Before the

MAHARASHTRA ELECTRICITY REGULATORY COMMISSION

World Trade Centre, Centre No.1, 13th floor, Cuffe Parade, Mumbai 400 005.

Tel. No. 022 22163964/65/69 – Fax 022 22163976

E-mail mercindia@mercindia.org.in

Website: www.mercindia.org.in

Case No. 12 of 2005 and 56 of 2005

In the matter of
Annual Revenue Requirement (ARR) Petition of TPC Limited for FY 2005-06 and ARR & Tariff Petition for FY 2006-07

Dr Pramod Deo, Chairman
Shri A. Velayutham, Member
Shri S.B.Kulkarni, Member

ORDER

Dated: October 3, 2006

The Tata Power Company Limited (TPC) filed its ARR Petition for FY 2005-06 on December 30, 2004, based on the earlier Tariff Regulations. In compliance with the Commission's directions issued vide its letter dated May 20, 2005, TPC submitted its revised ARR Petition for FY 2005-06 providing the break up of ARR of Generation, Transmission and Distribution Function on June 30, 2005. The Commission notified the MERC (Terms and Conditions of Tariff) Regulations, 2005 on August 26, 2005.

Subsequently, TPC submitted its ARR and Tariff Petition for FY 2006-07 on February 9, 2006. After two Technical Validations sessions, the Commission vide its letter May 4, 2006 directed TPC to submit its revised ARR and Tariff Petition for FY 2006-07 including a separate section on truing up of ARR for FY 2005-06. TPC submitted its revised ARR and Tariff Petition for FY 2006-07 on May 16, 2006.

The Commission admitted the ARR Petition of TPC for FY 2005-06 (Case No. 12 of 2005) and ARR and Tariff Petition of TPC for FY 2006-07 (Case No. 56 of 2005) on May 18, 2006.

The Commission, in exercise of the power vested in it under Section 61 and 62 of the Electricity Act, 2003, and all other powers enabling it in this behalf, and after taking into consideration all the submissions made by TPC, all the objections, responses of TPC, issues raised during the Public Hearing, and all other relevant material, issues this Order on the ARR Petition of TPC for FY 2005-06 and ARR and Tariff Petition of TPC for FY 2006-07.

ORGANISATION OF THE ORDER

This Order is broadly divided into six Sections.

The **first Section** consists of a background and brief history of the ARR and Tariff determination process and the subsequent quasi-judicial process that it underwent. It also contains the sequence of events. The salient features of the Order issued by the Appellate Tribunal for Electricity (ATE) on the distribution license of The Tata Power Company Ltd. (TPC) and its impact on the Commission's Order on TPC's distribution business are also detailed in this Section. For the sake of convenience, a list of abbreviations with their expanded forms is appended at the end of this Section.

The **second Section** of the Order details the various objections raised by the objectors in writing as well as during the Public Hearing before the Commission. The objections have been broadly categorized into 46 issues. The various objections have been summarized, followed by the response of TPC and the ruling of the Commission on each of the points.

The **third Section** of the Order comprises the Commission's analysis and its decisions on the truing up of each component of TPC's revenue and expenditure during FY 2004-05 and FY 2005-06.

The **fourth Section** of the Order comprises the Commission's analysis and its decisions on the ARR and tariff determination of TPC's Generation Business for FY 2006-07. This Section comprises the various cost estimates of TPC-Generation for FY 2006-07, and the Commission's reasoning for arriving at acceptable figures with reference to the figures given by TPC.

The **fifth Section** of the Order comprises the Commission's analysis and its decisions on TPC's ARR for FY 2006-07 for its Transmission Business. This Section comprises the various cost estimates for FY 2006-07 of TPC-Transmission, and the Commission's reasoning for arriving at acceptable figures with reference to the figures given by TPC.

The **sixth Section** of the Order comprises the Commission's analysis and its decisions on TPC's ARR for FY 2006-07 for its Distribution Business. This Section comprises the various cost estimates for FY 2006-07 of TPC-Distribution, and the Commission's reasoning for arriving at acceptable figures with reference to the figures given by TPC.

The **seventh Section** of the Order elaborates the tariff philosophy adopted by the Commission for determining the retail tariff, as well as the Wheeling Charges and the Cross-subsidy Surcharge.

List of Abbreviations

ABC	M/s A.B Cursetji & Company
ATE	Appellate Tribunal for Electricity
A&G	Administrative and General
ARR	Annual Revenue Requirement
BARC	Bhabha Atomic Research Centre
BEST	Brihanmumbai Electric Supply & Transport Undertaking
BPCL	Bharat Petroleum Corporation Limited
CAPEX	Capital Expenditure
CAGR	Compounded Annual Growth Rate
Cu.m	Cubic meter
CV	Calorific Value
CWIP	CWIP
CWPH	Central Water Pump House
DPR	Detailed Project Report
DTLF	Deferred Taxation Liability Fund
DTPS	Dahanu Thermal Power Station
EA 2003	Electricity Act, 2003
FAC	Fuel Adjustment Cost
FGD	Flue Gas Desulphurisation
FY	Financial Year
GFA	Gross Fixed Assets
GOM	Government of Maharashtra
HPCL	Hindustan Petroleum Corporation Limited
IDC	Interest cost During Construction
IIT	Indian Institute of Technology
IOC	Indian Oil Corporation
IPP	Independent Power Producers
Kcal	Kilo calories
KVA	Kilo-Volt Ampere
KPTCL	Karnataka Power Transmission Company Limited
KW	Kilo Watt
Kwh	Kilowatt hour
LSHS	Low Sulphur Heavy Stock
MbPT	Mumbai Port Trust
MOEF	Ministry of Environment & Forest
MERC	Maharashtra Electricity Regulatory Commission
MPCB	Maharashtra Pollution Control Board
MPCPL	M.Pallonji & Co. Pvt Ltd

MPT	Mumbai Port Trust
MSEB	Maharashtra State Electricity Board
MSPGCL	Maharashtra State Power Generation Company Limited
MSETCL	Maharashtra State Electricity Transmission Company Limited
MT	Metric Tonnes
MU	Million Units
MW	MegaWatt
MYT	Multi Year Tariff
O & M	Operations and Maintenance
ONGC	Oil and Natural Gas Corporation Limited
PLF	Plant Load Factor
PPA	Power Purchase Agreement
PTC	Power Trading Corporation
REL	Reliance Energy Limited
R & M	Repair and Maintenance
RPO	Renewable Purchase Obligation
TOD	Time of Day
TPC	Tata Power Company
TPTCL	TPTCL
VRS	Voluntary Retirement Service
WAPCOS	Water and Power Consultancy Services Limited

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1 BACKGROUND AND BRIEF HISTORY

TPC is a Company established in 1919. On April 1, 2000, The Tata Hydro-Electric Power Supply Company Limited (established in 1910) and The Andhra Valley Power Supply Company Limited (established in 1916), were merged into TPC to form one unified entity. Consequent to the merger, the licenses of the above mentioned Companies were also merged and TPC was granted a license by the Government of Maharashtra for the supply of energy to the public in its Mumbai License Area and to supply energy in bulk to licensees, vide Resolution No. IEA-2001/CR-10509/NRG-1, dated July 12, 2001.

1.1 COMMISSION'S ORDER ON ARR AND TARIFF PETITION FOR FY 2004-05

TPC had submitted a "Proposal for the Approval of the Annual Revenue Requirement for FY 2003-04" (ARR and Tariff Petition for FY 2003-04) on October 1, 2003, under affidavit to the Commission. TPC submitted the ARR and Tariff Petition for FY 2004-05 on affidavit, on February 20, 2004. The Commission admitted the ARR and Tariff Petitions for FY 2003-04 and FY 2004-05 on February 20, 2004. The Commission, after taking into consideration all the objections, including the submissions and responses of TPC, issues raised during the Public Hearing, and all other relevant material, issued the Operative part of the Order on June 1, 2004 and the detailed Order on June 11, 2004.

1.2 ARR PETITION FOR FY 2005-06

TPC submitted the 'Proposal for approval of Annual Revenue Requirement and Tariff Petition for FY 2005-06", under affidavit to the Commission, on December 30, 2004, based on the earlier Tariff Regulations of the Commission. The Commission vide its letter dated May 20, 2005 directed TPC to resubmit the ARR by segregating the ARR of Generation, Transmission and Distribution functions. Accordingly TPC submitted the revised ARR Petition for FY 2005-06 segregating the ARR in respect of Generation, Transmission and Distribution function along with the financial model, under affidavit to the Commission, on June 30, 2005.

The Commission in exercise of the powers conferred by the Electricity Act, 2003, notified the Maharashtra Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2005, on 26th August, 2005. These Regulations superseded the previous MERC (Terms and Conditions of Tariff) Regulations, 2004.

The Commission vide its letter dated 10th October, 2005 directed TPC to resubmit the ARR for FY 2005-06 based on the principles stipulated in the aforesaid Regulations, alongwith certain data gaps and information requirements, to the Commission. Further, vide letter dated

November 14, 2005, the Commission directed TPC to submit the ARR and Tariff Proposal for FY 2005-06 in the Formats forwarded by the Commission to the extent possible.

TPC vide letters dated 19th Oct, 9th Nov, 18th Nov, 2005, and 3rd January, 2006, submitted the data on actual details for FY 2004-05 including Truing up for FY 2004-05 and revised Petition for FY 2005-06 including actual details for the period April to August 2005.

1.3 MULTI YEAR TARIFF FRAMEWORK

Regulation 12.1 under Part C of the Maharashtra Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2005 notified on 26th August 2005, stipulates that the Commission shall determine the tariff for following matters under a multi-year tariff framework with effect from 1st April 2006:

a) Supply of Electricity by a Generating Company to a Distribution Licensee
b) Intra-State transmission of electricity
c) Wheeling of electricity
d) Retail sale of electricity

Regulation No. 14.1 under Part C of Terms and Conditions of Tariff Regulations states that *"The applicant shall submit a forecast of his aggregate revenue requirement and expected revenue from tariff and charges for the approval of the Commission for each financial year within a control period of five (5) financial years. Provided that for the first application made to the Commission under this Part, the control period shall be three (3) financial years i.e. April 1, 2006 to March 31, 2009."*

In line with the Tariff Regulations, the Commission vide its letters dated 14th November 2005 directed the following Utilities to submit the first Application for determination of multi year tariff for the first Control Period of 3 financial years, i.e., FY 2006-07, FY 2007-08 and FY 2008-09, by 30th November 2005:

- The Tata Power Company Limited (TPC)
- Reliance Energy Limited (REL)
- BEST Undertaking (BEST)
- Maharashtra State Electricity Transmission Company Limited (MSETCL)
- Maharashtra State Electricity Distribution Company Limited (MSEDCL)
- The Mula Pravara Electric Co-operative Society Ltd. (MPECS)

Further, the Commission, vide its letter dated 21st November 2005, forwarded the "Draft MYT Data Formats" to the Utilities and advised the Utilities to submit their first Multi Year Tariff Petition. In response to the Commission's letters, all the Utilities requested the Commission to extend the time for submission of the first MYT application.

The Commission, considering the requests made by the Utilities, vide its Order dated December 20, 2005 in the matter of Applicability of Multi Year Tariff Framework under

Regulation 12 of Part C of the Maharashtra Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2005 granted exemption to all the Utilities in Maharashtra from implementation of MYT framework for FY 2006-07. The Commission, in its Order, stated that the Commission would determine the tariff under a multi year tariff framework with effect from April 1, 2007 instead of April 1, 2006 as stipulated in MERC (Terms and Conditions of Tariff) Regulations, 2005 and accordingly, the first Control Period for MYT framework shall be the three financial years from April 1, 2007 to March 31, 2010. At the same time, the Commission directed the Utilities to submit the ARR and Tariff Petition for FY 2006-07 by December 31, 2005.

1.4 ARR AND TARIFF PETITION FOR FY 2006-07

TPC submitted its ARR and Tariff Petition for FY 2006-07 on February 9, 2006. The Commission vide its letter dated March 22, 2006 forwarded the data gaps and information required from TPC and subsequently TPC submitted its replies on the queries raised and the additional information sought by the Commission.

The Commission held a Technical Validation Session on the ARR and Tariff Petition for FY 2005-06 and FY 2006-07 of TPC, on April 5, 2006. During the session, the consumer representatives, i.e., Prayas and Mumbai Grahak Panchayat (MGP), contended that they had received the copy of ARR Petition on 31st March, and hence, due to lack of time, they were unable to assess the data gaps in the Petition. They requested the Commission to reschedule the Technical Validation Session. The Commission held a second Technical Validation Session on the ARR and Tariff Petition for FY 2005-06 and FY 2006-07 of TPC on April 17, 2006. The list of individuals, who participated in the Technical Validations Sessions, is provided in Appendix 1.

Subsequent to the first Technical Validation session, the Commission issued the Order on April 13, 2006 in the matter of applicability of MERC (Terms and Conditions of Tariff) Regulations, 2005. The Commission in its Order stipulated that *"the norms for approval of ARR and principles for determination of tariff as enunciated in the latest Tariff Orders of each licensee shall form the basis for approval of the Annual Revenue Requirement of licensees/Utility for FY 2005-06 and the determination of ARR and Tariff for FY 2006-07 will be governed by the Tariff Regulations"*.

The Commission on April 25, 2006 and May 4, 2006 directed TPC to provide additional information and clarifications on issues raised during the Technical Validation session and directed TPC to submit the revised Annual Revenue Requirement and Tariff petition for FY 2006-07 after incorporating the additional information required and including one separate section on truing up of ARR for FY 2005-06. TPC was also directed to submit the Public Notice in English and Marathi in the format prescribed by the Commission.

1.5 ADMISSION OF PETITIONS AND PUBLIC PROCESS

TPC submitted its revised ARR and Tariff Petition for FY 2006-07 including the responses to the queries raised during the technical validation sessions, with a separate section on truing up of ARR for FY 2005-06 on May 16, 2006. The Commission admitted the ARR and Tariff Petitions of TPC on May 18, 2006. In accordance with Section 64 of the EA 2003, the Commission directed TPC to publish its application in the prescribed abridged form and manner, to ensure public participation. The Commission also directed TPC to reply expeditiously to all the suggestions and comments from stakeholders on the ARR and Tariff Petitions. TPC issued the public notices in newspapers inviting comments/suggestions from stakeholders on its ARR and Tariff Petitions. The Public Notice was published in The Times of India, Indian Express, Mid Day, Maharashtra Times and Lok Satta newspapers.

The copies of TPC's Petitions and its summary were made available for inspection/purchase to members of the public at TPC's offices and on TPC's website (www.tatapower.com) and on the web site of the Commission (www.mercindia.org.in) in downloadable format. The last date for filing written objections was fixed as 9th June 2006. The Public Notice specified that the suggestions/objections, either in English or Marathi, may be filed in the form of affidavits along with proof of service on TPC. The Public Notice also informed the consumers about the date and venue of the Public Hearing, i.e., 12th June 2006 at 11:00 hours at Centrum Hall, World Trade Centre No.1, Cuffe Parade, Mumbai-400005.

The Commission received written objections expressing concern on high fuel cost, shipping and coal handling costs, and a host of other issues, from a total of 9 objectors. Those objectors who submitted that they would like to be heard in person, were invited for the Public Hearing at Mumbai. The Public Hearing was conducted in Mumbai on June 12, 2006.The list of individuals, who participated in the Public Hearing is provided in Appendix 2.

The category-wise number of consumers/institutions who submitted their objections on TPC's ARR and Tariff Petitions for FY 2005-06 and FY 2006-07 has been provided in the Table below:

Summary of Objections

Interest group	**Objections**
Distribution Licensee	2
Consumer representative	2
Industry association	2
Individuals	3
Total	**9**

Based on various objections received, the Commission directed TPC to submit data gaps identified by the Commission and TPC submitted the data and responses to the objections raised on the ARR and Tariff Petition, vide its letter dated 19th June, 2006.

The Commission has ensured that the due process, contemplated under law to ensure transparency and public participation has been followed at every stage meticulously and adequate opportunity was given to all the persons concerned to file their say in the matter. Based on the Commission's analysis, additional data was sought from TPC by the Commission from time to time, which was submitted by TPC.

1.6 ORDER OF ATE ON TPC'S LICENSE TO SELL TO RETAIL CONSUMERS

The Honourable Appellate Tribunal for Electricity (ATE) issued an Order in Appeal No. 31 of 2005 and 43 of 2005, dated May 22, 2006, in the context of the Appeal filed by REL against the Commission's Order in Case No. 14 of 2002 dated July 3, 2003 and the Appeal filed by TPC against certain selected portions of the same Order.

In its Order, the ATE ruled that,

> *"…we hold that Tata Power has not been granted license to undertake retail distribution of electricity in the area within which REL has been distributing power in retail to customers directly… The order and findings recorded by the Regulatory Commission are set aside.*
>
> *It is clear that Tata Power has licenses only to undertake bulk supply to licensees like REL as contended by REL."*

The Mumbai license area is peculiar in that it has several distribution licensees, and concepts such as the 'standby arrangement', and power purchase by one licensee for another. In the absence of TPC's distribution business, the charges payable for the standby arrangement as well as the actual functioning of the standby arrangement has to be re-allocated in some proportion to the other two licensees, viz. REL and BEST. Further, if TPC is no longer a distribution license, then it can no longer undertake the trading function, viz buying power for selling power to other distribution licensees, for which either a trading license is required or the Licensee has to be a distribution licensee having a deemed trading license. As a consequence, two major input cost elements of TPC's distribution business, i.e., share of standby charges and the power purchase cost, cannot be decided. Thus, the implication of the ATE Order is that the Commission cannot issue its Order on the ARR and tariff of the distribution and supply business of TPC.

TPC approached the Honourable Supreme Court of India in appeal against the Order of the ATE. In the meantime, the Commission initiated the process of appointing an administrator to undertake the job of overseeing the supply of electricity to those consumers who were being supplied by TPC's distribution business.

The Honourable Supreme Court of India granted interim relief to TPC by staying the ATE Order, through the following judgement issued on August 28, 2006:

> *"Having regard to the fact that the issues involved may affect a large number of consumers, we consider it appropriate to dispose of the matter as early as possible. Let the application for interim relief be listed for further hearing on November 7, 2006. We have informed the parties that if possible, we may dispose of the matter finally on that day.*
>
> *In the meantime, so far as old consumers are concerned, to whom the supply is made by the appellant, they shall not be disturbed and the appellant shall continue the supply in their cases. Additionally those applicants who have applied to the appellant for electricity connection of 1000 KVA or more may be supplied electrical energy by the appellant. This however, is confined to the applicants whose names have been included in the list attached to the application for interim relief.*
>
> *The appellant however, will not be entitled to supply electrical energy to any consumer who is already getting his supply from Respondent No.1.*
>
> *The above interim order is subject to the final result of the application for interim relief/appeal.*
>
> *We further direct that the Maharashtra Electricity Regulatory Commission will not proceed with the notice dated August 16, 2006 which is annexed as Annexure A to the further affidavit filed on behalf of the appellants in support of the I.A. for interim relief."*

Accordingly, the Commission is issuing the Order for the Distribution business of TPC also, as a part of this Order.

2 OBJECTIONS RECEIVED, TPC'S RESPONSE AND COMMISSION'S RULING

2.1 HIGH FUEL COST OF OIL BASED POWER GENERATION

The Millowners' Association submitted during the public hearing that the cost of generation has gone up because three out of six units of TPC use oil as fuel for power generation. The Millowners' Association stated that there has been a marginal increase in the price of coal/gas in the recent past but the price of oil has increased drastically. The Millowners' Association opined that TPC should maximise the use of gas and also set up a coal-based generating unit close to Mumbai.

Prayas submitted that oil cost comprises more than 70% of the total fuel cost in FY 2006-07, though oil based generation contributes only 33% to the net generation of TPC , making the cost of net ex-bus cost of oil based generation as Rs 5.60/kWh. Prayas opined that alternatives to oil -based generation in Mumbai must be considered on urgent basis and dependence on oil- based generation should be reduced.

TPC's Response

TPC submitted that it proposes to set up a coal-based unit of 250 MW in Trombay, and is also planning to set up a 1000 MW plant in Maharashtra to meet Mumbai/Maharashtra requirement.

Commission's Ruling

Unit 4 of TPC, which has oil based generation, ranks last in the merit order and is hence, the last to be despatched in case of TPC. The Commission recognizes the concerns expressed by the objectors as regards high fuel cost on account of liquid fuel based generation. The Commission is of the view that high cost generation should be despatched taking into consideration state-wide merit order despatch principles. Depending on the demand, generation from Unit 4 would be considered by the Commission only for meeting the demand in certain months of the year, when the demand exceeds the supply available, excluding Unit 4 generation capacity.

2.2 DISCOUNTS FROM HPCL AND BPCL

Prayas submitted during the hearing that the fuel supply agreements between TPC, HPCL and BPCL stipulate that a discount of Rs.1160/MT will be given on the oil procurement, till the time final costs are mutually settled, and an additional discount of Rs 600/MT is stipulated in TPC's agreement with BPCL for using lower grade LSHS. Prayas requested the Commission to ascertain whether such discounts are factored in while projecting the oil costs.

TPC's Response

TPC submitted that the Trombay thermal power station is operated under stringent environmental norms, especially with regard to SO_2 emissions. SO_2 emission levels are dependent on fuel input which is linked to the quantum of generation. TPC submitted that in the light of growing demand, there are only a few occasions particularly during monsoon when generation can be on lower side and low grade LSHS can be accommodated. TPC has therefore made a provision in the contract with BPCL for an additional discount of Rs. 600/MT. However, there is no firm commitment to uplift this quantity since the quantum of off take is seasonal.

Commission's Ruling

The Commission has considered the actual landed fuel prices for FY 2004-05 and FY 2005-06 as the month-wise landed fuel price has been vetted as part of vetting of FAC computations. For FY 2006-07, the Commission has considered the landed fuel price per unit as prevalent in the last quarter of FY 2005-06. Any variation in actual fuel price with respect to assumed landed fuel price including rebates/discounts will be considered as pass through in FAC computations. The Commission directs TPC to indicate rebates/discount separately as received from fuel suppliers along with supporting bills for the purpose of FAC computation.

