National Webinar

On

“Artificial Intelligence(AI)/Machine Learning(ML)

for

Smart Meters and Advanced Metering Infrastructure(AMI)”

7th January, 2026

आयोजक/ *Organised By*

Metering and Utility Automation Division
केंद्रीय विद्युत अनुसंधान संस्थान / Central Power Research Institute
(भारत सरकार की सोसाइटी, विद्युत मंत्रालय) / (Govt. of India Society, Ministry of Power)
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About National Webinar:

The **Artificial intelligence (AI)** play a crucial role in Advanced Metering Infrastructure (AMI) projects by leveraging the massive amount of data generated by smart meters. The Artificial Intelligence is used to analyze the data from Smart Meters to reduce energy consumption. **Artificial Intelligence (AI), Machine Learning (ML),** etc. based solutions for Smart Distribution sector and a unified billing and collection system.

AI-enabled smart meters evolve from simple data collectors into intelligent energy managers. They enable real-time usage (voltage, current & power) analysis and predictive maintenance, such as detecting energy theft or identifying defective components. This leads to better grid management for renewable energy integration, automated consumption control, lower energy bills, increased efficiency, and fewer outages for both consumers and utilities.

The following topics will be covered in the National webinar:

- **Artificial Intelligence (AI)/Machine Learning (ML) in Smart Meters**
- **Artificial Intelligence (AI)/Machine Learning (ML) in Advanced Metering Infrastructure (AMI)**

The Participant should have good internet connection and good quality headphone/speaker set with Laptop/Desktop. The participant should also have notepad/pen to note down important points.

Who should attend?

The National webinar is aimed at professionals of Power Utilities, BESS Manufacturers, Captive Power Plants, Battery Energy Storage System service providers, Integrators, R&D Engineers, Consultants, Regulators, Renewable Energy Producers, Faculties and Students from Academic Institutes and other stake holders in power and energy sectors.

Registration

No Registration Fee

Registration form, a part of this brochure, complete in all respect shall be sent to the National webinar Coordinator.

Kindly use separate form for each participant,

For Online Registration : https://forms.gle/1NogiaUFVH7y8rUF9 (Google form link to register)

For Offline or through mail : Downloaded/ Photo copies of Registration form are acceptable.

Metering and Utility Automation Division (MUAD)

The division is equipped with state-of-the-art technology instrumentation to cater the needs of testing and calibration services to customers from India & abroad at the following laboratories.

- Energy Meter Testing Laboratory (EMTL)
- Calibration Laboratory

Energy Meter testing laboratory caters the services for various customers in Type test, Acceptance test, Tamper test and additional tests as per tender specification of utilities. CPRI has established a comprehensive test facility for Energy Meters at Bangalore and Bhopal. Both laboratories are equipped with State of Art Technology which complies with the requirements of National & International Standards and conforms to ISO/IEC 17025:2017 standard. CPRI has also established Energy Meter Testing lab at Noida.

Energy Meter testing lab also renders DLMS/COSEM Protocol testing for Static Energy Meters/Smart Meters. By using latest version of Conformance Test Tool - CTT and Functional Evaluation Tool - FET both Static Energy Meters and Smart Meters are verified for their compliance to DLMS/COSEM (IEC 62056) protocol requirements and for their Parameter verification respectively. Also lab conducts communicability tests for Smart Meters. Both the above laboratories are recognized by Bureau of Indian Standards.

The Calibration laboratory is accredited by NABL as per ISO/IEC 17025:2017 standard for both at lab and at site. The calibration laboratory is equipped with high precision Energy Comparator of 0.01 class accuracy to calibrate reference energy meter up to 0.02 class accuracy. The laboratory has facility to calibrate Power source, reference standard energy meter, multi-function meter and power analyzer.

CPRI'S Profile

Central Power Research Institute (CPRI) set up in 1960 by the Government of India, functions as a National organization for applied research in power sector and also serves as an Independent Laboratory for testing and certification of power equipment. CPRI is a member of STI (Short Circuit Testing Liaison) of Europe and is accredited by M/s ASTA of UK. CPRI also provides consultancy services on various facets of power sector. CPRI has expertise in the area of Simulation, Diagnostics, System Analysis and Testing. CPRI laboratories have modern equipment needed for Power system simulation, Short circuit testing, Diagnostics of equipment, Materials engineering, Seismic qualification etc. CPRI has experienced faculty in different subjects concerned to power sector with practical experience in their areas of interest, as well as extensive experience in presenting courses/seminars.

