MINUTES OF THE 67th MEETING
OF THE
FORUM OF REGULATORS (FOR) HELD AT NEW DELHI
ON 12TH APRIL 2019

Venue	:	**Conference Hall, Upper Ground Floor CERC , New Delhi**
Day / Date	:	**Friday, 12th April, 2019**
List of Participants	:	**At Appendix-I (Enclosed)**

The meeting was chaired by Shri P.K.Pujari, Chairperson, Central Electricity Regulatory Commission (CERC) and Forum of Regulators (FOR). The Chairperson, CERC/ FOR welcomed all the Members of the Forum to the Meeting. He specifically welcomed Chairperson, Joint Electricity Regulatory Commission (Manipur & Mizoram), Chairperson, West Bengal Electricity Regulatory Commission and Member, CERC who were attending the meeting for the first time after they took over charge in their respective offices.

Thereafter, the Forum took up the agenda items for consideration.

BUSINESS SESSION – I

AGENDA ITEM NO. 1: CONFIRMATION OF THE MINUTES OF THE 66th MEETING OF THE FORUM OF REGULATORS HELD ON 18th JANUARY, 2019 AT NEW DELHI.

The Forum endorsed the minutes of the meeting held on 18th January, 2019 at New Delhi.

AGENDA ITEM NO. 2: ACCOUNTS RELATED MATTERS

1. **Budget for FY 2019-2020**

The Budget of Forum of Regulators indicating the estimated expenditure and expected income for FY 2019-20 was discussed by the Forum. Queries raised by Chairperson, Kerala ERC were answered and suggestions made with regard to presentation of the budget were noted. Accordingly, the Revised Budget of FOR for FY 2019-20 is at **Annexure-I.**

Thereafter, the Forum approved the Budget.

2. **Re-appointment of Auditor for Audit of Accounts of Forum for the FY 2018-19**

The Forum approved the reappointment of M/s MBR & Company LLP, Chartered Accountants, New Delhi for conducting the Audit of FOR for the F.Y. 2018-19. As it will be the 5th year (i.e. maximum duration for being Auditor of an organization) of their appointment, FOR Secretariat will initiate the process for appointing a new Auditor for the F.Y. 2019-2020.

3. **Re-appointment of Tax Consultant for filing the ITR for the FY 2018-19**

The Forum approved the re-appointment of M/s MM & Associates, Chartered Accountants, New Delhi for filing the Income Tax Return of FOR for the F.Y. 2018-2019.

4. **Re-appointment of Tax Consultant for filing the GSTRs for the FY 2019-20**

The Forum approved the reappointment of M/s MBR & Company LLP, Chartered Accountants, New Delhi as Consultant to handle various GST-related matters and for filing the GST returns of FOR for F.Y. 2019-20.

5. **IT related matters viz. exemption and scrutiny assessment for AY 2016-17**

a. The Forum was appraised of the efforts of the FOR Secretariat in seeking exemption for FOR from payment of Income Tax as per provisions of Section 10 (46) of the Income Tax Act, 1961 since the year 2012. It was informed that while the FOR Secretariat has submitted all the documents sought for by the Income Tax department, exemption under 10(46) of the Income Tax Act, 1961 has not been received till date. The Forum members advised the Secretariat to keep pursuing the matter and to take all steps necessary for obtaining exemption.

b. On the issue of claim received by the FOR Secretariat regarding scrutiny assessment for the FY 2015-16 (AY 2016-17), the officials of the Secretariat updated the Forum that a demand notice for Rs. 25,03,750/- under Section 156 of the Income Tax Act, 1961 has been received from the IT department after disallowing income of Rs 68,90,126/- claimed as exempt income by FOR. While FOR Secretariat has paid the demand raised vide aforesaid notice issued by the IT Department, the IT Authorities have informed the FOR Secretariat to speedily take up the matter of exemption with the higher authorities of Income Tax. Inability to get the exemption by 30.06.2019 would result in penalty under section 221(1) of the Income Tax Act. The Forum noted the efforts of the FOR Secretariat and suggested to carry on the efforts to get the exemption from IT authorities. The Members also suggested that capacity building programs be taken in larger numbers so that there is no surplus fund and question of IT payment would not arise in that case.

AGENDA ITEM NO. 3: PROCEDURE FOR PROCUREMENT OF POWER FOR SHORT AND MEDIUM TERM ON DEEP PLATFORM/ BIDDING PROCESS BY DISTRIBUTION LICENSEES-PRESENTATION-REFERENCE FROM BIHAR ERC

a. As per the request of the Bihar Electricity Regulatory Commission, a presentation on Short/ Medium-term bidding for power procurement on DEEP e-bidding portal was made by M/s PFCCL and M/s MSTCL.

b. The Procurement of Power by distribution companies through DEEP Portal has been made compulsory and such procurement of Power is done as per the revised “Guidelines for Procurement of Electricity for Medium Term from Power Stations set up on Finance, Own and Operate (FOO) basis” on 17th January 2017 that inter alia introduced system of 'Reverse Auction' through e-Bidding Portal. The team explained in detail, the features of the bidding process (Presentation is at **Annexure-II**). The DEEP Portal currently handles short-term, medium-term, coal flexibility and the pilot scheme notified by the Ministry of Power. The DEEP portal has demonstrated compliance with the guidelines of CVC, IT and STQC of Government of India. Till date, bidding for approx. 514275.2 MW has been concluded through DEEP e-Bidding Portal for short-term bidding where the tariff has decreased to nearly Rs. 4.25/unit. Of this, LoI for approx. 157660.10 MW have been issued. It was informed by representatives of PFCCL that the tariffs discovered through this process have been significantly lower than the tariff at which power was procured earlier.

c. Various aspects of the DEEP portal based transactions were discussed. Some members made suggestions for process improvement and opined that while the medium-term bidding has L1 matching, the short-term bidding does not have L1 matching. Hence, PFCCL can consider L1 matching for short-term bidding instead of bucket filling to reduce the tariffs. They also suggested that availability of surplus power of the generators should be indicated in the portal to which representatives of PFCCL stated that though the current guidelines do not have this provision, the same has been considered for stakeholder consultations.

The Forum appreciated the presentation.

AGENDA ITEM NO.4 : REPORT ON ELECTRICITY CONTRACTS IN US: INSIGHTS FOR INDIA - NARUC, U.S.A

Joint Chief (RA), CERC briefed the Forum on the current MOU between the Forum of Regulators (FOR) and the National Association of Regulatory Utility Commissioners (NARUC) and the study undertaken on the international practices on contracting. The study has helped understand the US experiences on the treatment of legacy contracts and contracting practices through the transition to the next market model.

For this study, NARUC with assistance from E3 (US-based Energy Consulting Firm), has prepared draft report on Electricity contracts in US: Insights for India, highlighting international experiences on structures of contracts in different market models and suggested alternatives for India in the light of emerging market realities in the country.

The presentation made by representatives of E3 and NARUC through video conference is at **Annexure-III.**

In the presentation, the team discussed the US market from the 1980s till date including the California and New York experience on contracts. It was stated that while regulators played a big role in contracting in California market, markets had a bigger role to play in the New York market. On Resource adequacy, it was stated that a mechanism to support reliability could be built into the electricity markets. A centralized procurement on behalf of load serving entities exists in California and the same may be studied based on the market design to avoid any future crisis. The representatives of E3/NARUC stated that every market has its own peculiarity. As an example, they stated that while the New York market has a competitive retail market, some of its customers take the services of the incumbent utility. They added that the utility contracts are regulated and that regulators set limits on duration of contracts. In New York, the State plays a role in procurement and the State Government signs contracts for the Renewable energy. Comparatively, Texas has no government intervention and has more competition.

