



महाराष्ट्र विद्युत नियामक आयोग

Maharashtra Electricity Regulatory Commission

MERC/FAC/20142015/00773

Date: 28 July, 2014

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

Subject: Detailed Vetting of Fuel Adjustment Cost (FAC) Charges of the Tata Power Company Ltd. for the QI FY 2012-13, *April 2012 to June 2012*

Reference: TPC-D's submission No. CREG/MUM/MERC/2012/305 dated 30.11.2012

Sir,

The Commission has scrutinized the FAC computation submitted by you as above and approved the FAC chargeable to the consumers for the QI FY 2012-13, *April 2012 to June 2012*. At the end of QI FY 2012-13, an amount of **Rs. 449.43 Crore** is to be carried forward for adjustment at future date.

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

Yours faithfully,




28.7.14
(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.

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



ANNEXURE 1

Detailed Vetting Report

Date: 28 July, 2014

Subject: Detailed Vetting of Fuel Adjustment Cost (FAC) Charges of the Tata Power Company Ltd. for the QI FY 2012-13, *April 2012 to June 2012*.

Reference: TPC-D's submission No. CREG/MUM/MERC/2012/305 dated 30.11.2012 for QI FY 2012-13, for Post Facto Vetting.

1. Submission by TPC:

TPC-D, in its submission has computed the FAC for the months of QI FY 2012-13, *April 2012 to June 2012* 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.

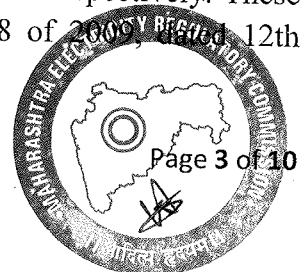
In terms of the aforesaid Regulation a Distribution Licensee is required to obtain post facto approval of the Commission on a quarterly basis for the FAC charges. Accordingly, TPC-D has submitted details of FAC chargeable from all consumers for the months of *April 2012, May 2012 and June 2012* of the 1st quarter of FY 2012-13.

At the end of the month of June 2012 **Rs. 449.43 Crore** 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:

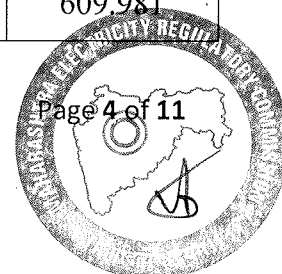
- Variable cost of generation is calculated based on net generation for Tata Power-G, - allocated to TPC-D, Bilateral purchases and procurement of Renewable energy.
- The hydro generation continues to be charged based on the variable tariff @ Rs. 2.00 per kWh and Rs. 1.65 per kWh for peak and off peak period generation respectively. These charges are considered as given in the Tariff Order in Case 98 of 2009, dated 12th September 2010.



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 **April 2012** it is **-0.51%** for **May 2012** it is **1.99%** and for **June 2012** it is **0.21%**. 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 **0.59%**, 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<>T interface MUs as shown in the "Energy Balance" tabulation of the FAC submission, is arrived at, as follows :

			April 2012	May 2012	June 2012
Tata Power-D Requirement					
Tata Power -D Input	MU	(i)	255.938	274.465	276.668
Changeover	MU	(ii)	283.881	300.135	307.328
Tata Power-D Requirement at T<>D interface	MU		539.819	574.600	583.996
Gross up for Trans Loss	MU	(iii)	24.020	25.567	25.985
Tata Power-D Requirement at G<> T	MU	(iii)=(i)+(ii)+(iii)	563.839	600.167	609.981



interface					
Banking Return	MU	(iv)	0.000	0.000	0.000
Total of TPC-D	MU	(v)=(iv)+(iii)	563.84	600.17	609.98

		April 2012	May 2012	June 2012
<i>Met Through</i>				
Tata Power-G Share	MU	459.37	470.79	487.47
RPO	MU	16.81	30.59	47.27
Contracted Purchase	MU	27.06	40.25	31.71
Less External Sales	MU	0.00	0.00	-2.01
Drawl/Supplied to Pool	MU	60.60	58.53	45.54
Total	MU	563.84	600.17	609.98

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

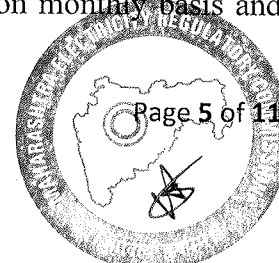
The Commission has carried out a broad assessment of adherence to the principles of merit order dispatch by comparing fuel wise, unit wise monthly gross generation with the levels considered in the Tariff Order and seeking justification for any material variation.

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 April 2012 to June 2012 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.



The Gross Generation at Unit 4 for the month of April 2012 to June 2012 has been 0 MU.

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 QI FY 2012-13, *April 2012 to June 2012* is as given below.

For the month of QI FY 2012-13, *April 2012 to June 2012*, 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. 4.3726/kwh in April 2012, Rs. 4.5435/kwh in May 2012 and Rs. 4.9271/kwh in June 2012.

