Gist of Discussions at the Fourth meeting of the Distribution Utilities Forum held on 10th June, 2019

1. Inaugural Session

1.1 **Fourth meeting of the Distribution Utilities Forum (DUF)** was held on **10th June, 2019** at India Habitat Centre, New Delhi under the chairmanship of **Mr. Gireesh B. Pradhan,** Former Chairperson, CERC and Honorary Chairman, Distribution Utilities Forum. List of participants is annexed. The theme for the discussion in the meeting was **Cost of Supply (CoS)**.

1.2 In his welcome address **Dr. Ajay Mathur**, Director General, TERI, welcomed the participants and briefly outlined the agenda for the day. He also mentioned that soft launch of the rooftop solar report prepared by TERI under the aegis of DUF will be made today.

1.3 In his opening remarks, **Mr. Krishan Dhawan**, CEO, Shakti Sustainable Energy Foundation (SSEF), addressed the forum by expressing importance of estimation cost of supply for the Discoms as well as Indian electricity industries. He also praised the forum for having productive discussions on critical topics in the electricity distribution sector.

1.4 **Mr. Gireesh B. Pradhan** mentioned that the forum is a platform **of** distribution utilities, **for** the distribution utilities and **by** the distribution utilities. He introduced the WWF representative to the forum. He mentioned that WWF recently launched its study report on "Renewable Energy Demand in India-Corporate Buyers' Perspective". He also thanked TERI and SSEF for bringing out various important studies to the forum.

1.5 **Mr. M R Sreenivasa Murthy,** Former Chairman, KERC mentioned that a forum for electricity distribution companies in the country is a very welcome initiative. He complimented, Mr Gireesh Pradhan, Shakti Foundation and TERI for the initiative. He was happy to note that the forum takes up issues which are of importance to the Distribution utilities.

2. **Presentation by WWF**

2.1 Mr. Ravi Singh, Secretary and CEO, WWF, set the context of the presentation in regard to their study "Renewable Energy Demand in India". His colleague **Mr. Varun Aggarwal** presented the finding of the study. The key points of the study were:

- Corporates account for over 50% of the total electricity consumption in India and is estimated to increase by another 66% by 2030.
- Around 69% of the companies are currently procuring Renewable Energy in some form or the other.
- Corporate Survey with Corporates chosen from a total of 15 sectors, brought out the following :
    a. 60% responding corporates prefer captive RE plants.
    b. 75% responding corporates prefer solar energy over other RE technologies.
    c. Policy & regulatory barriers identified as major challenges restricting uptake of RE by C&I customers.
- Introduction of Renewable Energy Demand Enhancement (REDE) Initiative: To develop a platform to increase C&I consumer demand with an overall RE off take commitment of 10GW by 2022. Also, REDE was created to identify innovative and collaborative solutions to address RE procurement barriers to help stakeholders.

3. Soft Launch of **"Solar Rooftop: Perspective of Discoms"** report by TERI was done in the meeting.

4. **Presentations by TERI and DUF members**

4.1 Mr Raghav Pachouri made the presentation on behalf of TERI team on **"Cost of Supply Discom's Approach and Major Challenges"**, covering relevance of CoS, various methodologies adopted by Discoms for computation of CoS and challenges faced by them in opting embedded cost approach.

4.2 This was followed by presentations from representatives of **MPMKVVCL**, **WBSEDCL**, **APDCL**, **BESCOM** and **OPTCL**, covering cost of supply practices followed for computation as well as their perspective.

a) Madhya Pradesh Madhya Kshetra Vidyut Vitaran Company Ltd. (MPMKVVCL)

- Adopting the methodology suggested in APTEL order[1], MPMKVVCL determines voltage-wise cost of supply (using simplified approach) based on certain assumptions such as break-up of commercial & technical losses, 50% of total loss at 11 kV + LT system is assumed as technical loss & remaining 50% as commercial loss.
- Incomplete feeder segregation, non-metering of feeders and unavailability of the ERP system (for proper indexing of asset cost) are the common reasons for unavailability of data required for estimating the CoS using embedded cost approach.

b) West Bengal State Electricity Distribution Company Ltd. (WBSEDCL)