At the end of the presentation, the Forum made note of the study prepared by the NARUC – FOR team.

AGENDA ITEM NO.5: REFERENCES FROM MINISTRY OF POWER:

a. **Implementation of uniform technical minimum conditions of 55% of Unit capacity for coal based power station**
b. **Regulators to ensure payment of Late Payment Surcharge (LPS) for delay in payment by DISCOMs as per the provisions of PPA**

i. Chief Engineer (R &R), MoP made a presentation **(Annexure–IV)** before the Forum. On the issue of late payment surcharge, the Forum was requested to look into the problems of the generators as they were not receiving their payments from the Discoms. To this, the Forum members advised that the generators can file a petition before the SERCs as the provisions of the Electricity Act, 2003 do not permit suo-motu action to be taken by the SERCs in this regard. It was also suggested that since most Discoms are government-owned, the MoP may consider writing to the State governments to intervene.

ii. It was suggested that since the Discoms have their own issues regarding payments, MoP may consider bringing the Discoms under a Forum. On the issue of Regulatory Assets, the Secretary, MoP expressed concern over accumulation of huge regulatory assets in some of the States and urged the SERCs to dispense with such a practice .

iii. On the issue of technical minimum (55%), MoP informed that only 3 States are following the norms of 55% technical minimum. The Forum noted the need for specifying the technical minimum especially in the wake of large scale integration of renewable energy, but felt that decision on this aspect should be backed by a study. MoP suggested that SERCs may look into the studies conducted by CEA as also the CERC Regulations in this regard.

iv. MoP requested SERCs to consider granting in-principle approval for costs to the generators for implementing the new environment norms. To this, the Members of the Forum stated that they can do so if CEA gives the cost estimates. Chairperson, CERC stated that CERC has taken a view that change in environment norms are Change in Law events, and the norms being notified by CEA for specific technology will be considered by CERC.

v. On the issue of strengthening the ERCs, the Members stated that the ERCs have limited powers under Section 142 of the Electricity Act, 2003. It was also stated that the ERCs do not have any enforcement powers and requested that MoP may consider making Rules or amending the Electricity Act, 2003 for providing such powers to the ERCs for better compliance of their Orders.

c. **New Measures taken by Government of India for promotion of Hydro power sector:**

Representatives of Ministry of Power informed that vide letter dated 22.03.2019, MoP had forwarded measures approved by Government of India to promote hydropower sector. In this regard, representatives of MoP made a presentation ***(Annexure-V)*** before the Forum. The representatives further informed the Forum that Hydro Purchase Obligation (HPO) is limited only to new Large Hydro plants and that the Government of India would specify the trajectory for HPO based on data collected. They stated that the Regulators could consider approving a levellised tariff for new hydro projects. The PPA could be for a minimum duration within which the generator would be able to repay at least 60% of its debt and that the Regulators could approve the PPA including the tariff calculations.

The Forum noted the observations of the officials of MoP .

On conclusion of the meeting, the Chairperson, CERC/ FOR thanked all the dignitaries present in the meeting. He thanked the staff of FOR Secretariat for their efforts in organizing the meeting. He also conveyed to the Members of Forum that the next FOR Meeting will be held in New Delhi, date and time of which would be informed in due course of time.

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/ APPENDIX – I /

LIST OF PARTICIPANTS ATTENDED THE 67TH MEETING

OF

FORUM OF REGULATORS (FOR)

HELD ON 12TH APRIL, 2019 AT NEW DELHI.

S. No.	NAME	ERC
01.	Shri P.K. Pujari Chairperson	CERC / FOR – in Chair.
02.	Shri R.P. Singh Chairperson	APSERC
03.	Shri Subhash Chandra Das Chairperson	AERC
04.	Shri S.K. Negi Chairperson	BERC
05.	Justice (Shri) S.S. Chauhan Chairperson	DERC
06.	Shri Anand Kumar Chairperson	GERC
07.	Shri Jageet Singh Chairperson	HERC
08.	Dr. Arbind Prasad Chairperson	JSERC
09.	Shri M.K. Goel Chairperson	JERC (State of Goa & UTs)
10.	Shri Lalchharliana Pachuau Chairperson	JERC for M & M
11.	Shri Shambhu Dayal Meena Chairperson	KERC
12.	Shri Preman Dinaraj Chairperson	KSERC
13.	Dr. Dev Raj Birdi Chairperson	MPERC
14.	Shri U.N. Behera Chairperson	OERC
15.	Ms. Kusumjit Sidhu	PSERC

	Chairperson	
16.	Shri Raj Pratap Singh Chairperson	UPERC
17.	Shri Sutirtha Bhattacharya Chairperson	WBERC
18.	Shri Arun Kumar Sharma Member	CSERC
19.	Shri Mukesh Khullar Member	MERC
20.	Shri S.C. Dinkar Member	RERC
21.	Shri Sanoj Kumar Jha Secretary	CERC
22.	Dr. Sushanta K. Chatterjee Joint Chief (RA)	CERC
23.	Ms. Rashmi Somasekharan Nair Dy. Chief (RA)	CERC
	SPECIAL INVITEES	
1.	Dr. M.K. Iyer Member	CERC
2.	Shri Indu Shekhar Jha Member	CERC
3.	Shri Mukul Dhariwal Member	MPERC
4.	Shri Ajay Kumar Bhalla Secretary	MOP
5.	Shri Sanjiv Nandan Sahai Additional Secretary	MOP
6.	Shri Aniruddha Kumar Joint Secretary	MOP
7.	Shri Ghanshyam Prasad Chief Engr.	MOP
8.	Shri Sunil Gautam Director	MOP
9.	Shri Vishal Pal Singh Deputy Secretary	MOP
10	Shri Bijoy R. Nair	MOP
11.	Shri M.K. Anand	CERC

	Chief (Fin.)	
12.	Ms. Geetu Joshi Chief (Eco.)	CERC
13.	Shri S.C. Shrivastava Chief (Engg.)	CERC
14.	Ms. Monali Hazra Regional Energy Manager and Clean Energy Specialist	USAID
15.	Shri Shubhranshu Patnaik Partner	Deloitte India
16.	Shri Manish Agrawal Senior Manager	PFCCL
17.	Shri Anubhav Kansal Manager	PFCCL
18.	Shri Nitesh Deputy Manager	PFCCL
19.	Shri S.D. Sharma Deputy Manager	MSTC LTD.

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STATUS FOR THE F.Y. 2018-2019 (Actual receipts & expenditures till 31.03.2019) and Proposed / Estimated Budget for F.Y. 2019-2020
(ON CASH BASIS)

Figures in Rs.

