

Power Beyond Solar

Leading the way in smart solar energy solutions
for a net-zero future



Solar Energy for All



Power Beyond Solar

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Company Profile



Founded in 1997, Trina Solar Co., Ltd. (stock symbol: Trina Solar; stock code: 688599) is mainly engaged in the research and development, production and sales of PV modules; power stations and system products; PV power generation, operation and maintenance services; development and sales of intelligent microgrids and multi-energy systems, as well as the operation of energy cloud platforms, etc., committing to lead the way in smart solar energy solutions for a net-zero future.

On June 10, 2020, Trina Solar was listed on the Science and Technology Innovation Board (STAR Market) of the Shanghai Stock Exchange (SSE). It is the first PV company that has gone public on the STAR Market providing PV products and systems as well as smart energy.

With innovation-driven development as its most important strategy and core driving force, Trina Solar has put in place a comprehensive and leading science and innovation system. So far, Trina Solar's SKL has set or broken 25 world records in terms of PV cell conversion efficiency and module output power.

Going forward, all the employees of Trina Solar will be guided by the Company's core values: "Focus on the Customers, Persist in Open Innovation, Persevere through Dedication and Hard Work, Strive for Excellence, Share the Responsibility, Create and Share Value together." By fulfilling its mission of "Solar Energy for All", Trina Solar aims to bring together the strengths of all the stakeholders with a cooperative and open attitude to lead the development of the industry, and make contributions to global energy conservation, emission reduction and sustainable development.



120GW+

Shipments
As of the third quarter of 2022



9.5GW+

Grid-connected



150+

Regions



23,000+

Employees

Milestones

Year	Milestone
1997	Trina Solar was founded in 1997 when the Chairman, Mr. Jifan Gao, took inspiration from the Kyoto Protocol and the U.S. Million Solar Roofs Initiative.
1999	Trina Solar completed China's first solar PV building, the "Sun Hut", featured in the promotional video for Beijing Olympics bid.
2003	Trina Solar participated in the Light Project helping to build 40 PV plants in western China.
2006	Trina Solar was listed on NYSE.
2008	Trina PV industrial park was built.
2010	Trina Solar became first "solar industry shaper" at Davos World Economic Forum.
2012	State Key Laboratory of PV Science & Technology was established in Changzhou headquarters.
2014	Gao Jifan became first President of Chairman of China PV Industry Association.
2015	Gao Jifan served as Co-Chairman of GSC.
2016	Trina Solar rolled out stored-energy business.
2017	Trina launched the Millions of PV Roofs Plan and unveiled China's first residential PV brand-Trina Home.
2018	Trina Solar launched Energy IoT brand-TrinaIoT.
2019	Trina Solar acquired Spanish tracker company Nclave and started the Tracker business.
2020	On June 10th, 2020, Trina Solar announced on its initial public offering of A Share on Sci-Tech innovation board, became the first solar intelligent energy enterprise on SSE STAR market.
2021	50GW+ company-wide production capacity.
2022	Cumulative module shipment exceeded 100GW.



Globalization

Globalization is regarded as Trina Solar's main corporate strategy. Trina Solar 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, Trina Solar 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 sixty countries and regions. It has set up regional headquarters in Zurich, Fremont (USA Silicon Valley), Miami, Tokyo, Singapore, Dubai, offices or branches in Madrid, Mexico, Sydney, Rome, etc., as well as manufacturing bases in Thailand and Vietnam with operations in more than 150 countries and regions around the world.

Global and Regional Headquarters

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

Manufacturing Bases Worldwide

- Changzhou, Yancheng, Suqian, Yiwu and Xining, China
- Vietnam
- Thailand

Financial Soundness



Three quarters of 2022
Operating Income
USD 8.97 billion

Y-o-Y Growth
86.15% 

Three quarters of 2022
Net Income Attributable to the Parent
USD 370.11 million

Y-o-Y Growth
107.74% 

Total Assets
USD 12.96 billion

Y-o-Y Growth
32.34% 

Three quarters of 2022
Total Module Shipments
28.79 GW

Y-o-Y Growth
71.37% 



Brand Reputation

Trina Solar 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, Trina has built a peerless brand reputation and collected numerous domestic and international awards.