2.3 PROPOSED 100MW HFO BASED UNIT

REL submitted that considering the high levels of oil prices, which are expected to rise further, TPC should provide details of the short/medium term steps planned to mitigate the problem, in view of the proposed 100 MW HFO based DG set.

TPC's Response

TPC submitted that they are aware of the impact of rising fuel cost. However, the State of Maharashtra is reeling under severe power shortage and such shortage is also imminent in Mumbai. Hence, TPC has proposed a short gestation power plant of 100MW for Mumbai city to mitigate the power shortage in near future. TPC informed that the capital cost of the project is low, i.e., Rs. 1.8 Crore/MW which would partly compensate the high variable cost of the project.

Commission's Ruling

The Commission notes that the objection raised by REL pertains to new Generation project, scrutiny of which would be undertaken separately. The same has not been considered for the purpose of Tariff Determination of TPC existing Generating Stations for FY 2006-07.

2.4 LIMITED AVAILABILITY OF COAL

Prayas submitted that in the ARR Petition, TPC has stated that against the coal requirement of 6061 MT/day for Unit No.5, only 5,800 MT/day is available. Due to this limited availability of coal, TPC has to burn oil for power generation from Unit No.5, thereby significantly increasing the cost of generation. Prayas requested TPC to explain such shortage and also requested the Commission to analyze this problem.

TPC's Response

TPC submitted that the Maharashtra Pollution Control Board (MPCB) has stipulated that the quantity of coal shall be restricted to 5800MT/day while the full load requirement is 6061MT/day. Also, due to peculiar demand pattern in the night, generation has to be backed down to below 50% on Unit 5 resulting in use of oil support.

Commission's Ruling

The same aspect has been discussed in the Commission's earlier Tariff Order also. TPC had submitted documents confirming that the quantity of coal has to be restricted to 5800 MT/day because of the limit on sulphur emissions.

2.5 PERFORMANCE OF POWER GENERATING STATIONS

Prayas submitted that TPC's generating units have shown a significant degradation in performance in parameters like heat rate, auxiliary consumption, etc., which has increased the fuel cost by about Rs. 100 Crore. Prayas requested the Commission to assess the plant performance for FY 2006-07 in accordance with the actuals of FY06 and reduce the ARR accordingly. Prayas also requested the Commission to direct TPC to explore avenues for further improvement in its plant performance. Mahindra & Mahindra Ltd. submitted that TPC has projected a considerable increase in the auxiliary consumption even when generation is at lower levels, hence TPC should take certain measures to reduce the auxiliary consumption.

TPC's Response

TPC disagreed with the observation and submitted that the auxiliary consumption has been projected on normative basis or less than normative basis or on the basis of auxiliary consumption for the past few years.

Commission's Ruling

The Commission agrees with the view of passing on benefits of better operational performance. However, it also of the view that if historical performance is considered in toto, then there will be no incentive for the Utility to improve further, as TPC's historical performance has been better than the norms stipulated in the Regulations, in most cases. In this regard, the Commission will keep in view the provisions of MERC (Terms and Conditions of Tariff) Regulations, 2005. Regulation 26.2 of Tariff Regulations stipulates

"Provided further that in case of an existing generation station, the Commission shall determine the tariffs having regard to the historical performance of such generating station and reasonable opportunities for improvement in performance, if any". The Commission has also elaborated the mechanism of sharing of the benefits of improved performance, between the consumers and the Utility, in Section 4 of the Order.

2.6 COAL -FREIGHT AND HANDLING COSTS

Prayas submitted that the freight and handling charges amounts to 52% of the total coal costs and stated that there has been an exorbitant increase of 30% in the freight and coal handling charges in just one year, i.e., from FY 2004-05 to FY 2005-06. Captain N.B.Jamnerkar also highlighted the sharp increase in freight charges form Rs 676.4 per unit in FY 2004-05 to Rs. 945 per unit in FY 2005-06. They stated that TPC should explain the reasons for such steep increase in the coal handling charges and explain the criteria adopted by TPC for entering into contracts/shipping arrangements.

TPC's Response

TPC submitted that it buys coal on FOB basis as well as on CIF basis. When the coal is bought on FOB basis, sea freight and local coal logistics are arranged separately. For CIF consignments, sea freight gets merged with FOB cost, thereby increasing the basic cost of coal. Sea freight component is about 30-35% of the total cost of coal and local logistics component comprises about 19% of the total cost of coal. Thus, combined coal freight and handling charges is indeed about 50% of the total cost of coal. TPC has added that the coal logistics cost shown in the ARR Petition is without the captive jetty being commissioned, and when the coal is brought to Trombay from the captive jetty, the cost structure would be different. The cost benefit analysis of the Jetty has already been submitted to the Commission as per DPR.

Commission's Ruling

The Commission has analysed the various components of landed cost of coal for FY 2004-05 and FY 2005-06. It is observed that though the freight and coal handling charges component of landed price of fuel has increased in FY 2005-06, the basic coal cost has reduced during FY 2005-06. The total landed price of imported coal has increased from Rs 2618/MT in FY 2004-05 to Rs 2737/MT in FY 2005-06, which reflects an increase of around 4.5% in landed fuel price.

2.7 SHIPPING COST OF COAL

Captain Jamnerkar in his presentation noted that for bringing the cargo of coal by chartered vessels from foreign countries, TPC entered into a fixed 'shipping contract' on two years basis in April 2005, instead of on six monthly basis, which was TPC's previous practice. He contended that the contract was made during the period when the shipping charter hire rates were at the peak of USD 45000-48000 per day, which are now USD 20000-25000 per day. He opined that if TPC had entered into six monthly contracts, then it would have saved about Rs. 50 Crore on this account.

TPC's Response

TPC submitted the following clarifications in this regard:

a) Shipping contract quotations were invited from 10 vessel owners in the month of Aug 05 for sea freighting of 1.8 million tonnes of coal, which is the coal requirement of one year and therefore the contract period is not two years as stated in the presentation.
b) As regards the allegation of higher charter rates, the contract was formalized when the charter hire rates were about USD 17000 per day and not USD 35000-48000 per day as contended. The freight rates were therefore competitive and in line with the market rates at that time. Therefore, the conclusion that Rs 50 Cr has been paid in excess is incorrect.

Commission's Ruling

In shipping industry, freight and other charges change with the market conditions frequently. It is always possible to infer, with the benefit of hindsight that a particular contract should not have been entered at the time it was actually entered. The utility also has no incentive or benefit in contracting higher freight rates. The Commission is of the view that this is an operational matter to be left to the discretion of the Utility.

2.8 CAPTIVE JETTY AT TROMBAY

Captain Jamnerkar submitted that there has been an increase in fuel handling charges from Rs 456.96 per unit in FY 2004-05 to Rs 531 per unit in FY 2005-06, though a capital expenditure of Rs. 127 Crore was approved by the Commission in FY 2004-05 on 'finger jetty' at Trombay with the objective of reducing the coal handling charges. He submitted that the cost of the 'wharf jetty' has now been revised by TPC from Rs. 127 Crore approved by the Commission in FY 2004-05 to Rs. 163 Crore. Since the purpose of both the 'jetty' projects has been mentioned as 'to reduce the cost of coal logistics', Captain Jamnerkar stated that TPC should be asked to explain whether they both comprise the same items and justify the capital expenditure scheme whose aim was to reduce the coal costs, whereas TPC is actually claiming increase in the cost. Captain Jamnerkar submitted that the cost of captive jetty at Trombay was given as Rs 127 Crore in the DPR, while the actual cost as per WAPCOS' report comes to Rs. 49 Crore, indicating an excess cost of Rs. 78 Crore. He requested the Commission to disallow such expenditure. He asked TPC to produce copies of contracts and explain the criteria concerning the contracts and bidding procedure adopted by TPC while entering into these contracts.

Captain Jamnerkar opined that instead of wharf Jetty, a multi fuel jetty with a cost of about Rs. 180 Crore would have been more advantageous considering that shipping turn around time can be reduced, also ships without gear which are cheaper to charter could enter the Jetty, and moreover wastage and pollution can be minimized. He contended that all environmental authorities and BPT had given permission for a Multi Fuel Jetty, yet TPC has submitted DPR for a Wharf Jetty, with a revised estimate of Rs. 163 Crore, without permission from environmental authorities.

TPC's Response

TPC responded that there is only one jetty being envisaged at Trombay for transportation of coal. Hence, the term Finger Jetty and Captive Coal Berth are one and the same as far as capital expenditure is concerned.

TPC submitted that the cost of captive coal berth estimated by WAPCOS were not final, as they are environmental consultants and not engineering consultants. It was a budgeted initial cost at the time of submission of the application. However, subsequently tenders were invited for the construction of berth, supply and installation of un-loaders and coal conveying systems and contracts were awarded to the lowest bidder after scrutinizing of the bids. The contract rate per ton for unloading of coal at this berth is not Rs 320/- per tonne, which is baseless and incorrect. TPC submitted that it has already provided details of the running and capital costs to the Commission as part of DPR.

TPC accused Captain Jamnerkar of having a vested interest in connection with the TPC Jetty Contract. TPC highlighted that Captain Jamnerkar has admitted that he was working as General Manager for M/s A B Cursetji & Company (ABC) and that ABC was an unsuccessful bidder for the Jetty Contract because of a non-compliant offer. Hence, TPC requested the Commission to view the objection as that made by a disgruntled bidder with ulterior motives and not from a bona fide objector.

TPC further submitted that the owners of the successful bidder in the Jetty contract, M/s M. Pallonji & Co. Pvt. Ltd. (MPCPL) and M/s ABC, are relatives having some family dispute between them. TPC is of opinion that the present dispute has also arisen out of their personal differences.

TPC referred to the name of Shri Pramod Navalkar mentioned by Captain Jamnerkar in his objection and submitted that Shri Navalkar had also worked for the same contractor i.e., M/s ABC. TPC submitted that Maharashtra Pollution Control Board (MPCB) has taken into consideration the allegations made by Shri Navalkar before giving their consent to TPC.

TPC, in its response, objected to the objector's claim that TPC withheld the estimated project cost of the Jetty from the Commission, as TPC had previously submitted the Detailed Project Report (DPR) to the Commission on 9th August, 2004 for the estimated project cost of Rs. 127 crore, with the actual project cost to be intimated to the Commission on completion of the project.

TPC, in its response, further clarified that the Water and Power Consultancy Services Limited (WAPCOS), had been employed by TPC only for the purpose of environmental clearances and not for design or to estimate the cost of construction of the jetty, therefore their estimates of the project cost are subject to limitations. TPC has pointed out that MOEF's clearance was required for projects with estimated cost of over Rs. 5 crore and therefore, once the estimated cost of project was disclosed as over Rs. 5 crore, any upward revision did not have much relevance, since MOEF's' permission in any event has been taken.

TPC, in its response, denied the allegations made by Captain Jamnerkar that the said Contractor was not a Civil Contracting Company and that the job was given through preferential treatment. TPC clarified that the design and location of the Jetty proposed by Skanska and MPCL were not the same as each bidder was required to formulate its own proposal for building a Jetty within TPC's premises to unload approximately 2 million tonnes of coal per annum.

TPC submitted the detailed procedure followed in awarding the tender to MPCL. TPC submitted that it has been exploring the potential of constructing its own jetty within its premises at Trombay because the other alternatives, i.e., a Jetty at Dharamtar and using Haji Bunder Jetty were more expensive and also were not environment friendly.

TPC submitted that the bids for the Jetty were opened on 10th December, 2003 by a Committee of 5 officers, including a representative from Internal Audit Department. TPC added that two bids conformed to bid requirements, i.e., Skanska and MPCL while M/s ABC's bid did not conform to the requirements of the tender. The two qualifying bids were reviewed by senior officers and analyzed by the Committee. MPCL's proposal was accepted by TPC management as it was the lowest and satisfied the requirements of the tender.

TPC submitted that Captain Jamnerkar was well aware of the aforesaid procedures and facts as he had advised and represented M/s ABC during the tender and was retained by M/s ABC as a Consultant for that specific project as per their quotation to TPC.

TPC, in its response, submitted that the Multi fuel jetty which was tendered, did not materialize because no permission was received from MOEF despite TPC's best efforts and hence the project was abandoned and no contract was awarded.

Commission's Ruling

The Commission has not considered the capitalisation of coal jetty during FY 2006-07. The Commission had directed TPC to submit the capital investment proposal for Captive Jetty after obtaining all the clearances. TPC has submitted the revised scheme pursuant to availing various statutory clearances, which is currently under scrutiny by the Commission as part of capex approval.

2.9 COAL HANDLING COST AT MPT JETTY AT HAJI BUNDER

Captain Jamnerkar submitted that TPC's Contractor has handled 2 million tonnes of Coal through Haji Bunder Jetty and was paid about Rs 520/ ton as charges for activities like midstream discharge of coal from mother vessel into barges, bringing barges to the Jetty, offloading and stacking the coal, reloading the coal in dumpers and transporting the same to TPC's Trombay plant. Captain Jamnerkar submitted that the actual cost for the above-mentioned operations is only Rs 320/ton and hence the excess payment of over Rs. 40 Crore per annum made by TPC should be disallowed by the Commission. He also submitted that the above contract was awarded without inviting tenders from reputed cargo handlers and no enquiries were sent to any Company.

TPC's Response

TPC denied the allegations, and submitted that the normal procedure of invitation of bids and evaluation was carried out and the contract was awarded to the lowest bidder.

TPC, in its response, submitted that Captain Jamnerkar's allegation of excessive expenditure on coal handling by TPC was targeted against MPCPL, with similar ulterior motives as discussed earlier.

TPC submitted that it always placed contracts based on competitive bidding and various contractors have carried out the coal handling for TPC for several years in the past. However, since one contractor was blacklisted by TPC for not performing contractual obligations, there has been discontent in the coal handling agencies and hence the above false allegations have been leveled against TPC with ulterior motives. TPC submitted that the rate being charged by the previous contractor under the 2005 MOU was Rs 581/- per metric tonne, while the rate of MPCL was Rs. 485/- which is less than the previous rate, hence TPC reiterated that the allegations made by Captain Jamnerkar are unfounded and misconceived.

TPC, in its response, denied Captain Jamnerkar's objection that the barging rate of Rs 180/- per M.T is very high, since Captain Jamnerker himself, when working for M/s ABC had submitted a non-compliant higher bid offer. TPC submitted that the barging work calls for the construction and supply of new 2500 M.T low draft barges, which have to be constructed a per I.R.S class which means they have to have all new equipments, engines and steelwork. These barges have to be fitted with higher power (800 H.P) engines with all navigational aids like Radar, G.P.S, Echo sounder and are also to have triple joy stick control to have better maneuvering in shallow waters and should be designed to sit flat in low waters. The barges should also have a 35 kVA generator to operate 3 fire pumps at a time in case of an emergency.

Futher, these barges are dedicated for barging TPC coal for the entire contract period and cannot be used elsewhere. TPC clarified that the rate of Rs 180/- per M.T also includes the dredging costs for keeping the channel and basin area dredged for the entire contract period for a quantity of over 100,000 cubic meters per annum. Therefore costs incurred for dredging over 100,000 cm. mtrs per annum, includes keeping a patrol watch launch near the jetty. Hence, the rate of Rs 180/- per M.T is not for barging alone but is an all composite rate for channel movement and dredging as well and is not very high as alleged by Captain Jamnerkar.

Commission's Ruling

The conditions and rates for coal handling contracts would vary depending on market conditions. It is always possible to infer, with the benefit of hindsight that a particular contract should not have been entered at the time it was actually entered. The utility also has no incentive or benefit in contracting higher rates for coal handling contracts. The Commission is of the view that this is an operational matter to be left at the discretion of the Utility. Further, it appears that the objector has been a contractor with TPC in the past and in that capacity, if any disputes are there, the same may be agitated before the appropriate forum for contractual disputes.

2.10 SANDBLASTING AND PAINTING

Captain Jamnerkar submitted that TPC has given Sandblasting and Painting contract for a fixed long duration of 10 years at a cost of Rs 25 Crore per annum, while the actual cost for similar activity for plants of similar size for REL, MSEB, etc. was only Rs 7 Crore. Thus, he contended that for a 10 year contract which as per his information was given without floating a tender, the excess payment made to the contractor will be about Rs. 180 Crore.

TPC's Response

TPC submitted the following justifications:

- TPC does not undertake sand blasting as sand blasting is a prohibited activity due to safety concerns; TPC has approved copper slag blasting which is a more expensive process, and this method of surface preparation is adopted for selective and need based areas only. TPC does not have any prilling towers as prilling towers are mainly associated with fertilizer plants and not with electrical power generation.

- REL has an installed capacity of 500 MW whereas TPC has an installed capacity at Trombay of 1300 MW. TPC has no details regarding the specifications/treatments adopted by REL and their annual expenditure on this account.
- Most of the units of TPC are older units (unit No.4 was commissioned in the year 1965) thus warranting more maintenance.
- The atmospheric conditions prevalent at Trombay are more corrosive due to the coastal location and close vicinity of refineries, fertilizer plants and other heavy industries. Due to the above, extensive and periodic rehabilitation/ corrosive prevention measures are undertaken for marine, offshore structures, main plants and buildings by adopting special type of industrial painting.
- The total expenditure is inclusive of housing colonies, various receiving stations, transmission towers, hydro generating stations, etc.
- The last tender enquiries were floated in the year 1997 and in 2000/2001
- The performance of the painting contractor is reviewed every 3 years, and before any extension the market rates/ trends are reviewed and appropriate rebates are obtained from the contractor.
- Recently, a tender enquiry was floated for painting/industrial protective coatings in the year 2006 and negotiations are in progress.

TPC, in its response, opined that Captain Jamnerkar is not acting in Public Interest but is acting in his self interest and is misleading the public. TPC clarified that the allegations made by Captain Jamnerkar that no tender has been floated by TPC for its sand blasting and painting contracts and the statements regarding the total cost for painting of other plants of different sizes and locations, are completely erroneous and baseless.

TPC submitted that MPCL has been TPC’s industrial painting contractor for the last 40 years. Hence, these plants require frequent maintenance by specialized paint applications. Maintenance painting of all structures like C.W. Cooling lines, Fuel Tanks, pipelines of various systems & structures, coal bunkers and coal conveyors, F.G.D’S, Boiler house structures, hydro vector towers, switchyard and such structures and buildings in the power plant need preventive maintenance painting on a continuous basis. Preventive maintenance painting also covers all structures like hydro power, penstocks, pipelines, switchyard structures, transmission towers, GIS buildings, transformer stations, housing colonies, etc. in hydro, transmission and other divisions.

TPC, in its response, submitted that in the year 2003 and 2004, a study was commissioned by TPC from M/s McKenzie, USA to examine all contracts and procedures and to suggest ways and means of reducing the cost. M/s McKenzie called all the paint manufacturers and discussed specifications and checked all technical and commercial aspects of the contracts and procedures, for suggesting ways and means of reducing the cost. TPC submitted that M/s McKenzie have found the present specifications being stipulated by TPC as well as other commercial aspects including procedures for award of work to be satisfactory.

TPC reiterated that they follow a detailed procedure for invitation, evaluation and award of tenders. The tenders go through technical and financial evaluations by senior officers and committees of TPC. The tenders are then approved by the committee of the Board of Directors and ultimately by the Board itself.

Commission's Ruling

The Commission's ruling on the matter is same as in the para 2.7 above.

2.11 COST OF COAL

Prayas submitted that the cost of imported coal delivered is Rs. 0.55/1000 kcal for REL while it is Rs. 0.59/1000 kcal for TPC. Prayas opined that there is significant scope of improvement in the coal procurement process of TPC, and requested the Commission to direct TPC to explore measures for efficient procurement of coal.

TPC's Response

TPC submitted that the comparison given by Prayas may not be on like to like basis as REL presumably buys coal on CIF basis while TPC buys most of the coal on FOB basis.

The calorific value considered by REL is 5200 kcal/kg which appears to be load port calorific value and the average calorific value for TPC as per contracts is also 5200 kcal/kg. TPC clarified that in case of REL, coal is transported by barges from mother vessel located about 6 NM from the jetty. TPC's handling operations involve transportation by barge over a distance of 20 NM, stocking coal at intermediate plot and road transportation. The coal being more volatile is prone to self combustion, water needs to be sprinkled. Due to multiple handling and sprinkling of water, there is reduction in the calorific value of coal fed to the boiler. TPC submitted that while evaluating cost of Rs/1000 kcal of coal, a calorific value of 4800 kcal/kg is used for TPC whereas for REL calorific value of 5200 kcal/kg is used.

Commission's Ruling

The Commission has noted TPC's explanation in this regard. Notwithstanding the same, the Commission directs TPC to explore further measures for cost effective procurement of coal.

2.12 COST OF BUND FOR CONDENSER COOLING DISCHARGE WATER AND COST OF DREDGING AND INTAKE CHANNEL

Captain Jamnerkar submitted that TPC has shown an expense of Rs. 12 Crore for making Bund for condenser cooling discharge water as per MPCB's requirement, which should not have been more than Rs. 2 Crore. He requested the Commission to disallow the excess expenditure of Rs. 10 Crore towards making of the Bund.

Captain Jamnerkar submitted that TPC has shown an expense of Rs. 10 Crore towards cost of dredging and intake channel. He pointed out that the cost for carrying out similar operation by HPCL was Rs. 75 lakh per annum, and he opined that the cost for TPC should not have been more than Rs. 2 Crore per annum. He also contended that the methodology of assessing the quantity dredged is not as per norms of the Hydrographic Survey of Seabed, and should be checked. He requested the Commission to disallow the excess amount of Rs. 8 Crore charged for the said activity.

<u>TPC's Response</u>

TPC responded that the statements made by Capt Jamnerkar are incorrect and the prevailing rates for dredging are in line with the market rates due to the following reasons:

a) Scope of work involves dumping in MbPT approved (tide and ebb) areas which are approximately over 25 km away from the dredging site.
b) TPC's requirement of water intake is much higher than that of BPCL and HPCL (Water intake by BPCL and HPCL is only the make-up water for their cooling towers while in case of TPC, it is one way through passage for cooling of condensate in the condensers). Any reduction in the water intake will have a direct negative impact on the power generation. Further higher amounts of silt in the intake of water will cause permanent damage to the machinery.
c) TPC's CWPH is located in high siltation zone, warranting continuous dredging and disposal of silt.

