertake the responsibilities and obligations of corporate citizenship around the world. In May 2024, Trina Solar joined the United Nations Global Compact (UNGC). It won the Gold Award multiple times in the global Corporate Social Responsibility (CSR) assessment by EcoVadis, a third-party independent assessment agency based in Europe. We committed to adhering to more international and high standards of sustainability, and to work with global participants to advance broader social goals and build a more sustainable future.

In 2024, Trinasolar received the ISO 37301 compliance management system certification issued by BSI, which highly recognizes Trinasolar's past management system. Constantly promoting the deeper and more solid progress of compliance management in special fields is the key to the rapid development of an enterprise.

Trinasolar, together with WWF, IBM and other international organizations, domestic and international enterprises, industrial parks and research institutions, launched the "Clean Energy for Earth" joint initiative, aiming to call for the participation of all sectors of society who care about climate change and are passionate about low-carbon development, raise people's awareness of using clean energy, and contribute to a "carbon-neutral" future.

In 2024, the rooftop photovoltaic project of the Child Development Center in Thailand, supported by Trinasolar, was completed. Altermim Corporation jointly constructs the project and volunteers from the Faculty of Engineering at Chulalongkorn University. The project is expected to generate 7.92MWh of electricity annually, saving 32,400 baht in electricity per year. Trinasolar, as a benchmark company in the tracker industry, built its first tracker project in Kenya, Africa. Our employees worked day and night to explore the geological conditions of the complex terrain, explain PV knowledge to local villagers, employ local villagers in the villages where the projects are located, provide jobs, and also help local villagers participate in the construction of PV projects through technical training. By 2022, Trinasolar's power plants in Kenya have provided 120,450 MWh of green electricity per year to 22,000 households. We have provided more than 120 jobs in the region and have conducted related technical training for more than 100 local workers.





# Core Values

Trinasolar People aspire to a mission of “Solar Energy for All,” which we have distilled into a brand-new set of company core values for the 3.0 era, which we call our CODES: Focus On The Customer, Persist in Open Innovation, Persevere through Dedication and Hard work, Strive for Excellence, Share the Responsibility Create and Share Value Together. These are the guidelines all Trinasolar People follow, and the “secret CODE” to our continued development and progress toward the future.