Innovation Platform

Innovation is the fundamental driving force of PV towards price parity. More importantly, innovation is regarded as Trina Solar's core development strategy. Trina Solar is home to one of China's first "State Key Laboratories of Photovoltaic Science and Technology" accredited by the Chinese Ministry of Science and Technology; "New Energy Internet of Things Industry Innovation Center", an open innovation platform for research in the field of new energy Internet of Things; and "National Enterprise Technology Center" accredited by five ministries and commissions in China including the National Development and Reform Commission (NDRC). It won "the 2020 National Technology Invention Award". The innovation platform represented by "One Laboratory and Two Centers" has continuously helped the company achieve many outstanding results in innovation and promoted its innovative development.

In 2019, Trina Solar was awarded two national qualifications, namely, the "National Enterprise Technology Center" and "National Intellectual Property Rights Demonstration Enterprise". In December 2020, Trina Solar was the only company from the photovoltaic industry to be accredited by the Ministry of Industry and Information Technology as a National Technology Innovation Demonstration Enterprise. In November 2021, Trina Solar was granted the "2020 National Technology Invention Award", which is the first national technology invention award in the field of PV technology in China.


R&D Capabilities

Relying on “One Laboratory and Two Centers” (Key Laboratory of PV Science and Technology, National Enterprise Technology Center and New Energy Internet of Things Industry Innovation Center), Trina Solar 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 more than 60 projects such as National 863 Program, National 973 Program, National Key R&D Projects and Provincial Science and Technology Commercialization, etc. Trina Solar’s SKL has set or broken 25 world records in terms of PV cell conversion efficiency and module output power.



By June 30th, 2022 Trina Solar has owned a total of 1041 valid patents and software copyrights, including 330 invention patents, which is far ahead of competing enterprises in the Chinese PV industry. Meanwhile, the company has led Chinese PV enterprises to participate 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 **110**
-  Standards issued **105**
-  First to propose and publish **IEC international standards**

Laboratory Accreditations

-  World's first **TÜV Rheinland IEC certified witness test laboratory**
-  World's first U.S.-accredited **UL 61730 witness test laboratory**

R&D Results

-  Number of patent applications **2400+**
-  Proportion of invention patents **50%**

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



New world record for Frontside efficiency **25.5%**



National Key R&D Programme projects



34 patents granted



Advanced HJT technology reserves



Actual efficiency of HJT cells in mass production **24.6% or above**



Working on **863 national projects**



Patents applied for **30+**



TÜV certification of HJT products awarded in first half of 2021

As of the third quarter of 2022

2011-2022
World records

for PV cell efficiency & module output

25

Our Business



PV Products

Vertex 210
Ultra-High Power Modules
TrinaTracker



System Solutions

Utility projects
Distributed PV systems



Smart Energy

Energy storage system
Energy IoT

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, Trina Solar'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 such as snowstorms and gale-force winds.

Trina Solar has been ranked as a Top Performer by PVEL (PV Evolution Labs) for the eighth year in a row and named a RETC Overall High Achiever for three consecutive years. Trina Solar has scored 100% in the BNEF Bankability Survey for six consecutive years and ranked 'AAA', the highest category in Q2'22 and Q3'22 PV ModuleTech Bankability Ratings reports.

Wide product range for multiple settings

Compared with same-class products on the market
0.01-0.04 USD/W ▼
Lower system costs

Over 30GW
Vertex modules shipped throughout the world by June, 2022.

LCOE 1%-3% ▼
Lower LCOE



50GW+

2021 module production capacity



40GW+

Vertex 210 series production capacity



NO.1

World's largest 210mm module production scale



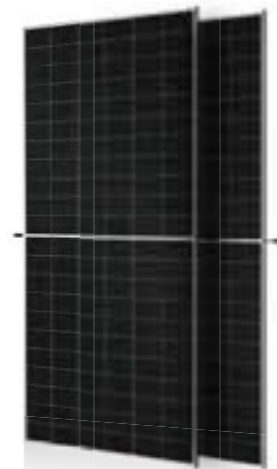
reddit winner 2022
Vertex S
435W+



Vertex S+
440W+



Vertex
510W+



Vertex
580W+



Vertex
605W+



Vertex
670W+




Vertex N
690W+


As of the third quarter of 2022


TrinaTracker



Efficiency booster in the era of grid parity

 **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

 **8GW+**
Global installations

 **5GW+**
Annual capacity

 **400+**
Tracker projects

Production Capacity

As one of the founders of the 600 W+ Eco-Alliance for Open PV Innovation, Trina Solar stands firmly on the front line of the new PV era. Trina Solar has built three main "210mm ultra-high power module Super-Factories" in Yiwu (Zhejiang province), Suqian and Yancheng (jiangsu province), a net-zero industrial park in Xining (Qing hai Province).



