

A WORLD LEADER IN NARROWBAND RADIO FREQUENCY (RF) SMART MESH NETWORKS









- Billing efficiency has continuously improved and increased from 80.69% in 2016 to 84.07% in 2021. Measures being put in place under RDSS 9Revamped Distribution Sector Scheme) to achieve target of 87-88%
- Collection efficiency remains a challenge has reduced as compared to FY 2016; 94.24% in 2016 to 92.4% in 2021
  - Delayed payment of current dues
  - Reduction in recovery of arrears
  - Govt. Depts. not making timely payments -Outstanding of INR 653 billion (Jun-22)

**Smart prepaid metering** shall therefore be a critical enabler for improving Discom cash flows and enhance operational efficiencies





- Govt. of India plans for replacement of all 250 million meters to smart prepaid meters
- Market still evolving -~5 million smart meters installed across Bihar, Uttar Pradesh, Haryana, Delhi, Rajasthan, Assam etc.
- Implementation mostly on post-paid
- Around **1.2 million** smart meters in **prepaid mode** in Bihar, Uttar Pradesh, Assam and Haryana
- Large-scale prepaid rollout only in Bihar (~92%)

Prepaid functionality of smart meters has ensured 100% recovery of arrears in Bihar divisions (Ashiyana & Bankipur) with high penetration of smart meters as well as led to a deposit of around INR 250 million as advance in both Discoms (NBPDCL & SBPDCL)





### Revamped Distribution Sector Scheme (RDSS)



#### **Goals and Targets**

Target – Deployment of 250 million smart meters

- Implementation in **2** (two) phases
- Phase 1 ~100 million smart meters by December 2023 in UTs, Industrial, Commercial, Government offices and other areas with losses>15%
- Phase 2 250 million smart meters by December 2025 in remaining areas

#### **Outlay and Features**

Scheme outlay of ~GBP 30.58 Bn.

- Government Budgetary Support of ~GBP 9.83 Bn.
- Results Linked grants tied to performance of DISCOMs on Operational & Financial performance and Reform initiatives
- Model SBD for AMISP on DBFOOT basis notified by Gol
- Empanelment process for AMISP and component/solution vendors released

#### **Policy & Regulations**

CEA Metering Regulations issued in 2021

- All new meters to be Smart Prepaid Meters
- Smart meter for all feeders by December 2022
- Phase-wise transition of existing meters







#### Total outlay of INR 3 trillion and categorized into 2 parts:

- PART A: Metering& Distribution Infrastructure works
- PART B: Training & Capacity Building & other enabling activities

#### Smart metering works:

Provision for an outlay of INR 1.5 trillion with an estimated GBS (Gross budgetary support) of INR 233 billion Implementation model –DBFOOT with complete responsibility of development and O&M on Implementing agency (AMISP) Funding pattern –15%/ 22.5% (limited to INR 900/ INR 1,350) of cost per meter Incentive for early completion (before Dec-23) –7.5%/ 11.25% (limited to INR 450/ INR 675) of cost per meter

#### **Key considerations:**

- Consumer Smart meters to be installed in prepayment mode
- System metering for DTs/ Feeders with Smart/ communicable meters

- Implementation in TOTEX mode throughPPP under DBFOOT or similar models
- End-to-end procurement of AMI solution
   to be ensured
- Lumpsum payment shall not exceed INR
   1,800/ consumer meter including any
   top-up by State Govt./ Discom (OR) grant
   component from Gol under the scheme
  - Satisfactory progress of prepaid smart metering works of Phase-I areas essential for release of grant under loss reduction works







