TAYPRO PRIVATE LIMITED 01

TAYPRO®

WE DRIVE PERFORMANCE

AI-powered Solar Cleaning Robots: Innovating for a Green Economy

Date
10 June 2025

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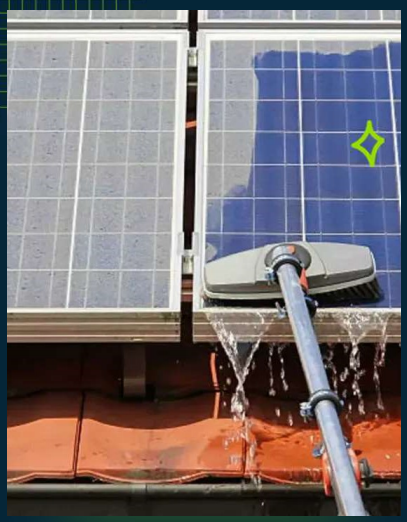

Problem

Inefficient and labor-intensive solar panel cleaning reduces energy yield and increases maintenance costs.

Massive Water Consumption for Cleaning

Inefficiency of Traditional Cleaning

High Annual Cleaning Costs

Significant Efficiency Reduction Due to Dust

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Solutions

Water-Efficient Cleaning Systems
Taypro aim to conserve water by eliminating water dependency for cleaning.

Automated Cleaning System
Automated cleaning systems self-operate for timely cleaning cycles

Remote Monitoring and Control
Enhance safety and minimize the requirement for on-site personnel by implementing timely interventions.

Efficient Cleaning Technology
Effective cleaning system which can clean solar modules using dual pass cleaning techniques.

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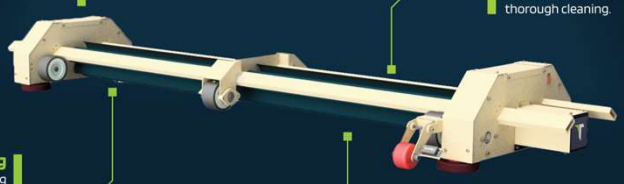
The Innovation for Green Economy

At TAYPRO, we provide advanced AI- and ML-based robotic solutions which ensure thorough cleaning of solar modules autonomously without using water.

RF-Based Mesh Communication
Our innovative RF-based Mesh Communication with isolated cloud-based SCADA provides robust communication in all terrains.

Patented Dual-Pass Cleaning
Our robots employ a dual-pass cleaning method, first blowing away dry dust and then using a microfiber cloth for thorough cleaning.



Advanced Weather Sensing
Our robots intelligently schedule cleaning cycles based on weather conditions and optimise efficiency.

Highest Uptime Guarantee
Our solutions are made from advanced technology, ensuring the highest uptime guarantee.

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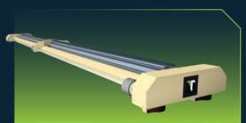
Our Patented Products



MODEL-A

Autonomous waterless cleaning robot with dual pass cleaning method with AI and ML capabilities.

MODEL-B

A pick-and-place type portable dry solar panel cleaning robot for scattered utility-scale solar power plants.

MODEL-T

Autonomous patented cleaning robot with a flexible body and 360° flexible rotational bridge for single-axis trackers.

TAYPRO OPEX

A solar panel cleaning service for utility-scale solar power plants

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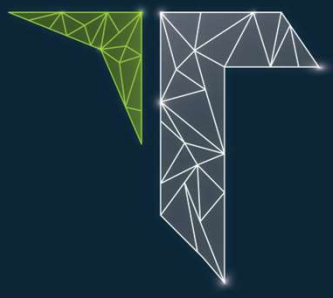
AI-Driven Innovations

Real-Time Data Collection

- Sensors: Motor current, speed, torque, slope detection, communication signal strength.
- Continuous Streaming: Onboard CPU and communication module for live data updates.

Intelligent Terrain Adaptation

- Terrain Detection: ML models analyze motor current & slope data to classify surface conditions.
- Adaptive Control: Robot automatically adjusts torque/speed for steep climbs or uneven ground.
- Failure Prevention: Alerts trigger maintenance before breakdown, reducing downtime & costs.



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Our Green Impact

Over 1,400,000,000+ Litres of Water Saved

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Our Green Impact

Water Saved
77 Cr
Liters Annually

Electricity Generation Increased
2.4 Cr
Units Annually

CO_2 Savings
12000
Metric Tons Annually

Equivalent of providing free clean drinking water for 4,25,073 humans for the entire year

Equivalent of powering 13,333 middle class homes with a free electricity for the entire year

Equivalent of eliminating 2609 cars from the road for the entire year

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Awards and Certifications

ISO-certified under an Integrated Management System (IMS) for Quality (9001), Environment (14001), and Occupational Health & Safety (45001).

