

## 1. EXECUTIVE SUMMARY

### 1.1 Introduction

The Tata Power Company Limited (Tata Power) is a company established in 1919. On April 1, 2000 The Tata Hydro-Electric Power Supply Company Limited (established in 1910) and The Andhra Valley Power Supply Company Limited (established in 1916) were merged into Tata Power, to form one unified entity. Consequent to the merger, the licenses of the above mentioned companies were also merged and Tata Power was granted a license by the Government of Maharashtra (GoM) for the supply of energy to the public in its Mumbai License Area and to supply energy in bulk to Distribution Licensees, vide resolution No: IEA –2001/ CR-10509/NRG-1, dated July 12, 2001. Tata Power has been recognized as a Transmission Licensee by this Hon'ble Commission under EA 2003. Tata Power has been filing its ARR and Tariff Petitions for the past periods and also filed the first MYT petition as required.

In line with the provisions of the tariff regulations, subsequent to the issue of the Multi-Year Tariff Order, the licensee or the generating company has to make an application for annual performance review which encompasses the comparison of the performance of the licensee or the generating company with the approved forecast of the aggregate revenue requirement and expected revenue from the approved tariff and charges. This document details the Annual Performance Review and Tariff Application of the Generation Business of Tata Power (Tata Power - G) and includes (i) True-up of performance of FY 2007-08 (ii) Review of the performance of FY 2008-09 (iii) Projected performance of FY 2009-10 (iv) Tariff Proposal for FY 2009-10.

### 1.2 Overall Approach for Present Filing

The present filing for the Annual Performance Review and Tariff filing is based on the principles enumerated by the Hon'ble Commission in the regulations and the relevant previous Tariff Orders (MYT order for FY 2007-08 and APR order for FY 2008-09 to FY 2009-10). The key aspects of the approach to the filing are discussed below:

#### 1.2.1 True-up for FY 2007-08

Tata Power - G, in the APR petition (for FY 2007-08) for its generation business had submitted the performance for FY 2007-08 based on the actual performance for the first half of the year, i.e. April to September 2007 and the revised estimated performance for the second half of the year, i.e. October 2007 to March 2008.

Tata Power - G for the present filing is submitting the actual performance of the generation function of Tata Power on various operational and cost related parameters. However, for



certain elements like the Long Term Interest, Interest on Working capital and Return on Equity, the computations would be based on the normative principles approved by the Hon'ble Commission in various regulations and orders. With regards to the treatment of revenue for the FY 2007-08, the aggregate ARR for Tata Power - G and the resultant gap / surplus, Tata Power - G would adhere to the principles which were outlined in the previous filing and which have been again outlined in subsequent paragraphs for reference.

### **1.2.2 Annual Performance Review Filing for FY 2008-09 and Revised Estimates for FY 2009-10**

As directed by the Hon'ble Commission, Tata Power - G is submitting the Annual Performance Review petition for the generation function for the year FY 2008-09 based on the actual performance of the function during the first half of the year (FY 2008-09) and revised estimates for the second half of the year. Similarly, Tata Power - G is also submitting the revised estimates for the FY 2009-10 based on the performance in the previous year.

### **1.2.3 Allocation of Assets and Costs**

For the purpose of the filing, the functional segregation of costs is based on segregation of information currently available with Tata Power. Tata Power captures cost data across the Generation, Transmission, Distribution, Supply, Head Office (HO) and Support Service (SS) functions ("Functional Areas"). Further Tata Power also maintains an Asset Register that gives the asset details existing on 31st March for these functional areas.

The basis of allocation of the assets and costs for Head Office and Support Services to the Generation, Transmission and Distribution functions ("Basic Areas") is same as that used for the MYT filing and is as explained in Section 3.3.

### **1.2.4 Sharing of Tata Power - G Capacity**

#### **1.2.4.1 Existing Capacity**

The Hon'ble Commission in its order dated 6<sup>th</sup> November 2007 had approved the Power Purchase Agreement (PPA) between Tata Power - G and BEST and also the Power Purchase Arrangement (also referred herein as PPA) between Tata Power - G and Tata Power - D which was also reflected in the Tariff Orders of the Hon'ble Commission for Tata Power - D and BEST. In the said PPAs, the capacity of Tata Power - G, both existing and future has been agreed to be shared in a certain ratio. The present filing has been made on the basis of the capacity contracted in the PPAs.

The capacity contracted and the balance capacity that would be available is as given in the table below:

**Table 1-1: Contracted Capacity**

	<b>PPA Status with Tata Power-G</b>	<b>Contracted Capacity Considered for projections from Existing Plants (MW)</b>	<b>%</b>
<b>BEST</b>	Signed	800	45.02%
<b>Tata Power-D</b>	Signed	477	26.84%
<b>Balance Capacity</b>		500	28.14%
<b>Total</b>		<b>1,777</b>	

It may be noted that Rlnfra has not signed any PPA with Tata Power - G so far. The projection on gross and net generation and consequent revenue determination of Tata Power - G for FY 2009-10 has been structured on the assumption (without assuming any obligation) that balance out of the existing capacity (1777 MW) i.e. 500 MW ("Balance Existing Capacity") available after allocating to BEST and Tata Power-D would be, for the time being, sold at the tariff fixed by the Hon'ble Commission to Rlnfra strictly on a day to day basis, until Tata Power - G finalises a PPA for the said Balance Existing Capacity of 500 MW to an appropriate counter party buyer. Any sale of power to Rlnfra out of the said balance 500 MW shall at all times be without prejudice to Tata Power - G's right to enter into a long term PPA to sell the said capacity of 500MW or any part thereof to any licensee or consumer in accordance with Section 10(2) and other provisions of the Electricity Act 2003.

#### **1.2.4.2 Capacity for Unit 8**

The PPAs signed on 6<sup>th</sup> November, 2007 also include the capacity allocation to the extent of 150 MW from 250 MW Unit 8 which is expected to be commissioned in January 2009. The PPAs envisage sale of 100 MW capacity to BEST and 50 MW to Tata Power-D from Unit 8. The balance 100 MW capacity from Unit 8 has been contracted to Tata Power Trading Company Ltd (TPTCL) ("TPTCL PPA Capacity").

**Table 1-2: Contracted Capacity-Unit8**

	<b>PPA Status with Tata Power-G</b>	<b>Contracted Capacity considered for projections from Unit 8 (MW)</b>	<b>%</b>
<b>BEST</b>	Signed	100	40.00%
<b>Tata Power-D</b>	Signed	50	20.00%
<b>TPTCL</b>		100	40.00%
<b>Total</b>		<b>250</b>	

### 1.3 Performance of FY 2007-08

This section deals with the performance for FY 2007-08 based on the audited accounts for the year. The various components are detailed below:

#### 1.3.1 Operational Performance for FY 2007-08

##### 1.3.1.1 Generation

The actual generation of Tata Power - G for FY 2007-08 is as under:

**Table 1-3: Gross Generation - FY 2007-08**

<b>Generating Station</b>	<b>Approved by Commission</b>	<b>FY 2007-08 (Actuals)</b>	<b>MUs Difference</b>
<b>Hydro Stations</b>			
Khopoli		258	
Bhivpuri		288	
Bhira		943	
<b>Total Hydro</b>	<b>1,500</b>	<b>1,489</b>	<b>(11)</b>
<b>Thermal</b>			
Unit 4	935	795	(140)
Unit 5	3,995	4,001	6
Unit 6	3,816	3,870	54
Unit 7	1,440	1,337	(103)
<b>Total Thermal</b>	<b>10,186</b>	<b>10,002</b>	<b>(184)</b>

Hydro generation for FY 2007-08 was 1,489 MU, marginally lesser than the quantum approved by the Hon'ble Commission. The overall thermal generation is marginally lower by 1.8 % than the approved levels mainly on account of lower generation from Unit 4 & Unit 7.

##### 1.3.1.2 Heat Rates

Heat Rate for Unit 4 and Unit 6 are within the levels approved by the Commission. The overall station heat rate is marginally better by 0.17 % than the approved levels. However in case of Unit 5 & Unit 7, there are deviations between approved heat rates and the actual heat rates. The detailed reasons for the same have been discussed in Section 4.2.2.

##### 1.3.1.3 Auxiliary Consumption

Tata Power - G has achieved lower auxiliary consumption on all units of Trombay and also on overall of 4.04% based on the actual mix of generation and approved auxiliary consumption against approved value of 4.41%. Both the thermal and hydro plants have operated within the overall approved levels for FY 2007-08.

### 1.3.2 Financial Performance – Expenditure – FY2007-08

#### 1.3.2.1 Fuel Costs

The total fuel cost for FY 2007-08 is Rs. 3,311 Crores as against the approved cost of Rs. 2,986 Crores. The increase in fuel costs over the approved amount is primarily on account of higher prices of Coal and Oil in the international market. Specifically, oil prices have been showing steep increasing trend during this period, as a result of which, average Oil Cost has been at Rs. 25,193/MT as against the approved value of Rs.19,886/MT by the Hon'ble Commission. Similarly, the coal price per MT was at Rs. 2,907/MT as against Rs. 2,814/MT approved by the Hon'ble Commission. It is submitted that the impact of increase in fuel costs has been contained to some extent on account of higher generation on coal, which otherwise would have resulted in additional burden of Rs.115 Crores.

The fuel cost, computed based on the approved heat rates and auxiliary consumption, except for Unit 5 and Unit 7 where Tata Power - G has sought an increase, is as indicated in the table below:

**Table 1-4: Fuel Costs based on Approved Norms – FY 2007-08**

Particulars		Unit 4	Unit 5	Unit 6	Unit 7	Rs. Crores	
						FHC & Other Adjustment	Total Fuel Cost
<b>Fuel Cost (Rs. Crores)</b>	<b>a</b>	<b>476</b>	<b>626</b>	<b>2,116</b>	<b>93</b>	<b>-</b>	<b>3,311</b>
Actual Heat Rate	b	2,497	2,567	2,306	2,001		
Actual Aux Consumption (%)	c	7.39%	4.87%	3.07%	2.37%		
Actual Net Heat Rate	d= b/(1-c)	2,697	2,698	2,379	2,050		
Normative Heat Rate	e	2,565	2,567	2,400	2,001		
Normative Aux Consumption (%)	f	8.00%	5.50%	3.50%	2.75%		
Normative Net Heat Rate	g=e/(1-f)	2,788	2,716	2,487	2,058		
<b>Fuel Cost applying Normative Net Heat Rate (Rs. Crores)</b>	<b>h=g/d*a</b>	<b>492</b>	<b>631</b>	<b>2,212</b>	<b>93</b>	<b>-</b>	<b>3,428</b>
Net Gains/ (Loss)	i=h-a	16	4	96	0	-	116
<b>Passed on to the Dist. License</b>	<b>j=1/3xi</b>	<b>5</b>	<b>1</b>	<b>32</b>	<b>0</b>	<b>-</b>	<b>39</b>

As can be seen from the table above, there is a net gain to Distribution Licensees of Rs. 39 Crores on accounts of the efficient operations of Tata Power - G.

#### 1.3.2.2 O&M Expenditure

The various components of O&M expenditure are explained in the sections below:

##### Employee Cost:

The total employee related expenses for the year FY 2007-08 were Rs. 131 Crores, against that of the actual expenditure of Rs. 106 Crores in FY 2006-07. The Employee cost of FY 2007-08 includes a statutory provision of about Rs. 24 Crores on account of AS 15 (R).

### **A&G Expenses**

The A&G Expenses for FY 2007-08 were Rs. 68 Crores, after considering the deduction of expenditure towards Brand Equity which is in line with the Hon'ble Commission. Tata Power - G wishes to submit that since it has appealed in the ATE against the Hon'ble Commission's stand on the dis-allowance of Brand Equity expenditure, Tata Power – G reserves the right to seek appropriate adjustments in the cost based on the decision of ATE.

