Digital Energy
Solar Plant Asset Performance Management (APM)

Improve Solar Asset Performance and Reliability, Reduce Operating Cost and Risk

GE’S SOLAR PLANT APM SOLUTION PROTECTS PV PLANT PROFITABILITY THROUGH PREDICTIVE ANALYTICS

With power purchase agreement (PPA) prices dropping rapidly, reducing maintenance costs and increasing power production is critical for PV plant profitability. How do you determine if your assets are performing at their full potential and what are the right maintenance strategies to sustain viable ROI for your PV assets and reduce operating risk?

KEY OUTCOMES

Increase Yield
Help to achieve more than 99% availability by reducing inverter downtime

Lower O&M Cost
Eliminates unplanned maintenance, avoid costly and unnecessary preventative maintenance

OVERVIEW

Increase Availability and Reliability at the Lowest Operating Cost
Solar Plant Asset Performance Management (APM) protects the health and performance of the most maintenance-intensive equipment in your PV plant. You’ll gain visibility into component failures before they affect energy production so you can empower operations and maintenance (O&M) teams to dispatch resources to your sites only when they’re truly needed.

Seamless Data Integration for Fleet-wide Visibility
Utilizing empirical machine learning models and physics-based algorithms Solar Plant APM transforms data from your PV plants’ SCADA into predictive analytics dashboards of fleet and site level KPIs including:

• Visualization of asset health at the fleet, site, and asset level
• Insights on performance gaps and production loss breakdown enabled by digital twin analytics and signature detection algorithms
• Historical and projected availability, energy production, and revenue, with and without recommended mitigation

Detailed Maintenance Intelligence for Improved O&M Strategy
Alerts provide recommended actions to prevent and repair component and subcomponent failures. Insights delivered include:

• Cost and time to repair
• Revenue and availability impact
• Material, labor cost and parts availability
• Better inventory management

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Understand Performance Gaps
Solar Plant APM performs analysis on digital twins of site assets in real-time to determine deviations from expected KPIs at any operating point and environmental condition.

Identify Areas for Improved Performance
Machine learning-based signature detection algorithms automatically quantify and categorize each cause of production loss, providing insight to enable better maintenance strategies.

Adopt Predictive, Proactive, Maintenance Strategies
With the use of machine learning, as data is processed, alerts are generated well before component failures, reducing unplanned downtime and costly emergency repairs.

50%
Increase in Plant Manager productivity

40%
Reduction in power production loss

30%
Reduction in O&M costs

For more information, contact: SolarPlantAPM.Sales@ge.com
gepowerconversion.com/industries/renewables/solar

* $100/MWh, 18% plant utilization
** Assuming 30% of O&M cost savings; $14/kW-year O&M expenses, $4.2/kW-year savings