



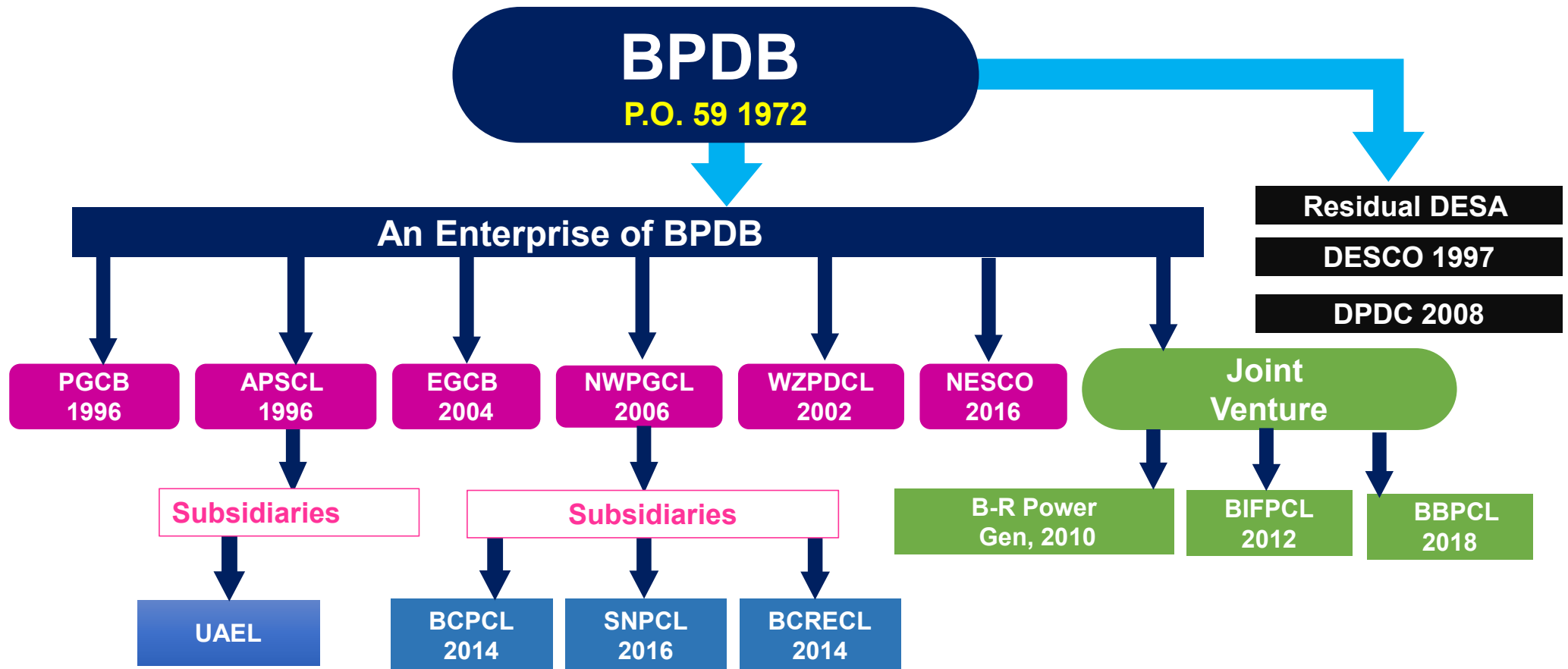
Digitalization of Electricity Utilities: **BPDB Perspective**

Engr. Jorifa Khatun

Bangladesh Power Development Board

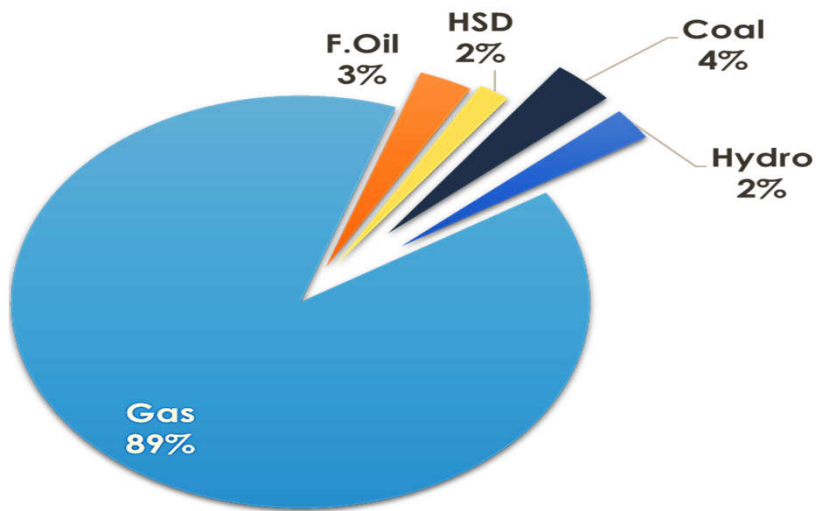
ACEF June 16, 2021

Deregulation of Bangladesh Power Sector



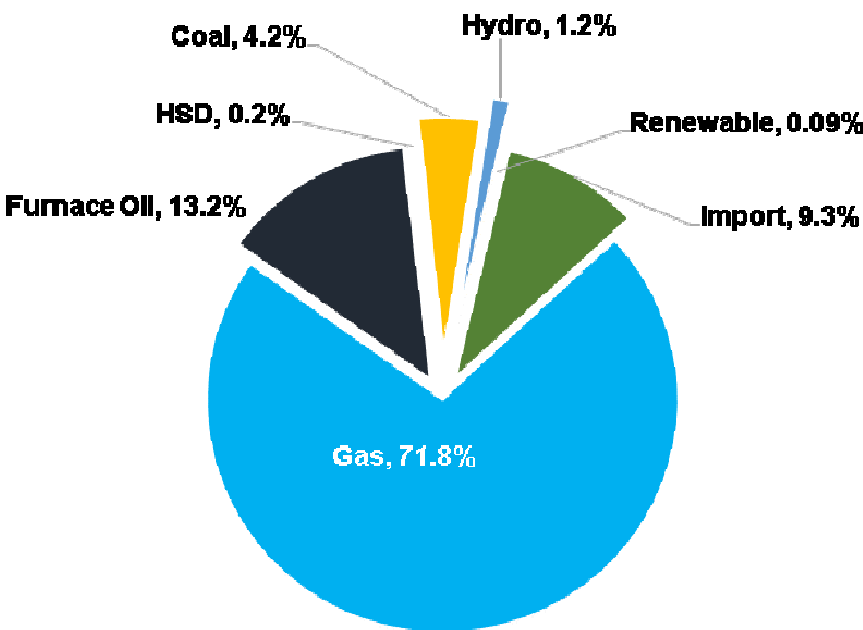
Energy Generation (Electricity) by Fuel Types

