



# Sustainability Beyond Products

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For the past 26 years, Trina Solar has stayed true to its purpose

## Solar Energy for All

### Our Vision

We are committed to lead the way  
in smart solar energy solutions for a  
**net-zero future**

## Sustainability Spotlights

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**Net-zero  
Operations**

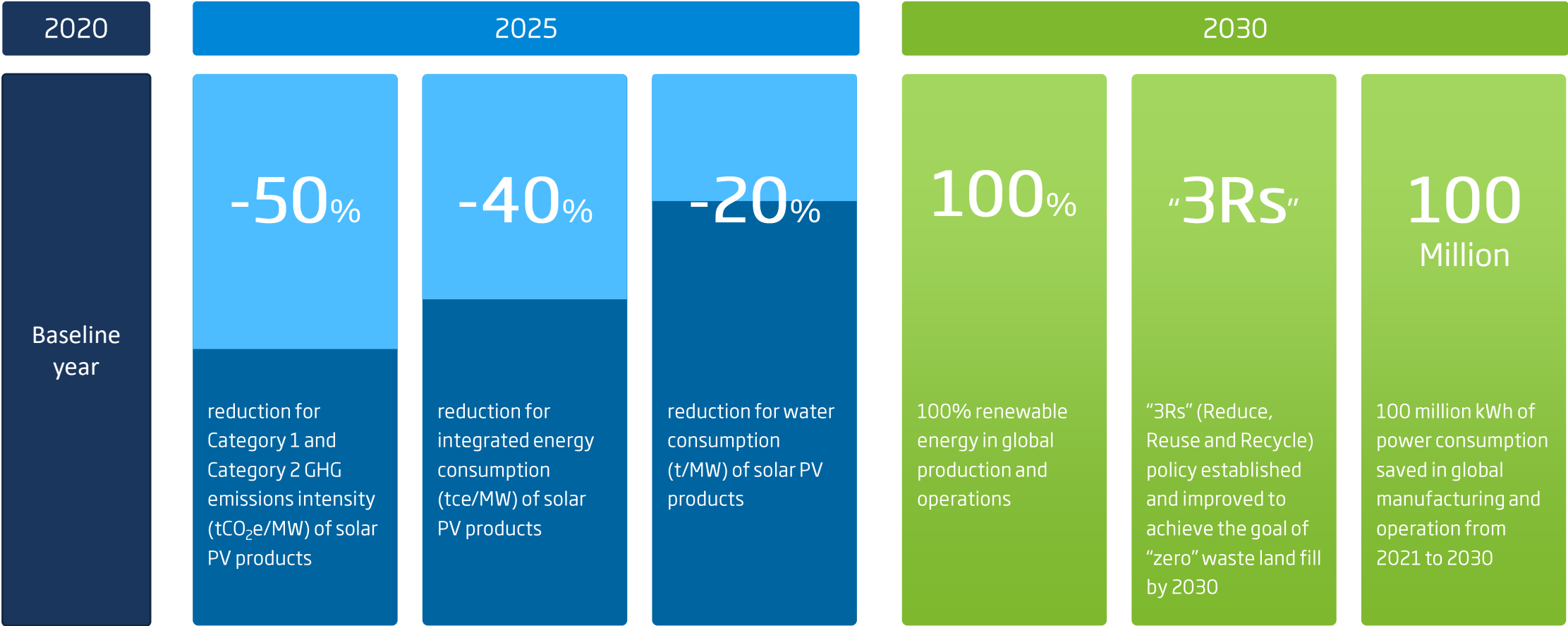
**Net-zero  
Products**

**Net-zero  
Systems**

# Net-zero Operations



# Sustainable Development Goal: 100% Renewable Energy Use in Manufacturing and Operation by 2030



Sustainable development goals are set for 2025 and 2030 against the base year of 2020.

# Decarbonizing the solar industry

## Trina Solar Green and Zero-Carbon Factories

Trina Solar Yiwu PV module factory:  
First 3<sup>rd</sup> party certified PV manufacturing plant in the world

- Product design
- Comprehensive layout of green zero-carbon supply chain
- Holistic energy and carbon management
- Latest automated production equipment
- Digital and intelligent management systems

Industry leading: Yiwu produced modules have lowest carbon emissions per unit in the manufacturing process.





