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**DISTRIBUTION
UTILITY MEET
DUM 2025**

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SPECIAL PLENARY SESSION

INNOVATIVE POLICIES AND REGULATORY INTERVENTIONS FOR SUSTAINABILITY OF DISCOMS

Future Proven Connectivity

Presented By

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



Analogue/AMR

Billing

Reading app



- Flat rate
- Monthly reads
- Manual / AMR / Drive by
- Wireless M-Bus

1st Gen Smart

Billing

MDM

HES



- Time of Use
- Hourly reads
- PCL, RF Mesh, NB-IoT, LTE-M

2nd Gen Smart

Billing

MDM

HES



- Time of Use, Real-Time Pricing
- 15-5-1 min reads
- RF Mesh, 4G

+

3rd Gen Smart

Apps, CIU

Load monitor
and control

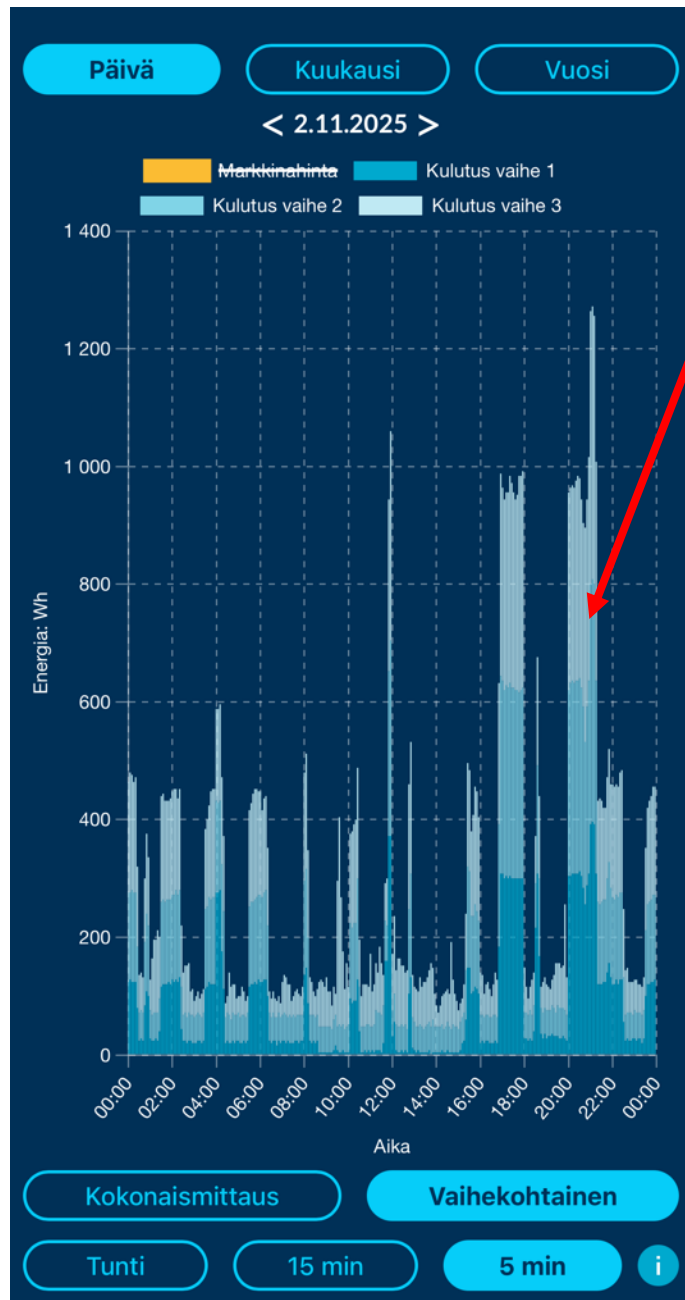
Edge compute



- Real-Time Pricing
- 5 min to < 1 s reads
- Event stream
- NR+, 6G(?)
- Data as a Service

