Before the

MAHARASHTRA ELECTRICITY REGULATORY COMMISSION

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Case No. 35 of 2009

In the matter of
The Tata Power Company Limited's Petition for Approval of Capital Cost and Determination of Tariff for Trombay Unit No. 8

Shri V. P. Raja, Chairman
Shri S. B. Kulkarni, Member
Shri V. L. Sonavane, Member

ORDER

The Tata Power Company Ltd
Bombay House
24, Homi Mody Street
Mumbai 400001 .... **Petitioner**

Dated: January 19, 2010

The Tata Power Company Ltd.,(TPC) submitted a Petition under affidavit to the Maharashtra Electricity Regulatory Commission (hereinafter referred to as 'MERC' or 'the Commission') on July 8, 2009 for Approval of Capital Cost and determination of tariff for its recently commissioned Trombay Unit No. 8.

2. TPC under its Petition prayed as under:

   a) *"Accept this Petition for Trombay Unit No. 8 in accordance with the principles contained in Tariff Regulations;*

b) *Condone any inadvertent omissions/ errors/ rounding off differences/ shortcomings and permit Tata Power –G to add/ change/ modify/ alter this filing and make further submissions as may be required at a future date;*
c) *Pass such further and other orders, as the Hon'ble Commission may deem fit and proper, keeping in view the facts and circumstances of the case."*

3. TPC submitted that it has four thermal generating Units operating at their Trombay Thermal Power station as follows:
    - Unit 4 : 150 MW Capacity
    - Unit 5: 500 MW Capacity
    - Unit 6: 500 MW Capacity
    - Unit 7: 180 MW Capacity
4. TPC submitted that it has signed a Memorandum of Understanding (MoU) with Government of Maharashtra (GoM) on April 4, 2005 under the Maharashtra State Policy for investment in the power generation sector for capacity addition (Government Resolution no. PSP 2005/CR 2068/NGR – 7 dated March 28, 2005), that provided administrative and fiscal support to TPC by GoM for setting up power plants. Further, TPC has envisaged setting up of power plants of 1500 MW capacity in Maharashtra under this MoU. TPC submitted that, its Trombay Unit No. 8 of 250 MW capacity is the only generating capacity under this MoU that has been commissioned. TPC further added that it is an expansion of existing generation capacity at Trombay.
5. TPC submitted that as per the conditions of the said MoU, TPC is required to sell power to the extent of 50% within the state of Maharashtra and the balance power will be sold at the discretion of TPC. TPC also submitted that it has signed Power Purchase Agreement (PPA) with various licensees/traders as under:
    - 100 MW capacity of Trombay Unit No. 8 with the Brihanmumbai Electric Supply and Transport Undertaking (BEST)
    - 50 MW capacity of Trombay Unit No. 8 with Tata Power Company –Distribution (TPC -D)
    - 100 MW capacity of Trombay Unit No. 8 with Tata Power Trading Company Limited (TPTCL, an Inter-state trading licensee)
6. TPC submitted that it has filed the present Petition under Sections 61, 62 and 64(1) of the Electricity Act 2003 (EA 2003) and under the MERC (Conduct of Business) Regulations

2004, MERC (Terms and Conditions of Tariff), Regulations, 2005 and orders of the Commission dated June 4, 2008 and May 28, 2009. The present Petition seeks approval of capital cost of Trombay Unit No. 8 and for approval of Tariff for 150 MW (which will be sold within Maharashtra), from the Commission. TPC added that, in its opinion, the Commission has the jurisdiction to regulate the tariff of Generating Companies within Maharashtra as envisaged under Section 86 (1) (a) and (b) of the EA 2003.

TPC also added that it has filed the Petition in accordance with the provisions stipulated in the MERC (Terms and Conditions of Tariff) Regulations, 2005, based on actual project cost till cut-off date of March 31, 2010.

7. The Commission scheduled a Technical Validation Session (TVS) in the matter on September 14, 2009 in the presence of the Consumer Representatives authorized on a standing basis under Section 94(3) of the EA 2003. Notices were issued accordingly.
8. During the TVS, TPC made a presentation on the salient features of the Petition for approval of capital cost and tariff for Trombay Unit No. 8 and requested the Commission to approve capital cost and tariff for Trombay Unit No. 8. The Commission subsequently detailed out the data gaps/ discrepancies/ additional information requirement based on the Petition submitted by TPC and their presentation during TVS.

The summary of submissions of TPC in the Petition is as under:

9. **Components of Tariff**

TPC submitted that in accordance with the MERC (Terms and Conditions of Tariff) Regulations, 2005, the tariff of Trombay Unit No. 8 should consist of two parts, namely, Annual Fixed Charge and Energy Charge.

10. **Annual Fixed Charge**

TPC submitted that Annual Fixed Charge consists of recovery of the following elements:

a) Return on Equity Capital;
b) Interest on Loan Capital;
c) Depreciation including Advance Against Depreciation(AAD);
d) Operation & Maintenance (O&M) expenses;
e) Interest on Working Capital;
f) Income Tax;

11. TPC submitted that it has computed the fixed charges under various heads of expenditure as follows:

I. Capital Cost of Project

- TPC has stated in its Petition that the date of Commercial Operation of Trombay Unit No. 8 was March 29, 2009. The capitalised cost of the project as on the Commercial Operation Date (COD), has been stated as Rs 970 Crores. Further, TPC in their Petition have stated that as per Regulation 30.2 of the MERC (Terms and Conditions of Tariff), Regulations 2005 ("Tariff Regulations") additional capitalization of certain items is permitted till the cut-off date stipulated in these regulations, which in case of Trombay Unit No. 8 works out to March 31, 2010. TPC have stated that the expected capitalization till the cut-off date is estimated at Rs 163 Crores, thereby the total capital expenditure of the Trombay Unit No. 8 would be Rs 1133 Crores.
- TPC further submitted to the Commission that no clearances were sought either from the CEA or from GoM as it was not required, in the case of Trombay Unit No. 8; post Electricity Act 2003 coming into force.
- The item wise summary of the capital costs submitted by TPC in their Petition is as given below: --------Rs Crores------

S. no.	Description	Standalone Cost	Erection Cost	Octroi	Total
1	Cost of Land & Site Development	0.03	0.00	0.00	0.03
2	Steam Generator Island	205.9	24.4	10.6	241.0
3	Turbine Generator Island	203.6	22.6	9.6	235.7
4	BOP Mechanical	71.3	6.2	2.7	80.3
5	BOP Electrical	77.3	7.8	3.4	88.5
6	Control & Instrumentation	13.7	1.6	0.7	16.1
7	Civil Works	165.8	0.0	0.0	165.8
8	Initial Spares	2.0	0.0	0.1	2.1
9	Construction and Pre-Commissioning expenses	43.8	0.0	0.0	43.8
10	Overheads	19.5	0.0	0.0	0
11	Interest During	83.4			83.4

	Construction				
12	Revenue from Infirm Power	(5.6)			(5.6)
	Total	**880.72**	**62.59**	**27.17**	**970.48**

Note: The above cost has been incurred by TPC till CoD for Trombay Unit-8

II. Additional Capitalization

- The details of the expected additional capitalization after COD but before the cut-off date as submitted in the Petition is as given below:

S. no.	Description	Amount (Rs. Crore)
1	Flue Gas Desulphurization-Expenses Incurred	52
2	Modification to 220 kV Switchyard	29
3	Expenditure incurred (before March 31, 2009) by not capitalized due to reconciliation of material jobs	12
4	Procurement of Spares- orders placed but not yet received and hence pending capitalization plus additional procurement in FY 2009-10	21
5	Balance Payment to Main Suppliers	9
5a	*Forex Escalation*	*3.5*
5b	*Pending bills to be raised for supplies made by suppliers*	*1*
5c	*Payment for PG tests*	*3*
5d	*Misc. Expense towards erection*	*1.5*
6	Balance Plant Civil Works	8.5
6a	*Painting Works*	*5*
6b	*Balance Payment with respect to Taxes and Escalation*	*0.5*
6c	*Sewage Works*	*1*
6d	*Paving, fencing and other misc infrastructure*	*1*
6e	*CW and TG Auxiliaries*	*1*
7	Provision for Contract Closure	5
8	Provision for Contract Closure of Civil Items	8
9	CW System Augmentation System	1
10	Other Development Costs-Ancillary Erection Work, housekeeping, Afforestation, admin, salaries yet to be capitalized	5

S. no.	Description	Amount (Rs. Crore)
11	Misc Expenditure towards Salary, Octroi, Legal and Consultants	3
12	Interest During Construction for FY 2009-10	9.7
	Total	**163**

III. Debt: Equity Ratio for funding the Project

- TPC in their Petition submitted that, the Trombay Unit No. 8 project has been financed through a mixture of debt and equity in the ratio of 70:30. The debt and equity components as submitted by TPC are given below:

S. no.	Description	Amount (Rs. Crore)
1	Debt	793
2	Equity	340
	Total Capital Cost	**1133**

IV. Depreciation

- TPC in their Petition have computed depreciation for the year FY 2009-10 on the basis of the assets capitalized till the end of FY 2008-09. The Depreciation for FY 2009-10 is projected to be Rs. 34.93 Crores. TPC have also stated that they have not considered any depreciation on the assets added during the year 2009-10 as the same was not allowed by the Commission in their tariff order for TPC – G. The details of the depreciation, asset class wise is given in the table below:

Asset Class Depreciation	Gross Block as on March 31, 2009	Rate of Depreciation (%)	Depreciation (Rs. Crore) – FY 10
Air Cond Plant – Portable	0.039	18	0.007
Batteries CG	3.148	18	0.567
Bldg others CD	0.795	1.8	0.014
Cool Towers and Waters sys	63.133	3.6	2.273
Face Bldg-Thermal Gen. Plant	67.016	3.6	2.413

Asset Class Depreciation	Gross Block as on March 31, 2009	Rate of Depreciation (%)	Depreciation (Rs. Crore) – FY 10
Fix Tool-3yr COMPUTER	0.032	3.6	0.011
Fixed Tools 3 yrs	0.002	33.4	0.001
Internal Wiring Fit	0.000	30	0.000
Other Civil Works	23.206	6	0.418
Roads Permanent	2.519	1.8	0.045
Switchgear equipment	48.069	3.6	1.73
Thermal Gen. Plant & equip.	703.37	3.6	25.321
Transformer equip.>100 kVA	24.941	3.6	0.898
Underground cables	34.228	3.6	1.232
Grand Total	**970.497**		**34.93**

V. O&M Expenses

- TPC have submitted in their Petition that, as per the MERC (Terms and Conditions of Tariff) Regulations, 2005, the normative parameters of O&M expenses for new generating stations is 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."

- Accordingly, TPC have stated that the applicable O&M expenses for Trombay Unit No. 8 have been computed to be Rs 12.66 lakh / MW, resulting in a total O&M expenditure for FY 2009-10 to be Rs. 31.64 Crores.

