

PerfectTrack

Follow the Sun. Redefining Energy

Next Generation Tracking
For Maximum Solar Efficiency



Built on Experience Designed for Perfection

With decades of engineering excellence in infrastructure - from telecom towers and transmission lines to solar structures, hybrid wind turbine systems, and large-scale EPC projects - Shah Power Pvt. Ltd. [Formerly Shah Infra Towers Pvt. Ltd.] has built a legacy of perfect reliability and engineering excellence.

PerfecTrack represents the next chapter of our engineering journey - a next-generation solar tracking solution born from decades of industry expertise, rigorous and perfectly engineered design excellence, and proven real-world validation.





Our Vision

To position PerfectTrack as a trusted global brand for next-generation solar tracking solutions—delivering innovation, stability, and sustainability through engineering excellence.



Our Mission

To create high-efficiency, long-lasting solar tracking systems that help developers and EPCs maximize output while ensuring operational reliability across terrains and climates.



Our Values

we stand for integrity, engineering excellence, purposeful innovation, and long-lasting sustainability. We focus on reliability and strong customer partnerships in everything we build.

A Legacy of Excellence



8 + Production
Plants Worldwide



600+ Skilled
Professionals



500+ Delighted
Customers Worldwide



Shah Power Pvt. Ltd.

Shah Power Private Limited is a leading comprehensive infrastructural solutions provider, specialized in the manufacturing & supply of high-quality towers & structures tailored for diverse infrastructure sectors. Its expertise extends to delivering turnkey EPC projects, along with offering a wide range of advanced solar structures & trackers. Shah Power consistently strives to support sustainable development through robust & reliable infrastructure solutions.

www.shahpower.in



Shah Eye Care Pvt. Ltd.

Shah Eye Care is a leading design & manufacturer of ophthalmic medical devices including Ophthalmic microsurgical Knives, I/A Handpieces, Coaxials & many, exporting to more than 80 countries worldwide with the state of the art manufacturing, Shah Eye Care also provide OBL & OEM Solutions, & holds global certifications such as ISO, CE, USFDA, EUDAMED, & CDSCO. Shah Eye Care strives to deliver high-quality products & reliable service, supporting eye care professionals globally.

www.shaheycare.com



Shah Distributors.

Shah Distributors is a leading distributor of ophthalmic medical devices across India. With its headquarters in Bangalore & coordinating offices in major Indian cities, the company has expanded its reach to serve customers nationwide. Shah Distributors is committed to providing reliable support & quality products to healthcare professionals throughout India.

