

Ref. No. MERC/MSEDCL/FAC/940

5<sup>th</sup> May, 2006

**The Managing Director,**  
Maharashtra State Electricity Distribution Company Ltd.,  
5<sup>th</sup> Floor, Prakashgad, Plot No. G-9,  
Bandra (East),  
Mumbai – 400 051.

**Sub : Levy of Fuel Adjustment Charges (FAC) by MSEDCL for the month of  
October 2005 to February 2006.**

Ref :

1. MSEDCL Letter No. SE/TRC/FAC/7924 dated 31.03.2006
2. MERC Letter No. MERC/Case 15 of 2000/FAC-MSEDCL/0714 dated 05.04.2006
3. SICOM Letter No. MERC/MSEDCL/FAC-August 03 to January 2006 dated 11.4.2006
4. MERC Letter No. MERC/Case 15 of 2000/FAC-MSEDCL/0789 dated 13.04.2006
5. SICOM Letter No. IAG/MERC/MSEDCL/FAC/2006-07 dated 21.4.2006
6. MSEDCL Letter No. SE/TRC/9552 dated 20.4.2006
7. MSEDCL Letter No. SE/TRC/9792 dated 24.4.2006
8. SICOM Letter No. IAG/MERC/MSEDCL/FAC/06-07 dated 28.4.2006

Sir,

The Commission vide its letter number 0293 dated 8<sup>th</sup> February, 2006, has earlier permitted the levy of FAC charge of 20 Paise/kWh pertaining to the month of September 2005. The detailed approval of your FAC submission for the month of September '05 has been given through letter no. 0420 dated 24<sup>th</sup> February 2006. The Commission vide its letter dated 5<sup>th</sup> April 2006 has also given provisional permission to MSEDCL to levy FAC @ 78 Paise/unit pertaining to the month of January 2006 in the billing month of April 2006, subject to detailed vetting and adjustment.

The Commission hereby **permits FAC rate @ 96 paise/unit pertaining to the  
months of February 2006 to be billed in the month of May 2006.**

Ref. No. MERC/MSEDCL/FAC/940

5<sup>th</sup> May, 2006

I am directed to forward herewith the detailed vetting and approval of the Commission on FAC charges pertaining to the months of October 2005 to February 2006. Details of under recovery (Rs. 452.43 Crore) arrived at for the period of September 2005 to January, 2006, and interest allowed (Rs. 12.81 Crore) on the aforesaid unrecovered amount are given in Table 'A' & Table 'B' / 'C' of the attachment respectively. In view of the Order dated 21st March, 2006 in Case No 52 of 2005, the total unrecovered amount, along with interest, is permitted to be prospectively recovered in three instalments (refer Table 'C') starting from billing month of July, 2006 to September, 2006.

To facilitate detailed vetting of the actual FAC data for the month of March 2006, and according approval of the FAC to be recovered by MSEDCL in the billing month of June 2006, your FCA claim pertaining to March, 2006 should be submitted before 15<sup>th</sup> May, 2006.

With regards,

Yours faithfully,

Sd/-  
(Ms. Malini Shankar)  
Secretary

Encl: As above.

c.c. to :

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,  
1<sup>st</sup> floor, Udyog Bhawan,  
Civil Lines, Nagpur 440 001.

Shri A.D. Mahajan / Shri M.N. Bapat,  
SICOM Ltd.,  
Nirmal Building,  
Nariman Point, Mumbai 400 021.

Shri Anupam Ray,  
Pricewaterhouse Coopers (P) Ltd.,  
252, Veer Savarkar Marg, 2<sup>nd</sup> floor,  
Shivaji Park, Dadar, Mumbai 400 025.  
Fax No. 5654 7800, Tel. 56691057  
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**Detailed Vetting Report**

**MSEDCL, FAC Charges for the period October, 2005 to February 2006.**

Attachment to letter No. MERC/MSEDCL/FAC/940 dated 5<sup>th</sup> May 2006

1. The Commission vide its letter dated 8<sup>th</sup> February 2006 had permitted to levy FAC charge of 20 Paise / kwh for metered sale pertaining to the month of September 2005 to be levied in the month of February 2006. Similar method of pass through with respect to the month of October 2005 FAC based on working of MSEDCL was also conveyed.
2. The Commission vide its letter dated 24<sup>th</sup> February 2006 has approved FAC charges for the month of September 2005 based on the Tariff Order dated 10<sup>th</sup> March 2004 and MERC (Terms and Conditions of Tariff) Regulations 2005. In the said letter, the Commission has given approved variable fuel cost to be considered for FAC calculations as against the variable cost of generation indicated in the Tariff Order.
3. Further, the Commission has issued a detailed Order in the matter of MSEDCL petition for review of regulations relating to FAC Formula dated 21<sup>st</sup> March, 2006, salient features of which are as below :-
  - i) The Commission has allowed the cost of power purchase from Kawas Station of NTPC to be allowed under FAC mechanism to mitigate the need for additional load shedding in the prevailing emergency situation of supply shortfall.
  - ii) The Commission has directed to consider the normative fixed cost as 69.6 paise / kWh based on the tariff order for FY. 2003-04 for arriving at the per unit variable cost for the sources of power purchase for which break up of fixed and variable cost is not available. The Commission has directed to deduct this normative fixed cost from the total cost per unit for the sources for which break up is not available such as Traders, bi-lateral sources, TPC and CPT, while estimating the change in fuel cost to be recovered through FAC.



- iii) The Commission to approve the FAC to be recovered by MSEDCL in excess of existing ceiling (20 paise / unit) on recovery through FAC charge after detailed vetting of the actual FAC data on case to case basis till the Commission issues the order on ARR and Tariff of MSEDCL for FY. 2006-07.
- iv) The Commission directed MSEDCL to submit the details of FAC computations in the prescribed formats for vetting for the period October 2005 to January 2006 by 25<sup>th</sup> March 2006.
- v) The Commission directed MSEDCL to submit a petition for post facto approval of short term power purchase for the period October 2005 to March 2006 and submit a separate petition for prior approval of short term power purchase of the next quarter i.e. April 2006 to June 2006 by 25<sup>th</sup> March, 2006.

4. The Commission vide its letter dated 5<sup>th</sup> April, 2006 has given its provisional permission to MSEDCL to levy 78 Paise/unit towards FAC charges as pass through pertaining to the month of January 2006 to be billed in April 2006, subject to vetting and adjustment.

Accordingly, the vetting is based on the following :-

- Tariff Order dated 10<sup>th</sup> March, 2004
- MERC (Terms and Conditions of Tariff) Regulations 2005
- Commission's letter dated 24<sup>th</sup> February 2006 approving FAC charges for the month of September 2005
- Commission's Order dated 21<sup>st</sup> March, 2006



**Analysis of FAC proposal submitted by MSEDCL and computation of FAC charges for the period October 2005 to February 2006 is as below :**

**i) Variable cost of generation :**

a. MSEDCL has made the FAC submissions for the period Oct.05 to Feb.06 in the Standard Formats prescribed by the Commission vide its letter dated 22<sup>nd</sup> August, 2005.

b. MSEDCL has submitted actual certified variable cost of power generation for each station for each month.

**c. Variable Fuel Cost :**

MSEDCL has considered the variable fuel cost as given by the Commission in its letter dated 24<sup>th</sup> February 2006.

**MSEDCL has not submitted sample bills for the fuel purchased and has informed vide its letter dated 20<sup>th</sup> April, 2006 that the bills are maintained at individual power station of Maharashtra State Electricity Generation Company Limited (MSEGCL) and would be submitted within a month. The Commission directs MSEDCL to submit the sample bills for the period November 2005 to February 2006 within one month from the date of this letter and to submit the bills along with the FAC submissions, in future.**

**The Commission vide its letter dated 24<sup>th</sup> February, 2006 on approval of FAC vetting for the month of September 2005 had directed MSEDCL to obtain and submit fuel analysis report of representative monthly sample of fuels certified by an Independent Certification Agency in support of actual calorific values along with quarterly FAC submissions in the future. The Commission observes that MSEDCL is yet to appoint such an agency and instead has informed vide its letter dated 20<sup>th</sup> April, 2006 that it would be out of place to consider such sample calorific value for verification of heat rate. The Commission expresses its displeasure in MSEDCL not complying with its directions and directs MSEDCL to forward the future FAC submissions along with the fuel analysis report of representative monthly sample of fuels certified by an Independent Certification Agency.**



MSEDCL has considered an amount of Rs. 10.57 crore as part of the fuel cost for Parali Station in the month of October 2005. As informed by MSEDCL, this transit loss amount was remained to be claimed in the FOCA calculations for the period 15<sup>th</sup> October 2004 to 31<sup>st</sup> May 2005. The Commission has reduced the fuel cost by Rs. 10.57 crore by **disallowing** the said transit loss as the same pertains to the prior period.