Utility Projects & EPCM

Against the new historical backdrop of price parity, Trina Solar has remained true to its original aspiration and committed to lead 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, Trina Solar 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.



As of the third quarter of 2022

One-stop Power Station Solutions



Leading the Energy Transition through Storage

Trina Storage is a business unit of Trina Solar, a company with 25 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, highly flexible, and cost-competitive.

A Vertically Integrated BESS Solution Provider



All-New Elementa



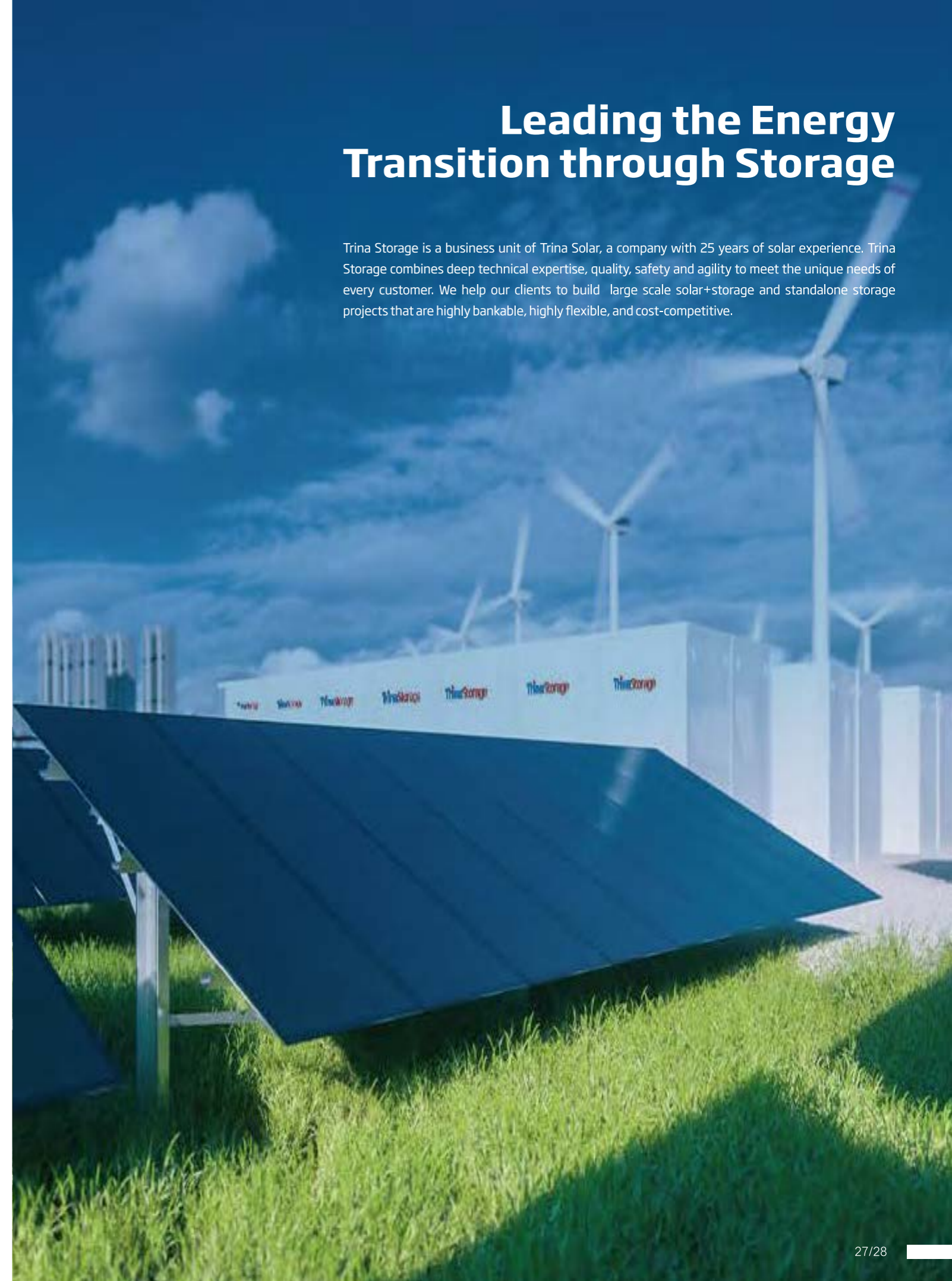
ENHANCED LIFECYCLE

Enhanced battery lifetime with over 12,000 cycles enabled by Trina's cutting-edge cell technology combined with advanced Battery Management techniques.