www.shahdistributors.co.in

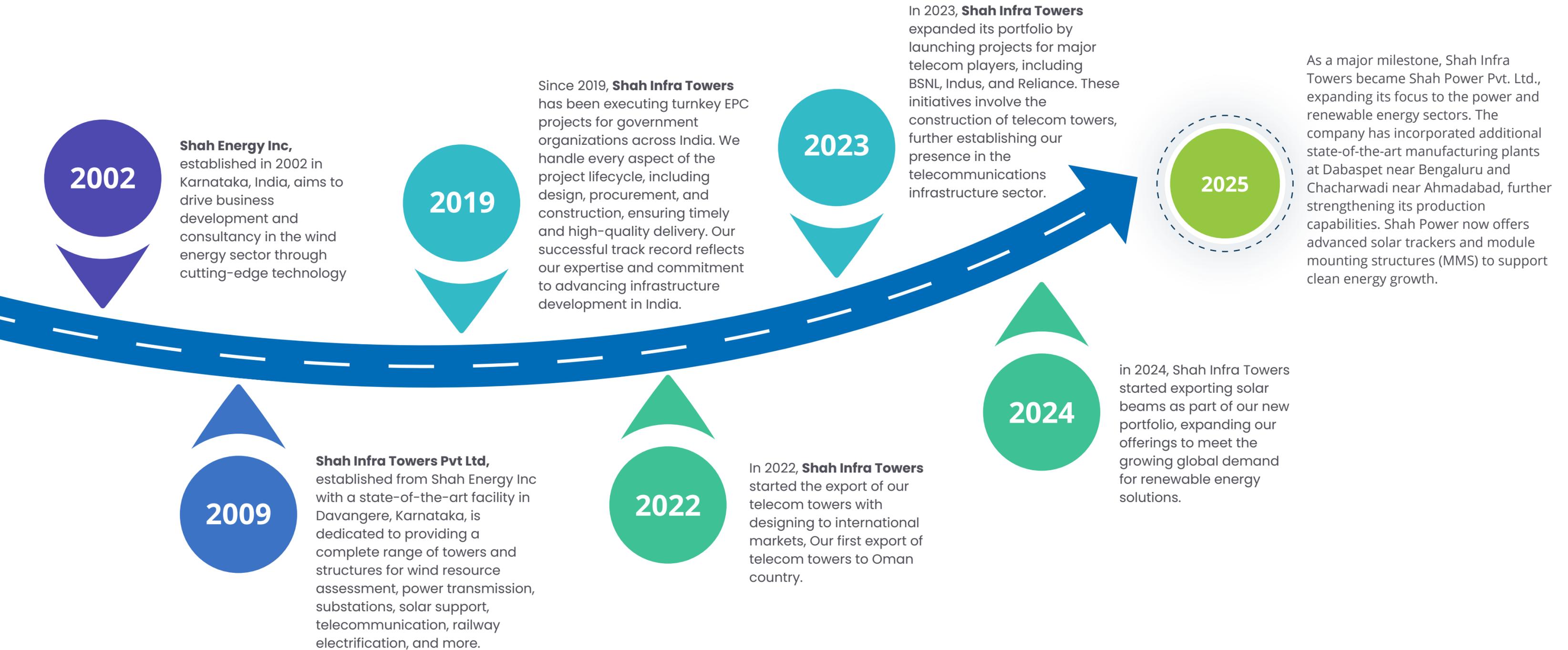


Shah Opticals

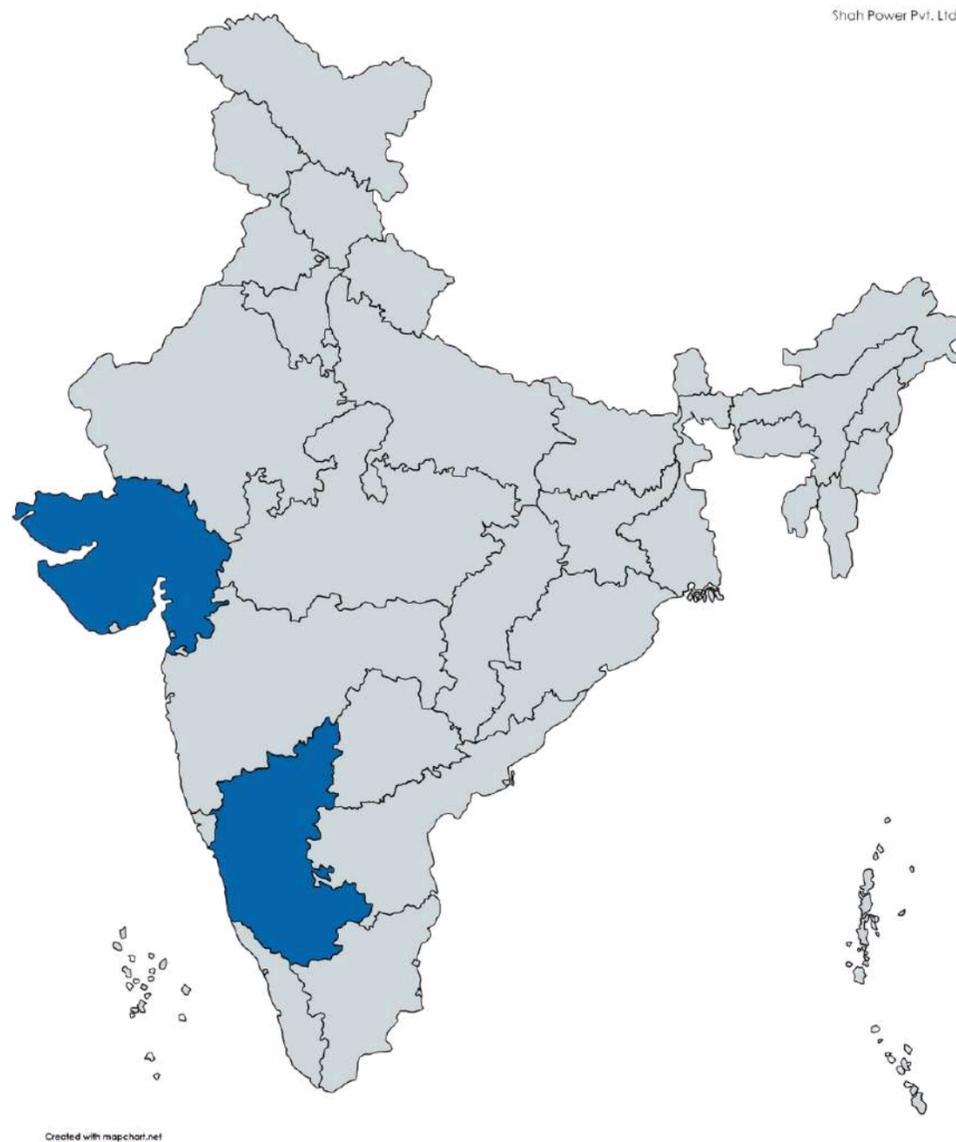
Shah Opticals is a well-known eye care center offering complete eye care services across various districts. They provide a wide range of optical solutions, including contact lenses and eyeglasses, customized to suit individual needs. The center is dedicated to delivering quality eye care with a focus on patient satisfaction and personalized service.