RDSS/SBD

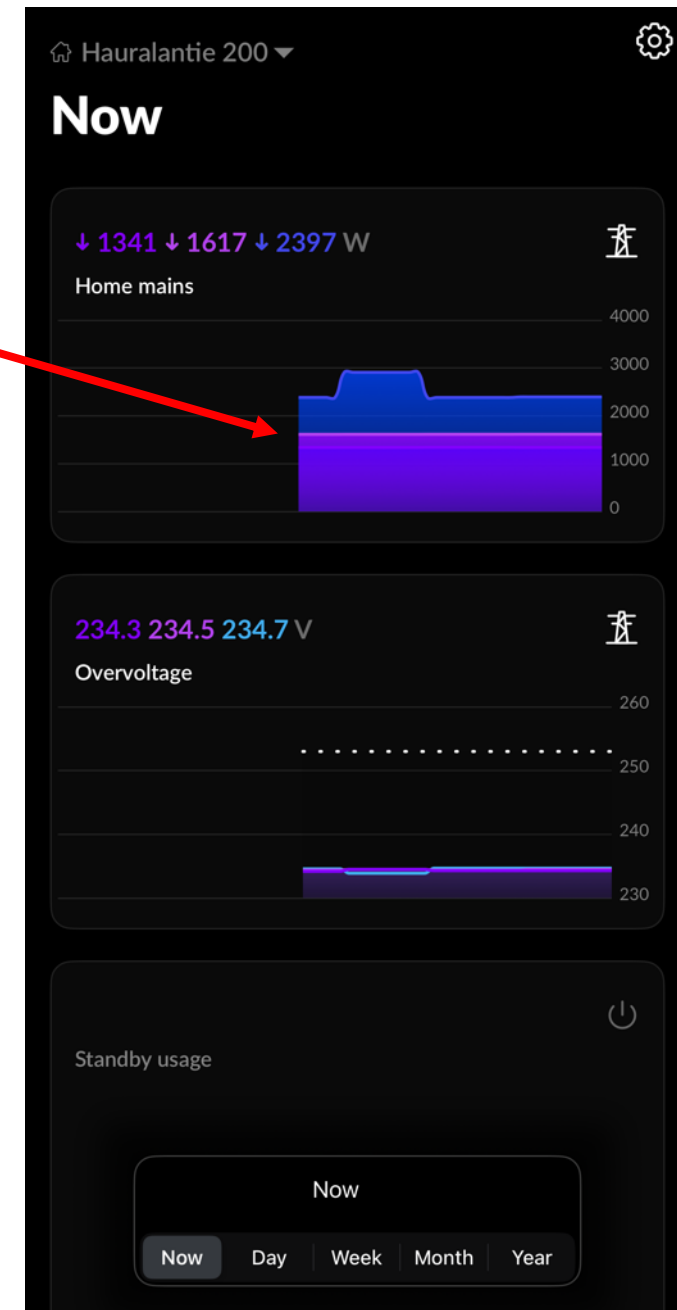
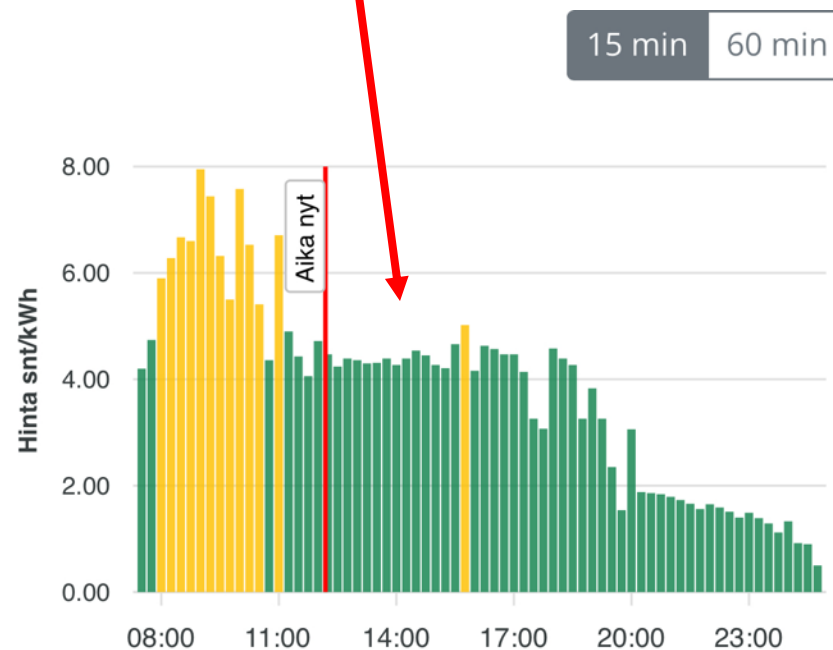
Data as a Service