S.No.	Particulars	FINANCIAL YEAR 2018-2019							Proposed Budget for F.Y. 2019-2020	
		FOR FUNDS				MoP PLAN ASSISTANCE			FORUM FUNDS *	MoP ASSISTANCE
		Budget	Actuals	Receivable/ Payable	Total @	Budget	Actuals	Receivable/ Payable	Budget	Budget
	INCOME									
1	Membership Fee (Current @ Rs. 6.00 lakh each Member) **[excluding GST @18%, levied separately]** [1]	**18000000**	17400000	600000	18000000	**-**	-	-	**18000000**	**-**
2	Interest from Corpus Fund [2]	**2450000**	2315016	134984	2450000	**-**	-	-	**2450000**	**-**
3	Interest from Autosweep [3]	**1200000**	1378581	50000	1428581	**-**	-	-	**1200000**	**-**
4	Interest from Savings Account	**-**	1284	-	1284	**-**	-	-	**-**	**-**
5	Plan Assistance from MoP [4]	**-**	-	-	-	**7800000**	4800000	-	**-**	**7800000**
	Total	**21650000**	**21094881**	**784984**	**21879865**	**7800000**	**4800000**	**0**	**21650000**	**7800000**
	EXPENDITURE									
1	Meeting Expenses [5]	**3166000**	1991018	-	1991018	**-**	-	-	**3500000**	**-**
2	Professional Fees (Staff Consultants) [6]	**3760000**	2312848	-	2312848	**-**	-	-	**4645000**	**-**
3	Secretariat Expenses [7]	**9984886**	3410469	-	3410469	**-**	-	-	**4238440**	**-**
	Sub-Total	**16910886**	**7714335**	-	**7714335**	**-**	**-**	**-**	**12383440**	**-**
4	Training [8]	**6900000**	6548292	-	6548292	**1800000**	1802256	0	**8727588**	**3228000**
5	Study/Consultancy	**802400**	0	-	0	**6000000**	1742161	0	**0**	**4572000**
	Total	**24613286**	**14262627**	**-**	**14262627**	**7800000**	**3544417**	**0**	**21111028**	**7800000**

* As can be seen, there has been a surplus budgeting of **Rs. 5.39 lakh** for the F.Y. 2019-20 (on CASH BASIS), i.e. an expenditure of **Rs. 2.091 Crore** against an income of **Rs. 2.165 Crore**.

@ Also, as can be seen, there has been a surplus budgeting of **Rs. 76.17 lakh** for the F.Y. 2018-19 (on CASH BASIS), i.e. an expenditure of **Rs. 1.426 Crore** against an income of **Rs. 2.188 Crore**.

SURPLUS 19-20 AS PER BUDGET	**538972**

NOTES:

1) For the F.Y. 2018-2019, membership fee is receivable from Tripura Electricity Regulatory Commission [Rs.6,00,000/-]. As has been communicated by them, they are still awaiting permission from the State Government to release the funds. Accordingly, on receipt of the same, the membership fee will be remitted to FOR.

2) The MoP has provided a corpus fund of Rs.3.70 crore (appox.) to FOR, which has been invested into fixed deposits (4 nos.FDs) with Corporation Bank (business bank of FOR). The corpus fund has been invested for a period of 555 days @ 6.70% and the FDs will mature between 21.09.2019 to 25.09.2019. The budgeted figure of interest on corpus fund for the FY 2019-20 is a projection based on the proportionate interest receivable during the FY 2019-20 (i.e. Rs.37,19,568* 365/555). Further, as per MoP instructions, the interest received on the said corpus fund has to be spent on the specific purpose, viz. training programs. Accordingly, FOR utilizes this amount towards conducting the yearly capacity building program held in collaboration with IIT, Kanpur (containing foreign component) for the Chairpersons/ Members of the SERCs. The interest from Corpus Fund FDR for the F.Y. 2019-20 has been projected on the assumption that the rate of interest may remain the same (i.e. @ 6.70% per annum only) during the aforeasaid period of maturity.

3) Income through membership fees is being invested in autosweeps/ flexi deposits with Corporation Bank (business bank of FOR). The budgeted figure of interest on autosweeps for the FY 2019-20 is a conservative projection, based on the balance of autosweeps available as on 31.03.2019*6.70%. The actual income depends upon utilization of the funds and the prevailing rate of interest on which they are invested, at a particular time. Further, the income generated is spent on various secretariat & other expenses required to run the Sectt.

4) For the F.Y. 2018-19 (i.e. 2nd year of the XIIIth Plan Period), BE/RE of Rs.78 lakh was approved by Ministry of Power (MoP). Against the BE of Rs.78 lakh, an amount of Rs.48 lakh has been received from MoP during the FY 2018-19. This is because the release of funds depends on the number of training programs and studies to be conducted by FOR during a financial year. Last year, it was decided to conduct 2 training programs and 3 studies out of the aforesaid BE sanctioned by Ministry i.e. Rs. 24 lakh (appox.) for 2 training programs and Rs. 54 lakh for 3 studies. Against the same, FOR has conducted only two training programs from the allocated funds. Further, out of three studies, only one study commenced in F.Y.2018-19 which costed lesser than the projected cost. Apart from this, two other studies could not be conducted due to paucity of time and non-receipt of entire funds from Ministry. Further, for the F.Y. 2019-20, MoP vide its letter dated 15.03.2019 has communicated allocation of **Rs. 26 lakh** (i.e. 1/3rd of the BE), based on the Vote on Account for the F.Y. 2019-20 (as has been communicated to them by the Budget Division of the Ministry of Finance vide their letter dated 20.02.2019). Therefore, for the F.Y. 2019-20 (i.e. 3rd year of the XIIIth Plan Period), it is assumed that a BE of Rs. 78 lakh will be granted to FOR (under the head Professional Services of the MoP) towards the Capacity Building and Consultancy Services. Accordingly, FOR has planned to conduct 2 Training programmes and 3 Studies.

5) For the F.Y. 2018-19, it was proposed that 2 meetings will be held outside Delhi and 4 meetings will be held in Delhi. However, during the F.Y. 2018-19, only 4 meetings were held, viz. 2 meetings were held outside Delhi and only 2 meetings could be held in Delhi. Therefore, the actual expenditure incurred (i.e. **Rs.19.91 lakh**) during the year is less than the budgeted (i.e. **Rs.31.66 lakh**). The break-up of expenditure incurred during the meetings, are as below:

Particulars	Expenditure incurred (in Rs.)
(a) 63rd FOR meeting held at CERC, New Delhi on 09th April, 2018	**68712**
(b) 64th FOR meeting held at Jharkhand on 24th August, 2018	**700000**
(c) 65th FOR meeting held at Odisha on 13th November, 2018	**700000**
(d) 66th FOR meeting held at CERC, New Delhi on 18th January, 2019	**63115**
(e) Working Group & Technical Committee meetings held at CERC, New Delhi a/w 1 Secretaries Workshop held at Chhattisgarh	**459191**
TOTAL	**1991018**

For the F.Y. 2019-20, it is proposed that 3 meetings will be held outside Delhi and 3 meetings will be held in Delhi. As per the present practice, in case of meetings held outside Delhi, a financial assistance of Rs.7.00 lakh will be given to the host Commission. Further, meetings in Delhi are mostly being held at CERC's premises at New Delhi, for which average expenditure for one meeting is around Rs.1.00 lakh. Further, during the F.Y. 2019-20, one Workshop for Secretaries of ERCs is being proposed, for which a budget of Rs.3.00 lakh is proposed. **Accordingly, a budget of Rs. 35.00 lakh is being proposed for F.Y. 2019-20, i.e. Rs. 21 lakh for meetings to be held outside Delhi, Rs. 3 lakh for meetings to be held in Delhi, Rs. 4 lakh for the Secretaries Workshop and Rs. 7 lakh for the Working Group & Technical Committee meetings.**

6) The actual expenditure incurred during the F.Y. 2018-19 (i.e. Rs. 23.12 lakh) is less than the budgeted expenditure (i.e. Rs. 37.60 lakhs). This is because, during the F.Y. 2018-19, one Research Associate and one Regulatory Executive Officer resigned for better prospects. Currently, FOR has an Advisor and a Research Associate to contribute to the activities of the FOR Sectt., which includes analyzing the studies, logistics for training programs and other data collection related works including annual reports, working group related works etc. Further, FOR has already advertised for the recruitment of one Research Associate (@ Rs. 50,000 per month appox.) and one Research Officer (@ Rs. 80,000 per month appox.) during the F.Y. 2019-20, the annual expenditure of which would be around Rs. 9.60 lakh (appox.). **Therefore, as against the budget of Rs. 37.60 lakh in F.Y. 2018-19, a budget of Rs. 46.45 lakh is proposed for the F.Y. 2019-20.**

NOTES (CONTD.):

7) Against the budget of **Rs. 99.85 lakh** for F.Y. 2018-19, a budget of **Rs. 42.38 lakh** is being proposed under the head **Secretarial Expenses** for the F.Y. 2019-20. The same comprises of Labour (Outsource) Expenses (Rs.27.65 lakh) *, Office/Other Expenses (Rs.0.20 lakh), Advertisement Expenses (Rs.1 lakh), Printing & Stationery (Rs. 10.73 lakh) **, Telephone Expenses (Rs. 0.44 lakh), Travelling Expenses (Rs. 0.50 lakh), Website Expenses (Rs. 1 lakh), Audit Fee (0.26 lakh), Legal Fee (i.e. Income Tax Return filing fee) (Rs.0.10 lakh) and Professional Fees for GST matters (Rs.0.50 lakh).