VI. Interest on Long Term Loans

- TPC submitted the disbursement of loan for the Trombay Unit No. 8 project as follows: **Rs Crore**

S. no.	Source	Interest Rate (%)	Up to COD	Additional Capitalization	Total
1	IDFC	Floating	355		355

2	IDBI Tranche 1	10.49%	200		200
3	IDBI Tranche 2	11.49%	92		92
4	IDBI Tranche 3	14.00%	32	54	86
5	IDBI Tranche 4	10.74%		20	20
6	IDBI Tranche 5	11.50%		40	40
	Total Debt		**679**	**114**	**793**

- The terms of IDBI loan are as given below:

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 10th year
Interest Rate	BPLR (-) 2.76% p.a. payable monthly. The interest rate would be fixed on each date of disbursement

- The terms of IDFC loan are as given below:

Tenor	3 year moratorium + 9 years
Repayment	35 quarterly instalment of Rs. 5.65 Crores & 36th instalment of Rs. 252.25 Crore
Interest Rate	Benchmark Rate (5 year G-Sec rate) + 1.45% p.a. (Payable monthly). If the company has a rating of AAA 7 months prior to interest rate date (subject to minimum of 8.9%). If the company is not able to maintain a rating of AAA, then IDFC will have the right to revise the spread

VII. Interest on Working Capital

- TPC has submitted in its Petition that it has computed working capital requirement in accordance with Regulation 34.5 of the MERC (Terms and Conditions of Tariff) Regulations, 2005. They have further stated that for calculating the interest due on the working capital, they have considered an interest rate of 13%, in line with what has been considered by the Commission in the APR order for FY 2008-09 dated May 28, 2009 (in the matter of Case No.111 of 2008) for TPC –G. Using this, TPC have computed the interest due on working capital for FY 2009-10 to be Rs 21.45 Crores, the details of which are given below:

S. no.	Particulars	Unit	Stabilization Period	Normal Operation	Total

S. no.	Particulars	Unit	Stabilization Period	Normal Operation	Total
1	Installed Capacity	MW	250	250	
2	Heat Rate of Unit	kcal/kWh	2600	2500	
3	Net No. of Units Generated at 80% Availability	MU	788.4	792.78	1581
4	Energy Charge	Rs./Unit	2.96	2.81	
5	Total Fuel Cost	Rs. Crores	233.19	222.42	456
6	Fixed Charges	Rs. Crores	111.37	111.37	223
7	Total	Rs. Crores	344.57	333.79	678
8	Cost of Coal + Oil for 2 months	Rs. Crores	77.73	74.14	75.94
9	O&M Expenses for one month	Rs. Crores	2.64	2.64	2.64
10	Maintenance of spares 1% historic cost	Rs. Crores	11.33	11.33	11.33
11	Receivables for sale of electricity for two months	Rs. Crores	114.86	111.26	113.06
12	Less: Payables for fuel for one month	Rs. Crores	(38.87)	(37.07)	(37.97)
13	Total Working Capital	Rs. Crores	167.69	162.3	165
14	Rate of Interest	%	13	13	0.13
	Interest on Working Capital	**Rs. Crores**	**10.9**	**10.5**	**21.45**

VIII. Return on Equity (RoE)

- TPC have calculated the return on equity for FY 2009-10 on the normative equity portion of the total assets capitalized at the beginning of FY2009-10. Hence, on an equity portion of Rs 291.14 Crores at the beginning of FY 2009-10, TPC have charged RoE of Rs. 40.76 Crores.

IX. Income Tax

- TPC in their Petition have stated that they have computed the Income Tax liable for FY 2009-10 using the same methodology that has been adopted by the Commission in TPC – G's tariff order dated May 28, 2009 whereby only the tax liable on the return on equity has been allowed as part of fixed tariff calculation. TPC further have grossed up this RoE with the Minimum Alternate Tax (MAT) rate and calculated the MAT payable on Trombay Unit No. 8 as Rs 5.21 Crores. The workings for the same are given below:

Particulars	FY 2009-2010 (250 MW)
Return on Equity (Rs. Crore)	40.76
Minimum Alternate Tax Rate (%)	11.33
Grossed up RoE (Rs. Crore)	45.97
Applicable MAT (Rs. Crore)	5.21

X. Based on the above given computations, TPC have claimed the Annual Fixed Charges for Trombay Unit No. 8 for the year 2009-10 as follows:

Rs Crore

Particulars	FY 2009-10 (250 MW)	FY 2009-10(150 MW In proportion to capacity)
Depreciation	31.65	18.99
O&M	88.75	53.25
Interest on Long Term Loans	21.45	12.87
Interest in Working Capital	34.93	20.96
Income Tax	5.21	3.12
Sub-total fixed expenditure	**181.98**	**109.19**
Return on Equity	40.76	24.46
Annual Fixed Charges	**222.74**	**133.65**

TPC further requested to the Commission that the identified charges be made applicable from April 1, 2009 to enable full recovery of costs of Trombay Unit No. 8.

12. TPC submitted that it has computed the energy charge based on the following parameters and assumptions:

i. Fuel Supply Agreement

TPC in their petition have based the fuel prices as approved in the APR Order for TPC-G dated May 28, 2009 as follows:

Particulars	FY 2009-10
GCV (kcal)	
Coal	5151
Oil	10550
Price (Rs. /MT)	
Coal	5195
Oil	20472

TPC has considered the same prices for determination of energy charge from Trombay Unit No. 8 for FY 2009-10

ii. Performance of Trombay Unit No. 8

- **<u>Quantum of Generation & Plant Load Factor (PLF):</u>**

  TPC, in their tariff Petition, have projected that the annual generation from the 150 MW capacity of Trombay Unit No. 8 allotted to Mumbai License Area Distribution Licensees would be 1206 MUs, thereby giving a plant load factor (PLF) of 91.8%. It has projected the plant availability for the year to be 99%.

- **<u>Station Heat Rate (SHR</u>**):

  TPC further submitted that Regulation 33.1.3 of the MERC (Terms and Conditions of Tariff) Regulations, 2005 stipulates that the gross station heat rate for coal-based generating stations for sets of 200/210/250 MW during the stabilization period as 2600 kcal/kWh and for the subsequent period as 2500 kcal/kWh . TPC has considered SHR of 2600 kcal/kWh during stabilization period (180 Days) and 2500 kcal / kWh for the remaining period of FY 2009-10 in its Petition.

- **Secondary Fuel Oil Consumption**:

  TPC have further submitted that as per the Tariff Norms, the allowable Secondary fuel oil consumption for coal-based generating stations is 4.5 ml/kWh during stabilization period and 2.0 ml/kWh for subsequent period. Accordingly, TPC has projected secondary oil consumption at 4.5 ml/kWh during the stabilization period and 2ml/kWh for the remaining period of FY 2009-10.

- **Auxiliary Energy Consumption**:

  As for the Auxiliary energy consumption, TPC have stated that Trombay Unit No. 8 has a Flue Gas Desulphurization (FGD) plant which has been provided to limit the Sulphur Dioxide emission to meet stipulations of Maharashtra Pollution Control Board (MPCB) for Trombay. The FGD plant would require additional power to operate, resulting in increased auxiliary consumption of Trombay Unit No. 8. The Tariff norms permit an auxiliary consumption of 8.5% after stabilization period but these norms do not include the auxiliary consumption of FGD plant.

  TPC have further stated that the actual auxiliary consumption of the FGD plant can only be known after its operation for a reasonable period of time. For the purpose of this Petition, TPC has stated that the Commission, in its Order on APR Petition of R-Infra(G) for FY 2008-09 (in the matter of Case No. 120 of 2008 dated May 25, 2009), has permitted additional auxiliary consumption on account of the FGD for its Dahanu generating units. Using this as the basis, TPC have projected an increased auxiliary consumption of 1% on account of FGD for the year 2009-10.

Technical Validation Session (TVS)

13. The Commission scheduled a TVS with TPC in the matter of determination of tariff of TPC Trombay Unit No. 8 on September 14, 2009. During the TVS, TPC made a presentation on the salient features of the Petition for approval of tariff for Trombay Unit No. 8 and requested the Commission to approve the tariff for Trombay Unit No. 8. The queries raised by the Commission during the process of the TVS and the response of TPC are given in the following paragraphs:

a) Chronology of events

The Commission enquired from TPC the chronology of events related to implementation of Trombay Unit No. 8 prior to Memorandum of Understanding (MoU) signed with Government of Maharashtra. The Commission also asked TPC to provide details of the minutes of meeting or any record of meetings and discussions held between TPC and GoM prior to signing of the MoU with the GoM. In response to which, TPC submitted that the Trombay Unit No. 8 project was conceived as part of implementation of the MoU and there are no events prior to the signing of MoU that can be directly connected with the setting up of Trombay Unit No. 8.

b) MoU signed with Government of Maharashtra

The Commission enquired from TPC to provide information on commitments made to GoM on allocation of capacity from Trombay Unit No. 8 at the time of signing of MoU. TPC submitted that as per the MoU, with regards to capacity allocation, 50% of the commissioned capacity and the energy generated was required to be sold in the state of Maharashtra, out of the 250 MW capacity of Trombay Unit No. 8,150 MW (being 60% of the unit capacity) has been tied up for sale to BEST and Tata Power-D in Mumbai i.e. in Maharashtra.

c) Regulatory provisions for determination of tariff

The Commission enquired from TPCas to under what provisions of the Act/Regulation/Policy has TPC approached the Commission for the Tariff determination process post the Tariff based competitive bidding guidelines issued by Ministry of Power (MoP), Govt. of India. TPC in this regard referred to :- (i) paragraph 5.1 of Tariff Policy – 2006, (ii) Commission's order in the matter of Case no. 87 of 2006, Case no 88 of 2006 & Case no. 30 of 2007 and (iii) observations of the Delhi Electricity Regulatory Commission in the matter of Case no. 50 of 2008. Relying upon the same, TPC requested the Commission to approve the tariff as proposed in its Petition.

The Commission informed TPC to provide justification for qualifying the Trombay Unit No. 8 project as 'Expansion project' and if TPC at any point of time received any benefits for this project under the MoU signed with GoM. TPC submitted that, the word 'Expansion Project' has neither been defined by the Electricity Act 2003 nor in any of the rules and regulations framed there under. It also submitted that, the expansion project would signify that it is an expansion or extension of an existing generation station. One of the criteria to qualify as expansion project would be the fact that such project would have to set up in the existing land or on an adjacent land. The Trombay Unit No. 8 has been set on the existing land of Tata power at Trombay. TPC also submitted that expansion of any project would involve utilisation of existing resources at that place. TPC submitted that regarding disposal of power generated from the said Trombay Unit No. 8 project, competitive bidding process will not be applicable as it was an expansion project wherefrom the distribution licensees have arranged for procurement of power through negotiated PPAs. TPC further informed the Commission that they have not received any fiscal benefit from the MoU with the Government of Maharashtra.

d) Merchant power sale under Regulatory regime

The Commission directed TPC to provide justification for apportioning 40% of Trombay Unit No. 8 capacity under Merchant basis instead of selling power to any of the distribution licensees in the state, as by adopting this approach it has earned windfall profit. TPC submitted to the Commission that post Electricity Act 2003, the activities of generating companies have been delicensed. Under Section 10(2) of the EA 2003, the generating company has been given freedom to supply electricity to any licensee or person. The same has been confirmed by Hon'ble Supreme Court in the judgement cited in TPC vs. MERC [2009 ELR (SC) 246]. The relevant portion of the judgement is extracted below:

"A generating company, if the liberalization and privatization policy is to be given effect to, must be held to be free to enter into an agreement and in particular long term agreement with the distribution agency, terms and conditions of such an agreement, however, are not unregulated. Such an agreement is subject to grant of

approval by the Commission . The Commission has a duty to check if the allocation of power is reasonable. If the terms and conditions relating to quantity, price, mode of supply the need of the distributing agency vis-à-vis the consumer, keeping in view its long term need are not found to be reasonable, approval may not be granted. A generating company has to make a huge investment and assurances given to it that subject to the provisions of the Act he would be free to generate electricity and supply the same to those who intend to enter into an agreement with it."