### **R&M Expenses:**

The total R&M expenses for FY 2007-08 were Rs. 103 Crores.

#### **1.3.2.3 Overall O&M Expenditure as a whole**

The O&M expenditure for FY 2007-08 is Rs. 310 Crores; this includes the expenses towards Brand Equity and Brand Promotion. Since the Hon'ble Commission has disallowed the same the overall O&M expenses excluding the Brand Equity Brand Promotion expenditure are Rs. 301 Crores, as compared to Rs. 313 Crores approved by the Hon'ble Commission during provisional truing up for FY 2007-08.

We would like to submit that the overall expenses are lower than that approved by the Hon'ble Commission during provisional truing up for FY 2007-08. The expenditure towards Brand Equity has been Rs. 9 Crores which has been disallowed by the Hon'ble Commission in the Order dated 2<sup>nd</sup> April 2008.

#### **1.3.2.4 Depreciation**

The Depreciation for the year FY 2007-08 is Rs. 48 Crores (after deduction of the depreciation component on account of assets added during the year) as against the estimate of Rs. 48 Crores approved by the Hon'ble Commission.

Tata Power - G would like to submit that, while the computation of depreciation has been carried out in line with the principles adopted by the Hon'ble Commission in its previous order, Tata Power - G has appealed against the same in the ATE.

#### **1.3.2.5 Interest and Finance Charges**

The Interest costs have been estimated under the following three heads, (i) interest on debt, (ii) interest on working capital and (iii) interest and finance charges.

### **Interest on Debt**

In addition to the interest on normative loans for the previous years (70% of Capex of FY 2003-04 and 70% of capitalisation of FY 2004-05, FY 2005-06 and FY 2006-07), the Interest and Finance Charges for the year FY 2007-08 have been computed on the 70% of the capital expenditure to be capitalised in FY 2007-08. Tata Power had raised a loan of Rs. 450 Crores from IDFC to fund its capital expenditure on the following terms:

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Tenor :	3 year moratorium + 9 years
Repayment:	35 quarterly instalment of Rs. 5.65 Cr & 36 <sup>th</sup> instalment of Rs. 252.25 Crores. Benchmark rate (5 years G-Sec Rate) + 1.45% p.a. (payable monthly) If the Company has a rating of AAA 6 months prior to interest reset date.
Interest rate:	(Subject to minimum of 8.90%) If the Company is not able to maintain a rating of AAA, then IDFC will have the right to revise the spread.

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Considering the above, an interest rate of 8.9% has been assumed for FY 2007-08. The interest charges for FY 2007-08 are computed at Rs. 20 Crores vis-à-vis Rs. 23 Crores approved by the Hon'ble Commission. It is submitted that the terms of the above loans have been approved by the MYT Tariff Order.

### **Interest on Working Capital**

The Interest on working capital has been computed based on the elements specified in the tariff regulations by the Hon'ble Commission.

For the purpose of estimating the interest on working capital for FY 2007-08, an interest rate of 11.5% (SBI PLR as on date of Tariff filing) has been considered as specified in the tariff regulations. Tata Power - G would however like to inform the Hon'ble Commission that the actual rate in FY 2007-08 was 12.25%.

The total Interest on Working Capital of Tata Power - G for FY 2007-08 works out to Rs. 87 Crores against Rs. 89 Crores approved by the Hon'ble Commission.

The actual working capital requirements of Tata Power - G are funded through a mix of actual borrowings and through funds provided by the Corporate through internal accruals. The actual interest on Working Capital for the year FY 2007-08 was Rs. 26 Crores. The share of Tata Power – G on the basis of the normative Working Capital share in total normative working capital in Tata Power's Mumbai Operations works out to Rs. 22 Crores.

It is submitted that the component of financing through corporate funds (Internal accruals) also is entitled to interest as the Corporate incurs a carrying cost for such 'internal cash' or

funds as usage of this cash denies an opportunity to earn income through interest on deposits in money markets. Thus, it can be said that Tata Power - G has effectively incurred a cost by blocking its money (cash) in such Working Capital.

It is well known that any ongoing company requires working capital to run its operation. The working capital required may either be borrowed or may be funded from own funds. If the working capital is borrowed, the cost of such borrowed funds is the interest paid to the lender on this borrowed amount. However if no loans are taken, the same would have to be provided by the company from the funds it has accrued. Such internal funds are in effect provided by the Shareholders who expect some return on the funds. Hence it would be legitimate to expect that there is cost of such internally accrued funds that are used to finance the working capital. In fact the cost of such internally accrued funds which reflect the expectation of returns by the shareholders is generally higher than the cost of borrowing. Hence even if no amount was actually borrowed, it would be incorrect to conclude that the entire normative interest on working capital as efficiency gain which needs to be shared with the consumers.

We also submit that the Tariff regulations provide guidelines for computation of Interest on working capital on “Normative Basis” and do not prescribe or stipulate any pre condition for funding the working capital through actual loans. Further, it is submitted that the treatment given for normative loans for financing Capital Expenditure may be extended to the financing of Working Capital.

In view of the above, we submit that the Interest on actual working capital requirement at normative interest rates (SBI PLR) should be considered as part of interest expenses for the computation of gains and losses on account of interest on working capital. The interest on Actual working Capital for FY 2007-08 works out to Rs 108 Crores. The Interest on Actual Working Capital is worked out in Annexure – II: Interest on Actual Working Capital.

We request the Hon'ble Commission to reconsider its stand directed in the earlier tariff order dated 2<sup>nd</sup> April 2008, and approve the above methodology for computing gains and losses on account of working capital.

### **Finance Charges**

The other finance charges for FY 2007-08 were Rs. (3) Crores. This is mainly on account of favourable foreign exchange variation. This would result in reduction of the estimated annual revenue requirement of Tata Power - G in FY 2007-08.

#### **1.3.2.6 Return on Equity**

Based on the opening balance of equity, the return of equity at the rate of 14 % works out to be Rs. 152 Crores for FY 2007-08 as against Rs. 152 Crores approved by the Hon'ble Commission.

### 1.3.2.7 Income Tax

After considering the various provisions under the Income Tax Act, the allowances and disallowances under Section 32, Section 43 A, 43 B, Section 80 IA, Section 14 and other relevant sections of the Act, the tax for the year 2007-08 has been separately computed for Tata Power - G as Rs. 120 Crores as against Rs. 44 Crores approved by the Hon'ble Commission.

The Hon'ble Commission's orders in Case No. 64, 65 & 66 of 2007 has ruled the following:

*The Commission agrees with REL's submission that normative interest on loan and normative interest on working capital are not actual expenses and hence, will not be eligible as deductible expenses while computing the income tax.*

Tata Power - G has incorporated the above ruling in the tax workings.

### 1.3.2.8 Capital Expenditure

The total capital expenditure in FY 2007-08 was Rs. 159 Crores against Rs. 175 Crores as approved by the Hon'ble Commission.

### 1.3.2.9 Non Tariff Income

For FY 2007-08, Tata Power - G has a Non-Tariff income of Rs. 27 Crores against Rs.10 Crores approved by the Hon'ble Commission.

### 1.3.3 Annual Fixed Charges for FY 2007-08

Based on the various costs outlined above, the Revised Annual Revenue Requirement of Tata Power - G for FY 2007-08 based on the actual performance is as given below:

**Table 1-5: Revised Annual Fixed Charges – FY 2007-08**

Particulars	Approved by Commission	FY 2007-08 (Actuals)	Rs. Crores
			Difference
O&M Charges	313	301	(12)
Interest on Long Term Loans	23	20	(2)
Interest on Working Capital	89	87	(2)
Interest and Finance Charges	-	(3)	(3)
Depreciation	48	48	(0)
Income Tax	44	120	76
<b>Total Fixed Expenditure</b>	<b>517</b>	<b>574</b>	<b>57</b>
Return on Equity	152	152	(0)
Less: Non-Tariff Income	10	27	17
<b>Annual Fixed Charges</b>	<b>659</b>	<b>699</b>	<b>40</b>

Tata Power - G has achieved availability and capacity index far higher than the normative levels and is therefore eligible to recover full Annual Fixed Charges.

### 1.3.4 Sharing of Gains and Losses in FY 2007-08

The Hon'ble Commission in the Tariff Regulations had approved a methodology for treatment of sharing of gains and sharing of losses. Tata Power - G in this submission has presented the actual expenditure on account of various heads of expenditure and the reasons for the variations of the same. In this section, the various heads of expenditures have been categorised into two viz. (i) controllable and (ii) uncontrollable. After such categorisation, the gains and loss for controllable expenditure has been computed and the sharing between the distribution licensees and Tata Power - G has been presented for the consideration of the Hon'ble Commission. The treatment to various heads of Expenditure has been given in the Table 4-25.

Based on the classification and the reasons given therein, the quantum of gains and losses offered for sharing is as follows:

#### 1.3.4.1 Fuel Costs

As explained, the changes in fuel cost due to operational parameters of the generation units would be considered as controllable. The total fuel costs at various normative parameters except for Unit 5 and Unit 7 (where actual Heat Rates are considered), the gains and the amount passed on to Distribution licensees are as follows:

**Table 1-6: Gains and Loss due to variation in Fuel Costs – FY 2007-08**

		Rs. Crores					
Particulars		Unit 4	Unit 5	Unit 6	Unit 7	FHC & Other Adjustment	Total Fuel Cost
<b>Fuel Cost (Rs. Crores)</b>	<b>a</b>	<b>476</b>	<b>626</b>	<b>2,116</b>	<b>93</b>	<b>-</b>	<b>3,311</b>
Actual Heat Rate	b	2,497	2,567	2,306	2,001		
Actual Aux Consumption (%)	c	7.39%	4.87%	3.07%	2.37%		
Actual Net Heat Rate	d= b/(1-c)	2,697	2,698	2,379	2,050		
Normative Heat Rate	e	2,565	2,567	2,400	2,001		
Normative Aux Consumption (%)	f	8.00%	5.50%	3.50%	2.75%		
Normative Net Heat Rate	g=e/(1-f)	2,788	2,716	2,487	2,058		
<b>Fuel Cost applying</b>							
<b>Normative Net Heat Rate</b>	<b>h=g/d*a</b>	<b>492</b>	<b>631</b>	<b>2,212</b>	<b>93</b>	<b>-</b>	<b>3,428</b>
<b>(Rs. Crores)</b>							
Net Gains/ (Loss)	i=h-a	16	4	96	0	-	116
<b>Passed on to the Dist. License</b>	<b>j=1/3xi</b>	<b>5</b>	<b>1</b>	<b>32</b>	<b>0</b>	<b>-</b>	<b>39</b>

As can be seen from above, Tata Power - G has passed on the savings to the extent of Rs. 39 Crores.

### 1.3.4.2 O&M Expenditure

Under the O&M Expenditure as outlined in Section 4.2, a number of uncontrollable factors have resulted in an increase in the expenses for FY 2007-08.

**Table 1-7: Gains and loss due to variation in O&M costs – FY 2007-08**

Sr. No.	Particulars	Rs. Crores
1	Approved O&M Expenditure for FY 2007-08	313
2	Actual O&M Expenditure without Brand Equity	301
3	Uncontrollable Expenditure	5
	<i>Water Charges</i>	2
	<i>Upgradation of IT infrastructure</i>	4
<b>4</b>	<b>Actual without Uncontrollable Expenditure (2-3)</b>	<b>296</b>
5	- Amount passed on to the Distribution Licensees (1/3rd of Gain/Loss) (1/3rd *(1)-(4))	6
6	Amount Allowed to be Retained by Tata Power-G	11
<b>7</b>	<b>Net Entitlement (3)+(4)+(6)</b>	<b>313</b>

The total amount being passed on to the Distribution Licensees on account of gains and loss is Rs. 6 Crores.

