



MAHARASHTRA ELECTRICITY REGULATORY COMMISSION

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MERC

MERC/FAC/2012-2013/01498

To,
The Managing Director,
The Tata Power Company Ltd,
24, Homi Mody Street,
Mumbai 400001

Vidyaadhar Wagle

THE TATA POWER CO. LTD.	
RECEIVED ON	
10 OCT 2012	
AT	HRS. BY
MD'S OFFICE	

Date: 4 October, 2012

Subject: Detailed Vetting of Fuel Adjustment Cost (FAC) Charges of the Tata Power Company Ltd. for QIII FY 2011-12, **October 2011 to December 2011.**

Reference: TPC-D's submission No. REG/MERC/2012/788 dated May 12, 2012

Sir,

The Commission has scrutinized the FAC computation submitted by you as above and approved the FAC chargeable to the consumers for QIII FY 2011-12 **October 2011 to December 2011.** At the end of QIII FY 2011-12, an amount of **Rs. 186.53 Crores** is to be carried forward for adjustment at future date.

The detailed report and vetted summary sheet are attached herewith as Annexure.

Yours faithfully

(Kuldip N. Khawarey)
Secretary, MERC

Enclosed: Detailed report.

Cc: All consumer representatives as per attached list.

Names and Addresses of Consumer Representatives authorized as per Section 94 (3) of the Electricity Act 2003

Prayas Energy Group, Amrita Clinic, Athawale Corner, Lakdipool-Karve Road Junction, Deccan Gymkhana, Karve Road, Pune 411 004.	The President, Mumbai Grahak Panchayat, Grahak Bhavan, Sant Dyaneshwar Marg, Behind Cooper Hospital, Vile Parle (West), Mumbai 400 056.
The General Secretary, Thane Belapur Industries Association, Plot No.P-14, MIDC, Rabale Village, PO Ghansoli, Navi Mumbai 400 7001	The President, Vidarbha Industries Association, 1st floor, Udyog Bhawan, Civil Lines, Nagpur 440 001.

Regulation Dept.
Inward No. 291
Date 12.10.12

ANNEXURE- Detailed Vetting Report for QIII FY 2011-12

Date : 4 October, 2012

Subject: Detailed Vetting of Fuel Adjustment Cost (FAC) Charges of the Tata Power Company Ltd. for QIII FY 2011-12, *October 2011 to December 2011*.

Reference: TPC-D's submission No. REG/MERC/2012/788 dated May 12, 2012 for QIII FY 2011-12 for Post Facto Vetting.

1. Submission by TPC:

TPC-D, vide its submission dated May 12, 2012, has computed the FAC for the months of October 2011 to December 2011 in accordance with the Order in Case 98 of 2009, dated 12th September 2010 in the matter of The Tata Power Company Limited - Distribution Business' (TPC-D) Petition for Truing Up for FY 2008-09, Annual Performance Review for FY 2009-10 and Tariff Determination for FY 2010-11 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.

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 *October 2011 to December 2011* covering 3rd quarter of FY 2011-12.

The Commission has approved FAC of *Rs. 24.25 Crores, Rs 24.09 Crores and Rs. 24.65 Crores* for months October 2011, November 2011 and December 2011 respectively. The monthly amount to be recovered is the aggregate of 10 % cap value reached for each tariff category.

At the end of the said quarter *Rs. 186.53 Crores* has been allowed to be carried forward for recovery at future date as the total FAC incurred is higher than the Cap value as above.

2. Methodology:

The methodology for arriving at FAC is as per Tariff Order in Case 98 of 2009, dated 12th September 2010. The salient features for arriving at FAC for the above period are as under:

- Variable cost of generation is calculated based on net generation for Tata Power-G, - allocated to TPC-D, Bilateral purchases and procurement of Renewable energy.
- 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 in Case 98 of 2009, dated 12th September 2010
- Normative/specified parameters of Heat Rate, Auxiliary Consumption, Transmission and Distribution loss are considered.
- Actual Distribution losses have been computed based on the metering arrangement established between Tata Power-T and Tata Power-D. The approved Distribution losses are 0.66%. The distribution loss computed is widely fluctuating from month to month as the quantity of energy to be metered is very small compared to the feeder sizes and respective instrumentation provided, viz. For **October 2011** it is **0.55%** for **November 2011** it is **0.63%** and for **December 2011** it is **1.16%**. It is understood 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, viz 0.78%, which is approved.