FY 2010



29,247 MkWh
Total Generation

FY 2020

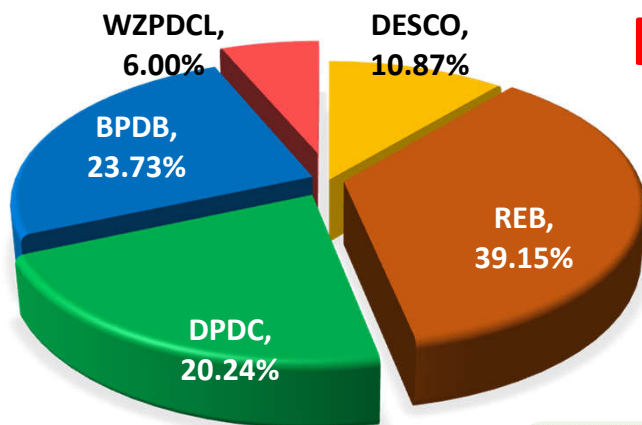


71,419 MkWh
Total Generation

Electricity Consumption

FY 2019-20

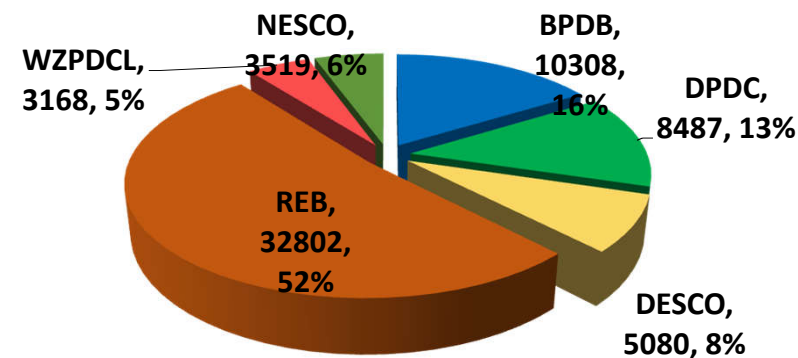
FY 2009-10



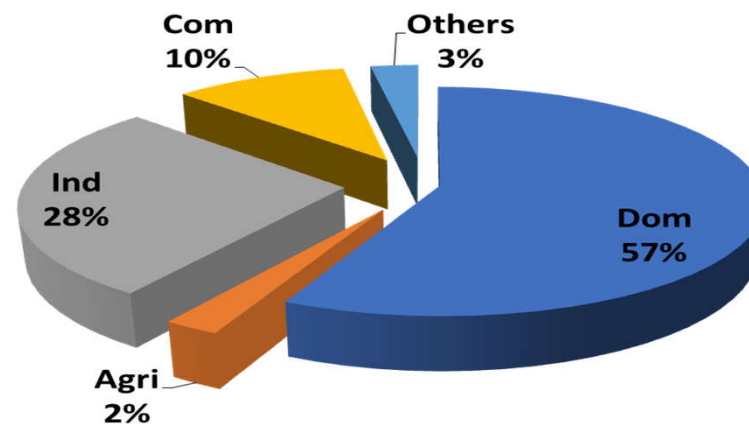
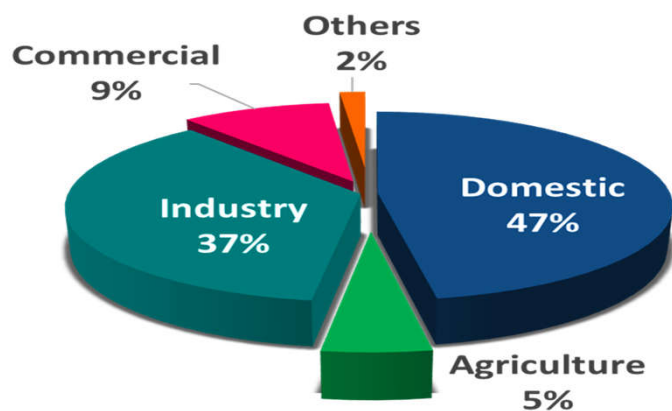
24,596 MkWh