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

<i>Months</i>	<i>Change in V.C. of Power Purchase (Rs. in Lakh)</i>
April 2012	5588.79
May 2012	6974.72
June 2012	9428.67

6. Auxiliary Consumption

For the share of TPC-D in the auxiliary consumption calculations, the percentage of Auxiliary consumption for the month of April 2012 is considered as 4.97% and for the months of May 2012 is considered as 4.88% and for June 2012, it is considered as 4.62% 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 @ 14.75%, Rs. 154.81 Lakh for April 2012, Rs. 186.95 Lakh for May 2012 and Rs. 221.19 Lakh for June 2012. The interest on working capital is approved at the same level as claimed by TPC-D.

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

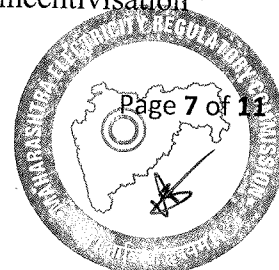
In Form 6.6 of the FAC submission, the Adjustment factor is computed by considering the records of over/under recovery in the past as well as the costs approved by the Commission in the previous months and allowed to be carried forward for recovery in the future months. The Adjustment factor as arrived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

Adjustment Factor

Sr. No.	Parameter	Unit	April 2012	May 2012	June 2012
(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	2,136	2,302	2,441
1.2	Incremental cost in Month j-4 actually recovered in month j-2	Rs Lakh	2,441	2,653	5,718
1.3	Over-recovery/under-recovery (1.1-1.2)	Rs Lakh	(305)	(351)	(3,277)
2.0	Carried forward adjustment for over- /under-recovery attributable to application of ceiling limit	Rs Lakh	37,130	40,128	44,287
3.0	Adjustment factor for over/under-recovery(1.3+2.0)	Rs Lakh	36,824	39,777	41,009

Excess Distribution Loss:

The approved distribution loss for TPC-D for FY 11 it is 0.66 %
The Actual Distribution Loss in April 2012, May 2012 and June 2012 is -0.51%, 1.99% and 0.21% 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 0.59%. Based on this, deduction or addition in MU loss is made for respectively months.

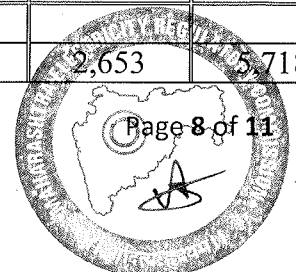
Additional Recovery:

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, in addition to the FAC approved, additional FAC is allowed to charge to the consumers.

10. Summary of FAC

The summarized details of FAC (A) & FAC per unit for the month *April to June 2012* are as under:

Sr. No.	Parameter	Unit	April-2012	May-2012	June-2012
(A)	(B)	(C)			
1.0	Calculation of FAC (A)				
1.1	Change in weighted average variable cost of power purchase(C)	Rs Lakh	5,589	6,975	9,429
1.2	Working Capital Interest (I)	Rs Lakh	155	187	221
1.3	Adjustment for Over Recovery/Under Recovery (B)	Rs Lakh	36,824	39,777	41,009
1.4	FAC (A) = C + I + B	Rs Lakh	42,568	46,939	50,659
	Adjustment due to IBSM		-		
	Total FAC due to IBSM		42,568	46,939	50,659
2.0	Calculation of FAC_{kWh}				
2.1	Sale within License Area	MU	547.85	565.84	583.41
2.2	Excess T&D Loss	MU	-0.20	-0.21	-0.21
2.3	FAC Charge (FAC _{kWh}) without considering cap on monthly FAC Charge	Paise/kWh	777	830	869
2.4	Cap on monthly FAC Charge	Paise/kWh	49.95	49.95	109.95
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	Rs Lakh	2,441	2,653	5,718



	Charge (Est)				
3.2	FAC (A) disallowed corresponding to excess T&D loss (Est)	Rs Lakh	(1)	(1)	(2)
3.3	Carried forward FAC (A) for recovery during future period (Est)	Rs Lakh	40,128	44,287	44,943

11. FAC charged (Consumer Category-wise FAC)

Consumer Category	E.C.	FAC cap	FAC applicable for Apr 2012	FAC applicable for May 2012	FAC applicable for Jun 2012*
	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
> 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
LT IV - LT Industries above 20 kW Load	5.10	0.51	0.51	0.51	0.51
LT IX – Agriculture					
LT VI - Street Light	4.00	0.40	0.40	0.40	0.40
LT VII - Temporary-Others (LT VII - b)	11	1.10	1.10	1.10	1.10
LT VII - Temporary-Religious (LT VII - a)	2.00	0.20	0.20	0.20	0.20
LT V - Advt & Hoardings	13.55	1.36	1.36	1.36	1.36
LT VIII - Crematorium and Burial Grounds					
HT I - Industry	5	0.50	0.50	0.50	0.50
HT II – Commercial	5.2	0.52	0.52	0.52	0.52

Consumer Category	E.C.	FAC cap	FAC applicable for Apr 2012	FAC applicable for May 2012	FAC applicable for Jun 2012*
HT III - Group Housing Society	4.1	0.41	0.41	0.41	0.41
HT IV - Temporary Supply	9	0.90	0.90	0.90	0.90
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

***Note: In June, 2012, 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	<u>Normative Auxiliary Consumption</u>		
	Hydro		0.50%
	Unit # 4	%	8.00%
	Unit # 5	%	5.50%
	Unit # 6	%	3.50%
	Unit # 7	%	2.75%
	Unit # 8	%	9.50%
2	<u>Heat Rate</u>		
	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