- WBSEDCL, the largest distribution company in West Bengal, with approximately 19 million consumers, has a number of consumer categories (more than 30). Bulk of the consumers, 17 million (90%), fall under the residential category. WBSEDCL follows the ACoS method for calculating cost of supply.
- An internal exercise was carried out by WBSEDCL to calculate voltage-wise / category-wise CoS with various cost and technical assumptions. The results of the exercise indicated reversal of tariff charged, that is, industrial consumers and HV consumers who are generally charged a higher tariff of Rs 8 per unit have CoS of Rs 5.5/unit and agriculture / LT consumers who are generally charged in the range of Rs 4–6/Unit have CoS of Rs 9/Unit. Imposition of these estimated CoS will create a tariff shock to LT consumers unless subsidized.
- Non-availability of DT / feeder meters and non-completion of feeder segregation are the key reasons for not having appropriate data to calculate voltage-wise / category-wise embedded CoS; 33 kV and 11 kV feeder / DT level metering has been completed recently, in 2018–19. Below 11 kV, only 50% DTs are metered. WBSEDCL expressed their interest to go for voltage-wise cost of supply calculations in future, if directed by the Hon'ble Commission.

[1] http://aptel.gov.in/judgements/30.05.2011%20%20102,%20103%20&%20112%20of%202010.pdf, page 63

c) Assam Power Distribution Corporation Limited (APDCL)

- Between 2004 and 2017, APDCL peak load demand has increased by 2 times from 646 MW to 1823 MW, the consumer base has increased by 3 times from 1.1 million to 4.3 million and asset base has increased by 4 times from Rs 765 Cr to Rs 3823 Cr.
- APDCL is largely dependent on APGCL and Central Generating Stations to meet the Base Load. However, to meet the peak demand of the state, power has been procured through bilateral contracts, also from the power exchanges from time to time to meet the deficit.
- APDCL is among the highest tariff imposer utilities in India. The main reasons are absence of power plants with low tariff, sale of power at cheaper rates to other Discoms and IEX due to low demand and technical minimum obligation of thermal power plants, buying costly power during peak hours due to lack of peak power resources and delay in commissioning of various power projects.
- Currently, the Cost of Supply is being calculated by using Average Cost of Supply approach (ACoS). However Commission has advised APDCL to firm up the data required to calculate Voltage-wise Cost of Supply (VCoS).
- Non availability of data due to incomplete feeder segregation and feeder metering is the key constraint / challenge for not able to estimate Embedded CoS. Also, proper implementation of ERP system is also pending form long time.

d) Bangalore Electricity Supply Company Limited (BESCOM)

- BESCOM follows ACoS methodology using the simplified approach. Recently in FY2019–20 ARR, BESCOM proposed Voltage-wise CoS. In the absence of actual data on voltage-wise cost, bifurcation of cost has been carried out on the basis of assumption in line with the APTEL order using simplified approach.
- BESCOM, like other Discoms, also faces complete DT and feeder metering as major challenge in adoption of ECoS. Non-availability of adequate data is the key issue to estimate CoS using embedded approach.

e) Odisha Power Transmission Corporation Limited (OPTCL)

- OPTCL expressed concerns over the methods to estimate the technical and commercial losses in the state grid system. The state commission fixed the losses for HT system that resulted in reduction in the LT losses (after improvement in the

overall AT&C losses) on records whereas in reality LT system has more losses associated with its system as compared to HT system. In the absence of DT and feeder metering, there is no other method to estimate the voltage-wise losses in Odisha.

- The Discom also expressed concerns in regard to factoring in the expenditure towards restoration of distribution system destroyed by natural calamities such as cyclone "Fani" in May, 2019 in the consumer tariff or methodology for the reflection of such additional expenditure in tariff.

5. Subsequent discussion by Forum

Key points on the theme of Cost of supply which emerged out of the discussion during the forum meeting are as below:

5.1 Mr. Gireesh Pradhan emphasised that to estimate CoS, the most important requirement is availability of data and the required data is not available due to absence of metering at various levels. He mentioned that metering has to be done 100% at DT / Feeder level as various CoS approach requires reliable granular data at ground level. Availability of data will help utilities in assessing the true cost incurred against various consumer categories. Respective state electricity regulatory commission, as in the past, has to clarify the directives and monitor the progress of DT / Feeder lever metering.

