India Smart Utility week 2024

Global lessons on Smart metering

14th March, 2024

Financing Smart Meters – Constraints and Possible Solutions

Revamped Distribution Sector Scheme (RDSS)

An Overview

Revamped Distribution Sector Scheme

GoI has announced the **Revamped Distribution Sector Scheme (RDSS)** with an outlay of INR 3.04 Lakh Cr. to support distribution companies in undertaking large scale reforms in the distribution sector in July 2021.

Scheme Objectives

- **Improve quality and reliability of supply to consumers through financially sustainable and operationally efficient Distribution sector**
- **Reduce AT&C loss on pan India level to 15% by 2024-25**
- **Reduce ACS-ARR Gap on pan India level to nil by 2024-25**

To be achieved through

PART A		PART B
1 Smart Metering and related AMI Infrastructure	**2 Distribution Infrastructure strengthening & modernization**	**3 Training & Capacity Building and other Enabling & Supporting Activities**
• Implementation of smart metering along with associated AMI incl. technology-based solution and unified billing and collection system.	• Distribution infrastructure works for strengthening and modernization including **SCADA and ERP**	• Supporting and enabling components of the Ministry, training and capacity building, Awards & Recognitions etc.
INR 1.51 Lakh Cr **GBS: INR 23,300 Cr**	**INR 1.52 Lakh Cr.** **GBS: INR 73,301 Cr**	**INR 1,430 Cr** **GBS: INR 1,030 Cr**

All ongoing approved projects under IPDS and DDUGJY will be subsumed under current scheme

Smart Metering Journey so far…

Initiation Stage (2011 – 2015)

- Smart Grid (SG) defined in Electricity (Amendment) Bill 2014
- 14 SG Pilot Projects Launched

2011

- Indian Smart Grid Task Force and Indian Smart Grid Forum established by GoI

2014

2015

- National Smart Grid Mission (NSGM) established
- Model Smart Grid Regulations issued by FoR
- BIS standards released for smart meters

Foundation Stage (2016 – 2020)

2016

- Functional Requirements for Smart Metering by CEA

2017

- Commencement of large-scale deployments by Energy Efficiency Services Limited (EESL)

2018

- Model DPR & RfP documents issued by NSGM
- 4 more SG projects sanctioned

2019

- Amended metering regulations published by CEA
- GOI issued advisory to replace all meters with smart meters by 2022

2020

- Electricity (Rights of Consumers) Rules, 2020 - all connections to be given with prepaid smart meter

Scale-up Stage (2021 – 2025)

2021

- Empanelment process for AMISPs and smart metering OEMs notified, and Request for Empanelment issued

2022

- New Revamped Distribution Sector Scheme with emphasis on smart metering announced by Finance Minister in Union Budget
- Model document for selection of AMISP on PPP basis was notified by MOP in 2021

Source: https://cyanconnode.com/wp-content/uploads/2022/05/Smart-Metering-in-India-Webinar_22Apr2022.pdf