Further, the generating company cannot be directed to sell its power to a distribution licensee as upheld by Appellate Tribunal for Electricity in its judgement in Appeals no. 228 and 230 of 2008 in the case of PTC *vs.* CERC. The relevant portion of the judgement is extracted below for perusal:

"On Point B we hold that the IPPs cannot be directed or compelled to enter into PPA directly with distribution utilities exclusively and restriction imposed with respect to sale of power to licensed trader is set aside. The condition imposed in Para 17 (a) is not sustainable, apart from being not in conformity with the provisions of The Electricity Act 2003."

TPC submitted that Tata power-Generation is free to dispose of electricity generated by it from Trombay Unit No. 8 to any person. Out of the 250 MW capacity of Trombay Unit No. 8, Tata power-Generation has entered into a contract to supply 150 MW of power to the distribution licensees i.e. BEST and TPC-D at the price approved by MERC. TPC submitted that, the jurisdiction of the Commission under the Act in the present case may be restricted to determination of generation tariff for the supply of 150 MW to the distribution licensees and not to other transactions carried out by Tata Power-generation on merchant basis. Therefore, the right of Tata Power-Generation to dispose the balance capacity of 100 MW from Trombay Unit No. 8 at any price, which it can discover in the market, continues to hold u/s 10(2) and other provisions of the Act.

TPC also submitted that, where electricity is supplied by a generating company to any person other than a distribution licensee, the tariff is negotiated. The generation tariff is regulated u/s 62 (1) (a) by the Appropriate Commission only in case of supply to a distribution licensee. It would be thus permissible under the current legal regime for Tata Power-Generation to sell its entire capacity from Trombay Unit No. 8 at any price discovered in the market. Such sale does not constitute windfall profit. The expression 'windfall' has been defined by Black's Law Dictionary, 9th edition in the following words:

> *'An unanticipated benefit, usually sizeable, such as that caused by a rise in stock prices or an inheritance.'*

The term 'windfall' therefore applies to fortuitous or unanticipated circumstances. However, sale of power by a generating company at a negotiated tariff is contemplated under the Act for all supplies other than to a distribution licensee. Therefore, the same cannot be treated as windfall profit.

e) The Commission enquired from TPC if it would be right to deduct the windfall profit from the capital cost and what provisions of the EA 2003 restricts the Commission from adopting such an approach.

TPC submitted that the Generating Company is not required to subsidise the regulated tariff from its earning through sale of power on merchant basis. There is no such provision expressly or implied in the Electricity Act 2003. It would be against the very intent of the Act to deny freedom to the generating companies in their generation business.

TPC further submitted that, the provisions of the EA 2003 require the regulated business i.e. distribution and the transmission business to account for profit earned from other business.

Section 41 of EA 2003 provides for other business of transmission licensee as follows:

> ***"Section 41. (Other business of transmission licensee):***
>
> *A transmission licensee may, with prior intimation to the Appropriate Commission, engage in any business for optimum utilisation of its assets:*
>
> *Provided that a proportion of the revenues derived from such business shall, as may be specified by the Appropriate Commission, be utilised for reducing its charges for transmission and wheeling*"

Section 51 of EA 2003 provides for other business of distribution licensee as follows:

> ***"Section 51. (Other businesses of distribution licensees):***
>
> *A distribution licensee may, with prior intimation to the Appropriate Commission, engage in any other business for optimum utilisation of its assets:*
>
> *Provided that a proportion of the revenues derived from such business shall, as may be specified by the concerned State Commission, be utilised for reducing its charges for wheeling:"*

TPC submitted that EA 2003, provides regulation by the Appropriate Commission over the other business earnings of regulated entities i.e. transmission licensee and distribution licensee and the same has been allowed to be utilised for reducing charges as applicable. However, no such provision exists in the Act in relation to a generating company. Generation is not a licensed activity under the EA 2003. The Act allows the generating company to rely on market forces to obtain its return in cases where the generating company offers to supply a certain capacity to a distribution licensee that the tariff determination jurisdiction of the Commission is attracted. The object and purpose of regulatory jurisdiction of Commission is to ensure that the distribution licensee procures power at a reasonable price for the power contracted through a PPA. The idea is not to restrict the profit of a generating company in all cases by regulating all kinds of sale of power by a generating company. Accordingly, it is submitted that the Commission may not be required under law to take into account the price realised by Tata Power-Generation in relation to sale of 100 MW from Trombay Unit No. 8.

TPC further submitted that the Commission can exercise jurisdiction on a generation company only to the extent of any agreement or arrangement entered into by such generating company with a distribution licensee.

f) Capacity allocation and PPA

The Commission asked TPC to provide details regarding the PPA for 100 MW from Trombay Unit No. 8 signed with BEST and allocation of 50 MW to TPC-D. TPC informed the Commission that the allocation of 100 MW capacity from Trombay Unit No. 8 was part of the PPA signed between Tata Power-G and BEST, this PPA was signed in December 2006. TPC further informed that the allocation of 50 MW power to TPC-D was part of the Minutes of Meeting (MoM) signed on December 23, 2006.

TPC further informed the Commission that the PPA and MoM were submitted by filing petitions in the matter of Case no. 87 of 2006 and Case no. 88 of 2006 and were subsequently approved by the Commission.

g) The Commission enquired from TPC as to when was the 250 MW project submitted to financial institutions for financial appraisal with the objective of securing debt portion of the capital cost of the project and whether TPC provided any information to the financial institutions regarding the beneficiaries of the project? TPC informed the Commission that no specific mention of beneficiaries was made in the correspondence with IDBI and IDFC.

The TVS was concluded and the Commission admitted the petition submitted by TPC for further processing. The Commission directed TPC to publish Public Notices in Newspapers in conformity with the requirements of the EA 2003 and the MERC Regulations, for informing the public regarding the salient features of the TPC's Trombay Unit No. 8 project and requesting for written objections, if any, from the public, and giving the intimation regarding the place and venue of the Public Hearing in the matter to be held at the Commission's office on November 24, 2009. Notices were published accordingly.

Public Hearing

14. The Public Hearing in the matter was held on Thursday, November 24, 2009 at 11:00 hours at the Commission's Office at 13th floor, Centre No. 1, World Trade Centre, Cuffe Parade, Mumbai-400005.

15. During the hearing, Mr. Rakshpal Abrol, President of Bharatiya Udhami Avam Upbhokta Sangh, submitted that, as directed by the Supreme Court order dated July 8, 2008, the TATA Power Company Limited (TPC) under the conditions of Licence issued to them can supply the power generated by Trombay Unit No. 8 in Mumbai Licensed Area alone and only surplus power can be made available outside Mumbai.

16. TPC in response to the consumer's objection has submitted to the Commission that the Supreme court's judgment dated July 8, 2008 does not mention any of the conditions stipulated as above that the power generated from Trombay Unit No. 8 needs to be sold to Mumbai license area and only surplus can be sold outside Mumbai. TPC further submitted that, the activities of generation have been de-licensed under the EA 2003; the license granted to Tata Power Company has to be read in a manner consistent with the Act. The license can only be extended to distribution of electricity. It cannot include generation as a regulated activity. The license condition, therefore, cannot be applied to generation activity of Tata Power. The Hon'ble Supreme court in the judgment cited as 2009 ELR (SC) 246 TPC *vs.* MERC has specifically held as follows:

"If by reason of a provision of a statute the generating companies are excluded from the licensing provisions, one of the principal tool of interpretation is that the mischief which was sought to be remedied may not be brought back by a side door. It has to be borne in mind that if the license raj is brought back through the side door or regulations seeking to achieve the same purpose which the Parliament intended to avoid, there would be a possibility of mis-interpretation and mis-application of statute.

17. TPC further informed the Commission that under Section 10 (2) of the EA 2003, the generating company has the freedom of choice to supply electricity to any licensee or person. The same has been confirmed by Hon'ble Supreme Court in the judgment cited as 2009 ELR (SC) 246 TPC *vs.* MERC. The relevant portion of the judgment is extracted below:

    "A generating company, if the liberalization and privatization policy is to be given effect to, must be held to be free to enter into an agreement and in particular long term agreement with the distribution agency, terms and conditions of such an agreement, however, are not unregulated. Such an agreement is subject to grant of approval by the Commission. The Commission has a duty to check if the allocation of power is reasonable. If the terms and conditions relating to quantity, price, mode of supply the need of the distributing agency vis-à-vis the consumer, keeping in view its long term need are not found to be reasonable, approval may not be granted. A generating company has to make a huge investment and assurances given to it that subject to the provisions of the Act he would be free to generate electricity and supply the same to those who intend to enter into an agreement with it."

18. TPC further submitted that, Trombay Unit No. 8 is a new unit Commissioned after the EA 2003 came into force. TPC-G under the present statutory dispensation is free to dispose of electricity generated by it from Trombay Unit No. 8 by sale to any person. The supply of power by TPC-G cannot be restricted within the Mumbai license area since:
    a) There is no obligation on TPC-G to sell electricity only within Mumbai license area
    b) The freedom of generating company to supply electricity to any licensee or person under Section 10 (2) of the EA 2003 cannot be restricted

c) It is not subject to the terms of license
d) Such restrictions will hinder free flow of power across state and violate the principle of Open Access mandated by the EA 2003

19. Mr. Rakshpal Abrol, President of Bharatiya Udhami Avam Upbhokta Sangh, also reminded further that the Commission had approved the tariff for sale of power by TPC, to the erstwhile Maharashtra State Electricity Board (MSEB) at Rs. 2.30 / kWH vide its order for Case No. 30 of 2003 in the matter of "Approval of M/s Tata Power Company's Annual Revenue Requirements for FY 2003-04 & 2004-05, and determination of tariff for FY 2004-05", dated June 1, 2004. TPC did not file any response to this observation. The Commission observes that Trombay Unit-8 sells 100 MW of power to TPTCL which in turn sells it either within the state or outside the state, the Trombay Unit-8 generates power by utilising existing facilities of Unit-4 to Unit-7. The beneficiaries of power generated from Unit-4 to Unit-7 have paid the capacity charges for all such facilities and the Commission at para no.70 has addressed the issue of usage of common facilities of Unit-4 to Unit-7 by Unit-8.

20. There were no further objections to the TPC's proposal and the Public Hearing was concluded.

Commission's Analysis and Ruling

Having heard TPC and objectors, and after considering the materials placed on record, the Commission is of the view as under.

21. **Jurisdiction of the Commission:**

As regards the jurisdiction of the Commission for determination of tariff of Trombay Unit No. 8, Commission is of the following view.

TPC, in its Petition has stated that out of the 250 MW generating capacity of Trombay Unit No. 8, PPAs are in place for total 150 MW, with BEST and TPC-D which are the

Distribution licensees in Mumbai, and that, remaining 100 MW power would be sold through Tata Power Trading Company Limited (TPTCL) who are Inter State traders. The question that is raised here, is, whether in such case, the Commission has the authority to determine the tariff as requisitioned by TPC.