- 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
- The cap on the FAC rate, as per the Commission's Tariff Order in Case 98 of 2009, dated 12th September 2010 for Tata Power-Distribution Business which is set at 10% of the average variable charge works out to 49.95 paise. The average recovery rate as per the aggregate of cap of each category is 47 paise/kWh which is comparable to average variable value of 49.95paise/ kWh
- As submitted by TPC-D, the G<>T interface MUs as shown in the "Energy Balance" tabulation of the FAC submission, is arrived at, as follows :

			October 2011	November 2011	December 2011
Tata Power-D Requirement					
Tata Power -D Input	MUs	(i)	260.218	251.199	265.652
Changeover	MUs	(ii)	264.724	264.067	245.817
Tata Power-D Requirement at T<>D interface	MUs		524.942	515.265	511.469
Gross up for Trans Loss	MUs	(iii)	23.644	23.208	23.037
Tata Power-D Requirement at G<> T interface	MUs	(iii)=(i)+(ii)+(iii)	548.586	538.473	534.506
Banking Return	MUs	(iv)	0.000	0.000	0.000
Total of TPC-D	MUs	(v)=(iv)+(iii)	548.59	538.47	534.51

			October 2011	November 2011	December 2011
Met Through					
Tata Power-G Share	MUs	a	482.62	447.18	465.35
RPO	MUs	b	10.4937	13.29	7.80
Contracted Purchase	MUs	c	27.25	18.92	0.97
Less External Sales	MUs	b	-1.44	-1.52	0.00
Draw/Supplied to Pool	MUs	d	29.66	60.59	60.39
Total	MUs	e	548.59	538.47	534.51



It is to be noted that FBSM has been implemented with effect from August 1, 2011. However, due to non availability of data regarding Wind energy, and Change over (migrated) consumers and non availability of ABT meter data for certain time blocks, there is slight mismatch with FBSM indicated data. The Commission observes that the wind energy data is taken on basis of credit notes for the particular month, and migrated consumer data is based on actual data submitted. Further, the TPC-G generation data for the concerned blocks is based on the readings of the commercial metering available at those locations. The Commission approves the same.

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

While assessing the normative 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:

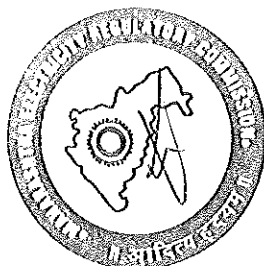
Actual variable cost of power generation of each unit is certified by Cost Accountant. Tata Power also has submitted Fuel Analysis Report of representative monthly samples of fuels certified by an "International Independent Inspection and Testing company" based in Mumbai, in support of actual fuel calorific value and moisture content of Coal and calorific value of Oil.

c. Normative Operating Parameters:

Tata Power has considered Unit-wise approved heat rate for October 2011 to December 2011 as per the Tariff Order for Tata Power Company Ltd Generation Business' (TPC-G) for approval of Truing up for FY 2008-09, Annual Performance Review for FY 2009-10 and Determination of Tariff for FY 2010-11 for computing actual Unit-wise, variable cost of generation on monthly basis and the same is allowed.

For Trombay Unit 6 (multi-fuel fired unit) the same approved heat rate is considered for all fuels. (Oil and RLNG) as approved in the Tariff Order as above.

The Gross Generation at Unit 4 in the months October 2011, November 2011 and December 2011 has been 0 Mus.



Station	PLF as per Order	PLF Actual Oct 2011	PLF Actual Nov 2011	PLF Actual Dec 2011
Unit # 5	80%	94%	84%	92%
Unit # 7	80%	95%	100%	99%
Unit # 6	80%	65%	58%	53%
Unit # 8	80%	96%	94%	97%

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) through State pool.

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 October 2011 to December 2011 is as given below.

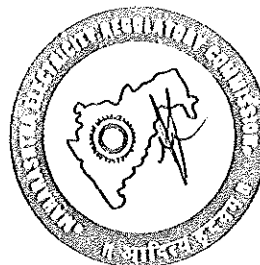
For the months of QIII FY 2011- 12, the Commission has approved weighted average variable cost of power purchase as Rs 3.381/kwh. As against this, the normative actual cost incurred is Rs. 4.572/kwh in October 2011, Rs. 4.320/kwh in November 2011 and Rs.4.8907/kwh in December 2011.

The explanation for the variance as above is as follows:

It is observed from TPC's submission that vide the tariff order under reference above, applicable for months October 2011 to December 2011, the Commission had approved purchase of 25.56 MUs/ month energy from sources other than TPC-G, at the rate of Rs 4.76/kwh. However, the procurement from these sources has been higher (about 2.6 times the MUs approved by the Commission in the Tariff Order), on account of increase in demand due to migrated customers. The cost of such procurements was Rs. 5.41/kWh in October 2011 which is higher than TPC G, Rs 3.68/kWh in November 2011 which is less than TPC -G and Rs. 4.36/kWh in December 2011 which is also lower than TPC-G. These procurements in November 2011 and December 2011 have offset comparatively high cost of TPC-G power.