In view of the above, dedicated machinery/equipment of high capital cost is a must. As barges and associated machinery are in short supply, the contractors have invested in suitable dredging machinery and have retained it for TPC as TPC has a 5 year dredging contract with them.

TPC, in its response to the objection regarding excess expenditure by TPC for dredging work for making a bund for its condenser cooling discharge water, submitting that TPC had followed its detailed procedure for inviting award of works in the case of dredging and bund contracts and tenders were issued to the following parties:

- Sunder Underwater Ltd.
- Mazgaon Docks Ltd.

- Dredging Corporation of India
- M. Pallonji & Co Pvt. Ltd

TPC submitted that MPCL's tender was found to be the lowest and satisfactory, hence the work was awarded to MPCL.

TPC, in its response, pointed out that comparison with dredging operations of other companies such as HPCL is misleading. TPC submitted that their scope of work involves dumping of the silt(after dredging) in far away areas, i.e., approximately over 25 km from the dredging sites and the C.W. pump house is located in a high siltation zone requiring continuous dredging and disposal of silt. TPC's requirements for water intake are much higher than that of HPCL. Moreover, grab dredging is the only method of dredging possible around the C.W. pump house since it is a safe method which does not cause any disturbance during the dredging and does not increase the turbidity of water.

TPC submitted that the allegation of total amount of dredging done by MPCL as approximately 2,75,000 cu. m. per year is incorrect, as the actual quantity is approximately 5,50,000 cum. per year. Hence, the alleged rate per cum which is extrapolated by the objector is inflated and incorrect. The latest revised rate of dredging is approximately Rs 225 per cu.m., which is far below the alleged rate of Rs 555/- per cu.m.

TPC submitted that the specifications, scope of work and procedure for awarding tenders in the case of dredging (as in other cases) has also been critically reviewed by M/s McKenzie, USA and have been found to be satisfactory.

TPC denied the allegation that the market rate is between Rs 55 to 65 per cu.m as being totally incorrect. TPC clarified that as stated above, the dredging required by TPC cannot be cutter suction dredge as set out above and has to be grab dredging. Hence, the very basis of the objection that the rate being paid by TPC is very high for cutter suction dredging, is completely misconceived. All the rates alleged in the cutter section dredging are therefore completely irrelevant.

TPC added that the Dredging Corporation of India has not responded to the tender enquiry floated by TPC for dredging around TPC's CWPH.

TPC submitted that it has only commenced the preliminary work, i.e., dredging associated with the construction of bunds for guiding the cooling water discharge as per the recommendations of CWPRS and approval from MoEF has been obtained.

TPC stated that the objector has neither provided a basis for the rate of Rs 65 per cum nor has he provided any calculation for quantum dredged. The objector has also assumed that the only cost involved in construction of bund is cost of dredging.

Commission's Ruling

The Commission's ruling on the matter is same as in para 2.7 above.

2.13 STANDBY CHARGES

The Millowners' Association observed that TPC is paying Rs. 396 Crore as standby charges, while the receipt on this account from REL is Rs. 91 Crore only. The Millowners' Association has objected to the bearing of these charges by only TPC consumers, as the standby facility is enjoyed by all the other Utilities in Mumbai.

The Millowners' association also submitted that TPC has mentioned that MSEB was not in position to supply power to TPC under the standby arrangement. The Millowners' Association stated that if MSEB is not in a position to give stand by supply then the standby charges should not be passed on to the consumers.

REL submitted that since the total liability towards standby charges has been accounted in terms of the Commission's Order dated 31st May, 2004, there should not have been any normative debt of Rs 188 Crore and interest thereon of Rs. 14 Crore on account of the same should not be allowed as part of TPC's ARR.

TPC's Response

TPC submitted that the need for considering notional debt has been adequately discussed on page 27, 28, 29, of the ARR Petition for FY 2005-06 filed on 30th June 2006.

Commission's Ruling

The payment of standby charges by TPC to MSEB is in accordance with the Commission's Tariff Order for MSEB issued earlier. Similarly, the sharing of standby charges between REL and TPC is in accordance with the Commission's Order on standby charges in Case No. 7 of 2000, issued on May 31, 2004. It may be noted that the licensees are passing on their share of the standby cost to their consumers through the tariff, and REL and BEST being large consumers of TPC, are also bearing part of the standby charges that forms part of TPC's share of the overall standby charges.

The Commission has disallowed the normative debt and the interest thereon claimed by TPC, as this issue has already been addressed in the Commission's Order in Case 7 of 2000, dated May 31, 2004.

2.14 CROSS- SUBSIDY

The Millowners' Association submitted that the tariff is not uniform for all categories of consumers and there is an element of cross subsidization. The Millowners' Association has objected to cross- subsidy through tariff and submitted that if the State Government decides to subsidise any category of consumers then the State Government should pay the subsidy amount.

TPC's Response

TPC has not responded to this objection.

Commission's Ruling

The Commission recognises the need to reduce cross-subsidy across consumer categories, but over time. The Tariff Policy notified by the Government of India has also stipulated that cross-subsidy will have to be reduced over time.

2.15 TARIFF DETERMINATION PROCEDURE

The Millowners' Association expressed its concern that no proposal was made by TPC for FY 2005-06, or at least no hearing was held for FY 2005-06. The Millowners' Association requested the Commission to ensure that normal regulatory procedure is followed every year regardless of the need for any change in the tariff rates.

TPC's Response

TPC submitted that it had submitted its ARR Petition for FY 2005-06 in December 2004 for the approval of the Commission. Thereafter, TPC has been abiding by the directions of the Commission and subsequently TPC has made further submissions on 30th June, 2005, 19th Oct, 2005 and 9th Nov, 2005 with regards to the ARR Petition for FY2005-06. Thereafter, TPC has submitted its ARR Petition for FY 2006-07.

Commission's Ruling

The Commission has determined the ARR for FY 2005-06 and FY 2006-07 year-wise, separately.

2.16 CARRYING COST

The Millowners' Association submitted that it is only the revenue gap as permitted under the EA 2003 which is required to be considered while fixing the tariff for the following year and not individual items of expenditure, because the impact of individual items is automatically reflected in the overall revenue requirement. The Association stated that there is no question of considering carrying charges on the deficit amount, as in a situation of excess reasonable return earned by the Licensee, no refund is given on the interest earned on such amounts till they are refunded/adjusted in the bills of the consumers.

TPC's Response

TPC submitted that it has not claimed the carrying cost of the revenue gap in FY 2005-06 in its ARR for FY 2006-07 and has only considered the carrying cost of unrecovered FAC. As regards to the carrying cost of unrecovered FAC, the FAC recovery formula permits the recovery of carrying cost of unrecovered FAC in the form of interest on working capital. Hence, the recovery of such carrying cost is justified.

Commission's Ruling

In the truing-up exercise, carrying cost is considered, irrespective of whether the Utility has earned a surplus or deficit. Accordingly, the Commission has considered the carrying cost on the revenue surplus between Clear Profit and Reasonable Return earned by TPC in FY 2004-05 as well as on the deficit between Clear Profit and Reasonable Return earned by TPC in FY 2005-06 which is added to the total ARR for FY 2006-07, including the un-recovered FAC.

2.17 RETURN ON EQUITY

The Millowners' Association requested for clarification on whether TPC was permitted to claim a reasonable return for FY 2005-06, as provided in the erstwhile Act. The EA 2003 states that the Sixth Schedule of the Electricity (Supply) Act, 1948 would apply for a period of only one year until a notification specifying the terms and conditions of tariff are issued under the EA 2003, whichever is earlier. On 1st June 2004 the Commission has notified the MERC (Terms and Conditions of Tariff) Regulations. Hence, the Millowners' Association has submitted that TPC is not justified in claiming an appropriation of Rs 21 Crore for FY 2005-06, which is a legacy of the previous enactment.

REL submitted that as per the Tariff Regulations, Return on Equity is allowed only on 50% of the investments made during the year. However, TPC has considered RoE on 100% of the investments made during FY 2006-07. REL also submitted that the Tariff Regulations allow Return on Equity based on the opening equity. However, TPC seems to have considered RoE of Rs 7.26 Crore on investments made during FY 2006-07.

TPC's Response

TPC responded by citing a para of the Commission's Order dated 13th April, 2006, which reads as follows:

> 'the norms for approval of the ARR and the principles for determination of tariff as enunciated in the latest tariff orders of each licensee shall form the basis of ARR of the Licensee/ Utility for 2005-06'

TPC has submitted that the principles for determination of tariff allow for charging the Reasonable Return and Statutory Appropriation for FY 2005-06.

TPC submitted that the Tariff Regulations do not stipulate that the RoE may be earned only on the opening equity for the Generating Business.

Commission's Ruling

As per the Commission's Order dated April 13, 2006, the principles enunciated in the previous Tariff Order would continue to apply for FY 2005-06, and the Commission's Tariff Regulations will apply from FY 2006-07. The detailed analysis and workings is given separately under this Order.

2.18 CARRY FORWARD OF THE DEFERRED EXPENSES ON REPAIRS TO BUILDINGS

The Millowners' Association objected to the carry forward of deferred expenses on repairs to buildings like major painting work, and has submitted that these expenses should be considered as and when incurred.

TPC's Response

TPC submitted that the expenditure under the head Repairs and Maintenance was estimated to be Rs 87 Crore in FY 2005-06, as against Rs 113 Crore incurred for FY 2004-05, which was on account of deferment of repairs expenses to buildings like major painting work. TPC contended that if such expenditure were incurred in FY 2005-06, the total expenditure under this head for FY 2005-06 would have been of the same order as in FY 2004-05 and the gap between clear profit and reasonable return would have been higher to that extent. The gap of FY 2005-06 is included in the ARR of FY 2006-07. Thus, the total burden on the consumer would not change due to this deferment.

TPC submitted that the O&M expense for FY 2006-07 is on normative basis, and requested the Commission to consider the expenditure over and above the norms, as a special item.

Commission's Ruling

In its Petition, TPC submitted that the R&M expenditure in FY 2005-06 was on the lower side on account of the deferment of repairs to buildings like major painting work due to unavoidable reasons. However, in the actual expenditure details submitted later, TPC appears to have included the painting expenses as well, as the expenditure in FY 2005-06 is Rs 116 Crore, which is slightly higher than the expenditure in FY 2004-05.

The Commission has examined the prudence of the R&M expenditure incurred by TPC in FY 2004-05 and FY 2005-06. The Commission has allowed only the normative R&M

expenditure in FY 2004-05 and FY 2005-06, to the extent of 3% of opening GFA, details of which are given in the Section 3 on Truing up of TPC's expenses for FY 2004-05 and FY 2005-06.

2.19 CAPITAL EXPENDITURE

The Millowners' Association submitted that the capital expenditure programme should be targeted to reduce the cost of generation apart from reduction in the transmission losses. Also TPC should set up additional capacities close to Mumbai using coal as fuel, instead of upgrading old ones for generation of power.

Prayas requested the Commission to take a cautious approach while approving capital expenditure and passing on the costs to the consumer because in a 'cost plus' regime the utilities tend to over invest and maximize their profits, which are linked to capital investments. Prayas expressed the following concerns about capital investments proposed by TPC:

a) In line with the guidelines for capital expenditure dt 9th February 2005, any capital investment scheme requiring expenditure of above Rs. 10 Crore, should only be approved on the basis of detailed scrutiny of the DPR and after a specific approval of the Commission. The Commission should direct TPC to submit DPR's for all the projects above Rs 10 Crore in their proposed 3 year rolling plan.

b) For the capex already incurred by TPC, compliance with in-principle clearance issued by the Commission is essential. Prayas requested the Commission to validate the said schemes to assess whether they have been completed within the scope and other parameters mentioned in the in-principle approval of the Commission and whether the stated benefits from the schemes have been realized.

c) TPC has proposed to invest Rs. 47 Crore in 'other minor works', which mainly include replacement of valves, computers, office furniture, etc. Prayas contended that this amount of investment appears high for the stated objectives.

d) In the 3 year roll out plan, TPC has mentioned an investment of Rs. 1000 Crore for a 250 MW coal based Unit no 9 at Trombay. Prayas has pointed out that the cost seems to be high considering that this is essentially a capacity expansion project and the cost of a typical Greenfield project is around Rs. 4 Crore/MW.

Prayas requested the Commission to consider new capital investment projects proposed by TPC (especially new power projects) through a separate public process and the Commission should present the adequate background information and its preliminary analysis to the public. Prayas emphasized the point that the Commission should check all the capital expenditure schemes for its usefulness and prudence.

REL submitted that in view of the Order of the Appellate Tribunal for Electricity (ATE) dated 22nd May 2006, the rolling capex plan should be disallowed.

Commission's Ruling

The Commission has studied the capital expenditure projected by TPC, to analyse the relevance and need for the capex, the past trend in capex, the actual capitalization in the past, consistency of the capex projected under the ARR Petition with the scheme-wise details submitted to the Commission earlier for in-principle approval, the Cost Benefit Analysis, and the impact on tariff. The results of the analysis of the capex have been discussed in the Section on Analysis of ARR, under interest expenditure. The Distribution capex proposed by TPC is being dealt with separately, and has not been addressed in this Order, due to reasons discussed in the background to the Order.

2.20 CALCULATIONS AND ANALYSIS TO BE MADE AVAILABLE

Prayas requested the Commission in the interest of transparency to provide them with the detailed calculations and analysis carried out during the tariff revision process and also to make soft copies of the same (spreadsheet version) available on the website of the Commission.

Commission's Ruling

The Commission's records, including the analysis carried out while approving the ARR alongwith the calculations are in the public domain and can be obtained by interested parties, on payment of the requisite fees and charges.

2.21 TRUING UP FOR FY 2004-05

Prayas submitted that the last Tariff Order passed by the Commission was for FY 2004-05, but TPC has not mentioned truing up for FY 2004-05 in this tariff revision process. Prayas requested the Commission to evaluate the performance of TPC in FY 2004-05 and consider it for true up in this tariff process.

Prayas stated that the revenue and expenditure details must be reconciled with the audited accounts. Prayas also submitted that the actual income tax paid must be used for truing up, which may be lower than that shown in the ARR.

TPC's Response

TPC submitted that the performance in FY 2004-05 has been discussed in the filing made by TPC for FY 2005-06 on 30th June 2005.

Commission's Ruling

The Commission has undertaken truing up of the actual expenses in FY 2004-05 and FY 2005-06, subject to prudence check, and the actual revenue earned in FY 2004-05 and FY 2005-06, to determine the revenue gap/surplus revenue in the respective years.

2.22 RESERVES AND SPECIAL APPROPRIATIONS

The Millowners' Association submitted that in the Tariff Order for TPC for FY 2003-04 and FY 2004-05, the Commission had ruled that amounts kept in various funds and reserves with TPC like the Contingency Reserve, Debenture Redemption Reserve, Deferred Taxation Liability Fund, Consumer Benefit Account, etc., can be appropriated to meet the gap between the Clear Profit and reasonable return. The Millowners' Association requested the Commission that the balance amounts in the above funds/reserves should be utilized to bridge the gap in clear profits and reasonable return instead of increasing the energy charges as proposed by TPC.

REL submitted that TPC's tariff proposal for FY 2006-07 reflects a carried forward shortfall of Rs 288 Crore relating to FY 2005-06. REL submitted that the shortfall should be reduced by available reserves, before it is allowed to be reflected in FY 2006-07.

TPC's Response

TPC submitted that they are willing to accept the Commission's ruling for meeting the gap. However, regarding meeting of the gap by appropriation of statutory reserves, TPC commented that the reserves have been created by applying the principles outlined in the Sixth Schedule of Electricity (Supply) Act, 1948. As per the relevant provisions of the Sixth Schedule and the various Government permissions, such reserves can be used only in specific conditions for specific purpose and not merely to meet the gap. Also a large portion of the gap has arisen due to the cap on FAC recovery imposed by the Commission. TPC opined that the events do not qualify for drawal out of reserves and hence it may not be appropriate to draw from all these reserves to meet the gap.

Commission's Ruling

The Commission has undertaken truing up of the actual revenue gap/surplus revenue in FY 2004-05 and FY 2005-06 and has adjusted the approved un-recovered revenue gap during FY 2005-06 mainly due to increase in fuel costs against the available reserves while determining the ARR of TPC-D for FY 2006-07, in accordance with the principles set out in the previous Tariff Order of the Commission for TPC. The details are given in Section 6 on ARR of TPC-D.

2.23 CAPITAL BASE COMPUTATIONS & NON-TARIFF INCOME

REL submitted that the Debt Redemption Reserve of Rs 37 Crore has not been considered for deduction in Capital Base computation as was done in the Commission's Tariff Order dt. 11th

June 2004. Also, Intangible Assets write off of Rs 59 Crore though shown in the table has not been adjusted while arriving at 'Negative Elements of Capital Base' and thus not reflected in arriving at the Capital base of Rs. 1336 Crore. REL has opined that in view of above adjustments, the Capital Base should be lower. REL also pointed out that the interest income under the head Non Tariff income which was Rs. 24 Crore in FY 2004-05, has been reduced to Nil in FY 2005-06.

TPC's Response

TPC submitted that in FY 2004-05, there was an interest of about Rs.24 Crore received on account of Income Tax refunds due for past many assessment years. The income of such magnitude is not expected to recur. Hence there is a difference in the figures of FY 2004-05 and FY 2005-06.

Commission's Ruling

The Commission has considered the debt redemption reserve of Rs. 37 crore in the Capital Base computations. Intangible assets written off has been considered by TPC as a negative element in the Capital Base computations, and has been accepted by the Commission. The Commission has projected the non-tariff income, based on past trends, details of which are given in Section 3 of the Order.

2.24 NET GAP FOR EACH FUNCTION (CP-RR)

REL requested TPC to submit net gap and adjustments, if any, for each function, i.e., Generation, Transmission and Distribution.

TPC's Response

TPC submitted that the computation of clear profit is possible only if the revenue from each business is known. As the Commission has fixed the tariff of TPC for integrated business, i.e., generation, transmission and distribution as a whole and not for individual businesses, it is not possible to compute the CP for individual business.

Commission's Ruling

The Commission's Order dated April 13, 2006 has stipulated that the principles outlined in the Commission's previous Tariff Order would be applicable for determination of revenue gap for FY 2004-05 and FY 2005-06, and the Commission's revised Tariff Regulations would be applicable for determining the revenue gap from FY 2006-07 onwards. Effectively, the computations of Capital Base, Reasonable Return and Clear Profit have to be done for TPC as an integrated Utility for FY 2004-05 and FY 2005-06, which has been done by the Commission, details of which are given in Section 3 of the Order. For FY 2006-07, the ARR and revenue gap for each business has been computed separately.

2.25 PURCHASE OF POWER BY TPC-D ON BEHALF OF BEST AND REL

BEST submitted that the power being purchased by TPC-D from sources other than TPC-G is deemed as power purchased for itself and also on behalf of BEST and REL, which is contrary to the Commission's direction during the first Technical Validation session, that there should be separate ARR for transmission, generation and distribution activities. BEST observed that TPC has clubbed the transmission and distribution activity. BEST requested TPC to sort out this matter as on one hand BEST, REL and TPC-D are treated as consumers of TPC-G, while on other hand TPC-D is shown as purchasing power on behalf of BEST and REL.

TPC's response

TPC submitted that TPC in its earlier filings had included the cost of standby and cost of power purchase from MSEB and other sources under the TPC-G business. However, during the Technical Validation session on 17th April, 2006, when BEST representative was also present, the Commission had advised TPC to exclude the power purchase for TPC-D, BEST and REL from TPC-G business, as it amounted to a trading activity requiring a Trading License. Accordingly, TPC has proposed such power purchase under TPC-D since as per the last proviso of Section 14 of EA 2003, the distribution licensee does not require a separate trading license.

Commission's Ruling

The Commission has approved the ARR for FY 2006-07 separately for each function, i.e., Generation, Transmission and Distribution. The energy available from Dahanu TPS of REL and generating stations of TPC is not sufficient to meet the projected energy requirement of Mumbai system. TPC-D has proposed to procure additional energy to meet the overall energy requirement of TPC-D as well as that of other two distribution licensees in Mumbai, i.e., REL_D and BEST. Initially, TPC proposed that TPC-G will procure additional power and supply to TPD-D, REL and BEST. However, as per the provisions of EA, 2003 the Generating Company is not a deemed trading licensee and hence, the Commission directed TPC to remove the power purchase from other sources for supply to REL-D and BEST from the ARR of TPC-G. In compliance with the Commission's directions and to meet the energy requirement of Mumbai system, TPC has included power purchase from other sources in the ARR of TPC-D as TPC-D is a deemed trading licensee as per the provisions of EA 2003.

The treatment of additional power purchase to meet the energy requirement for meeting the requirement of TPC-D and for supply to REL-D and BEST has been dealt in Section 6 of this Order.

2.26 PAYMENT OF TRADING COST MARGIN TO TPC-D

BEST submitted that in the absence of trading margin specified by the Commission, a margin of 4 paise per unit as specified by CERC has been considered in the ARR and the same is proposed to be payable to TPC-D by REL and BEST for their share of power purchase. BEST objected to payment of trading margin to TPC-D, while as per the ARR Petition, BEST and REL are shown as consumers of TPC-G.

TPC's Response

TPC responded by stating that in their discussions with BEST, they were told that TPC could procure power on their behalf. The margin was included by TPC since the activity involves costs and Regulations permit such margins to be charged.

Commission's Ruling

The Commission has not allowed any trading margin for purchase of power by TPC-D from outside sources on behalf of REL-D and BEST to meet the energy requirement of Mumbai system as elaborated in Section 6 of the Order.

2.27 INCREASE IN TARIFF

BEST expressed its concern over the revised tariff revision proposal as it imposed an additional burden of Rs. 735 Crore on BEST, which was Rs. 85 Crore as per the initial proposals.