# Net-zero Products





# Best Practice Example Vertex S+ and Vertex N: Using less input to produce more output

## Carbon Footprint

- Less energy & water consumption
- Less toxics & waste

## Quality / Reliability

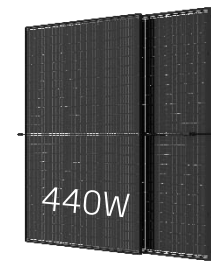
- Dual glass structure
- Longer performance & product warranty
- Higher lifetime yield (N-type i-TOPCon)

## Raw Materials

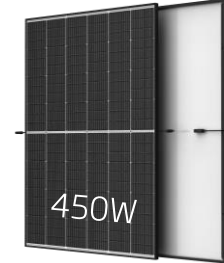
- Thinner glass
- Optimized frame
- Climatic adaptation at system level

## Circularity

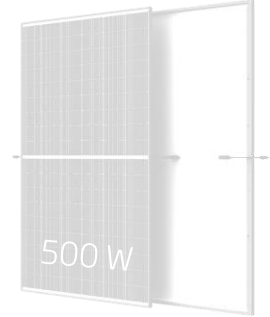
- >1kg plastics saved by replacing backsheet
- Easy separation of materials
- EOL recycling scheme



NEG9RC.27

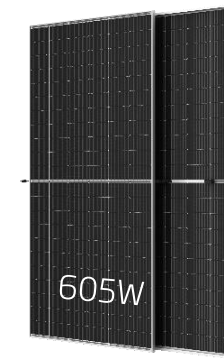


NEG9R.28

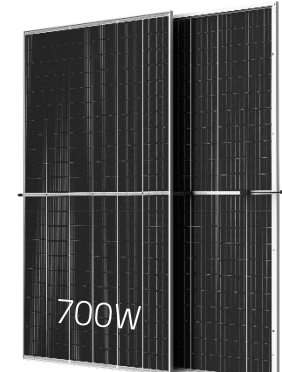


NEG18R.28

**Vertex S+**



NEG19RC.20

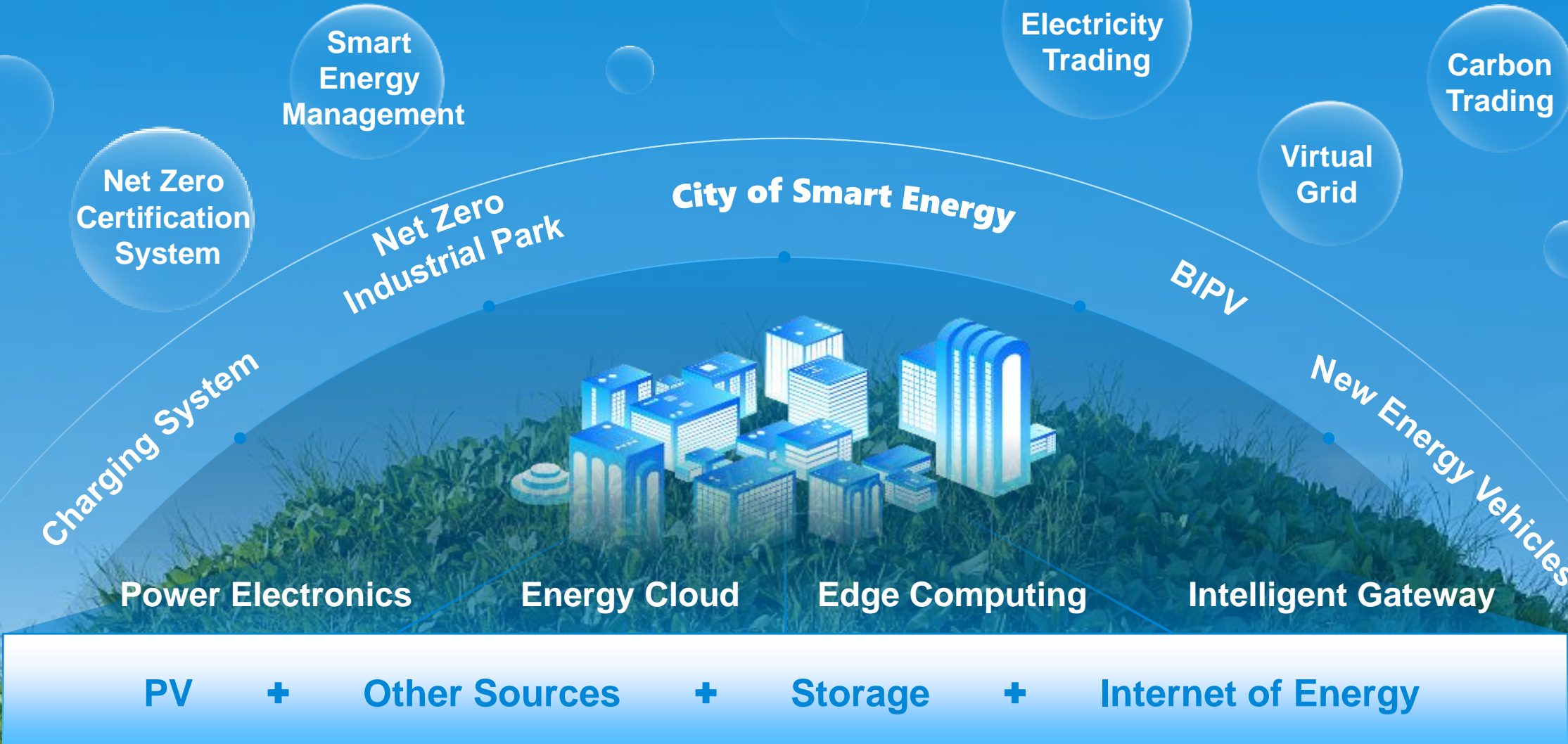


NEG21C.20

**Vertex N**

# Net-zero Systems

# Building an Optimized Net-Zero Energy System by integrating Hardware and Software





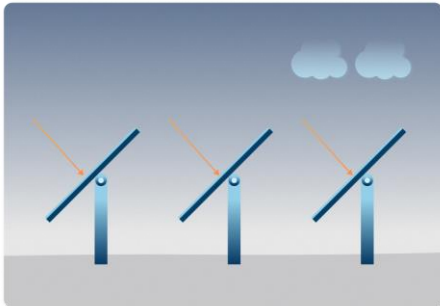
# Employing Software to get the most out of Hardware

## Smart Module + Tracker Integration

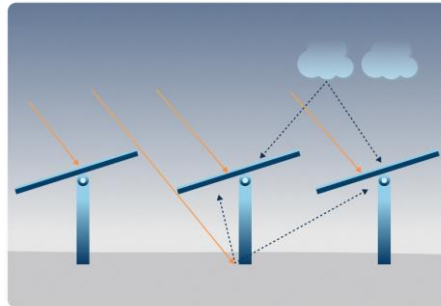
### SuperTrack

#### Smart control system

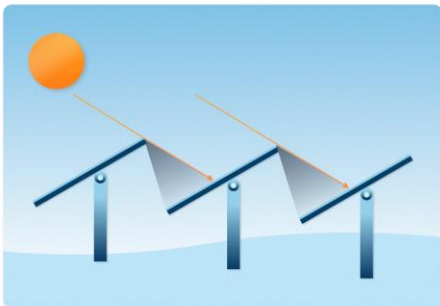
Conventional Tracking



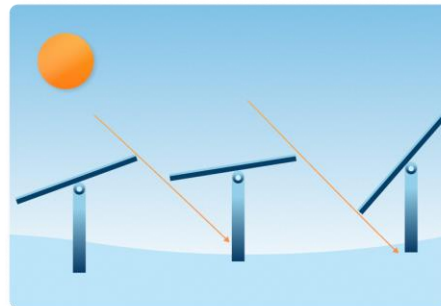
Smart Tracking Algorithm