www.shahopticals.com

Building excellence since 2002



Our Presence Accross India



Shah Power Private Limited, formerly known as Shah Infra Towers, serves as a leading manufacturer of infrastructure solutions with its headquarters strategically located in Davangere, Karnataka. Positioned at the geographical center of the state, our Davangere facility offers excellent connectivity, situated just off National Highway 4. The location provides convenient access by both rail and road—250 km from Bengaluru towards Pune and 140 km from Hubballi—placing us at the heart of one of Karnataka’s fastest-growing industrial corridors.

In addition, Shah Power operates state-of-the-art cold roll forming units located at Dabaspeth, near Bengaluru (approximately 50 km away), in Karnataka, and at Chacharwadi, near Ahmedabad (around 40 km away), in Gujarat.

Davangere Plant

Plot No. 10, & 32A, 32(A) (P), 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, Karur Industrial Area, P.B. Road, Davangere – 577 006, Karnataka

Dabaspeth, Bangalore Plant

Survey No.32, No.147/3/32/3, Honnehalli Gramapanchayat, Sompura Hobli, Nelamangala Taluk, Kengal Kempohalli Colony, Dabaspeth Industrial Area, Bengaluru - 562111

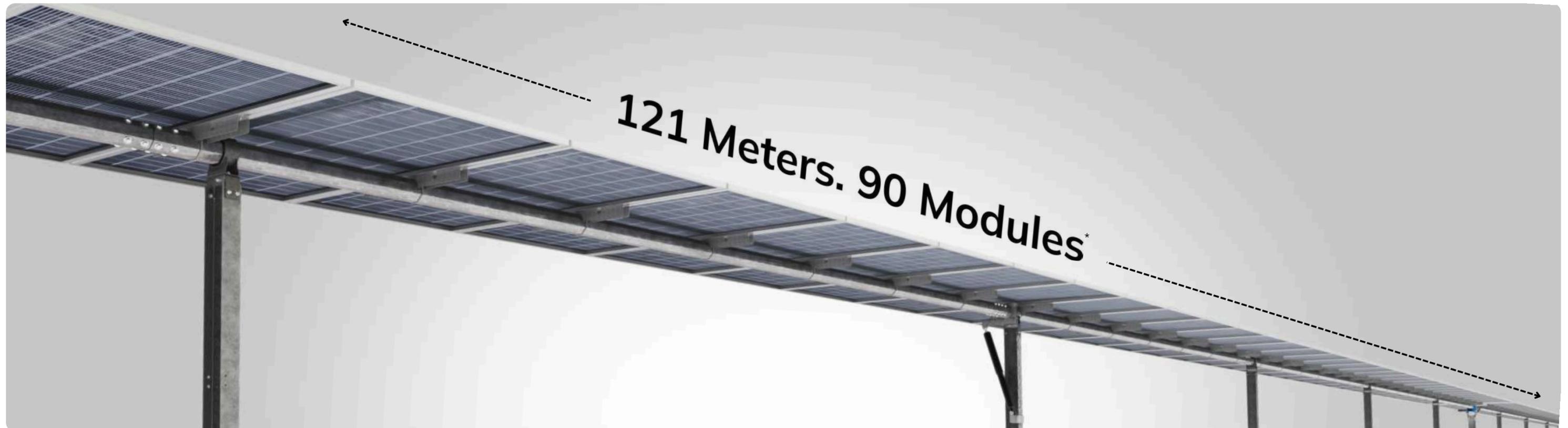
Chacharwadi, Ahmedabad Plant

Plot No. B12A, B14, B15, B16, B17, B18, B19, Paradise 1 Park, Sarkhej Bavla Road, Chacharwadi Vasna, Sanand, Changodar, Ahmedabad, Gujarat, 382213

Independent Single-Axis Solar Tracker with One-in-Portrait Design

Independent Single Axis Trackers are designed to enhance the efficiency of solar power systems by optimizing the angle of solar panels throughout the day. These trackers use precise tracking and perfectly calibrated tracking algorithms to follow the sun's movement, ensuring that panels are positioned at the most optimal angle for maximum energy absorption.

With robust design features that can withstand varying environmental conditions, SAT Solar Trackers offer excellent durability and reliability. Their energy-boosting capabilities make them a perfect solution for large-scale solar farms and commercial installations, ensuring higher energy yields compared to fixed-tilt systems.



Key Features

Optimized for Perfection

PerfecTrack 1P is a state-of-the-art single-axis solar tracker with a one-in-portrait configuration, engineered for utility-scale deployment and optimized energy yield. Each independent row spans up to 121 meters, accommodating up to 90 high-wattage modules and offering a tracking range of $\pm 60^\circ$ to maximize solar efficiency throughout the day.

Designed to deliver up to 20% higher and perfectly improved energy generation than fixed-tilt systems, PerfecTrack 1P ensures enhanced performance, faster return on investment, and lasting reliability.

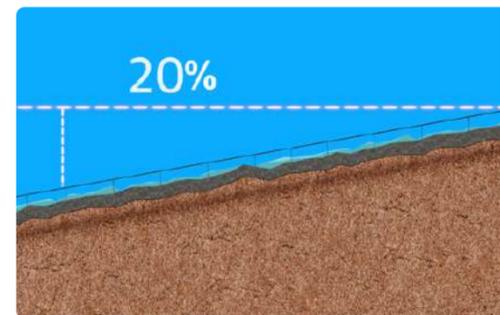
Its galvanized steel structure is compatible with all foundation types and built for quick installation across diverse terrains and ground conditions - making it a perfect partner in driving a sustainable energy future.