d. **Auxiliary consumption** –MSEDCL has taken auxiliary consumption at each unit at normative levels for calculation of variable cost of generation and the same is allowed. MSEDCL has taken actual net units generated for arriving at weighted average normative variable cost of generation for the month of February, 2006. However, for the months of October 05, November 05, December 05 and January, 2006, MSEDCL has taken the number of net units generated on normative basis for arriving at weighted average normative variable cost of generation and the same is **not allowed** as once the variable cost of generation for each unit is worked out on normative auxiliary consumption basis, actual net units generated have to be taken for arriving at weighted average normative variable cost of generation.

e. **Heat Rate** - MSEDCL has worked out the variable cost of generation considering normative heat rates of each station presumably as they do not have metering arrangement to measure the quantum of coal being fed to the boilers. The Commission, therefore, accepts the adoption of the normative heat rate.

f. **Transit Loss** – MSEDCL has worked out the variable cost of generation considering normative transit loss. In addition to the transit loss indicated in the cost of the coal statement, MSEDCL has also made adjustments to transit loss amount and the same is allowed.



ii) **Variable cost of power purchase –**

a. MSEDCL has purchased 10,011 MU's with a cost of Rs.2086.53 crore at avg. rate of Rs.2.08 / unit as against estimated 6745 MU's costing Rs.806.85 crore @ Rs.1.20 /unit. Thus, the units purchased have increased by 49% whereas the purchase cost has increased by 259% for the period Oct.05 to Feb.06. The Commission **cannot allow** costs of such magnitude continuously to be passed through the FAC mechanism on the pretext of reduction in Load Shedding without a proper long term plan for procurement of power is prepared by MSEDCL and the same is **approved** by the Commission to serve the demand for electricity in the area of supply of MSEDCL. **Accordingly, the Commission had directed MSEDCL to submit the long term power procurement plan alongwith ARR and Tariff Petition.**

Considering the severe power shortage faced by MSEDCL partly due to shutdown of the Unit 5 of Chandrapur Station of 500 MW, the substantial energy purchase by MSEDCL and cost thereof for the period Oct. 2005 to February, 2006 is allowed in line with the Commission's Order in Case 52 of 2005.

b. MSEDCL has submitted the data for the power purchase certified by Chartered Accountant **except the data relating to the Non Conventional Sources of Energy (NCSE). The sample bills for the power purchase are not submitted. MSEDCL has confirmed vide letter dated 20<sup>th</sup> April, 2005 to get the power purchase statements from Renewable Source of Power audited for future period. The Commission directs MSEDCL to submit power purchase invoices along with payment details thereof for the period October, 2005 to February, 2006 as confirmed vide its letter dated 20<sup>th</sup> April, 2006 and to submit future FAC submissions along with invoices for power purchase and audited power purchase statements for power purchased from Renewable Source of Power.**



c. The power purchase rate for Sardar Sarovar is taken as Rs.4.18 per unit. Pending receipt of invoice from Pench authorities, MSEDCL has considered the rate of Rs.2.45/unit for power purchased from Pench and the same is allowed. Upon the receipt of the invoice, the adjustment for the debit/credit to be given in subsequent FAC. As directed by the Commission in its order dated 21<sup>st</sup> March, 2006, MSEDCL has deducted normative fixed cost per of 0.696 Rs./unit from the actual total cost per unit.

**d. Captive Power Plants (CPP):**

The price for power purchase from CPP of Ballarpur Industries is taken as Rs.2.75 per unit (06.00 to 22.00 hrs) and Rs.2.50 per unit (22.00 to 06.00 hrs), ONGC is taken as Rs. 2.75/unit for peak and Rs.2.49/unit for non peak and Reliance Industries is taken as Rs. 4.50/unit for peak and Rs.4.40/unit for non peak. The wind power purchase rate is taken as Rs.3.46 / unit and hydro power rate is taken as Rs.2.45/ unit as per the respective orders. MSEDCL has submitted copies of the energy purchase agreements entered with Reliance Industries Ltd., Ballarpur Industries Ltd. and ONGC. The Commission has allowed the cost for power purchase from CPP as claimed by MSEDCL.

**e. UI charges:**

MSEDCL has purchased power through UI as detailed below:

Month	Gross Energy Input Requirement (MU's) (a)	UI's (MU's)	UI's as a % of (a)	UI rate (Rs./unit)
October 05,	6090	159.867	2.63%	2.28
November 05,	6178	192.676	3.12%	2.56
December 05	6486	161.809	2.49%	2.54
January, 2006	6493	220.895	3.40%	2.97
February, 2006	6043	262.505	4.34%	4.31
Total	<b>31290</b>	<b>997.752</b>	<b>3.19%</b>	





Considering the severe power shortage faced by MSEDCL and the cost of purchase of power from other sources/traders, the substantial UI purchase over the normative level is allowed. MSEDCL has considered the cost of UI energy as certified by CA and the same is allowed.

f. **Scheduled Energy Received in grid through Imports from various regions and losses:**

MSEDCL vide its letter dated 20<sup>th</sup> April, 2006 has submitted that the difference between scheduled energy of central sector generating stations and the actual receipt at WREB bus bar is considered in losses. Power procured from the traders / bilateral exchange is coming from ER & SR and has to cross 2-3 regions resulting into losses. The losses in power purchase through grid are given below:

<b>Month</b>	<b>Schedule Drawal as per WREB (MU's)</b>	<b>Loss (MU's)</b>	<b>Loss as a % of Scheduled Drawal</b>
Oct. 2005	1669.02	160	9.59%
Nov. 2005	1652.01	101	6.11%
Dec. 2005	1863.66	128	6.87%
Jan. 2006	1849.75	139	7.51%
Feb.2006	1631.12	120	7.36%
	<b>8665.56</b>	<b>648</b>	<b>7.47%</b>

As the energy losses of the grid in Power Purchase are not under control of MSEDCL the same are allowed.

iii) **Interest on working capital** – MSEDCL has not considered interest on incremental working capital requirement on account of change in fuel and power purchase costs and accordingly the same is not considered in the FAC.

iv) **Adjustment factor for over recovery / under recovery** – MSEDCL has considered an amount of Rs.29.78 crore being the excess amount carried forward from September, 2005 (vetted by the Commission) in FAC of October, 2005 FAC. and the same is considered by the Commission under overall under recovery instead of considering in the month of October, 2005 FAC. MSEDCL



has also considered an amount of Rs.160.15 crore in the FAC of February 2006 towards the under recovery for the month September, 2005 and excess amount carried forward of October 2005 compared to the billed amount in the month of February, 2006. The Commission has considered the same amount under overall under recovery instead of considering in the month of February, 2006 FAC.

The detailed calculations of FAC, adjustment of FAC for the excess T&D Loss, recoverable FAC, the FAC amount allowed to be billed, actually billed (for the month of February 2006), under recovery and over recovery and cumulative under recovery for the period September 2005 to February 2006 is given in Table A. The total under recovery net of T& D Loss for the period September 2005 to January 2006 comes to Rs. 452.43 crore. **The Commission has allowed FAC amount of Rs. 405.45 crore @ 96 Paise / unit for the month of February 2006 to be charged in the billing month of May 2006.**

As per Section 62 (6) of The Electricity Act, 2003, “If any licensee or a Generating Company recovers a price or charge exceeding the Tariff determined under this section, the excess amount shall be recoverable by the person who has paid such price or charge along with interest equivalent to the bank rate without prejudice to any other liability incurred by the licensee”. As per Regulation 76.8.2 of MERC Regulations 2005, interest on working capital shall be allowed at a rate equal to the short term prime lending rate (STPLR) of SBI as at the date on which the application for determination of tariff is made. At present STPLR of SBI for maturity upto 180 days is 10.5% p.a. and for maturity exceeding 180 days but less than one year is 11% p.a. As per Regulation 76.8.3 of MERC Regulations 2005, interest shall be allowed on the amount held as security deposit from distribution system users and consumers at the Bank Rate as at the date on which the application for determination of tariff is made. MSEDCL has confirmed that it is paying interest rate @ 6% p.a. on security deposits, being the Bank Rate as per The Reserve Bank of India. The Commission has, therefore, considered interest rate @ 6% p.a. on the under recovery.



The Commission allows MSEDCL to recover the FAC under recovery for the period September 2005 to January 2006 to the extent of Rs. 452.43 crore in three equal installments of Rs.150.81 Crore each in the FAC for the months April 2006 to June 2006 i.e. in the billing months of July 2006 to September 2006. The interest on under recovery is arrived at Rs. 12.81 crore and to be recovered in installments of Rs. 10.55 crore, Rs 1.51 crore and Rs. 0.75 crore in the billing months of July 2006, August 2006 and September 2006 respectively. The details of the interest on under recovery and charging of under recovery are given in Table B and C.

