14th Capacity Building Programme for Officers of Electricity Regulatory Commissions

Regulatory Approach to Tariff Setting in the Power Sector – Power Procurement and Renewable Energy

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Presentation Title

Name: Sunil Joglekar

Designation: Chief Distribution Mumbai Operations

Organization: The Tata Power Company Limited

Business Plan for Distribution Utilities – Investment under MYT Regime

Business Plan for Distribution Utilities

- Factors impacting the Business Plan for a Distribution Licensee:
  - Distribution loss
  - Existence of distribution network and future growth in the area
  - Age of the existing distribution network
  - Efficiency improvement in Operational
  - Technological disruption
  - Power procurement and
  - Consumer mix
  - Renewable Energy intervention / Micro Grid

Distribution Loss

- Technical Loss
  - Dependent on the age of the network
  - Maintenance of the network
  - Network spread and density
- Commercial Loss
  - Billing efficiency
  - Metering infrastructure
  - Collection management

Investment for Network Growth

- Electrification in new Area
  - Rural area having low density of population needs larger initial investment due to network spread per consumer
  - Area having higher density of population needs lesser investment
- Augmentation of existing network to cater the growth in demand of existing area
  - Urbanization Growth
  - Industrialization Growth
  - Commercial Development

Investment for Replacement of Existing Network

- In a typical area like Mumbai or Delhi where distribution network exists for more than 30 years, one of the major investment requirement is replacement of the existing network which has completed its useful life and R&M expenses has increased substantially on these network resulting into additional O&M expenses and increased distribution loss

Investment for Efficiency improvement

- Own R&M v/s Outsourced R&M
- Laying new network for growth v/s augmentation of existing network
- Digitalization of customer support & service
- Automation of O&M activities

Investment for Technological disruption

- Smart Meter v/s electronic or digital meter
- Geographical Information System (GIS) implementation
- Network Asset Tagging for faster response
- Supervisory control and data acquisition (SCADA)
- Enterprise Resource Planning (ERP) / System Applications & Products (SAP) system
- Outage Management System (OMS)
- Other Automation tools like Customer Relationship Management (CRM)

Investment for Demand Forecasting and Scheduling of Power

- Power Procurement and other related expenses like open access and transmission charges consist of more than 70% of the total expenses in the Annual Revenue Requirement of a typical Distribution Licensee in India
- Any surplus power tied up in advance and resulting into surplus during off peak period results into losses due to lower value realization of such surplus power
- Short Term power procurement V/s Long Term Power procurement

Investment for Demand Forecasting and Scheduling of Power

- Transmission charges are also dependent on decision of short- term power procurement vs long term power arrangement
- Investment is required for improvement in accuracy of power demand forecast as it may result into penalty for the distribution licensee as SERCs has been mandated under the consumer rights rule to receive compensation for outage over the specified time period
- Other side there is additional Deviation Settlement charges levied on the distribution licensee which is not a pass through in most of the states and it will reduce the return on equity.

Investment for Demand Forecasting and Scheduling of Power

- Other side there is additional Deviation Settlement charges levied on the distribution licensee which is not a pass through in most of the states and it will reduce the return on equity for the investment made by the licensee.
- Investment in skilled manpower is also required for procurement of power as quantum of power transacted through power exchanges are also increasing
- Government of India has also announced for multiple distribution companies in any area will further pressurize the existing distribution licensee for bringing efficiency in power procurement.

Consumer Mix

- Investment requirement is also largely impacted by the consumer mix of any area like :
- Rural Area
- Urban Area
- Residential Area
- Commercial Area
- Industrial Area
- Agricultural Area

Renewable Energy / Micro Grid

- Net Metering and Gross Metering Regulations for renewable energy are now mandatory services to be provided by a distribution licensee through the rules notified for rights of consumers in 2020
- Distribution licensee has to assess the network requirement by keeping in mind the potential penetration of renewable energy in the area otherwise it may result into inefficient network planning
- Micro grid is also one of the factor to be kept in mind with cost benefit analysis of connecting the remote areas with the distribution grid

Tata Power System Performance parameters-

Key Performance Indicator	Unit of Measurement	Achievement FY 20 Actual
System Average Interruption duration Index	Min	20.55
System Average Interruption Frequency Index	Nos	0.66
Distribution Loss	%	1.04
Collection Efficiency	%	99.50
AT&C Loss	%	1.48

The secret of getting ahead, is getting started." - ***Mark Twain***

Thank You!

Sunil Joglekar

Email Id: sunil.joglekar@tatapower.com

Contact: (+91) 9029004066