**178.5 Million** consumer and system meters sanctioned – **35%** at various stages of tendering/ award

|        | States Sanctioned but tenders yet to be issued |                        |           |               |  |
|--------|--|------------------------|-----------|---------------|--|
|        | No. State                                      | Sanction Details       |           |               |  |
| S. No. |  | <b>Consumer Meters</b> | DT Meters | Feeder Meters |  |
| 1      | Andhra Pradesh                                 | 5,608,846              | 293,140   | 17,358        |  |
| 2      | Goa  | 741,160                | 8,369     | 827           |  |
| 3      | Haryana  | 7,405,618              | 195,319   | 13,204        |  |
| 4      | Jammu and Kashmir                              | 1,407,045              | 88,037    | 0             |  |
| 5      | Jharkhand                                      | 1,341,306              | 19,512    | 1,226         |  |
| 6      | Kerala   | 13,289,361             | 87,615    | 6,025         |  |
| 7      | Manipur  | 154,400                | 11,451    | 0             |  |
| 8      | Meghalaya                                      | 460,000                | 11,419    | 1,324         |  |
| 9      | Mizoram  | 289,383                | 2,300     | 0             |  |
| 10     | Rajasthan                                      | 14,274,956             | 434,608   | 27,128        |  |
| 11     | Sikkim   | 144,680                | 3,229     | 633           |  |
| 12     | Tamil Nadu                                     | 30,000,000             | 472,500   | 18,274        |  |
| 13     | Tripura  | 547,489                | 14,908    | 0             |  |
| 14     | Uttarakhand                                    | 1,584,205              | 38,016    | 1,686         |  |
|        | Total  | 93,735,549             | 1,980,910 | 87,685        |  |







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|        | States Sanctioned and RFPs issued |                    |           |                                |                 |                    |           |                  |
|--------|-----------------------------------|--------------------|-----------|--------------------------------|-----------------|--------------------|-----------|------------------|
|        |                                   | Sanction Details   |           | Tendering status – RFPs issued |                 |                    |           |                  |
| S. No. | State/ DISCOM                     | Consumer<br>Meters | DT Meters | Feeder<br>Meters               | No. of packages | Consumer<br>Meters | DT Meters | Feeder<br>Meters |
| 1      | Assam                             | 5,744,698          | 77,547    | 2,782                          | 8               | 4,957,239          | 77,547    | 2,782            |
| 2      | Bihar                             | 2,350,000          | 250,726   | 6,427                          | 4               | 5,950,000          | 195,683   | 4,056            |
| 3      | Chhattisgarh                      | 5,962,115          | 210,644   | 6,720                          | 2               | 5,962,115          | 210,644   | 6,720            |
| 4      | Gujarat                           | 16,487,100         | 300,487   | 0                              | -               | 6,825,471          | 109,021   | -                |
| 5      | Himachal Pradesh                  | 2,800,945          | 39,012    | 1,951                          | 3               | 2,800,477          | 39,012    | 2,419            |
| 6      | Madhya Pradesh                    | 12,980,102         | 406,503   | 8,411                          | 3               | 2,285,064          | 35,928    | -                |
| 7      | Maharashtra                       | 22,488,866         | 407,507   | 27,826                         | 3               | 5,004,810          | 407,507   | 27,826           |
| 8      | Puducherry                        | 403,767            | 3,105     | 180                            | 1               | 403,767            | 3,105     | 180              |
| 9      | Uttar Pradesh                     | 26,979,055         | 1,526,801 | 20,874                         | 1               | 5,977,850          | 194,625   | 5,086            |
|        | Total                             | 85,910,019         | 3,024,151 | 74,478                         |                 | 61,166,779         | 2,605,248 | 67,912           |
|        |                                   |                    |           |                                |                 |                    |           |                  |
|        | <b>Overall Progress</b>           | 173,445,097        | 4,902,755 | 162,856                        |                 | 61,166,779         | 2,605,248 | 67,912           |
|        |                                   |                    |           |                                |                 | 35%                | 53%       | 42%              |





Key measures taken



- Release of Standard Bidding Documents (SBDs) for AMISPs
  - Consumer Metering SBD | System Metering SBD
- > CPSE (Central Public Sector Enterprises) Implementation model
- National Level AMISP Empanelment Process
- Focus on Energy Accounting
- Guidance for seamless integration and successful deployment of Smart meters
- Consumer Engagement and awareness Guidelines