The net change in variable cost of power purchase for the months October 2011 to December 2011 is:

Months	Change in V.C. of Power Purchase (Rs in Lacs)
October 2011	6529.62
November 2011	5053.74
December 2011	8067.54



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 months. TPC-D has submitted for approval, the Interest on working capital due to enhanced fuel costs @ 14.75% which is the PLR of SBI for the said period The interest to above amount to *Rs. 160.64 Lakhs for October 2011, Rs. 137.70 Lakhs for November 2011 and Rs. 173.09 Lakhs for December 2011.*

The same is approved.

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

In Form 6.6 of the FAC submission, the Adjustment factor is computed by considering the records of over/under recovery in the past as well as the costs approved by the Commission in the previous months and allowed to be carried forward for recovery in the future months. The Adjustment factor as arrived at is as follows:

Adjustment Factor

Sr. No.	Parameter	Unit	October 2011	November 2011	December 2011
(A)	(B)	(C)	(D)	(E)	(F)
1.0	Adjustment for over-recovery/under-recovery ('B')				
1.1	Incremental Cost Allowed to be Recovered in the month j-4	Rs Lakh	2,379	2,333	2,425
1.2	Incremental cost in Month j-4 actually recovered in month j-2	Rs Lakh	2,425	2,409	2,465
1.3	Over-recovery/under-recovery (1.1-1.2)	Rs Lakh	(46)	(76)	(39)
1.4	Tariff Order adjustment	Rs Lakh			
2.0	Carried forward adjustment for over- /under-recovery attributable to application of ceiling limit	Rs Lakh	5,996	10,213	12,918
3.0	Adjustment factor for over/under-recovery(1.3+2.0)	Rs Lakh	5,950	10,137	12,879

8. Excess Distribution Loss:

The approved distribution loss for TPC-D for FY 11 it is 0.66 %

The Actual Distribution Loss in October 2011, November 2011 and December 2011 is 0.55%, 0.63% and 1.16% respectively. The wide variations are due to measurement inadequacies. Hence, average loss for the quarter is considered by the Commission for incentivisation/ dis-incentivisation

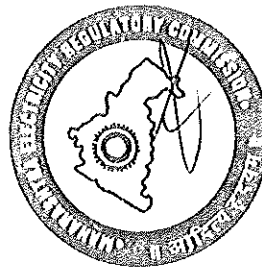


The average loss of the concerned quarter is 0.78%. Based on this, deduction or addition in MU loss is made for respectively months.

9. Summary of FAC

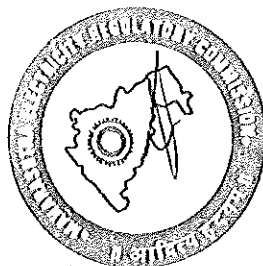
The summarized details of FAC (A) & FAC per unit for the months *October 2011 to December 2011* are as under:

Sr. No.	Parameter	Unit	Oct-11	Nov-11	Dec-11
(A)	(B)	(C)			
1.0	Calculation of FAC (A)				
1.1	Change in weighted average variable cost of power purchase (C)	Rs Lakh	6530	5054	8068
1.2	Working Capital Interest (I)	Rs Lakh	160	138	173
1.3	Adjustment for Over Recovery/Under Recovery (B)	Rs Lakh	5950	9666	12408
1.4	FAC (A) = C + I + B	Rs Lakh	12639	14858	20649
	Adjustment due to IBSM				
	Total FAC due to IBSM		12639	14858	20649
2.0	Calculation of FAC_{kWh}				
2.1	Sale within License Area	MU	520.75	520.67	508.39
2.2	Excess T&D Loss	MU	0.31	0.30	0.32
2.3	FAC Charge (FAC _{kWh}) without considering cap on monthly FAC Charge	Paise/kWh	243	285	406
2.4	Cap on monthly FAC Charge	Paise/kWh	49.95	49.95	49.95
2.5	FAC Charge (FAC_{kWh}) considering cap on monthly FAC Charge	Paise/kWh			
3.0	FAC (A)				
3.1	FAC (A) considering cap on Monthly FAC Charge (Est)	Rs Lakh	2425	2409	2465
3.2	FAC (A) disallowed corresponding to excess T&D loss (Est)	Rs Lakh	2	1	2
3.3	Carried forward FAC (A) for recovery during future period (Est)	Rs Lakh	10213	12448	18183