In this connection, the provisions Section 86 (1) (a) and (b) of the EA 2003 state as follows:

> ***Section 86. (Functions of State Commission):*** *--- (1) The State Commission shall discharge the following functions, namely: -*
>
> *(a) determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State:*
> *(b) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;*
> ....
> ....
> Section 79 (1) (a) and (b) of the Electricity Act 2003 states as follows:
>
> ***Section-79. (Functions of Central Commission):*** *--- (1) The Central Commission shall discharge the following functions, namely:-*
> *(a) to regulate the tariff of generating companies owned or controlled by the Central Government;*
> *(b) to regulate the tariff of generating companies other than those owned or controlled by the Central Government specified in clause (a), if such generating companies enter into or otherwise have* ***a composite scheme*** *for generation and sale of electricity in more than one State;*
> *……….*
> *……… (Emphasis added)*

BEST and TPC-D the two distirbution licensees in the state have an approved PPA signed with TPC-G for purchase of electricity from TPC's Trombay Unit No-8.

As per the functions of CERC, defined in Section 79 of EA 2003, CERC has to determine the tariff incase of a plant generating electricity under a "**composite scheme"**. In this respect, CERC in the matter of Petition no. 103 of 2005 dt. March 29, 2006 (involving Uttaranchal Jal Vidyut Nigam limited, Himachal Pradesh State Electricity Board and Uttaranchal Power Corporation Limited) has made the following observations:

"28. A regards the interpretation of the expression "composite scheme" as provided in clause (b) of sub-section 1 of section 79(1) (b) of the Electricity Act, 2003, although the expression has not been defined in the Act, the Commission is of the view that 'composite scheme' is one in which a generating station is originally conceived for the purpose of meeting the power requirements of more than one State. The generating station could be set up in one State but the beneficiaries would be pre-identified and be in more than one State. Traditionally the central generating stations have been set up as 'composite scheme'. Such generating stations had, at their very inception, inter-State beneficiaries identified and consequently the sale from such stations involved more than one State."

Also it has observed that:

"30. It also follows from the above that that a composite scheme is an inter- State scheme under which tariff applicable to all the beneficiaries of a project would also be the same………..."

Taking cognisance of the above, and in light of the statutory provisons under Sections 62, 64(5), 79 and 86 of the EA 2003, the Commission is of the view that the function of the Central Commission under Section 79(1) (b) to regulate the tariff of generating companies having a composite scheme for generation and sale of electricity in more than one State follows from Section 62(1) (a) that is for "*supply of electricity by a generating company to a distribution licensee*". Thus, if TPC's Trombay Unit No. 8 project does not sell to any distribution licensee of a state other than Maharashtra and as submitted by TPC the plant sells to traders or in open market through mutually agreed tariff under Section 49, then it would be outside the purview of CERC under the provisions of Section 79 (1)(b) of the EA 2003. The words "composite scheme" has not been defined in the EA 2003 but the words "*for generation and sale of* *electricity in more than one State"* are clear and are to be strictly construed. Thus, this Commisison would have jurisdiction to decide the tariff of the plant for sale of power generated to Distribution licensees in the State of Maharashtra. However, if TPC sells to distribution licensees outside the State of Maharashtra then clearly the provisions of Section 79(1)(b) would be applicable unless the provisions of Section 64(5) have been invoked. Section 64(5) provides that "*Notwithstanding anything contained in Part X, the tariff for any inter-State supply, transmission or wheeling of electricity, as the case may be, involving the territories of two States may, upon application made to it by the parties intending to undertake such supply, transmission or wheeling, be determined under this section by the State Commission having jurisdiction in respect of the licensee who intends to distribute electricity and make payment therefor:"* Based on the above, the Commission is of the view that the function of determination of tariff for sale to Distribution licensees in the State of Maharashtra as requisitioned would be within the jurisdiction of this Commission.

22. **Sale of power from Trombay Unit-8**

The Commission has taken note of TPC's submission that it has entered into PPAs to sell power from Unit-8 with BEST for 100 MW, TPC-D for 50 MW and TPTCL for the remaining 100 MW. It has also taken note of TPC's submission that restricting a Generator from selling power to any licensee or consumer if it so desires contravenes Section 10(2) of Electricity Act, 2003.

Analysis of Costs

23.

Capital Cost (Hard Cost including Interest During Construction and Financing Charges) : TPC submission

i. Base Hard Costs till COD:

The Commission has scrutinised the submission of TPC and the clarifications provided by them regarding the final capital cost of the project. Based on the scrutiny and analysis, the Commission observes as follows.

- As regards the capital cost for computation for tariff, Regulation 30.1 of the MERC (Terms and conditions of Tariff) Regulations, 2005 stipulates as under:

"Subject to prudence check by the Commission, the actual expenditure incurred on completion of the project shall form the basis for determination of the original cost of project. The original cost of project shall be determined based on the approved capital expenditure actually incurred up to the date of commissioning of the generating station and shall include capitalised initial spares subject to following ceiling norms as a percentage of the original cost as on the cut-off date:………………"

- TPC has submitted the capital cost incurred in the construction of TPC Trombay Unit No. 8 certified by an auditor. The project cost submitted till CoD is as given below:

S. no.	Item Head	As submitted by TPC(Rs. Crores)
1.0	Cost of Land & Site Development	0.027
2.0	**Plant & Equipment**	
2.1	Steam Generator Island	205.931
2.2	Turbine Generator Island	203.607
2.3	BOP Mechanical	71.343
2.4	BOP Electrical	77.298
2.5	Control & Instrumentation (C & I) Package	13.735
	Total Plant & Equipment excluding Taxes & Duties	571.941
2.6	Octroi charges	27.021
	Total Plant & Equipment	**598.961**
3.0	Initial spares	1.978
4.0	Civil Works	165.808
5.0	Construction & Pre- Commissioning Expenses	106.353
6.0	Overheads	19.468
7.0	**Capital cost excluding IDC & FC**	**892.569**
7.1	Interest During Construction (IDC)	83.37
8.0	Capital cost including IDC & FC	**975.937**
9.0	Revenue from Infirm Power	-5.61

S. no.	Item Head	As submitted by TPC(Rs. Crores)
10.0	**Total Capitalised Cost –up to COD**	**970.327**

ii. Additional capitalisation till CoD

- TPC in their petition have submitted that the additional capitalization to be carried out till the cut-off date is projected to be Rs 162.70 Crores. The detail of the additional capitalisation is as given below:

a) Under works deferred for execution the following activities are included

- Flue Gas De Sulphurisation with a package cost of Rs. 52 Crore
- Balance civil works amounting to Rs. 8.5 Crore primarily consisting of following activities

S. No.	Item Head	As submitted by TPC (amount in Rs. Crore)
1	Painting works	5
2	Sewage treatment	0.5
3	Paving fencing and other miscellaneous infrastructure	1
4	Cooling water and Turbo generator activities	1
5	Balance payment w.r.t taxes and escalation	1
	Subtotal	8.5

- Provision for contract closure

S. No.	Item Head	As submitted by TPC (amount in Rs. Crore)
1	Techno commercial claims from TPC and counter claims from BHEL	5
2	Techno commercial claims from L&T for civil works	8
	Subtotal	13

- Balance payment to main suppliers consists of following activities

S. No.	Item Head	As submitted by TPC (amount in Rs. Crore)
1	Forex escalation	3.5
2	Payment for PG tests	3
3	Pending bills to be raised by suppliers	1
4	Miscellaneous expenses towards erection	1.5
	Subtotal	9

- Miscellaneous works primarily comprising of following:

S. No.	Item Head	As submitted by TPC (amount in Rs. Crore)
1	Cooling water and Turbo generator activities	1
2	Miscellaneous expenditure towards safety, Octroi, legal and consultants	3
	Subtotal	4

- Other development costs amounting to Rs. 5 Crore comprising of activities like Ancillary erection work, housekeeping, afforestation, administration, salaries yet to be capitalised

The project approval sought by TPC is Rs. 1133 crore:

S. No.	Item Head	As submitted by TPC (amount in Rs. Crore)
1	Capitalised cost up to CoD	970.273
2	Additional capitalisation	162.70
	Total	**1132.973**

24. **Approval of project cost by the Commission**

24.1 **In-principle clearance:**

- TPC submitted the Detailed Project Report (DPR) of the Trombay Unit No. 8 project to the Commission vide its letter No. REG/MERC-ARR/06/0023 dated February 13, 2006 and further requested for in-principle clearance of its Trombay Unit No. 8 project vide TPC Letter No. REG/MERC-SUB/07/068/ dated April 18, 2007. The Commission had replied to TPC vide its letter No.

MERC/CAP/DPR/16/08/611 dated March 14, 2008 informing TPC that the **<u>"Guidelines for in-principle clearance of proposed investment schemes"</u>** dated February 9, 2005 had been amended on February 18, 2008 and that as per the amendment, in-principle clearance for Capital Investment Schemes for new generating stations was not required.

- The Commission has taken a view that since no clearance regarding the capital cost was required or taken by TPC from either the CEA (post the Electricity Act 2003) or the Commission before the construction of the Trombay Unit No. 8 project, it will not be apt to compare the estimated project cost with the final cost. The Commission has however under taken a prudence check of various costs and determined the approved project cost.

- TPC has submitted the capital cost incurred in the construction of TPC Trombay Unit No. 8 certified by an auditor. The Commission has examined this data and as well as the various work orders for the suppliers and accordingly approved the various components of capital cost as given in the following sections

24.2 As a part of Tariff approval process, the Commission has compared information available from other projects, mainly for indication of price trends and thereby compare the capital costs. The Commission has scrutinised the submission made by TPC and through a systematic process assessed and ascertained reasonableness of costs. The details are as given below.

25. **Comparison of Capital costs with costs of other similar projects**

25.1 The Commission has compared the proposed project cost of Rs. 1133 Crore (comprising of project cost till COD of Rs. 970.32 Crore and additional capitalisation of Rs. 162.70 Crore) with other projects either of similar size, nature of implementation (i.e. either green field or brown field) and projects which utilise similar technology. The tabulation follows:

Name of the Plant	TPC Trombay Unit No. 8		Parli Unit 6 (approved)		GVK Goindwal Sahib[1]		JSW Ratnagiri TPP[2]		Giral LTPS[3]		JK LTPS[4]	
Size of the Plant (MW)	**250**		**250**		**540**		**1200**		**125**		**1000**	
Plant Configuration	**1 * 250**		**1 * 250**		**2 * 270**		**4 * 300**		**1 * 125**		**8 * 125**	
Whether CoD of plant has been achieved	**Yes**		**Yes**		**No**		**No**		**No**		**No**	
	Rs Cr	***Cr / MW***	**Rs Cr**	***Cr / MW***	**Rs Cr**	***Cr / MW***	**Rs Cr**	***Cr / MW***	**Rs Cr**	***Cr / MW***	**Rs Cr**	***Cr / MW***
Cost of Land & Site Development	0.03	*0.00012*	1.98	*0.01*	115	*0.21*	8.13	*0.01*	1.7	*0.01*	28	*0.03*
Plant & Equipment												
Steam Generator Island	241	*0.96*	677	*2.71*	1071	*1.98*	3055	*2.55*	222	*1.78*	1790	*1.79*
Turbine Generator Island	236	*0.94*										
BOP (Total)	259	*1.04*	135	*0.54*	1005	*1.86*			131	*1.05*	143	*0.14*
(C & I) Package	16	*0.06*	3	*0.01*					9	*0.07*	516	*0.52*
Civil Works	182	*0.73*	195	*0.78*			651	*0.54*	163	*1.31*	778	*0.78*
Construction and Pre-Commissioning Expenses	38	*0.15*		*0.00*	101	*0.19*	100	*0.08*	25	*0.20*	352	*0.35*
Other Expenses	69	*0.27*	8	*0.03*	28.94	*0.05*	244	*0.20*	164	*1.31*	837	*0.84*
Capital cost excluding IDC & FC	**1040**	***4.16***	**1019**	***4.08***	**2320**	***4.30***	**4058**	***3.38***	**715**	***5.72***	**4444**	***4.44***
IDC	93	*0.37*	136	*0.54*	302	*0.56*	442	*0.37*	0	*0.00*	0	*0.00*