**Standard Bidding Documents** 

Key takeaways



| Utility  | Consumer   |  |
|--|--|--|
| No upfront Capex                                     | <ul> <li>Improved Consumer Engagement and Participation</li> </ul> |  |
| Fixed monthly AMISP Service Charge                   | Auto-reconnection Protocol to protect consumer interest            |  |
| Penalty linked to SLAs                               | Offline and Online Recharges                                       |  |
| Ownership Transfer at zero cost                      | Portal/Mobile App to provide self-service capabilities             |  |
| Consumer Empowerment through better service delivery |  |  |
| AMISP  |  |  |

- Monthly Payments to commence on 5% meters operationalization
- Payments through Direct Debit Mechanism for entire online consumer payments
- AMISP responsible for installation and operation for ~10 years







- Utilities can engage CPSEs as PIA (Project Implementing Agency) for carrying out Smart prepaid metering implementation on their behalf

- SLA adherence: Primary responsibility with appointed CPSE, which can have back-to-back arrangements
- Identified CPSEs: PGCIL, PFCCL, RECPDCL.
- PIA Fee:
  - \* <=10 lakh smart meters 8.0% of project costs capped at INR 480 / meter
  - \* >10 lakh smart meters 7.5% of project costs capped at INR 450 / meter







#### **Empanelment of AMISPs**

- Process initiated for empanelling AMISPs to demonstrate end-to-end prepaid smart metering solution on consumer meters

#### - Current status is as follows:

| Descriptions                                   | Phase I | Phase II | Total |
|--|---------|----------|-------|
| Applications received                          | 60      | 27       | 87    |
| Additional information awaited from Applicants | 5       | 8        | 13    |
| Submitted to CPRI for testing                  | 55      | 19       | 74    |
| Certificates issued                            | 29      | 2        | 31    |
| Ongoing  | 3       | 0        | 3     |

<u>Note:</u> CyanConnode along with Esyasoft MDM is supporting multiple AMISP's (13 till now of which certificates have been issued to 7)





**National Level Test Bed** AMISP Empanelment – CyanConnode status



CyanConnode along with Esyasoft MDM is supporting multiple AMISP's (13 till now), thereby forging a strong relationship and maximizing our winnability in upcoming bids

# **REC Testing Status**

CyanConnode along with Esyasoft MDM is supporting multiple AMISP's (13 no's), thereby forging a strong relationship.

This will help us to maximize our offering in upcoming bids and play a dominant role in Indian RDSS led AMI bidding

Till September, certificate issued to 7. The complete exercise of all potential AMISP's supported by CyanConnode is expected to be completed by October 2022.

| Testing Completed<br>(Certificate Issued to 7 ) | Testing Pending (Dates of testing Planned) |
|---|--|
| Adani Transmission                              | Techno Electric                            |
| L&T SW  | Adani Enterprises                          |
| HPL   | Hindustan Power                            |
| EnergyWiz                                       | AVON                                       |
| Tata Power                                      | Alfanar                                    |
| Genus   | Schneider Electric                         |
| Montecarlo                                      |  |







I. Upgradation of Billing system to ensure scalability and being future-ready:

• Nodal agency is drafting an SBD for procurement of a billing system under SaaS model.

#### II. Develop a utility-level Business intelligence (BI)/ Data Analytics (DA) layer:

- Need for handling data from multiple systems like MDMS, GIS, CIS, SCADA, OMS, DMS, Consumer apps etc. for generating various reports, analytics, and customized dashboards.
- A single utility-level BI/DA layer –can provide Data visualization, BI and Analytical insights in a consolidated manner for management view and decision-making.
- Utility may develop a Data warehouse/ Data Lake structure for collating and providing data suitable for use by BI/DA layer.

#### III. Deployment of a common Utility-level Enterprise service Bus (ESB):

• Implementing an ESB may also unlock additional business integration benefits for the utility like ease of new interfaces to other applications, like integration of multiple MDMs, SCADA, DMS, GIS, Consumer Apps etc.



## **Awards & Recognition**



# Thank You