The allowable under recovery arrived at for the months of November 2005 to February 2006 is provisional as the actual FAC billed amount is not available with MSEDCL. The Commission directs MSEDCL to give the effect of modified recoverable amount after receipt of billed FAC amount in future FAC submissions from time to time.



**Table A**

**Under Recovery / Over recovery for the period September, 2005 to February, 2006**

(Rs. in crore)

FAC Month	FAC – MSEDCL **	FAC–Commission **	Adjust. for Excess T & D Loss per Commission	Recoverable FAC as per Commission	FAC already allowed for billing (Paise /kwh)	FAC amount already allowed for billing	Actual FAC billed as given by MSEDCL	Under / Over Recovery as per Commission	Cummulative Under recovery
Sept.05*	106.58	106.58	1.23	105.35	20			105.35	105.35
Oct.05	217.64	218.57	24.05	194.52	20	112.5	112.5	82.02	187.37
Nov.05	205.79	208.17	18.74	189.43	20	78.14		111.29	298.66
Dec. 05	280.67	273.00	32.52	240.48	20	79.32		161.16	459.82
Jan.06	350.24	343.70	34.41	309.29	78	316.68		-7.39	452.43
Feb.06	401.63	405.45	21.11	384.34	96	384.34		0.00	452.43
<b>Total</b>	<b>1562.6</b>	<b>1552.89</b>	<b>132.94</b>	<b>1419.96</b>		<b>970.98</b>			

\* As vetted by the Commission

\*\* FAC of the respective months without adjustment of under / over recovery.



**Table B**

**Interest on Under recovery for the FAC period September, 2005 to January, 2006**

(Rs. in crore)

Under / Over recovery of the month	Under / Over Recovery as per Commission	Billing month	Period of under recovery till Billing month (April FAC)	Int. @6% p.a. on under recovery
Sep-05	105.35	Jan-06	6	3.16
Oct.05	82.02	Feb-06	5	2.05
Nov.05	111.29	Mar-06	4	2.23
Dec. 05	161.16	Mar-06	4	3.22
Jan.06	-7.39	Apr-06	3	-0.11
<b>Total</b>	<b>452.43</b>			<b>10.55</b>

**Table C**

**Recovery of under recovery in the billing Months of May 2006 to October, 2006**

(Rs. in crore)

Billing Month	Under recovery allowed to be recovered	Interest allowed for recovery	Total amount allowed for recovery *	Balance Under recovery	Int. @6% p.a. on the balance under recovery
Jul-06	150.81	10.55	161.36	301.62	1.51
Aug-06	150.81	1.51	152.32	150.81	0.75
Sep-06	150.81	0.75	151.56	0.00	0.00
<b>Total</b>	<b>452.43</b>	<b>12.81</b>	<b>465.24</b>		<b>2.26</b>

This recoverable amount would be converted into per unit FAC charge for metered / unmetered consumers based on consumption for respective months.



**Table 3.3 - October, 2005**

**Title Calculation of Station/Unit-wise variable cost of generation (fuel cost)**

Sr. No.	Generating Station/Unit <sup>1&amp;2</sup>	Fuel Basket (FB) <sup>1&amp;2</sup>	Order (FY)	Order for Month & Year					Actual for Month & Year				Normative Actual Var. Cost <sup>4</sup> for Month & Year		
				Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Reasons for Material Variation	Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Var. Cost <sup>3</sup>	Var. Cost
			MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU		Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)
<b>1.0</b>	<b>Generating Station/Unit wise, Fuel Basket-wise details</b>														
<b>2.0</b>	<b>Generating Station/Unit wise summary</b>														
	Khaparkheda		5471	0.9162	50125.3	456	0.9162	4,177	380		1.24	4,699	380	1.19	4,507
	Paras		345	1.2063	4161.74	29	1.2063	347	35		1.45	506	35	1.44	502
	Bhusawal		2802	1.0721	30040.2	234	1.0721	2,503	278		1.62	4,514	278	1.66	4,608
	Nasik		4680	1.3188	61719.8	390	1.3188	5,143	448		1.80	8,064	448	1.79	8,026
	Parli		3538	1.2278	43439.6	295	1.2278	3,620	346		1.62	5,624	346	1.58	5,459
	Koradi		5901	1.1695	69012.2	492	1.1695	5,751	492		1.19	5,874	492	1.20	5,930
	Chandrapur		15693	0.7023	110212	1,308	0.7023	9,184	1,029		0.98	10,132	1,029	0.95	9,805
	Gas Thermal		3961	0.6742	26705.1	330	0.6742	2,225	328		0.81	2,674	328	0.81	2,664
	<b>Total</b>	<b>All fuels</b>	<b>42391</b>	<b>0.9328</b>	<b>395416</b>	<b>3,533</b>	<b>0.9328</b>	<b>32,951</b>	<b>3,337</b>		<b>1.26</b>	<b>42,088</b>	<b>3,337</b>	<b>1.24</b>	<b>41,501</b>



ANNEXURE 2 -- October, 2005

Sheet 3.3a

**Calculation of Normative Variable Cost of Generating Stations**

<b>A. Thermal Stations</b>	<b>K'kheda</b>	<b>Paras</b>	<b>Bhusawal</b>	<b>Nasik</b>	<b>Parli</b>	<b>Koradi</b>	<b>C'pur</b>	<b>Total for Coal</b>	<b>Uran (Gas)</b>
Actual Gross Generation (MU)	421	39	307	493	383	546	1,116	3,305	336
<b>Approved Auxiliary Consumption%</b>	<b>8.50%</b>	<b>9.70%</b>	<b>10.00%</b>	<b>9.00%</b>	<b>9.70%</b>	<b>9.80%</b>	<b>7.60%</b>		<b>2.40%</b>
Net Normative Generation (MU)	386	35	276	449	346	492	1,031	3,015	328
Actual Generation Cost (Rs lakhs)	4,699	506	4,514	8,064	5,624	5,874	10,132	39,414	2,674
Less: Transit Loss after Adjustment	443	14	208	143	230	(6)	62	1,094	-
Add: Normative Transit Loss (Rs.Lakhs)	89	15	35	60	129	17	176	523	-
Actual Adjusted Gen Cost (Rs.Lakhs)	4,346	507	4,341	7,982	5,523	5,898	10,246	38,843	2,674
Actual Quantity purchased (MT)	404,584	38,334	227,734	316,026	321,813	421,763	861,581	2,591,834	
Avg coal purchase price (Rs/MT)	1,227	1,516	2,106	2,397	1,676	1,299	1,184		
Actual Transit Loss (MT)	19,052	997	8,540	7,178	13,747	(2,220)	5,229	52,521	
Actual Transit Loss (Rs/lakhs)	290	15	135	143	230	(6)	62	870	
Actual Heat Input (MKcal)	1,091,854	124,673	796,532	1,302,836	1,028,132	1,626,203	2,911,413	8,881,643	664,203
Actual Fuel Cost (Rs/MkCal)	398	407	545	613	537	363	352	437	403
<b>Base Variable Cost (Rs/kWh)</b>	<b>0.9162</b>	<b>1.2063</b>	<b>1.0721</b>	<b>1.3188</b>	<b>1.2278</b>	<b>1.1695</b>	<b>0.7023</b>		<b>0.6742</b>
Actual Heat Rate (kCal/kWh)	2,590	3,198	2,593	2,642	2,682	2,981	2,610	2,687	1,977
<b>Norm - Heat Rate (kCal/kWh)</b>	<b>2,725</b>	<b>3,200</b>	<b>2,735</b>	<b>2,663</b>	<b>2,649</b>	<b>2,996</b>	<b>2,502</b>	<b>2,675</b>	<b>1,966</b>
Variable cost after adjustment for Transit Loss, Heat rate & Auxiliary Consumption									
	1.1853	1.4422	1.6561	1.7928	1.5760	1.2046	0.9530	1.1699	0.8109
<b>Norm - Transit Loss (%)</b>	<b>1.45%</b>	<b>2.58%</b>	<b>0.98%</b>	<b>0.96%</b>	<b>2.40%</b>	<b>1.47%</b>	<b>1.72%</b>		<b>1.72%</b>
Actual Transit loss (%) Quantity	7.85%	2.33%	5.26%	2.27%	4.27%	-0.53%	0.61%		0.00%
<b>Normative Variable Cost (Rs/kWh)</b>	<b>1.1853</b>	<b>1.4422</b>	<b>1.6561</b>	<b>1.7928</b>	<b>1.5760</b>	<b>1.2046</b>	<b>0.9530</b>	<b>1.1699</b>	<b>0.8109</b>