1. Recognised as Top Robotic Cleaning Equipment Supplier by Mercom India
2. Best use of AI for Sustainable Development by MINT (Hindustan Times)
3. Best Innovation and Business Plan Winners of InnovateNEXT 1.0
4. Winners of PATHFINDER
   Recognised as top 50 startups of 2019 by VJTITBI
5. 4 Granted Patents 2 Pending Patents
   (4 Concept and 2 Industrial Design patents)
6. Tested and Certified by National Institute of Solar Energy for Module Performance
7. Certified for IP55 and IP65 by TUV NORD
8. Certified for Extreme Damp Heat and Dry Heat by ELCA Labs

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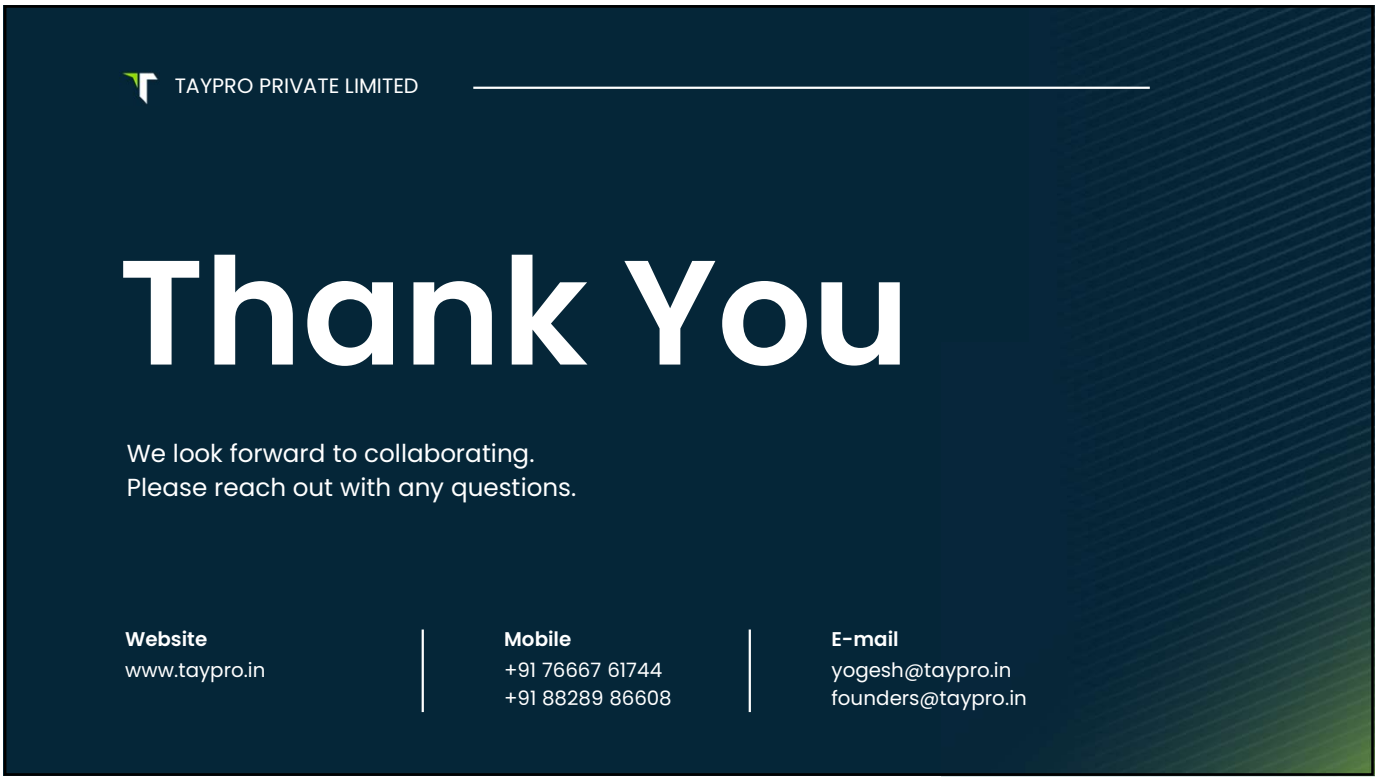
TAYPRO PRIVATE LIMITED
Thank You
We look forward to collaborating.
Please reach out with any questions.
Website
www.taypro.in
Mobile
+91 76667 61744
+91 88289 86608
E-mail
yogesh@taypro.in
founders@taypro.in

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