### 1.3.4.3 Interest on Working Capital

The Hon'ble Commission in its Order dated 2<sup>nd</sup> April 2008 considered the difference between Actual Working Capital and that approved as gains and hence, passed 1/3<sup>rd</sup> of the same to the distribution licensees. Tata Power - G has appealed against the Hon'ble Commission's methodology vide an appeal in the ATE stating that, it has funded its working capital through funds available with the Corporate which have a certain carrying cost.

**Table 1-8: Gains and loss due to variation in Working Capital costs – FY 2007-08**

Sr. No.	Particulars	Rs. Crores
1	Normative interest Working Capital as per approved norms	87
2	Actual Interest on Working Capital	108
3	Uncontrollable Expenditure	
<b>4</b>	<b>Actual without Uncontrollable Expenditure (2-3)</b>	<b>108</b>
5	Amount passed on to the Distribution Licensees (1/3rd of Gain/Loss) (1/3rd *(1)-(4))	(7)
6	Retained by Tata -Power -G	(14)
<b>7</b>	<b>Net Entitlement (3)+(4)+(6)</b>	<b>94</b>

Tata Power –G reserves the right to seek appropriate adjustments in the cost based on the decision of ATE.

### 1.3.5 Revenue from Power Supply

The Revenue from Power supply for Tata Power - G was earned from the following distribution licensees

**Table 1-9: Revenue from Generation Business – FY 2007-08**

Sr. No.	Particulars	Unit	BEST	REL / Rlnfra	Tata Power-D	Total
1	Fixed Charge	Rs. Crores	182	212	100	494
2	Incentive	Rs. Crores	15	18	8	41
3	Hydro Rebate	Rs. Crores	(27)	(31)	(15)	(72)
4	Energy Rate	Rs./kWh	3	3	3	3
5	Energy Sold	Mus	4,086	4,748	2,246	11,080
6	Energy Charge	Rs. Crores	1,355	1,574	745	3,674
7	Cash Discount / Settlement of previous issues	Rs. Crores	(11)	3		(7)
<b>8</b>	<b>Total = 1+2+3+6+7</b>	<b>Rs. Crores</b>	<b>1,515</b>	<b>1,776</b>	<b>839</b>	<b>4,130</b>

### 1.3.6 Tax Reversal

The Hon'ble Commission may recall that Tata Power in the filing for APR – FY 2007-08 had discussed the Tax Reversal (on account of upholding of benefits arising from Section 80 IA as well as other favourable decisions) it had succeeded in obtaining for various years commencing FY 1983- 84. The benefit of the same was also passed on to the Distribution Licensees in the submission. The Hon'ble Commission in its order dated 4<sup>th</sup> June 2008 had considered the benefit arising out this reversal only upto the period FY 2002-03. For the benefit in the period FY 2003-04 onwards, the Hon'ble Commission suggested that the same may be considered along with the impact of the Appellate Tribunal Judgement in the subsequent filing. Tata Power - G in this subsection is presenting the computation of the benefit to be passed on to the consumers from the year FY 2003-04 onwards. The following additional points are to be considered

- The ATE judgement pertained to the period FY 2004-05 and FY 2005-06. Hence the computation of FY 2003-04 would not be impacted by the said ATE judgement;
- There have been additional Tax Reversals on account of Section 80 IA computations recognized in the year FY 2007-08. Such benefits have also been passed on to the distribution licensees
- The principles of Sixth Schedule of Electricity (Supply) Act 1948 is applicable upto FY 2006-07

The benefit to be passed on the consumers is computed in the table below:

**Table 1-10: Tax Reversal passed on the Distribution Licensee – FY 2007-08**

		Rs. Crores				
		FY2003-04	FY2004-05	FY 2005-06	FY2006-07	Total
(i)	Tax Reversals pertaining to the years FY 84 onwards -Shown in APR FY 08	42	31	30		
(ii)	Additional Tax Reversals -Shown in this APR FY 09	6	8	12	1	
<b>(iii)=(i)+(ii)</b>	<b>Total</b>	<b>48</b>	<b>39</b>	<b>42</b>	<b>1</b>	
(iv)	Tax claimed by TPC in their Filing based on actuals	224	138	160		
(v)= (iv)-(iii)	Tax that would have been claimed had the adjustments taken place in respective years	176	99	118		
(vi)	Tax Approved by the Hon'ble Commission in the Tariff Order for TPC	128	105	110		
(vii)	Tax Amt restored due to ATE Judgement		33	50		
<b>(viii)=(vi)+(vii)</b>	<b>Total Amt requested to be Approved (including the amount restored)</b>	<b>128</b>	<b>138</b>	<b>160</b>		
(v)	The amount by which CP would have exceeded RR owing to tax reversal = If (viii) is greater than (v) then (viii)-(v) else Nil	-	39	42		
(vi)= 1/3 of (v)	Transfer to T&D Reserve out of the excess through application of the provisions of the Sixth Schedule of the ESA 1948 Act	-	13	14		
<b>(vii) = 1/3 of (v)</b>	<b>Share of the consumers relating to the amount in (v) above through application of provisions of Sixth Schedule of the ESA 1948 Act</b>	<b>-</b>	<b>13</b>	<b>14</b>	<b>1</b>	<b>28</b>

Accordingly an amount of Rs. 28 Crores would be passed on to the Distribution Licensee which has been included in the computation of Gap / Surplus for FY 2007-08.

### 1.3.7 Net Annual Revenue Requirement and Gap for FY 2007-08

In summary, the break-up of the expenses for FY 2007-08 along with the adjustments on account of sharing of gains and losses is as follows:

**Table 1-11: Annual Revenue Requirement – FY 2007-08**

Sr. No.	Particulars	FY 2007-08			Rs. Crores
		Approved	Entitlement as per the Regulations	Efficiency Gains / (Loss) from Controllable factors shared with Consumers	Net Entitlement (Including Transfer to Reserves) after Impact of Gains / (Loss) from Controllable factors
<b>I</b>	<b>Revenue</b>				<b>4,157</b>
	- Power Supply				4,130
	- Non-Tariff Income	10			27
<b>II</b>	<b>Expenditure</b>				
1	Fuel Related Expenses	2,986	3,428	39	3,389
2	Operation & Maintenance Expenses	313	318	6	313
3	Depreciation, including advance against depreciation	48	48		48
4	Interest on Long-term Loan Capital	23	20		20
5	Interest on Working Capital	89	87	(7)	94
6	Other Finance Charges	-	(3)		(3)
7	Income tax	44	120		120
8	Return on Equity	152	152		152
<b>9</b>	<b>Total Expenditure</b>	<b>3,655</b>	<b>4,170</b>	<b>37</b>	<b>4,133</b>
10	Incentive		41		41
<b>11</b>	<b>Total Incl. Incentive</b>		<b>4,211</b>		<b>4,174</b>
<b>III</b>	<b>Gap/(Surplus)</b>				<b>17</b>
<b>IV</b>	<b>Impact of Tax Reversal</b>				<b>(28)</b>
<b>V</b>	<b>Add Excess Recovery -Page 40 of 106 of TPC-D Order dated 4th June 08</b>				<b>(46)</b>
<b>VI</b>	<b>Net Gap/(Surplus)</b>				<b>(57)</b>

We request the Hon'ble Commission to kindly approve the above entitlement, Revenue and the Gap/Surplus arising there from for the year FY 2007-08.

### 1.3.8 Sharing of Surplus / Gap

Tata Power – G proposes to share the Surplus / Gap worked out above in the ratio of the sharing of the fixed costs or share of Tata Power - G capacity. The share of each Distribution Licensee is as follows:

**Table 1-12: Share of the Gap/ (Surplus) – FY 2007-08**

Dist. Licensees	Share of Gap / Surplus = Share of Tata Power -G Cap	Share of Gap/Surplus (Rs Crores)
BEST	36.88%	(21)
Rlnfra	42.85%	(24)
Tata Power - D	20.27%	(11)
<b>Total</b>	<b>100.00%</b>	<b>(57)</b>

The above surplus has been presented without the carrying cost. The surplus for FY 2007-08 along with the carrying cost (negative) and the share of each distribution licensee is presented in the Chapter 7. Tata Power – G request the Hon'ble Commission to share this surplus (along with the carrying cost) with the three distribution licensees viz. BEST, Rlnfra and Tata Power – D.

#### **1.4 Appellate Tribunal for Electricity (ATE) judgement dated 12<sup>th</sup> May 2008**

The Tariff order for FY 2006-07 was passed on 3<sup>rd</sup> October 2006. In the said order, the Hon'ble Commission had carried out the truing up of the expenditure for FY 2004-05 and FY 2005-06. The Hon'ble Commission had disallowed certain quantum of expenditure under different heads for the two years. Tata Power then filed a review petition against the said tariff order with the Hon'ble Commission.

The Hon'ble Commission thereafter passed the order on the review petition on 22<sup>nd</sup> March 2008 in which it maintained its stand (except on one matter) as taken in the Tariff Order dated 3<sup>rd</sup> October 2006. Tata Power then filed an appeal against the order of the Hon'ble Commission dated 22<sup>nd</sup> March 2008 in the Hon'ble Appellate Tribunal for Electricity (ATE).

The ATE passed an order on 12<sup>th</sup> May 2008 in the said matter. The ATE has allowed Tata Power appeal on those issues. Consequent to the ATE order, Tata Power is entitled to recover the amount of disallowed expenditure.

The ATE order discusses various issues and the amounts entitled to be recovered by Tata Power consequent to the ATE order are as follows:

- Depreciation
- Income Tax
- Employee Expenditure
- A&G Expenses
- R&M Expenses
- Drawal from Statutory Reserves
- Income Tax adjustment
- Disallowed Capital Expenditure
- Departure from Mercantile System

The issues have been stated and discussed in details in Chapter 5.

##### **1.4.1 Summary of Recoverable Amount**

The summary of the amounts recoverable through Tariff are as follows. The Hon'ble Commission had disallowed these amounts for FY 2004-05 and FY 2005-06 and considered the impact of the same in the determination of the Tariff for FY 2006-07. If these amounts are to be recovered in the year FY 2009-10, interest for 3-4 years would accrue. As these items are largely revenue based, this interest has been calculated based on the rate allowed

by the Hon'ble Commission for working Capital. Accordingly the interest works out to Rs. 137 Crores on the total amount as given in the table below.

**Table 1-13: Amount Recoverable from the Tariff**

				Rs. Crores
Sr. No.	Issue	FY 2004-05	FY 2005-06	Total
1	Depreciation	41	4	45
2	Income Tax	33	50	83
3	Employee Expenditure	-	12	12
4	R&M Expenditure	2	1	3
5	A&G Expenditure	19	16	35
6	Interest on Disallowed Capex	5	5	10
7	Departure from Mercantile System	(101)	356	255
<b>8</b>	<b>Total</b>	<b>(1)</b>	<b>444</b>	<b>443</b>
9	Interest for 4 years	(0)		(0)
10	Interest for 3 years		137	137
<b>11</b>	<b>Total Recovery including Interest</b>	<b>(2)</b>	<b>581</b>	<b>579</b>

#### 1.4.2 Recovery of the amount from the Consumers/Licensees

As the amount pertains to the period when Tata Power was operating as an integrated utility, this amount would be recoverable from all the three licensees viz. BEST, Rlnfra and Tata Power-D. The recovery is therefore proposed on the ratio of total sales in the two years together viz. FY 2004-05 and FY 2005-06. The amount recoverable from each Distribution Licensee is as follows:

**Table 1-14: Amount Recoverable from the Distribution Licensees**

							Rs. Crores
Licensee	FY 2004-05 Sales (MU)	Ratio of Sales FY 2004-05	Share of Each Licensee	FY 2005-06 Sales (MU)	Ratio of Sales FY 2005-06	Share of Each Licensee	Total Share of Each Licensee
BEST	3,352	35%	(1)	3,924	38%	219	218
REL	3,962	41%	(1)	4,155	40%	232	231
TPC-D	2,269	24%	(0)	2,336	22%	130	130
<b>Total</b>	<b>9,583</b>	<b>100%</b>	<b>(2)</b>	<b>10,415</b>	<b>100%</b>	<b>581</b>	<b>579</b>

Tata Power requests the Hon'ble Commission to direct BEST and Rlnfra to pay the amount as given in the above table in the year FY 2009-10. As regards the recovery from Tata Power -D, amount to Rs. 130 Crores is included in the ARR for Tata Power - D for the year FY 2009-10.

