OPERA for Solar is a cloud-based, IoT-powered intelligent platform which drives optimal plant performance for operators, asset managers, and owners under complex grid and high-end energy forecasting requirements. While delivering an efficient real-time data analytics and decision support system, OPERA offers multiple interfaces to engage with plant operations and ensures all stakeholders maintain real-time transparency.
**Challenges**

- Increasing OPEX due to lack of predictive maintenance
- Tracking solar panel degradation and predicting key equipment failures
- Inaccurate energy forecasting and subsequent penalties over Utilization Index
- High cost of facility surveillance and security personnel
- Unwarranted shutdown or delayed maintenance of plant equipment due to false data injection and spoofing
- Photo Voltaic Plant process data quality and unavailability issues

**Solutions**

- Instrumentation of all the assets in the solar plant like solar panels, modules, strings, inverters, transformers and connecting through SCADA system to the cloud via gateway
- Edge analytics implemented at the gateway to cleanse data and also provide alerts
- Business intelligence analytics, performance analytics, case analysis, plant monitoring and control, all in a single platform
- Billing and revenue invoicing & connectivity with ERP system
- Intelligent energy forecasting with short-term and long-term visibility to maintain maximum power output and avoid penalties
- Predictive maintenance of the assets using big data analytics provide alerts for planned maintenance
- Algorithms to identify the efficiency issues in the system quickly improve capacity utilization factor
- Vegetation and dust level identification on PV module using pattern recognition technique on data and image
- High-end diagnosis of object intrusion and subsequent alarms

**Benefits**

- Improves solar plant capacity utilization factor by 10%-30% (based on technology and location) by fine-tuning the plant operating parameters
- Improves forecasting of energy generated from solar irradiation from 60-65% (existing) accuracy level to 80-85% and helps plant owners with accurate power scheduling and to avoid penalties
- Up to 20% cost reduction in maintenance costs
- Provides higher operational efficiency
- Enables loss estimation
- Portfolio-based real-time monitoring of critical assets with performance specific KPIs

LTI (NSE: LTI) is a global technology consulting and digital solutions company helping more than 250 clients succeed in a converging world. With operations in 27 countries, we go the extra mile for our clients and accelerate their digital transformation with LTI’s Mosaic platform enabling their mobile, social, analytics, IoT and cloud journeys. Founded 20 years ago as the information technology division of the Larsen & Toubro group, our unique heritage gives us unrivaled real-world expertise to solve the most complex challenges of enterprises across all industries. Each day, our team of more than 20,000 LTItes enable our clients to improve the effectiveness of their business and technology operations, and deliver value to their customers, employees and shareholders. Find more at www.Lntinfotech.com or follow us at @LTI_Global

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