Average
Consumption
Growth

9%



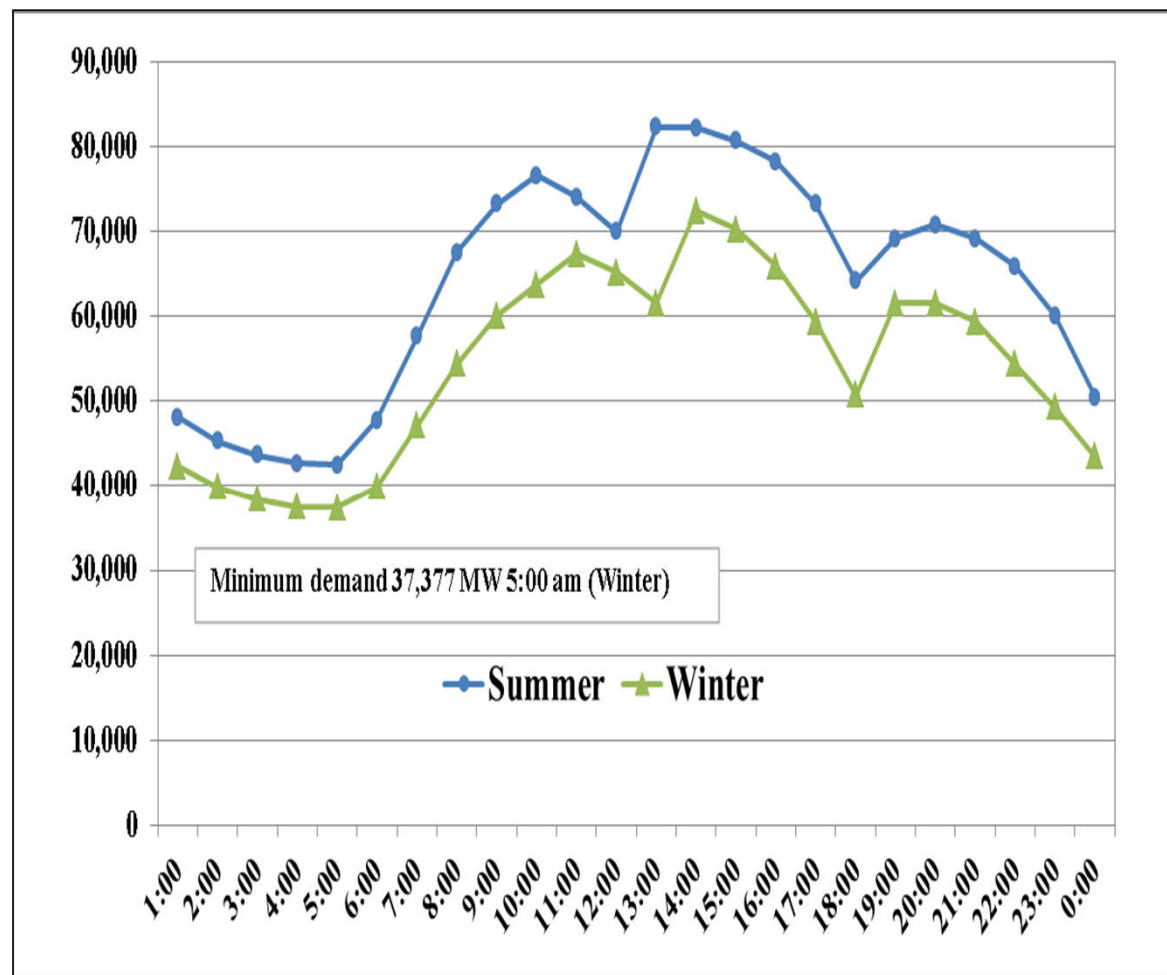
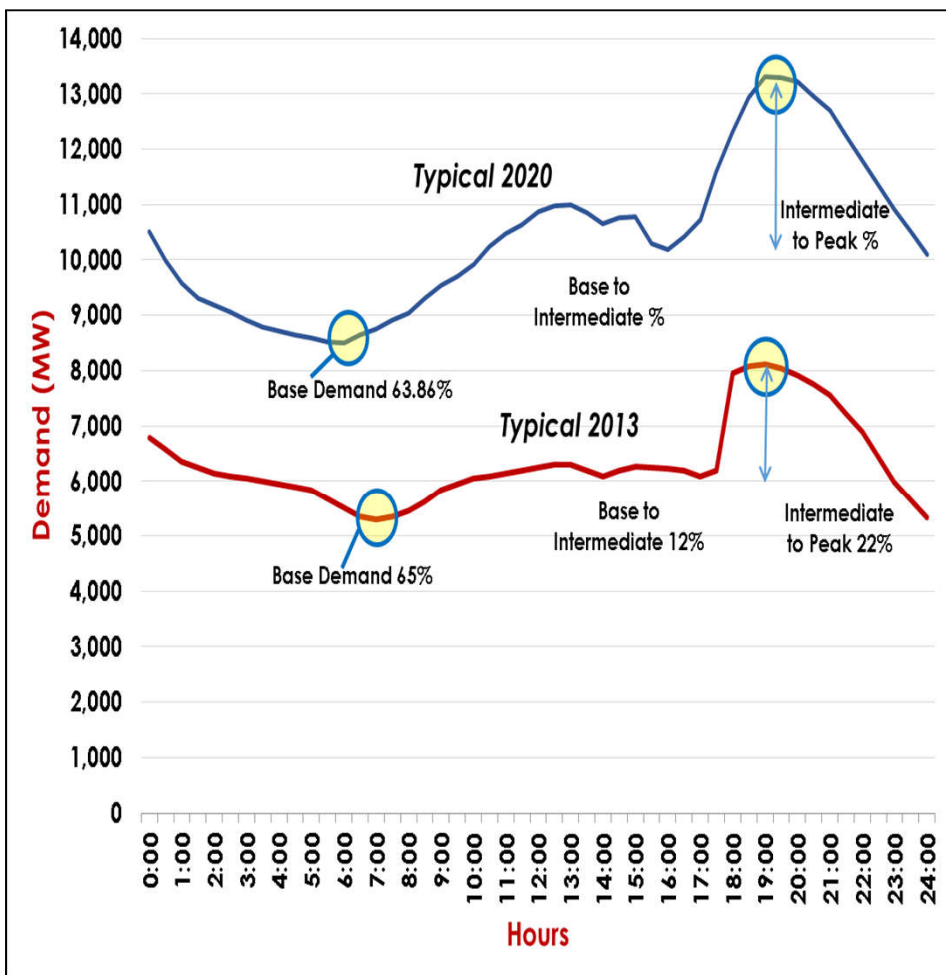
63,364 MkWh