## 1.5 Performance of FY 2008-09

This section deals with the performance for FY 2008-09, which takes into consideration, MYT filing of Tata Power - G for FY 2007-08, MYT Order for FY 2007-08 issued by the Hon'ble Commission, the provisional truing up carried out by the Hon'ble Commission in the Tariff Order for FY 2008-09, the actual performance for H1 of FY 2008-09 (April 2008 - September 2008) and the estimated performance for H2 for FY 2008-09 (October 2008 - March 2009).

### 1.5.1 Operational Performance for FY 2008-09

#### 1.5.1.1 Generation

The estimated Generation of Tata Power - G for FY 2008-09 is broadly as under:

**Table 1-15: Gross Generation - FY 2008-09**

Generating Station	Approved by Commission	(MUs)		
		H1 Actuals	H2 Revised Estimates	FY 2008-09 Revised Estimates
<b>Hydro Stations</b>				
Khopoli		163	117	
Bhivpuri		101	193	
Bhira		246	328	
<b>Total Hydro</b>	<b>1,375</b>	<b>510</b>	<b>638</b>	<b>1,148</b>
<b>Thermal</b>				
Unit 4	573	437	356	793
Unit 5	4,317	2,154	1,995	4,149
Unit 6	3,556	2,009	1,383	3,392
Unit 7	1,303	453	662	1,115
<b>Total Thermal</b>	<b>9,750</b>	<b>5,052</b>	<b>4,396</b>	<b>9,448</b>

The hydro generation for FY 2008-09 is likely to be lower ( 227 MUs) as compared with that approved by the Hon'ble Commission. The reduced generation is primarily resulting from compliance with the KWTA regulations.

The overall thermal generation is also expected to be marginally lower by 3.1% than the approved levels mainly on account of extended outage of Unit 7.

#### 1.5.1.2 Heat Rates

Heat Rate for Unit 4, Unit 6 and Unit 7 are likely to be within the levels approved by the Hon'ble Commission. However, in case of Unit 5, the Heat Rate is expected to be higher than those approved by the Hon'ble Commission on account of enhanced generation leading to increased coal firing.

It is submitted that Tata Power - G in its APR filing had sought a heat rate of 2512 kcal/kWh for Unit 5 taking into consideration various aspects. Against this, the Hon'ble Commission has approved a heat rate 2494 kcal/kWh in FY 2008-09. The estimated heat rate in FY 2008-09 would be 2539 kcal/kWh which is in line with what Tata Power – G had sought in the filing.

On an overall basis, the heat rate of Trombay Power Station is expected to be marginally higher at 2403 kcal/kWh than the Heat rate of 2394 kcal/kWh approved for FY 2008-09 mainly due to higher generation on coal. Tata Power - G therefore request the Hon'ble Commission to allow the higher projected heat rate for the current year ( 2539 kcal/kWh) and approve heat rate as requested for in the petition for the future years for Unit 5.

### **1.5.1.3 Auxiliary Consumption**

Each Unit of Trombay Power Station is expected to operate within the levels approved by the Hon'ble Commission.

### **1.5.2 Financial Performance – Expenditure – FY 2008-09**

The expected performance of Tata Power - G in FY 2008-09 under some of the key heads is stated in the sections below:

#### **1.5.2.1 Fuel Costs**

The total fuel cost for FY 2008-09 is estimated to be Rs. 4,152 Crores, as against the estimate of Rs. 3,301 Crores approved by the Hon'ble Commission. The increased fuel costs are largely on account of the increased fuel prices for coal, gas and oil during FY 2008-09.

#### **1.5.2.2 O&M Expenditure**

The O&M expenditure for FY 2008-09 is expected to be about Rs. 325 Crores (excluding brand equity of Rs. 8 Crores), as compared to Rs. 329 Crores approved by the Hon'ble Commission.

#### **1.5.2.3 Depreciation**

Depreciation for the year FY 2008-09 is estimated at Rs. 51 Crores as against Rs. 61 Crores approved by the Hon'ble Commission.

#### **1.5.2.4 Interest and Finance Charges**

The expenditure under this head has been estimated under three heads viz. (i) Interest on Debt, (ii) Interest on Working Capital (iii) Other Finance Charges

### **Interest on Debt**

In addition to the interest on normative loans for the previous years (70% of Capex of FY04 and 70% of capitalisation of FY 2004-05, FY 2005-06, FY 2006-07), Tata Power has availed loans from IDFC (Rs.450 Crores) and IDBI (Rs.400 Crores). The Interest and Finance Charges for the year FY 2008-09 have been computed based on the interest on capitalisation for previous years and the expenditure to be capitalised in FY 2008-09 considering a debt-equity ratio of 70:30..

- **IDFC Loan**

Tata Power has raised a loan of Rs. 450 Crores from IDFC to fund its current capital expenditure on the following terms:

Tenor :	3 year moratorium + 9 years
Repayment:	35 quarterly instalment of Rs. 5.65 Cr & 36 <sup>th</sup> instalment of Rs. 252.25 Cr.
Interest rate:	Benchmark rate (5 years G-Sec Rate) + 1.45% p.a. (payable monthly) If the Company has a rating of AAA 6 months prior to interest reset date. (Subject to minimum of 8.90%) If the Company is not able to maintain a rating of AAA, then IDFC will have the right to revise the spread.

As can be seen from the above table, the interest rate is liable to vary over a period of time. Through a letter dated 29<sup>th</sup> September 2008, IDFC has sought to reset the interest rate to 13% from 29<sup>th</sup> September 2008 for a period of one year. Accordingly, Tata Power has considered an average rate of 10.95% (average of 8.9% and 13%) for the year FY 2008-09.

- **IDBI Loan**

Tata Power - G has raised a loan of Rs. 400 Crores from IDBI for additional funding for its capital expenditure on the following terms:

Tenor :	3 year moratorium + 9 years
Repayment:	5% every year for 9 years after moratorium period and balance in the 10 <sup>th</sup> year
Interest rate:	Benchmark rate (SBI PLR) - 2.76% p.a. (IDBI has right to review cost of loan before final disbursement)

The various quantum of disbursement in the year FY 2008-09 under the said loan is as follows:

**Table 1-16: IDBI Loan & Interest Rates - FY 2008-09**

<b>Month of Disbursement</b>	<b>Quantum of Disbursement (Rs Crores)</b>	<b>Net Rate of Interest (%)</b>
End Mar-08	200.00	10.50%
Aug-08	92.00	11.50%
Oct-08	84.00	14.00%
<b>Total</b>	<b>376.00</b>	<b>11.53%</b>

Hence an average rate of 11.53% percent has been considered for interest on capitalisation of assets in FY 2008-09.

Considering above, the interest charges for FY 2008-09 are estimated at Rs. 35 Crores vis-à-vis Rs. 34 Crores approved by the Hon'ble Commission. This difference is on account of the revised interest rates on the loans availed from IDFC and IDBI in line with the prevailing conditions in the financial markets.

In the above computations of interest rates, the quantum of IDBI loan is being utilised for all the three functions viz. Tata Power – G, Tata Power – T and Tata Power – D. Based on the capitalisation considered for the three functions, the quantum of Rs 400 Crores of IDBI loan may not be sufficient. Hence Tata Power – G may have to borrow additionally (including other sources) to finance its Capital Expenditure in the year FY 2008–09. Pending finalisation of additional loans, for the purpose of estimation of interest for the year, it is assumed that the additional loans would be available at the terms considered above. The impact of actual loans on the interest cost would be included during the truing up for FY 2008-09.

### **Interest on Working Capital**

The Interest on working capital computed based on an interest rate of 12.75% and as per the elements specified in the tariff regulations by the Hon'ble Commission for FY 2008-09 works out to Rs. 129 Crores.

As discussed in Section 4.6.3 , Tata Power - G submits that the Interest on actual working capital requirement at normative interest rates (SBI PLR) should be considered as interest on working capital for computation of gains and losses. Accordingly, Tata Power - G has computed the interest on actual working capital at Rs. 133 Crores.

It is submitted that the total interest paid by Tata Power for short term loan taken for H1 of FY 2008-09 works out to Rs. 7 Crores. Hence, the interest on such short term loans for the year has been estimated to be Rs. 15 Crores. The share of Tata Power – G on the basis of the normative working capital share in total working capital in Tata Power Operations works out to Rs. 13 Crores. In addition, Tata Power has also financed the Working Capital needs through line of Buyer's Credit. The cost of financing of this Buyers Credit for H1 of FY 2008-09 worked out to Rs 33.2 Crores. No projections for H2 of FY 2008-09 are available at this

point of time as this amount is sensitive to the Foreign Exchange Rate which is presently very volatile. Hence, the total actual interest on working capital for FY 2008-09 is projected to be Rs. 46 Crores.

### **Finance Charges**

The finance charges are estimated at Rs. (0.19) Crores against the amount of NIL approved by the Hon'ble Commission.

#### **1.5.2.5 Share of Tata Power's Load Control Centre (LCC) Charges**

The apportionment of LCC charges for the year FY 2008-09 to Tata Power - G is worked out to Rs. 2 Crores. The computation of LCC charges have been submitted in the APR petition of Tata Power – T for FY 2008-09

#### **1.5.2.6 Return on Equity**

Based on the opening balance of equity, the return of equity at 14 % works out to be Rs. 154 Crores as against Rs. 157 Crores approved by the Hon'ble Commission.

#### **1.5.2.7 Income Tax**

Tax provision for FY 2008-09 determined based on the applicable tax rate on the Return on Equity amounts to Rs. 88 Crores. The tax computations are based on the Tax WDV of the assets and the various applicable provisions u/s 14A, 32A, 43A, and 43B of the IT Act, 1961. Tata Power - G has incorporated the ruling of the Hon'ble Commission in Case No. 64, 65 & 66 of 2007 in the tax workings.

#### **1.5.2.8 Capital Expenditure**

The capital expenditure for FY 2008-09 is now expected to be Rs. 356 Crores as against Rs. 276 Crores approved by the Hon'ble Commission.

#### **1.5.2.9 Non Tariff Income**

The Non-Tariff Income for Tata Power - G for the FY 2008-09 is estimated at Rs. 13 Crores as against Rs. 9 Crores approved by the Hon'ble Commission.

#### **1.5.2.10 Incentive**

In accordance with the Tariff Regulations, the estimated incentive on Thermal and Hydro Generation is expected to be Rs. 32 Crores.