Advantages of smart meters

Power procurement cost optimization

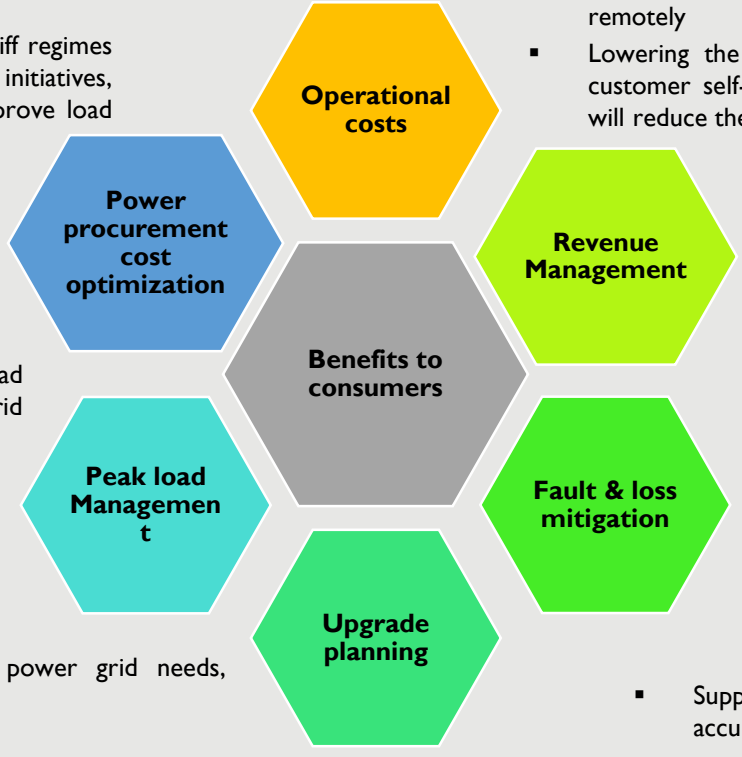
- Improving the ability to deploy advanced tariff regimes and other demand-side management initiatives, optimize power procurement costs and improve load management

Peak Load Management

- Increasing load management during peak load times, ensuring more efficient use of grid resources/upgrade deferral

Upgrade planning

- Helping utilities better understand power grid needs, facilitating better system planning



Operational costs

- Reducing meter reading costs as meters are read remotely
- Lowering the cost to service customers via increased customer self-service (fewer bill queries and complaints will reduce the need for site visits)

Revenue Management

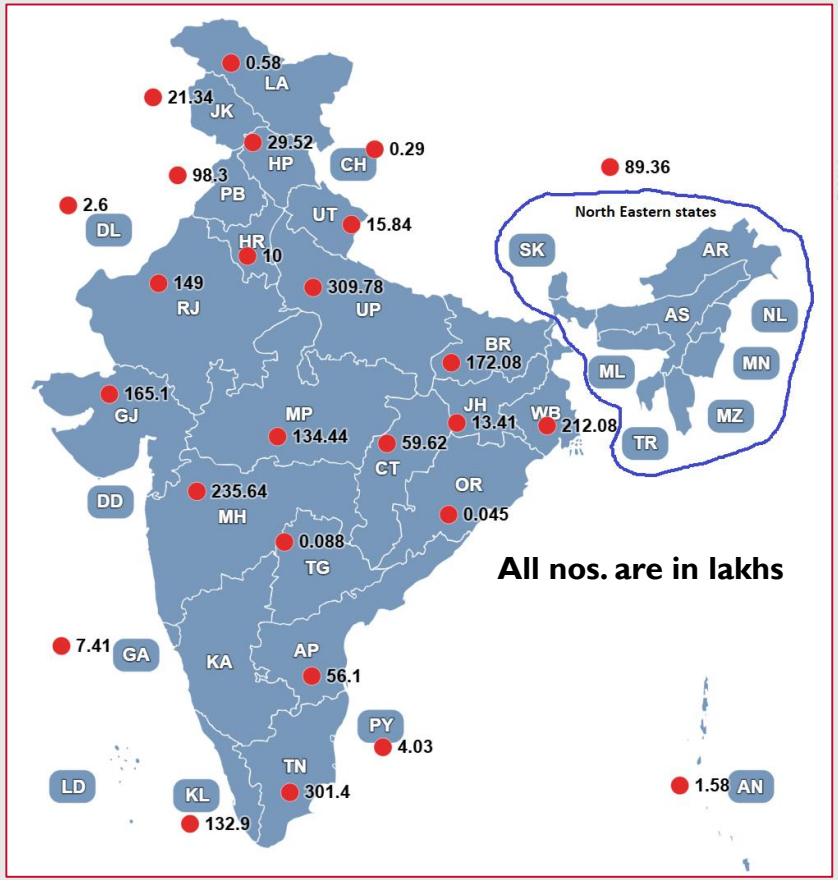
- Enabling timely billing to improve the revenue management through steady cash flow
- Improve collection to bill ratio