10. FAC charged as per MERC amended Regulations (Consumer Category-wise FAC)

Consumer Category	Energy Charge	FAC cap	FAC applicable for October	FAC applicable for November	FAC applicable for December
	a	d = a *10%	e =min(c,d)	e =min(c,d)	e =min(c,d)
	Rs/kWh	Rs/kWh	Rs/kWh	Rs/kWh	Rs/kWh
LT 1 - Residential		10%			
Below Poverty Line (BPL 0-30Units)	0.4	0.04	0.04	0.04	0.04
> S1 (0-100 units)	1.05	0.11	0.11	0.11	0.11
> S2 (101-300 units)	2.5	0.25	0.25	0.25	0.25
> S3 (above 300 units)	4.4	0.44	0.44	0.44	0.44
> S4 (> 500 Units)	5.3	0.53	0.53	0.53	0.53
LT II - LT Commercial					
> 0 - 20 kW (LT-II -a)	4.25	0.43	0.43	0.43	0.43
- 0 - 300 units		0.00	0.00	0.00	0.00
- 301 - 500 units		0.00	0.00	0.00	0.00
- 501- 1000 units		0.00	0.00	0.00	0.00
- Above 1000 units		0.00	0.00	0.00	0.00
> 20kW and <= 50 kW (LT-II -b)	4.8	0.48	0.48	0.48	0.48
> 50 kW (LT -II -c)	5.05	0.51	0.51	0.51	0.51
LT III - LT Industries below 20 kW Load	4.5	0.45	0.45	0.45	0.45
- 0 - 300 units (BEST)		0.00	0.00	0.00	0.00
- 301 - 500 units (BEST)		0.00	0.00	0.00	0.00
- 501- 1000 units (BEST)		0.00	0.00	0.00	0.00
- Above 1000 units (balance units) (BEST)		0.00	0.00	0.00	0.00
	5.1	0.51	0.51	0.51	0.51
LT IV - LT Industries above 20 kW Load	5.10	0.51	0.51	0.51	0.51
- LT V - (A) Above 20 kW upto 100 kW load		0.00		0.00	
- LT V - (B) Above 100 kW load		0.00		0.00	
	4	0.40		0.40	
LT IX - Agriculture					
		0.00		0.00	
LT VI - Street Light	4.00	0.40	0.40	0.40	0.40
- LT VI - Street Light - Grampanchayat, A, B & C Class Municipal Council (MSEDCL)		0.00		0.00	
- LT VI - Street Light - Municipal Corp. Areas (MSEDCL)		0.00		0.00	
		0.00		0.00	
LT VII - Temporary-Others (LT VII - b)	11	1.10	1.10	1.10	1.10
	2	0.20	0.20	0.20	0.20
LT VII - Temporary-Religious (LT VII - a)	2.00	0.20	0.20	0.20	0.20
		0.00	0.00	0.00	0.00
LT V - Advt & Hoardings	13.55	1.36	1.36	1.36	1.36
		0.00	0.00	0.00	
LT VIII - Crematorium and Burial Grounds		0.00	0.00	0.00	
HT I - Industry	5	0.50	0.50	0.50	0.50
		0.00	0.00	0.00	0.00
HT II - Commercial	5.2	0.52	0.52	0.52	0.52
		0.00	0.00	0.00	0.00
HT III Public and Govt.		0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00
HT III - Group Housing Society	4.1	0.41	0.41	0.41	0.41
		0.00	0.00	0.00	0.00
HT IV - Temporary Supply	9	0.90	0.90	0.90	0.90
		0.00	0.00	0.00	
HT V - Railways					
> 22/33 kV	4.95	0.50	0.50	0.50	0.50
> 100kV	4.80	0.48	0.48	0.48	0.48
Total Recovery					



Appendix-2.1

The normative parameters are as under:

Sr. No.	Parameter	Unit	Normative Rate
			<i>(As per Tariff Order dated 8th Sep 2010)</i>
1	Normative Auxillary Consumption		
	Hydro	%	0.50%
	Unit # 4	%	8.00%
	Unit # 5	%	5.50%
	Unit # 6	%	3.50%
	Unit # 7	%	2.75%
	Unit # 8	%	9.00%
2	Heat Rate		
	Unit # 4	kcal/ kWh	2683.00
	Unit # 5	kcal/ kWh	2577.00
	Unit # 6	kcal/ kWh	2514.00
	Unit # 7	kcal/ kWh	1971.00
	Unit # 8 (150 MW)	kcal/ kWh	2500.00
3	Distribution Loss	%	0.66%
4	Transmission Loss	%	4.85
5	Weighted Average Cost of Power Purchase	Rs. /kWh	3.3814