* W.r.t. the budget of Rs.27.65 lakh for FY 2019-20 under Labour (Outsource) Expenses the same is on account of outsourced staff engaged through manpower agencies in FOR. The outsourced employee consists of a Sr. Accounts Officer, a Sr. Executive (Steno), a Technical Officer (IT) and 2 nos. Executive (Admin.). Therefore, based on their experience and the work being done by these employees, the budget is proposed.

** The break-up of budget of Rs.10.73 lakh for the FY 2019-20, is as follows:
(i) Rs.12,000/- towards subscription of magazines & journals for FOR.
(ii) Rs.3 lakh towards printing of study reports.
(iii) Rs.3.61 lakh towards printing of Annual Reports for the FYs 2012-13, 2013-14 & 2014-15.
(iii) Rs.4 lakh towards printing of Annual Reports for the FYs 2015-16, 2016-17 & 2017-18.

8) For the F.Y. 2019-20, an expenditure of **Rs.87.28 lakh** is being proposed, which comprises of **Rs.80 lakh** (which is calculated @10% escalation cost on the total expenditure of **Rs.72.76 lakh** incurred on the similar progamme held during F.Y. 2018-19) for conducting the Capacity Building Programme in collaboration with IIT-Kanpur, **under the head Forum Funds** and **Rs.7.28 lakh** towards the balance payment of Capacity Building Programme conducted in collaboration with IIT-Kanpur during the F.Y. 2018-19. Further, it is submitted that the actual expenditure incurred for conducting the capacity building program for the Chairpersons/ Members of the SERCs in collaboration with IIT, Kanpur during the FY 2018-19 was Rs.72.76 lakh. Against the same, an amount equivalent to 90% (viz. Rs.65.48 lakh) of the total aforesaid cost was released as advance for conducting the program. The invoice for the remaining 10% (viz. Rs.7.38 lakh) of the total aforesaid cost was received in April, 2019. Therefore, as the budget of FOR is based on the CASH basis, 90% cost incurred during the financial year has been shown as the expenditure. The balance 10% has been budgeted as payable during the FY 2019-20.

During the Statutory Audit of FOR for the F.Y. 2014-15, the Statutory Auditor has highlighted the issue regarding the applicability of service tax on the membership fee of FOR. In this regard, FOR has taken an informal advise from a Tax Counsultant (Service Tax expert). He has informed that service tax was leviable on the membership fee of FOR since 01.07.2012, prior to which services were not taxable. The same is due for payment on the basis of billing, i.e. on or before 6th of the subsequent month, in which the bills were raised. Therefore, in this regard, it is stated that if the service tax issue arises and any liability arises, the same will be met from available Reserves & Surplus of FOR. Further, it is submitted that the liability on account of service tax (viz. applicable from 01.07.2012, i.e. for the FYs 2012-13 to 2016-17) is just a probability. The same may or may not arise. Therefore, the figure of demand (if any) cannot be projected. However, on an estimation, the amount of liability is Rs.1.48 crore (appox.) (includes service tax & projected interest) as on 31.03.2019, which will be met from the Reserve & Surplus of FOR, if situation arises.

Annexure-II

Procedure for Power Procurement Short Term & Medium Term through DEEP e-Bidding Portal

by
Yogesh Juneja, CEO

PFC CONSULTING LTD.
(A wholly owned subsidiary of Power Finance Corporation Ltd.)

April 12, 2019

BACKGROUND – SHORT TERM

1. DEEP (Discovery of Efficient Electricity Price) e-Bidding portal was launched by Hon'ble Minister of State (I/C) for Power on 12th April 2016.
2. Procurement of Power is done through e-Reverse Auction as per the revised Guidelines for short term (***i.e. for a period of more than one day to one year***) Procurement of Power by Distribution Licensees through Tariff based bidding process on 30th March 2016.
3. The Procurement of Power has been made compulsory through DEEP Portal.

BACKGROUND – MEDIUM TERM

1. DEEP (Discovery of Efficient Electricity Price) e-Bidding portal was launched by Hon'ble Minister of State (I/C) for Power on 17th August 2016.
2. Procurement of Power is done as per notified the revised "Guidelines for for Procurement of Electricity for Medium Term from Power Stations set up on Finance, Own and Operate (FOO) basis" on 17th January 2017 and inter alia introducing system of 'Reverse Auction' through an e-Bidding Portal.
3. Further Central Government has notified Amendments to above Guidelines to enable the provisions of SHAKTI POLICY on 30th January 2019.

OBJECTIVES

1. To provide a platform for simultaneous bidding processes for various Distribution Licensees and Bidders.
2. To bring in uniformity in the process of Power Procurement across various DISCOMs in the country.
3. To provide a common platform with e-Reverse Auction facility for conducting competitive bidding for procurement of power resulting overall reduction in cost of procurement, manpower and time to benefit the consumers.
4. To disseminate information to a wider audience comprising of Procurers, Bidders including the stakeholders in power sector and direct and indirect consumers.
5. To enhance transparency and efficiency in the power procurement process across the country.

OBJECTIVES

6. To transform L-1 matching approach in manual tendering process into CVC compliant bucket filling approach so as to ensure Bidders to bid in a more comfortable and transparent manner.
7. To promote efficiency and fairness through minimum paper work and intervention.
8. To have inbuilt compliance with STQC (Dept. of Electronics) Guidelines, CVC Guidelines, IT Act and General Financial Rules (2005).

BIDDING PROCESS

1. The e-Bidding portal is accessible through www.mstcecommerce.com, www.powermin.nic.in and www.pfcclindia.com.
2. Bidders and Distribution Licensees to be registered on the portal.
3. Digital Signatures would be required for using the portal.
4. Bidders are required to deposit one time registration fee of Rs. 20,000/-.
5. Distribution Licensees can conduct the bidding process by themselves or appoint PFC Consulting Ltd. as their Authorized Representative.
6. The Distribution licensees would notify their requirement on Round the Clock (RTC) basis or hourly basis during the specified period.

BIDDING PROCESS

1. Provisions made for e-Tendering and e-Reverse Auction process.
2. Through e-tendering process, Initial Price Offers (IPOs) are discovered. After checking the eligibility criteria and norm of elimination, the list of Bidders qualified for next stage i.e. e-Reverse Auction is prepared.
3. The Bidders quote their tariff in Rs./kWh in the e-Reverse Auction stage which has the provision to increase the quantum but reduce the tariff by the Bidders in successive entry, continued and completed in 2 hours.
4. The bidding process to be completed in 10 days minimum and 15 days maximum period.
5. The Distribution Licensees have the right to reject the discovered price if the same is not aligned to market conditions.
6. Bidders have the right to exit without penalty if LoA is not issued as per schedule.
7. The successful bidders are charged a nominal fee of Rs. 500/- per MW. Bidding Fee is not charged from unsuccessful Bidders.