REL submitted that the acceptance of Bulk Supply Tariff of Rs 4.02/kWh as proposed by TPC would increase the Bulk Supply Tariff payable by REL and BEST to TPC by more then 50% of the FY 2005-06 level, which would be a shock to the consumers in Mumbai.

TPC's Response

TPC submitted that the revised ARR Petition has proposed a higher tariff for TPC consumers as compared to the ARR Petition submitted in February 2006, due to the revision of fuel cost and power purchase cost subsequent to the Technical Validation session on 17th April 2006.

Commission's Ruling

The Commission has analysed every element of the ARR of TPC-G, TPC-T and TPC-D while approving the ARR and Revenue Gap of TPC for FY 2006-07, as detailed in Sections 4 to 6 of this Order. Further, the Commission has also carried out the truing up of ARR and Revenues for FY 2004-05 and FY 2005-06 based on actual costs and revenue during the year, as detailed in Section 3 of this Order.

2.28 INCREASE IN ENERGY CHARGES

Mahindra & Mahindra Ltd. and Vel Induction Hardenings submitted that the proposed increase of 50% in the energy charges are very detrimental to Companies located in the high cost Mumbai region and are not justified.

TPC's Response

TPC submitted that the tariff hike is mainly due to the fuel price increase, which is beyond their control. TPC contended that the rationale for the tariff hike and the tariff proposal is adequately explained in the ARR Petition. TPC explained that the Tariff Regulations provide for the recovery of the costs incurred and earning of a reasonable return through the tariff. TPC in its petition has proposed to recover the above costs and earn the reasonable return. TPC contended that it has become necessary to increase energy charges due to steep increase in LSHS cost from Rs. 11240 per ton in June 2004 to Rs. 22700 per ton, and the cap of 10% imposed by Commission on FAC, which resulted in large amount of unrecovered FAC, of Rs 350 Crore, which is also proposed to be recovered through the tariff.

Commission's Ruling

The Commission has analysed every element of the ARR of TPC-G, TPC-T and TPC-D while approving the ARR and Revenue Gap of TPC for FY 2006-07, as detailed in Sections 4 to 6 of this Order. Further, the Commission has also carried out the truing up of ARR and Revenues for FY 2004-05 and FY 2005-06 based on actual costs and revenue during the year, as detailed in Section 3 of this Order.

2.29 TOD TARIFF

Mahindra & Mahindra Ltd. submitted that TPC should provide certain incentives to the consumers for setting up wind mills to encourage non- conventional energy sources, for PF improvement above 0.92 up to unity, TOD tariff structure, bulk consumption incentive for major consumers and for improving the quality of power and harmonic suppression at the distribution end.

The Millowners' Association suggested that the Commission must consider the introduction of Time of Day (ToD) tariff, which will encourage power consumption during the lean periods of the day and afford an opportunity to reduce power tariff because of economy of scale.

The Millowners' Association also suggested that Power Factor rebate and bulk consumption rebate should be introduced for eligible consumers.

TPC's Response

TPC submitted that subject to the ease of implementation, TPC would abide by the directions of the Commission. However, TPC contended that power factor incentive gives rise to high voltage during off-peak hours due to predominantly underground cable network in Mumbai.

Commission's Ruling

The Commission's views on this aspect have been elaborated in Section 7 (Tariff Determination of TPC-D) of this Order.

2.30 IMPACT OF ATE ORDER IN APPEAL NO. 31 AND 43 OF 2005

Bombay Small Scale Industries Association, REL and Shri Mahesh Bharbhaya have expressed their apprehension regarding the holding of the Public hearing in view of the order passed by the Appellate Tribunal on 22nd May 2006, in appeal No31 & 43 of 2005 which has set aside the MERC's earlier Order dated 3rd July, 2003. They have submitted that the Appellate tribunal has passed the said order in the appeal by TPC and REL against the Commission earlier order in the case no.14 of 2002. In its Order the Appellate Tribunal has held that TPC has a license for only bulk supply of electricity and does not have a license for retail supply of electricity in Mumbai City.

In this context the Bombay Small Scale Industries Association and Shri Bharbhaya have contended that unless and until the Order passed by the Appellate Tribunal is set aside by a higher authority, MERC should not hold the Public hearing.

REL has also submitted in its presentation that TPC's ARR and Tariff Petition is required to be modified in line with ATE Order.

TPC's Response

TPC submitted that they are studying the implementation of the judgement passed by ATE and would take appropriate action when required.

Commission's Ruling

The Commission's observations on this aspect has been elaborated in Section 1 of this Order.

2.31 ALLOCATION OF GENERATING CAPACITY

REL submitted that TPC in its ARR Petition has not mentioned the principles for allocation of generating capacity of TPC-Generation business to various users including REL and BEST. REL has suggested that the Generating capacity may be allocated in the ratio of Maximum demand of REL, BEST and TPC-D met by TPC in FY 2005-06

TPC's Response

TPC submitted that the fixed charges being shared in the proportion of capacity being allocated would be relevant only if a capacity is dedicated for a licensee. In order to allocate/ dedicate a capacity, a PPA needs to be in place. TPC informed that BEST and REL are in the process of finalization of PPA with TPC. Hence TPC contends that the distribution of fixed charges on the basis of capacity may not be appropriate at this stage.

Commission's Ruling

The Commission vide its Order dated December 9, 2005 in Case 4 of 2003 directed REL and TPC to enter into long power purchase agreement within 3 months from the date of the Order. However, the Commission has not received any Draft PPA for approval between TPC and REL. As regards PPA between TPC and BEST, the Commission has issued the Order on the Petition filed by BEST for approval of PPA between TPC and BEST in Case 27 of 2005 and has directed BEST to re-submit the PPA after incorporating the additional provisions and changes suggested in the Order. In the absence of PPAs, the Commission has approved the interim mechanism for recovery of Annual Fixed Charges of TPC's Generating Stations in Section 4 of the Order.

2.32 DEDICATED/ INTRA STATE TRANSMISSION LINE

REL submitted that the transmission lines built by TPC transmit not only power generated at its generating stations but also power purchases from external sources. Therefore the transmission lines of TPC are not covered under the definition of dedicated transmission lines but are an integral part of Intra state Transmission System.

TPC's Response

TPC submitted that Section 2(16) of EA-03 stipulates as follows:

"Dedicated Transmission Lines means any electric supply line for point to point transmission which are required for the purpose of connecting electric lines or electric plants of a captive generating plant referred to in section 9 or generating station referred to in section 10 to any transmission lines or sub-stations or generating stations or load center, as the case may be,"

TPC further submitted that a large portion of their network has been constructed to evacuate power from their own generating stations. Hence the transmission network of TPC qualifies as dedicated transmission network.

Commission's Ruling

This aspect has already been addressed in the Commission's Order on transmission pricing framework, in Case No. 58 of 2005. The Commission has considered TPC's transmission network as a part of the intra-State transmission system, and has not considered it as a dedicated transmission network.

2.33 ALLOCATION OF TRANSMISSION CHARGES

REL submitted that the annual Transmission charges of TPC needs to be allocated as per the formulae specified in the Regulation 53.2 of the MERC (Terms and Conditions of Tariff) Regulations, 2005 and the Transmission Capacity Rights should be allocated to the Transmission System users i.e. REL, BEST and TPC-D using the same principles as that of generation capacity allocation

TPC's Response

TPC submitted that the Commission is in the process of determination of transmission service charges for all the Utilities. TPC would take an appropriate view in the matter after the Commission's Order on transmission service charges.

Commission's Ruling

This aspect has already been addressed in the Commission's Order on transmission pricing framework, in Case No. 58 of 2005.

2.34 ENERGY BALANCE

REL submitted that the energy balance for FY 2006-07 projected by TPC in its ARR needs to be reviewed on the following aspects:.

- Assumptions of DTPS generation considered by TPC should match with the generation projected by REL in its ARR
- Net generation of TPC is considered as 9432 MU as against generation of 10635 MU in FY06.
- RPO obligation of all three licensees i.e REL, BEST and TPC-D considered at 115 MU seems to be lower in view of the total RPO generation in FY06 and the corresponding share of REL, BEST and TPC.
- Assumptions of growth in sales of direct consumers of TPC-D in accordance with the MERC order dtd 3rd July 2003 and also Appellate Tribunals Order dated 22nd May, 2006.

TPC's Response

TPC in its response submitted the following clarifications:

- The DTPS generation is based on assumptions made by TPC on PLF and availability and TPC has not altered the assumptions at this point of time.
- The application of Merit order principles as explained in the ARR Petition along with the various assumptions made results in estimated net generation of TPC Generating Stations as 9432 MU.
- TPC has based the RPO estimated for FY 2006-07 on RPO calculations adopted by MEDA for FY 2004-05 and TPC does not believe that RPO for FY 2006-07 would be different from the figure of FY 2004-05.

Commission's Ruling

The Commission has considered the net generation available from REL Dahanu Stations based on approved ARR of REL Generation Function and considering the past performance. As regards the generation from TPC's own generating stations, the net generation during FY

2005-06 was higher mainly due to increase in generation from hydel stations by around 500 MW as compared to average hydel generation achieved during the last nine years because of heavy rainfall during the year. The Commission has projected the RPS obligations of three Distribution Licensees REL-D, TPC-D and BEST equivalent to 3% of total energy requirement in accordance with the Commission's Order (Case 6 of 2006) dated August 16, 2006 in the matter of Long term Development of Renewable Energy Sources and associated Regulatory (RPS) Framework.

2.35 DEMAND CHARGES BASED ON COINCIDENT MAXIMUM DEMAND

REL during the hearing proposed for levy of capacity charges payable by distribution licensee as against demand charges proposed by TPC. REL further submitted, in case, the demand charges are to be considered, it should be based on Coincident Maximum Demand and not on aggregated demands of individual points as the Distribution Licensee is required to transfer the load from one point to the other based on the system requirement, which may result in higher aggregate demand with the coincident demand remaining the same. REL further submitted that the Commission in its order dtd 11th June, 2004 on TPC's ARR and Tariff Petition for FY 2004-05 has directed TPC to install coincident Demand meters and bill REL on the basis of Coincident Maximum Demand.

TPC's Response

TPC submitted that the advantaged for adopting of non-coincident demand based billing has been elaborated in its ARR and Tariff Petition.

Commission's Ruling

The Commission has approved the tariff for TPC Generation function in accordance with the MERC (Terms and Conditions of Tariff) Regulations, 2005. However, in the absence of Power Purchase Agreement (PPA) between TPC-G and Distribution Licensees and in absence of capacity allocation, the Commission has approved the interim measure for recovery of Annual Fixed Charges of TPC-G in proportion to average non-coincident peak demand of three Distribution Licensees met by TPC during FY 2005-06.

2.36 INTERCONNECTION WITH PGCIL

REL submitted that the total value of the scheme as Rs 300 Crore shown in the TPC ARR Petition is not matching with the cost breakup submitted in the Petition and needs to be reconciled.

TPC's Response

TPC submitted that there is an error and the total cost of the scheme is Rs 321 Crore as per the details provided in the break-up of the costs.

Commission's Ruling

The Commission has noted the discrepancy. However, this capital investment is not included in the proposed capital expenditure by TPC for Transmission during FY 2006-07 as part of ARR.

2.37 TRANSMISSION SYSTEM ACCESS CHARGE

REL submitted that as per the MERC (Terms and Conditions of Tariff) Regulations, 2005 the 'Transmission System Access Charge' is to be recovered from the 'intending Transmission system user', for the transmission lines dedicated to such user. REL submitted that is it not stated as to how much of the proposed capital expenditure would be recovered as Transmission System Access Charge and the recovery of such 'Transmission System Access Charge' would be required to be reduced from the total capital for computation of equity.

TPC's Response

TPC has responded by submitting that at that point of time it is not possible to estimate the Transmission System Access Charge and opined that it would be appropriate to consider the same at the time of truing up.

Commission's Ruling

This aspect has already been addressed in the Commission's Order on transmission pricing framework, in Case No. 58 of 2005.

2.38 TRANSMISSION SYSTEM AUGMENTATION

REL submitted that they have already forwarded its demand projections to TPC for seven years and have requested TPC for providing additional outlets, which may require certain works to be carried out by TPC including augmentation of its transmission system. REL contended that TPC has not provided for the augmentation of transmission system to provide additional outlets to REL in its ARR Petition.

Commission's Ruling

The Commission vide its Order dated December 9, 2005 in the matter of Case 4 of 2003 opined that "the Commission will engage a suitable consultant to evolve a methodology /criteria for determining the basis of providing additional outlets". The Commission had subsequently engaged IIT Mumbai to evolve the methodology/criteria for determining the basis of providing additional outlets, and the same has been dealt with appropriately in the Commission's Order in Case No. 14 of 2006 and Case No. 15 of 2006.

2.39 CHANGE IN THE PRINCIPLE OF TARIFF FOR 220KV

REL submitted that as there is no substantial change in the position with respect to providing the additional outlets to REL at 22/33 kV the tariff principles for drawal of energy at 220 kV shall be considered as approved in the TPC's Tariff Order for FY 2004-05 REL submitted that non-availability of the required outlets at 22/33 kV is compelling REL to extend its network, which would not be the most efficient network configuration, and requires higher capital outlay. REL submitted that a change in the principle of tariff determination for drawal of energy at 220KV will result in REL consumers paying extra cost for the energy.

REL submitted during the hearing that TPC has contended that 5% discount in the energy charge at 220 kV results in the under recovery of Rs. 76 Crore. REL requested the Commission to continue with the principle of differential tariff at different voltage levels, which was considered by the Commission in its Tariff Orders for TPC and REL for FY 2004-05.

TPC's Response

TPC submitted that as mentioned in the ARR, in spite of the Commission's direction, REL is using 220 kV interconnection for normal drawal of power. The applicability of 5% discount would be relevant only if the interconnection is used for standby purpose only and not for normal drawal and if the interconnection is used for normal drawal, then the demand charges should also be applicable in addition to energy charges.

Commission's Ruling

As the Commission has issued the Order on Generation Tariff for TPC's Generating Sations/Units and the Transmission Pricing Framework Order in Case 58 of 2005 dated June 27, 2006, this aspect of drawal of power is not relevant in the current context.

2.40 INCOME FROM WHEELING CHARGES

REL submitted that the wheeling charges needs to be charged based on the transmission pricing methodology to be approved by the Commission.

Commission's Ruling

The Commission has determined the wheeling charges based on the allocation of the distribution business' cost between the wires and supply business as elaborated in Section 7 of this Order.

2.41 HIGH TRANSMISSION LOSS

REL submitted that the 200 MW of power sourced from PTC is shown to be reduced to 165 MW in the TPC's ARR Petition.

TPC's Response

TPC clarified that the transmission losses is due to utilisation of network of other licensees for availing this power, i.e., KPTCL (4%), Southern Region (4.5%), Western Region (4%), and MSETCL (5%) and the total transmission losses works out to 17.5%.

Commission's Ruling

The Commission has observed that after deducting the transmission losses for utilisation of network of other licensees for transmitting this power from source of supply to TPC network, the net power available at TPC system reduces with respect to the contracted capacity. Further, the losses for utilisation of intra-State network will now be governed in accordance with the Commission's Order dated September 29, 2006 in Case 31 of 2006 in the matter of Determination of Transmission Tariff for Intra-State Transmission System for FY 2006-07.

2.42 TARIFF PROPOSAL

REL submitted that for determining the correct price of power received by TPC-D it is essential to install interface meters. REL also submitted that the TPC's proposal of recovering the fixed cost from TPC-D on transfer price basis of energy charges is inconsistent with the Commission's philosophy of recovering the fixed cost through fixed charges and variable cost through variable charges. REL suggested that until the interface meters are installed, the Maximum Demand of TPC-D should be assessed on the basis of differential load curve and demand charges should be applicable for TPC-D also. REL also requested the Commission that the classification and tariff rates for all the categories of REL and TPC consumers should be identical.

TPC's Response

TPC submitted that the tariff proposal of TPC has been suggested keeping in mind the ease of implementation and availability of necessary infrastructure. TPC suggested that an alternate tariff proposal should be designed keeping the above two requirements.

Commission's Ruling

The Commission has approved Generation Tariff for TPC's Generating Sations/Units as elaborated in Section 4 of the Order. As the Generation Tariff approved by Commission is based on two part tariff (Recovery of Annual Fixed Charge and Energy Charge) in accordance with the MERC (Terms and Conditions of Tariff) Regulations, 2005, the issue of demand charges will not be relevant. However, in the absence of approved Power Purchase Agreements, the Commission has considered an interim measure for recovery of Annual Fixed Charges of TPC's thermal generating stations in proportion to average non-coincident peak demand of three Distribution Licensees met by TPC system during FY 2005-06.

2.43 CONTRACT DEMAND V/S ACTUAL DEMAND

REL objected to TPC's proposal of charging the demand charges to new industrial and commercial consumers based on "Actual Demand" instead of 'Billing demand'. REL submitted that the Commission is its Order dated July 3, 2003 in Case No. 14 of 2002 restrained TPC from supplying to any new consumers having maximum demand below 1000 kVA. The Maximum Demand is defined in Supply Code and can be known only at the end of billing period, whereas the Contract Demand is a contractual quantity and is fixed before the release of a connection. As per the definition, the "Billing Demand" includes charging on the basis of actual demand recorded or 50% of the contract demand whichever is higher. REL further submitted that it is observed that number of new consumers in their application requested for a contract demand marginally in excess of 1000 kVA, however, the actual recorded demand were below 1000 kVA. REL submitted that TPC's this proposal is a ruse to capture consumers with a lower Maximum Demand, which will result in violation of the Commission's Order. REL further submitted that ATE judgment dated May 22, 2006 in Appeal No. 31 and 43 of 2005 holds that TPC cannot supply in retail and is barred from taking new consumers.

Commission's Ruling

The Commission does not find merit in TPC's suggestion of charging the new consumers on Actual Demand instead of Billing Demand.

2.44 NEW CATEGORY OF HT RESIDENTIAL BULK SUPPLY

REL submitted that TPC has an existing tariff category called as 'HT Public Supply' which reflects single ownership of the area and includes group housing by corporations like ONGC, BARC, IOC, etc. REL contended that other group housing category would have a cluster of different ownership's and approving tariff for such residential bulk supply would result in to redistribution of energy and resale of energy and will require an appropriate license. REL submitted that it is not advisable to create such an additional tariff category.

Commission's Ruling

The Commission is in the process of issuing the licenses in accordance with the EA 2003 and the MERC Licensing Regulations. The aspect of whether TPC-D can sell to such Group Housing Colonies will become clearer with the issue of the licenses. For the present, the Commission does not accept TPC's request to create the additional category.

2.45 POWER PURCHASE TO MEET THE REQUIREMENT OF MUMBAI

REL submitted that as per the Tariff policy, the Distribution Licensees are required to source future power requirement through competitive bidding. It would thus be essential that the additional power required apart from power being supplied by TPC generating stations for the consumers in Mumbai is procured at the most competitive price. REL proposed that a Trading

Company can be formed to procure short term and long term power requirements for Mumbai through competitive bidding collectively and TPC, REL and BEST can own such company on pro-rata basis. REL opines that such an arrangement would prevent artificial competition and consequent pricing benefits to the generators/ traders in case all the three licensees, i.e., TPC-D, REL and BEST enters the market simultaneously for procuring power in smaller individual lots.

Commission's Ruling

The Commission is of the view that it is the responsibility of the Distribution Licensees to source the power required to meet the demand and energy requirement of the respective License Area. The Commission will approve the power procurement plan of Distribution Licensees in accordance with the provisions of MERC (Terms and Conditions of Tariff) Regulations, 2005. Strategic matters with respect to sourcing of power jointly by Distribution Licensees needs to be settled between the Distribution Licensees.

2.46 TROMBAY PROJECT COST BREAK UP

REL in its submission submitted that the Project Cost of Trombay Project at Rs 1000 Crore does not match with the cost break up provided by TPC in its ARR Petition and that TPC should check the same.

REL also submitted that whether necessary environmental approval has been obtained for installing FGD at cost of Rs 169 Crore including the discharge of liquid effluents containing increased Sulphur Oxides content.

TPC's Response

TPC regretted the error and submitted that the total Project Cost of Trombay Project is Rs 1000 Crore. Regarding environmental clearance for discharge of liquid effluents, TPC submitted that they would take the clearance as and when it is necessary.

Commission's Ruling

The Commission notes that objections raised by REL pertain to part of Generation project, scrutiny of which would be undertaken separately. The same has not been considered for the purpose of Tariff Determination of TPC existing Generating Stations for FY2006-07.

2.47 ENVIRONMENT EFFECT OF CONSTRUCTION OF JETTY

Capt. Jamnerkar during the hearing submitted that there would be an exodus of flamingoes due to construction of Jetty.

TPC's Response

TPC submitted that as per the recommendations of Ministry of Environment and Forest (MoEF), TPC had appointed Dr. Bharat Bhushan, Deputy Director General (Planning), Yashwntrao Chavan Academy of Development planning for carrying out studies of flamingoes in the region and a detailed report was prepared. This report confirms that the construction of captive berth at Trombay has no effect on the habitat of flamingoes.

Commission's Ruling

The Commission directed TPC to submit the capital investment proposal for Captive Jetty after obtaining all the clearances. TPC has submitted the revised scheme pursuant to availing various statutory clearances, which is currently under scrutiny by the Commission as part of capex approval.

3 TRUING UP OF ANNUAL REVENUE REQUIREMENT FOR FY 2004-05 AND FY 2005-06

TPC, in its ARR and Tariff Petition for FY 2005-06, submitted that based on the existing tariff and actual expenditure in accordance with the guidelines determined by the Commission vide its Order dated June 11, 2004 against the Annual Revenue Requirement for the year FY 2004-05, TPC is expected to have a surplus revenue of Rs 9 Crore in FY 2004-05. TPC also provided the comparison of actual revenue and expenditure against each head with the revenue and expenditure approved by the Commission alongwith the reasons for deviations. Subsequently, Clear Profit computations submitted by TPC indicate that the actual revenue surplus in FY 2004-05 was Rs. 25 crore. The Commission in this Section has analysed all the elements of actual revenue and expenses for FY 2004-05, in order to 'true up' the same.