2020

Typical Load Curve: Bangladesh

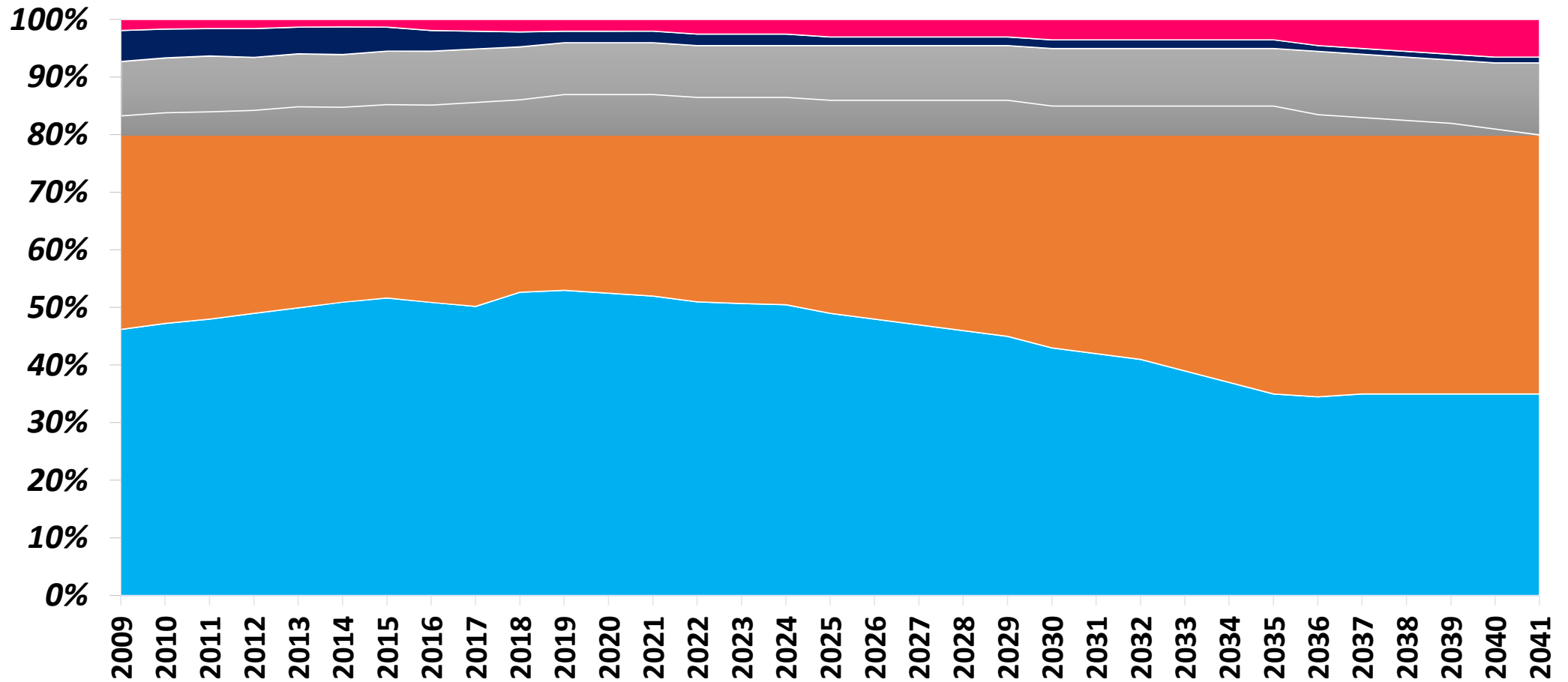
2041



Source: Revisiting PSMP 2016

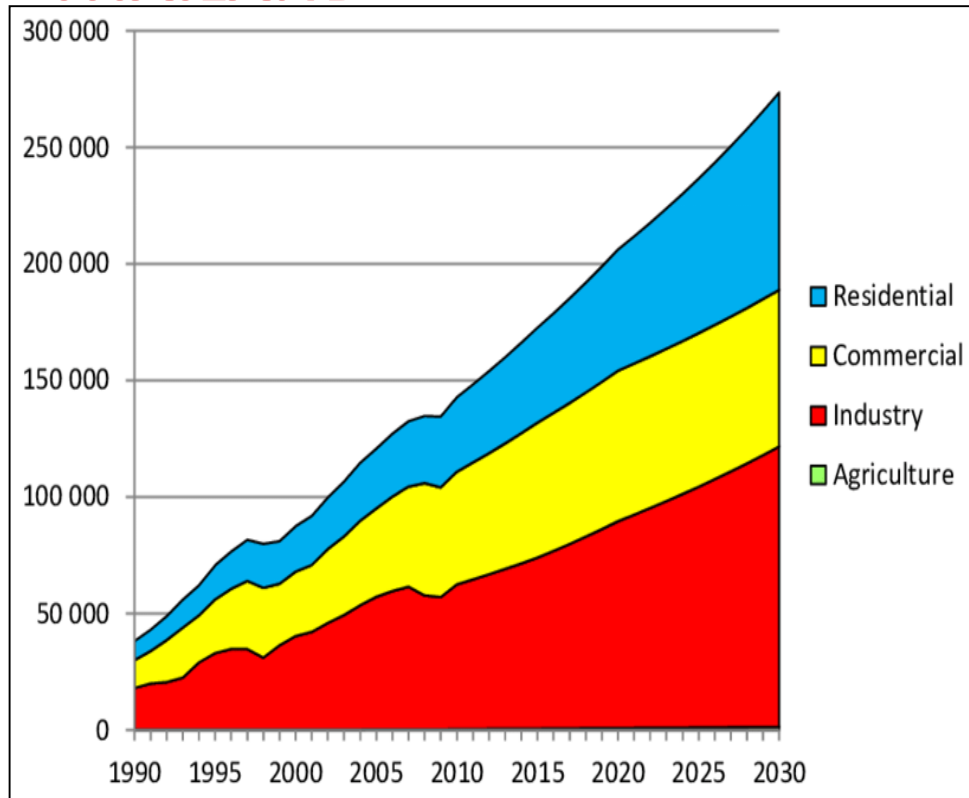
Electricity Consumption Demand In Bangladesh

Residential **Industry** **Commercial** **Irrigation** **Others**



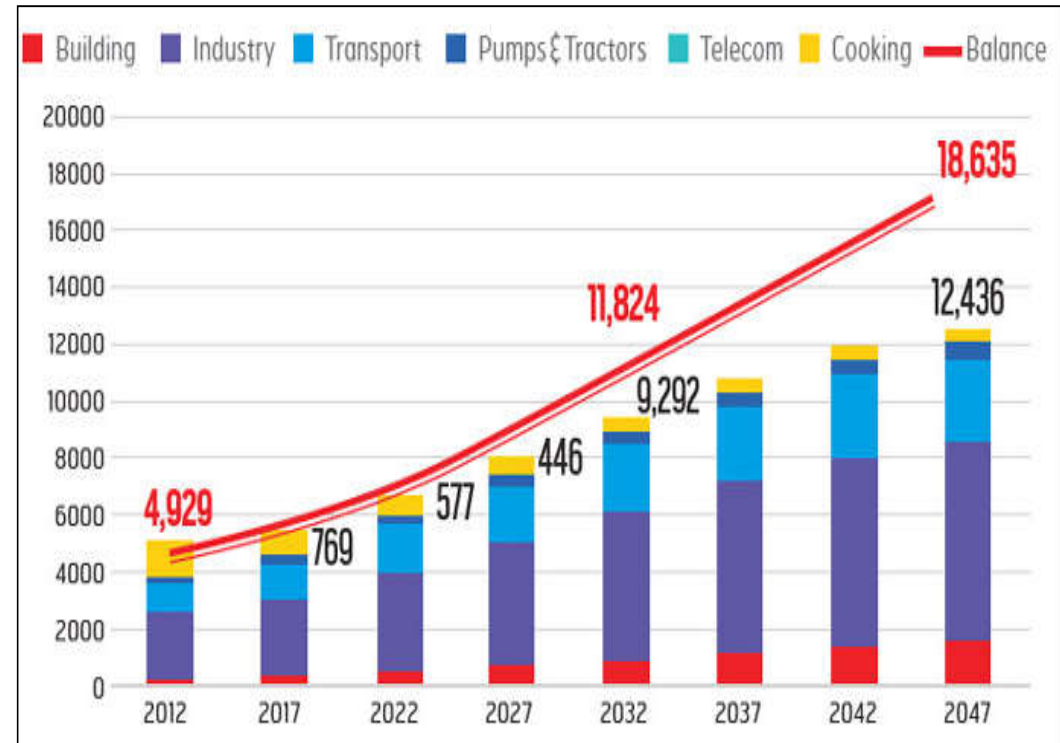
Electricity Consumption Demand Thailand and India