**ANNEXURE 3**

**Table 4.1**

**Title Variable cost of power purchase<sup>1&11</sup>**

Sr. No.	Power Purchase Source <sup>2</sup>	Order (FY)				Order for Month & Year				Oct-05					
			Net Purchase <sup>3</sup>	Var. Cost <sup>5</sup>	Var. Cost Amt <sup>4</sup>		Net Purchase <sup>3</sup>	Var. Cost <sup>5</sup>	Var. Cost Amt <sup>4</sup>	Net Purchase <sup>3</sup>	Tariff <sup>6</sup>	PP Amt <sup>7</sup>	FAC Unit <sup>8</sup>	FAC Rate <sup>9</sup>	FAC Amt <sup>10</sup>
		MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	Rs Lakh	Rs/ kWh
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)= (I)*(J)	(L)	(M)	(N)= (L)*(M)	(O)= (K)+(N)	(P)
	Korba	4501	0.53	23,630	375	0.53	1,969	438	0.53	2,304	438	0.09	402	2706	0.62
	Vindhyanchal	4808	0.76	36,516	401	0.76	3,043	542	0.82	4,419	542	0.15	813	5232	0.97
	Kawas	457	2.45	11,190	38	2.45	933	91	1.03	941	91	0.50	461	1401	1.53
	Gandhar	818	1.15	9,374	68	1.15	781	66	1.21	795	66	0.19	124	919	1.40
	Kakrapur	1772	2.99	53,002	148	2.99	4,417	39	2.18	847	39	0.20	76	923	2.38
	Tarapur 1,2, 3&4	1187	0.94	11,212	99	0.94	934	114	2.67	3,030	114	0.07	74	3104	2.73
	NTPC (ER)	108	1.06	1,148	9	1.06	96	82	0.94	768	82	0.22	180	947	1.16
	Tata Power (Trading)	104	1.80	1,876	9	1.80	156	-	-	-	-	-	-	0	#DIV/0!
	Power Trading Corp	2127	1.49	31,796	177	1.49	2,650	136	2.99	4,073	-	-	-	4073	2.99
	Others (NCE Wind & Hydro)	300	3.17	9,500	25	3.17	792	15	3.40	518	-	-	-	518	3.40
	Tata NP							33	2.09	683				683	2.09
	Dodson							1	2.04	19				19	2.04
	Others (CPP)							18	2.05	370				370	2.05
	Adani							24	3.03	725				725	3.03





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NVVN							138	2.74	3,782				3782	2.74	
Sardar Sarovar							86	3.48	2,984				2984	3.48	
Pench							27	1.75	473				473	1.75	
Received in grid through Imports from various regions & Losses							(160)	-	-				0	-	
Unscheduled Interchange (UI)			4,400			367	160	2.28	3,652				3652	2.28	
<b>Total Power Purchase</b>	<b>16182</b>	<b>1.20</b>	<b>193,646</b>	<b>1349</b>	<b>1.20</b>	<b>16137</b>	<b>1849</b>	<b>1.64</b>	<b>30382</b>	<b>1372</b>	<b>0.16</b>	<b>2,130</b>	<b>32511</b>	<b>1.7583</b>	



ANNEXURE 4

Table 3.3

Title Calculation of Station/Unit-wise variable cost of generation (fuel cost)

Sr. No.	Generating Station/Unit <sup>1&amp;2</sup>	Fuel Basket (FB) <sup>1&amp;2</sup>	Order (FY)	Order for Month & Year					Nov-05				Normative Actual Var. Cost <sup>3</sup> for Nov 2005		
				Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Reasons for Material Variation	Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Var. Cost <sup>3</sup>	Var. Cost
			MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU		Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)
<b>1.0</b>	<b>Generating Station/Unit wise, Fuel Basket-wise details</b>														
<b>2.0</b>	<b>Generating Station/Unit wise summary</b>														
	Khaparkheda		5471	0.9162	50125.3	456	0.9162	4,177	468		1.13	5,312	468	1.17	5,465
	Paras		345	1.2063	4161.74	29	1.2063	347	36		1.55	553	36	1.45	518
	Bhusawal		2802	1.0721	30040.2	234	1.0721	2,503	292		1.62	4,747	292	1.67	4,876
	Nasik		4680	1.3188	61719.8	390	1.3188	5,143	442		1.73	7,676	442	1.70	7,524
	Parli		3538	1.2278	43439.6	295	1.2278	3,620	432		1.37	5,915	432	1.35	5,833
	Koradi		5901	1.1695	69012.2	492	1.1695	5,751	544		1.10	5,977	544	1.13	6,173
	Chandrapur		15693	0.7023	110212	1,308	0.7023	9,184	870		0.93	8,113	870	0.90	7,845
	Gas Thermal		3961	0.6742	26705.1	330	0.6742	2,225	328		0.81	2,668	328	0.81	2,659
	<b>Total</b>	<b>All fuels</b>	<b>42391</b>	<b>0.9328</b>	<b>395416</b>	<b>3,533</b>	<b>0.9328</b>	<b>32,951</b>	<b>3,413</b>		<b>1.20</b>	<b>40,961</b>	<b>3,413</b>	<b>1.20</b>	<b>40,893</b>



ANNEXURE 5 - Nov-05

Sheet 3.3a

**Calculation of Normative Variable Cost of Generating Stations**

<b>A. Thermal Stations</b>	<b>K'kheda</b>	<b>Paras</b>	<b>Bhusawal</b>	<b>Nasik</b>	<b>Parli</b>	<b>Koradi</b>	<b>C'pur</b>	<b>Total for Coal</b>	<b>Uran (Gas)</b>
Actual Gross Generation (MU)	516	40	321	486	474	600	946	3,382	335
<b>Approved Auxiliary Consumption%</b>	<b>8.50%</b>	<b>9.70%</b>	<b>10.00%</b>	<b>9.00%</b>	<b>9.70%</b>	<b>9.80%</b>	<b>7.60%</b>		<b>2.40%</b>
Net Generation (MU)	472	36	289	442	428	541	875	3,082	327
Actual Generation Cost (Rs lakhs)	5,312	553	4,747	7,676	5,915	5,977	8,113	38,293	2,668
Less: Transit Loss after Adjustment	152	48	205	252	278	30	54	1,019	-
Add: Normative Transit Loss (Rs.Lakhs)	88	14	39	65	136	138	158	640	-
Actual Adjusted Gen Cost (Rs.Lakhs)	5,249	518	4,581	7,489	5,774	6,085	8,218	37,914	2,668
Actual Quantity delivered (MT)	399,853	35,011	250,497	347,611	365,544	459,210	837,270	2,694,995	
Avg coal purchase price (Rs/MT)	1,270	1,515	2,043	2,346	1,556	1,189	1,098		
Actual Transit Loss (MT)	9,957	1,796	10,247	12,862	19,154	1,464	4,901	60,382	
Actual Heat Input (Kcal/kWh)	1,339,019	126,628	835,092	1,288,815	1,255,197	1,781,446	2,468,047	9,094,245	663,019
Actual Fuel Cost (Rs/MkCal)	392	409	549	581	460	342	333	417	402
<b>Base Variable Cost (Rs/kWh)</b>	<b>0.9162</b>	<b>1.2063</b>	<b>1.0721</b>	<b>1.3188</b>	<b>1.2278</b>	<b>1.1695</b>	<b>0.7023</b>		<b>0.6742</b>
Actual Heat Rate (kCal/kWh)	2,593	3,202	2,602	2,654	2,650	2,970	2,608	2,689	1,982
<b>Norm - Heat Rate (kCal/kWh)</b>	<b>2,725</b>	<b>3,200</b>	<b>2,735</b>	<b>2,663</b>	<b>2,649</b>	<b>2,996</b>	<b>2,502</b>	<b>2,675</b>	<b>1,966</b>
Variable cost after adjustment for Heat rate & Auxiliary Consumption	1.1674	1.4510	1.6670	1.7005	1.3494	1.1345	0.9016	1.1152	0.8107
<b>Norm - Transit Loss (%)</b>	<b>1.45%</b>	<b>2.58%</b>	<b>0.98%</b>	<b>0.96%</b>	<b>2.40%</b>	<b>1.47%</b>	<b>1.72%</b>		<b>1.72%</b>
<b>Actual Transit loss (%) Quantity</b>	<b>2.49%</b>	<b>9.09%</b>	<b>4.79%</b>	<b>3.70%</b>	<b>4.91%</b>	<b>0.32%</b>	<b>0.59%</b>		<b>0.00%</b>
Per unit Adj Cost of Transit Loss	-	-	-	-	-	-	-	-	-
<b>Normative Variable Cost (Rs/kWh)</b>	<b>1.1674</b>	<b>1.4510</b>	<b>1.6670</b>	<b>1.7005</b>	<b>1.3494</b>	<b>1.1345</b>	<b>0.9016</b>	<b>1.1152</b>	<b>0.8107</b>