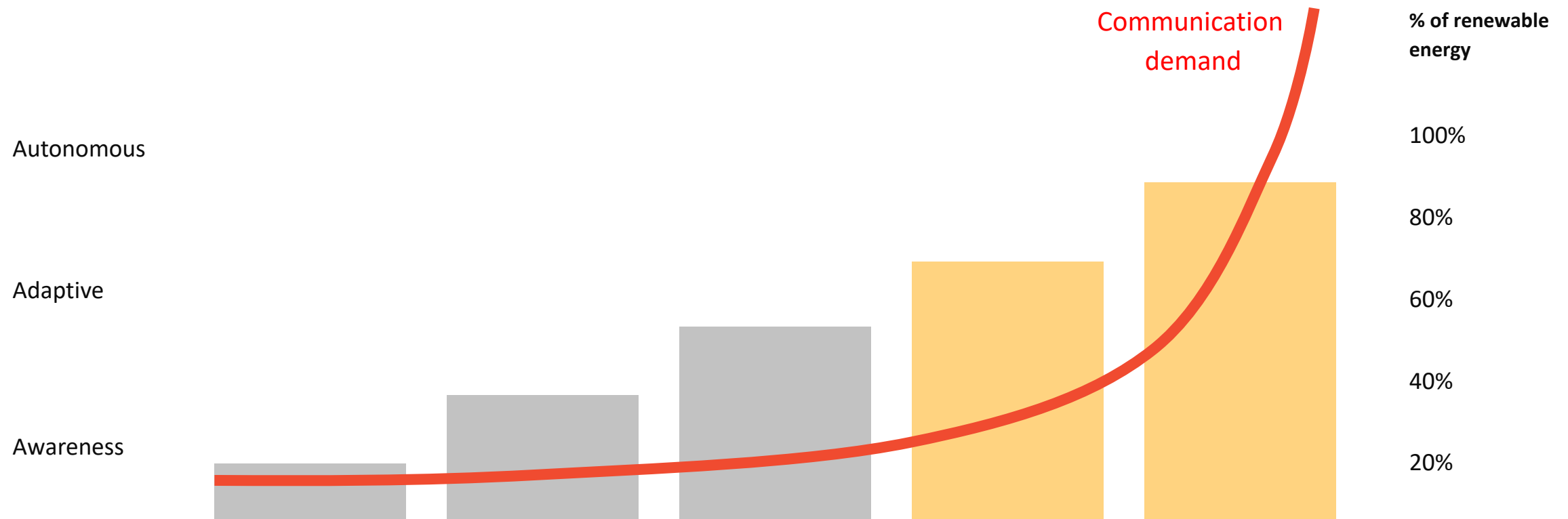
In Finland, we are already moving to 3rd generation. 5min reading interval. Consumer see it with <10 min delay.

HAN offers real time consumption option locally.

Prices are set with 15min interval.