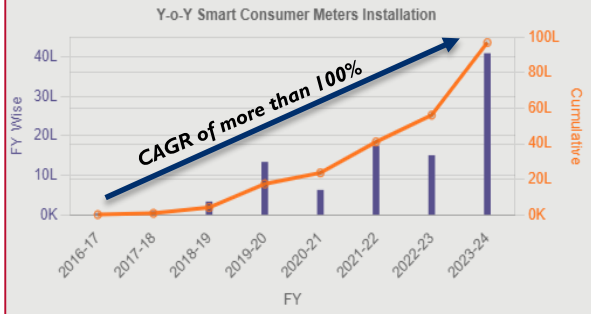
Fault & Loss Mitigation

- Allowing system faults be notified and located quickly, following power cuts and interruptions
- Supporting energy accounting, leading to more accurate measurements of distribution losses

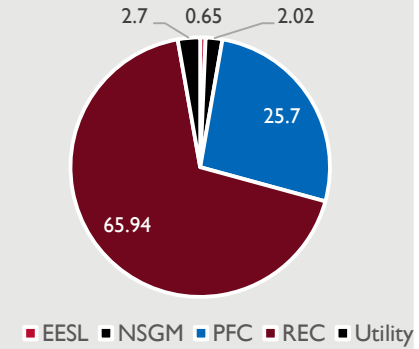
Current status of smart meters

State wise sanction of smart meters





Installed smart meters – agency wise



Major highlights

- Max smart meters are sanctioned to the states of UP, TN and Maharashtra.
- Exponential growth in installation of smart meters in the last 3 years
- PFC and REC are leading the smart meter installation across India

Source: NSGM Dashboard, MoP

Smart Meters – a big investment opportunity ?

Background	Description
Revamped Distribution Sector Scheme	• Replace 250 million conventional meters with smart meters ○ Enabling private sector participation by competitive selection of Advanced Metering Infrastructure Service Providers (AMISP) ○ Scale of the smart meter program and the completion timelines, necessities infusion of large upfront capex ○ 109.3 mn awarded and 9.7 mn installed
USD 12 billion debt financing opportunity	• Total Financing requirement of USD 20 bn, at a conservative estimate of INR 6,000/ meter ○ Government of India grant of USD 3 billion (15%) ○ Equity of USD 5 billion ○ Debt of USD 12 billion
Challenges	**Operational Challenges** • Interoperability with the existing discom IT systems, meter data managements systems **Financing Challenges** • Availability of Debt Financing – dependence on balance sheet financing • DISCOMs as counter parties raises risk perception
Encouraging Developments	• Investor Response – USD 2 bn platform sponsored by Genus Power received Investment from GIC, Singapore • Impact of Smart Meters – Enhanced revenue collection in DISCOMs of Bihar is being reported

Why is financing a challenge ? – USAID SAREP findings

Based on secondary research

- *Discoms as the counterparties to the AMISP contract potentially raise risk perception of investors*
- *Scale of smart meter rollout envisaged under RDSS is huge vis-à-vis current installations*
- *New Business model with limited private players*

Based on stakeholder discussions

- *Operationalization of the payment security mechanism (PSM) by Discoms*
- *Support from promoter : Requirement of undertakings/guarantees for additional comfort*
- *Limited data/track record of operational history*

Possible options to support financing smart meters

- ***Dedicated line of credit from DFIs to domestic FIs and thereafter FI disburses loans to AMISPs***

Option I

- ***Recycling of capital through models such as InvITs***

Option 2

- ***Loan Guaranty for the debt facility of AMISPs (Credit enhancement through DFI support to enhance lending to AMISPs)***

Option 3

Panel discussion to follow…

Thank You

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