SNAPSHOT OF SHORT TERM BIDDING

1. Till date bidding for approx. 514275.2 MW has been concluded through DEEP e-Bidding Portal. Out which LoI for approx. 157660.10 MW have been issued.
2. Tariff discovered are significantly lower than the tariff at which power was procured earlier.

SNAPSHOT OF MEDIUM TERM BIDDING

1. Till date bidding for approx. 2633.5 MW has been concluded through DEEP e-Bidding Portal.

THANK YOU

TYPE OF FUEL - MEDIUM TERM BIDDING

1. *Coal from domestic market other than Coal Mine/Blocks*
2. *Coal from Linkage Coal*
3. *Coal from Coal Mine/Blocks allocated through auction by Governmental Instrumentality*
4. *Gas from domestic market*
5. *Gas from ONGC/GAIL*
6. *Supply from Hydro-electric Power Station*
7. *Coal imported from international market*
8. *Gas imported from international market*
9. *Coal from captive mines abroad*
10. *Fuel imported under fixed-price Gas Contract*
11. *Lumpsum Tariff*

Annexure-III

Regulatory Guidelines:

Insights from the U.S. on Electricity Contracting and Markets

67th Meeting of the Forum of Regulators

April 12th, 2019

Lakshmi Alagappan & Fritz Kahrl
Energy and Environmental Economics (E3)

Project Background

- Significant changes are underway in India’s electricity industry
  - Rapid declines in solar PV and wind costs
  - Aggressive national RE policy
  - Growing discom interest in shorter-term contracts
  - Concerns over coal plant utilization
  - Open access and customer choice
  - Ongoing efforts to improve financial health of discoms

USAID/NARUC/E3 Engagement with CERC and FOR

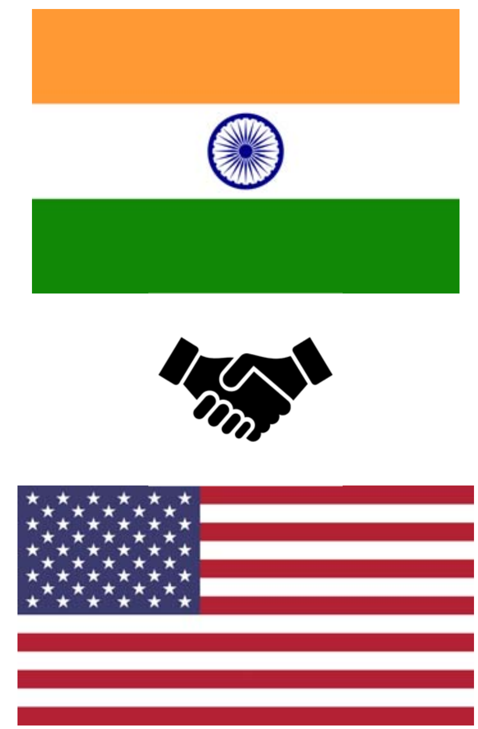
- Year 1: Regulatory Primer
  - Identified potential regulatory solutions to help inform more efficient power system operations in India
    - Focus on market design and imbalance mechanisms
    - Focus on integration of renewables
    - Draw from U.S. experience and Indian field research
- Year 2: Regulatory Guidelines
  - Examines transitional aspects of moving existing long-term contracts into a market-based structure with a focus on lessons learned from the U.S.

Key Questions

- How to transition long-term physical contracts to financial contracts, allowing buyers and sellers more flexibility to participate in short-term markets?
- How to regulate contracts in a more market-oriented environment, including contract duration and other terms and conditions?
- How to create meaningful spot market pricing that reflects system marginal costs and facilitates lower cost dispatch and more flexible operation?
- How to reduce the amount of uneconomic self-scheduling by long-term contract holders?
- When and how to introduce financial products to allow sellers and buyers to hedge electricity market risk?
- How much fuel price, electricity market price, and investment risk to pass on to generators?
- How to ensure that, even with greater reliance on shorter-term markets, load serving entities still have incentives to invest in adequate resources to meet electricity demand?
- How to ensure that markets are competitive and that greater reliance on electricity markets does not create unacceptable risks for discoms and customers?

Why focus on the US?

- Many parts of the US had electricity sectors that looked much like India’s today – long-term contracts/owned generation with coal plants, rapidly declining technology/fuel costs, aggressive energy policy
- As policymakers and regulators considered transitioning to markets, they asked similar questions during the transition that Indian regulators are asking now
- Overall contract and dispatch framework as proposed by CERC (CFDs and bid into DAM) is similar to the US
- E3 has a long history of work in jurisdictions that have undergone similar transitions and chose two case studies for the Guidelines from which to distill best practices and lessons learned: California and New York



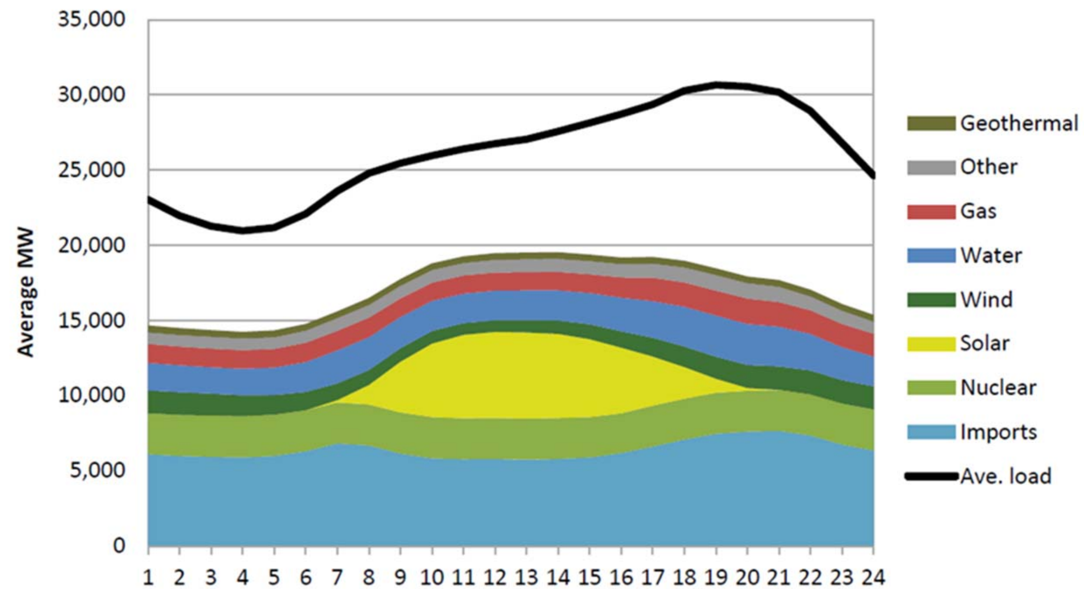
Case Studies: California & New York

- Case study regions were chosen based on their different points along spectrums of industry structures, regulatory oversight of contracting, and integration of long-term contracts into ISO markets
  - California – primarily regulated utilities that provide retail service, regulatory authorities have large influence on contract terms and conditions, forward contracts are a large source of inflexibility in the market
  - New York – competitive retailers play a large role, regulators only intervene in regulated utilities that provide default service, and market requires all bilateral contracts to be economically bid

Key Takeaway #1

- Long-term bilateral contracting can be compatible with merit order dispatch, but enabling compatibility between them may require changes in markets and regulation to reduce self-scheduling

- CA: Still large amounts of self-scheduling in market (see right); have tried changes to market design to help encourage more economic bidding
- NY: No generation self-scheduling; all generation is economically cleared through the market, including generators that have bilateral contracts with offtakers

