



# महाराष्ट्र विद्युत नियामक आयोग

## Maharashtra Electricity Regulatory Commission

MERC/FAC/2012-2013/1226

Date: 25 November, 2014

The Managing Director,  
The Tata Power Company Ltd,  
Dharavi Receiving Station,  
Near Shalimar Industrial Estate,  
Matunga, Mumbai 400 019

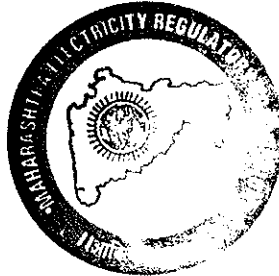
**Subject:** Detailed Vetting of Fuel Adjustment Cost (FAC) Charges of the Tata Power Company Ltd. for the QIV FY 2012-13, *January 2013 to March 2013*

**Reference:** TPC-D's submission No. CREG/MUM/MERC/2013/186 Dated 2 September, 2013

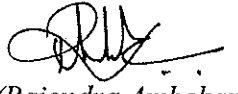
Sir,

The Commission has scrutinized the FAC computation submitted by you as above and approved the FAC chargeable to the consumers for the QIV FY 2012-13, *January 2013 to March 2013*. At the end of QIV FY 2012-13, an amount of **Rs. 309.24 Crore** is to be carried forward for adjustment at future date in April, 2013.

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



Yours faithfully

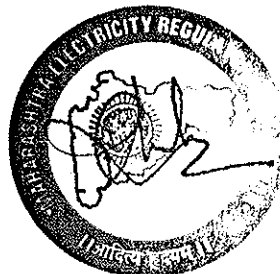
  
(Rajendra Ambekar)  
Director (Tariff)

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 Dnyaneshwar 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.
Maharashtra Chamber of Commerce, Industry & Agriculture, Oricon House, 6th Floor, 12 K. Dubash Marg, Fort, Mumbai- 400 001 (Nashik Branch) E-mail: maccia.nsk@gmail.com	



## ANNEXURE

Detailed Vetting Report for the QIV FY 2012-13, *January 2013 to March 2013*.

Date: 25 November, 2014

**Subject:** Detailed Vetting of Fuel Adjustment Cost (FAC) Charges of the Tata Power Company Ltd. for the QIV FY 2012-13, *January 2013 to March 2013*.

**Reference:** TPC-D's submission No. CREG/MUM/MERC/2013/186 Dated 2 September, 2013 for QIV FY 2012-13, for Post Facto Vetting.

### 1. Submission by TPC:

TPC-D, in its submission has computed the FAC for the months of QIV FY 2012-13, *January 2013 to March 2013* 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 of *January 2013, February 2013 and March 2013* of the 4<sup>th</sup> quarter of FY 2012-13.

At the end of the month of March 2013 *Rs. 309.24Crore* has been allowed to be carried forward for recovery at future date.

### 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:

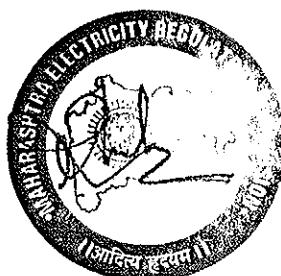
- Variable cost of generation is calculated based on net generation for Tata Power-G, - allocated to TPC-D, Bilateral purchases and procurement of Renewable energy.
- The hydro generation continues to be charged based on the variable tariff @ Rs. 2.00 per kWh and Rs. 1.65 per kWh for peak and off peak 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 **January 2013** it is 1.53% for **February 2013** it is 1.23% and for **March 2013** it is 2.19%. 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 1.67%, 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.
- As submitted by TPC-D, the G<math>\leftrightarrow</math>T interface MUs as shown in the "Energy Balance" tabulation of the FAC submission, is arrived at, as follows :

			January 2013	February 2013	March 2013
<b>Tata Power-D Requirement</b>					
Tata Power -D Input	MU	(i)	267.440	245.344	283.572
Changeover	MU	(ii)	248.812	236.510	271.665
Tata Power-D Requirement at T<math>\leftrightarrow</math>D interface	MU		516.252	481.853	555.236
Gross up for Trans Loss	MU	(iii)	22.464	20.968	24.161
Tata Power-D Requirement at G<math>\leftrightarrow</math> T interface	MU	(iii)=(i)+(ii)+(iii)	538.717	502.821	579.397
Banking Return	MU	(iv)	0.000	0.000	0.000
<b>Total of TPC-D</b>	MU	(v)=(iv)+(iii)	<b>538.72</b>	<b>502.82</b>	<b>579.40</b>

		January 2013	February 2013	March 2013
<b>Met Through</b>				
Tata Power-G Share	MU	360.72	349.48	447.33
RPO	MU	11.06	13.63	17.94
Contracted Purchase	MU	18.18	41.08	57.28
Less External Sales	MU	0.00	0.00	0.00
Drawl/Supplied to Pool	MU	148.76	98.63	56.85
<b>Total</b>	MU	<b>538.72</b>	<b>502.82</b>	<b>579.40</b>



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 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 January 2013 to March 2013 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.



