

ANNEXURE

Detailed Vetting of Fuel Adjustment Cost (FAC) Charges of The Tata Power Company Ltd. for Q4 FY 10 January 2010 to March 2010

Tata Power's Application for approval of FAC Charge for January 2010 to March 2010 No: REG/MERC/10/57 dated March 17, 2010

1. **Submission by TPC:**

TPC-D, vide its submission dated 17th June 2010, has computed the FAC for the month of January 2010 to March 2010 in accordance with the Order dated June 15, 2009 in the matter of Annual Performance Review for (APR) for FY 2008-09 and Tariff Determination for FY 2009-10 (herein after 'APR Order') passed by the Commission and detailed methodology as per MERC (Terms and Conditions of Tariff) Regulations, 2005. The relevant parameters approved in the APR Order for computation of FAC are enclosed at Appendix-1

In terms of the aforesaid Regulation a Distribution Licensee is required to obtain post facto approval of the Commission on a quarterly basis for the FAC charges. Accordingly, TPC-D has submitted details of FAC chargeable from all consumers for the months January 2010 to March 2010 covering 4th quarter of FY 2009-10.

2. **Methodology :**

The methodology for arriving at FAC is as per Tariff Order dated 15th June, 2009. The salient features for arriving at FAC for the above period are as under:

- a. Variable cost of generation is calculated based on net generation for Tata Power-G.
- b. The hydro generation continues to be charged based on the variable tariff @ Rs. 2.00 per kWh and Rs. 1.65 per kWh for peak and off peak period generation respectively. These charges are considered as given in the Tariff Order dated 28th May, 2009.
- c. Normative parameters of Heat Rate, Auxiliary Consumption, Transmission and Distribution loss are considered.
- d. Actual Distribution losses have been computed based on the metering arrangement established between Tata Power-T and Tata Power-D. The distribution loss computed is widely fluctuating from month to month. It is appreciated that such wide fluctuations are due to the very small base of sales and inherent low distribution loss levels. Hence, TPC has presented average Distribution loss for the said quarter.

- e. Power purchase for Tata Power-D requirement is considered from all sources of power usually purchased by the utility.

The sources include power from contracted capacity of Tata Power-G, renewable sources (wind), power purchase through bilateral contracts and power purchase through banking mechanism, Unscheduled Interchanges.

- f. The cap on the FAC rate, as per the Commission's Tariff Order dated 15th June, 2009 for Tata Power-Distribution Business, which is set at 10% of the average variable charge works out to 42.10 paise/kWH for the months January 2010 to March 2010.
- g. As explained by TPC-D, the G<>T interface MUs as shown in the "Energy Balance" tabulation of the FAC submission, is arrived at, after subtracting the grossed up requirement of TPC-D's consumers outside the license area, from the G<>T interface MUs given in the IBSM statement under Item B for the respective month. The reconciliation, of TPC-D's Energy balance statement with SLDC's IBSM statements is thus achieved.

3. Variable cost of generation for Tata Power-G:

While assessing the actual variable cost of generation, the Commission has assessed unit wise variable cost of generation and weighted average variable cost of generation considering the following:-

- a. Change in generation mix
- b. Change in fuel price
- c. Normative operating parameters (i.e. heat rate and auxiliary consumption) as set out in the Tariff Order.

a. Change in generation mix:

The Commission has carried out a broad assessment of adherence to the principles of merit order dispatch by comparing fuel wise, unit wise monthly gross generation with the levels considered in the Tariff Order and seeking justification for any material variation.

b. Change in Fuel Price:

Actual variable cost of power generation of each unit is certified by Cost Accountant. Tata Power also has submitted Fuel Analysis Report of representative monthly samples of fuels certified by an Independent Certification Agencies viz M/s SGS India Pvt Ltd, Mumbai in support of actual fuel calorific value of Coal and M/s Intertek Lab for Oil

c. Normative Operating Parameters:

Tata Power has considered Unit-wise approved heat rate as per the Tariff Order for Tata Power-G dated 28th May 2009 for computing actual Unit-wise, variable cost of generation on monthly basis and the same is allowed.

For Trombay Unit 6 , the same approved heat rate is considered for all fuels. (Oil and RLNG).

As Trombay Unit 8 has completed the stabilisation period, the normative heat rate and auxiliary consumption values are considered 2500 kCal/kWH and 8.5% respectively

4. Variable cost of power purchase of Tata Power-D:

In addition to purchase from Tata Power-G, Tata Power-D has considered power purchase from the Wind Plants of Tata Power, short term power purchase through bilateral contracts, power purchase through Banking mechanism and Unscheduled interchanges (UI)

5. Change in variable cost of power purchase (“C”):

Change in variable cost of power purchase (Rs Lakhs) has been arrived at by multiplying power purchase (MUs) with the change in weighted average cost (Rs/kWh) of power purchase. The change in variable cost of power purchase for months January 2010 to March 2010 is,