THAILAND



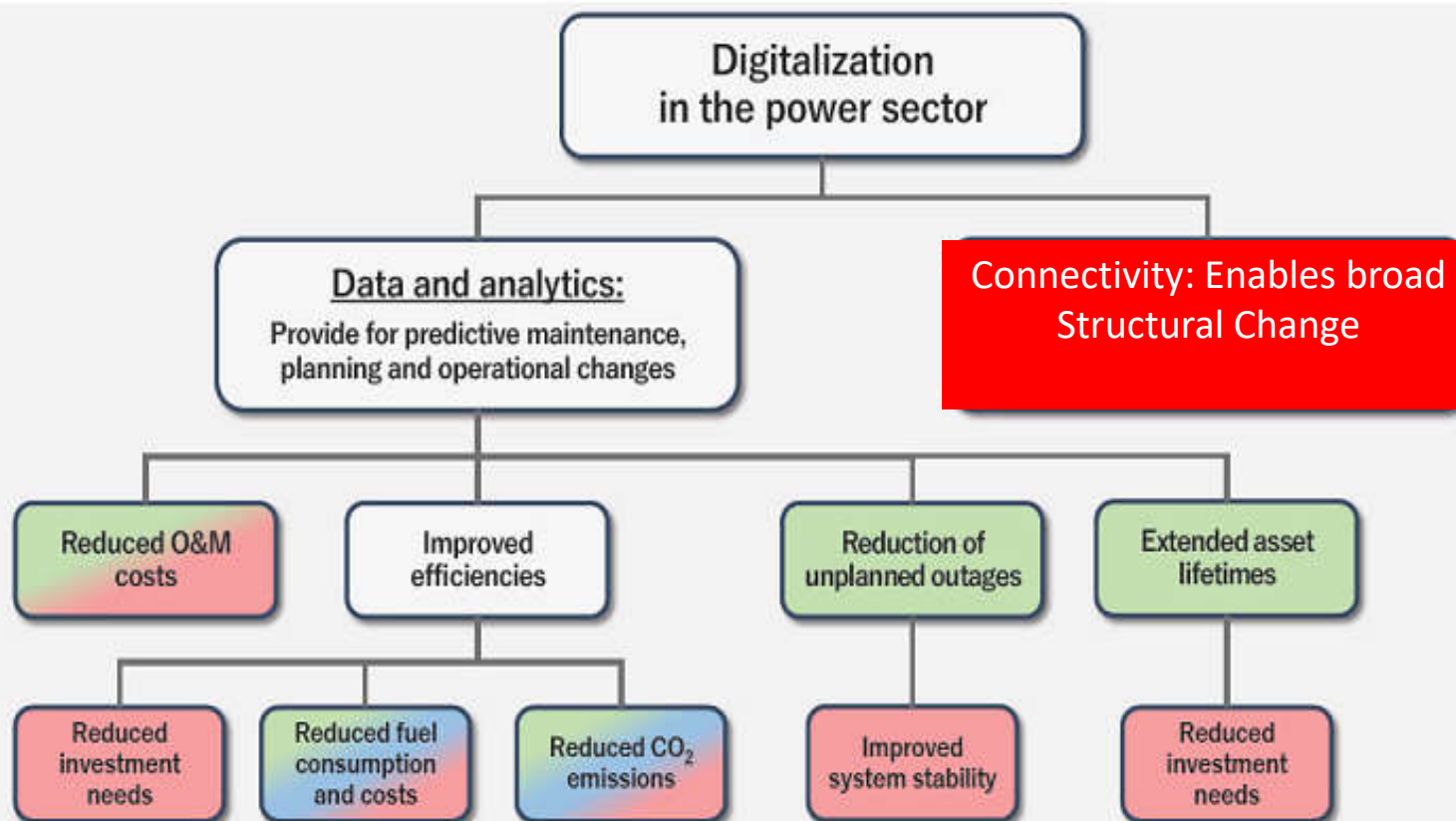
**Industrial 50% now decreasing 48% ,
Residential consumption increasing 24% &
Commercial 24 %**

India



**Industrial 41.48%, Domestic 24 %, Commercial 8.5
%, Agricultural 18 %**

Why Do we need the Digitalization of Power System



Digitalization in the power sector has the **potential** to bring **benefits** to the owners of power sector assets, the wider electricity system, consumers and the environment

Digital Transformation: Generation and Distribution System

Advanced Power Plant Technology

Advantages of 500 & 800 MW Gas based CCGT

- High efficiency (40 % SC, > 60 % CC)
 - Fast start-up capability, high operational flexibility
 - Low lifecycle costs
 - High reliability and availability
 - Reduced emissions per kWh
 - High efficiency and low emission also in part-load operation
-
- **Coal Based Sub critical to Ultra -Supercritical**

Renewable based Power Generation

Existing Capacity : 130 MW

Solar based : Pipeline Project Capacity : 2500 MW

Hydro Power Import Nepal: 500 MW By 2027

Wind Based: Under Process

Potential Area: PSPP in Hill Tract

Remakri village, Thanchi sub-district,
Bandarban district.

Effective head 361m

Discharge 161 m³/s

Probable Capacity 500 MW (Efficiency
88%)

L/H: 4.0

Effective Reservoir Volume m³: 84,00,000

Thanchi village, Thanchi sub-district,
Bandarban district.