Focus On  
The **C**ustomer



Persist In  
**O**pen Innovation



Persevere Through  
**D**edication  
And Hard Work



Strive For  
**E**xcellence



**S**hare The Responsibility And  
Create And Share  
Value Together



# Global Partners





# Vertex 210 Ultra-High Power Modules



**Abu Dhabi**  
Al Dhafra 800MW project One of the largest single PV power station



**Atacama, Chile**  
230MW power station project



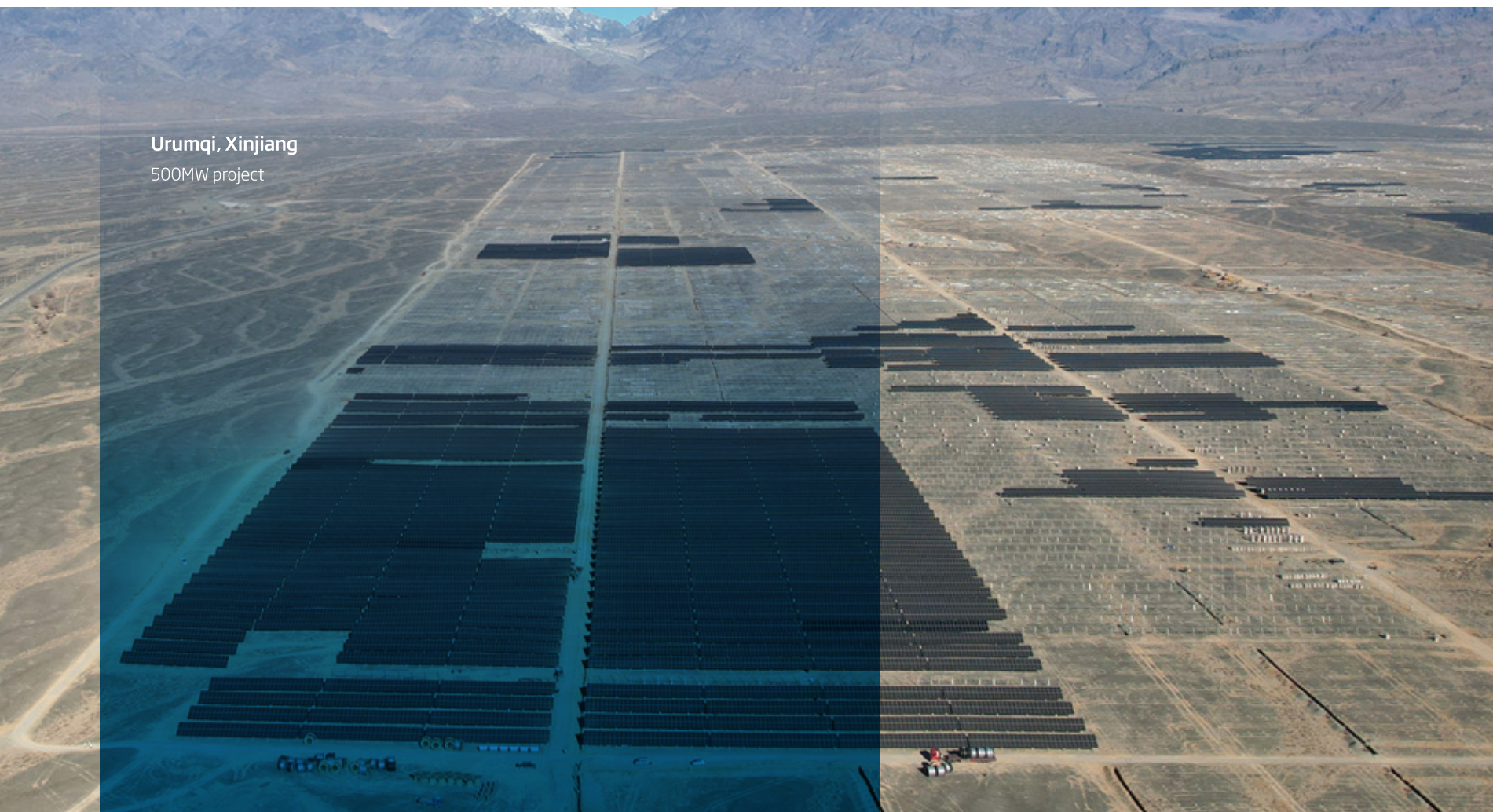
**Bavaria, Germany**  
125MW “Energy Town” project

Source:MaxSolar



**Yemen**  
70MW project





Urumqi, Xinjiang  
500MW project

## Vertex 210 Ultra-High Power Modules



Hainan Prejecture, Qinghai  
500MW large-scale PV project



Wanning, Hainan  
100MW PV power project



Caipeng Village, Tibet  
50MW project



# Smart Energy Storage Solutions

Auchteraw, UK

50MW / 100MWh energy storage project for ancillary services



North Tawton, UK

30MW / 71MWh energy storage project for ancillary services

Birmingham, UK

25MW/58MWh energy storage project



Berkeley, UK

25MW/56MWh independent energy storage project



# Smart Energy Storage Solutions

Xinjiang, China  
200MW/800MWh energy storage system project



Qinghai, China  
135MW / 540MWh grid-scale energy storage project



Gansu, China  
80MW / 320MWh grid-scale energy storage project



Qinghai, China  
75MW/300MWh shared storage project



# Emmerging Scenerio Solutions



Trinasolar and Qinghai Pioneer a New Green Model of Integrated Solar Power and Computing



Trinasolar and Qinghai Pioneer a New Green Model of Integrated Solar Power and Computing



Huai'an to Set a New Benchmark for Smart Energy Solutions



Dafeng Net-Zero Industrial Park





**Hainan, Qinghai**  
602 MW Ultra-High-Voltage PV Project



**Santa Luzia, Brazil**  
519.4MW Vanguard 1P Project



**Kaitaia, New Zealand**  
39.4 MW Vanguard 2P Project

# TrinaTracker

**Jimsar, Xinjiang**  
100MW PV power station Project







**Liulin, Shanxi**  
100MW Arable Mountain Treatment and Agricultural PV Complementary PV Power Station Project



**Libo, Guizhou**  
220MW Agricultural PV Power Station EPC Project



**Wuwei, Anhui**  
100MW Fishery-solar PV Power Station Project



**Tarim Oilfield, Xinjiang**  
100MW PV Power Station Project

# Utility Projects



# Utility Projects

**West Raynham, UK**  
50 MW ground-mounted power station project



**Olivares, Spain**  
54.4 MWp ground-mounted power station project



**Miyagi Kurokawa, Japan**  
28.81 MWp ground-mounted power station project

**Alameda, Chile**  
10.5 MWp ground-mounted power station project





The TrinaSolar logo, featuring the word "Trina" in blue with a red dot above the 'i', followed by "solar" in a lighter blue font.

**Trina**solar

**Solar Energy for All**