Rs 1.95/kWH , Rs.1.82/kWH and Rs. 1.45 per kWH respectively, taking them to Rs 4.10/kWH, Rs. 3.97/kWH and Rs. 3.60 per kWH resp. for these months, as against the approved rate of Rs 2.148 per kWH

The net change in variable cost of power purchase for the months January 2010 to March 2010 is Rs 5,299.97 Lakhs; Rs.4,790.69 Lakhs and Rs.4,494.46 Lakhs respectively

6. Interest on working capital (“I”):

Interest on working capital has been granted at the approved Interest rate for the eligible amount viz the difference between the Normative Actual variable cost of Power procurement and the Order cost of power procurement, for the respective month

7. Adjustment factor for over recovery / under recovery (“B”):

Subsequent to the filing of previous FAC submissions by TPC-D, SLDC has issued revisions to the inter-utility billing through the Intermediate Balancing and Settlement Mechanism (IBSM). The variations so caused to the decremented and incremented energies from the common pool, by TPC-D and the other Distribution utilities in the state, and the price receivable/ payable for the same. TPC-D has incorporated the change in the Summary sheet of FAC submission (Sheet 8.1) for all the three quarters of the year.

Adjustment Factor

Sr. No.	Parameter	Unit	Jan-10	Feb-10	Mar-10
(A)	(B)	(C)	(D)	(E)	(F)
1	Adjustment for over-recovery/under-recovery ('B')				
1.1	Incremental Cost Allowed to be Recovered in the month j-4	Rs Lakh	874.41	1,003.85	1,061.45
1.2	Incremental cost in Month j-4 actually recovered in month j-2	Rs Lakh	1,081.35	1,056.22	1,177.26
1.3	Over-recovery/under-recovery (1.1-1.2)	Rs Lakh	(206.94)	(52.37)	(115.81)
2	Carried forward adjustment for over-recovery/under-recovery attributable to application of ceiling limit	Rs Lakh	3,630.00	7,359.56	10,684.67
2.1	Adjustment for (Total amount T.O. 3583.19)	Rs Lakhs	(342.46)	(353.40)	(377.04)
3	Adjustment factor for over-recovery/under-recovery (1.3+2.0)	Rs Lakh	3,080.60	6,953.79	10,191.82

Note: The item 2.1 in the Table above, is towards the appropriation of Rs 3583.19 lakhs projected in the ARR application by TPC as "unrecovered FAC", but the same has not been considered by the Commission in the Gap calculations. Hence it is assumed to be carried over for recovery at future date and hence it is being deducted per month in proportion with sales of the month.

8. Excess Distribution Loss:

The approved distribution loss for TPC-D for FY 10 it is 0.63 %

The Actual Distribution Loss in January 2010 to March 2010 is 3.33% , -4.20%, 8% respectively.

The average loss of the concerned quarter is 2.86%. Based on this, deduction or addition in MU loss is made for resp months

9. Summary of FAC

The summarized details of FAC (A) & FAC per unit for the months January 2010 to March 2010 are as under:

S.No.	Parameter	Unit	January 2010		February 2010		March 2010	
			(V)	(V)	(W)	(W)	(U)	(U)
			TPC	Approved	TPC	Approved	TPC	Approved
1	Calculation of FAC (A)							
1.1	Change in weighted average variable cost power purchase	Rs Lakh	5299.97	5299.97	4790.69	4790.69	4494.46	4494.46
1.2	Working Capital Interest (I)	Rs Lakh	60.04	60.04	53.41	53.41	60.39	60.39
1.3	Adjustment for Over Recovery/Under Recovery (B)	Rs Lakh	3080.60	3080.60	6953.79	6953.79	10191.82	10191.82
1.4	FAC (A) = C + I + B	Rs Lakh	8440.61	8440.61	11797.89	11797.89	14746.67	14746.67
2	Calculation of FACKWh							
2.1	Sale within License Area	MU	252.13	252.13	260.18	260.18	277.58	277.58
2.2	Excess T&D Loss	MU	4.65	4.65	4.24	4.24	4.86	4.86
2.3	FAC Charge (FACKWh) without considering cap on monthly FAC Charge	Paise/kWh	328.71	328.71	446.18	446.18	522.12	522.12
2.4	Cap on monthly FAC Charge	Paise/kWh	42.10	42.10	42.10	42.10	42.10	42.10
2.5	FAC Charge (FACKWh) considering cap on monthly FAC Charge	Paise/kWh	42.10	42.10	42.10	42.10	42.10	42.10
3	FAC (A)							
3.1	FAC (A) considering cap on Monthly FAC Charge (Est)	Rs Lakh	1061.45	1061.45	1095.37	1095.37	1168.61	1168.61
3.2	FAC (A) disallowed corresponding to excess T&D loss (Est)	Rs Lakh	19.59	19.59	17.85	17.85	20.44	20.44
3.3	Carried forward FAC (A) for recovery during future period	Rs Lakh	7359.56	7359.56	10684.67	10684.67	13557.62	13557.62