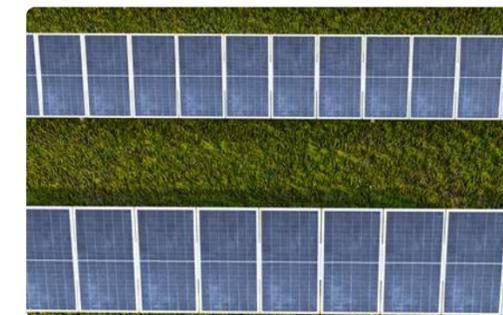
**Intelligent Tracking System
with up to $\pm 60^\circ$ Tilt Range**



**Real-time adaptive tracking
with advanced sensing**



**Excellent terrain adaptability
for N-S slopes Up to 20%**



**Optimized row spacing for
maximum land use efficiency**



**Fully compatible with bifacial
panels for enhanced performance**

Mechanical Configuration & Components



Features a maintenance-free slew drive with high-performance DC motor



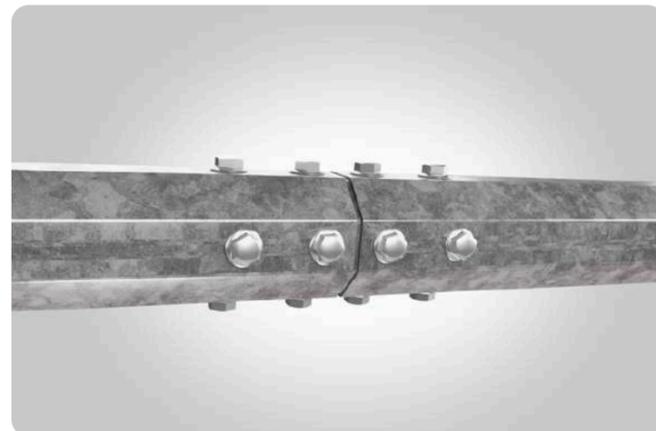
Height-adjustable post for precise tilt and east-west control.



Advanced bearing seat design with slotted base holes for quick on-site adjustments.



Bearings are built with self-lubricating, UV-resistant, UL-certified materials



Features an octagonal torque tube with a unique coupler for enhanced stability.



Four dampers per row absorb wind shocks for reliable performance.



Precision mounting rail reduces gravity torque and stress, ensuring smooth slew drive operation.

Technical Specifications

Performance Specifications

Parameter	Value
Architecture / Type	Independent Horizontal Single Axis Tracker
Configuration	1x module in portrait
Tracking range	±60°
Row Size / Row Length	121m.
Modules / Panels per row	Up to 90 Pcs.
Terrain Slope Tolerance	Up to 20% (N-S)

Technical Specifications

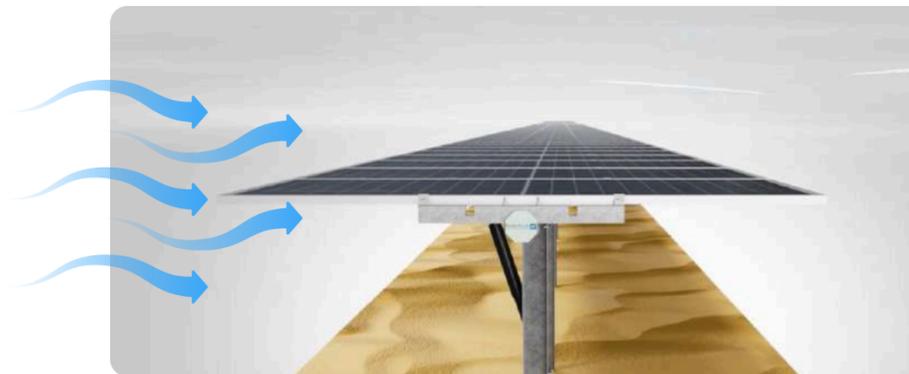
Category	Specifications
Foundations	Concrete type (Pile inserted into ground)
Structure Material	Hot dip galvanized steel / Pre galvanized steel
Structural connections	Octagon coupler design to improve stability of tracker.
Modules / Panels supported	1303 x 2384 x 35 mm (700w)
Power of Panels	63Kw.
Bifacial optimization	High-rise mounting rails,
Torque tube type	Octagon torque tube
Bearing Type	UV resistance Sliding Bearing, with self lubricated (UL Approved Raw material)
Multi-Point Driving System	Slew drive + DC motor
Power Consumption	Typical 0.02 Kwh per day
Daily Energy Consumption	Powered By PV Strings, Back-up Li-ion battery

Environmental Resilience & Safety Features



Intelligent Backtracking for Maximum Yield

The integrated backtracking algorithm dynamically adjusts each row's tilt in response to slope variations, sunlight intensity, and module orientation. This ensures minimal row-to-row shading and maximum energy capture throughout the day.



