

## ANNEXURE

### **Detailed Vetting of Fuel Adjustment Cost (FAC) Charges of The Tata Power Company Ltd.**

for **Q1 FY 10** April 2009 to June 2009  
(Attachment to MERC letter No. /TPC/FAC/Oct08 – Dec08/ 09 of 10<sup>th</sup> June 2009.)  
Tata Power's Application for approval of FAC Charge for April 2009 to June 2009

**1. TPC-D, vide its submission dated 7th March 2009, has computed the FAC for the month of April 2009 to June 2009 in accordance with the Order dated June 4, 2008 in the matter of Annual Performance Review for (APR) for FY 2007-08 and Tariff Determination for FY 2008-09 (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 month April 2009 to June 2009 covering 1st quarter of FY 2008-09..

2. The methodology for arriving at FAC from October, 2008 is as per Tariff Order dated 4<sup>th</sup> June, 2008. 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. 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 2nd April, 2008.
- b. Normative parameters of Heat Rate, Auxiliary Consumption, Transmission and Distribution loss are considered.
- c. Actual Distribution losses have been computed based on the metering arrangement established between Tata Power-T and Tata Power-D in October'07. 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.
- d. Power purchase for Tata Power-D requirement is considered from all sources of power it purchases power from. 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.
- e. The cap on the FAC rate, as per the Commission's Tariff Order dated 4<sup>th</sup> June, 2008 for Tata Power-Distribution Business, which is set at 10% of the average variable charge works out to 48.00 Paise/kWh for April and May 2009 and 42.10 paise/kWh for June 2009

### **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.

#### **c. Normative Operating Parameters:**

Tata Power has considered Unit-wise approved heat rate as per the Tariff Order for Tata Power-G dated 2<sup>nd</sup> April 2008 for computing actual Unit-wise, variable cost of generation on monthly basis and the same is allowed.

### **3. Variable cost of power purchase of Tata Power-D:**

In addition to Tata Power-G, Tata Power-D has considered power purchase sources from the Wind Plants of Tata Power, short term power purchase through bilateral contracts and power purchase through Banking mechanism.

**4. 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 April 2009 to June 2009 is Rs -0.41891 -0.54144 1.065633 per kWh respectively, taking them to Rs 2.81413 2.6916 3.2135 per kWh resp. for these months as against the approved rate of Rs 3.233044 for April May 2009 and Rs 2.147867 per kWh for June 2009. The net change in variable cost of power purchase for the months April 2009 to June 2009 is Rs (934.07) ##### 2,483.86 Lakhs respectively. The excessive power procurement cost in the month June 2009 is due to much higher generation from oil fired Trombay Unit No. 6 and reduction of generation from coal fired Trombay unit 5, which has increased the average cost of power procured from TPC-G.

**5. Interest on working capital (“I”):**

In their submission under reference,

- Tata Power has considered interest on working capital due to change in prices of fuel in line with the Tariff Regulations.
- The change in variable cost of power purchase (“C”) is the additional working capital required for that particular month. The additional interest burden on this amount is considered as the Interest on working capital (“I”).

Tata power has considered rate of interest as per SBI PLR for the required month. However, it is to be noted that in order to claim "change in interest on working capital on account of change in fuel cost" as per the Regulation 82.5 of MERC (Conditions of Tariff) Regulations 2005, all the relevant proof of drawing the amount from the financial institution, proof of interest paid on the same and proof of having used the same for the incremental fuel cost needs to be provided. The matter can be considered only subsequent to providing all the documents as called for. Hence for this quarter, no amount is considered payable towards Interest on working capital as per Regulation 82.5 of MERC (Conditions of Tariff) Regulations 2005,