Conventional Backtracking



Smart Backtracking Algorithm



Up to 8% Energy Gain

### Trina Smart Cloud

#### Smart O&M cloud platform



Remote monitoring & control for max uptime

# Employing Software to get the most out of Hardware

## Smart Module + Tracker Integration

**Vertex N**  
TOPCon  
Modules



High  
Performance

**SuperTrack**  
High  
Reliability

**Trina Smart Cloud**  
High  
Efficiency

**Trina solar**  
**Trina Tracker**  
Flexible  
Trackers

# Power Beyond Solar: Smart Battery Energy Storage System

## AC System

### DC System



Elementa Utility Cabinet

Discharge 1500V

Charge 1500V

690V

690V

35KV

35KV

110KV-220KV

110KV-220KV



PCS



MV



Power Booster Station  
AC110KV-220



Grid



All in one  
PCS & MV

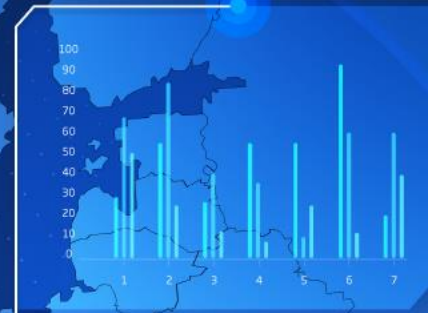






EUROPEAN INDUSTRY SURVEY

# LARGE-SCALE SOLAR: CHALLENGES AND TECHNOLOGY TRENDS



[bit.ly/PV-IndustrySurvey](https://bit.ly/PV-IndustrySurvey)



The logo for TrinaSolar, featuring the word "Trina" in a bold, white, sans-serif font with a red dot above the letter "i", followed by "solar" in a lighter, lowercase, sans-serif font. The background is a scenic landscape with a bright sunburst effect in the sky, a winding road, and a forest of trees with some autumn foliage.

TrinaSolar

# Sustainability Beyond Products