ORGANIZER

ISGF India Smart Grid Forum

KNOWLEDGE PARTNER

Power Foundation of India

DISTRIBUTION UTILITY MEET DUM 2025

SESSION PARTNERS

Power Foundation of India

AIDA Collaboration | Innovation | Excellence

SPECIAL PLENARY SESSION

INNOVATIVE POLICIES AND REGULATORY INTERVENTIONS FOR SUSTAINABILITY OF DISCOMS

Smart Meters as the Foundation for Digitalization of DISCOMS

Presented By

Anoop Kaur Bowdery, CEO, EDW Wireless

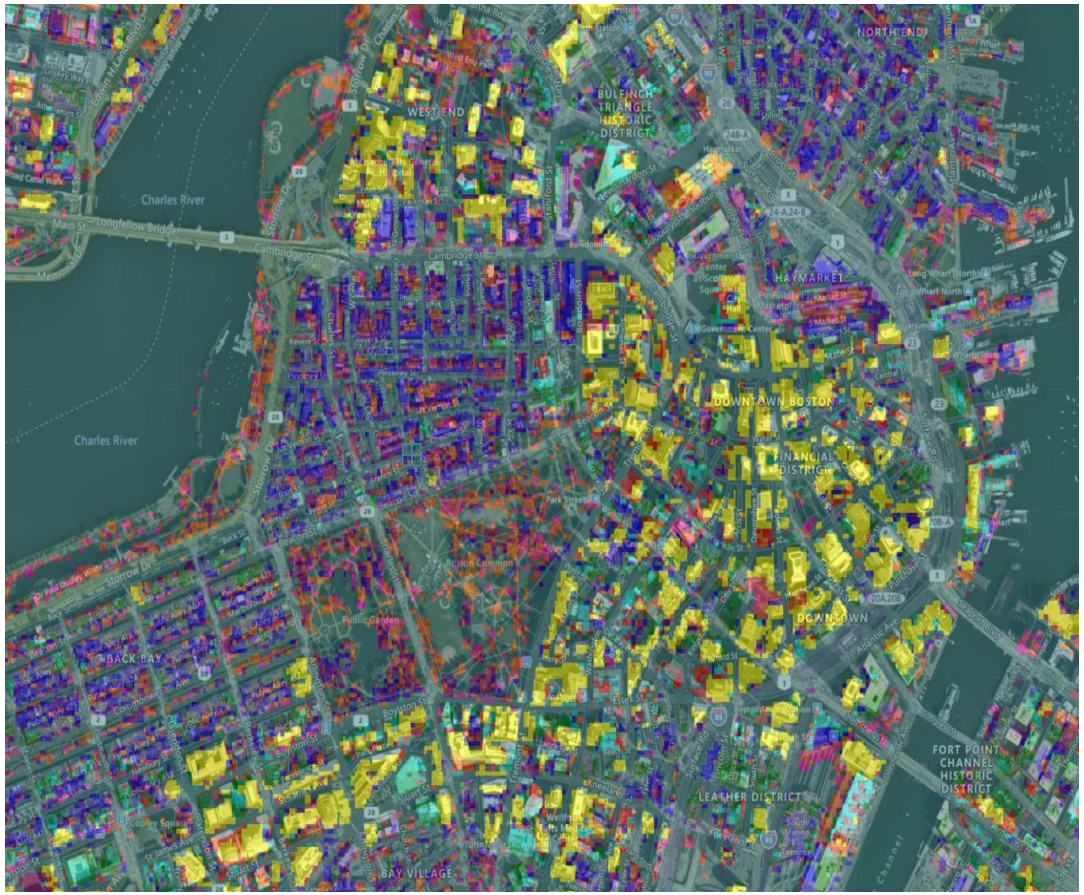
EDX WIRELESS

Distribution Utility Meet | 04 - 05 November 2025 | www.dumindia.in

• Challenges in Smart Meter Rollout and Maintenance

•Reliable performance requires:

- •**Hardware:** Consistency, calibration, and durability at scale.
- •**Communication:** Continuous, interference-free connectivity across diverse terrains.
- •**Data:** Secure, accurate, and real-time transfer between systems.
- •**Human Factors:** Skilled workforce, informed consumers, and adaptive processes.



