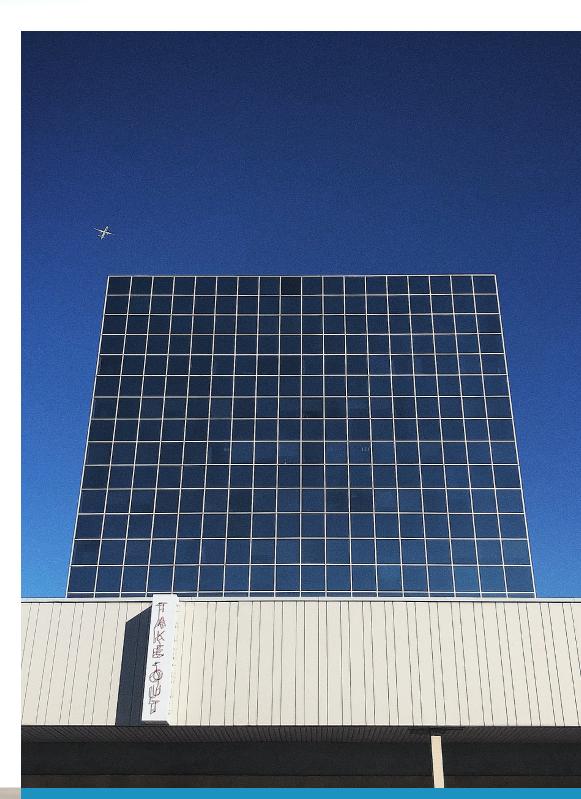


SOLAR CLEANING ROBOT



Technology driven waterless solar panel cleaning from Invendis offers complete solar panel cleaning service by making use of modern technology including automation, artificial intelligence and cloud technology.



Solar panel cleaning is an essential part of maintaining a solar panel array. With a commercial solar panel array, the pressures of reaping the maximum financial reward & realizing a quick ROI are immense



Invendis Solar bot is an automatic cleaning system that provides effective & non-abrasive cleaning using a cutting-edge robot that can effectively clean roof & ground mounted, fixed tilt solar arrays using powerful yet soft nylon wire brush by moving along the rigid frame without adding any load to the panel surface.



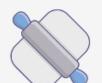




Water free cleaning technology



High speed cleaning



Rolling brush cleaning



Rugged design hardware



Mobile app control



Solar charged batteries



Fully autonomous dedicated solar module



Scheduled operations



## SOLAR CLEANING ROBOT

## **SERVICES**





## **Planning**

Optimizing site design to minimize investment.

Collaboration with developers, panel providers, and other installation teams.





#### Commissioning

Deployment and configuration of solar bot on-site

SCADA, Remote management setup and training, on-site testing and QA





## Maintenance

Periodic maintenance to ensure constant availability

SLA based on-call support providing immediate response.





## **Monitoring**

Remote monitoring of system components and status

Dedicated interface for reporting and analytics.

## **Standard features**

- Solar panel counting
- Motor overload and short circuit protection
- Soft start & stop, programmable bi- directional cleaning
- Robot status on remote
- On board Parametric Data logging
- India based technical support

SOLAR CLEANING ROBOT

# <u>Optional features</u>

- Live GPS Tracking of Robot with map Integration
- Customized SCADA interface
- Customized reports
- Customized cloud integration
- On-call Service Support and annual AMC
- Helpdesk Integration

# TECHNICAL SPECIFICATIONS



#### Physical parameters

**Dimensions (L\*W)** 4200 \* 460 mm

Weight < 55 kgs

**Installation Angle** Up to 30°C

Hill Climb/ Descent Up to 15 °C

Alignment tolerance along horizontal

25mm

vertical tolerance from panel edges

15mm

Horizontal tolerance from panel edges

15mm



axis

#### **Battery Specification**

Type - LiFePO Battery

**Capacity** - 20Ah for travel dist of 3KM

Charging time - 6hrs under normal operating

conditions

## SOLAR CLEANING ROBOT



### **Operation**

**Mode** Autonomous

Controls By scheduler / Automatic / SCADA / Android App

**Connectivity** WiFi/ LoRa

**Driving Mode** DC Motor output

Charging Mode Self built in battery charger with BMS

Cleaning Device Dry waterless rolling brush

Brush RPM 100 - 120 RPM - Variable, Programming through app

Microcomputer Controller Intelligent control system, IR panel counting sensor

**Tower Lamp** Red and green operating lights





### **Operating parameters**

Voltage	24V DC Nominal
Power consumption	70 watts under normal operating conditions
Running speed	12 - 20 mtrs / min
Operating noise	<65 dB
Operating Temperature	~40°C to ~85°C

Operating Humidity (Max) 95%

**Protection** IP65 tested and IP65

air breather

# SOLAR BOAT SOLAR CLEANING ROBOT

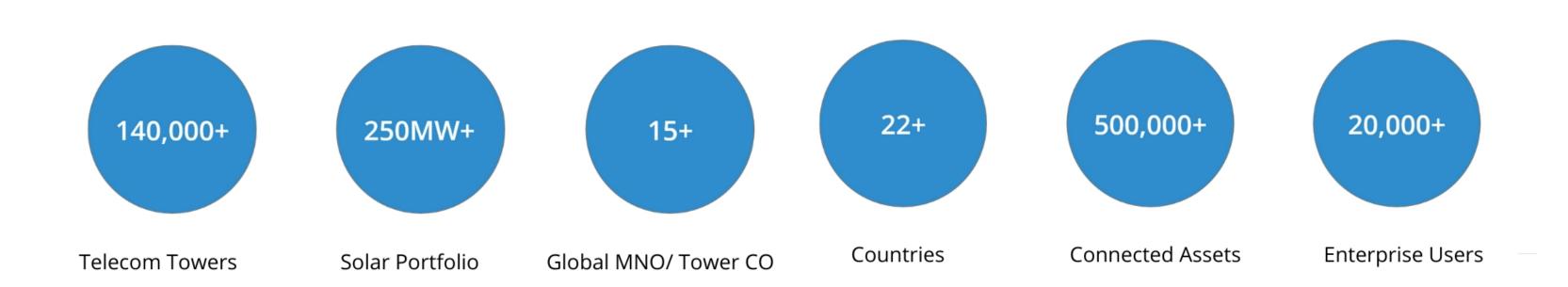
Invendis designs develops and markets the most widely usable remote monitoring systems and services to global infrastructure companies to enable them to monitor, control, maintain and manage their distributed infrastructure assets efficiently

# OUR MISSION IS TO PROVIDE SEAMLESS AND RELIABLE DISTRIBUTED INFRASTRUCTURE MANAGEMENT SERVICES.

We are committed to delivering technically compatible, environmentally safe remote monitoring products and solutions to meet the customer's requirements globally.

We at Invendis Technologies India Pvt. Ltd. recognizes that Information Security and assets are the responsibility of each one of us in the organization. We are committed to creating a secure ecosystem that will enable us to secure information against unauthorized changes, tampering, destruction, or loss by implementing the "Information Security Management System".

#### **OUR SOLUTIONS HAVE SERVICED**





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