The electricity sector is one of those sectors wherein various certain consumer categories - agricultural and domestic - are earning heavy subsidies. It is the right time to sensitize these categories of consumers about the subsidy they get; it is important to highlight the Actual Cost of Supply (ACoS) in the bill itself and mentioning the difference between the actual cost of supply and the tariff at which consumer is being billed.

5.2 Mr. M.R. Sreenivasa Murthy expressed concerns over metering issue in India. He mentioned that though we are surplus power country, but we do not meter electricity at various places. It is a big concern today. He also mentioned the requirement of capacity building and issue of shortage of employees in Discoms. He also expressed concerns on the strengthening of transmission network. He mentioned that only 3% of consumers have smart meters even after so much emphasis and efforts of various utilities. He also suggested that in addition to adopting embedded cost of supply, efforts towards reduction of overall cost which includes power purchase cost,

transmission cost, distribution cost, etc., are also very crucial for Discoms so that overall CoS can be brought down. Integrated resource planning is requisite for optimization of power purchase cost and other costs associated with it which would help to bring down the tariff. Doing this will improve Discoms financial health and reduce ACS-ARR gap.

5.3 Mr. K Ramanathan, TERI, expressed concern over metering and urged Discoms to take the 100% feeder / DT metering work on priority. He also suggested the forum to carefully look after overall power purchase cost with motive of reducing it with better planning.

5.4 For the benefit of DISCOMs, Mr. A.K Saxena mentioned that TERI had developed an Embedded Cost of Supply Model for Punjab State Power Corporation Limited (PSPCL) in 2011 and the same was being used by PSPCL. **Mr. S Narayan Kumar**, added that **TERI's model** adopts two methodologies - one for power surplus scenario and one for power deficit scenario- for estimating embedded cost of supply which includes demand, energy and customer related charges based on exhaustive load research and data collation work with the help of PSPCL.

6. <u>Presentation by PWC on CoS model:</u>

6.1 Mr Shaswat Nayak made the presentation on behalf of PWC team on "Cost of Supply Framework: Assessing cost of supplying electricity to consumer categories". PWC worked out a CoS model that use the embedded cost approach to estimate CoS. This model is envisaged as a tool available on open web for Discom use.

6.2 Mr. Gireesh Pradhan suggested that PWC does further work on their model after taking data from DISCOMs and present the result in next DUF meeting. West Bengal (WBSEDCL) and Telangana (TNSPDCL) Discom agreed to provide data to PWC.

7. Mr. Gireesh B. Pradhan, sought suggestions from forum in regard to the next study topic under DUF. **"Open Access"** was agreed by the forum members as the next study topic. Mr. Pradhan also requested the utilities for their continued support and cooperation to carry out the next study by providing information and inputs for developing base paper and subsequent work.

8. The fourth meeting of Distribution Utilities Forum (DUF) was concluded with a vote of thanks by **Mr. Gireesh B. Pradhan**.

FORTH MEETING OF DISTRIBUTION UTILITIES FORUM HELD ON

10th JUNE 2019 AT INDIA HABITAT CENTRE, NEW DELHI

List of Participating Forum Members

S.No	Name	Designation	Organization
1	Mr. Gireesh B. Pradhan	Honorary Chairman	Distribution Utilities Forum
2	Mr. M R Sreenivasa Murthy	Former Chairman	KERC
3	Mr. Ravi Singh	Secretary and CEO	WWF
4	Mr Rajib Bedajna	Addl. GM (F&A)	West Bengal State Electricity Distribution Company Ltd. (WBSEDCL)
5	Mr. Shyamal Kanti Das	Sr. Manager (F&A)	West Bengal State Electricity Distribution Company Ltd. (WBSEDCL)
6	Mr. Rajib Das	General Manager	CESC Ltd.
7	Mr. Sujay Kumar Saha	Head (ESCO & HA)	Tata Power Delhi Distribution Ltd. (TPDDL)
8	Mr. Mithun Chakraborty	Head of Group (Strategy)	Tata Power Delhi Distribution Ltd. (TPDDL)
9	Mr. Baljeet Singh Khanooja	General Manager (Commercial)	Madhya Pradesh Madhya Kshetra Vidyut Vitaran Company Ltd. (MPMKVVCL)
10	Mr. A.R. Verma	Dy CGM (Regulatory Affairs)	Madhya Pradesh Madhya Kshetra Vidyut Vitaran Company Ltd. (MPMKVVCL)
11	Mr. Sabyasachi Padhi	General Manager (Technical)	Odisha Power Transmission Corporation Limited (OPTCL)