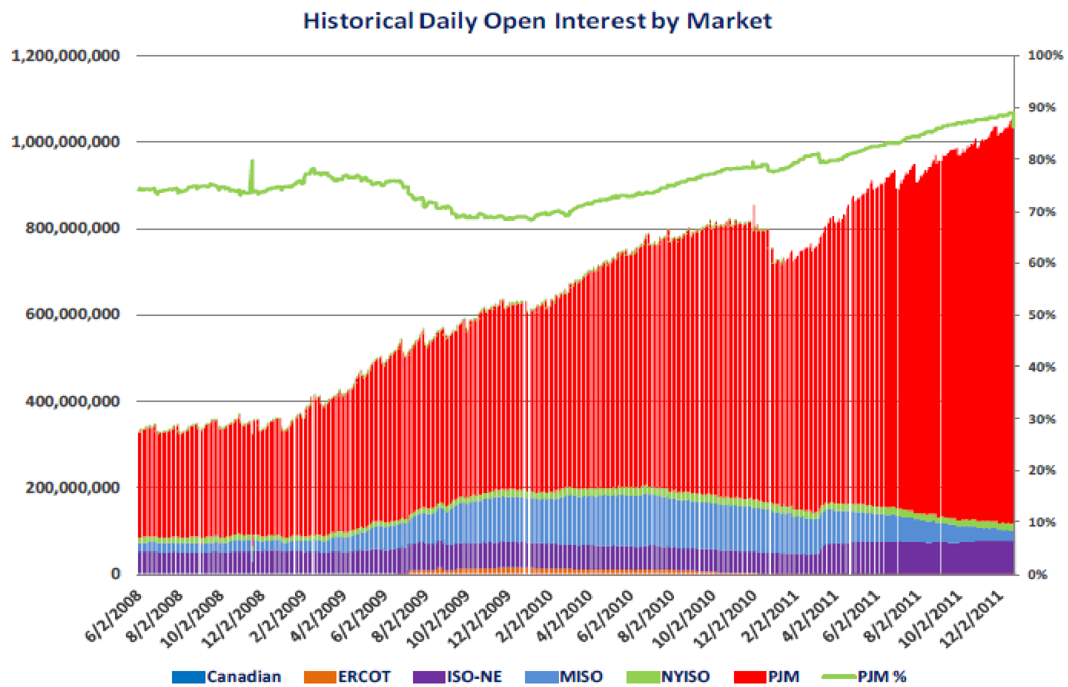


Average Hourly Self-Scheduled Resources (Shaded Area) Relative to Average Hourly Demand (Black Line) for the CAISO, 2016

Key Takeaway #2

- Hedging tools are critical for managing electricity spot market risks, but the development of exchange-traded financial products for electricity will likely be demand-driven and iterative

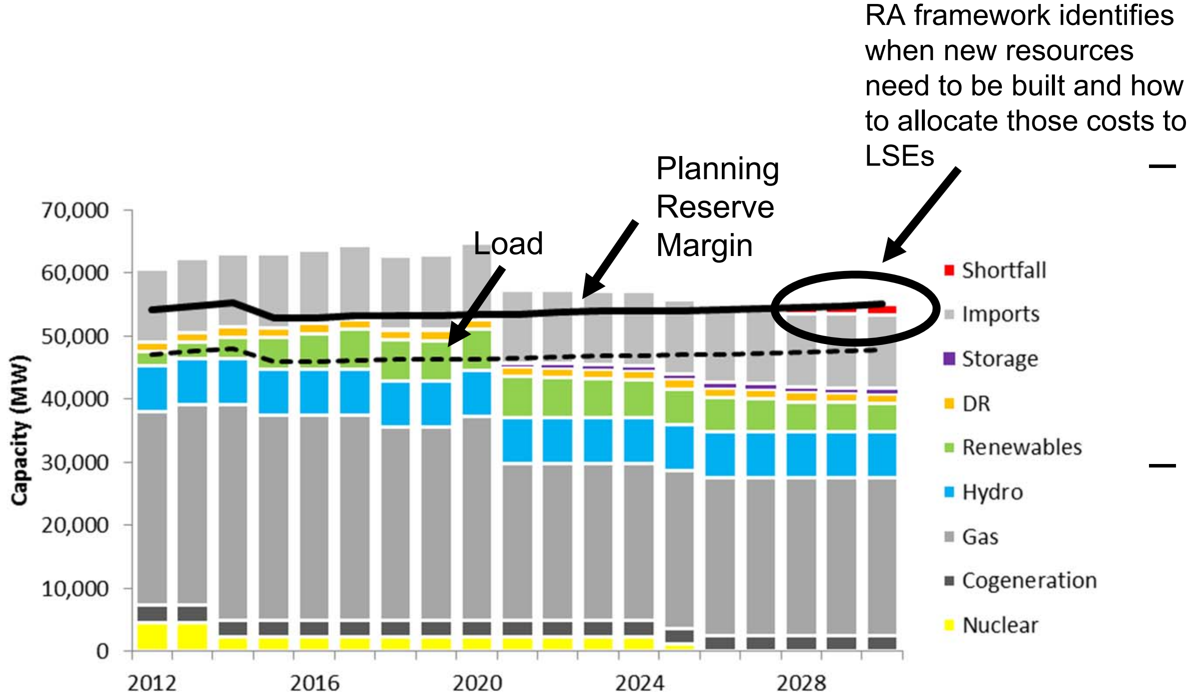
- CA: Use utility owned generation, long- and short-term bilateral contracts, and natural gas futures to hedge against market price risk
- NY: use short-term bilateral contracts and electricity financial products like futures, options, swaps
- Exchange based products were slow to develop and responded to demand and were iterative



Interest by ISO market in CME exchange products from 2008-2011

Key Takeaway #3

- As reliance on spot markets increases, resource adequacy and fairly allocating fixed generation costs become more important



California Planning Reserve Margin for Resource Adequacy

- CA and NY both have resource adequacy programs to ensure enough generation is online for next 6-12 months
- Also have long-term procurement mechanisms for new generation investment (see left for CA)

Key Takeaway #4

- Developing or expanding electricity markets does not reduce the cost of expensive legacy contracts, but markets can improve future decision-making
  - High average electricity prices were a key driver to market development in CA and NY, but legacy contracts were a sunk cost
  - Continue to pay the fixed costs, regardless of dispatch
    (They are reconciled to this reality); variable costs are paid only when dispatched
  - If economic, some legacy contracts were bought out and terminated or assets were made to be more dispatchable so that they could be meet flexibility requirements

Key Takeaway #5

- In expanding retail competition and choice, it is important that lawmakers and regulators have a vision for who will sign long-term contracts to finance new generation
  - Competitive retail providers will generally try to avoid long-term contracts, because of uncertainty in long-term demand; generators typically need a longer-term contracts to obtain financing
  - CA and NY are still grappling with this tension – regulated utilities are signing some contracts on behalf of competitive retailers in CA; state agencies are signing long-term contracts in NY

Key Takeaways #6-9

- There are multiple contractual arrangements through which electricity sellers and buyers with long-term bilateral contracts can participate in spot markets.
- There are no simple regulatory formulas for setting long-term contracting requirements for regulated utilities
- Higher penetrations of solar and wind generation have increased the importance of a well-functioning spot market
- Forward, real-time balancing, and ancillary services markets are interactive; lack of consistent incentives across markets can create opportunities for gaming and reliability challenges

Please read the Guidelines for more detail on each of these takeaways

Thank You!

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Annexure-IV

Meeting of Forum of Regulators

Issues for deliberation

12.4.2019

Issue-1 : Late Payment Surcharge

- Government on 8th March 2019 has approved the recommendations of Group of Ministers (GoM) constituted to examine the specific recommendations of High Level Empowered Committee (HLEC) constituted to address the issues of Stressed Thermal Power Projects

- Para 3.4 of the OM dated 8.3.19 issued by MoP

  *"**Para 3.4: Approval with regard to mandatory payment of Late Payment Surcharge (LPS):** Ministry of Power may engage with the Regulators to ensure that LPS is paid in case of delay in payment by DISCOMs as per the provisions of PPA. Appropriate Regulatory Commissions may ensure compliance."*

Regulators are requested to implement the above decision of the Government.