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

Sr. No.	Parameter	Unit	April'09	May'09	June'09
(A)	(B)	(C)			
<b>1.0</b>	<b>Adjustment for over-recovery/under-recovery ('B')</b>				
1.1	<b>Incremental Cost Allowed to be Recovered in the month j-4</b>	Rs Lakh	858.24	935.66	99.35
1.2	<b>Incremental cost in Month j-4 actually recovered in month j-2</b>	Rs Lakh	1,310.39	999.40	61.29
1.3	<b>Over-recovery/under-recovery (1.1-1.2)</b>	Rs Lakh	(452.16)	(63.74)	38.06
<b>2.0</b>	<b>Carried forward adjustment for over-recovery/under-recovery attributable to application of ceiling limit</b>	Rs Lakh	1,485.58	-	-
<b>2.1</b>	<b>Adjustment for T.O. (Total amount 3583.19)</b>	Rs Lakhs			(323.51)
<b>3.0</b>	<b>Adjustment factor for over-recovery/under-recovery (1.3+2.0)</b>	Rs Lakh	1,033.42	(63.74)	(285.44)

**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.

**7. Excess Distribution Loss:**

The approved distribution loss for TPC-D for FY 09 is 2.93 % and for FY 10 it is 0.66 %. The Actual Distribution Loss in April 2009 to June 2009 is -4.20% 5.95% -7.27% respectively. The average loss of the concerned quarter is -1.82%. Based on this, no deduction on account of excess Distr loss is made.

## 8. Summary of FAC

### The summarized details of FAC (A) & FAC per unit for the months

April 2009 to June 2009 are as under

Parameter	Unit	April'09	May'09	June'09
(B)	(C)	(V)	(W)	(U)
Calculation of FAC (A)				
Change in weighted average variable cost <u>power purchase</u>	Rs Lakh	-934.07	-1,249.99	2,483.86
Working Capital Interest (I)	Rs Lakh	0.00	0.00	0.00
Adjustment for Over Recovery/Under Recovery (B)	Rs Lakh	1,033.42	-63.74	-285.44
FAC (A) = C + I + B	Rs Lakh	99.35	-1,313.73	2,198.42
Calculation of FAC <sub>kWh</sub>				
Sale within License Area	MU	221.84	207.23	238.26
Excess T&D Loss	MU			
FAC Charge (FAC <sub>kWh</sub> ) without considering cap on monthly FAC Ch	Paise/kWh	4.48	-63.39	92.27
Cap on monthly FAC Charge	Paise/kWh	48.00	48.00	42.10
FAC Charge (FAC <sub>kWh</sub> ) considering cap on monthly FAC Charge	Paise/kWh	4.48	-63.39	42.10
FAC (A)			0.00	
FAC (A) considering cap on Monthly FAC Charge (Est)	Rs Lakh	99.35	-1,313.73	1,003.07
FAC (A) disallowed corresponding to excess T&D loss (Est)	Rs Lakh			
Carried forward FAC (A) for recovery during future period (Est)	Rs Lakh	0.00	0.00	1,195.35

### Appendix-1

The normative parameters as per the tariff order dated 2<sup>nd</sup> April, 2008 are as under:

Sr.No.	Parameter	Unit	Normative Rate
1	Heat Rate		
	Unit # 4	kCal/KWh	2570
	Unit # 5	kCal/KWh	2494
	Unit # 6	kCal/KWh	2400
	Unit # 7	kCal/KWh	1971
2	Auxiliary Consumption		
	Hydro	%	0.5
	Unit # 4	%	8
	Unit # 5	%	5.5
	Unit # 6	%	3.5
	Unit # 7	%	2.75
3	Distribution Loss (TPC-D)	%	2.93
4	Transmission Loss	%	4.85
5	Weighted Average variable cost of power purchase	Rs./KWh	3.23

The normative parameters as per the tariff order dated 28th May 2009, are as under:

Sr.No.	Parameter	Unit	Normative Rate
1	Heat Rate		
	Unit # 4	kCal/KWh	2575
	Unit # 5	kCal/KWh	2499
	Unit # 6	kCal/KWh	2400
	Unit # 7	kCal/KWh	1971
2	Auxiliary Consumption		
	Hydro	%	0.5
	Unit # 4	%	8
	Unit # 5	%	5.5
	Unit # 6	%	3.5
	Unit # 7	%	2.75
3	Distribution Loss (TPC-D)	%	2.92
4	Transmission Loss	%	4.85
5	Weighted Average variable cost of power purchase	Rs./KWh	2.1479