**ANNEXURE 6**

**Table 4.1**

**Title Variable cost of power purchase<sup>1&11</sup>**

Sr. No.	Power Purchase Source <sup>2</sup>	Order (FY)			Order for Month & Year			Nov-05							
		Net Purchase <sup>3</sup>	Var. Cost <sup>5</sup>	Var. Cost Amt <sup>4</sup>	Net Purchase <sup>3</sup>	Var. Cost <sup>5</sup>	Var. Cost Amt <sup>4</sup>	Net Purchase <sup>3</sup>	Tariff <sup>6</sup>	PP Amt <sup>7</sup>	FAC Unit <sup>8</sup>	FAC Rate <sup>9</sup>	FAC Amt <sup>10</sup>	Var. Cost Amt <sup>4</sup>	Var. Cost <sup>5</sup>
		MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	Rs Lakh	Rs/ kWh
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)=(I)*(J)	(L)	(M)	(N)=(L)*(M)	(O)=(K)+(N)	(P)
	Korba	4501	0.53	23,630	375	0.53	1,969	413	0.52	2,161	413	0.10	399	2560	0.62
	Vindhyanchal -I	2727	0.74	20,049	227	0.74	1,671	268	0.83	2,229	268	0.09	253	2482	0.92
	Vindhyanchal -II	2081	0.79	16,467	173	0.79	1,372	248	0.79	1,960	248	0.09	226	2186	0.88
	Kawas - Gas	457	2.45	11,190	38	2.45	933	43	1.03	441	43	0.07	30	471	1.10
	Kawas - Liquid	0	-	-	-	-	-	-	-	-	-	-	-	0	#DIV/0!
	Gandhar	818	1.15	9,374	68	1.15	781	128	1.02	1,303	128	0.46	583	1886	1.48
	Kakrapur	1772	2.99	53,002	148	2.99	4,417	76	2.18	1,647	76	0.20	148	1794	2.38
	Tarapur 1-4	1187	0.94	11,212	99	0.94	934	95	2.65	2,522	95	0.07	66	2588	2.72
	Eastern Region	108	1.06	1,148	9	1.06	96	69	0.90	621	69	0.25	170	791	1.15
	Tata Power Company	104	1.80	1,876	9	1.80	156	1	2.90	35	1		-	35	2.90
	Power Trading Corp	2127	1.49	31,796	177	1.49	2,650	130	2.88	3,752	130		-	3752	2.88
	Adani	0	-	-	-	-	-	12	3.05	360	12		-	360	3.05
	NVVN	0	-	-	-	-	-	50	2.67	1,340	50		-	1340	2.67
	RETL	0	-	-	-	-	-	15	2.24	327	15		-	327	2.24



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Tata N.P.	0		-	-	-	-	117	2.20	2,575	117	0.21	246	2821	2.41	
Dodson	0		-	-	-	-	3	1.90	50	3		-	50	1.90	
Sardar Sarovar	0		-	-	-	-	60	3.48	2,105	60		-	2105	3.48	
Pench	0		-	-	-	-	17	1.75	299	17		-	299	1.75	
Received in grid through Imports from various regions	0		-	-	-	-	(101)	-	-	(101)		-	0	-	
Unscheduled Interchange (UI)	0		4,400	-	-	367	193	2.56	6,199	193		-	6199	3.22	
Non Conventional Sources (Wind)	0		-	-	-	-	16	3.46	559	16		-	559	3.46	
Non Conventional Sources (Hydro)	300	3.17	9,500	25	3.17	792	3	2.45	77	3		-	77	2.45	
Power Purchase from Bagasse	0		-	-	-	-	1	3.24	45	1		-	45	3.24	
Power Purchase from captive generating units	0		-	-	-	-	19	2.05	388	19		-	388	2.05	
<b>Total Power Purchase</b>	<b>16182</b>	<b>1.20</b>	<b>193,646</b>	<b>1349</b>	<b>1.20</b>	<b>16137</b>	<b>1876</b>	<b>1.65</b>	<b>30996</b>	<b>1876</b>	<b>0.11</b>	<b>2,122</b>	<b>33117</b>	<b>1.7653</b>	



ANNEXURE 7

**Table 3.3**  
**Title Calculation of Station/Unit-wise variable cost of generation (fuel cost)**

Sr. No.	Generating Station/Unit <sup>1&amp;2</sup>	Fuel Basket (FB) <sup>1&amp;2</sup>	Order (FY)	Order for Month & Year					Normative Actual Var. Cost <sup>4</sup> for Dec 2005					
				Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Var. Cost <sup>3</sup>	Var. Cost
			MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(L)	(M)	(N)	(O)	(P)
<b>1.0</b>	<b>Generating Station/Unit wise, Fuel Basket-wise details</b>													
<b>2.0</b>	<b>Generating Station/Unit wise summary</b>													
	Khaparkheda		5471	0.9162	50125.3	456	0.9162	4,177	458	1.16	5,314	458	1.20	5,496
	Paras		345	1.2063	4161.74	29	1.2063	347	29	1.59	456	29	1.47	422
	Bhusawal		2802	1.0721	30040.2	234	1.0721	2,503	303	1.54	4,668	303	1.68	5,091
	Nasik		4680	1.3188	61719.8	390	1.3188	5,143	474	1.75	8,285	474	1.70	8,054
	Parli		3538	1.2278	43439.6	295	1.2278	3,620	434	1.33	5,772	434	1.31	5,701
	Koradi		5901	1.1695	69012.2	492	1.1695	5,751	575	1.10	6,319	575	1.14	6,573
	Chandrapur		15693	0.7023	110212	1,308	0.7023	9,184	1,152	0.96	11,034	1,152	0.91	10,526
	Gas Thermal		3961	0.6742	26705.1	330	0.6742	2,225	285	0.82	2,348	285	0.81	2,311
	<b>Total</b>	<b>All fuels</b>	<b>42391</b>	<b>0.9328</b>	<b>395416</b>	<b>3,533</b>	<b>0.9328</b>	<b>32,951</b>	<b>3,709</b>	<b>1.19</b>	<b>44,197</b>	<b>3,709</b>	<b>1.19</b>	<b>44,173</b>

ANNEXURE 8 - Dec-05



Sheet 3.3a

**Calculation of Normative Variable Cost of Generating Stations**

<b>A. Thermal Stations</b>	<b>K'kheda</b>	<b>Paras</b>	<b>Bhusawal</b>	<b>Nasik</b>	<b>Parli</b>	<b>Koradi</b>	<b>C'pur</b>	<b>Total for Coal</b>	<b>Uran (Gas)</b>
Actual Gross Generation (MU)	507	32	332	520	475	635	1,244	3,744	292
<b>Approved Auxiliary Consumption%</b>	<b>8.50%</b>	<b>9.70%</b>	<b>10.00%</b>	<b>9.00%</b>	<b>9.70%</b>	<b>9.80%</b>	<b>7.60%</b>		<b>2.40%</b>
Net Generation (MU)	463	29	298	473	429	572	1,150	3,415	285
Actual Generation Cost (Rs lakhs)	5,314	456	4,668	8,285	5,772	6,319	11,034	41,849	2,348
Less: Transit Loss after Adjustment	89	49	(47)	288	263	42	219	903	-
Add: Normative Transit Loss (Rs.Lakhs)	106	18	41	78	152	192	131	718	-
Actual Adjusted Gen Cost (Rs.Lakhs)	5,331	425	4,756	8,076	5,660	6,469	10,946	41,663	2,348
Actual Quantity delivered (MT)	518,695	45,282	249,645	374,898	403,869	614,858	661,000	2,868,246	
Avg coal purchase price (Rs/MT)	1,237	1,547	2,249	2,359	1,564	1,241	1,163		
Actual Transit Loss (MT)	6,325	3,102	5,463	13,244	16,836	1,976	19,000	65,946	
Actual Heat Input (Kcal/kWh)	1,324,248	102,491	858,849	1,389,943	1,263,268	1,880,063	3,242,976	10,061,838	583,098
Actual Fuel Cost (Rs/MkCal)	403	415	554	581	448	344	338	414	403
<b>Base Variable Cost (Rs/kWh)</b>	<b>0.9162</b>	<b>1.2063</b>	<b>1.0721</b>	<b>1.3188</b>	<b>1.2278</b>	<b>1.1695</b>	<b>0.7023</b>		<b>0.6742</b>
Actual Heat Rate (kCal/kWh)	2,614	3,197	2,591	2,674	2,658	2,962	2,607	2,687	1,999
<b>Norm - Heat Rate (kCal/kWh)</b>	<b>2,725</b>	<b>3,200</b>	<b>2,735</b>	<b>2,663</b>	<b>2,649</b>	<b>2,996</b>	<b>2,502</b>	<b>2,675</b>	<b>1,966</b>
Variable cost after adjustment for Heat rate & Auxiliary Consumption	1.1990	1.4699	1.6827	1.7003	1.3144	1.1429	0.9140	1.1076	0.8112
<b>Norm - Transit Loss (%)</b>	<b>1.45%</b>	<b>2.58%</b>	<b>0.98%</b>	<b>0.96%</b>	<b>2.40%</b>	<b>1.47%</b>	<b>1.72%</b>		<b>1.72%</b>
Actual Transit loss (%) Quantity	1.22%	7.03%	-0.15%	3.53%	4.17%	0.32%	2.87%		0.00%
<b>Normative Variable Cost (Rs/kWh)</b>	<b>1.1990</b>	<b>1.4699</b>	<b>1.6827</b>	<b>1.7003</b>	<b>1.3144</b>	<b>1.1429</b>	<b>0.9140</b>	<b>1.1076</b>	<b>0.8112</b>



