



Sunfluence

Weather Management System (WMS) & Solar Efficiency Monitoring Powered by IoT & AI

Our Weather Management System (WMS) and Solar Efficiency Monitoring Platform combines IoT-based sensing, cloud connectivity, and AI-driven analytics to deliver real-time visibility into solar plant performance. The platform transforms raw environmental and

operational data into actionable insights, helping plant operators, investors, and asset owners maximize energy yield while maintaining operational efficiency and financial performance.

Environmental & Weather Monitoring

The system continuously captures critical environmental parameters that directly influence solar generation:

- Solar Irradiance
- Ambient Temperature
- Module Temperature
- Wind Speed and Direction
- Dust and Soiling Impact
- Humidity
- Rainfall

These parameters are correlated with real-time power generation and Satellite data to understand how environmental changes impact solar plant performance.

AI and deep learning models analyse these patterns to detect performance losses, predict generation trends, and recommend operational improvements.

Unified Reporting & Insights Real-Time Dashboard

- ✓ Single-screen overview of plant health
- ✓ Energy, weather, and financial KPIs
- ✓ Drill-down analysis from plant → inverter → string level

Real-Time Cloud Monitoring Dashboard

The platform provides a unified cloud dashboard that delivers live insights into plant performance and operational health.

Key monitoring capabilities include:

 Power Generation Monitoring	 Grid Export & Energy accounting	 Inverter health & string-level performance	 Solar panel efficiency tracking
 Capacity Utilization Factor (CUF) Analysis	 Revenue & financial performance analytics	 Weather & Env. Intelligence	 Preventive & corrective maintenance tracking

This integrated approach allows operators to monitor the entire plant ecosystem from a single interface.

AI-Driven Intelligence Predictive Fault Detection

AI algorithms continuously analyse operational data to identify early signs of equipment failure.

Capabilities include:

- Early alerts before inverter failures
- Root cause analysis of recurring issues
- Detection of underperforming strings
- Shadow impact analysis (including crop growth in agrivoltaics)

Advanced Analytics & Optimization Predictive Intelligence

- Solar generation forecasting using weather and historical data
- Failure prediction for inverters and electrical components
- Automated performance anomaly detection

Optimization Recommendations

- Optimal solar panel cleaning schedules
- Load balancing recommendations
- Maintenance prioritization
- Energy yield improvement insights

Smart Alerts

- Threshold-based alerts
- Mobile, email, and dashboard notifications
- AI-driven anomaly alerts

Smart Monitoring. Intelligent Decisions.
Higher Solar Performance.



CommuniFi Technologies LLP

B-604, Solitaire Corporate Park, Near Bhaskar House,
Off. S. G. Highway, Makarba, Ahmedabad, GUJARAT, 380051
Mobile: +91 7949114900, 9724026585