### 1.5.3 Annual Fixed Charges for FY 2008-09

Based on the various costs as outlined above, the estimated Annual Fixed Charges for FY 2008-09 are as given below:

**Table 1-17: Revised Annual Fixed Charges – FY 2008-09**

Particulars	Approved by Commission	Rs. Crores
		FY 2008-09 Revised Estimates
O&M Charges	329	325
Interest on Long Term Loans	34	35
Interest on Working Capital	99	129
Interest and Finance Charges	-	(0)
Depreciation	61	51
Return on Equity	157	154
Income Tax	45	88
Allocation of LCC Charges	-	2.03
Less: Non Tariff Income	9	13
<b>Annual Fixed Charges</b>	<b>716</b>	<b>771</b>

Tata Power - G is likely to achieve availability and capacity index far higher than the normative levels and is therefore eligible to recover full Annual Fixed Charges. In addition to the above Annual Fixed Charges, Tata Power - G would be entitled for an incentive as discussed earlier.

### 1.5.4 Sharing of Gains and Losses for FY 2008-09

Based on the explanations made in Section 4.14, the gains and losses for FY 2007-08 work out to as follows:

#### 1.5.4.1 Fuel Costs

The fuel cost, computed based on the approved Heat Rates and auxiliary consumption, except for Unit 5 where Tata Power - G has sought an increase, is as indicated in the table below:

**Table 1-18: Fuel Costs based on Approved Norms – FY 2008-09**

							Rs. Crores
Particular		Unit 4	Unit 5	Unit 6	Unit 7	FHC & Other Adjustment	Total Fuel Cost
<b>Fuel Cost (Rs. Crores)</b>	<b>a</b>	<b>633</b>	<b>1,101</b>	<b>2,341</b>	<b>77</b>		<b>4,152</b>
Actual Heat Rate	b	2,522	2,539	2,353	1,968		
Actual Aux Consumption (%)	c	7.5%	4.8%	3.3%	2.4%		
Actual Net Heat Rate	d= b/(1-c)	2,726	2,667	2,433	2,017		
Normative Heat Rate	e	2,570	2,539	2,400	1,971		
Normative Aux Consumption (%)	f	8.0%	5.5%	3.5%	2.8%		
Normative Net Heat Rate	g=e/(1-f)	2,793	2,686	2,487	2,027		
<b>Fuel Cost applying Normative Net Heat Rate (Rs. Crores)</b>	<b>h=g/d*a</b>	<b>649</b>	<b>1,109</b>	<b>2,393</b>	<b>77</b>		<b>4,228</b>
Net Gains/ (Loss)	i=h-a	16	8	52	0	-	76
<b>Passed on to the Dist. Licenses</b>	<b>j=1/3xi</b>	<b>5</b>	<b>3</b>	<b>17</b>	<b>0</b>	<b>-</b>	<b>25</b>

As can be seen from above, Tata Power - G has passed on the benefit of Rs. 25 Crores to the Distribution Licensees.

#### 1.5.4.2 O&M Expenditure

The gains and loss on account of the variation in O & M expenditure is as follows:

**Table 1-19: Gains and loss due to variation in O&M costs – FY 2008-09**

Sr. No.	Particulars	Rs. Crores
1	Approved O&M Expenditure for FY 2008-09	: 329
2	Actual O&M Expenditure without Brand Equity	: 325
3	Uncontrollable Expenditure	: -
<b>4</b>	<b>Actual without Uncontrollable Expenditure (2-3)</b>	<b>: 325</b>
<b>5</b>	<b>- Amount passed on to the Distribution Licensees (1/3rd of Gain/Loss) (1/3rd *(1)-(4))</b>	<b>: 1</b>
<b>6</b>	<b>Amount Allowed to be Retained by Tata Power-G</b>	<b>: 3</b>
<b>7</b>	<b>Net Entitlement (3)+(4)+(6)</b>	<b>: 327</b>

#### 1.5.4.3 Interest on Working Capital

The gains and loss on account of the variation under this head is worked out as follows:

**Table 1-20: Gains and losses due to variation in Working Capital costs – FY 2008-09**

Sr. No.	Particulars	Rs. Crores
1	Normative interest Working Capital as per approved norms	129
2	Actual Interest on Working Capital	133
3	Uncontrollable Expenditure	-
<b>4</b>	<b>Actual without Uncontrollable Expenditure (2-3)</b>	<b>133</b>
<b>5</b>	<b>- Amount passed on to the Distribution Licensees (1/3rd of Gain / Loss) (1/3rd *(1)-(4))</b>	<b>(1)</b>
<b>6</b>	<b>Net Entitlement (1)+(2)+(5)</b>	<b>130</b>

### 1.5.5 Revenue from Power Supply

The Hon'ble Commission had approved of the Fixed Charges from Unit 4 to 7 and from Hydro Units. The Fixed Charges and Energy Charges for Unit 8 were approved separately on provisional basis. The revenue recovered from the distribution licensees for Tata Power – G for units other than Unit 8 is presented below:

**Table 1-21: Revenue from Generation Business – FY 2008-09**

Sr. No.	Particulars	Unit	BEST		REL		Tata Power-D		Total
			H1	H2	H1	H2	H1	H2	
1	Fixed Charge	Rs. Crores	122	122	76	76	72	72	540
2	Incentive	Rs. Crores	7	5	5	3	4	3	27
2	Hydro Rebate	Rs. Crores	(22)	(22)	(13)	(13)	(13)	(13)	(98.41)
3	Energy Rate	Rs./kWh	4.71	3.92	4.71	3.92	4.71	3.92	4.33
4	Energy Sold	Mus	2,409	2,180	1,506	1,363	1,436	1,300	10,194
5	Energy Charge	Rs. Crores	1,134	854	709	534	676	509	4,417
<b>6</b>	<b>Total = 1+3+4+5</b>	<b>Rs. Crores</b>	<b>1,241</b>	<b>958</b>	<b>776</b>	<b>600</b>	<b>740</b>	<b>571</b>	<b>4,885</b>

### 1.5.6 Net Annual Revenue Requirement and Gap for FY 2008-09

The break-up of the expenses for FY 2008-09 along with the adjustments on account of sharing of gains and losses is as follows:

**Table 1-22: Net Annual Revenue Requirement for 2008-09**

Sr. No.	Particulars	Approved	FY 2008-09		Rs. Crores
			Entitlement as per the Regulations	Efficiency Gains / (Loss) from Controllable factors shared with Consumers	Net Entitlement (Including Transfer to Reserves) after Impact of Gains / (Loss) from Controllable factors
<b>I</b>	<b>Revenue</b>				<b>4,899</b>
	- Power Supply				4,885
	- Non-Tariff Income	9			13
<b>II</b>	<b>Expenditure</b>				
1	Fuel Related Expenses	3,301	4,228	25	4,203
2	Operation & Maintenance Expenses	329	329	1	327
3	Depreciation, including advance against depreciation	61	51		51
4	Interest on Long-term Loan Capital	34	35		35
5	Interest on Working Capital	99	129	(1)	130
6	Other Finance Charges + LCC	-	2		2
9	Income tax	45	88		88
10	Return on Equity	157	154		154
<b>11</b>	<b>Total Expenditure</b>	<b>4,026</b>	<b>5,016</b>	<b>26</b>	<b>4,991</b>
12	Incentive		32		32
<b>13</b>	<b>Total Incl. Incentive</b>		<b>5,048</b>		<b>5,022</b>
<b>III</b>	<b>Net Gap/(Surplus)</b>				<b>124</b>

### 1.6 Gap/Surplus of FY 2007-08 along with FY 2008-09

Tata Power – G considers it appropriate to bring forward the gap and surplus from the previous years with their carrying cost before discussing the performance of FY 2009-10. The gap/surplus for the years FY 2007-08 and FY 2008-09 along with the cost of carrying is worked out in the table below. The share of each of the distribution licensees is also shown in the table:

**Table 1-23: Sharing of Gap / Surplus – FY 2007-08 with carrying cost.**

Sr. No.	Particulars	Rs. Crores		
		FY 2007-08	FY 2008-09	Total
1	Tata Power-G gap / (surplus)	(57)	124	<b>67</b>
2	Interest for No. of Months	18	6	
3	Rate of Interest*	12.83%	13.00%	
4	Interest Cost	(11)	8	<b>(3)</b>
<b>5</b>	<b>Share of Gap/ (Surplus) with interest cost</b>	<b>(68)</b>	<b>132</b>	<b>64</b>
<b>Sharing of Gap / (Surplus)</b>				
	BEST	(25)	59	34
	Rinfra	(29)	37	8
	Tata Power-D	(14)	35	22
	<b>Total</b>	<b>(68)</b>	<b>132</b>	<b>64</b>

### 1.7 Annual Revenue Requirement for FY 2009-10

Tata Power - G has signed PPAs with BEST and Tata Power-D and the same have been approved by the Hon'ble Commission through its order dated 6<sup>th</sup> November 2007. Generation Capacity of Tata Power - G is being envisaged to be procured by BEST and Tata Power-D in accordance with the said PPAs. These capacities have been approved by the Hon'ble Commission in their Tariff Orders for Tata Power-D and BEST in June 2008. The PPAs also include the capacity allocation to the extent of 150 MW from 250 MW Unit 8 which is expected to be commissioned in January 2009. The PPAs envisage sale of 100 MW capacity to BEST and 50 MW to Tata Power-D from Unit 8. The balance 100 MW capacity from Unit 8 has been contracted to Tata Power Trading Company Ltd (TPTCL) ("TPTCL PPA Capacity").

It may be noted that Rlnfra has not signed any PPA with Tata Power - G so far. The projection on gross and net generation and consequent revenue determination of Tata Power - G for FY 2009-10 has been structured on the assumption (without assuming any obligation) that balance out of the existing capacity ( 1777 MW) i.e. 500MW ("Balance Existing Capacity") available after allocating to BEST and Tata Power-D would be, for the time being, sold at the tariff fixed by the Hon'ble Commission to Rlnfra strictly on a day to day basis, until Tata Power - G finalises a PPA for the said Balance Existing Capacity of 500MW to an appropriate counter party buyer. Any sale of power to Rlnfra out of the said balance 500MW shall at all times be without prejudice to Tata Power - G's right to enter into a long term PPA to sell the said capacity of 500MW or any part thereof to any licensee or consumer in accordance with Section 10(2) and other provisions of the Electricity Act 2003. In so far as Unit 8 is concerned, in terms of the aforesaid approved PPA's only 150 MW has been considered available to BEST and Tata Power -D. As already conveyed earlier, the balance 100 MW from Unit-8 has been contracted to be sold to TPTCL at a negotiated price.

Solely for the purposes of working out the Merit Order Despatch (MoD) from Tata Power - G plants (except for 100 MW TPTCL PPA Capacity from Unit 8) the requirements of the three Distribution Licensees (TPC-D, BEST and Rlnfra) have been considered. It is specifically stated that no liability or obligation to supply power from Tata Power - G to Rlnfra should be inferred there from.

On the basis of the above, the details of the contracted capacities are as given in the table below:

**Table 1-24: Contracted capacity of Tata Power - G (Existing Units) – FY 2009-10**

	PPA Status with Tata Power-G	Contracted Capacity Considered for projections from Existing Plants (MW)	%
<b>BEST</b>	Signed	800	45.02%
<b>Tata Power-D</b>	Signed	477	26.84%
<b>Balance Capacity</b>		500	28.14%
<b>Total</b>		<b>1,777</b>	

The commissioning of Unit 8 is scheduled in January 2009. Based on the PPAs signed, for the purpose of this filing, the capacity of Unit 8 is being shared in the following proportion:

**Table 1-25: Contracted Capacity (Unit 8) – FY 2009-10**

	<b>PPA Status with Tata Power-G</b>	<b>Contracted Capacity considered for projections from Unit 8 (MW)</b>	<b>%</b>
<b>BEST</b>	Signed	100	40.00%
<b>Tata Power-D</b>	Signed	50	20.00%
<b>TPTCL</b>		100	40.00%
<b>Total</b>		<b>250</b>	

Note: Nothing stated in the present ARR filing shall in be construed or implied to confer any right to Rlnfra to demand supply of any quantum of power from Tata Power - G.