Effective head 329m

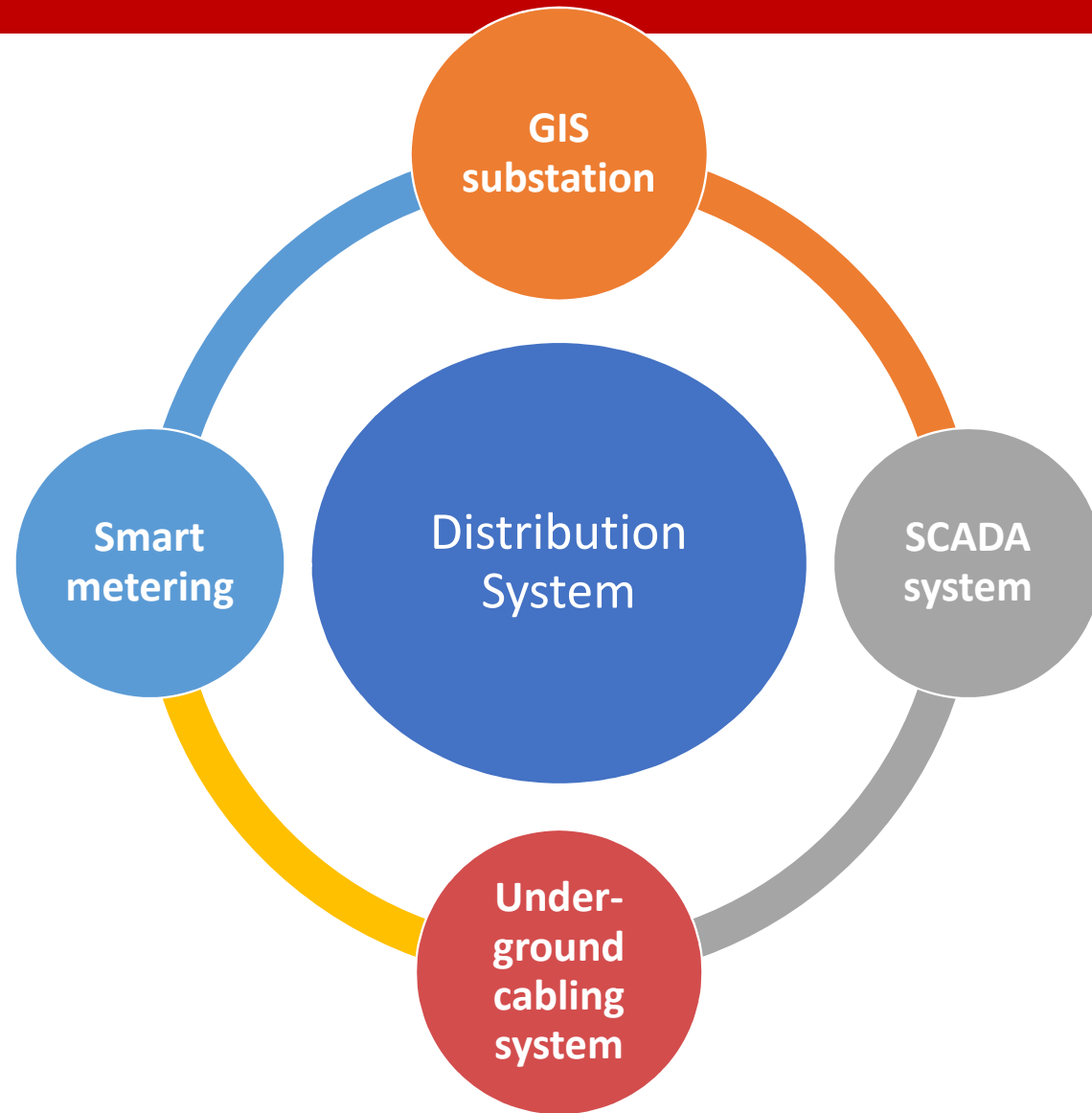
Discharge 176 m³/s

Probable Capacity 500 MW
(Efficiency 88%)

L/H: 5.4

Effective Reservoir Volume m³:
45,00,000

Digital Transformation: Distribution Sector



Digitalization: Consumer Satisfaction



On-line Bill Collection
-through SMS,
Banking



On-line Application

- Consumer new connection & Complaint management
- Recruitments



E-Tendering System



Computerized Billing and Customer Accounting System



Automated Meter Reading System (AMR)
Prepaid Meter system
To Ensure Proper use of Energy



ERP

Human Resource Management
Fixed Asset Module,
Finance Module and
Procurement Module



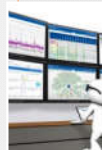
SCADA System in Distribution Network

GIS (66,255 consumer data surveyed and entered into the system)**1,84,012 poles of 11KV and 33KV line surveyed ,**
Distribution Analysis Software (ETAP already installed In Server)

Under Ground Cabling:



E-Filing management System



online Project Review



Call Center

- **for Customer Feedback/ Complaints**

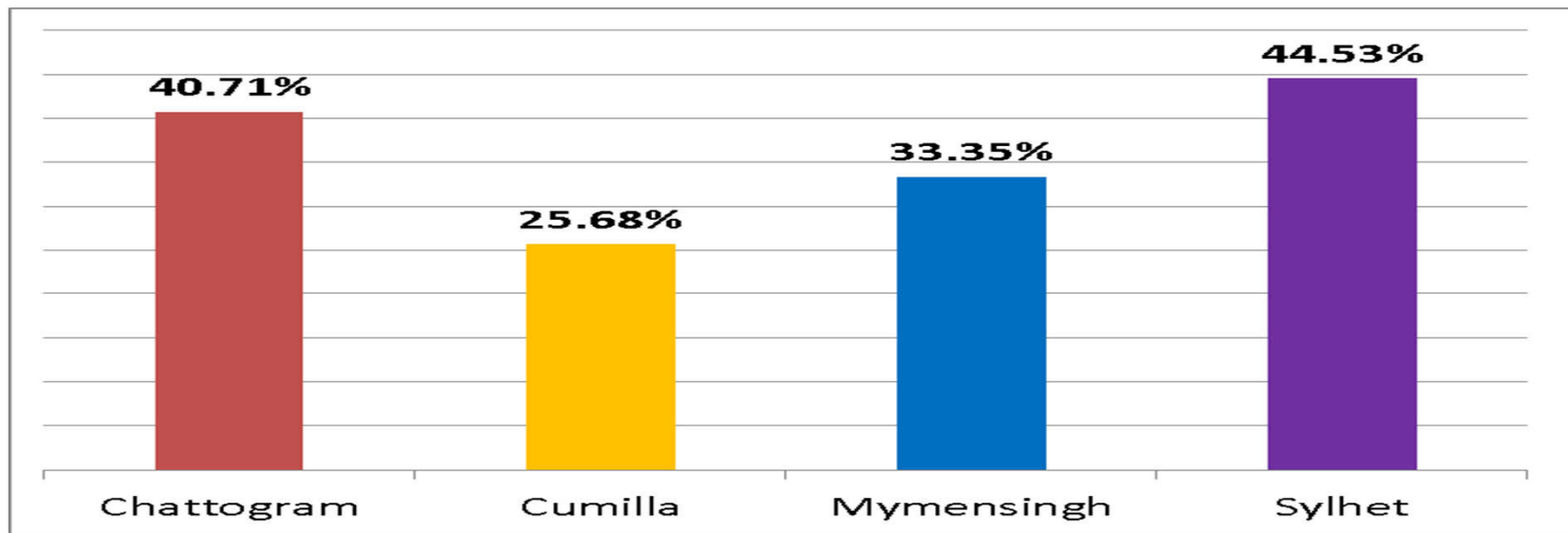


Video Conferences/Meeting

Digital Transformation: Distribution System

Existing Consumer | Prepaid meter Connected 4.0 million out of 40 Million in Power Sector

