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India Smart Grid Forum

India SMART UTILITY Week 2025

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Session : SMART METERING PART B – DISCOMs, AMISPs, OEMs and SIs

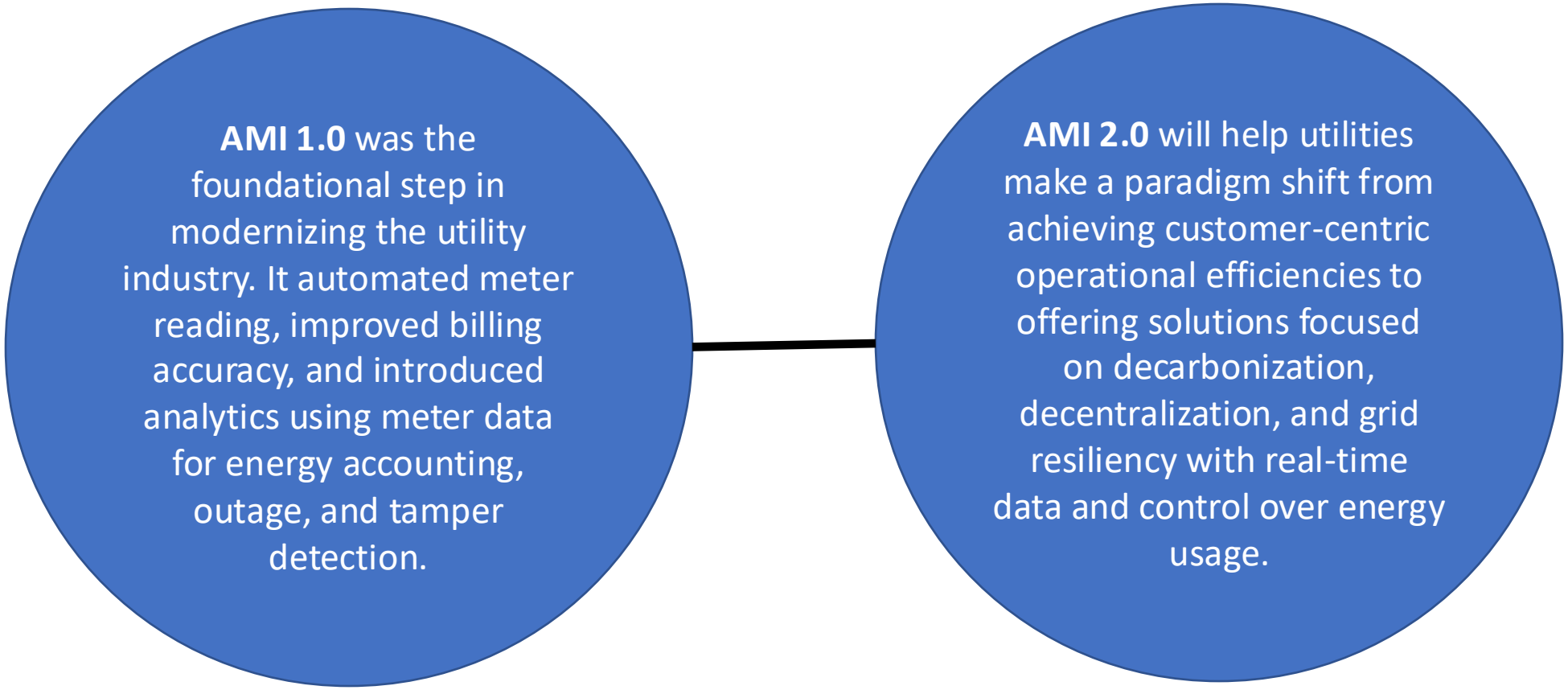
PRESENTATION TOPIC

AMI2.0 - Utility Prospective

Presented By

Amit Kumar Bansal, DGM-Metering, Noida Power Company Ltd.