12	Mr. Manmaya Kumar Sahu	Executive Engineer	Odisha Power Transmission Corporation Limited (OPTCL)
13	Ms. S R Shantamma	DGM (PP)	Bangalore Electricity Supply Company (BESCOM)
14	Ms. S Harini	DGM (RA)	Bangalore Electricity Supply Company (BESCOM)
15	Mr. Nilmadhab Deb	Assistant General Manager (F&A)	Assam Power Distribution company Limited (APDCL)
16	Mr. Santosh Naik	Executive Engineer	Mangalore Electricity Supply Company Limited (MESCOM)
17	Mr. Prakash Hegde	Asst. Executive Engineer	Mangalore Electricity Supply Company Limited (MESCOM)
18	Mr. S. Nagesh	EE (TA &QC)	Chamundeshwari Electricity Supply Corp Ltd (CESCOM)
19	Mr. Mujamil Khan	EE	Chamundeshwari Electricity Supply Corp. Ltd (CESCOM)
20	Mr. Vinod Bansal	CAO	Jodhpur Vidyut Vitran Nigam Ltd (JVVNL)
21	Mr. Swami Reddy Singireddy	Director / IPC & RA	Southern Power Distribution Company of Telangana Ltd (TSSPDCL)
22	Mr. Satish Kumar Katroju	DE / RAC &IPC	Southern Power Distribution Company of Telangana Ltd (TSSPDCL)
23	Mr. T.Madhusudhan	Chief General Manager	Northern Power Distribution Company of Telangana Ltd (TSNPDCL)

24	Mr. V. Buchi Reddy	Asst. Accounts Officer	Northern Power Distribution Company of Telangana Ltd (TSNPDCL)
25	Mr. N.Gangadhar	GM (RA)	Eastern Power Distribution Company Of AP Ltd (APEPDCL)
26	Mr. H.Gopala Rao	GM (Revenue)	Eastern Power Distribution Company Of AP Ltd (APEPDCL)
27	Mr. Abdul Rahim	Executive Engineer	Cochin Port Trust
28	Mr. Abhishek Ranjan	VP	BSES Rajdhani Power Limited (BRPL)

List of Participants from Shakti Sustainable Energy Foundation (SSEF) and The Energy and Resources Institute (TERI)

S.NO.	NAME	DESIGNATION	ORGANIZATION
1	Mr. Krishan Dhawan	CEO	SSEF
2	Mr. Chinmaya Acharya	Chief of Program	SSEF
3	Mr. Vivek Sen	Head of Power Program	SSEF
4	Ms. Gayatri Ramanathan	Program Coordinator	SSEF
5	Dr. Ajay Mathur	Director General	TERI
6	Mr. K. Ramanathan	Distinguished Fellow	TERI
7	Mr. Girish Sethi	Senior Director, Energy	TERI
8	Mr. Amit Kumar	Senior Director, Social Transformation	TERI
9	Mr. A.K. Saxena	Senior Director, Electricity and Fuels	TERI

10	Dr. Ashvini Kumar	Senior Director, Renewable Energy Technologies	TERI
11	Mr. S Narayan Kumar	Fellow	TERI
12	Mr. Robin Mazumdar	Consultant	TERI
13	Mr. Raghav Pachouri	Associate Fellow	TERI
14	Ms. Rashi Singh	Research Associate	TERI
15	Ms. Ruchi Gupta	Research Associate	TERI
16	Mr. Ashish Sharma	Research Associate	TERI
17	Mr. Rishabh Sethi	Consultant	TERI