Issue-2 : Uniform Technical Minimum of Coal based Power Stations

- GoI target of 175 GW of RE by 2022. Balancing requirement is to be mainly met by coal based generation as other sources are limited.
- CERC has notified Technical Minimum limit of 55% of Capacity for coal based Power Stations.
- CERC vide its order dated 9th April 2019 has allowed following relaxation in technical minimum to lignite based NLC power stations:
  - TPS- I Expansion Units: Technical minimum of 65% is allowed.
  - TPS-II, Stage-1 & Stage-2 Units: Technical minimum of 65% is allowed.
  - Provided, with a condition that if in future, if technical minimum of coal based generating station is set below the present level of 55%, than the technical minimum load of NLCIL lignite based power plant shall also be revised appropriately
  - TPS II Expansion Units: Exemption is granted from technical minimum operations up to 30.06.2019.
- Some IPPs like GMR-Kamalanga and Adhunik Power and Natural Resources Limited (APNRL) generating station have implemented 55% technical minimum.

Issue-2 : Uniform Technical Minimum of Coal based Power Stations

- States where order for implementation of 55% technical minimum in state thermal generating stations have been issued in some form:
- Uttar Pradesh (UPERC Order in Petition No.1217 / 2017)
- Maharashtra (MERC has issued Guidelines for operation of MOD under Availability base Tariff order, in which 55% Technical minimum of generating units has been specified. These Guidelines shall be effective for implementation from the month of April 2019.
- Telangana: Technical minimum mentioned in state grid code which refers to the provisions of IEGC. However the clause pertaining to technical minimum is not operative as on date and linked with notification of intrastate DSM regulation which is in draft stage.
- Technical Minimum limits for most of the coal based generators of states have not yet been aligned to CERC norms and is on higher side.
- For smooth integration of large RE capacity into the Grid, it is essential that all coal based generators (Inter State or Intra State) follow uniform technical minimum criteria.

SERCs are requested to follow the same technical minimum conditions as specified by CERC for all Coal based Power Stations and monitor its implementation.

Issue-3 : Enforcement of PPA

- As per provisions of the Electricity Act, State Commissions to regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State. Accordingly, State Regulators are approving the PPA.
- It has been observed that some of the terms and conditions of PPA, including obligations of the Procurers are not getting fulfilled like – Opening of LC, timely payments etc.
- It is recognized that the Agreement is a contract between two Parties.

SERCs need to identify the monitoring mechanism for ensuring proper implementation of the PPA.

Issue-4 : Implementation of new Environmental Norms

- MOP has on 30th May, 2018 issued direction to CERC under section 107 of the Electricity Act for allowing pass-through of the additional cost due to installation or up-gradation of various emission control systems and its operational cost to meet the new environment norms. (this letter was also sent to States/UTs)
  - *Central Commission to develop appropriate regulatory mechanism to address the impact on tariff, and certainty in cost recovery on account of additional capital and operational cost, under concluded long term and medium term PPAs for this purpose .*
- Further it has been clarified vide MOP letter dtd 7.12.2018 that the impact of operating costs incurred in the implementation of new Environmental Norms shall not be considered for Merit Order Despatch of Coal Based Thermal Power Stations till 31.03.2022.
  - *For this purpose, CERC is requested to devise a methodology of supplementary tariff determination separately from normal tariff so that installation of FGD/ other ECS has no bearing on the merit order dispatch till 31.03.2022.*

Issue-4 : Implementation of new Environmental Norms

- Plan for Phased implementation of the Pollution Control Equipments as per new Environmental Norms in Power Plants till the year 2022 has already been finalised by CEA in consultation with various Stakeholders. This plan has also been submitted to Hon'ble Supreme Court in the ongoing case.
- Central Commission has given in-principle approval for Power Plants for the expenditure to be done for compliance to new environmental norms.

State Commissions are requested to adopt the same regulatory approach so that uniformity is maintained and implementation of new environmental norms is done within the time line identified.

Issue-5 : Regulatory assets

- Regulatory assets – provision in tariff policy
  - Under business as usual conditions, no creation of Regulatory Assets shall be allowed;
  - Recovery of outstanding Regulatory Assets along with carrying cost of Regulatory Assets should be time bound and within a period not exceeding seven-years. The State Commission may specify the trajectory for the same.
- Status: As reported by states at present regulatory asset is around Rs 1,40,000 Crores – Rs 56,000 crores of Regulatory assets have been created in UDAY states since inception of UDAY (Nov 2015)- mostly these are also kept outside the balance sheet).
  - If no regulatory asset was allowed as per tariff policy, the loss level in UDAY states would have been only around Rs 20,000 crores instead of Rs 76000 Crores reported by them.

State Commissions are requested

- **Not to allow any regulatory assets as per the provisions of the tariff policy.**
- **Retail tariff to be cost reflective for viability of Discoms.**
- **Specify the trajectory for Recovery of outstanding Regulatory Assets.**
- **Achieve Zero regulatory asset status in 2-3 years**

Issue-6 : suggestions invited for Strengthening of ERC and FOR

- Suggestions invited to address the following indicative list for amendment to Electricity Act /policies/ rules etc
- Selection process of the members of the commission
- Enforcement power to the regulators?
- Any change required in the Functions of the ERCs
- Should FOR be an independent statutory body. Separate secretariat for FOR. Redefine the role of FOR
- How to ensure uniformity of approach in regulations by ERCs for power sector
- Uniformity in qualification for CERC and SERC – section 77 and section 84 to be aligned
- Reduction in regulatory controls and more competitive environment through market – should section 63 be made prime and section 62 only under exceptional circumstances
- Any other

Thank You

Issue-3 : Measures to promote Hydro Power Sector

- **Ministry of Power has on 8.3.2019 has issued an OM conveying approval of** Government on measures to promote hydropower sector. Some of the Measures are :
- **Declaring LHPs (> 25 MW projects) as Renewable Energy source**
- **Hydro Purchase Obligation (HPO) as a separate entity within Non solar Renewable Purchase Obligation (RPO):**
  - The HPO shall cover all LHPs commissioned after issue of Office Memorandum dtd 8.3.2019 as well as the untied capacity (i.e., without PPA) of the commissioned projects.
  - This HPO will be within the existing Non Solar RPO after increasing the percentage assigned for it so that existing Non-Solar RPO for other renewable sources remains unaffected by the introduction of HPO.
  - The trajectory of annual HPO targets will be notified by Ministry of Power based on the projected capacity addition plans in hydropower sector.
  - Necessary amendments will be introduced in the Tariff Policy and Tariff Regulations to operationalize HPO.

Issue-3 : Measures to promote Hydro Power Sector

- **Tariff rationalisation measures for bringing down hydropower tariff:**
  - Providing **flexibility to the developers** to determine tariff by back loading of tariff after increasing project life to 40 years, increasing debt repayment period to 18 years and introducing escalating tariff of 2%.
  - The **levellized tariff** over the useful life of the project may be calculated based on CERC norms and thereafter, the determination of year wise tariff, for a long term PPA for procurement of Hydro Power for a period of not less than specified years (depending upon the repayment plan for the debt raised by the generator such that major part of the loan is repaid during the tenure of such PPA), may be left to the Developer and DISCOMs as per their feasibility and depending upon the terms of repayment of loan negotiated with the lenders subject to-

    (a) submission of such complete calculations with assumptions to be provided by the generator of hydro power at the time of filing of the application; and

    (b) upfront approval by the appropriate Regulatory Commission.