As elaborated in Section 1 of the Order, TPC submitted its consolidated ARR and Tariff Petition for FY 2005-06 in the month of December 2004 and in compliance to the Commission's directions, TPC submitted its revised ARR and Tariff Petition separately for Generation, Transmission and Distribution for FY 2005-06 on June 30, 2005.

Subsequently, TPC submitted its ARR and Tariff Petition for FY 2006-07 on February 9, 2006. TPC, in its Petition for FY 2006-07, submitted the revised data for FY 2005-06 based on actual data for first eight months (April 2005 to November 2005) and estimated data for next four months (December 2005 to March 2006). While processing the ARR and Tariff Petitions of TPC, the Commission directed TPC to include a separate section on truing up of ARR for FY 2005-06 based on the actual performance during the year. TPC, in its revised Petition for FY 2006-07 dated May 16, 2006, submitted a separate section on truing up of ARR for FY 2005-06.

The Commission, in its Order dated April 13, 2006 in the matter of applicability of MERC (Terms and Conditions of Tariff) Regulations, 2005, stipulated that *"the norms for approval of ARR and principles for determination of tariff as enunciated in the latest Tariff Orders of each licensee shall form the basis for approval of the Annual Revenue Requirement of licensees/Utility for FY 2005-06 and the determination of ARR and Tariff FY 2006-07 will be governed by the Tariff Regulations"*. In case of TPC, the last Tariff Order was issued by the Commission on June 11, 2004 in the matter of Approval of Annual Revenue Requirement for FY 2003-04 and FY 2004-05 and determination of tariffs for FY 2004-05. Therefore, the Commission has analysed the actual expenditure and revenue of TPC for FY 2005-06 in accordance with the principles enunciated in the Order dated June 11, 2004. The Commission has also analysed all the elements of actual revenue and expenses for FY 2005-06 in this

Section.

Further, as the Commission in its Order dated April 13, 2006 has stipulated that the principles of ARR determination as enunciated in the last Tariff Order shall form the basis for approval of ARR for FY 2005-06, the Commission has analysed the truing up of ARR for FY 2004-05 and FY 2005-06 on consolidated basis for TPC as a whole, i.e., all the three businesses of TPC, viz. Generation, Transmission and Distribution have been considered on consolidated basis.

3.1 TOTAL SALES

TPC, in its Petition for FY 2005-06, submitted the category-wise actual sales for FY 2004-05 and the category wise sales projections for FY 2005-06. TPC submitted the actual sales for FY 2004-05 and projected the sales for FY 2005-06 based on the CAGR of the sales during past years for the different consumer categories. TPC, in its ARR Petition for FY 2006-07, submitted the category-wise sales for FY 2005-06 considering eight months' actual sales, i.e., from April 2005 to November 2005 and estimated sales for four months, i.e., from December 2005 to March 2006. Subsequently, TPC also submitted the details of category-wise actual sales for FY 2005-06. The category-wise actual sales for FY 2004-05, sales projected by TPC for FY 2005-06 and actual sales for FY 2005-06 is given in the Table below:

Table: Category-wise Sales for FY 05 and FY 06 (MU)

Category	**FY 2004-05**			**FY 2005-06**		
	Tariff Order	**Actuals**	**Allowed after truing up**	**Petition**	**Actuals**	**Allowed after truing up**
REL	3401	3352	3352	3822	3924	3924
BEST	4021	3962	3962	4103	4155	4155
Railways	780	782	782	769	766	766
HT Consumers	762	804	804	814	848	848
Textiles	312	294	294	249	248	248
LT 2 Part	158	209	209	261	273	273
LT 1 Part	108	122	122	135	136	136
Residential	50	58	58	65	65	65
Sales in License Area	**9592**	**9583**	**9583**	**10218**	**10415**	**10415**
MSEB and Others'	424	785	785	637	692	692
Total Sales of TPC	**10016**	**10368**	**10368**	**10855**	**11107**	**11107**

The actual sales in FY 2004-05 has been 10368 MU, which is 352 MU higher than the total sales approved by the Commission in its Order on ARR and Tariff Petition for FY 2004-05 at 10016 MU. The total sale during FY 2005-06 has increased by around 7.13% with respect to total sales in FY 2004-05. The Commission has accepted the category-wise actual sales for FY 2004-05 and FY 2005-06.

3.2 T&D LOSSES

The Commission in its Tariff Order for FY 2004-05 approved total T&D loss of 2.4%. TPC, in its Petition for FY 2005-06, submitted that the actual T&D losses for FY 2004-05 were 2.39% and projected the T&D loss for FY 2005-06 at 2.26%. Subsequently, TPC submitted the details of actual T&D losses for FY 2005-06, as 2.30%. As the total T&D losses of TPC for FY 2004-05 and FY 2005-06 are lower than the T&D loss approved by the Commission, the Commission accepts the actual T&D losses of 2.39% and 2.30% for FY 2004-05 and FY 2005-06, respectively.

The summary of T&D losses are given in the following Table:

Table: T&D Losses (%)

Category	FY 2004-05			FY 2005-06		
	Tariff Order	Actuals	Allowed after truing up	Petition	Actuals	Allowed after truing up
T&D Losses	2.40%	2.39%	2.39%	2.26%	2.30%	2.30%

3.3 GENERATION FROM TPC'S GENERATING STATIONS

3.3.1 Gross Generation

The Commission, in its Order on ARR and Tariff Petition for FY 2004-05, approved gross generation of 10591 MU. However, the actual gross generation achieved during FY 2004-05 is 10950 MU, which has been accepted by the Commission. The details of Unit-wise gross generation for FY 2004-05 is given in the following Table:

Table: Summary of Gross Generation and PLF of Thermal Stations for FY 2004-05

Particulars	FY 2004-05		
	Tariff Order	Actuals	Allowed after truing up
Gross Generation (MU)			
Hydel Stations	1336	1438	1438
Unit 4, Trombay	112	667	667
Unit 5, Trombay	4185	4071	4071
Unit 6, Trombay	3761	3439	3439
Unit 7, Trombay	1198	1335	1335
Total Thermal	**9,255**	**9,511**	**9,511**
Total Gross Generation	**10,591**	**10,950**	**10,950**

The actual generation from hydel stations of TPC during FY 2004-05 has been higher by around 102 MU as compared to gross generation approved by the Commission and the actual generation from thermal stations of TPC during FY 2004-05 has been higher by around 256 MU as compared to gross generation approved by the Commission. The Commission accepts the actual gross generation of 10950 MU achieved for FY 2004-05.

TPC, in its revised Petition for FY 2005-06, projected generation of 1975 MU from its hydel stations and 9057 MU from its thermal stations. TPC further submitted that the hydel generation during FY 2005-06 is estimated to be higher as compared to average generation of around 1400-1500 MU during previous years because of heavy rainfall during the year. Subsequently, TPC submitted the details of actual generation for FY 2005-06. The total actual generation during FY 2005-06 was 2024 MU from hydel stations and 9185 MU from thermal stations, which has been accepted by the Commission. The details of Unit-wise gross generation for FY 2005-06 is given in the Table below:

Table: Gross Generation (in MU) during FY 2005-06

Particulars	**FY 05-06**		
	Petition	**Actuals**	**Allowed after truing up**
Hydel Stations	1975	2024	2024
Unit 4, Trombay	553	642	642
Unit 5, Trombay	3788	3758	3758
Unit 6, Trombay	3340	3454	3454
Unit 7, Trombay	1376	1331	1331
Total Thermal	**9,057**	**9,185**	**9185**
Total Generation	**11,032**	**11,209**	**11209**

3.3.2 Auxiliary Consumption

The Commission, in its Order on ARR and Tariff Petition for FY 2004-05, approved auxiliary consumption of hydel stations and each unit of thermal station separately, based on the actual auxiliary consumption achieved during previous years. TPC, in its Petition for FY 2005-06, submitted the actual auxiliary consumption for FY 2004-05. TPC submitted that the actual auxiliary consumption achieved during FY 2004-05 for hydel stations is equivalent to auxiliary consumption of 0.5% approved by the Commission. TPC further submitted that the actual auxiliary consumption of the Trombay thermal station is also equivalent to auxiliary consumption of 4.17% as approved by the Commission. As the auxiliary consumption achieved during FY 2004-05 is equivalent to auxiliary consumption approved by the Commission in Tariff Order, the Commission accepts the actual auxiliary consumption for FY 2004-05.

TPC, in its Petition for FY 2006-07, submitted revised estimates of auxiliary consumption for FY 2005-06 based on eight months actual and four months estimated auxiliary consumption. TPC submitted that the auxiliary consumption on Unit 4 is expected to be higher than the auxiliary consumption approved by the Commission in its Tariff Order for FY 2004-05 due to partial load operation and frequent shut downs. Subsequently, TPC submitted the actual auxiliary consumption for FY 2005-06, as 0.35% and 4.25% for hydel stations and thermal station, respectively.

The Commission has analysed the auxiliary consumption of TPC's hydel stations and thermal station for the previous five years, i.e., from FY 1999-2000 to FY 2003-04 and observed that the actual auxiliary consumption for hydel stations achieved during previous five years is in the range of 0.54% to 0.66%, and for thermal generation ranges between 4.12% to 4.83% as shown in the Table below:

Table: Auxiliary Consumption during previous five years

Units, Station	FY 99-00	FY 00-01	FY 01-02	FY 02-03	FY 03-04
Hydel Stations	**0.66%**	**0.65%**	**0.54%**	**0.62%**	**0.60%**
Unit 4, Trombay	9.90%	7.80%	7.40%	7.30%	7.80%
Unit 5, Trombay	5.70%	5.20%	5.40%	5.04%	5.30%
Unit 6, Trombay	4.20%	3.80%	3.70%	3.30%	3.20%
Unit 7, Trombay	2.20%	2.60%	2.90%	2.74%	2.50%
Total Thermal	**4.83%**	**4.57%**	**4.60%**	**4.35%**	**4.12%**

As the actual auxiliary consumption of thermal station achieved during FY 2005-06 is within the range of auxiliary consumption achieved during the previous five years, the Commission accepts the actual auxiliary consumption of thermal station at 4.25% achieved during FY 2005-06. The summary of auxiliary consumption for FY 2004-05 and FY 2005-06 is given in the following Table:

Table: Auxiliary Consumption for FY 2004-05 and FY 2005-06

UNIT, STATION	FY 2004-05			FY 2005-06		
	Tariff Order	Actuals	Allowed after truing up	Petition	Actuals	Allowed after truing up
Hydel Stations	0.50%	0.50%	0.50%	0.45%	0.36%	0.36%
Unit 4, Trombay	7.80%	7.79%	7.79%	8.55%	8.32%	8.32%
Unit 5, Trombay	5.30%	5.00%	5.00%	5.12%	5.12%	5.12%
Unit 6, Trombay	3.25%	3.20%	3.20%	3.35%	3.31%	3.31%
Unit 7, Trombay	2.80%	2.31%	2.31%	2.45%	2.29%	2.29%
Total Thermal	**4.17%**	**4.17%**	**4.17%**	**4.27%**	**4.25%**	**4.25%**

3.4 VARIABLE (FUEL) COSTS OF TROMBAY GENERATING STATION

The variable cost of generation depends upon following parameters:

- Heat Rate
- Fuel Parameters (Cost of Fuel and Calorific Value)

3.4.1 Heat Rate

The Commission, in its Order on ARR and Tariff Petition for FY 2004-05, approved the Unit wise Heat Rate and based on the approved unit wise heat rates, the average heat rate approved for Trombay Generating Station was 2349 kCal/kWh. TPC, in its Petition for FY 2005-06, submitted data on actual heat rate for FY 2004-05, wherein it is observed that the actual heat rate for Unit 5 is higher than the heat rate approved in the Tariff Order and the actual heat rate of Unit 4, Unit 6 and Unit 7 is lower than the heat rate approved in the Tariff Order. However, the overall actual heat rate for the Station is equivalent to the average heat rate approved by the Commission in the Tariff Order, hence, the Commission accepts the actual heat rate for FY 2004-05.

TPC, in its Petition for FY 2005-06, submitted that the heat rate for FY 2005-06 has been estimated based on actual performance parameters. TPC further submitted that the Heat Rate of the Unit 5 in second half of FY 06 is expected to be higher than that in the first half, due to overhaul. TPC projected average Heat Rate of 2350 kCal/KWh for FY 2005-06, in its Petition. Subsequently, TPC submitted the actual performance details of thermal stations for FY 2005-06 and the actual heat rate for FY 2005-06 is 2344 kCal/kWh. The actual heat rate for Unit 5 in FY 2005-06 is higher than the heat rate approved by Commission in its Tariff Order for FY 2004-05, however the actual heat rate of Unit 4, Unit 6 and Unit 7 as well as the overall actual heat rate of generating station for FY 2005-06 is lower than the heat rate approved in the Tariff Order for FY 2004-05. Therefore, the Commission accepts the actual heat rate achieved during FY 2005-06. The summary of heat rate during FY 2004-05 and FY 2005-06 is given in the following Table:

Table: Summary of Heat Rate for FY 2004-05 and FY 2005-06

Heat Rate (Kcal/KWh)	**FY 04-05**			**FY 05-06**		
	Tariff Order	**Actuals**	**Allowed after truing up**	**Petition**	**Actuals**	**Allowed after truing up**
Unit 4, Trombay	2574	2555	2555	2610	2564	2564
Unit 5, Trombay	2447	2456	2456	2463	2458	2458
Unit 6, Trombay	2338	2328	2328	2334	2322	2322
Unit 7, Trombay	2019	1977	1977	1972	1971	1971
Total Thermal	**2349**	**2349**	**2349**	**2350**	**2344**	**2344**

3.4.2 Fuel Price and Fuel Calorific Value

The Commission, in its Order on ARR and Tariff Petition for FY 2004-05, considered the fuel prices and calorific value of fuels based on the past trends. The variation in the fuel prices and calorific value of fuel during FY 2004-05 has been considered as part of Fuel Adjustment Charge (FAC).

TPC submitted that the fuel prices, particularly the price of Oil (Liquid Fuel), have increased substantially during FY 2005-06 due to substantial increase in crude prices. For FY 2005-06, TPC in its Petition, considered the fuel prices based on actual fuel prices for first eight months of FY 2005-06. Subsequently, TPC submitted the actual fuel prices and calorific value of respective fuels for FY 2005-06. For the purpose of truing up of fuel costs (variable cost of generation) for FY 2004-05 and FY 2005-06, the Commission has considered the actual fuel costs and actual calorific value, as given in the Table below:

Table: Summary of Fuel Prices and Calorific Value

	FY 2004-05			FY 2005-06		
	Tariff Order	**Actuals**	**Allowed after truing up**	**Petition**	**Actuals**	**Allowed after truing up**
A. Fuel Price (Rs/MT)						
Gas	3970	3959	3959	4702	4708	4708
Coal	2285	2618	2618	2783	2737	2737
Oil	11240	11395	11395	17188	16440	16440
B. Calorific Value (kCal/kg)						
Gas	13000	12944	12944	13008	13060	13060
Coal	4750	4805	4805	4879	4905	4905
Oil	10500	10518	10518	10514	10272	10272
C Fuel Price (Rs/Mkcal)						
Gas	305	306	306	361	360	360
Coal	481	545	545	570	558	558
Oil	1070	1083	1083	1635	1600	1600

3.4.3 Total Fuel Costs and Variable Cost of Generation

Based on heat rate, fuel prices and fuel calorific value as discussed in above paragraphs, the total fuel costs and variable cost of generation for FY 2004-05 and FY 2005-06 is summarized in the following Table:

Table: Fuel Costs (Rs. Crore)

	FY 2004-05			FY 2005-06		
	Order	**Actual**	**Approved after truing up**	**Petition**	**Actual**	**Approved after truing up**
Unit 4	31	172	172	237	278	278
Unit 5	541	587	587	604	568	568
Unit 6	923	802	802	1,230	1280	1280
Unit 7	74	81	81	98	95	95
Total	**1569**	**1,641**	**1641**	**2,170**	**2,221**	**2221**

Table: Variable Cost of Generation (Rs/kWh)

	FY 2004-05			FY 2005-06		
	Order	**Actual**	**Approved after truing up**	**Pettiion**	**Actual**	**Approved after truing up**
Unit 4	3.01	2.79	2.79	4.68	4.72	4.72
Unit 5	1.37	1.52	1.52	1.68	1.59	1.59
Unit 6	2.54	2.41	2.41	3.81	3.83	3.83
Unit 7	0.64	0.62	0.62	0.73	0.73	0.73
Total	**1.77**	**1.80**	**1.80**	**2.50**	**2.53**	**2.53**

The total fuel costs during FY 2004-05 have been higher at Rs 1641 Crore, as compared to Rs 1569 Crore approved in the Tariff Order. This increase in total fuel costs is attributable to increase in quantum of generation and increase in fuel prices during FY 2004-05. The fuel prices and hence the variable cost of generation has increased substantially during FY 2005-06 mainly due to increase in liquid fuel prices as a result of global increase in crude prices. The Commission approves the total fuel costs of Rs 1641 Crore and Rs 2221 Crore for FY 2004-05 and FY 2005-06, respectively, as these costs have been already vetted by the Commission under the FAC submissions made by TPC.

3.5 POWER PURCHASE QUANTUM AND COSTS

The Commission, in its Order on ARR and Tariff Petition for FY 2004-05, considered power purchase of 62 MU from the erstwhile MSEB at a total cost of Rs 18 Crore. However, the actual quantum of power purchase by TPC during FY 2004-05 is slightly higher at 85 MU and the total actual cost of power purchase as submitted by TPC is Rs 29 Crore. For FY 2004-05, the Commission has considered the actual quantum of power purchase by TPC from various sources, for truing up purposes.

The summary of quantum of power purchase and power purchase cost for FY 2004-05 is given in the Table below:

Table: Summary of Power Purchase for FY 2004-05

Particulars	Units	FY 04-05		
		Tariff Order	Actuals	Allowed after truing up
Total Quantum	MU	62	85	85
Total Power Purchase Cost	Rs Crore	18	29	29
Cost per unit	Rs/kWh	2.90	3.41	3.41
RPO Adjustment	Rs Crore			-0.42
Net Power Purchase Cost	**Rs Crore**			**28.58**

TPC, in its Petition for FY 2005-06, estimated the total quantum of power purchase as 448 MU. TPC submitted that additional power purchase is mainly due to increase in energy input required to meet the increase in demand of Mumbai consumers. TPC also filed a separate Petition in September 2005, for approval of short term power purchase to the extent of 175 MW from Jindal through PTC and the Commission accorded approval for the short term power purchase in its Order in Case No. 20 of 2005.

Subsequently, TPC submitted the details of actual power purchase from different sources during FY 2005-06 as 599.03 MU. The total cost of actual power purchase during FY 2005-06 including open access charges is Rs 188 Crore. The summary of power purchase during FY 2005-06 is given in the Table below:

Table: Summary of Power Purchase in FY 2005-06

Particulars	FY 05-06		
	Petition	Actuals	Allowed after truing up
A. Quantum (MU)			
MSEB (own)	106	137.74	137.74
MSEB (Jindal)		13.52	13.52
TPTCL	100	100.6	100.6
PTC India	219	347.17	347.17
RPO	23		25.42
Total Quantum	**448**	**599.03**	**624.45**
B. Power Purchase Cost (Rs Crore			
MSEB (own)	34	45.05	45.05
MSEB (Jindal)		5.04	5.04

Particulars	FY 05-06		
	Petition	Actuals	Allowed after truing up
TPTCL	29	29.65	29.65
PTC India	68	108.24	108.24
RPO Obligation	8		8.21*
Total Quantum	**139**	**187.98**	**196.19**
C. Per Unit Rate (Rs/kWh)			
MSEB (own)	3.21	3.27	3.27
MSEB (Jindal)		3.73	3.73
TPTCL	2.90	2.95	2.95
PTC India	3.11	3.12	3.12
RPO	3.48		3.23
Total	**3.10**	**3.14**	**3.14**

** Net RPO Obligation of TPC added.*

For the purpose of truing up, the Commission has considered the actual power purchase cost of Rs 196.19 Crore as including RPO obligations.

The Commission, in its Order on ARR and Tariff Petition for FY 2004-05, considered the standby charges of Rs 396 Crore payable by TPC to MSEB. The actual standby charge included by TPC as part of total purchase costs for FY 2004-05 and FY 2005-06 is Rs 396 Crore and the Commission has accepted the same.

Maharashtra Energy Development Agency (MEDA), has finalised the RPO settlement for FY 2004-05 and as per the final settlement, the RPO obligation for each licensee works out to 0.78% of Gross Energy Input of Distribution Licensee (excluding inter-se sale/purchase amongst the licensees) and the weighted average cost of power from renewable sources of energy works out to Rs 2.12/kWh. Based on the total energy input of TPC Distribution for FY 2004-05, TPC's share towards RPO obligation works out to 26.15 MU. TPC has purchased around 27.74 MU from the wind generating station of TPC. As the actual purchase by TPC from renewable sources is more than its RPO obligation, TPC will get credit of 0.52 Crore towards contribution of renewable energy units to the extent of 1.59 MU to RPO pool under RPO settlement. The Commission has considered this credit for the purpose of truing up for FY 2004-05.

Further, MEDA is in the process of finalising the RPO settlement for FY 2005-06 and as per the preliminary estimates, it is envisaged that the RPO obligation for FY 2005-06 will be around 2 % of Energy Input and the weighted average cost of power from renewable sources of energy will be Rs 3.23/kWh. Based on the total energy input of TPC Distribution for FY 2005-06, TPC's share towards RPO obligation works out to 51.61 MU. However, TPC has purchased 26.18 MU from the wind generating station and the balance 25.42 MU needs to be adjusted in the final RPO settlement. Considering the weighted average RPO Pool Rate of Rs 3.23 per unit for FY 2005-06, TPC will have to pay Rs 8.21 Crore to RPO Pool towards shortfall in meeting its RPO obligations to the extent of 25.42 MU. The Commission has considered this additional cost of RE purchase for the purpose of truing up for FY 2005-06.