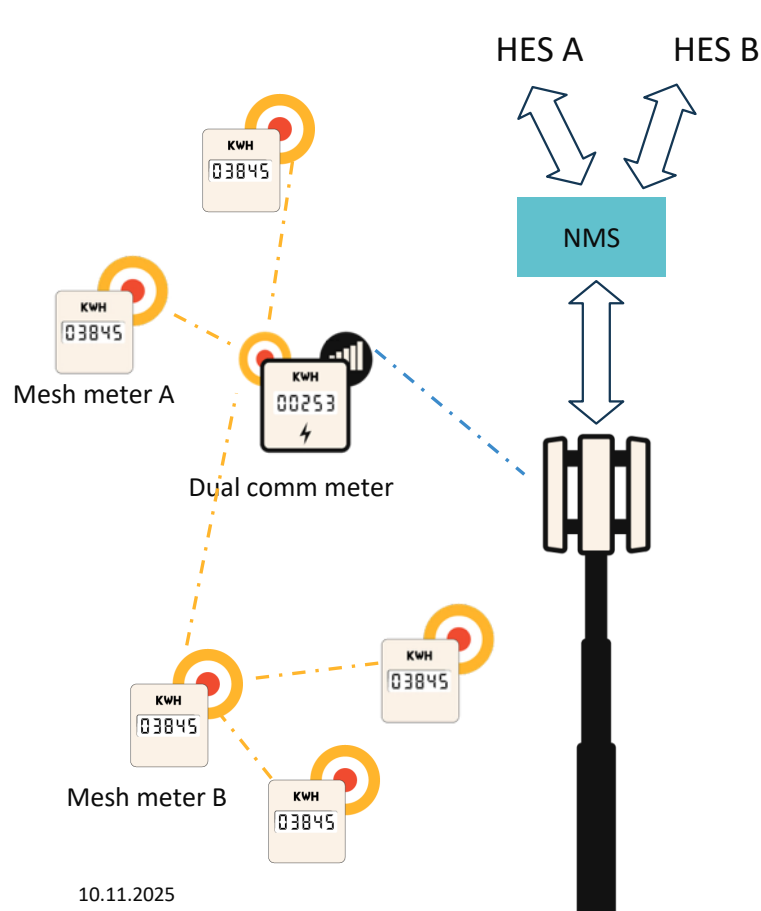
- Renewables drives for autonomous connectivity



Key requirements in India

- **Scaling** to hundreds of millions, without tuning. Very high local **densities**.
- Work everywhere with **~100% coverage** – urban, rural, basements
- **Cost-predictability** – Meet SLA (incl. DC/RC), pay only for results, low maintenance, transparency and clarity on IPR patent fees.
- High **Cybersecurity**.
- **Interoperability enabler** to serve 100+ utilities, tens of AMI SPs, tens of HES and Smart Meter manufacturers.
- **Dependable** and **upgradable** for 10+ years

Only meters & NO dedicated infrastructure



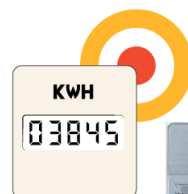
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Mesh Meters

Up to 99.7 % of installed base

- Ultra resilient and fully autonomous
- Self forming and self healing and multi gateway
- Based on NR+ 5G standard
- Ultra optimized bill of material



