

# Energy Resource Monitoring



Bankable Data Logging

Energy Yield Projections

Cloud-Based Dashboards & Alerts

Performance Ratio Calculation Integration

Solar Irradiance & Wind Speed Measurement

## Advantages

- Site feasibility and bankability enhanced with real-world data
- Ensures project viability before capital investment
- Supports compliance with regulatory and certification requirements
- Facilitates investor confidence and transparency
- Reduces risk of underperformance due to environmental constraints



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# ENERGY RESOURCE MONITORING

Our services offer Solar and Wind Resource Assessment, Environmental Monitoring Systems, and real-time data on atmospheric conditions, enabling developers, engineers, and stakeholders to make data-driven decisions, maximize energy output, and ensure long-term sustainability of clean energy projects.



## BENEFITS

of Automatic Weather Stations

- ✓ Accurate Pre-Installation Analysis
- ✓ Real-Time Monitoring for Peak Performance
- ✓ Data-Driven Planning for Higher ROI
- ✓ Site-Specific Operational Assessments
- ✓ Predictive Insights to Minimize Downtime



## Energy Resource Assessment

### Solar Resource Assessment

We conduct precise on-site measurement of solar irradiance, temperature, and related parameters using pyranometers and data loggers. This data enables accurate energy yield forecasting, optimal system design, and site selection—helping developers make informed, performance-driven investment decisions.

### Wind Resource Assessment

Using high-accuracy anemometers, wind vanes, and data loggers, we assess wind speed, direction, and turbulence over time to build detailed wind profiles. These insights support turbine placement, improve design efficiency, and reduce uncertainty in wind energy output.

### Environmental Monitoring Systems

Our EMS track real-time environmental conditions—temperature, humidity, dust, rainfall, and wind—and integrate with inverters to calculate Performance Ratio (PR). This ensures continuous system optimization, predictive maintenance, and maximum energy harvest under varying site conditions.

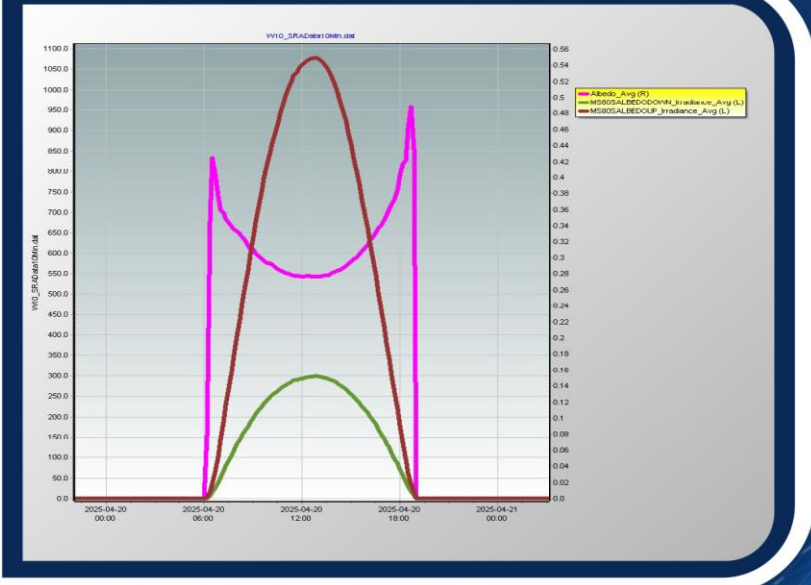


**Our Environmental Monitoring Systems deliver real-time data on key atmospheric conditions, enabling continuous performance tracking and efficient system management. The solution empower developers, engineers, and stakeholders to make data-driven decisions, maximize energy output, and ensure the long-term sustainability of clean energy projects.**

## Sensors & Instruments

BIS offers a wide range of sensors with specific Class categories and ratings, such as NEMA, IP68, etc. Following are a few sensors and instruments that can be connected to Environment Monitoring Stations:

- ✓ Temperature Sensor
- ✓ Humidity Sensor
- ✓ Rain Gauge
- ✓ Wind Speed and Direction Sensor
- ✓ Solar Radiation Sensor – Pyranometer
- ✓ Pressure Sensor
- ✓ Albedo Meter
- ✓ Back of Module Temperature Sensor
- ✓ Solar Panel with Batteries
- ✓ Sun Tracker
- ✓ Visibility Sensor
- ✓ Soiling Kit
- ✓ Data Logger
- ✓ Radio and/or GSM/Satellite Communication modules



## ENVIRONMENT MONITORING EXPERTS

- Automatic Weather Stations
- Runway Visual Range (RVR)
- HydroMet Solutions
- Precision Agriculture
- Air Quality Monitoring
- Solar & Wind Resource Assessment
- Automated Weather Observing System
- Weather Surveillance Radars
- Early Warning Systems
- Calibration Services

### Visit Us

**HQ:** Buraq Center, 11-D, 6th Road, Satellite Town, Rawalpindi, Pakistan.

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