Wind Stow Mode for Structural Protection

When wind speeds exceed 18 m/s (\approx 40 mph), PerfectTrack-1P automatically enters Wind Stow Mode, positioning the solar modules at a 0° angle to minimize wind load and structural stress. This proactive safety mechanism ensures system stability and long-term durability during extreme weather events.



Smart Snow Shedding Function

In Heavy Snow Mode, PerfectTrack-1P automatically tilts the modules up to 60°, allowing accumulated snow to slide off easily. This feature maintains surface cleanliness, prevents energy loss, and ensures consistent performance in cold-weather conditions.

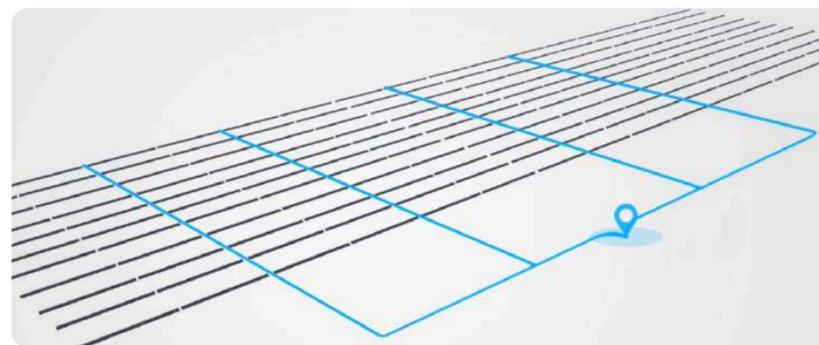
Tracker Control System Overview



UL & CE-Certified Tracker Control Unit (TCU)

At the heart of PerfectTrack-1P lies a UL and CE-certified Tracker Controller Unit using perfectly advanced astronomical algorithm to deliver precise solar tracking every moment of the day.

The TCU combines built-in wind protection, intelligent motor control, and lithium-ion backup power with robust LoRa-based wireless communication — ensuring uninterrupted, reliable performance in every environment.



Centralized Intelligent Control

A single Network Control Unit (NCU) seamlessly manages up to 120 Tracker Control Units (TCUs), enabling synchronized operation across the solar field. Each PerfectTrack-1P tracker intelligently adapts to real-time weather conditions, optimizing performance and ensuring reliable, coordinated motion control.



Seamless SCADA Integration

With built-in Ethernet connectivity, PerfectTrack-1P enables effortless integration with SCADA systems, providing centralized, real-time monitoring and control for enhanced operational efficiency and visibility across the solar plant.

Technical Specifications

Smart Environmental Responce

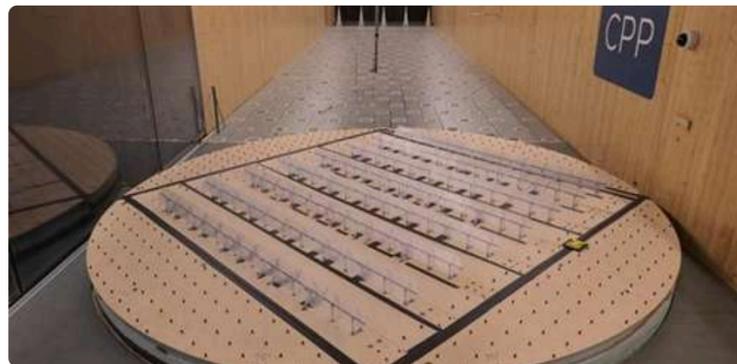
Mode	Function / Specs
Operating temp. range	-30°C ~ +80°C (Slew Drive)
Standard design wind speed	120mph (54m/s) per ASCE7-10, Higher wind load available
Wind Stow	0° position at >18 m/s wind
Wind protection	Programmed through NCU controller
Snow Mode (Optional)	Up to 60° tilt for snow dump
Backtracking	Shadow-avoidance on slopes