3.6 FUEL ADJUSTMENT CHARGE (FAC)

The Commission has also separately vetted the Fuel Adjustment Charge (FAC) levied by TPC on month to month basis, to recover the increase in fuel and power purchase costs for FY 2004-05 and FY 2005-06. The approval of overall vetting of FAC levied for FY 2004-05 and FY 2005-06 was communicated to TPC by the Commission in the month of June 2006. The Commission would like to clarify that while vetting FAC and for assessment of the under recovery and over recovery of FAC levied with respect to change in costs, the Commission has considered the normative parameters including heat rate, T&D loss and auxiliary consumption as approved in the Tariff Order for FY 2004-05. The principle of FAC is to allow the recovery of variation in fuel costs with respect to base fuel costs considered in the Order and hence for the purpose of FAC computations, the baseline figures of norms considered in the Order needs to be applied. Therefore, the FAC pertaining to excess T&D loss and excess auxiliary consumption has been disallowed while approving the FAC levied on month to month basis.

However, while undertaking the truing up of costs and revenue for FY 2004-05 and FY 2005-06, the Commission has considered the actual values for the operational parameters, i.e., T&D loss, auxiliary consumption and heat rate subject to norms specified in previous Tariff Order. Further, the Commission has also considered the actual fuel costs and power purchase costs incurred by TPC during FY 2004-05 and FY 2005-06. As the actual fuel cost and power purchase costs have been considered for truing up, there is no need to reverse the amounts disallowed towards excess T&D loss and excess auxiliary consumption during vetting of FAC on month to month basis. Further, as the actual revenue reported by TPC during FY 2004-05 and FY 2005-06 including revenue from FAC has been considered as part of truing up, there is no need to separately consider the amount of over/under recovery of FAC for FY 2004-05 and FY 2005-06. However, the interest on over/under recovery of FAC needs to be considered as a part of truing up of ARR.

The Commission, while vetting the FAC for FY 2004-05 has estimated the interest on over recovery as Rs 1.41 Crore and for FY 2005-06, the interest on under recovery as Rs 5.02 Crore. Hence, this interest on over-recovery and under recovery has been considered while truing up the ARR for FY 2004-05 and FY 2005-06.

3.7 OPERATION & MAINTENANCE EXPENSES

3.7.1 Employee Expenses

The Commission had approved employee expenses of Rs. 146 crore, in its Order on ARR and Tariff Petition for FY 2004-05. TPC submitted that the actual employee expenditure in FY 2004-05 was lower, at Rs. 133.4 crore. For FY 2005-06, TPC submitted that the actual employee expenditure was higher, at Rs. 147.7 crore.

The Commission has examined the prudence of the actual employee expenditure incurred by TPC in FY 2004-05 and FY 2005-06, and has applied the efficiency norms to determine the employee expenditure. The Commission has accepted the actual employee expenditure in FY 2004-05, as it is lower than the allowed level of employee expenditure in the Tariff Order. However, the Commission not allowed the entire increase in expenditure in FY 2005-06, as the increase was higher than the normal growth trend.

TPC has projected the employee expenses for FY 2005-06 in its Petition for FY 2005-06, based on six month actuals and balance projection, wherein it has considered an increase in the employee expenditure in FY 2005-06 over the actual employee expenditure in FY 2004-05. Subsequently, TPC has given the actual employee expenses in FY 2005-06. While approving the employee expenses for FY 2005-06, the Commission has considered an increase of around 5% over the allowed level of expenses in FY 2004-05 (after truing-up), in accordance with the trend of increase in CPI, though the actual growth trend in case of TPC is around 3%. The employee expenses allowed by the Commission for FY 2004-05 and FY 2005-06 are given in the Table below:

Employee Expenses (Rs. Crore)

Particulars	FY 2004-05			FY 2005-06		
	Tariff Order	Actuals	Allowed after truing up	Petition	Actuals	Allowed after truing up
Salaries & Wages	109.87	80.55	80.55	100.42	105.60	84.58
Staff Welfare Expenses	0.00	10.46	10.46	9.97	9.70	10.98
Terminal Benefits	28.12	36.55	36.55	25.12	24.70	38.38
VRS Expenses	8.00	5.81	5.81	7.30	7.70	6.11
Total Employee Cost	**145.99**	**133.38**	**133.38**	**142.81**	**147.70**	**140.05**

3.7.2 Administration & General Expenses

The Commission had approved A&G expenses of Rs. 82.9 crore, in its Order on ARR and Tariff Petition for FY 2004-05. However, TPC submitted that the actual A&G expenditure in

FY 2004-05 is much higher, at Rs. 102 crore, and has sought truing up of the actual A&G expenses. Subsequently, for FY 2005-06, no increase in expenditure has been sought by TPC.

The Commission has examined the prudence of the A&G expenditure incurred by TPC in FY 2004-05 and FY 2005-06. Mere incurrence of the cost cannot be a reason for allowing the same through the tariff. The annual growth in A&G expenses is around 2.4%, over the last five years. The Commission is of the opinion that A&G expenses should be controlled, and has hence allowed A&G expenses for FY 2004-05 at the same level as approved in the Tariff Order. For FY 2005-06, an increase of 2.4% has been considered, over the allowed level of A&G expense in FY 2004-05, as given in the Table below.

A&G Expenses (Rs. Crore)

Sl.	Particulars	FY 2004-05			FY 2005-06		
		Tariff Order	Actuals	Allowed after truing up	Petition	Actuals	Allowed after truing up
1	Net A&G Expenses	82.85	101.96	82.85	91.04	101.20	84.86

3.7.3 Repair & Maintenance Expenses

The Commission had approved R&M expenses of Rs. 107.8 crore, in its Order on ARR and Tariff Petition for FY 2004-05, at the rate of 3% of opening GFA for TPC as a whole. However, TPC submitted that the actual R&M expenditure in FY 2004-05 is slightly higher, at Rs. 113.2 crore, and has sought truing up of the actual R&M expenses. For FY 2005-06, TPC has submitted that the actual R&M expenditure is slightly higher than the actual expenditure in FY 2004-05, at Rs. 116 crore. In its Petition, TPC submitted that the R&M expenditure in FY 2005-06 was on the lower side on account of the deferment of repairs to buildings like major painting work due to unavoidable reasons. However, in the actual expenditure details submitted later, TPC appears to have included the painting expenses as well, as the expenditure is slightly higher than the expenditure in FY 2004-05.

The Commission has examined the prudence of the R&M expenditure incurred by TPC in FY 2004-05 and FY 2005-06. The Commission has allowed the R&M expenditure in FY 2004-05 and FY 2005-06, to the extent of 3% of opening GFA, as shown in the Table below:

R&M Expenses (Rs. Crore)

Sl.	Particulars	FY 2004-05			FY 2005-06		
		Tariff Order	Actuals	Allowed after truing up	Petition	Actuals	Allowed after truing up
1	Net R&M Expenses	107.77	113.21	111.14	87.18	115.95	115.33

Sl.	Particulars	FY 2004-05			FY 2005-06		
		Tariff Order	Actuals	Allowed after truing up	Petition	Actuals	Allowed after truing up
2	Gross Fixed Assets at beginning of year	3,592.32	3,704.74	3,704.74	3,988.49	4,023.00	3,844.32
3	R&M Expenses as % of GFA at beginning of year	3.0%	3.1%	3.0%	2.2%	2.9%	3.0%

3.8 DEPRECIATION

The Commission, in its earlier Order dated June 11, 2004, had permitted depreciation to the extent of Rs 171 Crore for FY 2004-05, which amounts to 4.76% of Opening level of Gross Fixed Assets (GFA) of TPC for FY 2004-05. The Depreciation rates were considered as prescribed in the notification issued by the Ministry of Power, Government of India, in March 1994.

TPC, in its ARR Petition, submitted actual depreciation costs incurred for FY 2004-05 as Rs 245.50 Crore, at an overall depreciation rate of 6.63% corresponding to opening GFA of Rs 3704.74 Crore. For FY 2005-06, TPC proposed total depreciation expenditure cost as Rs 160.08 Crore, at an overall depreciation rate of 4.01% corresponding to opening GFA of Rs 3988.49 Crore.

The Commission has examined the depreciation and actual capitalisation claimed by TPC in detail as against the various capex schemes approved by the Commission. The Commission has noted that the actual Opening level of GFA for FY 2004-05 amounts to Rs 3704.74 Crore as against Rs 3592.32 Crore considered by the Commission in its Tariff Order. Further, the Commission notes that as against permitted capital expenditure of Rs 192 Crore and permitted capitalisation of Rs 53 Crore under its earlier Tariff Order, actual capitalisation by TPC during FY 2004-05 amounted to Rs 280.20 Crore. The Commission has verified the actual capitalisation claimed by TPC as against the capex schemes already approved by the Commission.

During FY 2004-05, TPC had submitted Detailed Project Reports for four Generation Schemes, viz., Khopoli Penstock, Shirwata Dam, Walvan Dam and Coal berth at Trombay. The Commission had given in-principle clearance to following schemes, viz., Khopoli Penstock (Rs 170 Crore), Shirwata Dam (Rs 70 Crore) and Walwan Dam (Rs 31 Crore).

As regards, the capital scheme for captive coal jetty at Trombay, TPC was asked to resubmit its capex proposal for approval upon availing requisite statutory clearances. TPC submitted revised scheme for coal berth at Trombay, which is currently under scrutiny of the

Commission. The copy of the environmental clearance submitted by TPC shows that the capital cost has been considered as only Rs. 7 crore, though the capital cost is now being shown as Rs. 163 crore. As the environmental clearance is given for the indicated scope of work, there appears to be a discrepancy between the scope of work indicated by TPC to the environmental department, and the scope of work being considered now. Hence, any approval can be granted by the Commission for the captive coal jetty only when TPC obtains the environmental clearance for the same scope of work indicated under the request for approval of capital expenditure. Subsequently, Environment Department, GoM, has sent a letter to the Commission stating that TPC's jetty has been cleared at a cost of Rs. 163 crore. The Commission is in the process of scrutinising the details of this clearance. However, as the jetty is not being capitalised in FY 2006-07, it has not been considered in the capital cost estimates for FY 2006-07, for the purposes of computing interest and depreciation.

TPC submitted that Khopoli Penstock scheme was completed during January 2005 whereas Shirwata Dam and Walwan Dam have been completed during March/April 2005. The actual capital expenditure incurred for various schemes has been submitted as follows - Khopoli Penstock scheme (Rs 139 Crore), Shirwata Dam (Rs 46 Crore) and Walwan Dam (Rs 23 Crore). The Commission had considered capitalisation of Khopoli Penstock Scheme during FY 2004-05 whereas capitalisation of Shirwata Dam and Walwan Dam has been considered during FY 2005-06. TPC had envisaged an additional generation of 9.05 MU per year over an existing average generation of 213.4 MU after the implementation of the Khopoli Penstock Scheme. TPC had envisaged an additional generation of 13.34 MU per year due to increased storage capacity after implementation of the Shirwata Dam scheme.

There is a discrepancy between the capitalisation figures reported under Form F5.4 (CWIP and capitalisation) and figures for addition to Gross Fixed Assets reported under Form F4 (Assets and Depreciation) by TPC under its submission. Accordingly, the Commission has only considered capital schemes whose details have been furnished under Form F5.3 (Capital Expenditure). The Commission directs TPC to henceforth ensure consistency across various Forms. Further, under Form F5.4, TPC has not included capitalisation of interest and only cost of works has been considered for capitalisation. The Commission opines that interest cost during construction (IDC) should not be considered as part of revenue expense and the same should be capitalised along with assets, as and when put to use. Accordingly, the Commission has considered capitalisation of assets including IDC derived considering the normative debt (70% of capital investment) and considering the interest rate of 10% for the schemes initiated during FY 2004-05 and FY 2005-06. The details pertaining to capitalisation of assets during FY 2004-05 and FY 2005-06 are summarised in the following Table:

Table: Capitalisation **(Rs Crore)**

Sl.	Particulars	FY 2004-05			FY 2005-06		
		Tariff Order	Actuals	Allowed after truing up	Petition	Actuals	Allowed after truing up
1	Works capitalized		280.80	141.60	235.23	196.79	94.13
2	Interest capitalised		0.00	9.91	0.00	0.00	6.53
3	**Total Capitalisation**	**53.00**	**280.80**	**151.52**	**235.23**	**196.79**	**100.72**

As regards applicability of depreciation rates for FY 2005-06, the Commission, in its Order dated April 13, 2006, stipulated that *"the norms for approval of ARR and principles for determination of tariff as enunciated in the latest Tariff Orders of each licensee shall form the basis for approval of the Annual Revenue Requirement of licensees/Utility for FY 2005-06 and the determination of ARR and Tariff FY 2006-07 will be governed by the Tariff Regulations"*.

TPC submitted the actual depreciation expenditure in FY 2004-05 and FY 2005-06, which have been computed partly in accordance with the depreciation rates considered in the Tariff Order. However, in case of plant and machinery under Transmission assets, the actual depreciation costs (Rs 68.54 Crore) for FY 2004-05 as submitted by TPC under Form F3 over Opening Gross fixed Assets (Rs 468.03 Crore) is very high and the depreciation rate works out to 14.65% during FY 2004-05. TPC is directed to submit the Auditor's certificate certifying that the accumulated depreciation for each asset in the asset register has not exceeded 90% of the asset value, as depreciation cannot be claimed beyond 90% of the asset value. The Depreciation expenditure approved by the Commission for FY 2004-05 and FY 2005-06 are summarised in the following Table:

Table: Depreciation Expense (Rs Crore)

Sl.	Particulars	FY 2004-05			FY 2005-06		
		Tariff Order	Actuals	Allowed after truing up	Petition	Actuals	Allowed after truing up
1	**Depreciation**	171.00	245.50	200.35	160.08	157.00	153.46
2	**Opening GFA**	3592.32	3704.74	3704.74	3988.49	4023.00	3844.32
3	**Depreciation Rate (%)**	**4.76%**	**6.63%**	**5.41%**	**4.01%**	**3.90%**	**3.99%**

3.9 INTEREST ON LONG TERM LOAN

The Commission had approved interest cost of Rs 13.44 Crore for FY 2004-05, after considering interest at the rate of 10% on additional loans based on normative debt: equity of 70:30 for new investments. TPC submitted that actual interest cost for FY 2004-05 has been Rs 20.33 Crore and projected the interest cost for FY 2005-06 as Rs 29.96 Crore. In addition, the Commission had earlier approved interest cost of Rs 11.85 Crore towards interest paid on foreign loans under its earlier Tariff Order for FY2004-05. However, the Commission notes that TPC has neither incurred any such cost nor claimed the same in its Petition, hence the Commission has not considered the same for the true-up exercise for FY 2004-05. Further, TPC sought approval for interest cost of Rs 15.63 Crore on normative debt component towards standby adjustment. The Commission has disallowed the normative debt for standby adjustment and the interest thereon claimed by TPC, as the same has already been accounted for in the Commission's Order dated May 31, 2004.

TPC had computed interest costs for the normative debt corresponding to entire capital expenditure incurred during that year. As observed earlier, the Commission opines that interest cost towards capital expenditure needs to be capitalised as and when the asset is put to use and should not be charged to revenue expense. Pursuant to such capitalisation, interest costs can be charged to revenue expense over the repayment tenure of such outstanding debt. Accordingly, the Commission has considered interest cost of normative debt corresponding to capitalised assets only. The details of interest cost are summarised in the following Table:

Table: Interest Expenditure (Rs Crore)

Sl.	Particulars	FY 2004-05			FY 2005-06		
		Tariff Order	Actuals	Allowed after truing up	Petition	Actuals	Allowed after truing up
1	Opening balance of loan		108.18	108.18	198.46		182.85
2	Additions		103.80	86.16	127.59		70.51
3	Repayment		(13.52)	(11.50)	(26.50)		(20.11)
4	Closing balance of loan		198.46	182.85	299.55		233.24
5	**Interest cost**	**13.44**	**20.33**	**14.55**	**29.96**	**45.00**	**20.80**
6	% Interest Rate		13.3%	10.0%	12.0%		10.0%

3.10 WRITE-OFF OF BAD DEBTS

As TPC did not have too many retail consumers in FY 2004-05 and FY 2005-06, the write-off of bad debts is on the lower side, at Rs. 2 crore, which is in accordance with the provisioning allowed in the Tariff Order for FY 2004-05. Hence, the bad debts written off have been considered as Rs. 2 crore in FY 2004-05 and FY 2005-06.

3.11 INCOME TAX

TPC has considered income tax liability of Rs. 138 crore and Rs. 160 crore in FY 2004-05 and FY 2005-06, respectively. In the Tariff Order for FY 2004-05, the Commission had projected income tax liability of Rs. 175 crore, on the following rationale:

> *"The Commission has allowed Corporate Income Tax and disallowed Dividend Tax and Deferred Tax for determination of ARR. The Commission has projected Income Tax applicable to Tax PBT computed for the License Area operations, and has computed the Income Tax for FY 2003-04 and FY 2004-05 based on the Commission's estimate of revenue and expenditure. The Commission has disallowed the Deferred Tax, as Deferred Tax does not represent actual tax outgo. The Commission has also disallowed the Dividend Tax as the consumers should not have to pay tax on dividends distributed to TPC's shareholders."*

Analysis of TPC's audited Annual Reports for FY 2004-05 and FY 2005-06, reveals that the actual income tax paid by TPC in FY 2004-05 and FY 2005-06 for the current year is Rs. 139.9 crore and Rs. 146.8 crore, respectively. Further, the income tax includes the revenue earned by TPC on its several other businesses, viz., IPP business in Belgaum, Delhi distribution license business (NDPL), captive power plants at Jojobera, Transmission business, power trading, etc. In FY 2004-05, the actual income tax paid by TPC as a whole, is almost equal to the income tax being considered for truing up purposes. This is irrational, as truing up is undertaken based on actual revenue and expenses, subject to prudence check, and the tax liability of the other businesses should not be loaded to the Mumbai license area.

Also, TPC is leveraging the balance sheet of its electricity business, for investment in other businesses like Maithon Power Limited, etc. The consumers of the Mumbai license area should also get the benefit of the tax shelter, if any, being derived by the other business ventures. Moreover, the consumers of the Mumbai license area should not subsidise the other businesses of TPC. Hence, in larger public interest, the Commission rules that the income tax allowable for TPC's licence business in Mumbai, will be a proportion of the actual income tax paid by TPC.

In the absence of details on actual income tax paid for the Mumbai license area, the actual income tax paid by TPC in FY 2004-05 and FY 2005-06 has been apportioned between the Mumbai license area business and other business of TPC, which has been assumed as 75:25. Accordingly, 75% of the actual income tax paid by TPC has been apportioned to TPC's licensed business in Mumbai. Thus, the income tax expenditure allowed for FY 2004-05 and FY 2005-06 is Rs. 104.9 crore and Rs. 110.1 crore, respectively. TPC should submit documentary evidence of the actual income tax paid by TPC for its Mumbai license area business in FY 2004-05 and FY 2005-06, and the corresponding amount will be trued up in the next year.

3.12 REVENUE FROM SALE OF ELECTRICITY

TPC has submitted the details of actual revenue from sale of electricity for FY 2004-05 and FY 2005-06, as Rs. 2944 Crore and Rs. 3614 Crore, respectively, excluding revenue from share of standby charges of Rs. 91 crore, paid by REL to TPC. However, for FY 2005-06, though the above revenue has been indicated as actual revenue, under the Clear Profit computations, it does not appear logical that the revenue can increase by such levels, without any increase in tariff or FAC. TPC subsequently clarified that the actual revenue of Rs. 3614 crore indicated by TPC for FY 2005-06, is not the actual billed revenue, but the revenue that TPC would have billed, had the ceiling on recovery of FAC not been present. This approach is incorrect and misleading, and only the actual billed revenue should be considered. The Commission has hence considered the actual billed revenue as submitted by TPC for truing up purposes in FY 2004-05 and FY 2005-06, as Rs. 3102 crore, and Rs. 3344 crore, respectively.

3.13 NON-TARIFF INCOME

The Commission had projected non-tariff income in FY 2004-05 at Rs. 56.2 crore. However, TPC submitted that the actual non-tariff income in FY 2004-05 is higher, at Rs. 67 crore. For FY 2005-06, TPC projected non-tariff income of Rs. 55.8 crore, while the actual non-tariff income has been equivalent to Rs. 56 crore.

The Commission has considered the non-tariff income equal to the actual non-tariff income reported by TPC, as shown in the Table below, as this is higher than the non-tariff income considered by the Commission in the Tariff Order.

Non-Tariff Income (Rs. Crore)

Sl.	Particulars	FY 2004-05			FY 2005-06		
		Tariff Order	Actuals	Allowed after truing up	Petition	Actuals	Allowed after truing up
1.0	Rental (land, bldg, plant & m/cery)	5.00	5.89	5.89	7.53		
2.0	Income on services rendered	3.10	7.76	7.76	16.75		
3.0	Delayed Payment Charges	5.00	0.70	0.70	0.38		
4.0	Sale of Scrap and Stores	5.00	4.16	4.16	6.18		
5.0	Miscellaneous Revenue	5.00	7.87	7.87	4.31		
6.0	Interest on call money	0.00		-			
7.0	Other Interest	4.10	24.50	24.50	-		
8.0	Income from Statutory Investments	29.02	16.16	16.16	20.69		
8.1	Income - DTLF Invest	20.97		-			
8.2	Income on Units from UTI-only Contingency Investments	8.06		-			
9.0	**Total Other Income**	**56.22**	**67.05**	**67.05**	**55.84**	**56**	**56**

3.14 CAPITAL BASE

In the Order for determination of ARR for FY 2003-04 and FY 2004-05, and determination of tariff for FY 2004-05, the Commission had restated the Capital Base for TPC for the period from FY 1997-98 to FY 2003-04, and had allowed the Capital Base for FY 2004-05, after adjusting the reserves and allowing for the impact of the standby charges with retrospective effect.