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Ministry of Power

Annexure-V

Meeting with CERC on "Tariff Rationalization Measures as per Cabinet Approval "

12th April, 2019

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Ministry of Power

MEASURES FOR REVIVAL OF HYDROPOWER SECTOR

(Approved by the Cabinet on 07.03.2019)

- Declaring Large Hydropower Projects (LHPs) as Renewable Energy source

- Hydropower Purchase Obligation

  (For projects commissioned after 08.04.2019 and untied capacity)

- Budgetary support for flood moderation

  (On case to case basis)

- Budgetary support for enabling infrastructure

  (On case to case basis but limited to Rs. 1.5 cr/ MW for upto 200 MW projects and Rs.1 cr/ MW for > 200 MW projects)

- Tariff rationalization measures

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Hydropower - Benefits

- Long life
- No fuel supply risk / no fuel price rise
- No REGULATORY risk such as change in law, change in environmental norms etc. unlike coal
- Always EBIDTA positive
- Peaking support for intermittent Solar & Wind (275 GW by 2026-27)*
- Hydro's effective cost is lower than normative tariff while thermal's effective cost is higher than normative tariff.

* Increase in premium for peaking power in day-ahead market (Average tariff from Apr '18 to Dec'18 is Rs 4.08/unit, Peak Tariff is Rs 5.07/unit)

Proposal in the Cabinet Policy

The levelised tariff over the useful life of the project may be calculated on the basis of the norms specified in the CERC regulations and thereafter, the determination of year wise tariff, for a long term PPA for procurement of Hydro Power for a period of not less than specified years (depending upon the repayment plan for the debt raised by the generator such that **at least 60% loan is repaid** during the tenure of such PPA), may be left to the developer and DISCOMs as per their feasibility and depending upon the terms of repayment of loan negotiated with the lenders subject to,

(a) submission of complete calculations with assumptions to be provided by the generator of hydro power at the time of filing of the application; and

(b) approval by the Commission.

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Assumptions for tariff Analysis

Project Capacity	:500 MW
Capital cost	:5000Cr
Debt:Equity Ratio	:70:30
Interest Rate	:10%
Annual Energy	:2190MU
Saleable Energy	:1882MU
1st Year O&M	: 3.5% of TCC – R&R-IDC- IEDC
Annual O&M escl.	: 4.77%
Discounting factor	: 10.36%
First Year Tariff (Rs./Unit)	:5.55
Levellised Tariff (Rs./Unit)	: 4.76

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Summary of tariff Analysis

Para-meters	12 years depreciation							
	Normal CERC	Flat at LT	1% esc.	1% esc +EMI	2% esc.	2% esc+EMI	3% esc.	3% esc+EMI
FYT (1st Yr Tariff)	5.55	4.76	4.34	4.34	3.94	3.94	3.54	3.54
LT (Lev. Tariff)	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76
FY DSCR	1.33	**1.14**	**1.04**	1.27	**0.95**	**1.15**	**0.85**	**1.03**
ADSCR	2.95	2.93	3.40	3.16	3.95	3.67	4.57	4.26
IRR (%)	11.24	11.15	11.03	11.11	10.92	10.99	10.81	10.88
Min. PPA period	7	7	7	9	7	9	7	9

*** CAGR of ACS is 3.90% during 2010-11 to 2016-17**

Government of India
Ministry of Power

Summary of tariff Analysis

Para-meters	18 years depreciation							
	Normal CERC	Flat at LT	1% esc.	1% esc +EMI	2% escln.	2% esc+EMI	3% esc.	3% esc+EMI
FYT (1st Yr Tariff)	5.28	4.88	4.45	4.45	4.03	4.03	3.63	3.63
LT (Lev. Tariff)	4.88	4.88	4.88	4.88	4.88	4.88	4.88	4.88
FY DSCR	1.46	1.35	1.23	1.51	1.12	1.37	1.03	1.22
ADSCR	2.64	2.59	3.00	2.68	3.47	3.09	4.02	3.57
IRR (%)	11.60	11.54	11.40	11.42	11.26	11.28	11.13	11.15
Min. PPA period	11	11	11	14	11	14	11	14

* CAGR of ACS is 3.90% during 2010-11 to 2016-17

Government of India
Ministry of Power

Summary of tariff Analysis

Para-meters	20 years depreciation							
	Normal CERC	Flat at LT	1% esc.	1% esc +EMI	2% escln.	2% esc+EMI	3% esc.	3% esc+EMI
FYT (1st Yr Tariff)	5.18	4.87	4.44	4.44	4.03	4.03	3.62	3.62
LT (Lev. Tariff)	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.87
FY DSCR	1.48	1.39	1.27	1.56	1.15	1.47	1.03	1.26
ADSCR	2.56	2.48	2.87	2.52	3.32	2.91	3.83	3.35
IRR (%)	11.57	11.54	11.40	11.42	11.26	11.29	11.13	11.16
Min. PPA period	12	12	12	16	12	16	12	16

*** CAGR of ACS is 3.90% during 2010-11 to 2016-17**

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Summary of Tariff Analysis

Parti-culars	12 Years Loan tenure								18 Years Loan tenure								20 Years Loan tenure							
	Normal CERC	Flat Tariff	1% Esc.	1% Esc. + EMI	2% Esc.	2% Esc. + EMI	3% Esc.	3% Esc. + EMI	Normal CERC	Flat Tariff	1% Esc.	1% Esc. + EMI	2% Esc.	2% Esc. + EMI	3% Esc.	3% Esc. + EMI	Normal CERC	Flat Tariff	1% Esc.	1% Esc.+ EMI	2% Esc.	2% Esc. + EMI	3% Esc.	3% Esc. + EMI
FYT	**5.55**	**4.76**	**4.34**	**4.34**	**3.94**	**3.94**	**3.54**	**3.54**	**5.28**	**4.88**	**4.45**	**4.45**	**4.03**	**4.03**	**3.63**	**3.63**	**5.18**	**4.87**	**4.44**	**4.44**	**4.03**	**4.03**	**3.62**	**3.62**
LT	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.88	4.88	4.88	4.88	4.88	4.88	4.88	4.88	4.87	4.87	4.87	4.87	4.87	4.87	4.87	4.87
FY DSCR	**1.33**	**1.14**	**1.04**	**1.27**	**0.95**	**1.15**	**0.85**	**1.03**	**1.46**	**1.35**	**1.23**	**1.51**	**1.12**	**1.37**	**1.01**	**1.22**	**1.48**	**1.39**	**1.27**	**1.56**	**1.15**	**1.41**	**1.03**	**1.26**
Av. DSCR	2.95	2.93	3.40	3.16	3.95	3.67	4.57	4.26	2.64	2.59	3.00	2.68	3.47	3.09	4.02	3.57	2.56	2.48	2.87	2.52	3.32	2.91	3.83	3.35
FY ROE	16.50	8.68	4.57	9.00	0.56	4.99	-3.33	1.09	16.50	12.51	8.30	14.39	4.19	10.28	0.20	6.29	16.50	13.4	9.24	15.2	5.1	11.0	1.16	7.06
Proj. IRR	11.24	11.2	11.03	11.11	10.92	10.99	10.81	10.9	11.6	11.5	11.4	11.4	11.2	11.28	11.13	11.2	11.57	11.5	11.4	11.4	11.2	11.3	11.1	11.2
Min. PPA period	**7**	**7**	**7**	**9**	**7**	**9**	**7**	**9**	**11**	**11**	**11**	**14**	**11**	**14**	**11**	**14**	**12**	**12**	**12**	**16**	**12**	**16**	**12**	**16**

THANK YOU