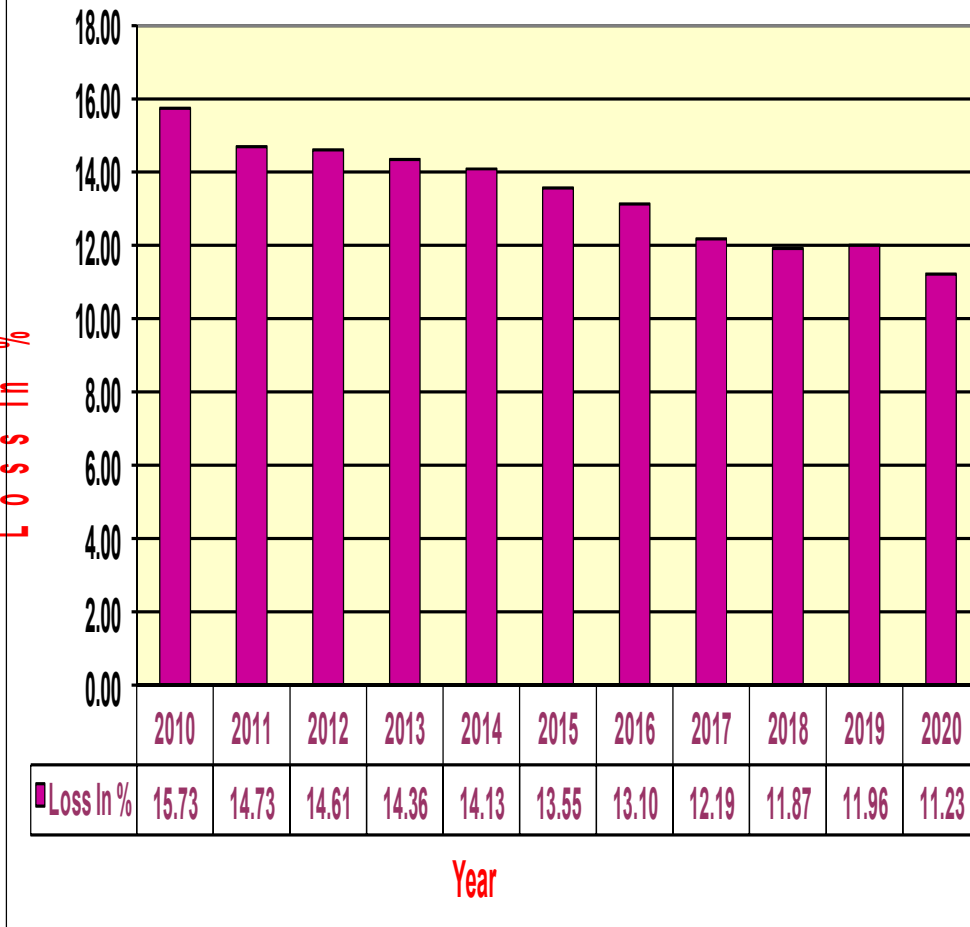
- BPDB installed 1.3 million prepaid meters out of its 3.3 Million customers



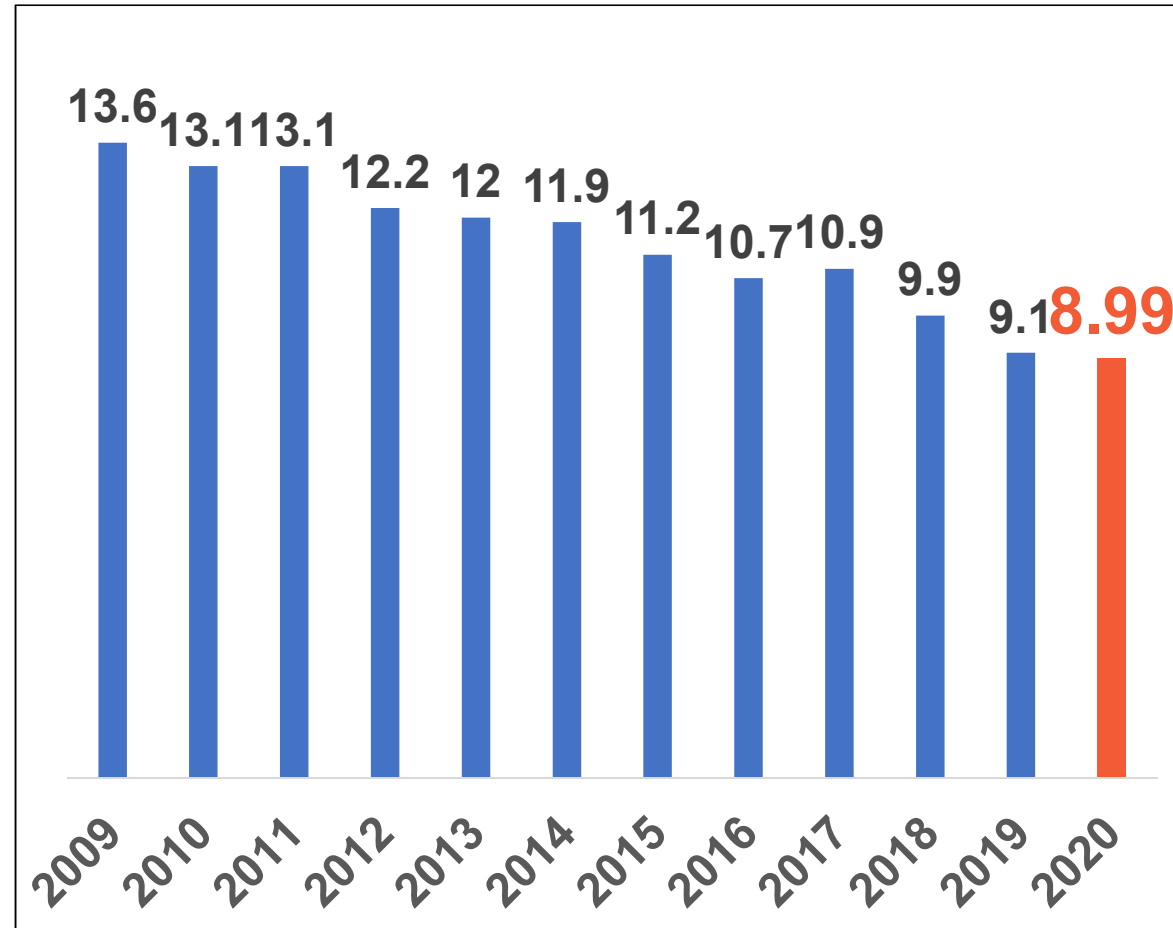
- 1.0 Million, Under Process , ADB Finance
- 30 Thousand Three Phase, 0.9 Million and 70 Thousand Single Phase meter of 25 Sales and distributor division of Four Distribution Zones

Best Practice:T&D Loss Reduced Significantly

Comparison of T & D loss (FY 2010-20)