Tracker Controller Specifications

Category	Specification
Tracker controller	PV Tracker Intelligent communication Box
Controller Certification	UL + CE Certified
Solar tracking method / Control Algorithm	Astronomical algorithm + Intelligent Algorithm
Tracking Accuracy	≤ 0.5°
Ingress Protection	IP65
Power supply	SELF POWERED: Standalone smart solar power AC POWERED: Customer-provided, 120-277 VAC circuit
Power Backup	Li-ion battery
Communications	LoRa wireless with Zigbee,
Operator / Tracker interface	RS485 and LAN Interface

Design Validation through Wind Tunnel Testing by Global Authorities

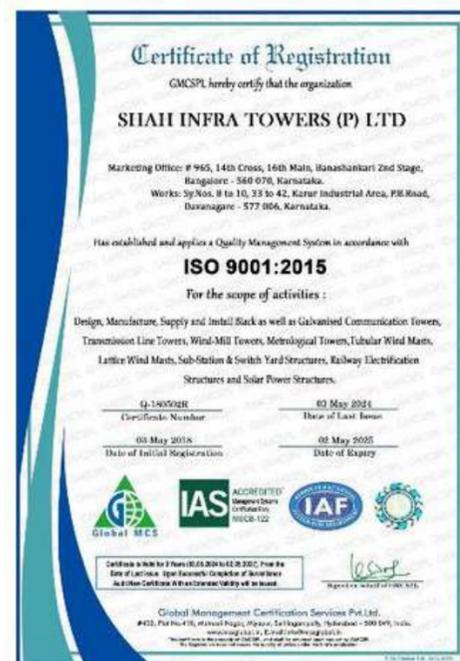
PerfecTrack-1P has undergone rigorous wind tunnel database studies, advanced dynamic analysis, and comprehensive damping assessment in collaboration with CPP Sydney, Australia.



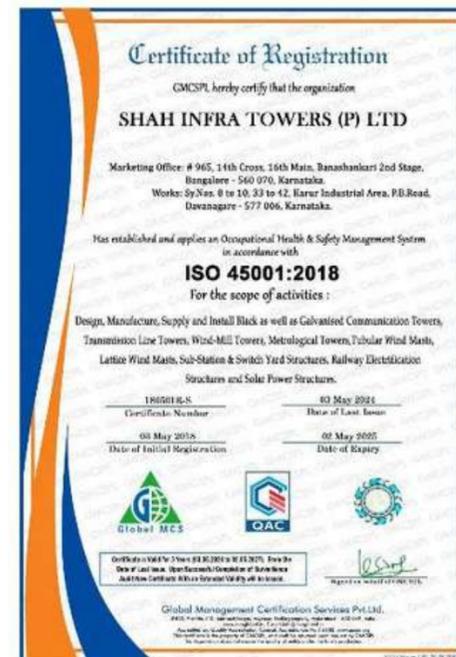
CPP Wind Engineering Consultants stands among the world's leading wind tunnel laboratories, recognized for their expert assessment capabilities. They rigorously tested the PerfecTrack 1P's structural durability by simulating multiple tilt angles and a variety of wind speeds to ensure its reliability under diverse conditions.

Proven Standards. Trusted Certifications

The state-of-the-art manufacturing facility of Shah Power Pvt. Ltd. is ISO-certified, ensuring quality and consistency at every stage of production. PerfecTrack 1P holds CE and UL certifications, with its advanced Tracker Controller Unit (TCU) certified under both standards.