[1] Based on project cost approved by PSERC

[2] Based on information furnished in the IPO document of JSW Energy Limited

[3] Based on project cost approved by RERC

[4] Based on project cost approved by RERC

Name of the Plant	TPC Trombay Unit No. 8		Parli Unit 6 (approved)		GVK Goindwal Sahib[1]		JSW Ratnagiri TPP[2]		Giral LTPS[3]		JK LTPS[4]	
Size of the Plant (MW)	250		250		540		1200		125		1000	
Plant Configuration	1 * 250		1 * 250		2 * 270		4 * 300		1 * 125		8 * 125	
Whether CoD of plant has been achieved	Yes		Yes		No		No		No		No	
	Rs Cr	*Cr / MW*	Rs Cr	*Cr / MW*	Rs Cr	*Cr / MW*	Rs Cr	*Cr / MW*	Rs Cr	*Cr / MW*	Rs Cr	*Cr / MW*
Capital cost including IDC & FC	**1133**	***4.53***	**1155**	***4.62***	**2622**	***4.86***	**4500**	***3.75***	**715**	***5.72***	**4444**	***4.44***

26. **Itemised Analysis of the proposal:**

The Commission has observed that on account of wide difference in size, model, make, and various project-specific engineered details, it is not appropriate to make a direct “One to One” comparison with any other power plant or thermal generating unit. It is also noted that the methods of clustering and bunching together the equipment supply and erection packages could also be different for the concerned projects taken for comparison. Therefore, the Commission has assessed the available data as indicative of the range of prices and costs involved. The Commission has also made an overall comparison of the final cost per MW capacity of the projects. With reference to the Capital Cost tabulation submitted by TPC, and item wise analysis based on comparison of costs across various projects is given below:

Item 1.0: Cost of land & site development:

The expenditure under this head for TPC Trombay Unit 8 is the least of all the above compared projects. As submitted by TPC, the new unit (Trombay Unit 8) is located right within the existing Trombay Thermal power station of TPC, and hence cost of procurement of land is not involved and the cost for development of land is also low; and the same is acceptable.

Item 2.0 Plant & Equipment:

As submitted by TPC, most of the major procurements for TPC’s Trombay Unit 8 project were done on EPC basis, and the remaining capital items as well as construction jobs were clustered as packages for competitive bidding. The Commission notes that while most of the other projects are executed in similar way, the manner of clustering and packaging the items would not necessarily be identical among the projects. The Commission, therefore, has made a broad comparison and analysed the available data to assess reasonableness of the proposed costs.

In case of the BTG package (comprising of Steam generator and Turbine Generator island), the cost of Rs. 1.90 Crore/MW for Trombay Unit No. 8 is lesser than Rs. 2.71 Crore/MW in case of 1 x 250 MW Parli Unit-6, and Rs. 1.98 Crore/MW of 2 x 270 MW

GVK Goindwal Sahib project but more than Rs. 1.78 Crore/MW of 1 x 125 MW Giral LTPS project and Rs. 1.79 Crore/MW of 8 x 125 MW JK LTPS project.

Sub items 2.3 & 2.4 Balance of Plant (BoP) - Mechanical & Electrical auxiliaries

The Commission has observed that the equipment covered under the Balance of plant consist of Mechanical as well as Electrical auxiliaries which are not covered by the suppliers of equipments under the Boiler and the Turbo-Generator package. The Commission notes that the range of such equipment included in these sub-groups and the levels of technologies, control interface and accessories, etc included therein may differ from plant to plant. In case of the BoP package of Trombay unit 8, the cost of Rs. 1.04 Crore/MW incurred by TPC is slightly less than the Rs. 1.05 Crore / MW of Giral LTPS project, however the Commission notes that the BoP package cost of Rs. 259 Crore for Trombay Unit 8, as proposed by TPC, includes cost towards FGD plant of Rs. 52 Crore and cost of additional transmission bays in the Trombay switchyard of Rs. 29 Crore. These equipment are not provided and not included in the BoP costs of the other plants under comparison. If the cost of these two packages are excluded from the cost of Balance of Plant equipment of Trombay Unit-8, then the total BoP package cost would be Rs. 178 Crore and the unit cost would be Rs. 0.71 Crore/MW.

Sub item 2.5: Control & Instrumentation (C&I) Package:

In case of C&I package the cost of Rs. 0.06 Crore/MW incurred at TPC Unit-8 is lesser than the cost of Rs. 0.07 Crore/MW of 1 x 125 MW Giral LTPS

27. **Comparison of Total Plant & Equipment cost Excluding Taxes & Duties**

Based on the above data the Commission has further made the following tabulation:

Detail	TPC Unit 8	Parli Unit 6	GVK Goindwal Sahib	Giral LTPS	JK LTPS
Plant size	1 x 250 MW	1 x 250 MW	2 x 270 MW	1 x 125 MW	8 x 125 MW

Cost (Rs Cr / MW)	3.008	3.268	4.057	2.894	2.477

The Commission notes from the above analysis that the combined total cost of Steam Generator and Turbine Generator package, Mechanical and Electrical BoP, and C&I package incurred by TPC at Trombay Unit 8 is Rs. 3.008 crore/MW. After excluding the cost of Rs 29 Crores towards Switchyard bays, the cost/MW reduces to Rs 2.892 Crore/MW. This is lesser than Rs 3.268 Crore/MW incurred by Parli Unit 6, and Rs 4.057 Crore/MW incurred by GVK Goindwal sahib and comparable to Rs 2.894 Crore/MW incurred by Giral LTPS project.

28. **Approval of Capital cost pertaining to land and site development, and Plant & Equipment, excluding taxes and duties:**

Based on the above detailed analysis, the Commission observes that, the costs for the Land and site development as well as the Total Plant & Equipment costs, comprising of the Boiler package, the Turbine Generator package, the BoP package and the C&I package are reasonable and hence the Commission approves the same.

29. The Commission has also analysed the remaining items of the Capital costs :

Sub item 2.6: Taxes & Duties: Octroi Charges

- The Commission observes that TPC has included items like Taxes and Octroi levied on various equipments as part of the capital costs for this project. However, at point (iv) of the Memorandum of Understanding signed between the Government of Maharashtra and Tata Power Company Limited on the July 4, 2005, in line with the policy decision of the State Department of Industries, Energy and Labour vide policy no PSP -2005/CR – 2068/NRG – 7 dated March 28, 2005 seeking to promote private sector participation in the field of power generation in the State of Maharashtra to mitigate the power shortages, it states as follows:

  " (iv) Government of Maharashtra will grant 100% exemption from stamp duty, registration charges for the projects and 100% exemption for Octroi for machinery and other equipment required for initial setting up of the Projects........"

As such, the Commission has not considered any Octroi payment to determine the capital cost for the project and directs TPC to approach the Govt. for the exemption of Octroi, or if the Octroi has already been paid by TPC then for the refund of the same.

Item 3.0: Initial Spares

Based on the submission made by TPC, till the time of attaining COD, TPC had purchased Rs. 1.98 Crore of spares and as part of further capitalisation it has proposed to procure balance spares of Rs. 20.56 Crore. Thus, the Commission notes that the total spares to be procured for Trombay Unit No. 8 is Rs. 22.54 Crore which contributes 2.15% of project cost and is within the limits of 2.5% as permissible under the Tariff Regulations, 2005.

Item 4.0 : Civil works :

The Commission observes that in case of Civil works the cost of Rs. 0.73 Crore/MW is lesser than the Parli Unit-6 cost of Rs. 0.78 Crore/MW, Rs. 1.31 Crore/MW of Giral LTPS and Rs. 0.78 Crore/MW of JK LTPS

Item 5.0: Construction & pre-commissioning expenses:

The costs booked by TPC under this head pertain to the "Start up fuel" used by TPC for Trombay Unit 8. The Commission directed TPC to provide the details of the same, as there was an inconsistency between the amounts submitted in the petition and those shown by TPC in the presentation to the Commission during the TVS. The Commission informed TPC to submit their justification, TPC in reply submitted to the Commission that the amount of Rs. 30.80 Crores under the head 'Start-up Fuel' also includes an amount of Rs 24.94 Crores incurred by TPC as "cost of fuel" during the infirm generation period. TPC further submitted that the Commission had, in its APR order dated April 2, 2008 (in the matter of Case no 68 of 2007), fixed the price of Rs 1.75/kWh for "infirm power" generated. However, due to the sudden rise in fuel prices in FY 2008-09 and high amounts of oil used in infirm generation, the costs of fuel exceeded the revenue from the sale of power such generated.

The Commission observes that since fuel cost is revenue expenditure in nature, whether incurred during infirm generation or firm generation, the Commission while allowing the actual expense incurred on this account (Rs. 24.94 Crore), directs that the same be recovered from BEST and TPC – D in proportion to the signed PPA quantum and hence, these costs will not be allowed as part of capital expenditure of Trombay Unit No. 8. TPC in their reply on data gap query have submitted to the Commission that Rs. 5.66 Crore of revenue has already been recovered through sale of infirm power, the Commission hereby allows TPC to recover the under-recovered fuel cost, i.e., Rs. 19.28 Crore (Rs. 24.94 Crore – Rs. 5.66 Crore) from BEST and TPC – D in six equal monthly instalments in proportion to the signed PPA quantum, after the issue of this Order.

Item 6.0 : Overheads:

The Commission enquired from TPC details of the expenditure under the head 'Overhead expenses' amounting to Rs. 19.47 crore. TPC submitted the following details:

S. no.	Particular	Amount (Rs. Crore)
	Establishment	
1	Project development expenses	2.05
2	Construction power	0.03
3	Transmission tower & lines	0.28
4	Miscellaneous works - shifting of drains, rerouting	2.24
5	Electrical	0.02
6	Site establishment : Fencing, storage	1.19
7	Afforestation : Tree Plantations	0.19
8	AC / PC's etc.	0.07
9	Balance	1.66
	Design and Engineering	
10	Design and Engineering (TCE Order no. 5300036763)	11.07
	Audit & Accounts	

S. no.	Particular	Amount (Rs. Crore)
11	Legal expenses	0.03
12	Audit & Accounts	0.63
	Total	**19.47**

The Commission has scrutinised the costs and observes that the above cost of Rs 19.468 crore amounts to approx. 1.7% of the total project cost of Rs 1133 Crore proposed by TPC. The Commission observes that the same is reasonable and approves the same.