### **1.7.1 Energy Requirement**

The forecast of sales to these three Distribution Licensees is based on the historical growth trend. The customer base of the three Distribution Licensees comprises of industrial, commercial and residential customers. From past experience it has been observed that this historical trend method has proved to be reasonably accurate and sufficient for forecasting the load.

In light of the above, Tata Power - G has reviewed the historical trends based on the CAGR of the entire Mumbai requirement for the past 3 years (FY 2004-05 to FY 2007-08). This CAGR has been used to estimate the Mumbai requirement for FY 2009-10 after grossing up for the intervening losses to determine the net generation requirement. After providing for Outages of various Units of Tata Power - G and Rlnfra, the individual dispatch from each Unit of Tata Power - G is determined by running the Merit Order Dispatch (MOD) model for meeting Mumbai requirements.

### **1.7.2 Revenue Requirement of Tata Power - G**

The Tariff chargeable by a Generation Business supplying power to Distribution Licensees has been determined as Energy Charges and Annual Fixed Charge.

### **1.7.3 Energy Charges**

#### **1.7.3.1 Energy Availability**

Tata Power - G currently has an installed capacity of 1777 MW comprising of 447 MW of Hydro and 1330 MW of Thermal Generation. The capacity at Trombay will be enhanced by

250 MW with the commissioning of coal based Unit 8 in January 2009. It is estimated that 1,443 MUs shall be generated from hydro capacity (based on limits imposed by Krishna Water Tribunal Award (KwTA). Thermal capacity is likely to be available at levels far higher than normative levels inspite of the average age of the plants being more than 20 years.

The Tariff Regulations entail projections of the Availability considering the availability of fuel. In this regard, Tata Power - G would like to submit that the present gas supplies to Trombay have been reduced in the recent past and is likely to be less even in FY 2009-10. Such reduction in availability impacts the generation of Unit 7. However, it is further submitted that such gas supplies are totally beyond the control of Tata Power - G. Hence we request the Hon'ble Commission to kindly consider the same and permit Tata Power - G to recover the fixed charges even when the availability is less than 80 % on account of the reduced supply of gas.

**1.7.3.2 Auxiliary Consumption**

The auxiliary consumption for the hydro and thermal generating units has been estimated at the normative levels as approved by the Hon'ble Commission in the MYT order.

**1.7.3.3 Station Heat Rate**

The Heat Rates for Unit 4, Unit 6 and Unit 7 have been considered at the levels approved by the Hon'ble Commission for the year FY 2008-09. However deviations have been taken from those approved for Unit 5.

Unit 5: As mentioned earlier, due to (i) higher coal consumption in Unit 5, (ii) improving of safety in coal mills, and (iii) difference in Heat Rate between that filed during the filing of MYT petition and the approved value i.e. increase in Heat Rate due to quality of coal a higher Heat Rate of 2555 kcal/kWh has been considered for estimation of generation.

Based on the above, the heat rate of Trombay Power station is expected to be only marginally higher at 2402kcal/kWh than the heat rate of 2377 kcal/kWh approved for FY 2009-10.

**Table 1-26: Gross Heat Rate of Tata Power - G Units – FY 2009-10  
(kcal/kWh)**

<b>Generating Station</b>	<b>FY 2008-09 Revised Estimates</b>	<b>Approved by Commission</b>	<b>FY 2009-10 Revised Estimates</b>
Unit 4	2522	2575	2575
Unit 5	2539	2499	2555
Unit 6	2353	2400	2400
Unit 7	1968	1971	1971
<b>Station</b>	<b>2403</b>	<b>2377</b>	<b>2402</b>

### 1.7.4 Energy Balance for FY 2009-10

Based on the Operational parameters, fuel prices and Merit Order Dispatch, the resulting net despatches from various sources of power to meet the energy requirement and the resultant energy balance for the Control Period is as follows:

**Table 1-27: Aggregated Despatch**

<b>Generation</b>	<b>Fuel</b>	<b>MUs</b>
Unit 4	Oil	72
Unit 5	Oil	289
Unit 5	Coal	3,480
Unit 6	Oil	3,704
Unit 6	Gas	37
Unit 7	Gas	1,381
Unit 8 (150 MW)	Coal + Secondary Oil	1,090
Hydel	Water	1,443
<b>Total</b>		<b>11,496</b>

**Table 1-28: Ex-Bus Energy Balance – FY 2009-10**

	<b>MUs</b>
<b>Total Ex-Bus Mumbai Requirement</b>	<b>17,993</b>
Met Through	
<b>Tata Power-G</b>	
- Thermal	10,054
- Hydel	1,443
<b>Total Tata Power-G</b>	<b>11,496</b>
<b>External Sources</b>	
- Rlnfra-Dahanu	4,087
- Power Purchases incl. Renewables	2,410
<b>Total Mumbai Requirement</b>	<b>17,993</b>

#### 1.7.4.1 Generation Costs

Tata Power - G uses Coal, Gas and Fuel Oil as the primary fuels for its generating stations. While coal and oil are imported, Gas is purchased locally. Some portion of the coal supplies are governed by the Fuel Supply Agreements while the gas price is under the Administered Price Mechanism of the MoPNG, Govt of India.

Coal supplies are largely governed by the Fuel Supply/Transportation Agreements while the gas price is under the Administered Price Mechanism of the MoPNG, Govt of India. The following basis has been adopted for estimating the prices of various fuels for the year FY 2009-10:

#### **Coal**

The coal requirement at Trombay would be met by sourcing coal from Indonesia through long term contracts with P T Adaro, P T Samtan and other Indonesian Coal sources.

The FOB Price is arrived at based on the (i) current contract prices, (ii) Validity of the contracts and (iii) International Coal market movement. The FOB price for Indonesian Coal has been estimated to be USD 72.1 / MT. For Freight Tata Power has entered into long term Contract of Affreightment for voyage from Indonesia to India at USD 25 / MT. Hence, freight is estimated at USD 25 / MT for the year FY 2009-10. This contract is a fixed price contract and is not affected by the trends in pricing.

Considering the present structure of duties and levies and on the assumption that this coal would be imported through the jetty of Trombay, the estimated cost of Landed Coal would work out to Rs. 5,343 /MT.

### Gas

The price for FY 2008-09 was around Rs. 4,600 / MT. The Gas sold to power and fertiliser units is under Administrative Price Mechanism (APM). The current gas price is Rs 4,700 / MT. Though the price escalation is due from FY 2008-09, Government of India has not declared the price escalation. An escalation of 10% can be considered for FY 2009-10. The cost of gas thus considered for projections is Rs. 5,113 /MT.

### Oil

The oil market has seen extreme volatility in prices from a peak of USD 150 / barrel to a drop to USD 50 / barrel. Further, the world market scenario along with its recessionary outlook makes it very difficult to predict the likely price in the coming months. In view of this, we have assumed the current price based on the last shipment for estimating the fuel costs on account of oil usage. Therefore, the price of the fuel Oil is projected to be Rs. 20,860 / MT.

#### 1.7.4.2 Energy Charge (Ex Bus Generation)

Based on the fuel prices, GCVs and operational parameters estimated, the Energy Charge for various units is worked out as under:

**Table 1-29: Energy Charge of Generation for FY 2009-10**

Unit	Fuel	Gross Heat Rate (kcal/kWh)	Aux Cons (%)	Net Heat Rate (kcal/kWh)	Cal Value (kcal/kg)	Price (Rs/Tonne)	Rs./kWh
							Energy Charge (Rs/kWh)
Unit 4	Oil	2,575	8.00%	2799	10450	20860	5.59
Unit 4	Gas	2,575	8.00%	2799	13000	5113	1.10
Unit 5	Oil	2,555	5.50%	2704	10450	20860	5.40
Unit 5	Gas	2,555	5.50%	2704	13000	5113	1.06
Unit 5	Coal	2,555	5.50%	2704	4950	5343	2.92
Unit 6	Oil	2,400	3.50%	2487	10450	20860	4.96
Unit 6	Gas	2,400	3.50%	2487	13000	5113	0.98
Unit 7	Gas	1,971	2.75%	2027	13000	5113	0.80
Unit 8*	Coal + Secondary Oil	2,525	9.63%	2794	4950		3.04

\* Worked out considering Coal and Secondary Oil Cost

### 1.7.5 Capital Expenditure

Tata Power - G has planned for the following investments in the Control Period:

**Table 1-30: Summary of Proposed Capital Expenditure & Capitalisation – FY 2009-10**

Particulars	Rs. Crores			
	FY 2008-09	FY 2009-10	FY2008-09	FY 2009-10
	Revised Estimates	Revised Estimates	Revised Estimates	Revised Estimates
	Capital Expenditure		Capitalisation	
<b>Non-DPR Schemes</b>				
Schemes initiated prior to FY05	0	0	-	-
Schemes initiated in FY05	4	0	9	-
Schemes initiated in FY06	5	1	5	1
Schemes initiated in FY07	26	6	30	6
Schemes initiated in FY08	30	10	34	14
Schemes initiated in FY09		39		42
<b>Sub Total</b>	<b>65</b>	<b>57</b>	<b>78</b>	<b>62</b>
<b>DPR Cases</b>				
Schemes initiated prior to FY05	43	2	58	-
Schemes initiated in FY05	40	15	30	-
Schemes initiated in FY06	-			
Schemes initiated in FY07	71	2	70	-
Schemes initiated in FY08	41	13	22	32
Schemes initiated in FY09		43		13
<b>Sub Total</b>	<b>196</b>	<b>75</b>	<b>180</b>	<b>45</b>
<b>Total Carry Forward Schemes</b>	<b>261</b>	<b>131</b>	<b>259</b>	<b>107</b>
<b>New Schemes</b>				
Non-DPR Schemes	83	119	79	98
DPR Cases	0	113	-	-
<b>Sub Total</b>	<b>83</b>	<b>232</b>	<b>79</b>	<b>98</b>
HO & SS Allocation Including Contingency Provision	12	25	12	15
<b>Total New Schemes</b>	<b>95</b>	<b>257</b>	<b>91</b>	<b>113</b>
<b>Total Generation</b>	<b>356</b>	<b>389</b>	<b>350</b>	<b>220</b>

# Incl. IDC

### 1.7.6 Components of Annual Fixed Charges

#### 1.7.6.1 O&M Expenditure

Tata Power - G has computed the O&M expenditure at Rs. 341 Crores based on the norms specified by the Hon'ble Commission.

The Hon'ble Commission had approved a normative based O&M Expenditure for FY 2008-09 for the existing units of Tata Power - G. However due to uncontrollable factors as outlined below, the projected O&M Expenditure is expected to be higher than that approved by the

Hon'ble Commission for FY 2008-09. In line with the principle followed by the Hon'ble Commission, the O&M expenditure has been estimated based on a 6% increase over the costs estimated in FY 2008-09 after considering the various uncontrollable factors.

Based on the principles, the O&M expenses for the FY 2009-10 are as given below:

**Table 1-31: O&M Expenses FY 2009-10**

Particulars	FY 2008-09 Revised Estimates	Approved by Commission	Rs. Crores
			FY 2009-10 Revised Estimates
Employee Expenses	152		156
Administration & General Expenses	84		84
- Less : Brand Equity	(8)		(7)
Repair and maintenance	97		109
<b>Total</b>	<b>325</b>	<b>329</b>	<b>341</b>

#### 1.7.6.2 Interest and Finance Charges

In addition to the interest on normative loans for the previous years (70% of Capex of FY2003-04 and 70% of capitalisation of FY2004-05 and FY 2005-06), actual loans for FY 2006-07 and FY 2007-08, estimates for FY 2008-09 and the 70% of the expenditure to be capitalised in FY 2009-10 (based on 70:30 Debt-Equity ratio) is considered for the purpose of computation of Interest on debt.