INTRODUCTION



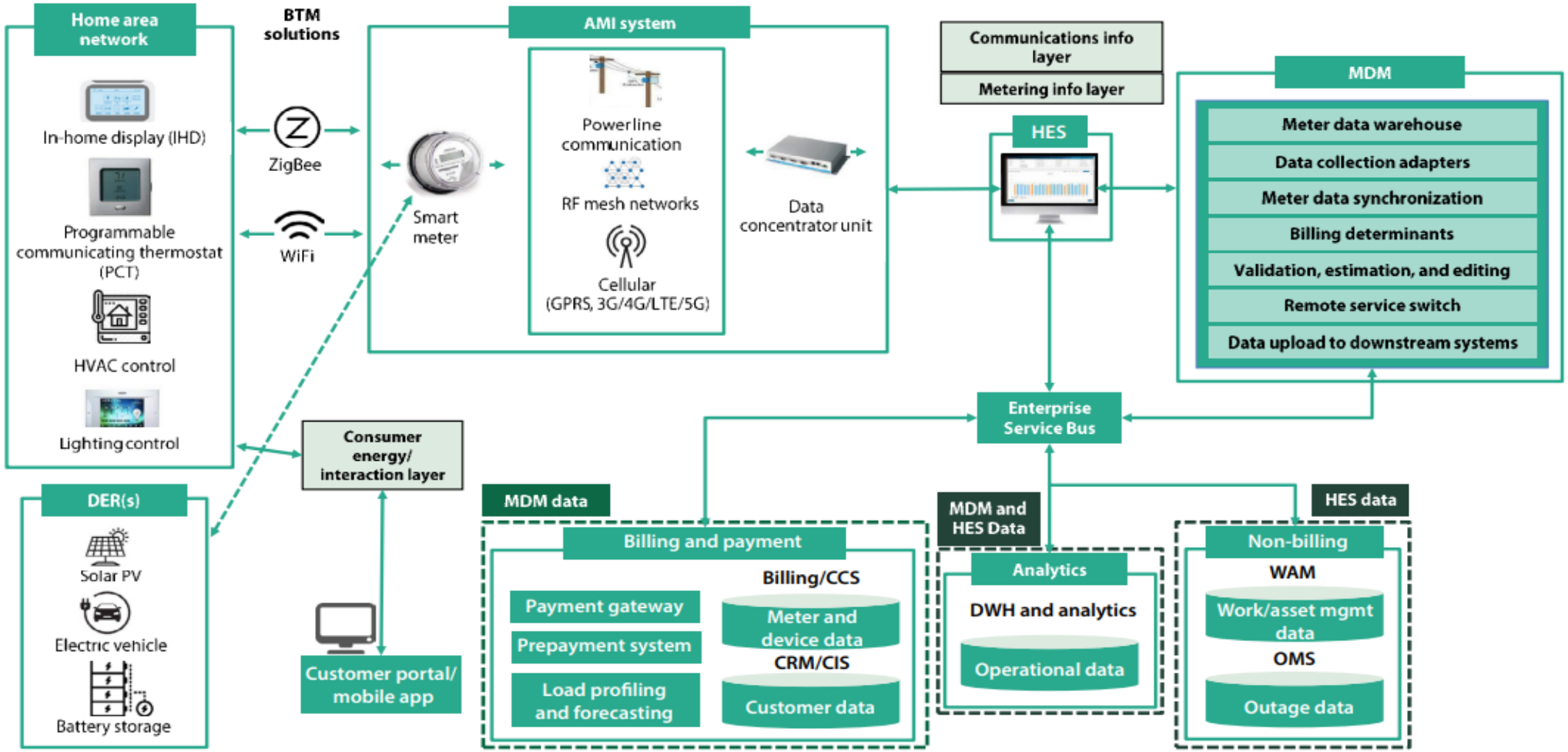
Architecture of AMI 2.0

Core Components	Smart Meters
	Data Concentration Units
	Communication Network
	MDMs
	HES
Workflow	Data Collection and Transmission
	Data Reception and Management
	Data Processing and Analytics
	Customer Interface
	Outage Management
AMI 2.0	**Edge Computing**
	Advanced Capabilities
	Real-time Data
	Security
	Interoperability
	Scalability
	Cost Effectiveness

Functionalities of AMI 2.0

- Real-time data analytics and monitoring.
- Two-way communication between utilities and consumers.
- Enhanced integration with DERs (e.g., solar panels, EVs).
- Improved customer awareness of consumption.
- Edge computing and access to high-resolution waveform data.
- Support for microgrids and intelligent automation.
- Load disaggregation available to consumers.
- Anomaly detection capabilities.
- Can be a control gateway for various Distributed Energy Resources (DERs).