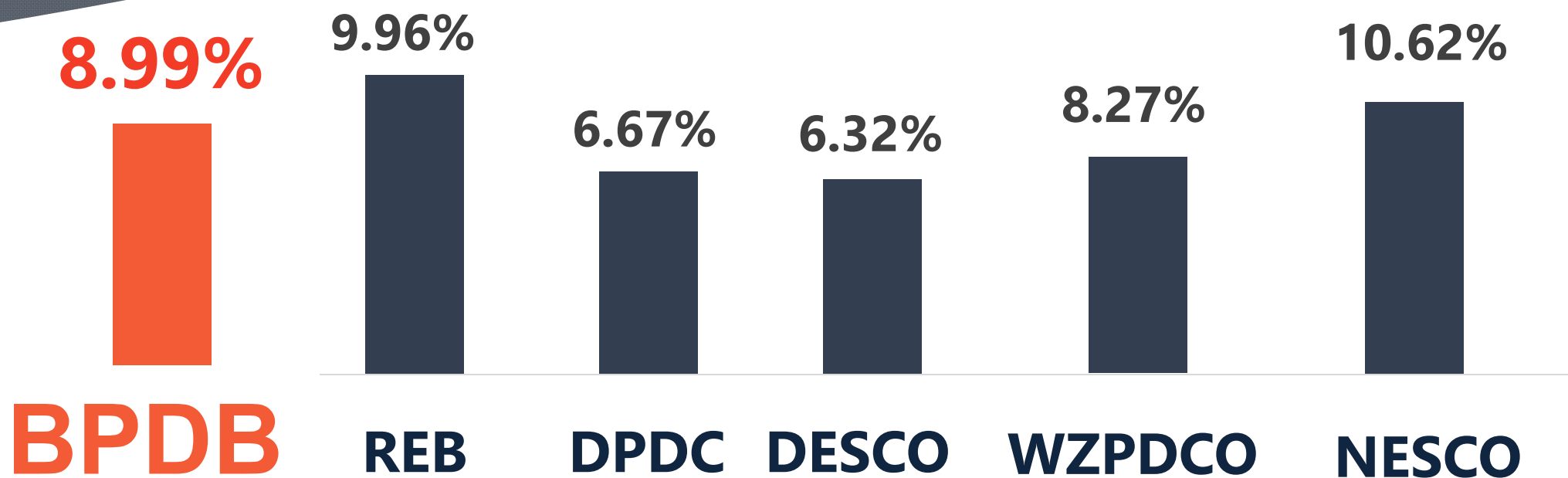


BPDB's Distribution System Loss

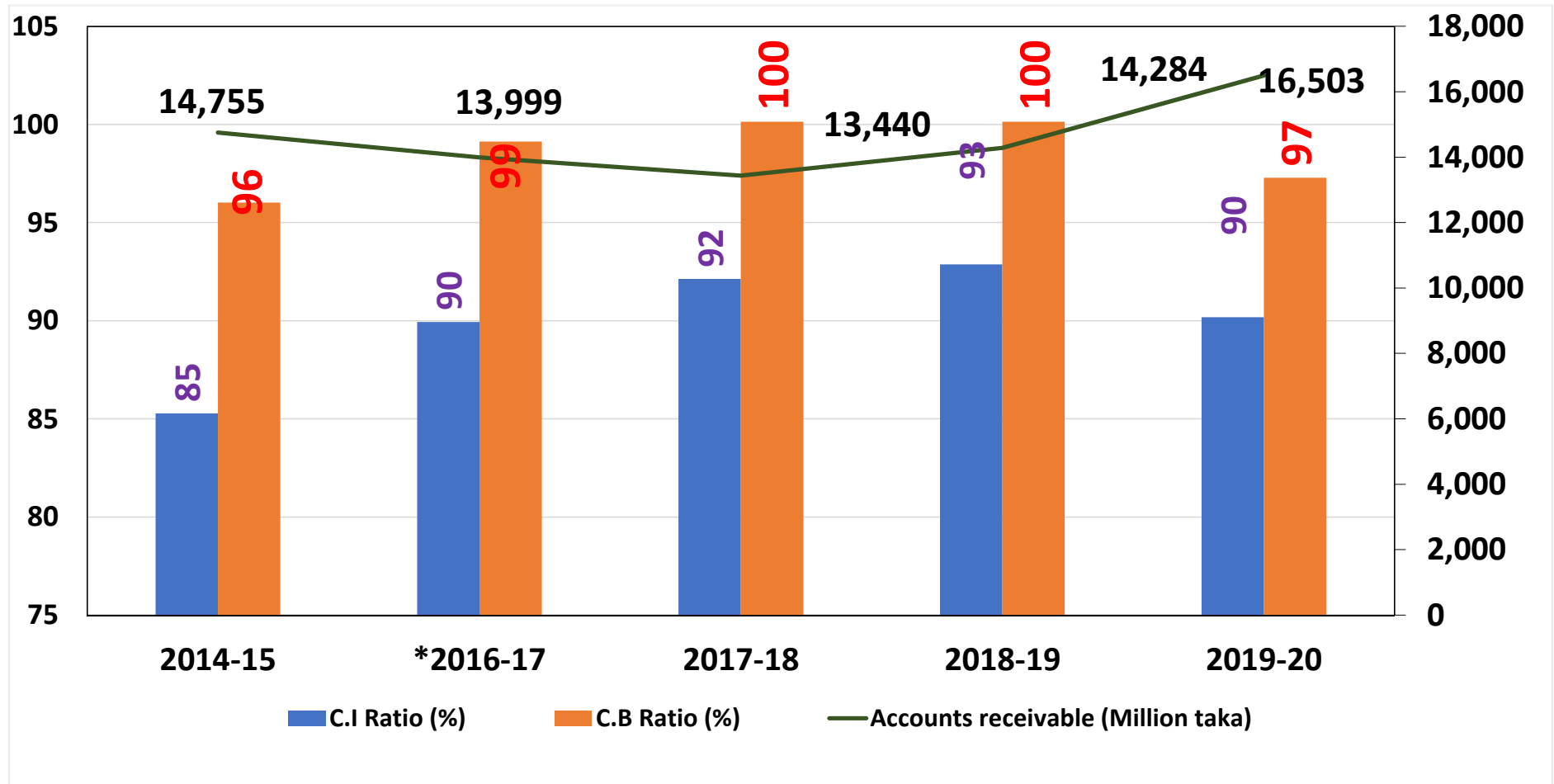


Distribution Loss Comparison

FY 2020



Best Practice: Revenue, Collection & Bill ratio :



Investment Opportunities





Thank

You

Bangladesh Power Development Board