Item No. 7.1 Interest During Construction (IDC):

The IDC component of Rs. 0.37 Crore/MW proposed by TPC for Trombay Unit 8 is lesser when compared to Rs. 0.54 Crore/MW of Parli Unit-6, Rs. And 0.56 Crore/MW of GVK Goindwal Sahib, and comparable with Rs. 0.37 Crore/MW of JSW Ratnagiri. The Commission has recomputed the IDC due and this working is as follows:

As regards the debt raised by TPC for the construction of Trombay Unit No. 8, the Commission has observed that out of the various tranches in which loan were availed from the bankers; TPC has stated that it has availed the IDBI Tranche 3 loan at an interest rate of 14%. The Commission enquired TPC to provide a justification for this high rate of interest during the Technical Validation session. TPC in their reply have submitted the following:

> *"….. Tata Power has submitted that the cost of loans is highly dependent on the market conditions. Further, Tata Power has demonstrated that it was also able to secure loans applicable for Trombay Unit No. 8 at most competitive rates (subject to market conditions).*
>
> *As regards the IDBI Tranche 3, the same was taken in October 2008. During that period, the funds in the market have dried up and the interest cost had risen substantially. The cost of loans available to Tata Power at that point of time (around Oct-08) was in the range of about 14%. In addition to this IDBI tranche, this is evidenced by the rate of interest payable by Tata Power for a short term loan of Rs. 500 Crore availed (for meeting general corporate purpose) around Oct-08 which worked out to 14.4%. Moreover, the SBI PLR*

at that time was 13.75%, very close to cost of 14% availed by Tata Power under the loan of IDBI."

The Commission has observed that the terms of the IDBI loan to TPC specify that the loan will be disbursed at a rate which is 2.76% below the IDBI prime lending rate prevalent at the time of disbursement. Commission's analysis shows that the IDBI PLR at the time when the loan has been disbursed, in October 2008, was 14.25%, hence the Commission is disallowing interest to be charged at the rate of 14% as claimed by TPC for the purpose of approving the capital cost for the Trombay Unit No. 8 project, but approves the interest on this tranche at a rate of 11.49%, in line with interest approved for Tranche-2 of the IDBI loan.

30. **Approval of Capital Costs**

Based on the above analysis the capital expenditure approved by the Commission till CoD for Trombay Unit No. 8 is as follows:

S. no.	Item Head	As submitted by TPC(Rs. Crores)	As approved by the Commission (Rs. Crores)
1.0	Cost of Land & Site Development	0.027	0.027
2.0	**Plant & Equipment**		
2.1	Steam Generator Island	205.931	205.931
2.2	Turbine Generator Island	203.607	203.607
2.3	BOP Mechanical	71.343	71.343
2.4	BOP Electrical	77.298	77.298
2.5	Control & Instrumentation (C & I) Package	13.735	13.735
	Total Plant & Equipment excluding Taxes & Duties	571.941	571.941
2.6	Octroi charges	27.021	0.000
	Total Plant & Equipment	**598.961**	**571.941**
3.0	Initial spares	1.978	1.978
4.0	Civil Works	165.808	165.808
5.0	Construction & Pre-Commissioning Expenses	106.353	81.413
6.0	Overheads	19.468	19.468
7.0	**Capital cost excluding IDC & FC**	**892.569**	**840.608**
7.1	Interest During Construction (IDC)	83.37	82.98

S. no.	Item Head	As submitted by TPC(Rs. Crores)	As approved by the Commission (Rs. Crores)
8.0	Capital cost including IDC & FC	**975.937**	**923.588**
9.0	Revenue from Infirm Power	-5.61	-5.66
10.0	**Total Capitalised Cost –up to COD**	**970.327**	**917.928**

31. TPC in their petition have submitted that the additional capitalization to be carried out till the cut-off date is projected to be Rs 162.70 Crores. The expenditure considered by the Commission for the purpose of capital cost determination and tariff computation is given in the table below.

Regulation 30 of MERC (Terms and Conditions of Tariff) Regulations, 2005 provides the guidelines for approving the project cost of Generating units. Regulation 30.1 provides ceiling norms as a percentage of the original cost as on cut-off date, since Trombay Unit No. 8 was commissioned in January 09, the applicable cut-off date as defined under the Tariff Regulation, 2005 would be March 31, 2010. The expenditure approved for additional capitalisation is as given below:

S. no.	Item Head	As submitted by TPC (Rs. Crore)	As approved by the Commission (Rs. Crore)
1	Flue Gas De Sulphurisation Plant	52.00	52.00
2	Balance Civil Works	8.50	8.50
3	Provision for Contract Closure	13.00	13.00
4	Miscellaneous Works	4.00	4.00
5	Procurement of Balance Spares	20.56	20.56
6	Cost of Transmission Bays	29.00	-
7	Expenditure Incurred but not capitalised due to pending reconciliation of material to jobs	12.00	12.00
8	Balance of Payment to Main Suppliers	9.00	9.00
9	Other Development Costs	5.00	5.00
10	Interest During Construction (IDC) for Balance Cap Work	9.70	4.81
	Total Additional	**162.760**	**128.87**

S. no.	Item Head	As submitted by TPC (Rs. Crore)	As approved by the Commission (Rs. Crore)
	Capitalisation		

The Commission has approved the above expenditure proposed for additional capitalisation with the following exclusion:

Exclusion: The Commission observes that, TPC has included the cost of modification to the existing 220 kV transmission switchyard located in Trombay as part of the additional capitalisation of Trombay Unit No. 8. The Commission is of the view that any modification being made beyond the generation bus bar of Trombay Unit No. 8 cannot be included as part of capital expenditure of Trombay Unit No. 8. As such, the Commission has not considered the projected expenditure Rs. 29 Crore on the modification to the existing 220 kV switchyard. for the approving the capital cost of the project

32. Based on the above approach adopted for approval of the capital costs till COD and for further capitalisation till the cut-off date, the total capital cost of Trombay Unit No. 8 approved by the Commission is as given below:

Total approved Capital cost (Rs Crore)

S. No.	Description	As submitted by TPC	As approved by the Commission
1	Capital Cost till COD	970	918
2	Additional Capitalisation till cut-off date	163	129
3	**Total Capital Cost**	**1133**	**1047**

33. **Comparison of Overall cost**

33.1 Comparison with Nagarjuna Power Corporation Limited NPCL:

The Commission observes that Nagarjuna Power Corporation Limited (NPCL) is establishing a 1015 MW imported coal based power project at Karnataka, which has an FGD and a Desalination plant as its auxiliaries. The Commission has also made the following comparison of Trombay Unit 8 costs with that of Nagarjuna Power Corporation Limited (NPCL)

S. no.	Particular	TPC Trombay Unit No. 8	TPC Trombay Unit No. 8 (w/o FGD)	Nagarjuna (FGD + Desalination)	Nagarjuna (only FGD and w/o desalination)	Nagarjuna (w/o FGD & desalination)
1	Project cost (Rs. Crore)	1047	995.00	4299.00	4249.00	4099.00
2	Capacity (MW)	250.00	250.00	1015.00	1015.00	1016.00
3	**Cost / MW**	**4.19**	**3.98**	**4.235**	**4.186**	**4.038**

NPCL has obtained 'in-principle' approval of project cost from CERC (in the matter of Petition no. 40 of 2005 order dt. October 25, 2005) at Rs. 4299 Crore of which the FGD plant cost is Rs. 150 Crore and the cost of De - salination plant was Rs. 50 Crore. It is observed that in case of 250 MW Trombay Unit No. 8, with the approved Capital cost of Rs 1047 Crores, the pro-rata overall cost with inclusion of FGD package comes to Rs. 4.188 crore/MW which is similar to the proposed cost of the 1015 MW NPCL project with FGD and without desalination system, in addition to this it is observed that after excluding the FGD cost from Trombay Unit No. 8 and both the FGD & De salination system cost from NPCL the cost/MW of Trombay Unit No. 8 at Rs. 3.98 Crore/MW is lower than the corresponding NPCL value of Rs. 4.038 Crore/MW.

33.2 Comparison with other projects

The final approved project cost of Rs. 1047 Crore of TPC Unit 8 project amounts to prorata cost of Rs. 4.188 Crore/MW which is lesser when compared to Rs. 4.62 Crore/MW of Parli Unit-6, Rs. 4.86 Crore/MW for GVK Goindwal Sahib, Rs. 5.72 Crore/Mw of Giral TPS, and Rs. 4.44 Crore/MW projected for 8 x 125 MW JK LTPS

34. Based on the above analysis the Commission observes that the approved capital cost of Rs. 1047 Crore of TPC Trombay Unit 8 is in line with similar projects elsewhere in India.

35. **<u>Means of Finance</u>**

TPC in their petition have claimed that the capital expenditure has been financed with a debt equity ratio of 70:30. This is in line with Regulation 31.2.1 of the MERC (Terms and Conditions of Tariff) Regulations, 2005 which states that

"31.2.1 Any generating station commissioned on or after the date of notification of these Regulations shall be assumed to be financed at a normative debt: equity ratio of 70:30."

36. The Commission determines the financial structure of the project cost as provided in the above Regulation. The debt and equity component accordingly works out as follows:

-------Rs Crore-------

Description	As submitted by TPC	As approved by the Commission
Debt	793	733
Equity	340	314
Total Capital Cost	**1133**	**1047**

37. **<u>Commission's analysis on Annual fixed charges for FY 09-10</u>**

The Commission has examined the costs apportioned under various heads of Annual Fixed Charges by TPC and states as under:

a) O&M Expenditure

38. The Commission has considered the O&M expenses on normative basis for FY 2005-06 as Rs. 10.82 Lakh/MW as specified in Regulation 34.6.2 of the MERC (Terms and Conditions of Tariff) Regulations, 2005 for a new generating station. Further, the Commission has considered an escalation rate of 4% per annum to arrive at O&M. Since TPC has also calculated the O&M expenses based on the normative methodology as given in the Tariff Norms, the Commission approves the projected O&M expenditure of Trombay Unit No. 8 amounting to Rs 31.64 Crores.

--------Rs Crore -----

Year	As submitted in the Petition	As approved by the Commission
FY 2009-10	31.64	31.64

b) Interest on Long term debt

39. TPC has raised debt from two financial institutions to meet the capital expenditure of Trombay Unit No. 8, namely IDFC and IDBI. The tranche wise details of the loans availed as submitted by TPC are given below:

S. No.	Source	Interest rate (%)	Up to COD (Rs. Crore)	Additional Capitalisation (Rs. Crore)	Total (Rs. Crore)
1	IDFC	Floating	355		355
2	IDBI Tranche 1	10.49%	200		200
3	IDBI Tranche 2	11.49%	92		92
4	IDBI Tranche 3	14.00 %	32	54	86
5	IDBI Tranche 4	10.49%		20	20
6	IDBI Tranche 5	11.50%		40	40
	Total debt		**679**	**114**	**793**

40. The Commission has examined the capital costs and has approved the capital cost of the project till the COD amounting to Rs 917.93 Crores and additional capitalization amounting to Rs 128.87 Crores. Thus the amount of loans approved and used for tariff determination changes from that provided by TPC. The total loan amount approved by the Commission till COD amounts to Rs 642.55 Crores (which is seventy per cent of the cost capitalized till COD) while the loan amount approved after COD is equivalent to Rs 90.21 Crores. The Commission has allocated the loan amongst the various tranches according to the dates of disbursement so that the earlier tranches are accounted for first.