- **IDFC Loan**

Tata Power-D had raised a loan of Rs. 450 Crores from IDFC to fund its current capital expenditure on the following terms:

Tenor:	3 year moratorium + 9 years
Repayment:	35 quarterly instalment of Rs. 5.65 Cr & 36th instalment of Rs. 252.25 Cr.
Interest rate:	Benchmark rate (5 year G-Sec Rate) + 1.45% p.a. (payable monthly) If the Company has a rating of AAA 6 months prior to interest reset date. (Subject to minimum of 8.90%) If the Company is not able to maintain a rating of AAA, then IDFC will have the right to revise the spread.

As can be seen from the above table, the interest rate is liable to vary over a period of time. Through a letter dated 29<sup>th</sup> September 2008, IDFC has sought to reset the interest rate to 13% from 29<sup>th</sup> September 2008 for a period of one year. Accordingly, Tata Power - G has considered an average rate of 13% for the year FY 2009-10.

- **IDBI Loan**

Tata Power has taken another loan to the extent of Rs 400 Crores to finance the Capital Expenditure in the Licensed Area from IDBI. The brief terms of payment are as follows:

Tenor:	3 year moratorium + 10 years
Repayment:	5% of the loan amount would be repaid every year for the first nine years and balance in 10 <sup>th</sup> year.
Interest rate:	BPLR (-) 2.76% p.a payable monthly. The interest rate would be fixed on each date of disbursement.

The various quantum of disbursement in the year FY 2008-09 under the said loan have been provided earlier Hence an average rate of 11.53% percent has been considered for capitalisation in FY 2009-10.

Considering above, the interest charges for FY 2009-10 are estimated at Rs. 57 Crores vis-à-vis Rs. 50 Crores approved by the Hon'ble Commission in MYT order. This difference is on account of the upwards revision in interest rates on the loans of IDFC and new loan taken from IDBI. This has resulted from a general rise in the cost of the borrowings in the financial market.

#### **Interest on working Capital**

The Interest on working capital has been computed based on the elements specified in the tariff regulations by the Hon'ble Commission. Accordingly, SBI PLR of 13 % (based on the current PLR) has been assumed for computing the interest on working capital for the Control Period.

The total Interest on Working Capital of Tata Power - G for FY 2009-10 is projected as Rs. 94 Crores as against the approved amount of Rs. 78 Crores in the MYT order.

#### **1.7.6.3 Share of Tata Power's Load Control Centre (LCC) Charges**

The apportionment of LCC charges for the year FY 2008-09 to Tata Power – G is worked out to Rs. 2 Crores.

#### **1.7.6.4 Depreciation**

The depreciation is estimated as Rs. 60 Crores as against Rs. 81 Crores approved by the Hon'ble Commission.

### 1.7.6.5 Return on Equity

Based on the opening balance of equity, the return of equity at 14 % works out to be Rs. 169 Crores as against Rs. 172 Crores approved by the Hon'ble Commission.

### 1.7.6.6 Income Tax

Tax provision for FY 2009-10 determined based on the applicable tax rate on the Return on Equity amounts to Rs. 107 Crores.

### 1.7.6.7 Non-Tariff Income

Considering that (i) the reserves have been adjusted completely by the Hon'ble Commission to bridge the gap and (ii) non-recurring items cannot be predicted, the non-tariff income is estimated at Rs. 17 Crores for FY 2008-09.

### 1.7.7 Summary of Annual Fixed Charges

The Annual Fixed Charges for the Generation Business for the FY 2009-10 are as summarised below:

**Table 1-32: Annual Fixed Charges of Tata Power - G – FY 2009-10**

Particulars	Approved by Commission	Rs. Crores	
		FY 2008-09 Revised Estimates	FY 2009-10 Revised Estimates
O&M Charges	329	325	341
Interest on Long Term Loans	50	35	57
Interest on Working Capital	78	129	94
Interest and Finance Charges	-	(0)	-
Depreciation	81	51	60
Income Tax	31	88	107
LCC Cost Allocation		2.03	2.03
<b>Total Fixed Expenditure</b>	<b>569</b>	<b>630</b>	<b>662</b>
Return on Equity	172	154	169
Less: Non Tariff Income	7	13	17
<b>Annual Fixed Charges</b>	<b>734</b>	<b>771</b>	<b>813</b>

It may be mentioned that as against the approved amount of Rs. 734 Crores, the estimated Annual Fixed Charges is Rs. 813 Crores.

### 1.8 Sale of Power from Unit 8

The 250 MW Unit 8 at Trombay is expected to be commissioned in January 2009. As explained earlier, the Capacity of Unit 8 may be divided into two parts viz. (i) Capacity of 150 MW to be shared between Tata Power-D (50 MW) and BEST (100 MW) as per the PPA

approved by the Hon'ble Commission through the order dated 6<sup>th</sup> November 2007. (ii) Contracted Capacity of 100 MW to TPTCL.

Tata Power - G recognises that Unit 8 is situated at Trombay and therefore shares some of the resources with other units at Trombay. Hence in order to be fair to the consumers of Mumbai, it is proposed to cost the utilisation of the common resources used and also compensate the distribution licensees of Tata Power - G for every unit of sale from the contracted portion (100 MW) of the Unit. Such treatment would also reduce the Annual Fixed Charges of Tata Power - G thereby providing relief to the consumers.

The Hon'ble Commission in its previous order dated 2<sup>nd</sup> April 2008 had approved a provisional tariff for Unit 8. It had also directed Tata Power - G to approach the Commission separately for the approval of the Capital Cost. Tata Power - G would abide by the direction given by the Hon'ble Commission in this regard. In the meantime for the purpose of this submission, we request the Hon'ble Commission to kindly approve the Annual Fixed Charges and the Energy Charges on provisional basis. As mentioned earlier, Unit 8 would be commissioned in January 2009 and accordingly it would run for about 3 months in FY 2008-09 in its stabilisation period (of six months).

The section outlines the computation of the provisional tariff for Unit 8 for the year FY 2009-10 and also discusses the methodology for arriving at the compensation for utilisation of the common resources.

### 1.8.1 Operational Performance for FY 2008-09 and FY 2009-10

#### 1.8.1.1 Generation

The estimated generation Tata Power - G (150 MW) for FY 2008-09 and FY 2009-10 is broadly as under:

**Table 1-33: Gross Generation – FY 2008-09 & FY 2009-10**

Generating Station	MUs	
	FY 2008-09 Revised Estimate	FY 2009-10 Revised Estimate
Unit 8	262	1,206

#### 1.8.1.2 Summary of Operational Parameters

The summary of the operational parameters for FY 2007-08 and FY 2008-09 is as given in the table below:

**Table 1-34: Operational Parameters for Unit 8 – FY 2008-09 & FY 2009-10**

Sr. No.	Particulars		FY 2008-09	FY 2009-10
1	Stabilisation Period	Months	3	3
2	Normal Operation Period	Months	0	9
3	Heat Rate			
	-During Stabilisation Period	kcal/kWh	2600	2600
	-During Normal Operaiton Period	kcal/kWh	2500	2500
4	Normative Aux Consumption	%		
	-During Stabilisation Period		9.00%	9.00%
	-During Normal Operaiton Period		8.5%	8.5%
	Add			
5	Aux Consmpion due FGD	%	1%	1%
6	Total Aux Consumption	%		
	-During Stabilisation Period	%	10.00%	10.00%
	-During Normal Operaiton Period	%	9.50%	9.50%
7	Secondary Oil Consumption	ml/kWh		
	-During Stabilisation Period	ml/kWh	4.50	4.50
	-During Normal Operaiton Period	ml/kWh	2.00	2.00
8	Net Heat Rate			
	-During Stabilisation Period	kcal/kWh	2889	2889
	-During Normal Operaiton Period	kcal/kWh	2762	2762
9	Weighted Avg Gross Heat Rate for the year	kcal/kWh	2600	2525
10	Weighted Avg Net Heat Rate for the year	kcal/kWh	2889	2794
11	Weighted Avg Secondary Oil Consumption for the year		4.5	2.625
12	Weighted Avg Aux. Consumption for the year		10.00%	9.63%

Tata Power – G would like to submit that before computing the energy charges, it would be necessary to consider the impact of Flue Gas Desulphurisation (FGD) plant being commissioned at Trombay Unit 8 to maintain the Sulphur Dioxide contents within limits. The normative auxiliary consumption for 250 MW unit size is 8.5 %. However this norm does not include the consumption to accommodate the auxiliary consumption of FGD plant for the Unit 8. As Unit 8 is incorporated with Flue gas desulphurization plant, the actual auxiliary power requirement for Unit 8 shall be higher than the norm. However, it will only be possible to ascertain the actual auxiliary consumption of FGD plant more realistically only after the actual operation for a reasonable period of time. However, for the present submission, the auxiliary consumption of Dahanu Units of Rlnfra has been considered as a proxy for arriving at the impact of the FGD on Auxiliary Consumption. Accordingly, after making an adjustment for 80 % Capacity of FGD on Unit 8 the additional auxiliary consumption on account of FGD is considered as about 1% for FY 2008-09 & FY 2009-10.

## 1.8.2 Financial Performance – Expenditure

### 1.8.2.1 Fuel Cost

The total fuel cost for FY 2008-09 and FY 2009-10 is estimated to be Rs. 86 Crores and Rs. 331 Crores.

**Table 1-35: Fuel Cost Details - FY 2008-09 & FY 2009-10**

Particulars	Units	
	FY 2008-09 Revised Estimate	FY 2009-10 Revised Estimate
<b>Consumption (MT)</b>		
Coal	135,376	609,121
Oil	1,061	2,849
<b>GCV (kcal)</b>		
Coal	4,950	4,950
Oil	10,450	10,450
<b>Price (Rs./MT)</b>		
Coal	6,136	5,343
Oil	28,070	20,860
<b>Total Fuel Cost (Rs. Crores)</b>	<b>86</b>	<b>331</b>

### 1.8.3 Annual Fixed Charges for Unit 8

The Annual Fixed Charges for Unit 8 comprises of the following

- O&M Expenditure
- Interest on Long Term Debt
- Interest on Working Capital
- Depreciation
- Return on Equity
- Income Tax

The Annual Fixed Charge in the following write-up has been computed for a 250 MW Unit. The Annual Fixed Charges so computed have been scaled down proportionately to arrive at the same for 150 MW capacity.

#### 1.8.3.1 O&M Expenditure

For Unit 8, the O&M expenses have been computed based on the norms specified by the Hon'ble Commission for new capacities. The Hon'ble Commission vide their Regulations on terms and conditions of tariff have specified the norm for computing the O&M for new capacities being commissioned as given below:

“(i) *Coal-based Generating Stations*  
200/210.250 MW sets:

*Rs. 10.82 lakh/MW*

*The above operation and maintenance norms are for the base year commencing April 1, 2005, which shall be escalated at the rate of 4 per cent per annum to arrive at permissible operation and maintenance expenses for the relevant year of tariff period.”*

Unit 8 is being commissioned in FY 2008-09 – based on the above principle, the applicable norm for Unit 8 for FY 2008-09 shall be  $10.82 \times (1.04)^3 = 12.17$  lakhs per MW and for FY 2009-10 the amount would be Rs 12.65 Lakhs per MW. Accordingly, the O&M expense for FY 2008-09 works out to Rs. 8 Crores (3 months operation) and Rs. 32 Crores for FY 2009-10.