For FY 2004-05 and FY 2005-06, the Capital Base computations have to be undertaken, as the Commission in its Order dated April 13, 2006, stipulated that the principles specified in the Commission's previous Tariff Order would be applied for determination of the ARR for FY 2005-06, and the Commission's Tariff Regulations would be applied from FY 2006-07 onwards. TPC submitted the Capital Base computations for FY 2004-05 and FY 2005-06 based on the actual addition to assets, depreciation and borrowings. The Commission has allowed the Capital Base with modifications for the allowed level of asset addition, depreciation and borrowings, as shown in the Table below:

Capital Base (Rs. Crore)

Sl.	Particulars	FY 2004-05			FY 2005-06		
		MERC	Actual	Allowed after truing up	Petition	Actual	Allowed after truing up
1	Original cost of Fixed Assets	3645	3988	3844	4219	3941	3941
2	Less: Capital Contribution from Consumers	42	42	42	42	42	42
		3603	**3946**	**3802**	**4177**	**3899**	**3899**
3	Cost of Intangible Assets	61	82	82	82	82	82
4	Work In Progress & Advances	411	46	55	80	145	145
5	Contingencies Reserve Investments	173	173	173	184	183	183
6	Stores & Tools Balances	233	213	213	271	267	267
7	Cash & Bank Balances	30	8	8	7	8	8
8	**Total (A)**	**4511**	**4468**	**4334**	**4801**	**4584**	**4584**
11	Depreciation	2065	2139	2094	2301	2450	2249
12	Intangible Assets written off	54	59	59	59	66	66
13	Approved Borrowings	263	198	183	487	233	233
	Amount of approved borrowings	353	198	183	487	233	233
	Less Net Exchange Fluctuation write-off	-90					
14	Debentures						
15	Security Deposits from Consumers	24	22	22	22	23	23
16	Tariffs & Dividend Control Reserve	0	0	0	0	3	3
17	Investment Allowance Reserve	121	121	121	121	121	121
18	Consumers' Benefit A/c (Op.Bal.)	0	0	0	0	3	3
19	Special Appro. re: Project Cost	534	534	534	534	534	534
20	Debt Redemption Reserve	37	37	37		37	37
21	**Total (B)**	**3098**	**3111**	**3050**	**3524**	**3470**	**3269**
24	**CAPITAL BASE (A-B)**	**1414**	**1357**	**1284**	**1277**	**1114**	**1315**

3.15 REASONABLE RETURN

The methodology for computation of Reasonable Return has been stipulated in the Schedule VI of the erstwhile Electricity (Supply) Act, 1948. For FY 2004-05 and FY 2005-06, the computation of Reasonable Return on the Capital Base has to be undertaken, in accordance with the same principles outlined for computation of Capital Base. TPC submitted the Reasonable Return computations for FY 2004-05 and FY 2005-06 based on the Capital Base computations and the applicable rate of Return. The Commission has allowed the Reasonable Return for FY 2004-05 and FY 2005-06, on the Capital Base as computed by the Commission, as shown in the Table below:

Reasonable Return (RR) (Rs. Crore)

Sl.	Particulars	FY 2004-05			FY 2005-06		
		MERC	Actual	Allowed after truing up	Petition	Actual	Allowed after truing up
1	a) Upto 31.3.1955 @ 7%	0	0	0	0	0	0
2	b) From 1.4.55 to 14.10.91 @ BR + 2%	16	16	16	16	16	16
3	c) From 14.10.91 to 13.3.99 @ BR + 5%	174	174	174	174	174	174
4	d) Balance @ 16%	35	26	14	23	23	19
5	Total	**225**	**216**	**204**	**213**	**213**	**209**
	Other Income	0					
6	On loans from approved institutions @ 0.5%	1	1	1	2	1	1
7	On investment allowance reserve @ 0.5%	1	1	1	1	1	1
8	**Reasonable Return**	**226.45**	**217.12**	**205.26**	**216.04**	**214.77**	**210.47**

3.16 CLEAR PROFIT

The methodology for computation of Clear Profit has been stipulated in the Schedule VI of the erstwhile Electricity (Supply) Act, 1948. TPC submitted the Clear Profit computations for FY 2004-05 and FY 2005-06 based on its actual expenses and revenue in these years, though there are discrepancies in various submissions made by TPC. TPC has indicated actual surplus revenue of Rs. 19 crore in FY 2004-05, and shortfall (revenue gap) of Rs. 288 crore in FY 2005-06, respectively.

The Commission has computed the Clear Profit for FY 2004-05 and FY 2005-06, on the basis of the revenue estimated by the Commission and the expenditure allowed by the Commission after truing up, as shown in the Table below:

Clear Profit (Rs. Crore)

Particulars	FY 2004-05			FY 2005-06		
	Tariff Order	Actual	Allowed after truing up	Petition	Actuals	Allowed after truing up
Income						
Sale of Electricity (incl Meter Rent & wheeling charges)	2852	2944	2944	3212	3233	3233
Standby Charges from BSES	91	91	91	91	91	91
Non Tariff Income	56	67	67	56	56	56
Total Income	**2999**	**3102**	**3102**	**3359**	**3380**	**3380**
Expenditure						
Fuel Costs	1569	1641	1641	2170	2221	2221
Power purchase- variable costs	18	29	29	139	188	188
Interest on FAC over/under recovery			-1.41			5.02
MSEB Standby Charges	396	396	396	396	396	396
Employee Costs	146	133	133	143	148	140
R&M Expenditure	108	113	111	87	116	115
Wheeling Charges	19	20	20	19	17	17
Admin & Others	83	102	83	91	101	85
Bad Debts	2	2	2	0	2	2
Interest & Finance Charges	32	20	15	64	45	40
Depreciation for the year	171	245	200	160	157	153
W/off of forex variation	21	0	0	0	0	0
Total Expenses	**2565**	**2702**	**2629**	**3269**	**3391**	**3363**
Profit Before Tax	**435**	**400**	**473**	**90**	**-11**	**17**
Income Tax	175	138	105	141	160	110
Provision for Deferred tax	0	0			0	
Profit After Tax	259	262	368	-51	-171	-93
Statutory appropriation	**18**	**20**	**20**	**21**	**10**	**10**
Contingency @.5% of Gross Block	18	20			10	
Special Appropriation	0			21		
Clear Profit	**241**	**242**	**348**	**-72**	**-181**	**-103**
Reasonable Return	**226**	**217**	**205**	**216**	**192**	**210**
Net Gap (CP-RR)	**14**	**25**	**143**	**-288**	**-373**	**-313**

Note: 1.The Petition numbers for FY 2005-06 have been compiled by the Commission based on TPC's submission on individual elements.

There is a surplus between Clear Profit and Reasonable Return in FY 2004-05 to the extent of Rs. 143 crore, while there is a gap between Clear Profit and Reasonable Return in FY 2005-06 to the extent of Rs. 313 crore, as computed by the Commission. The surplus/gap in FY 2004-05 and FY 2005-06 and the interest thereon, computed at the rate of 6%, has been adjusted against the reserves available at the end of FY 2005-06 while determining the ARR of FY 2006-07 for TPC-D, along the same lines as undertaken in the previous Tariff Order, in the following order of priority, viz.

i) Consumer Benefit Account
ii) Tariff and Dividend Control Reserve

iii) Debt Redemption Reserve

iv) Contingency Reserve

Further, in line with the approach adopted by the Commission in the earlier Tariff Order, the Commission has appropriated the reserves available with TPC, which are to be utilised for reducing the tariff applicable for the consumers. The detailed treatment of the reserves has been elaborated in Section 6, while dealing with the revenue requirement of the Distribution function of TPC in FY 2006-07.

4 ARR AND TARIFF DETERMINATION OF TPC'S GENERATION BUSINESS FOR FY 2006-07

The total installed capacity of TPC's Generation Business is 1777 MW which comprises 447 MW of hydel stations and 1330 MW of thermal station. The station-wise and unit-wise break up of total capacity of TPC's Generation Business is given in the following Table:

Table: Summary of Generation Capacity

Station/Unit	Installed Cap
	MW
Hydel	
Khopoli	72
Bhivpuri	75
Bhira	300
sub-total	**447**
Thermal	
Unit 4	150
Unit 5	500
Unit 6	500
Unit 7	180
sub-total	**1330**
Total	**1777**

TPC, in its Petition for FY 2006-07, submitted that the Commission has specified the norms of operation for various parameters for generating stations in the MERC (Terms and Conditions of Tariff) Regulations, 2005 and TPC has estimated the cost for own generation based the norms as specified by the Commission. The Commission, in its Order dated April 13, 2006 in the matter of applicability of MERC (Terms and Conditions of Tariff) Regulations, 2005, stipulated that "*the determination of ARR and Tariff for FY 2006-07 will be governed by the Tariff Regulations*".

As regards applicability of operational norms specified in Tariff Regulations, Regulation 26.2 of Tariff Regulations stipulates *"Provided further that in case of an existing generation station, the Commission shall determine the tariffs having regard to the historical performance of such generating station and reasonable opportunities for improvement in performance, if any"*. As discussed in Section 2 of the Order, some of the stakeholders during public hearing represented that in case the actual performance is better than the operational norms stipulated in the Regulations, the operational parameters should be allowed at actual levels achieved during the previous years. In case of TPC thermal generating station, the operational parameters of some of the generating stations are better than the norms and for some of the units, the actual performance is lower than the norms. In accordance with the provision in the Regulations, there is a need to specify the operational norms for existing generating stations based on historical performance of the generating station. The Commission is of the opinion that if historical performance is considered in toto for the Units whose operational performance is better than the norms, then there will be no room to motivate the Utility to improve further. Similarly, for units whose historical performance is lower than the norms, there is a need to gradually improve the performance to achieve the stipulated norms. At the same time, the historical performance needs to be considered, while stipulating the norms. Therefore, the Commission has considered revised operational norms for TPC, keeping in view the past performance, while at the same time retaining some incentive for the Utility to encourage for sustained efficient operation in case the actual performance is better than the norms and considering some improvement for the Units, whose performance is lower than the norms. The revised operational norms approved by the Commission for each unit of TPC Generating Station are discussed in subsequent sections.

4.1 GENERATION FROM TPC GENERATING STATIONS

TPC, in its Petition, has considered that the energy requirement of three Licensees, i.e., REL-Distribution Business, BEST and TPC-Distribution Business are required to be met from TPC's own generation and external purchases (as purchased by TPC-D on behalf on REL and BEST). TPC, in its Petition, has estimated the total quantum of generation from its own generating stations and power purchase from other sources based on projected energy input requirement of three Distribution Licensees, i.e., REL-Distribution Business, BEST and TPC-Distribution Business.

The Commission has approved the total Energy Input Requirement of REL-Distribution Business and TPC-Distribution Business for FY 2006-07, while determining the respective ARRs. For BEST, the Commission has approved the total energy input requirement during FY 2006-07 by considering a growth rate of 3.49% equivalent to CAGR for the period FY 2001-02 to FY 2005-06 and by applying a uniform intra state transmission loss of 4.85%. The summary of total energy input requirement of three Distribution Licensees in Mumbai system after considering the intra State transmission loss of 4.85%, is given in the following Table:

Table: Energy Requirement of Mumbai Licensees

Energy Input Requirement of Mumbai Licensees	**MU**
TPC-D	2561
REL	8597
BEST	4449
Total	**15607**

Considering the net approved generation of 3856 MU from REL's DTPS and 468 MU to be procured by each Distribution Licensee under Renewable Purchase Specifications for FY

2006-07, the energy required from TPC-Generation and TPC-Distribution for meeting the total energy requirement of Mumbai system works out to 11283 MU.

4.1.1 Availability of TPC's Generating Stations

TPC, in its Petition, submitted that the Commission's Tariff Regulations stipulate availability of 80% for full recovery of annual fixed charges. TPC has projected overall availability of 93% for its Trombay thermal station. TPC, in its Petition, has also submitted the details of planned outages and forced outages considered for projecting the availability for FY 2006-07.

The unit wise availability as projected by TPC is given in following Table:

Table: Availability for FY 2006-07

Station/Unit	Availability (%)
Unit 4	99.00%
Unit 5	99.00%
Unit 6	93.13%
Unit 7	97.17%

The Commission has considered the availability projections of TPC for FY 2006-07, as projected by TPC. As the projected availability of all the Units of Trombay thermal generating station is more than the normative availability of 80%, the Commission allows the full recovery of annual fixed charges approved by the Commission.

4.1.2 Auxiliary Consumption

TPC, in its Petition, submitted that for hydel generating stations and for Unit 5 and Unit 7, it has considered the auxiliary consumption as per the norms stipulated in Tariff Regulations. TPC has considered auxiliary consumption of 0.5% for hydel stations. For Unit 5, TPC has adopted the norm of 7% stipulated for 500 MW coal fired unit without cooling tower and with steam driven boiler feed pumps and for Unit 7, it has adopted the norm of 3% as stipulated for Combined Cycle Generating Stations. As regards Unit 4, TPC submitted that as per the directions of the Commission, Unit 4 is operated only to meet the shortfall during the peak demand and hence, results in low loading of the unit combined with frequent ramping up and down of the unit and therefore, TPC has considered the auxiliary consumption of 8% based on weighted average auxiliary consumption during last 5 years. For Unit 6, TPC submitted that if norms are to be adopted, then the auxiliary consumption would be 7%, however, as the unit is oil fired, certain auxiliary equipments like coal-handling equipments and coal mills are not used thereby requiring a lower auxiliary consumption, Therefore, for Unit 6, TPC has considered the auxiliary consumption of 4% based on past trends.

The Commission has analysed the auxiliary consumption of TPC's thermal units for the last seven years including FY 2005-06 and the actual auxiliary consumption during last seven years is given in the Table below:

Table: Auxiliary Consumption during last seven years

	FY 99-00	FY 00-01	FY 01-02	FY 02-03	FY 03-04	FY 04-05	FY 05-06
Hydel	0.66%	0.65%	0.54%	0.62%	0.60%	0.50%	0.36%
Unit 4	9.90%	7.80%	7.40%	7.30%	7.80%	7.79%	8.32%
Unit 5	5.70%	5.20%	5.40%	5.04%	5.30%	5.00%	5.12%
Unit 6	4.20%	3.80%	3.70%	3.30%	3.20%	3.20%	3.31%
Unit 7	2.20%	2.60%	2.90%	2.74%	2.50%	2.31%	2.29%

In accordance with the provisions of Regulations and considering the actual auxiliary consumption achieved during the past seven years including auxiliary consumption for FY 2005-06, the Commission has approved the revised norms of auxiliary consumption. For hydel stations of TPC, the auxiliary consumption from FY 1999-2000 to FY 2003-04 is higher than 0.5%, but during FY 2005-06, it is lower than 0.5%. Therefore, for hydel stations, the Commission retains the norm of 0.5% as stipulated in Tariff Regulations.

For Unit 4, the actual auxiliary consumption during last seven years is in the range of 7.30% to 9.90%, with actual auxiliary consumption during FY 2005-06 of 8.32%. For Unit 4, the Commission approves the revised norm of 8% for auxiliary consumption with the objective of gradual improvement. For Unit 5, the actual auxiliary consumption is in the range of 5% to 5.7%, with actual auxiliary consumption during FY 2005-06 of 5.12%, which is lower than the stipulated norm of 7%. For Unit 5, the Commission approves the revised norm of 5.5% for auxiliary consumption, with the objective of retaining some incentive for the Utility for improved performance. For Unit 6, the actual auxiliary consumption is in the range of 3.2% to 4.2%, with actual auxiliary consumption during FY 2005-06 of 3.31%. For Unit 6, the Commission approves the revised norm of 3.5% for auxiliary consumption, with the objective of retaining some incentive for the Utility for improved performance. For Unit 7, the actual auxiliary consumption is in the range of 2.2% to 2.9%, with actual auxiliary consumption during FY 2005-06 of 2.29%. For Unit 6, the Commission retains the auxiliary consumption norm of 2.75% as stipulated in the Tariff Regulations.

The summary of Auxiliary Consumption proposed by TPC and as approved by the Commission for FY 2006-07 is given in the following Table:

Table: Auxiliary Consumption for FY 2006-07

	Petition	Commission
Hydel	0.50%	0.50%
Unit 4	8.00%	8.00%

	Petition	Commission
Unit 5	7.00%	5.50%
Unit 6	4.00%	3.50%
Unit 7	3.00%	2.75%

4.1.3 Net Generation from TPC's Generating Stations

TPC, in its Petition, has projected the gross and net generation from its Generating Stations based on following principles:

- Gross Generation of 1500 MU from TPC's Hydel Stations by estimating the water levels in the lakes for FY 2006-07 and assuming average monsoon trend
- Average gas supply limited to 609 TPD based on the past trends
- Average daily coal consumption of 5400 MT for 500 MW unit 5 considering oil support required during low load periods
- Minimum Technical Limitation for generation on 500 MW Unit-5 at 200 MW
- Minimum Technical Limitation for generation on 500 MW Unit-6 at 150 MW
- Minimum Technical Limitation for generation on 150 MW Unit 4 at 50 MW (whenever operational)
- Application of Merit Order Dispatch methodology considering above parameters

The Commission has analysed the hydel generation of TPC's hydel stations for the last nine years excluding FY 2005-06, which is given in the Table below:

Table: Hydel Generation during last nine years:

	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	FY 02-03	FY 03-04	FY 04-05
Gross Hydel Generation (MU)	1,175	1,585	1,350	1,614	1,150	1,304	1,350	1440	1438

The average hydel generation for the last nine years excluding FY 2005-06 works out to 1378MU. The actual hydel generation during FY 2005-06 was 2024 MU, which is attributable to very high rainfall during the year. Considering the actual hydel generation during the last nine years excluding FY 2005-06, the Commission for FY 2006-07 accepts the gross hydel generation of 1500 MU as projected by TPC.

Considering the operational constraints and highest variable cost of Unit 4 power, the Commission has accepted the gross generation projected by TPC from Unit-4, and Unit-7. However, the Commission has increased the gross generation from Unit-6 with Oil as fuel, to meet the total energy requirement of Mumbai System. Thus, the PLF projected by the Commission for Unit 6 for FY 2006-07 is 68% as against PLF of 61% projected by TPC in ARR Petition.

Further, the Commission has projected the generation from Unit 5 with coal as fuel based on average daily coal consumption of 5400 MT and considering the calorific value of coal as considered by the Commission, which has resulted in increase in generation from Unit 5 with coal as fuel. The summary of net generation projected by TPC and as approved by the Commission for FY 2006-07 is given in the following Table:

Table : Net Generation from TPC Generating Stations

	Petition	**Commn**
Hydel	1493	1493
Unit 7 Gas	1375	1379
Unit 6 Gas	23	23
Unit 5 Coal	3468	3729
Unit 6 Oil	2546	2894
Unit 5 Oil	358	159
Unit 4 Oil	168	168
sub-total	**9431**	**9845**

4.2 VARIABLE (FUEL) COSTS OF THERMAL GENERATING STATIONS

The variable cost of generation depends upon following parameters:

- Heat Rate
- Secondary Oil Consumption
- Fuel Blending
- Fuel Parameters (Cost of Fuel and Calorific Value)

4.2.1 Heat Rate

TPC, in its Petition, submitted that for Unit 5 and Unit 6, it has considered the heat rate as per the norms stipulated in Tariff Regulations. As regards Unit 4, TPC submitted that as per the directions of the Commission, the Unit 4 is operated only to meet the shortfall during the peak demand and hence results in low loading of the unit combined with frequent ramping up and down of the unit and therefore, TPC has considered the heat rate of 2600 kCal/kWh based on weighted average heat rate during last 5 years. For Unit 7, TPC submitted that the reduction in gas availability has affected the loadability of the Unit and hence, TPC has sought a minor deviation in the heat rate for Unit 7 from the norm stipulated in the Regulations. TPC has considered the heat rate of 2000 kCal/kWh for Unit 7 based on weighted average heat rate during last 5 years.

The Commission has analysed the heat rate of TPC's thermal units for the last seven years including FY 2005-06, which is given in the Table below:

Table: Heat Rate (kCal/kWh) during last seven years

	FY 99-00	FY 00-01	FY 01-02	FY 02-03	FY 03-04	FY 04-05	FY 05-06
Unit 4	2,630	2,610	2,647	2,611	2,574	2,555	2,564
Unit 5	2,451	2,403	2,428	2,414	2,469	2,456	2,458
Unit 6	2,396	2,397	2,379	2,378	2,338	2,328	2,322
Unit 7	2,041	2,006	2,007	2,079	1,965	1,977	1,971

Considering the actual heat rate during last seven years, the Commission retains the heat rate norms as stipulated in Tariff Regulations for Unit 5 and Unit 7. For Unit 4, the Commission approves the revised heat rate norm of 2560 kCal/kwh. For Unit 6, the Commission approves the revised norm of 2400 kCal/kWh with the objective of retaining some incentive for the Utility for improved performance. The summary of unit-wise heat rate approved by the Commission is given in the following Table:

Table: Heat Rate (kCal/kWh) for FY 2006-07

	Petition	Commission
Unit 4	2600	2560
Unit 5	2450	2450
Unit 6	2450	2400
Unit 7	2000	2000

4.3 FUEL PRICE AND FUEL CALORIFIC VALUE

TPC, in its Petition, submitted that it uses imported coal, gas and fuel oil as the primary fuel for its thermal generating station. Regarding price of Fuel Oil (LSHS), TPC submitted that the oil prices have seen high volatility in the recent past, with crude oil prices in the international markets increasing by unprecedented amounts. TPC further submitted that within the last year, i.e., FY 2005-06, the average price of Rs 17000/Ton of oil during first half has increased to Rs 19000/Ton in the next quarter, which is an increase of 12%. TPC considered the price oil for FY 2006-07 as Rs 22700/MT, the price prevalent in March 2006. For coal and gas, TPC has considered the weighted average price for the last quarter of FY 2005-06.