Architecture for AMI 2.0

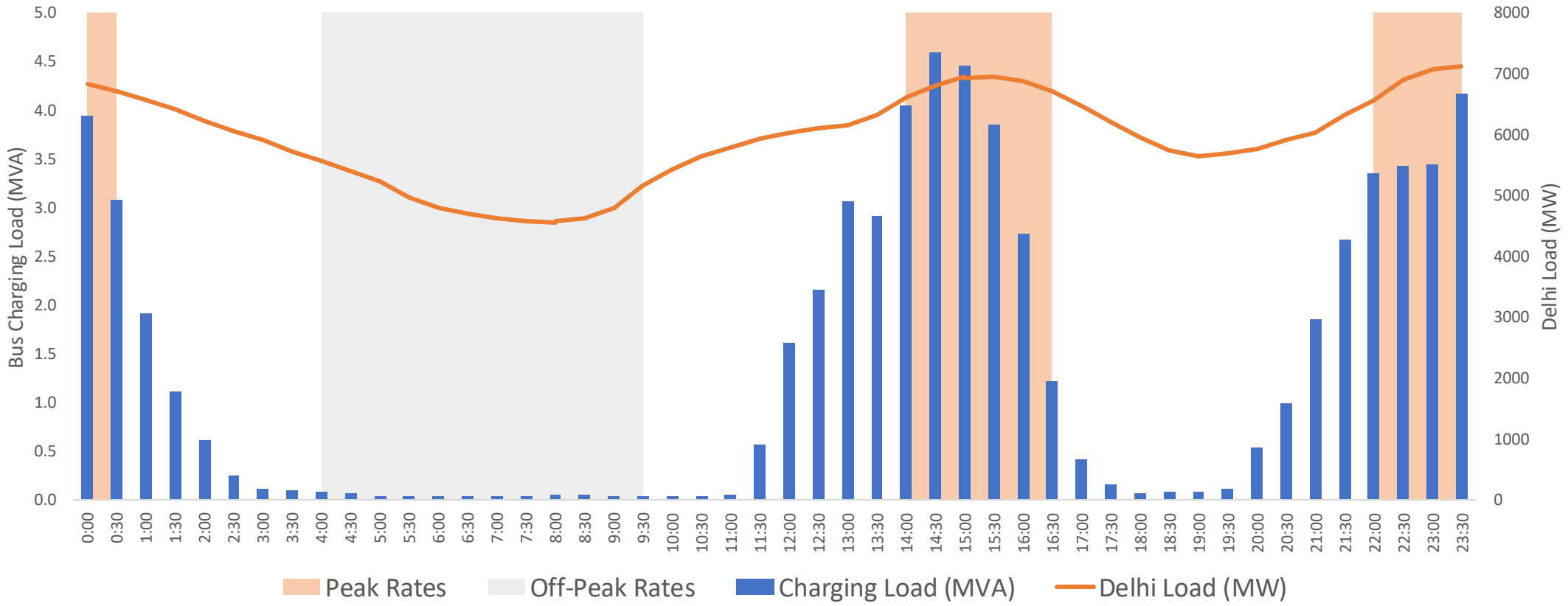


Communication Infrastructure

- Power Line Communication (PLC)
- Cellular Networks
- Radio Frequency (RF)
- Narrow Band Internet of things (NB-IOT)
- Combination of NBIOT and BLE
- IoT Devices
- Zigbee
- Ethernet

- Reliability and Security
- Cost and Scalability
- Bandwidth and Latency
- Integration with Existing Infrastructure
- Coverage and Range

USE CASE – Typical EV Depot Charging Profile



KEY TAKEAWAYS / RECOMMENDATIONS

❑ Interoperability with Other Smart Grid Solutions

- ❖ **Integration with Smart Grids**: AMI 2.0 in India is part of the broader smart grid initiative, which involves integrating smart meters with other smart grid technologies like distributed energy resources (solar panels, electric vehicles) and energy storage systems. This helps optimize grid operations.

- ❖ **IoT Integration**: It is expected that AMI 2.0 will integrate with Internet of Things (IoT) devices, enhancing grid automation and enabling advanced applications like automated demand response and real-time energy management.

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THANK YOU

For discussions/suggestions/queries email: isuw@isuw.in

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Links/References (If any)