#### **CBIP Workshop on Smart Metering**



#### Objective Based Smart Metering: BRPL Experience



## SMART Approach for SMART Metering



Well begun is half done !!



## **Objective based Approach: Why objective needed**

Expectation from Smart meterdefined by Objective



Area Profile (Rural, Urban)

Asset (DT, HT feeder)

• Consumer category (Temp, E-Ricks)



"Objective" drives the actual system requirements

## **Key Objectives – BRPL**



**Temporary Connections** Marriage / Ramlila/ Jagran functions

#### **Objective 1**



Weekly Bazaar



Park/Community Halls/ **Temples/ Farm houses** 

#### **Objective 2**

- Loss reduction 417 at high loss area
- Metering at 2. dense / JJ areas

- Short-term Temp connection- Proper handling
- Control metering system remotely Remote Tariff Updation Improved Collection Efficiency 2.
- 3.
- 4.



**Government Colonies** 





High loss, Dense areas & JJ



Increased focus on short term temporary connection due to DG Ban

# **Objective 1**



# Approach for addressing Objectives





# **System Architecture: Smart Pre-paid Metering**





## **Process Flow: Smart Pre-paid Metering**



End to End process to ensure Smooth Billing Revenue Cycle



## Win-Win Situation: Smart Pre-Paid Metering



# **Objective 2**



# Approach for addressing Objectives



### **Snapshot: Smart Group Metering**

#### **Background**

- Initiative started in FY 2015-16
- Installed for controlling theft
  in high loss areas
- 4 High loss areas selected with loss > 30%
- 2200 meters installed till now

#### **System Architecture**

- Group metering system is a compact unit
  - 9 single phase meters
  - DCU (Data Concentration Unit) for online data communication
  - HDU (Home Display Unit) is at consumer premise and communicates with meter over RF
- Data transfers to HES (Head End System) over GPRS for billing and analysis
- Data integration with SAP Billing

#### Mainly installed in Village and dense/ JJ areas



### **Metering Box: Smart Group Metering**



## **Installation: BRPL Delhi**



#### BEFORE



# **Billing Gain & Payback: Smart Group Metering**

- Billing compared month on month basis pre & post installation
- E.g. if meter is installed in month of Jul'17 then billing data was taken for "Aug + Sept16" & "Aug + Sept17"
- Significant increase in billing is observed across divisions
- Overall <u>159% billing increase</u> recorded for Pole meters

Division		Sarita Vihar	Jaffarpur	Najafgarh	Tagore Garden	
Area Name	UoM	Vill Jasola Vill Tajpur Pahar	. Vill Sarangpur i	Vill Raghavpur Vill Prem Nagar Basti Vill Rewla Khanpur	Harijan Colony Tilak Vihar	BRPL
Total Consumer studied	Nos	369	33	364	51	817
Pre installation - consumer billing	kWh	695992	31668	625328	125332	1478320
Post installation - consumer billing	kWh	1572641	49249	1769736	433902	3825528
Billing Growth	%	126%	56%	183%	246%	159%
Input Growth	%	5%	3%	7%	4%	5%
Net consumer billing	kWh	1494009	47772	1645854	416546	3634252
Billing Gain	kWh	798017	16104	1020526	291214	2155932
Amount Gain	Rs	55,86,119	1,12,728	71,43,683	20,38,497	1,50,91,521
Total Capital Expenditure	Rs	12,30,000	1,10,000	12,13,333	1,70,000	27,23,333
Simple Payback	months	4.5	1.0	5.9	12.0	5.5



Payback period ~ 6 months

# **Challenges: Smart Group Metering**

- Complete area should be covered with Pole Group metering to avoid MR movement
- Strong Public Resistance
  - Installation
  - Increased consumption
- Testing of Pole Meters
- Burning of Display unit (in anticipation of main meter)
- Replacement of faulty Meter both pole and display unit to be replaced
- Commercially not viable for less dense areas
- Trained manpower for meters installation

#### **Consumer Engagement and Awareness is the key for success**



# Way Forward

- Planning to install <u>Smart prepaid meters</u> at specific category of consumers such as new short-term temporary connections compliant to DERC regulations
- To continue Smart Group meter installation for identified <u>slums and villages</u>
- Planning to cover <u>Smart Group Metering Project under</u> "Saansad Adarsh Gram Yojna" scheme of Govt of India
- Taking up Real time monitoring of <u>DT Health & Supply</u> reliability with meter and <u>additional sensor data</u>



# THANKS