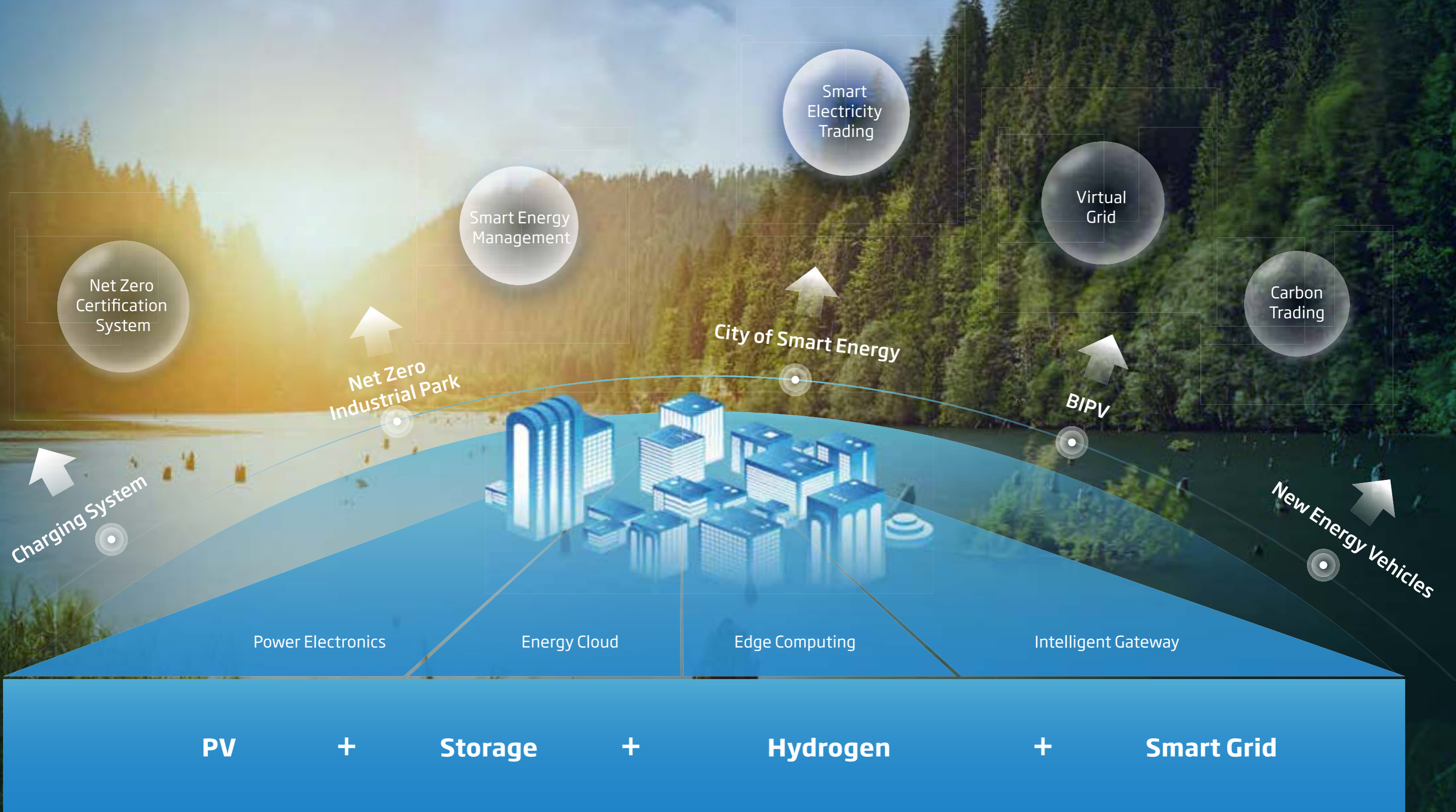


OPTIMIZED COST

Savings of up to 8% on CAPEX and OPEX compared to other Tier 1 suppliers due to the maximized efficiency throughout our value chain.