Quality Management System



Occupational Health & Safety Management System



Environmental Management System

The Key Benefits of Single Axis Trackers (SAT)

- **Optimized Energy Yield:** SAT Solar Trackers adjust the panel's angle to follow the sun throughout the day, maximizing energy capture and improving the overall efficiency of the solar system.
- **Durability and Robust Design:** Built to withstand harsh weather conditions, these Trackers offer exceptional durability, ensuring reliable performance over time.
- **Cost Efficiency:** By increasing energy production, these Trackers reduce the cost per watt, making them a cost-effective solution for large-scale solar installations.
- **High Wind Load Resistance:** The design of these Trackers allows them to handle high wind loads, providing enhanced stability even in challenging weather conditions.
- **Low Maintenance:** The trackers require minimal maintenance due to their durable construction and efficient operation, reducing long-term operational costs.
- **Scalability:** These Trackers are highly scalable and adaptable, making them suitable for a wide range of solar projects, from small installations to large solar farms.
- **Simplicity in Installation:** The design of Trackers facilitates easy installation, reducing setup time and costs.

Competitive Advantages



Our trackers are built using UL-approved raw materials for bearings, ensuring superior quality, reliability, and compliance with global safety standards.

Backed by Shah Power 's Expertise

PerfecTrack benefits from the extensive experience and engineering excellence of Shah Power, a leader in fabrication and manufacturing. This synergy ensures the highest standards of quality, reliability, and precision in every solar tracker system we produce.

International Quality Standards

Our solar trackers are developed using advanced technology and are fully compliant with international standards, ensuring high durability, efficiency, and longevity.

Cost-Effective Solutions

We offer high-quality solar trackers at competitive prices, helping our clients maximize their return on investment while promoting the use of renewable energy.

Strong Industry Partnerships

We collaborate with leading solar panel manufacturers and project developers, offering customized tracking solutions that meet the specific needs of large-scale solar installations.

Collaborations and Partnerships

Shah Power Private Limited values the power of collaboration and strategic partnerships in driving the renewable energy revolution. By working closely with industry leaders and stakeholders, we deliver tailored solar tracking solutions that meet the unique needs of diverse projects.

Partnerships with Solar Panel Manufacturers: We collaborate with leading solar panel manufacturers to integrate our advanced tracker systems seamlessly into their offerings, ensuring enhanced energy efficiency for their installations.

Collaborations with Project Developers: Our team partners with renewable energy project developers to provide customized tracking solutions for utility-scale solar power plants, helping optimize energy generation and project profitability.

Synergy with Shah Infra Towers: As part of the Shah Group, we leverage Shah Infra Towers' extensive experience in fabrication and manufacturing, ensuring the highest quality standards and engineering excellence in our products.

Customer-Centric Approach: Our partnerships are built on trust, transparency, and a commitment to delivering solutions that align with our clients' goals. From initial consultation to post-installation support, we work hand-in-hand with our partners to ensure project success.

Driving Renewable Energy Growth: Together with our collaborators, we aim to accelerate the adoption of solar energy by providing reliable, innovative, and cost-effective tracking systems that make renewable energy more accessible and efficient.

PerfecTrack 
Follow the Sun. Redefining Energy

We are open for Global Business...

Building on its proven expertise in delivering globally recognized infrastructure for telecom and transmission networks, Shah Power Pvt. Ltd. brings the same commitment to quality and engineering excellence to PerfectTrack - and welcomes global partners to join this journey toward smarter solar energy.



PerfectTrack **1P**

Follow the Sun. Redefining Energy

Marketing office:

#3, D.No.201, 2nd Floor, 9th Avenue
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Bengaluru - 560018

Head office & Factories:

Plot No. 10, & 32A, 32(A) (P), 33, 34, 35, 36,
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Karur Industrial Area, P.B. Road,
Davangere - 577 006, Karnataka

Dabaspeta - Bengaluru Plant

Marketing office: Survey No.32, No.147/3/32/3,
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