

Organiser

RenewableWatch

In Association with

PV Diagnostics

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Training Webinar on
**Data Analysis
Techniques to
Improve O&M**

April 28, 2020

Time : 10:00 a.m. to 2:00 p.m.



Role of data analytics in improving O&M efficacy in the solar industry

A wealth of data is collected from solar power plants, and its correct analysis can significantly improve plant availability and optimise preventive maintenance schedules. Each solar plant is different and unique, and thus, requires a customised approach to improve O&M efficacy. The data coming from generation meters, inverters and strings can help in modelling the power flow within the plant and in identifying performance trends, key failure modes and the root cause of the failure modes. And the best part is that you do not need to run elaborate programs to analyse this data!



ABOUT RENEWABLE WATCH

Renewable Watch covers the entire spectrum of **renewable energy** - wind, solar, bioenergy, small hydro and other **emerging technologies** - and includes both **grid-interactive** and **offgrid power solutions**. It aims to provide accurate information to track investments and projects, to showcase innovations and technologies and to offer a platform for debate and discussion on policy, regulation and financing.

ABOUT PV DIAGNOSTICS

PV Diagnostics evaluates the quality of existing solar plants and works on improving their efficiency through a combination of data science and technology intervention. The core focus of our studies is the performance turnaround of solar assets. We possess state-of-the-art technology including portable (handheld) EL imaging and drone-based thermography to diagnose plants. We also work with multiple investors on technical due diligence of solar power plants.

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OBJECTIVE

This module will help you in analyzing the data from the plant to identify key performance trends, compare inverter-level generation to identify low-performance zones, use string-level generation data and/or breakdown data to conduct root-cause analysis and learn how to correct for variation in radiation and temperature. At the end of the session, you will be able to:

- ❖ Compare the performance of the plant with respect to expected performance
- ❖ Identify the reasons for underperformance through generation trends and energy flow evaluation
- ❖ Plan preventive maintenance for your plant based on the actual plant condition

WHO SHOULD ATTEND?

This training is intended for:

- ❖ Solar O&M engineers
- ❖ Heads of operations and maintenance
- ❖ Performance monitoring teams of IPPs
- ❖ Field engineers
- ❖ Project managers
- ❖ Investors

COURSE CONTENT

Plant data analysis (10:00 a.m. to 12:00 noon)			
MODULE 1	Historical generation and performance analysis (20 minutes)	Loss analysis (10 minutes)	Breakdown analysis (optional; 15 minutes)
	Inverter efficiency analysis (15 minutes)	WMS data analysis (15 minutes)	Short exercise on plant data analysis followed by Q&A (30 minutes)
Preventive maintenance through monitoring and measurement (12:30 p.m. to 2:00 p.m.)			
MODULE 2	Module performance and efficiency (20 minutes)	String monitoring data analysis (20 minutes)	Temperature corrected PR calculation and correlation (20 minutes)
	PVSyst report interpretation and correlation with actual losses (20 minutes)	Short exercise on preventive maintenance followed by Q&A (30 minutes)	Session by client representative (Tentative from Terraform Global)

Detailed outline

TRAINERS PROFILE

This training session will be led by Prakash Suratkar, Pranav Maheshwari, Atul Kumar Jain, and Vikrant Chaudhari. They have a combined working experience of more than 40 years and have expertise in the fields of solar cell and module technology, performance evaluation, diagnostics and performance improvements, and technical due diligence.

Prakash Suratkar is the CEO of PV Diagnostics. He has published many technical papers including 10 in the solar PV industry. He was Head of Technology and Process Engineering, Cell and Module, at Tata Power Solar. He also served as CEO and VP at InnoRel Systems Pvt. Ltd, a company that worked in MPPT optimisers.

Pranav Maheshwari leads Engineering and Technology at PV Diagnostics. He holds a dual degree (B.Tech & M.Tech) from IIT Bombay in the Energy Science and Engineering department. Over the past few years, he has advised leading renewable stakeholders on a wide variety of performance assessments, diagnostics & performance improvements, and technical due diligence studies. He is an automation expert.