#### 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 month QIV FY 2012-13, *January 2013 to March 2013* is as given below.

For the month of QIV FY 2012-13, *January 2013 to March 2013*, the Commission has approved weighted average variable cost of power purchase as Rs 3.38/kwh. As against this, the normative actual cost incurred is Rs. 3.9868/kwh in January 2013, Rs. 2.9020/kwh in February 2013 and Rs. 4.0798/kwh in March 2013.

The net change in variable cost of power purchase for the months of October 2012 to December 2012 is as under:

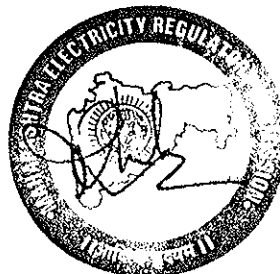
<i>Months</i>	<i>Change in V.C. of Power Purchase (Rs in Lacs)</i>
January 2013	3261.48
February 2013	-2411.32
March 2013	4046.94

#### 6. Auxiliary Consumption

For the share of TPC-D in the auxiliary consumption calculations, the percentage of Auxiliary consumption for the month of January 2013 is considered as 5.01% and for the months of February 2013 is considered as 4.77% and March 2013, it is considered as 4.73% of the total Auxiliary Consumption.

#### 7. 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 @ 14.50% for



January 2013 and @14.45% for February and March, 2013, Rs. 113.80 Lakh for January 2013, Rs. 30.49 Lakh for February 2013 and Rs. 139.43 Lakhs for March 2013.

The same is approved.

#### 8. 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	January 2013	February 2013	March 2013
(A)	(B)	(C)	(D)	(E)	(F)
1.0	<b>Adjustment for over-recovery/under-recovery ('B')</b>				
1.1	Incremental Cost Allowed to be Recovered in the month j-4	Rs. Lakh	8,041	8,086	7,477
1.2	Incremental cost in Month j-4 actually recovered in month j-2	Rs. Lakh	7,477	6,901	5,105
1.3	Over-recovery/under-recovery (1.1-1.2)	Rs. Lakh	564	1,186	2,372
2.0	Carried forward adjustment for over- /under-recovery attributable to application of ceiling limit	Rs. Lakh	41,184	37,619	29,499
3.0	Adjustment factor for over/under-recovery(1.3+2.0)	Rs. Lakh	41,748	38,805	31,871

#### **Excess Distribution Loss:**

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

The Actual Distribution Loss in January 2013, February 2013 and March 2013 is 1.53%, 1.23% and 2.19% respectively. The wide variations are due to measurement inadequacies. Hence, average loss for the quarter is considered by the Commission for incentivisation/ disincentivisation

The average loss of the concerned quarter is 1.67%. Based on this, deduction or addition in MU loss is made for respectively months

#### **Additional Recovery:**

The Commission in its Order is Case No. 29 of 2012 has allowed TPC-D to recover an accumulated amount of around Rs. 300/- Crore as requested by TPC-D, from its consumers through the bills during the months of June 2012 to February 2013. The average amount in such case will be Rs. 0.60/kWh, over and above the FAC allowed upto 10% cap. The additional amount of Rs. 0.60/kWh, average, will be recovered proportionate to the tariff charged to the consumers as per their respective category and slab, in conformity with the



principles specified in Regulation 82.10 of Maharashtra Electricity Regulatory Commission (Terms and Conditions of Tariff) (Amendment) Regulations, 2011. Accordingly, from June 2012 onwards till February 2013, in addition to the FAC approved, additional FAC is allowed to charge to the consumers.

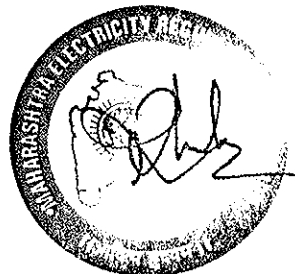
#### Revised ceiling of FAC:

The Commission vide its Order dated 26 August, 2012 in Case No. 63 of 2012 has revised the average FAC Ceiling to 20% of Variable Tariff for all the Distribution Licensees in the State of Maharashtra. The revised FAC ceiling of 20% is the average ceiling for the Distribution Licensee as a whole, and the applicable ceiling will be different for different consumer categories/sub-categories/consumption slabs, equivalent to 20% of the variable tariff of that consumer category/sub-category/consumption slab. The revised FAC Ceiling will come into effect for the FAC allowable (to be charged to consumers) from the month of September 2012 onwards. Accordingly, from September 2012 onwards the FAC ceiling has been considered as 20%.