#### **1.8.3.2 Interest on Debt**

Considering a capitalised cost of Rs. 1,136 Crores in FY 2008-09 and Rs. 20 Crores in FY 2009-10, the Interest cost for Unit 8 works out to Rs. 23 Crores and Rs. 97 Crores for the year FY 2008-09 & FY 2009-10 respectively.

#### **1.8.3.3 Interest on Working Capital**

The interest on Working Capital has been computed by applying the norms as given in the Tariff Regulations issued by the Hon'ble Commission. This works out to Rs. 22 Crores for FY 2008-09 (one year computation) and Rs. 21 Crores for FY 2009-10. The interest on Working Capital for FY 2008-09 for 3 months of operation therefore works out to Rs. 5 Crores.

#### **1.8.3.4 Depreciation**

The Depreciation for FY 2008-09 is estimated to be Rs. 9 Crores and for FY 2009-10 the same is projected to be Rs. 38 Crores.

#### **1.8.3.5 Return on Equity**

The Return on Equity for FY 2008-09 and FY 2009-10 works out to Rs. 12 Crores and Rs. 48 Crores respectively.

#### **1.8.3.6 Income Tax**

After considering the allowable expenditures under the Income Tax Act 1961, it is estimated that there would be a taxable loss for Unit 8 for FY 2008-09 and for FY 2009-10. Hence the tax for Unit 8 is taken as Nil for the year FY 2008-09 and FY 2009-10.

#### **1.8.4 Annual Fixed Charges for Unit 8**

Based on the above computations, the Annual Fixed Charges for Unit 8 for the year FY 2008-09 and for FY 2009-10 are presented in the table below:

**Table 1-36: Annual Fixed Charge – FY 2008-09 & FY 2009-10**

Particulars	Rs. Crores			
	FY 2008-09	FY 2009-10	FY 2008-09	FY 2009-10
	For 250 MW		For 150 MW (in proportion to total Capacity)	
O&M Charges	8	32	5	19
Interest on Long Term Loans	23	97	14	58
Interest on Working Capital	5	21	3	12
Depreciation	9	38	6	23
Return on Equity	12	48	7	29
Income Tax	-	-	-	-
<b>Annual Fixed Charges</b>	<b>57</b>	<b>235</b>	<b>34</b>	<b>141</b>

### 1.8.5 Energy Charge

The Energy Charge for Unit 8 works out to Rs. 3.04 per kWh as given below:

**Table 1-37: Energy Charge of Unit 8 – FY 2009-10**

Fuel	Norms gm/Kwh*	Cal Value (kcal/kg)	Net Heat Contribution	Price (Rs/Tonne)	Rs./kWh
					Energy Charge (Rs/kWh)
Secondary oil (gms/Kwh)	2.36	10,450	25	20,860	0.05
Coal (Balance)		4,950	2,769	5,343	2.99
<b>Total</b>			<b>2,794</b>		<b>3.04</b>

\* Considering a specific Gravity of 0.9 gm/ml and stabilisation of 3 Months in FY 2009-10

### 1.8.6 Costing of Shared Service utilised by Contracted Capacity of 100 MW with TPTCL

Unit 8 of 250 MW at Trombay is expected to be commissioned in January 2009. With the expected commissioning of 250 MW Unit 8, the total generation capacity at Trombay would be 1580 MW. However as mentioned earlier, out of the 250 MW capacity of Unit 8, 100 MW is contracted with TPTCL. It is realised that this 100 MW would also avail of the common services at Trombay. Accordingly a cost of the commonly shared facilities (services & assets) would need to be apportioned to Unit 8 -100 MW too.

It is proposed to (i) identify the common shared facilities and common assets (ii) identify the various expenditure components for such commonly shared facilities to enable us to arrive at the cost of utilisation of the shared services. This cost can be then used to charge the Merchant/Contracted capacity for its share of capacity as its share towards expenditure incurred for maintaining the shared facilities.

The common facilities and common assets identified for sharing are

- Coal Jetty
- Coal yard
- DM Plant
- Raw Water System
- Switchyard
- CW System
- Administration and Security
- Housing Colony
- Common Roads and Civil Works
- Dredging
- Environmental Monitor
- Ash Handling
- Coal Handling
- Property Tax & Water rates and Taxes

The expenditure components on such common facilities have been identified as follows:

- O&M Expenditure on such common facilities;
  - The total costs on account of shared facilities would include the O&M expenses for the shared facilities including employee salaries;
  - R&M expenses on items like Coal Handling system, Ash Handling system which are utilised only for Coal fired Units are apportioned only on Unit 5 and Unit 8 in proportion to the respective capacities as the other units do not use coal for generation;
  - For the purpose of determining the O&M expenditure contribution, the actual O&M expenses for FY 2007-08 have been taken as reference;
  - Costs have been divided as per usage – e.g. costs relating to ash and coal handling facilities are not allocated to Unit 4,5 and 7;
- Interest on Coal yard and Coal jetty only as the rest of the assets are very old ( circa 1984 -93 ) and the contribution under this head from these assets is negligible;
- Depreciation on Coal yard and Coal jetty only for the reason given above; and
- RoE on Coal yard and Coal jetty only.

For arriving at the total costs, the share of the expenditure by Unit 8 - 100 MW is based on the proportion of this contracted capacity (100 MW) as a % of the total capacity being served by these assets.

**I. Additional Assumptions:**

- The common heads of expenditure has been allocated to various units on the basis of the capacity of the Unit
- Other Financial Assumptions for computation

**Table 1-38: Financial Assumptions – FY 2009-10**

<b>Financial Assumptions</b>	<b>%</b>
Interest Rate for Debt	10%
Depreciation Rate	3.6%
Debt	70%
Equity	30%
ROE	14%

## II. Cost Computation

The break-up of the costs allocated is as given below:

**Table 1-39: Total Allocation to Unit 8- 100 MW**

<b>Particulars</b>		<b>FY 2008-09</b>	<b>FY 2009-10</b>	<b>FY 2010-11</b>	<b>FY 2011-12</b>
Apportionment of Capital Cost to Unit 8 -	Rs.Crores	4	4	4	4
O&M Expenditure (escalated at 5% p.a)	Rs.Crores	4	4	4	4
<b>Total</b>	<b>Rs.Crores</b>	<b>7</b>	<b>8</b>	<b>8</b>	<b>8</b>

The total allocation to the Contracted Capacity works out in the range of Rs. 7 Crores to Rs. 8 Crores per annum. Tata Power - G is of the opinion that the proposed methodology would be fair and at the same time quite simple for computing the charges to be paid by the Contracted Capacity. It is therefore proposed to compensate the Distribution licensees with the above quantum.

### 1.9 Tariff Proposal

#### 1.9.1 Contracted Capacity

On the basis of the explanations for sharing of capacity of Tata Power – G provided earlier, the Contracted Capacity with the distribution licensees considered for projections is as follows:

**Table 1-40: Contracted Capacity (Existing Units) of Tata Power - G**

	<b>PPA Status with Tata Power-G</b>	<b>Contracted Capacity Considered for projections from Existing Plants (MW)</b>	<b>%</b>
<b>BEST</b>	Signed	800	45.02%
<b>Tata Power-D</b>	Signed	477	26.84%
<b>Balance Capacity</b>		500	28.14%
<b>Total</b>		<b>1,777</b>	

**Table 1-41: Contracted Capacity from Unit 8**

	PPA Status with Tata Power-G	Contracted Capacity considered for projections from Unit 8 (MW)	%
<b>BEST</b>	Signed	100	40.00%
<b>Tata Power-D</b>	Signed	50	20.00%
<b>TPTCL</b>		100	40.00%
<b>Total</b>		<b>250</b>	

### 1.9.2 Annual Fixed Charges

The Annual Fixed Charges for FY 2009-10 and the allocation to Thermal and Hydro units is as given the table below. As each unit and station would achieve more than the normative availability and capacity index respectively, Tata Power - G is entitled to full recovery of its Annual Fixed Charges.

**Table 1-42: Annual Fixed Charge – FY 2009-10: Thermal & Hydro Allocation**

Particulars	Rs. Crores			
	Thermal Generation Unit 4 to Unit 7	Unit 8 (150 MW)	Hydro Generation	Total Generation
O&M Charges	270	19	71	360
Interest on Long Term Loans	39	58	18	115
Interest on Working Capital	88	12	6	106
Depreciation	30	23	31	83
Return on Equity	110	29	59	198
Income Tax	70	-	37	107
Allocation of Load Control Centre Cost	1	-	1	2
<b>Gross Fixed Charges</b>	<b>608</b>	<b>141</b>	<b>223</b>	<b>971</b>
Less: Non tariff Income	12	-	6	17
<b>Net Fixed Charges</b>	<b>596</b>	<b>141</b>	<b>217</b>	<b>954</b>

### 1.9.3 Energy Charge

The energy charge for each of thermal units has been computed below:

**Table 1-43: Energy Charge of Generation FY 2009-10**

Unit	Fuel	Gross Heat Rate (kcal/kWh)	Aux Cons (%)	Net Heat Rate (kcal/kWh)	Cal Value (kcal/kg)	Price (Rs/Tonne)	Rs./kWh
							Energy Charge (Rs/kWh)
Unit 4	Oil	2,575	8.00%	2799	10450	20860	5.59
Unit 4	Gas	2,575	8.00%	2799	13000	5113	1.10
Unit 5	Oil	2,555	5.50%	2704	10450	20860	5.40
Unit 5	Gas	2,555	5.50%	2704	13000	5113	1.06
Unit 5	Coal	2,555	5.50%	2704	4950	5343	2.92
Unit 6	Oil	2,400	3.50%	2487	10450	20860	4.96
Unit 6	Gas	2,400	3.50%	2487	13000	5113	0.98
Unit 7	Gas	1,971	2.75%	2027	13000	5113	0.80
Unit 8*	Coal + Secondary Oil	2,525	9.63%	2794	4950		3.04

\* Worked out considering Coal and Secondary Oil Cost

Based on the above, the total indicative tariff from each Unit/Station is as given below:

**Table 1-44: Indicative Total Tariff – FY 2009-10**

Unit	Cap (MW)	Fixed Rate (Rs/kWh)*	Variable Charge (Rs/kWh)	Total (Rs/kWh)
Hydro				
Khopoli	72	1.65		
Bhivpuri	75	1.09		
Bhira	300	0.40		
<b>Total Hydro</b>	<b>447</b>	<b>0.70</b>		<b>0.70</b>
Unit 4-Oil	150	0.11	5.59	5.70
Unit 5-Coal	500	0.68	2.92	3.60
Unit 6-Oil	500	0.62	4.96	5.58
Unit 7-Gas	180	1.04	0.80	1.84
Unit 8-Coal	250	1.61	3.04	4.65
<b>Total Thermal</b>	<b>1,580</b>	<b>0.72</b>	<b>3.48</b>	<b>4.21</b>

\* At 80% PLF or Actual PLF whichever is Higher

#### 1.9.4 Incentive

Incentive shall be computed as per the directives of the Hon'ble Commission and shall be charged based on actual performance of the Tata Power - G for both the hydro and thermal power stations.

#### 1.9.5 Peak and Off Peak Period

The Hon'ble Commission, in order to give the economic signals had considered the Hydro generation in two time periods viz. Peak Period and Off Peak Period. Further different rates were given for the generation from Hydro plants during these periods. The peak period that was specified was from 9 hrs to 12 hrs and from 18 hrs to 22 hrs.



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However, Tata Power - G would like to submit that, it is observed that for Mumbai load the peak period is between 10 hrs to 14 hrs and from 18 hrs to 22 hrs. The Hon'ble Commission is requested to change the period for Mumbai accordingly.

This will also send proper economic signal for hydro facilities to be operated during peak time and signal for hydro unit to control the frequency.