+

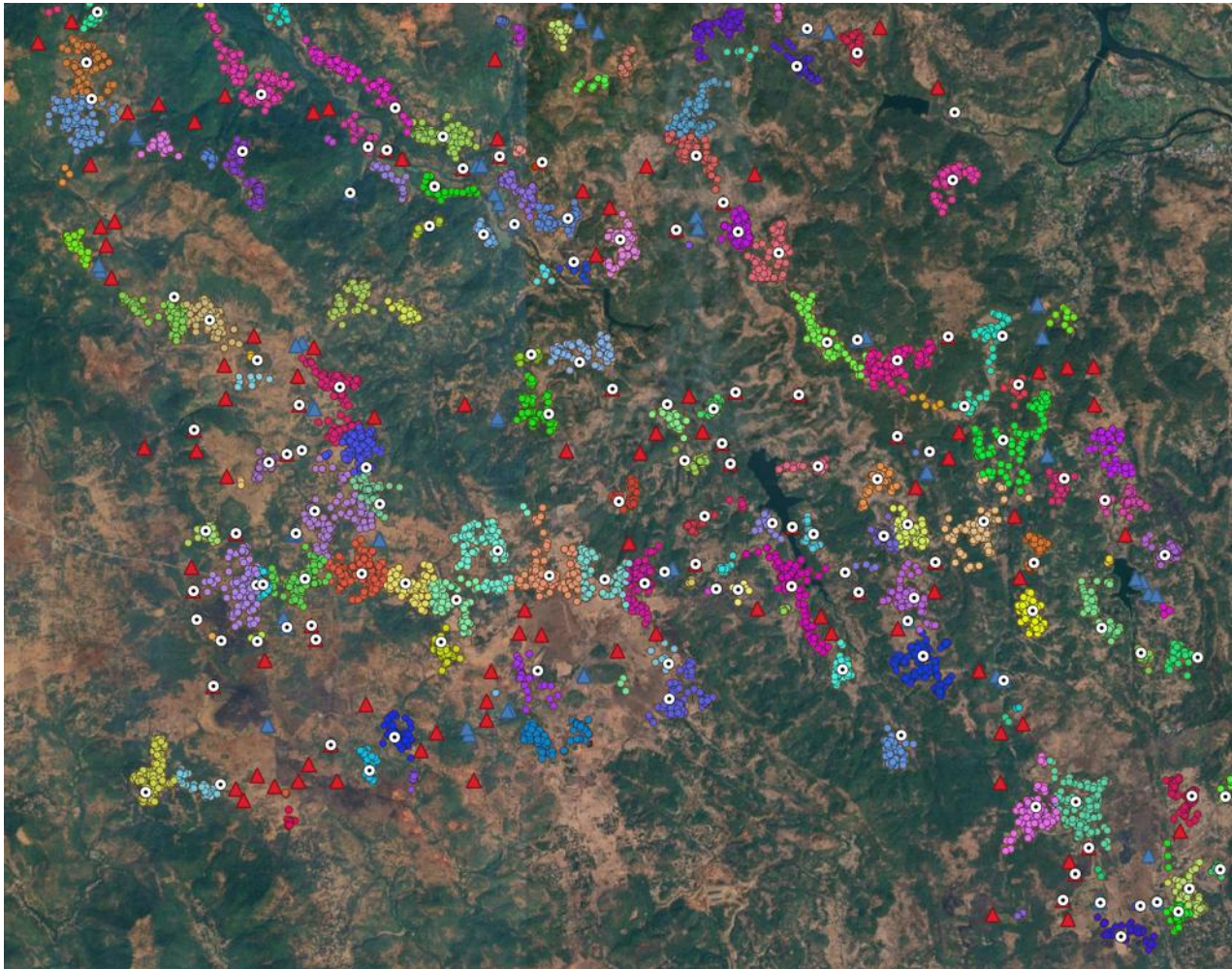


Dual Communication Meters

Connect up-to 300 mesh meters

- Dual communication 4G + NR+ Mesh
- Optimized bill of material making
- Dynamic mode switching

Planning example: Cellular vs Mesh in a challenging area, 25k meters



Cellular

OK RSRP
36.8%

RSRP<-110
63.2%

Wirepas, NR+

Mesh
formation OK
98.6%

Isolated 1.4%

- **Based on global NR+ standard, defined by ETSI. Applicable for IS18010**
- **Performance-based commercial model:** Utilities pay only for connected, SLA-compliant meters.
- **End-to-end assurance:** From meter to HES data delivery. **No excuses.**
- **Open ecosystem:** Anyone can join – no lock-in. All can bring their strengths. Support for all meter manufacturers and HES providers.
- **EU CSA leading security.** ETSI and BIS collaboration.
- **1# RF Mesh** in Europe and India, **1 Crore connected in India**
- **99% Coverage and SLA.**

Connectivity Approach for RDSS/SBD.

- Best Effort? – No. Leads to big problems and cost later.
- Guaranteed Performance? – Yes. Responsible option.
- Future Proven? – Defines the long term success!

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THANK YOU

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

www.dumindia.in

Links/References (If any)

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BACKUP SLIDES