**ANNEXURE 9**

**Table 4.1**  
**Title Variable cost of power purchase<sup>1&11</sup>**

Sr. No.	Power Purchase Source <sup>2</sup>	Order (FY)			Order for Month & Year			Dec-05							
		Net Purchase <sup>3</sup>	Var. Cost <sup>5</sup>	Var. Cost Amt <sup>4</sup>	Net Purchase <sup>3</sup>	Var. Cost <sup>5</sup>	Var. Cost Amt <sup>4</sup>	Net Purchase <sup>3</sup>	Tariff <sup>6</sup>	PP Amt <sup>7</sup>	FAC Unit <sup>8</sup>	FAC Rate <sup>9</sup>	FAC Amt <sup>10</sup>	Var. Cost Amt <sup>4</sup>	Var. Cost <sup>5</sup>
		MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	Rs Lakh	Rs/ kWh
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)= (I)*(J)	(L)	(M)	(N)= (L)*(M)	(O)= (K)+(N)	(P)
	Korba	4501	0.53	23,630	375	0.53	1,969	359	0.48	1,731	359	0.10	372	2103	0.59
	Vindhyanchal -I	2727	0.74	20,049	227	0.74	1,671	313	0.85	2,668	313	0.06	176	2845	0.91
	Vindhyanchal -II	2081	0.79	16,467	173	0.79	1,372	257	0.79	2,029	257	0.05	140	2169	0.85
	Kawas - Gas	457	2.45	11,190	38	2.45	933	108	2.98	3,204	108	1.94	2,084	5288	4.92
	Kawas - Liquid	0	-	-	-	-	-	-	-	-	-	-	-	0	#DIV/0!
	Gandhar	818	1.15	9,374	68	1.15	781	157	1.02	1,603	157	0.46	724	2328	1.48
	Kakrapur	1772	2.99	53,002	148	2.99	4,417	78	2.18	1,700	78	0.20	152	1852	2.38
	Tarapur 1-4	1187	0.94	11,212	99	0.94	934	115	2.65	3,060	115	0.07	80	3140	2.72
	Eastern Region	108	1.06	1,148	9	1.06	96	68	0.89	601	68	0.18	125	726	1.07
	Tata Power Company	104	1.80	1,876	9	1.80	156	46	2.88	1,314	46	-	-	1314	2.88
	Power Trading Corp	2127	1.49	31,796	177	1.49	2,650	155	3.04	4,696	155	-	-	4696	3.04
	Adani	0	-	-	-	-	-	68	3.24	2,191	68	-	-	2191	3.24
	NVVN	0	-	-	-	-	-	53	2.82	1,479	53	-	-	1479	2.82
	RETL	0	-	-	-	-	-	25	2.73	679	25	-	-	679	2.73
	Tata N.P.	0	-	-	-	-	-	200	1.89	3,794	200	-	-	3794	1.89





**MSEDCL-FAC – OCT 05 TO FEB 06**  
**MERC**

Dodson	0	-	-	-	-	5	1.84	93	5	-	93	1.84		
Sardar Sarovar	0	-	-	-	-	44	3.48	1,518	44	-	1518	3.48		
Pench	0	-	-	-	-	11	1.75	193	11	-	193	1.75		
Received in grid through Imports from various regions	0	-	-	-	-	(109)	-	-	(109)	-	0	-		
Unscheduled Interchange (UI)	0	4,400	-	-	367	162	2.54	4,114	162	-	4114	2.54		
Non Conventional Sources (Wind)	0	-	-	-	-	17	3.46	573	17	-	573	3.46		
Non Conventional Sources (Hydro))	300	3.17	9,500	25	3.17	792	5	2.45	119	5	-	119	2.45	
Power Purchase from Bagasse	0	-	-	-	-	11	3.24	363	11	-	363	3.24		
Power Purchase from captive generating units	0	-	-	-	-	22	2.05	450	22	-	450	2.05		
<b>Total Power Purchase</b>	<b>16182</b>	<b>1.20</b>	<b>193,646</b>	<b>1349</b>	<b>1.20</b>	<b>16137</b>	<b>2167</b>	<b>1.76</b>	<b>38172</b>	<b>2167</b>	<b>0.18</b>	<b>3,854</b>	<b>42026</b>	<b>1.9396</b>



ANNEXURE 10

Table 3.3

Title Calculation of Station/Unit-wise variable cost of generation (fuel cost)

Sr. No.	Generating Station/Unit <sup>1&amp;2</sup>	Fuel Basket (FB) <sup>1&amp;2</sup>	Order (FY)	Order for Month & Year					Jan-06				Normative Actual Var. Cost <sup>4</sup> for Dec 2005		
				Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Reasons for Material Variation	Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Var. Cost <sup>3</sup>	Var. Cost
			MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU		Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)
<b>1.0</b>	<b>Generating Station/Unit wise, Fuel Basket-wise details</b>														
<b>2.0</b>	<b>Generating Station/Unit wise summary</b>														
	Khaparkheda		5471	0.9162	50125.3	456	0.9162	4,177	421		1.17	4,926	421	1.21	5,114
	Paras		345	1.2063	4161.74	29	1.2063	347	40		1.33	529	40	1.43	568
	Bhusawal		2802	1.0721	30040.2	234	1.0721	2,503	313		1.60	5,019	313	1.69	5,287
	Nasik		4680	1.3188	61719.8	390	1.3188	5,143	520		1.82	9,487	520	1.78	9,288
	Parli		3538	1.2278	43439.6	295	1.2278	3,620	443		1.30	5,784	443	1.32	5,855
	Koradi		5901	1.1695	69012.2	492	1.1695	5,751	585		1.08	6,287	585	1.10	6,402
	Chandrapur		15693	0.7023	110212	1,308	0.7023	9,184	1,136		0.95	10,737	1,136	0.91	10,291
	Gas Thermal		3961	0.6742	26705.1	330	0.6742	2,225	260		0.83	2,148	260	0.80	2,073
	<b>Total</b>	<b>All fuels</b>	<b>42391</b>	<b>0.9328</b>	<b>395416</b>	<b>3,533</b>	<b>0.9328</b>	<b>32,951</b>	<b>3,718</b>		<b>1.21</b>	<b>44,918</b>	<b>3,718</b>	<b>1.21</b>	<b>44,878</b>



ANNEXURE 11 – January, 2006

Sheet 3.3a

**Calculation of Normative Variable Cost of Generating Stations**

<b>A. Thermal Stations</b>	<b>K'kheda</b>	<b>Paras</b>	<b>Bhusawal</b>	<b>Nasik</b>	<b>Parli</b>	<b>Koradi</b>	<b>C'pur</b>	<b>Total for Coal</b>	<b>Uran (Gas)</b>
Actual Gross Generation (MU)	464	44	343	570	486	642	1,223	3,772	266
<b>Approved Auxiliary Consumption%</b>	<b>8.50%</b>	<b>9.70%</b>	<b>10.00%</b>	<b>9.00%</b>	<b>9.70%</b>	<b>9.80%</b>	<b>7.60%</b>		<b>2.40%</b>
Normative Net Generation (MU)	425	39	309	519	439	579	1,130	3,439	260
Actual Generation Cost (Rs lakhs)	4,926	529	5,019	9,487	5,784	6,287	10,737	42,770	2,148
Less: Transit Loss after Adjustment	41	(19)	107	226	131	14	267	767	-
Add: Normative Transit Loss (Rs.Lakhs)	59	13	35	80	137	62	190	576	-
Actual Adjusted Gen Cost (Rs.Lakhs)	4,945	561	4,948	9,340	5,790	6,335	10,660	42,579	2,148
Actual Quantity delivered (MT)	378,707	31,287	223,847	397,577	358,354	447,421	949,242	2,786,436	
Avg coal purchase price (Rs/MT)	1,276	1,568	2,097	2,458	1,596	1,312	1,164		
Actual Transit Loss (MT)	3,773	748	4,161	10,844	8,229	1,490	22,960	52,205	
Actual Heat Input (Kcal/kWh)	1,212,337	138,993	890,107	1,531,557	1,285,966	1,921,499	3,185,742	10,166,200	542,079
Actual Fuel Cost (Rs/MkCal)	408	404	556	610	450	330	335	419	396
<b>Base Variable Cost (Rs/kWh)</b>	<b>0.9162</b>	<b>1.2063</b>	<b>1.0721</b>	<b>1.3188</b>	<b>1.2278</b>	<b>1.1695</b>	<b>0.7023</b>		<b>0.6742</b>
Actual Heat Rate (kCal/kWh)	2,612	3,194	2,596	2,687	2,646	2,993	2,605	2,695	2,035
<b>Norm - Heat Rate (kCal/kWh)</b>	<b>2,725</b>	<b>3,200</b>	<b>2,735</b>	<b>2,663</b>	<b>2,649</b>	<b>2,996</b>	<b>2,502</b>	<b>2,675</b>	<b>1,966</b>
Variable cost after adjustment for Transit Loss, Heat rate & Auxiliary Consumption									
	1.2147	1.4300	1.6892	1.7847	1.3209	1.0950	0.9061	1.1204	0.7983
<b>Norm - Transit Loss (%)</b>	<b>1.45%</b>	<b>2.58%</b>	<b>0.98%</b>	<b>0.96%</b>	<b>2.40%</b>	<b>1.47%</b>	<b>1.72%</b>		<b>1.72%</b>
<b>Actual Transit loss (%) Quantity</b>	<b>1.00%</b>	<b>-4.10%</b>	<b>2.55%</b>	<b>2.73%</b>	<b>2.30%</b>	<b>0.33%</b>	<b>2.42%</b>		<b>0.00%</b>
<b>Normative Variable Cost (Rs/kWh)</b>	<b>1.2147</b>	<b>1.4300</b>	<b>1.6892</b>	<b>1.7847</b>	<b>1.3209</b>	<b>1.0950</b>	<b>0.9061</b>	<b>1.1204</b>	<b>0.7983</b>