Major Challenges

Scale Meets Variability	• The challenge isn't the number of meters; it's the diversity of conditions they operate in."
Connectivity is Often the Weakest Link	• It's rarely the meter that fails; it's the network around it.
Integration Complexity	• Biggest hurdle is connecting the whole ecosystem to run seamlessly
People and Policy	• Consumers who must trust the technology, utilities who must adapt processes, and regulators who must align standards

Scale Meets Variability

- Rolling out millions of meters means dealing with diverse geographies, building types, power systems, and communication conditions

Use Case: Hydro One (Ontario, Canada)

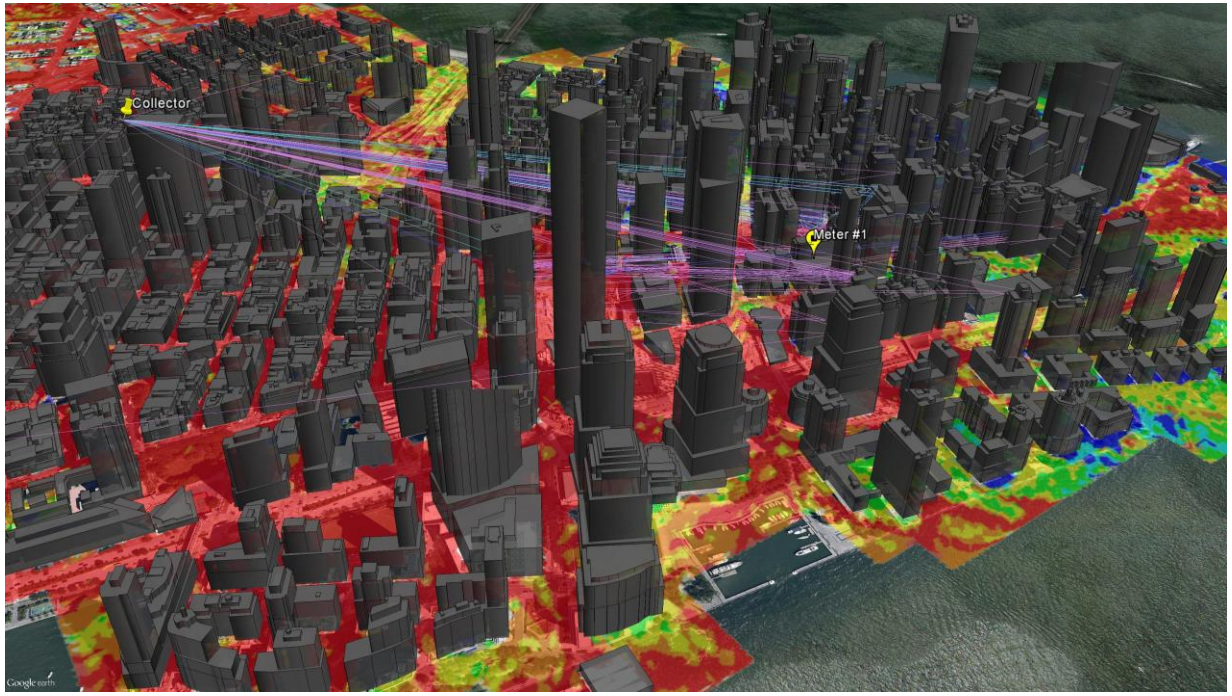
Challenge: Covered an enormous area with urban density and forested rural zones. The first rollout had poor coverage in northern regions.

Solution: They re-planned connectivity using terrain-based RF propagation modeling, optimized tower placement, and improved meter-to-gateway link reliability by 20%.