Atul Kumar Jain leads Operations at PV Diagnostics. He holds a dual degree (B.Tech & M.Tech) in Microelectronics from IIT Bombay. He has around four years of experience as an R&D Engineer focused on PV module technology efficiency, cost optimisation, and reliability. Previously, he has worked at kWatt Solutions Private Ltd as Vice President, Technical Department, for four years.

Vikrant A. Chaudhari has a doctorate degree in solar cells from IIT Bombay. He has previously worked as a Manager at Solar module R&D, Mundra Solar Photovoltaic Ltd. and as a Research Scientist, solar module R&D, SunEdison Research Pvt. Ltd. He has nine years of experience, working in many verticals of the solar industry and holds around eight publications and six patents on cell technology.

The companies that have participated in our previous Related Solar Conferences included: ABB India, ACME Cleantech Solutions, Actis Advisers, Aditya Birla Capital, Amplus Solar, Aegeus, Arctech Solar, Artha Group of Companies, Avaada, AVI Solar Energy, Azure Power, BHEL, BIS, Bosch, CESC, Clean Energy Associates, Clean Max Enviro Energy Solutions, Cleanmax IHO, Cleantech Solar, Climate Connect Technologies, CLP India, Customized Energy Solutions, DuPont India, Emergent Ventures, Enerparc Energy, ERDA, Essel Green Energy, Essel Infra Projects, Exide, First Solar, Fortum India, Fourth Partner Energy, Fronius India, GE, Gensol Consultants, Ginlong, Greenko Group, Hareon Solar, Harsha Abakus Solar, Hero Future Energies, Hinduja Renewables Energy, HMEL, Huawei, IB solar, ICRA, Idam Infrastructure Advisory, IFCI, IIFCL, IREDA, Ingeteam, Inspire Clean Energy, Jinkosolar, KEI Industries, Kirloskar Solar Technologies, KPMG, KSTAR, L&T Financial Services, Lanco Solar, Lapp India, Lara Global, Larsen & Toubro, LERRI Solar Technology India, Lightsource, LONGi Solar Technology, M&I Materials India, Maharishi Solar Technology, Mahindra Powerol, Mahindra Susten, Manikaran Solar, Maruti Suzuki India, Mc Nally Bharat, MEDA, Megawatt Solutions, MNRE, Mytrah Energy (India), Navitas Solar, Nelco, NEDO, Okaya Power, Om Sai Renewable Energy, Optimum Tracker, Orange Renewable, PES Solar, Phono Solar, Power Grid Corporation of India, Power One Microsystem, POSOCO, Praxair India, PWC, Proinso Solar Energy, PTC India Financial Services, PEDA, Rajasthan Renewable Energy Corporation, Ravindra Energy, Rays Future Energy India, REC, ReGen Powertech, ReNew Power Ventures, Renewsys, RTI International, Sailax, SBI Capital Markets, SECI, Secure Meters, Shapoorji Pallonji Infrastructure Capital, Shenzhen Kstar, Siemens, Sindicatum Carbon Capital, Solar Arise, Solis, Soltec Trackers, Sprng Energy, Sterling and Wilson Solar, Sterlite Power Transmission, Sumec Group Coporation, Sun Aura Technologies, Sungrow, SunSource Energy, Suntech Power, Super Solar, SWELECT Energy Systems, Tata International, Tata Power Solar Systems, Tata Steel, Toyo Engineering, UL India, Urja Global, URTH Power Solutions, VARP Power, Vertiveco, Vikram Solar, Virtubox Infotech, VRG Energy India, VS Saurya Ener Tech, Waaree Energies, Welspun Renewables Energy, YES BANK, etc.

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REGISTRATION FORM

I would like to register for the conference

NAME/DESIGNATION _____ COMPANY _____

MAILING ADDRESS _____

PHONE _____ MOBILE _____

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Renewable Watch

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REGISTRATION FEE

- The fee for the training is Rs 15,000 for one participant, Rs 25,000 for two, Rs 35,000 for three and Rs 45,000 for four.
- There is a 10% discount for those registering before 20th April. 18% GST is applicable
- Registration will be confirmed on receipt of the payment. To register online, please log on to http://indiainfrastructure.com/shopping_cart.php?id=3

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