Building a Net-Zero Energy System



Solar Energy for All

million kWh

162,000

Green power generation

CO₂ emissions reduced by

161.5
million tons

SO₂ emissions reduced by

4.86
million tons

Smoke emissions reduced by

44.06
million tons

Equivalent to planting

8.9
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

Potable Water Project in Ya'an

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

Social Responsibility

While achieving its own development, Trina Solar never forgets to give back to the society, or to undertake the responsibilities and obligations of corporate citizenship around the world. As a result, it won the Gold Award twice consecutively in the global Corporate Social Responsibility (CSR) assessment by EcoVadis.

In February 2020, when COVID-19 broke out in China, Trina Solar, utilized its global presence, mobilized its global resources to purchase medical supplies and donated them to Jiangsu Charity Federation. The medical supplies were offered to the medical teams from Jiangsu Province, Shanghai Fudan Huashan Hospital and the Fifth People's Hospital to support Wuhan's fight against COVID-19. The donated medical supplies were also delivered to designated hospitals for COVID-19 treatment in Nanjing, Changzhou, Yancheng and Suqian. As COVID-19 further evolved overseas, Trina Solar donated masks and other medical supplies to Spain, Japan, Maldives, etc. In March 2022, Trina Solar launched a donation to help prevent and control the epidemic in Changzhou.

The "Green benefits - Mekong-Lancang Cooperation (MLC) photovoltaic off-grid power generation project" undertaken by Trina Solar has been completed, contributing to power development in Myanmar, Cambodia and Laos, fulfilling electricity needs of local schools and Buddhist Institutes. In March 2021, Trina Solar donated 1,050 electrical appliances to 350 households for the project of International Cultural and Tourism Resort in Wu'erhe Town, located in the West of Wu'erhe District, Kelamayi City, Xinjiang, totaling RMB 1.8 million. In August 2021, Trina Solar donated RMB 5 million to assist in the disaster relief and post-disaster reconstruction in Henan Province. In the same year, Trina Solar Siyuan-Sunshine Venture Fund donated RMB 500,000 to Ankang Charity Association for rural revitalization, industrial development and public welfare projects. In March 2022, Trina Solar conducted charitable deeds at the Kalenjin tribe in Kenya, where it worked with local government to employ villagers from five villages nearby and enable them to participate in PV project construction through technical training. Hence, the construction of three photovoltaic power plants, namely, RADIANT, ELDOSOL and KESSES were completed. Trina Solar continues to pay attention to and provide pinpoint assistance to vulnerable groups, delivering health and care to everyone in need.



Core Values

Trina People aspire to a mission of “solar for all mankind,” which we have distilled into a brand-new set of company core values for the 3.0 era, which we call our CODES: Recognition & Cooperation, 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 Trina People follow, and the “secret CODE” to our continued development and progress toward the future.



Focus On
The **C**ustomer



Persist In
Open Innovation



Persevere Through
Dedication
And Hard Work



Strive for
Excellence



Share the Responsibility
Create and Share
Value Together

Global Partners



Vertex 210 Ultra-High Power Modules



Qingtian County, Lishui, Zhejiang Province
400kW Vertex industrial/commercial distributed power project

Yulin, Shaanxi Province
100MW Vertex ground-mounted power station project

Binh Dinh Province, Vietnam
50.6MW Vertex Dam Tra O floating project



Lingshou, Hebei Province
50MW Vertex Agriculture-complementary projects

TrinaTracker

Ultra high temperature, large terrain slope

Cobra Solar Park Project, Spain
Ultra high temperature 44°C,
large terrain slope: Terrain Slope Over 12%



Hainan, Qinghai

High altitude of 3200 m, low temperatures reaching -30°C

High-altitude, low-temperature climate



Miraflores Project

Highly corrosive, 3km away from the salt mine

Highly corrosive area



Project in Clare, South Australia
Expansive clay soil, hurricane area

Expansive clay soil, high wind pressure

Utility Projects & EPCM



Agascalientes, Mexico
133 MW ground-mounted power station project



Los Llanos, Colombia
81.7 MW ground-mounted power station project



Ishinomaki, Miyagi Prefecture, Japan
14MW ground-mounted power station project



Phong Phu, Vietnam
42MW ground-mounted power station project



Norfolk, Britain
50MW ground-mounted power station project



Lianghuai, Anhui 170MW floating project



Xiangshui, Jiangsu 120MW solar aquaculture project



Yangquan, Shanxi 50MW pioneer project

Utility Projects & EPCM



Tongchuan, Shanxi Province
250MW pioneer project