41. As regards the interest rates at which these loans have been availed, the Commission has observed that the interest rate of 14% as claimed by TPC in their petition for Tranche 3 of IDBI loan is very high. During the Technical Validation Sessions held, the Commission asked TPC to justify this high cost of raising debt which places an unnecessary burden on the consumers of the Mumbai Licensee area. TPC in their reply to the Commission's queries have submitted that the IDBI Tranche – 3 was availed in October 2008, at a time when the funds in the market had considerably dried up and interest costs were high. They have informed that at that time, the cost of funds available to TPC was around 14%. TPC has stated that another loan taken by Tata Power for corporate purposes at the same time was availed at around 14.4%. Further, TPC have also stated in their reply that the SBI PLR at that time was 13.75%. The Commission finds this very surprising that TPC have mentioned the SBI PLR in their reply while at the same time making no mention of IDBI PLR. According to the terms of the loan agreement, the interest rate for the IDBI loan is set at 2.76% below the bank PLR. According to the Commission's analysis, the PLR of IDBI was 14.25% in October 2008, which would imply that the interest rate to be paid on

the said tranche would be 11.49%. This is the rate used by the Commission for calculation of interest on this tranche.

42. For the other tranches of the IDBI loans as well as the IDFC loan, the Commission is satisfied with the rates and the other conditions mentioned by TPC.

43. The summary of loans availed and interest expenses as approved by the Commission in this Order are given below:

S. No.	Source	As claimed by TPC (Rs. Crore)				As approved by the Commission (Rs. Crore)			
		Interest rate (%)	Up to COD	Additional Capitalisation	Total	Interest rate (%)	Up to COD	Additional Capitalisation	Total
1	IDFC	Floating	355		355	Floating	355		355
2	IDBI Tranche 1	10.49%	200		200	10.49%	200		200
3	IDBI Tranche 2	11.49%	92		92	11.49%	87	5	92
4	IDBI Tranche 3	14.00 %	32	54	86	11.49 %		85	85
5	IDBI Tranche 4	10.74%		20	20	10.74%		-	-
6	IDBI Tranche 5	11.50%		40	40	-		-	-
7	**Total debt**		**679**	**114**	**793**		**643**	**90**	**733**

44. Accordingly, the Commission has recomputed the interest charges due for FY 2009-10, these are as given below:

Source	Opening Balance (Rs. Crore)	Drawal (Rs. Crore)	Repayment (Rs. Crore)	Closing Balance (Rs. Crore)	Interest Rate	Interest (Rs. Crore)
IDFC	355.15	-	8.92	346.23	13.00%	45.59
IDBI Tranche 1	200.00	-	-	200.00	10.49%	20.98
IDBI Tranche 2	87.40	4.60	-	92.00	11.49%	10.04
IDBI Tranche 3	-	85.61	-	85.61	11.49%	IDC
Total	**642.55**	**90.21**	**8.92**	**723.84**	**11.99%**	**76.61**

45. The Commission observes that the loans taken in FY 2009-10 would be utilized for additional capitalization of assets. As such, the interest due on these loans would not form

a part of the revenue expenditure for FY 2009-10 but instead would form a capital expenditure in the form of IDC. TPC in their petition have included even this expenditure while calculating the fixed costs for Trombay Unit No. 8. However, this is not the right approach and the Commission does not approve it. Accordingly, Commission has considered only loans taken till the end of 2008-09 for calculating the interest due and this interest for FY 2009-10 works out to be Rs 76.61 Crores.

c) Depreciation and Advance Against Depreciation

46. To compute the allowable depreciation, the Commission has used the methodology given in Regulation 34.4.1 and the rates as specified in Annexure I of the MERC (Terms and Conditions of Tariff) Regulations, 2005.

47. Accordingly, the Commission has considered the capitalized expenditure of Trombay Unit No. 8 as on the start of FY 2009-10 as the value base for computation of depreciation. Since the total capital cost approved by the Commission till the end of FY 2008-09 is Rs 917.928 Crores, hence the depreciation computed for tariff purposes will be based on this asset base. The Depreciation so computed, using the asset class base in the same proportion as given by TPC in their petition, is equal to Rs 33.05 Crores. Thus the depreciation amount claimed by TPC and approved by the Commission is given below:

Year	As submitted in the Petition (in Rs. Crore)	As approved by the Commission (as Rs. Crore)
FY 2009-10	34.93	33.05

d) Interest on working capital

48. In accordance with Regulation 34.5 of MERC (Terms and Conditions of Tariff) Regulations, the Commission has considered the following elements for determining the working capital requirement:

- Cost of coal for two months for non-pit-head generating stations, corresponding to target availability;
- Cost of secondary fuel oil for two months corresponding to target availability;
- Operation and Maintenance expenses for one month;
- Maintenance spares @ 1 per cent of the historical cost; and

- Receivables for sale of electricity equivalent to two months of the sum of annual fixed charges and energy charges calculated on target availability; minus
- Payables for fuel (including oil and secondary fuel oil) to the extent of one month of the cost of fuel calculated on target availability

49. Further, while computing the interest on working capital, the Commission has considered the interest rate of 11.75% which is equivalent to the prevailing prime lending rate of SBI at the time when TPC submitted its petition. The summary of interest on working capital as proposed by TPC and as approved by the Commission is given in the Table below:

Particulars	As submitted by TPC in Petition (Rs. Crore)	As approved by the Commission (in Rs. Crore)
Cost of Coal/Lignite for 2 months	75.94	75.94
Cost of Secondary Fuel Oil for 2 months		
O & M expenses for 1 month	2.64	2.64
Maintenance Spares (at 1% of capital cost)	11.33	10.47
Receivables for 2 month	113.06	109.74
(Less): Payable for fuel	-37.97	-37.97
Total Working Capital requirement	**165.00**	**160.87**
Computation of working capital interest		
Interest Rate (%)	13%	11.75%
Working Capital Interest	**21.45**	**18.90**

e) Return on Equity

50. In accordance with Regulation 34.1 of MERC (Terms and Conditions of Tariff) Regulations, 2005, the Commission has considered the applicable return on equity of 14% per annum on the equity portion as approved in the Order. Further, in accordance with the MERC (Terms and Conditions of Tariff) Regulations, 2005, return on equity needs to be computed only on the opening equity and not on the assets added during the year. Since the maximum equity portion to be considered as per the Tariff norms is equal to 30 per

cent of the total capital expenditure, the equity considered for calculating the RoE is 30 per cent of the approved capital expenditure of Rs 917.928 Crores, amounting to Rs 275.38 Crores. Thus the RoE approved by the Commission is equal to Rs 38.55 Crores.

Year	As submitted in the Petition (in Rs. Crore)	As approved by the Commission (in Rs. Crore)
FY 2009-10	40.76	38.55

f) Income tax

51. The Commission has calculated the income tax considering the approved return on equity as the profit. Further, TPC in their petition have stated that only Minimum Alternate Tax would be payable on Trombay Unit No. 8 profits. The Commission accepts this argument and accordingly has calculated the Income Tax. TPC also has grossed up the RoE by the MAT rate to arrive at the taxable income. However, the norms stated in MERC Tariff Regulations do not allow for grossing up of the RoE for tax calculation purposes, hence the Commission has disallowed the same and accordingly, the income tax approved for tariff calculation purposes is given below:

Particulars	As submitted in the Petition (in Rs. Crore)	As approved by the Commission (in Rs. Crore)
Return on Equity (RoE)	40.76	38.55
Minimum Alternate Tax (MAT) Rate	11.33%	11.33%
Grossed up RoE	45.97	-
Applicable MAT	5.21	4.37

TPC has entered into a PPA of 100 MW with BEST and 50 MW with TPC-D, the balance 100 MW is proposed to be sold to TPTCL, thus TPC-G can recover capacity charges only to the extent of 150 MW from the two Mumbai distribution licensees

The Commission has computed the fixed charges due on the Mumbai Licensees for the supply of energy from Trombay Unit No. 8 by apportioning the total fixed costs of

Trombay Unit No. 8 on the basis of the contracted capacity. Thus the approved fixed charge for the year 2009-10 is given below:

S. no.	Description	Units	Claimed by TPC		Approved by Commission	
			Total Trombay Unit No. 8	**Mumbai License Area**	**Total Trombay Unit No. 8**	**Mumbai License Area**
A.	Capacity	MW	250	150	250	150
B.	Number of Days of Operation	No.	365	365	365	365
C.	Annual Fixed Charges					
i)	Depreciation	Rs Crore	34.93	20.96	33.05	19.83
ii)	Advance Against Depreciation	Rs Crore	0.00	0.00	0.00	0.00
iii)	Operation & Maintenance Expenses	Rs Crore	31.64	18.99	31.64	18.99
iv)	Interest on Long Term Loan	Rs Crore	88.75	53.25	76.61	45.97
v)	Interest on Working Capital	Rs Crore	21.45	12.87	18.90	11.34
vi)	Return on Equity Capital	Rs Crore	40.76	24.46	38.55	23.13
vii)	Income tax paid/payable	Rs Crore	5.21	3.12	4.37	2.62
viii)	Other Expenses	Rs Crore				
	(Less: Other Income)					
ix	**Total Annual Fixed Charges**	**Rs Crore**	**222.74**	**133.65**	**203.13**	**121.88**

52. **Commission's analysis on Performance parameters:**

a) Performance Parameters During Stabilization and Post Stabilization Period

53. Under Regulation 33.1.2 of Tariff Regulations, 2005, the auxiliary consumption permitted for coal based generating stations in the 200 MW series is 8.5% with an additional auxiliary consumption of 0.5% during the stabilization period. Accordingly, the Commission has approved auxiliary consumption of 9.0% for a period of 177 days of FY 2009-10 which correspond to the stabilization period of Trombay Unit No. 8. For the rest of the year, the auxiliary consumption has been approved at 8.5%. As regards the

auxiliary consumption of FGD unit, the Commission is of the view that in the absence of any data on the actual power consumption of the FGD unit it approves, provisionally, the 1% auxiliary consumption as requested by TPC in their petition

54. The Commission also directs TPC to maintain monthly energy consumption information for the FGD unit which would be utilised for establishing a norm for FGD operation in future. Moreover the above 1% additional auxiliary consumption on account of operation of a FGD plant would be trued-up at the end of the year. Further, since the FGD plant has not been capitalized in FY 2008-09, the Commission had asked TPC about the status of the FGD plant operation and the likely date of commissioning of the FGD Unit. TPC, in their replies to the Commission have stated that the plant is likely to be commissioned by the end of October 2009. Accordingly, the Commission has considered the commissioning of FGD unit from November 1, 2009 and has approved 1% additional auxiliary consumption on this account for a period of 5 months of FY 2009-10

55. The Commission also approves the specific oil consumption of 4.5 ml/kWh during stabilization period and 2.0 ml/kWh post stabilization period as submitted by TPC in their petition. The Commission also approves the heat rate of 2600 Kcal/kWh during stabilization period and 2500 kcal/kWh for the balance period for Trombay Unit No. 8

56. The operational parameters approved by the Commission are as follows:

Particular	Unit	As submitted by TPC		As approved by the Commission		
		Stabilization period (6 months)	Normal Operation (6 months)	Stabilization period (177 days)	Normal Operation without (37 days)	Normal Operation with FGD (151 days)
Heat Rate	Kcal / kWh	2600	2500	2600	2500	2500
Auxiliary Consumption	%	9%	8.5%	9.00%	8.5%	9.50%
Add: Auxiliary Consumption due to operation of FGD system	%	1	1	0%	0%	1%

Total Auxiliary Consumption	%	10%	9.5%	9%	8.5%	9.5%
Secondary oil consumption	ml / kWh	4.5	2	4.5	2	2

57. Based on the parameters approved by the Commission the net energy to be generated from Trombay Unit No. 8 for FY 2009-10 is as given below:

Parameter	Unit	As submitted by TPC		Approved by Commission		
		Pre - stabilization	Post - Stabilization	Pre - stabilization	Post - Stabilization (without FGD)	Post - Stabilization (with FGD)
No. of days	**No.**	183	182	177	37	151
Capacity Allocated to BEST & TPC – D	**MW**	150	150	150	150	150
PLF	**%**	91.8%	91.8%	91.8%	91.8%	91.8%
Gross Generation	**MU**	605	601	585	122	499
Auxiliary Energy Consumption	**%**	10.00%	9.50%	9.00%	8.5%	9.50%
Net Generation	**MU**	**544**	**544**	**532**	**112**	**452**
		1088		**1096**		

58. Energy charge for FY 2009-10

The Commission has recomputed the fuel cost based on the performance parameters as approved by the Commission in this Order. The Commission has considered the prices for Coal and LSHS as approved in the APR order for FY 2008-09 of TPC – G (in the matter of Case no. 111 of 2008) issued on May 28, 2009. Thus the fuel and coal prices approved are as follows:

Fuel Parameters	Unit	As submitted by TPC	As approved by Commission
Calorific Value			
Fuel 1 Coal	kcal/Kg	5151	5151
Fuel 2 LSHS	kcal/Kg	10550	10550

Fuel Parameters	Unit	As submitted by TPC	As approved by Commission
Landed Fuel Price per unit			
Fuel 1 Coal	Rs/MT	5195	5195
Fuel 2 LSHS	Rs/MT	20472	20472

59. Based on performance parameters, i.e., heat rate and auxiliary consumption approved for FY 2009-10, and considering the fuel prices and calorific value as approved above, the variable cost of generation and rate of energy charge for Unit No. 8 of Trombay thermal generating station for FY 2009-10 as approved by the Commission is given in the Table below:

Parameter	Unit	Stabilization Period	Normal Period
Fuel Consumption			
Coal	MT	290637	299157
LSHS	MT	2637	1118
Fuel Cost			
Coal	Rs Crore	150.85	155.41
LSHS	Rs Crore	4.85	2.29
Total Fuel Cost	Rs Crore	**155.69**	**157.70**
Net Generation	MU	**532**	**564**
Cost of Generation per unit (at Generation Terminal)	Rs/kWh	2.66	2.54
Energy Charge per unit (ex-bus)	**Rs/kWh**	**2.93**	**2.80**

60. The comparison of rate of energy charge as proposed by TPC and as approved by the Commission for FY 2009-10 is as given in the Table below:

Particular	Petition of TPC		Approved by Commission	
	Stabilization Period	Normal Period	Stabilization Period	Normal Period
Cost of Generation (Rs /kWh)	2.66	2.54	2.66	2.54
Energy Charge (Rs/kWh)	2.96	2.81	2.93	2.80

~~61. Commission's analysis on charges for FY 2008-09~~

a) Energy charges and fixed charges for FY 2008-09

62. TPC in their petition have stated that Trombay Unit No. 8 operated for a period of 3 days in FY 2008-09 post COD. Hence they are entitled to recover fixed charges and energy charges for the same period. TPC have further stated that although the said period forms a part of FY 2008-09 for which the Annual Fixed Charges need to be computed separately but keeping in mind the fact that the period is very small, they have appropriated the fixed charges for FY 2009-10 for the three days of FY 2008-09. Thus the fixed charges for FY 2008-09 claimed by TPC are as follows:

Particulars	Amount (in Rs Crore)
Annual Fixed Charges for 150 MW for FY 2009-10	133.65
No of days in FY 2009-10	365
No of days in FY 2008-09	3
Annual Fixed Charges for 150 MW for FY 2008-09	1.10

63. TPC have also stated that they have calculated the energy charge for energy supplied for the 3 days of FY 2008-09 on the basis of the actual fuel cost and actual calorific value prevailing at the time, the details of which are given below:

Fuel	Norms		Calorific value	Net heat contribution	Price	Cost at generator Terminals	Energy charge
	ml/kWh	gm/kWh (sp. Gravity of 0.9)	(kcal / kWh)	(kcal/kWh)	(Rs. / MT)	(Rs. /kWh)	Rs. / kWh
Stabilisation Period							
Secondary oil	4.5	4.05	10382	42.05	20534	0.083	
Coal (balance)			5151	2558	4691	2.33	
Total				**2600**		**2.41**	**2.65**

64. The Commission approves the proposed method of TPC for recovery of fixed cost for FY 2008-09 in view of the short time period of 3 days for which the plant has operated in FY 2008-09. Accordingly the fixed costs approved by the Commission are as follows:

Particulars	Amount (in Rs Crore)
Annual Fixed Charges for 150 MW for FY 2009-10	121.88
Annual Fixed Charges for 150 MW for FY 2008-09	1.10

This fixed charge of Rs. 1.10 crore should be recovered by TPC from BEST and TPC-D in proportion to the quantum of PPA.

65. The Commission also approves the energy charges of Rs 2.65 / kWh for the 3 days of FY 2008-09 as claimed by TPC in their petition, this energy charge should be levied by TPC on the actual energy sold to BEST and TPC-D.

The Commission observes that the usage of 100% imported coal has skyrocketed the power generation cost of TPC's Trombay Unit No. 8. It is noted that the cost in Rs/M kCal paid by TPC for the imported coal is 40% higher than that paid by other utilities in the State for washed coal. Further, high cost of fuel increases the working capital requirement of the unit, thereby bringing additional load on the consumers. The Commission directs TPC to explore all possible avenues to reduce its power generating costs. Improvement of plant efficiency, reduction of auxiliary consumption, use of blended coal are some of the measures which need to be taken very seriously by TPC in order to reduce the cost of generation. The Commission advises TPC to maintain accurate records of actual auxiliary consumption during the year and implement measures to reduce the same.

66. **Apportionment of cost of shared facilities and services used by Trombay Unit No. 8**

66.1: **Details of Shared facilities**:

TPC, in its submission to the Commission has identified some common services of Unit-4 to Unit-7 that is utilised for operation of Trombay Unit No. 8, from which 100 MW has been sold to TPTCL and has accordingly identified costs associated with the same, which it submits can then be paid to the respective units. TPC in their petition have stated that the following facilities of Unit 4 to 7 of the Trombay Station are being utilized by Trombay Unit No. 8:

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

66.2 **Expenditure on shared facilities** :

TPC have also stated that the expenditure components on such common facilities have been identified under the following heads:

- O&M Expenditure on such common facilities;
- 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.

67. TPC further submitted that for arriving at the total costs, the share of the expenditure by Trombay Unit No. 8 for this 100 MW is based on the proportion of the contracted capacity (100 MW) as a % of the total capacity being served by these assets. Using this, TPC have proposed that the allocation of costs to the 100 MW from Trombay Unit No. 8 will be as given below:

Particulars	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12
Apportionment of Capital cost to Trombay Unit No. 8 - 100 MW (Rs. Crore)	1.8	4.4	4.3	4.3
O&M expenditure (escalated at 5% p.a.) (Rs. Crore)	3.6	3.8	3.9	4.1
Total (Rs. Crore)	**5.4**	**8.2**	**8.2**	**8.3**

TPC has proposed to compensate the consumers of the respective Distribution licensees with the above quantum from the year FY 2009-10 onwards.

68. The Commission during the course of TVS had enquired if charging of any costs to Unit -8 would lead to double counting. TPC submitted that they have presented the cost of shared facility in the petition. The cost of such shared facility is being proposed to be apportioned to Trombay Unit No-8 and in turn to 100 MW capacity of Trombay Unit No-8. Such costs that are absorbed would be given credit in the ARR of the rest of the Units i.e. Unit-4 to Unit-7 thereby ensuring that there is no double counting. TPC further explained that these facilities were in operation for over 25 years now.

69. **Commission's observations :**

The Commission observes from the above submission that the common facilities being utilised for operation of Trombay Unit No-8 appear to have inherent higher capacity. Further, it appears from the above submission that these facilities are capable to take additional load pertaining to the new 250 MW unit with or without marginal additions and modifications, as the case may be. The Commission also observes that all such common facilities would be utilised during the normative life of 25 years of Trombay Unit No-8.

The Commission further observes that the consumers of power generated from existing Trombay Unit-4 to Unit-7, from whom the capacity charge for establishment and operation of all such common facilities is being recovered, need to be compensated adequately by Trombay Unit No-8 for the usage. The Commission notes that 150 MW of the power generated from TPC Trombay Unit-8 is proposed to be supplied to a section of the existing consumers of TPC's Units 4 to 7. However, as per TPC's submission, the remaining 100 MW power generated with the use of the common facilities as identified above, is proposed to be sold to an Inter-state trading licensee. In case the same was to be sold to the existing consumers of TPC's Trombay units 4 to 7, the compensation to the consumers would not be required separately. However, the Commission notes that Under Section 10(2) of the EA 2003, the generating company has been given freedom to supply electricity to any licensee or a consumer. Further the Hon'ble Supreme Court in the judgement cited as 2009 ELR (SC) 246 TPC vs. MERC has remarked that,

> *"A generating company, if the liberalization and privatization policy is to be given effect to, must be held to be free to enter into an agreement and in particular long term agreement with the distribution agency, terms and conditions of such an agreement, however, are not unregulated........"*

With the above background, the Commission is not in a position to direct TPC to sell the remaining 100 MW power either to the existing set of consumers or to any specific set of consumers, as it would contravene provisions of Section 10(2) of the EA 2003. Hence the Commission is of the view that the existing consumers who bear the cost of common facilities as above, need to be adequately compensated for use of these facilities to generate and sell power to other users.

As the Commission does not have adequate technical and financial information and data of all such common facilities, the Commission is unable to decide the extent of usage of all such common facilities and a mechanism for sharing of such costs.

70. The Commission hereby directs TPC to undertake a detailed Techno-commercial audit of all such common facilities to ascertain the extent of usage and sharing of all such facilities, the life of these assets and their capacities and propose to the Commission a mechanism for sharing of costs for all such common facilities being utilised by Trombay Unit-8. Based on the results obtained from this study the Commission would then finalise a mechanism for reimbursement in lieu of all such common facilities of Unit-4 to Unit-7 being utilised by Trombay Unit-8. TPC is hereby directed to submit this Techno-Commercial audit report within a period of 3-months from this order.

71. **Approved tariff for Trombay Unit No-8**

Based on the above principles, the fixed charges and energy charges for the Mumbai Licensees approved by the Commission for FY 2009-10 are as given below:

Particulars	As submitted by TPC in the Petition	As approved by the Commission
Total Fixed Charges (Rs Cr)	133.65	121.88
Sale to Mumbai distribution licensees (MW)	150	150
Fixed charge per MW (Rs. Crore)	0.891	0.812
Energy Charges (Rs / kWh)		
During Stabilization Period	2.96	2.93
Post Stabilization Period	2.81	2.80

The Commission directs TPC to ensure that it supplies power corresponding to the capacity contracted by Mumbai Licensees before it supplies power to other entities, subject to the schedule provided by the two distribution licensees. The Commission further directs TPC to submit a fortnightly status report about the hourly schedule provided by BEST & TPC-D for supply of power from Trombay Unit No. 8 and the actual demand met from Trombay Unit No-8 duly certified by the State Load Dispatch Centre.

With this Order, the Commission disposes of TPC's Petition in Case No. 35 of 2009.

(V. L. Sonavane)	(S. B. Kulkarni)	(V. P. Raja)
Member	Member	Chairman

(P.B. Patil)
Secretary, MERC