#### 10. Summary of FAC

The summarized details of FAC (A) & FAC per unit for the months of January to March 2013 are as under:

Sr. No.	Parameter	Unit	Jan-2013	Feb-2013	Mar-2013
(A)	(B)	(C)			
1.0	<b>Calculation of FAC (A)</b>				
1.1	Change in weighted average variable cost of power purchase( C )	Rs Lakh	3261	-2411	4047
1.2	Working Capital Interest (I)	Rs Lakh	114	30	139
1.3	Adjustment for Over Recovery/Under Recovery (B)	Rs Lakh	41748	38805	31871
1.4	<b>FAC (A) = C + I + B</b>	Rs Lakh	<b>45123</b>	<b>36424</b>	<b>36057</b>
	<b>Adjustment due to IBSM</b>				
	<b>Total FAC due to IBSM</b>		<b>45123</b>	<b>36424</b>	<b>36057</b>
2.0	<b>Calculation of FAC<sub>kwh</sub></b>				
2.1	Sale within License Area	MU	511.48	478.83	549.02
2.2	Excess T&D Loss	MU	2.70	2.48	2.86
2.3	FAC Charge (FAC <sub>kwh</sub> ) without considering cap on monthly FAC Charge	Paise/k Wh	878	757	653
2.4	Cap on monthly FAC Charge	Paise/k Wh	99.90	99.90	99.90
3.0	<b>FAC (A)</b>				
3.1	FAC (A) considering cap on Monthly FAC Charge (Est)	Rs Lakh	7477	6901	5105
3.2	FAC (A) disallowed corresponding to excess T&D loss (Est)	Rs Lakh	27	25	29
3.3	<b>Carried forward FAC (A) for recovery during future period (Est)</b>	Rs Lakh	<b>37619</b>	<b>29499</b>	<b>30924</b>





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

Consumer Category	E.C.	FAC cap	FAC applicable for Jan 2013*	FAC applicable for Feb 2013*	FAC applicable for Mar 2013
	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
<b>LT I - Residential</b>		20%			
Below Poverty Line (BPL 0-30Units)	0.40	0.08	0.08	0.08	0.08
> S1 (0-100 units)	1.05	0.21	0.21	0.21	0.21
> S2 (101-300 units)	2.50	0.50	0.50	0.50	0.50
> S3 (above 300 units)	4.40	0.88	0.88	0.88	0.88
> S4 (> 500 Units)	5.30	1.06	1.06	1.06	1.06
<b>LT II - LT Commercial</b>					
> 0 - 20 kW (LT-II -a)	4.25	0.85	0.85	0.85	0.85
> 20kW and <= 50 kW (LT-II -b)	4.8	0.96	0.96	0.96	0.96
> 50 kW (LT -II -c)	5.05	1.01	1.01	1.01	1.01
<b>LT III - LT Industries below 20 kW Load</b>	4.5	0.90	0.90	0.90	0.90
<b>LT IV - LT Industries above 20 kW Load</b>	5.10	1.02	1.02	1.02	1.02
<b>LT IX - Agriculture</b>					
<b>LT VI - Street Light</b>	4.00	0.80	0.80	0.80	0.80
<b>LT VII - Temporary-Others (LT VII - b)</b>	11	2.20	2.20	2.20	2.20
<b>LT VII - Temporary-Religious (LT VII - a)</b>	2.00	0.40	0.40	0.40	0.40
<b>LT V - Advt &amp; Hoardings</b>	13.55	2.71	2.71	2.71	2.71
<b>LT VIII - Crematorium and Burial Grounds</b>					
<b>HT I - Industry</b>	5	1.00	1.00	1.00	1.00
<b>HT II - Commercial</b>	5.2	1.04	1.04	1.04	1.04
<b>HT III - Group Housing Society</b>	4.1	0.82	0.82	0.82	0.82
<b>HT IV - Temporary Supply</b>	9	1.80	1.80	1.80	1.80
<b>HT V - Railways</b>					
> 22/33 kV	4.95	0.99	0.99	0.99	0.99
> 100kV	4.80	0.96	0.96	0.96	0.96
<b>Total Recovery</b>					

\*Note: Additional FAC as per Order in Case No. 29 of 2012 is allowed to charge over and above this charge



## Appendix-2.1

The normative parameters are as under:

Sr. No.	Parameter	Unit	Normative Rate
			(As per Tariff Order dated 8th Sep 2010)
1	<b><u>Normative Auxiliary Consumption</u></b>		
	Hydro		0.50%
	Unit # 4	%	8.00%
	Unit # 5	%	5.50%
	Unit # 6	%	3.50%
	Unit # 7	%	2.75%
	Unit # 8	%	9.00%
2	<b><u>Heat Rate</u></b>		
	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	<b><u>Distribution Loss</u></b>	%	0.66%
4	<b><u>Transmission Loss</u></b>	%	4.85
5	<b><u>Weighted Average Cost of Power Purchase</u></b>	Rs. /kWh	3.3814