Lesson: *Variability in terrain and foliage affects RF propagation just as much as population density*

Connectivity is often the Weakest Link

- Smart meters rely on stable communication networks regardless of technology such as RF mesh, PLC, NB-IoT, LTE-M



Use Case: CenterPoint Energy (Texas, USA)

Challenge: Despite strong mesh coverage, CenterPoint's AMI network experienced packet losses and latency issues during storms due to dense foliage and unplanned network congestion.

Solution: They introduced redundant backhaul links and gateway clustering, plus used RF simulation to improve mesh routing efficiency.

Lesson: Even in advanced markets, *reliability isn't guaranteed without predictive connectivity planning.*

Integration Complexity

- Achieving interoperability across multiple vendors, protocols, and legacy systems is still one of the biggest pain points worldwide

Use Case: Ausgrid (New South Wales, Australia)

Challenge: AMI data had to flow into separate systems for demand management and customer engagement. Inconsistent data refresh intervals led to **mismatched readings** and customer confusion.
Solution: Integrated systems through an **enterprise analytics layer** for synchronized reporting.

Lesson: *True digitalization happens when data flows uniformly across every system — from grid to customer interface.*

People and Policy

- Consumer acceptance, workforce training, and data privacy compliance all add layers of operational risk.
- Even in mature markets like the U.S. or Europe, utilities found that success depended as much on coordination and governance as on technology.

Use Case: California Smart Grid Rollouts (PG&E, SCE)

Challenge: Early consumer backlash — privacy concerns and misconceptions about "health risks" from RF signals.

Response: Utilities launched **public education campaigns**, open data transparency, and customer web portals showing real-time usage.

Outcome: Complaints dropped by 70%, and adoption rose sharply once people *understood* the benefits.

Operational benefits to DISCOMs

Efficiency

Accurate & automated metering, billing and collection, seeing a 20-30% improvements

Loss Reduction

Real time collection and visibility into technical and commercial losses

Operational Insight

Meters feed critical data into outage management, GIS and ADMS systems

Planning & forecasting

Real time consumption, introduce TOU tariffs and prepare for distributed energy sources such as solar, ev etc

DISCOM Digitalization

- **Automation**
  - Reactive to a proactive ecosystem
- **Integration**
  - Systems seamlessly coordinated with one another
- **Data Driven Operations**
  - Predictive maintenance, load forecasting, renewable integration

Use Case: Florida Power & Light (FPL – Florida, USA)

Automation → Reactive to Proactive Ecosystem

•FPL connected **over 5 million smart meters** with sensors and outage management systems.

•Integrated AMI data with **ADMS and GIS**, creating a self-correcting grid that detects and isolates faults automatically.

•Result: **40% reduction in outage duration** and faster hurricane restoration times.

KEY TAKEAWAYS

Every country learned that scale isn't the obstacle — **diversity is**

Most deployment failures come not from meters, but from the **communication layer**

Smart meters only create value when their data flows across **billing, GIS, ADMS, OMS, and CRM** systems.

Consumer trust, regulatory support, and trained field staff decide long-term success.

The next generation moves beyond metering into **active grid intelligence**

KEY TAKEAWAYS

- At EDX, we see AMI 2.0 as the point where RF planning meets digital intelligence.
  Our mission is to make connectivity predictable, so every smart meter, sensor, and inverter can operate in harmony across cities, villages, and continents.

ORGANIZER

India Smart Grid Forum

KNOWLEDGE PARTNER

Power Foundation of India

DISTRIBUTION UTILITY MEET DUM 2025

SESSION PARTNERS

Power Foundation of India

AIDA Collaboration | Innovation | Excellence

EDX WIRELESS

THANK YOU

For discussions/suggestions/queries email: ***dum@indiasmartgrid.org***

www.dumindia.in

Links/References (If any)

BACKUP SLIDES