ANNEXURE 12

Table 4.1

Title Variable cost of power purchase<sup>1&11</sup>

Sr. No.	Power Purchase Source <sup>2</sup>	Order (FY)	Order for Month & Year			Jan-06			Net Purchase <sup>3</sup>	Tariff <sup>6</sup>	PP Amt <sup>7</sup>	FAC Unit <sup>8</sup>	FAC Rate <sup>9</sup>	FAC Amt <sup>10</sup>	Var. Cost Amt <sup>4</sup>	Var. Cost <sup>5</sup>
			Net Purchase <sup>3</sup>	Var. Cost <sup>5</sup>	Var. Cost Amt <sup>4</sup>	Net Purchase <sup>3</sup>	Var. Cost <sup>5</sup>	Var. Cost Amt <sup>4</sup>								
		MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	Rs Lakh	Rs/ kWh	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)=(I)*(J)	(L)	(M)	(N)= (L)*(M)	(O)= (K)+(N)	(P)	
	Korba	4501	0.53	23,630	375	0.53	1,969	363	0.48	1,756	363	0.09	329	2085	0.57	
	Vindhyanchal -I	2727	0.74	20,049	227	0.74	1,671	298	0.84	2,517	298	0.16	470	2987	1.00	
	Vindhyanchal -II	2081	0.79	16,467	173	0.79	1,372	256	0.79	2,023	256	0.15	390	2413	0.94	
	Kawas - Gas	457	2.45	11,190	38	2.45	933	28	1.03	288	28	0.06	18	306	1.09	
	Kawas - Liquid	0	-	-	-	-	-	142	3.74	5,317	142	2.79	3,968	9285	6.52	
	Gandhar	818	1.15	9,374	68	1.15	781	147	1.02	1,500	147	0.39	572	2072	1.41	
	Kakrapar	1772	2.99	53,002	148	2.99	4,417	54	2.06	1,119	54	0.20	106	1225	2.26	
	Tarapur 1-4	1187	0.94	11,212	99	0.94	934	119	2.65	3,159	119	0.07	82	3241	2.72	
	Eastern Region	108	1.06	1,148	9	1.06	96	67	0.90	607	67	0.20	138	745	1.10	
	Tata Power (Trading)	104	1.80	1,876	9	1.80	156	52	3.42	1,771	52		-	1771	3.42	
	Power Trading Corp	2127	1.49	31,796	177	1.49	2,650	149	2.77	4,137	149		-	4137	2.77	
	Adani	0	-	-	-	-	-	184	3.08	5,667	184		-	5667	3.08	
	NVVN	0	-	-	-	-	-	36	2.91	1,049	36		-	1049	2.91	
	RETL	0	-	-	-	-	-	25	2.72	687	25		-	687	2.72	
	Tata N.P.	0	-	-	-	-	-	19	1.66	319	19	0.21	40	359	1.87	



**MSEDCL-FAC – OCT 05 TO FEB 06**  
**MERC**

Dodson	0		-	-	-	-	6	1.80	108	6		-	108	1.80	
Sardar Sarovar	0		-	-	-	-	44	3.48	1,550	44		-	1550	3.48	
Pench	0		-	-	-	-	11	1.75	185	11		-	185	1.75	
Received in grid through Imports from various regions	0		-	-	-	-	(139)	-	-	(139)		-	0	-	
Unscheduled Interchange (UI)	0		4,400	-	-	367	221	2.97	6,564	221		-	6564	2.97	
Non Conventional Sources (Wind)	0		-	-	-	-	18	3.46	621	18		-	621	3.46	
Non Conventional Sources (Hydro))	300	3.17	9,500	25	3.17	792	13	2.45	315	13		-	315	2.45	
Power Purchase from Bagasse	0		-	-	-	-	12	3.24	392	12		-	392	3.24	
Power Purchase from captive generating units	0		-	-	-	-	31	2.58	812	31		-	812	2.58	
<b>Total Power Purchase</b>	<b>16182</b>	<b>1.20</b>	<b>193,646</b>	<b>1349</b>	<b>1.20</b>	<b>16137</b>	<b>2158</b>	<b>1.97</b>	<b>42462</b>	<b>2158</b>	<b>0.28</b>	<b>6,114</b>	<b>48576</b>	<b>2.2515</b>	



ANNEXURE 13

Table 3.3

Title Calculation of Station/Unit-wise variable cost of generation (fuel cost)

Sr. No.	Generating Station/Unit <sup>1&amp;2</sup>	Fuel Basket (FB) <sup>1&amp;2</sup>	Order (FY)	Order for Month & Year					Feb-06			Normative Actual Var. Cost <sup>4</sup> for Dec 2005			
				Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Reasons for Material Variation	Var. Cost <sup>3</sup>	Var. Cost	Generation <sup>3</sup>	Var. Cost <sup>3</sup>	Var. Cost
			MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU		Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)
<b>1.0</b>	<b>Generating Station/Unit wise, Fuel Basket-wise details</b>														
<b>2.0</b>	<b>Generating Station/Unit wise summary</b>														
	Khaparkheda		5471	0.9162	50125.3	456	0.9162	4,177	471		1.12	5,293	471	1.17	5,516
	Paras		345	1.2063	4161.74	29	1.2063	347	35		1.34	470	35	1.47	515
	Bhusawal		2802	1.0721	30040.2	234	1.0721	2,503	270		1.55	4,172	270	1.65	4,449
	Nasik		4680	1.3188	61719.8	390	1.3188	5,143	512		1.79	9,175	512	1.77	9,035
	Parli		3538	1.2278	43439.6	295	1.2278	3,620	379		1.38	5,247	379	1.40	5,323
	Koradi		5901	1.1695	69012.2	492	1.1695	5,751	462		1.12	5,169	462	1.14	5,282
	Chandrapur		15693	0.7023	110212	1,308	0.7023	9,184	928		1.02	9,461	928	0.99	9,179
	Gas Thermal		3961	0.6742	26705.1	330	0.6742	2,225	270		0.83	2,232	270	0.81	2,189
	<b>Total</b>	<b>All fuels</b>	<b>42391</b>	<b>0.9328</b>	<b>395416</b>	<b>3,533</b>	<b>0.9328</b>	<b>32,951</b>	<b>3,326</b>		<b>1.24</b>	<b>41,218</b>	<b>3,326</b>	<b>1.25</b>	<b>41,487</b>