Over the period, CPRI officers have gained lot of practical knowledge concerning to testing and operational problems of the industry. CPRI is a leading provider of Training and Continuing Education to Utilities, PSUs across the country for the past 50 years. CPRI is continually setting new standards in training and continuing education from basic theoretical information to practical hands-on electrical equipment training. CPRI courses have made substantial impact on the level

of training and education to India's electricity utilities, manufacturing companies, transmission and distribution companies. By upgrading the occupational skill of technical workers, CPRI training courses have improved the career path of many electrical personnel as well as contributed to an improvement in electricity efficiency, plant productivity, electrical system reliability an overall competitiveness of Indian industry.

Smt S.Sudha is Joint Director & Head of the Division (HoD) of Metering and Utility Automation Division (MUAD) of CPRI. She has graduated in B.E Electrical from R.V.College of Engineering, Bangalore. She started her career as Engineering Officer Grade1 in CPRI. She has 27 years of experience in the field of Energy Meter testing as per IS & IEC Standards, Calibration of Reference standard Energy Meters and other measuring instruments. She has conducted pre dispatch inspection on Test Benches and Reference Standard Meters at manufacturer's premises abroad. Having experience in both testing and calibration she has conducted many seminars & conference on Smart Grid, Smart Meters, Communication technologies and Cybersecurity. She has provided consultancy services to state electricity board & conducted Third Party Inspection at various manufacturer's premises on behalf of power utilities. Her areas of Research interest include Smart Grid, Smart Meter, Micro PMU, Cyber Security, OT Cybersecurity Audit, ISMS Audit, Renewable Energy (RE), Power Quality & EMI/EMC for EV Charger. Mobile: +91 96118 43364, Email: sudha@cpri.in

Dr Kaliappan Perumal, PhD (NIT, Tiruchirappalli), presently he is holding the post of Additional Director and Group Head for Metering and Utility Automation Division of Central Power Research Institute (CPRI), Bangalore, Ministry of Power, A Govt. of India Society. He has more than 32 years of experience working in the field of Power System Protection, Numerical Protection IEDs, Smart Grid Technology and Applications, Synchrophasor, Wide Area Measurement System (WAMs), Wide Area Monitoring, Protection and Control (WAMPAC) and Renewable Energies: Wind Farm-Solar Plant. His areas of researches are Adaptive Relaying, Computer Relaying, Protection issues in Distributed Generation and DERs, MicroGrid Protection, Assessment of compliance of both M class & P class Synchrophasor, Synchrophasor for Power System Protection and Control applications, Internet of Things (IoT) Enabled Smart Grid, Renewable Energies: Wind Farm, Solar Power and Hybrid Wind Farm-Solar Plant with storage.

Cyber Security for Power Sector, Cyber Physical System Security for the Smart Grid, Information Security Management System for Industrial Control System, Power Station, SCADA System, Industrial Control System, IT-OT Convergence, OT Cyber security Audit, ISMS Audit, Digital Substation, IEDs, Substation Automation, IEC 61850 Cyber Security Compliance, Synchrophasor, WAMs, WASA, WAMPAC, Data and Communication system, Renewable Energies, Wind Farm, Solar Plant, BESS, MicroGrid, DERs, DERMs, Smart Distribution System, Smart Meters, Advanced Metering Infrastructure, DLMS/COSEM Cyber Security, Cyber Security Standards and CEA Guidelines for Cyber Security in Power Sector.

He has organized more than 130 events including Smart Grid and Cyber Security domain. He has also delivered around 470 expert lectures in PSU, Central, IISc, IITs, NITs and reputed academia colleges/Universities. He is a IEEE Senior member, ISA Senior Member, Fellow IE, DLMS UA Member/DLMS Security Force Member, TC57/WG15 Data & Communication Security Member, BIS LTD 35 Power System Relays Member, BIS LTD 10 Power System Control and Associated Communication Member, Mobile: +919449149924, Email: kaliappan@cpri.in

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