ANNEXURE 14 - Feb-06

Sheet 3.3a

**Calculation of Normative Variable Cost of Generating Stations**

<b>A. Thermal Stations</b>	<b>K'kheda</b>	<b>Paras</b>	<b>Bhusawal</b>	<b>Nasik</b>	<b>Parli</b>	<b>Koradi</b>	<b>C'pur</b>	<b>Total for Coal</b>	<b>Uran (Gas)</b>
Actual Gross Generation (MU)	517	39	296	558	417	509	998	3,334	276
<b>Approved Auxiliary Consumption%</b>	<b>8.50%</b>	<b>9.70%</b>	<b>10.00%</b>	<b>9.00%</b>	<b>9.70%</b>	<b>9.80%</b>	<b>7.60%</b>		<b>2.40%</b>
Approved Net Generation (MU)	473	35	266	508	377	459	922	3,040	270
Actual Generation Cost (Rs lakhs)	5,293	470	4,172	9,175	5,247	5,169	9,461	38,986	2,232
Less: Transit Loss after Adjustment	42	(32)	29	249	101	53	119	560	-
Add: Normative Transit Loss (Rs.Lakhs)	69	10	32	66	127	113	171	587	-
Actual Adjusted Gen Cost (Rs.Lakhs)	5,320	512	4,175	8,992	5,273	5,229	9,514	39,014	2,232
Actual Quantity delivered (MT)	397,792	24,550	200,183	319,228	308,791	408,592	878,710	2,537,845	
Avg coal purchase price (Rs/MT)	-	1,603	2,030	2,217	1,708	1,292	1,233		
Actual Transit Loss (MT)	3,529	582	2,946	11,495	5,885	2,812	10,471	37,721	
Actual Heat Input (MKcal)	1,351,776	123,318	769,421	1,490,212	1,102,833	1,519,357	2,603,485	8,960,402	553,879
Actual Fuel Cost (Rs/MkCal)	394	415	543	603	478	344	365	435	403
<b>Base Variable Cost (Rs/kWh)</b>	<b>0.9162</b>	<b>1.2063</b>	<b>1.0721</b>	<b>1.3188</b>	<b>1.2278</b>	<b>1.1695</b>	<b>0.7023</b>		<b>0.6742</b>
Actual Heat Rate (kCal/kWh)	2,615	3,198	2,598	2,668	2,644	2,987	2,608	2,688	2,005
<b>Norm - Heat Rate (kCal/kWh)</b>	<b>2,725</b>	<b>3,200</b>	<b>2,735</b>	<b>2,663</b>	<b>2,649</b>	<b>2,996</b>	<b>2,502</b>	<b>2,675</b>	<b>1,966</b>
Variable cost after adjustment for Heat rate & Auxiliary Consumption	1.1720	1.4718	1.6488	1.7658	1.4027	1.1431	0.9895	1.1647	0.8117
<b>Normative Variable Cost (Rs/kWh)</b>	<b>1.1720</b>	<b>1.4718</b>	<b>1.6488</b>	<b>1.7658</b>	<b>1.4027</b>	<b>1.1431</b>	<b>0.9895</b>	<b>1.1647</b>	<b>0.8117</b>



**ANNEXURE 15**

**Table 4.1**

**Title Variable cost of power purchase<sup>1&11</sup>**

Sr. No.	Power Purchase Source <sup>2</sup>	Order (FY)			Order for Month & Year			Feb-06							
		Net Purchase <sup>3</sup>	Var. Cost <sup>5</sup>	Var. Cost Amt <sup>4</sup>	Net Purchase <sup>3</sup>	Var. Cost <sup>5</sup>	Var. Cost Amt <sup>4</sup>	Net Purchase <sup>3</sup>	Tariff <sup>6</sup>	PP Amt <sup>7</sup>	FAC Unit <sup>8</sup>	FAC Rate <sup>9</sup>	FAC Amt <sup>10</sup>	Var. Cost Amt <sup>4</sup>	Var. Cost <sup>5</sup>
		MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	MU	Rs/ kWh	Rs Lakh	Rs Lakh	Rs/ kWh
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)= (I)*(J)	(L)	(M)	(N)= (L)*(M)	(O)= (K)+(N)	(P)
	Korba	4501	0.53	23,630	375	0.53	1,969	327	0.48	1,578	327	0.09	292	1870	0.57
	Vindhyanchal -I	2727	0.74	20,049	227	0.74	1,671	283	0.85	2,409	283	0.10	275	2684	0.95
	Vindhyanchal -II	2081	0.79	16,467	173	0.79	1,372	236	0.79	1,876	236	0.09	223	2099	0.89
	Kawas - Gas	457	2.45	11,190	38	2.45	933	20	1.03	205	20	0.11	22	227	1.14
	Kawas - Liquid	0	-	-	-	-	-	243	3.72	9,053	243	3.08	7,496	16550	6.80
	Gandhar	818	1.15	9,374	68	1.15	781	127	1.02	1,298	127	0.31	397	1695	1.33
	Kakrapar	1772	2.99	53,002	148	2.99	4,417	9	2.06	181	9	0.20	17	198	2.26
	Tarapur 1-4	1187	0.94	11,212	99	0.94	934	140	2.09	2,933	140	0.27	382	3315	2.37
	Eastern Region	108	1.06	1,148	9	1.06	96	72	0.91	658	72	0.22	157	815	1.13
	Tata Power (Trading)	104	1.80	1,876	9	1.80	156	1	2.70	25	1		-	25	2.70
	Power Trading Corp	2127	1.49	31,796	177	1.49	2,650	64	3.08	1,979	64		-	1979	3.08
	Adani	0	-	-	-	-	-	177	3.27	5,772	177		-	5772	3.27
	NVVN	0	-	-	-	-	-	-	-	-	-		-	0	#DIV/0!
	RETL	0	-	-	-	-	-	4	2.27	82	4		-	82	2.27
	Tata N.P.	0	-	-	-	-	-	20	1.60	325	20	0.21	43	368	1.81





**MSEDCL-FAC – OCT 05 TO FEB 06**  
**MERC**

Dodson	0	-	-	-	-	0	2.50	8	0	-	8	2.50		
Sardar Sarovar	0	-	-	-	-	35	3.48	1,217	35	-	1217	3.48		
Pench	0	-	-	-	-	14	1.75	244	14	-	244	1.75		
Losses	0	-	-	-	-	(120)	-	-	(120)	-	0	-		
Unscheduled Interchange (UI)	0	4,400	-	-	367	263	4.31	11,315	263	-	11315	4.31		
Non Conventional Sources (Wind)	0	-	-	-	-	18	3.46	630	18	-	630	3.46		
Non Conventional Sources (Hydro))	300	3.17	9,500	25	3.17	792	0	2.45	6	0	-	6	2.45	
Power Purchase from Bagasse	0	-	-	-	-	13	3.24	414	13	-	414	3.24		
Power Purchase from captive generating units	0	-	-	-	-	34	2.64	903	34	-	903	2.64		
<b>Total Power Purchase</b>	<b>16182</b>	<b>1.20</b>	<b>193,646</b>	<b>1349</b>	<b>1.20</b>	<b>16137</b>	<b>1980</b>	<b>2.18</b>	<b>43112</b>	<b>1980</b>	<b>0.47</b>	<b>9,304</b>	<b>52416</b>	<b>2.6478</b>



**Annexure 16 - Calculation of FAC charge for the period October 2005 to February 2006:**

Sr. No.	Parameter	Units	Oct. 2005		Nov. 2005		Dec. 2005		Jan. 2006		Feb. 2006	
			As per MSEDCL	As per Commission	As per MSEDCL	As per Commission	As per MSEDCL	As per Commission	As per MSEDCL	As per Commission	As per MSEDCL	As per Commission
	<b>Calculation of FAC</b>											
1	Normative Variable Fuel Cost of generation	Rs./unit	1.26	1.24	1.20	1.20	1.19	1.19	1.21	1.21	1.25	1.25
2	Normative Variable Fuel Cost of power purchase	Rs./unit	1.72	1.76	1.75	1.77	1.99	1.94	2.28	2.25	2.63	2.65
3	Normative Variable Fuel cost of generation and power purchase	Rs./unit	1.42	1.43	1.39	1.40	1.48	1.47	1.60	1.59	1.76	1.77
5	Change in Variable Fuel cost of generation and power purchase	Rs./unit	0.42	0.42	0.39	0.39	0.48	0.47	0.60	0.59	0.76	0.76
6	Net Generation + Net power purchase	MUs	5192	5186	5289	5289	5857	5857	5878	5875	5306	5306
7	Change in Variable Fuel cost of generation and power purchase	Crore	217.64	218.57	205.79	208.17	280.67	273.00	350.24	343.70	401.63	405.45
8	Working capital interest (I)	Crore	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Adjustment of over recovery/ under recovery (B)	Crore	29.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.65	
	<b>Total FAC (7+8+9)</b>	Crore	<b>247.42</b>	<b>218.57</b>	<b>205.79</b>	<b>208.17</b>	<b>280.67</b>	<b>273.00</b>	<b>350.24</b>	<b>343.70</b>	<b>449.28</b>	<b>405.45</b>
	<b>FAC liable sale</b>											
	Sale within License Area	MUs	3764	3764	3906	3906	3966	3966	4060	4060	3990	3990
	Excess T & D losses	MUs	465	465	386	386	536	536	451	452	219	219
	<b>FAC Charge without considering cap</b>	Paise/unit	<b>59</b>	<b>52</b>	<b>48</b>	<b>48</b>	<b>62</b>	<b>61</b>	<b>78</b>	<b>76</b>	<b>107</b>	<b>96</b>