The Commission has analysed the actual coal price for FY 2004-05 and FY 2005-06 submitted by TPC and the projected coal price for FY 2006-07. TPC has not provided the detailed break up of coal price against all the components of fuel price in the format specified by the Commission. Further, the Commission would like to clarify that for the purpose of Fuel Price to be considered for computing the energy charge and for variation in fuel price to be allowed through FAC mechanism, the definition of 'Fuel Price' shall be as follows:

Fuel Price shall mean the landed cost of fuel at power station battery limits and will consist of only the following components:

a) Basic Fuel Price including statutory taxes, duties, royalty as applicable

b) Transportation (freight) cost by rail/road/pipeline or any other means including transportation service charges for bringing fuel up to the Power Station boundary.

c) Fuel Treatment Charges such as washing / cleaning charges, Sizing Crushing Charges, Fuel Analysis Charges etc. for making fuel up to the required grade / quality

d) Fuel Handling Charges, including that towards loading and unloading charges for bringing fuel to the power station boundary.

Besides above, the Commission specifies a ceiling on 'transportation service charge', at 2% of the freight charge.

The Commission directs TPC to submit hereafter the break up of total fuel price per unit in the above components for arriving at the total landed cost of fuel at power station battery limits along with all FAC submissions as well as ARR and Tariff filings.

For FY 2006-07, the Commission has considered the price and calorific value of coal and gas equivalent to average actual fuel price and calorific value for FY 2005-06. For oil, considering the volatility of prices, the Commission has considered the actual fuel price as applicable during the last quarter of FY 2005-06. The Commission has not considered any escalation in fuel prices as the adjustments for variation in fuel prices is allowed as part of FAC mechanism. The summary of fuel prices and calorific value as projected by TPC and as considered by the Commission is given in the Table below:

Table: Fuel Price and Calorific Value of Primary Fuel

	FY 2006-07	
	Petition	**Commission**
A. Fuel Price (Rs/MT)		
Gas	4914	4708
Coal	2840	2737
Fuel Oil	22700	22700
B. Calorific Value (kCal/kg)		
Gas	13000	13060
Coal	4802	4905
Fuel Oil	10500	10500
C Fuel Price (Rs/Mkcal)		
Gas	378	360
Coal	591	558
Fuel Oil	2162	2162

4.4 VARIABLE COST OF GENERATION AND RATE OF ENERGY CHARGE

Based on heat rate, auxiliary consumption, fuel prices and fuel calorific value as discussed in above paragraphs, the variable cost of generation and rate of energy charge for each Unit of Trombay thermal generating station for FY 2006-07 as approved by the Commission is given in Table below:

Table: Approved Variable Cost of Generation and Rate of Energy Charge

Unit	Fuel	Fuel Price	CV	Heat Rate	Aux. Cons.	Cost of Gen	Energy Charge
		Rs/Ton	kCal/kg	kcal/kWh	%	Rs/kWh	Rs/kWh
Unit 4	Fuel Oil	22700	10500	2560	8.00%	5.53	6.02
Unit 5	Fuel Oil	22700	10500	2450	5.50%	5.38	5.69
Unit 5	Coal	2737	4905	2450	5.50%	1.39	1.47
Unit 6	Gas	4708	13000	2400	4.00%	0.87	0.90
Unit 6	Fuel Oil	22700	10500	2400	4.00%	5.19	5.38
Unit 7	Gas	4708	13000	2000	3.00%	0.72	0.74

The summary of variable cost of generation and rate of energy charge as proposed in the Petition and as approved by the Commission for FY 2006-07 is given in the Table below:

Table: Summary of Variable Cost of Generation and Rate of Energy Charge

		Variable Cost of Generation (Rs/kWh)		Rate of Energy Charge (Rs/kWh)	
Unit	Fuel	Petition	Commission	Petition	Commission
Unit 4	Fuel Oil	5.62	5.53	6.11	6.02
Unit 5	Coal	1.45	5.38	1.56	1.47
Unit 5	Fuel Oil	5.3	1.39	5.70	5.69
Unit 6	Gas	0.93	0.87	0.97	0.90
Unit 6	Fuel Oil	5.3	5.19	5.52	5.38
Unit 7	Gas	0.76	0.72	0.78	0.74

4.5 SUMMARY OF TOTAL FUEL COSTS:

Based on the approved net generation and rate of energy charge, the total fuel costs for FY 2006-07 is summarised in following Table:

Particulars	Petition	Commission
Fuel Costs (Rs Crore)		
Unit 7 Gas	107	103
Unit 6 Gas	2	2
Unit 5 Coal	540	548
Unit 6 Oil	1405	1556
Unit 5 Oil	204	91
Unit 4 Oil	103	101
Total	**2361**	**2401**
Net Generation (MU)	7938	8352
Per Unit Variable Cost (Rs/kWh)	2.97	2.87

4.6 ANNUAL FIXED CHARGE OF TPC'S GENERATING STATIONS

The Annual Fixed Charges comprises:

- Operation & Maintenance Expenses
- Depreciation
- Interest on Long Term Loans
- Interest on Working Capital
- Return on Equity
- Income Tax

4.7 OPERATION & MAINTENANCE EXPENSES

TPC submitted that it has projected the O&M expenses for the Generation Business in accordance with the norms stipulated in the Tariff Regulations, i.e., on the basis of the average of the actual O&M expenditure for the 5 years ending March 31, 2004. TPC considered this average as the figure for FY 2001-02 and increased it at a fixed rate of 4% per annum to derive the O&M expenses for FY 2006-07. Accordingly, the average O&M expenditure worked out to Rs. 246 crore, and the O&M expenses for FY 2006-07 was projected at Rs. 300 crore.

In this context, the O&M expenditure of TPC during the last five years has been reducing and was at the highest at Rs. 252 crore in FY 1999-00. Hence, it may not be appropriate to compute the O&M expenses on a normative basis in such a situation, as the consumers would end up paying additional tariff for expenditure that is not being incurred. Hence, the Commission has projected each individual component of O&M expense separately, as given below:

4.7.1 Employee Expenses

The Commission has considered an increase of around 5% over the allowed level of expenses in FY 2005-06 (after truing-up), based on the increase in CPI, though the actual annual increase is around 2.9%, based on 5 year CAGR. This will give some incentive to TPC for reducing the expenditure on this count. As the break-up of employee expenses for the generation business in previous years is not available, the share of TPC's generation business in previous years was allocated proportionately, to study the trend. The Commission has thus allowed employee expenditure of Rs. 91.5 crore for FY 2006-07.

4.7.2 Administration & General Expenses

The Commission has considered an increase of around 5% over the allowed level of expenses in FY 2005-06 (after truing-up), based on the increase in CPI, though the actual annual increase is around 2.4%, based on 5 year CAGR. This will give some incentive to TPC for reducing the expenditure on this count. As the break-up of A&G expenses for the generation business in previous years is not available, the share of TPC's generation business in previous years was allocated proportionately, to study the trend. The Commission has thus allowed A&G expenditure of Rs. 56.2 crore for FY 2006-07.

4.7.3 Repair & Maintenance Expenses

The Commission has allowed R&M expenses at 3% of the Gross Fixed Assets (GFA) for TPC as a whole, and allocated the share of TPC's generation business proportionately. The Commission has thus allowed R&M expenditure of Rs. 102.2 crore for FY 2006-07, which works out to 3.8% of opening GFA for the Generation Business.

4.7.4 Total Operation & Maintenance Expenses

The Commission has thus allowed total O&M expenses of Rs. 255 crore_for TPC's generation business, as compared to TPC's request for approval of Rs. 300 crore.

4.8 DEPRECIATION

TPC, in its ARR Petition, proposed depreciation expenditure for FY 2006-07 for Generation business as Rs 60.36 Crore. The overall depreciation rate amounts to 2.15% corresponding to opening GFA of Rs 2807.80 Crore. TPC submitted that depreciation costs projected for FY 2006-07 are in accordance with depreciation rates provided under MERC (Terms and Conditions of Tariff) Regulations, 2005. Further, TPC has proposed to undertake capital expenditure of Rs 428.53 Crore during FY 2006-07 corresponding to its generation function and has proposed to capitalise Rs 342.43 Crore during FY 2006-07.

The Commission has examined the depreciation and capitalisation proposed by TPC in detail as against the various generation related capex schemes approved by the Commission. The proposed capitalisation of Rs 342.43 during FY 2006-07 includes Rs 78 Crore towards captive coal berth at Trombay and Rs 180 Crore towards HFO based DG sets. As regards, captive coal berth at Trombay, revised scheme submitted by TPC pursuant to availing various statutory clearances is currently under scrutiny by the Commission. The Commission's detailed ruling on this capex is given in Section 2 earlier. As regards, capex scheme of HFO based DG sets, the Commission had already conveyed that such capacity addition will have to be done through competitive route as stipulated under National Tariff Policy. Thus, the Commission has not considered capitalisation of coal berth and HFO based DG set schemes during FY 2006-07 as proposed by TPC. Accordingly, the Commission has considered capitalisation of remaining Non-DPR related schemes amounting to Rs 84.37 Crore as proposed by TPC during FY 2006-07.

The Opening level of GFA for FY 2006-07 amounts to Rs 2678.69 Crore as against Rs 2807.80 Crore claimed by TPC. Further, TPC has not proposed any interest capitalisation and only works capitalisation has been proposed. The Commission opines that interest cost during construction (IDC) should not be considered as part of revenue expense, however, the same should be capitalised along with assets, as and when put to use. Accordingly, the Commission has considered capitalised cost including IDC derived based on normative debt (70% of works capitalised) at the interest rate of 10% for the schemes initiated during FY 2004-05 and FY 2005-06 and at the rate of 8% for the schemes initiated during FY 2006-07. The capitalisation details during FY 2006-07 are summarised in the following Table:

Table: Capitalisation (Generation) **(Rs Crore)**

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1	Works capitalized (G)	342.43	84.37
2	Interest capitalized (G)	0.00	5.01
3	**Total Capitalisation (G)**	**342.43**	**89.38**

Further, as elaborated earlier, the Depreciation Rates stipulated under MERC (Terms and Conditions of Tariff) Regulations, 2005 shall be applicable for FY 2006-07. Accordingly, the Commission has approved depreciation costs for FY 2006-07 in accordance with the Tariff Regulations, as summarised in the following Table:

Table: Depreciation Expense (Generation) **(Rs Crore)**

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1	Depreciation (G)	60.36	60.08
2	Opening GFA (G)	2807.80	2678.69
3	**% Depreciation (G)**	**2.15%**	**2.24%**

4.9 INTEREST ON LONG TERM LOAN

TPC proposed interest expenditure of Rs 30.56 Crore for FY 2006-07 for its generation function. Further, TPC considered the interest cost based on normative debt: equity of 70:30 for financing of capital expenditure at the normative interest rate of 10% p.a., and normative loan repayment of 8 years. In addition, TPC has also proposed interest cost of Rs 14.06 Crore towards standby adjustment during FY 2006-07.

TPC has computed interest costs for the normative debt corresponding to entire capital expenditure proposed to be incurred during that year. In this context, the Commission observes that as per MERC (Terms and Conditions of Tariff) Regulations, the permissible interest cost in this case will have to be determined based on 'normative loan capital', as per Regulation 34.3.2 of the Tariff Regulations, as under:

> *34.3.2 Interest on normative loan capital, calculated under Regulation 31.2, Regulation 31.3 and Regulation 31.4 above shall be allowed, based on the approved interest rate and the normative repayment schedule in accordance with Regulation 32 above:*

The 'normative loan capital' should be linked to approved capital expenditure for the assets put to use. Accordingly, the Commission is of the opinion that interest expense towards capital expenditure needs to be capitalised as and when the asset is put to use and should not be charged to revenue expense. However, pursuant to such capitalisation, interest costs can be charged to revenue expense over the repayment tenure of such outstanding debt. Accordingly, the Commission has considered interest cost of normative debt corresponding to capitalised assets only. Further, the Commission has considered interest cost at the interest rate of 10% p.a. for the assets put to use during FY 2004-05 and FY 2005-06 and at the interest rate of 8% p.a. for assets put to use during FY2006-07. Accordingly, weighted average rate of interest cost works out to 9.7%.

Further, as per proviso under Regulation 32.2 of the MERC (Terms and Conditions of Tariff) Regulations, 2005, normative loan repayment schedule for each year shall be equal to amount of depreciation for fixed assets to which such loan relates. Accordingly, the Commission has considered loan repayment schedule of 20 years for the loans drawn during FY 2006-07, however, the loan repayment period for loans drawn during FY 2004-05 continue to be 10 years, as provided earlier. The Commission has disallowed the normative debt for standby adjustment and the interest thereon claimed by TPC, as the same has already been accounted for in the Commission's Order dated May 31, 2004.

The details of interest cost are summarised in the following Table:

Table: Interest cost (Generation) (Rs Crore)

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1	Opening balance of loan	215.40	202.45
2	Additions	120.97	62.57
3	Repayment	(30.80)	(22.72)
4	Closing balance of loan	305.58	242.29
5	**Interest cost**	**30.56**	**21.61**
6	Overall Interest Rate (%)	11.7%	9.7%

4.10 INTEREST ON WORKING CAPITAL

TPC, in its Petition, submitted that the Working Capital has been calculated in accordance with the Commission's Tariff Regulations, which stipulate the components of working capital of a generating station. TPC further submitted that the normative interest rate of 10.25% has been considered for estimating interest on working capital. TPC has projected total interest on working capital of Rs 80.52 Crore for thermal station and Rs 4.40 Crore for hydel stations.

The Commission has estimated the unit wise working capital requirement for the thermal station of TPC and station-wise working capital requirement for hydel stations of TPC in accordance with the provisions of Tariff Regulations.

Further, the Tariff Regulations stipulates that Rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on the date on which the application for determination of tariff is made. As the short-term Prime Lending Rate of State Bank of India is around 10.25%, the Commission has considered the interest rate of 10.25% for estimating the interest on working capital.

The interest on working capital for each unit of thermal stations and each hydel station for FY 2006-07 is given in Table below:

Table: Interest on Working Capital

Unit/Station	**Interest on Working Capital (Rs Crore)**
A Thermal Station	
Unit 4	2.90
Unit 5	23.83
Unit 6	38.75
Unit 7	4.85
Sub-total (Thermal Station)	**70.33**
B. Hydel Stations	
Khopoli	1.48
Bhivpuri	1.16
Bhira	1.70
Sub-total (Hydel)	**4.34**
Total	**74.67**

4.11 INCOME TAX

TPC has projected income tax of Rs. 94.56 crore for its generation business, by adding back the book depreciation to the RoE component, and deducting the tax depreciation. TPC has also considered income tax on account of projected incentive income earned during FY 2006-

07, which is incorrect. Income tax on the incentive component cannot be allowed to be passed through to the consumers.

However, the income tax liability is proportionate to the taxable income, which depends on the revenue and expenditure of the business, rather than a mandatory value of RoE, which is based on the Commission's Tariff Regulations. Hence, the Commission has not considered TPC's projection of income tax liability.

The income tax liability for TPC's Mumbai license area as a whole for FY 2006-07 would be expected to be in the same range as in the previous years. Hence, the income tax liability for FY 2006-07 for TPC's Mumbai license area has been considered as the average of the actual income tax liability in the previous two years, i.e., Rs. 104.9 crore and Rs. 110.1 crore, which works out to Rs. 107.50 crore. This tax liability has been further apportioned to each business, viz., generation, transmission and distribution, in the proportion of the RoE component, in the absence of any other reference parameter. Thus, the income tax liability of the generation business of TPC in FY 2006-07, has been estimated as Rs. 71.5 crore.

4.12 NON-TARIFF INCOME

TPC has projected non-tariff income of Rs. 29.1 Cr in FY 2006-07, on account of income from statutory investments, miscellaneous revenue, rentals and sale of scrap. There is no clear trend in non-tariff income in the past years, and the average non-tariff income in the last three years is quite close to the actual income in FY 2005-06. Hence, the non-tariff income in FY 2006-07 has been projected at the same levels as in FY 2005-06, and the share of TPC's generation business has been allocated proportionately. The non-tariff income projected by TPC and that considered by the Commission for FY 2006-07 is given in the following Table:

Non-Tariff Income (Rs. Crore)

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1.0	Rental (land, bldg, plant & m/cery)	4.39	
2.0	Income on services rendered	2.56	
3.0	Delayed Payment Charges	-	
4.0	Sale of Scrap and Stores	2.67	
5.0	Miscellaneous Revenue	4.89	
6.0	Interest on call money		
7.0	Other Interest	-	
8.0	Income from Statutory Investments	14.55	
9.0	**Total Other Income**	**29.07**	**40.01**

4.13 RETURN ON EQUITY

TPC submitted that it has projected the Return on Equity (RoE) for FY 2006-07 for its generation business in accordance with the Tariff Regulations notified by the Commission, which stipulates a 14% return on equity per annum on the regulatory equity at the beginning of the Financial Year for which the return is being computed. TPC also considered RoE on the entire assets added during the year, though the Tariff Regulations do not provide for this in the case of Generation Business.

TPC submitted that since TPC is an integrated Utility having other businesses as well, the equity of the licensed business has been worked out from the Balance Sheets, and the equity of the licensed business has been further allocated to the generation business, transmission business and distribution businesses, on the basis of the asset base. TPC submitted an Auditor's certificate for the computation of opening equity in FY 2004-05. Since all assets of TPC are financed from own equity, a normative equity of 30% of total equity employed for generation assets added during the years FY 2004-05 and FY 2005-06 has been considered, based on the Tariff Regulations.

The Commission has computed the allowable RoE for FY 2006-07 on the opening equity base in FY 2006-07, based on the opening equity levels in FY 2004-05, and the normative equity component of the addition to capital assets considered for the generation function for FY 2004-05 and FY 2005-06. The Commission has not considered RoE on the normative equity component of the addition to capital assets considered for the generation function for FY 2006-07, as the Commission's Tariff Regulations do not provide for RoE on this component for the generation function, unlike the transmission and distribution functions. The RoE projected by TPC and that considered by the Commission for FY 2006-07 is given in the following Table:

Return on Equity (Rs. Crore)

S.no.	Particulars	Ref.	FY 2006-07	
			Petition	Approved
1	Regulatory Equity at the beginning of the year		1073.03	1073.33
2	Capital Expenditure		172.82	89.38
3	Equity portion of capital expenditure		51.85	26.81
4	Regulatory Equity at the end of the year		1124.87	1100.15
	Return Computation			
5	Return on Regulatory Equity at the beginning of the year	14%	150.22	150.27

S.no.	Particulars	Ref.	FY 2006-07	
			Petition	Approved
6	Return on Equity portion of capital expenditure	14%*(3)/2	7.26	0.00
7	**Total Return on Regulatory Equity**		157.48	150.27

4.14 FIXED COST OF GENERATION

The fixed cost of the generation business of TPC is the summation of all the expenses and RoE. TPC has projected the fixed cost for FY 2006-07 at Rs. 698.6 crore. The Commission has determined the ARR for FY 2006-07, based on the expenses allowed under various heads, as discussed above. The Commission rules that the generation incentive will be payable at the end of the year, based on the actual generation above the normative PLF. The fixed cost projected by TPC and that allowed by the Commission for FY 2006-07 is given in the following Table:

Fixed Cost of Generation (Rs. Crore)

Sl.	Particulars	Ensuing Year FY 2006-07	
		Petition	Approved
1	Operation & Maintenance Expenses	299.79	254.93
2	Depreciation, including advance against depreciation	60.36	60.08
3	Interest on Long-term Loan Capital	30.56	21.61
4	Interest on Working Capital	84.91	74.67
5	Other Expenses	0.00	0.00
6	Income Tax	94.56	71.50
7	**Total Fixed Expenditure**	**570.17**	**482.79**
9	Return on Equity Capital	157.48	150.27
11	Less: Non-Tariff Income	29.07	40.01
12	**Total Fixed Cost**	**698.59**	**593.05**

Thus, the total fixed cost allowed by the Commission for TPC's generation business in FY 2006-07 is Rs. 593.1 crore, as compared to TPC's projection of Rs. 698.6 crore.

4.15 STATION WISE/UNIT WISE FIXED COST

The above total Fixed Cost for TPC's generation business has to be apportioned to the generation Stations/Units, to determine the Fixed Charge payable to each of the generating Stations/Units.

In case of hydel Stations, the fixed charges have been allocated station-wise, whereas the fixed cost of thermal Station at Trombay has been allocated to each Station. TPC submitted the above allocation and the assumptions for the same in its Petition. The allocation of fixed costs proposed by TPC and the allocation undertaken by the Commission is given in the Tables below, alongwith the rationale for the same.

Table: Fixed Cost Allocation between Thermal and Hydro (Rs. Crore)

Sl.	Particulars	Petition			Approved		
		Total Generation	Total Thermal	Total Hydro	Total Generation	Total Thermal	Total Hydro
1	Operation & Maintenance Expenses	299.79	228.97	70.82	254.93	194.71	60.22
2	Depreciation, including advance against depreciation	60.36	31.92	28.44	60.08	31.77	28.31
3	Interest on Long-term Loan Capital	30.56	24.03	6.53	21.61	17.00	4.62
4	Interest on Working Capital	84.91	80.52	4.39	74.67	70.33	4.34
5	Other Expenses	0.00	0.00	0.00	0.00	0.00	0.00
6	Income Tax	94.56	60.75	33.81	71.50	45.94	25.57
7	**Total Fixed Expenditure**	**570.17**	**426.19**	**143.98**	**482.79**	**359.74**	**123.05**
9	Return on Equity Capital	157.48	101.17	56.31	150.27	96.53	53.73
11	Less: Non-Tariff Income	29.07	15.80	13.27	40.01	21.75	18.26
12	**Aggregate Revenue Requirement**	**698.59**	**511.56**	**187.03**	**593.05**	**434.53**	**158.52**

The fixed costs have been allocated between thermal and hydro stations in the same proportion indicated by TPC. The fixed cost of thermal Station has been further allocated between the different Units on the basis of the Net Fixed Assets of the Units as shown below, in the absence of any Unit-wise accounting for the same.

Table: Fixed Cost Allocation between Units of Trombay Thermal Station (Rs. Crore)

Sl.	Particulars	Approved				
		Total Thermal	Unit 4	Unit 5	Unit 6	Unit 7
1	Operation & Maintenance Expenses	194.71	4.25	95.47	62.09	32.89
2	Depreciation, including advance against depreciation	31.77	1.54	8.93	5.05	16.25
3	Interest on Long-term Loan Capital	17.00	0.90	10.90	3.88	1.33
4	Interest on Working Capital	70.33	2.90	23.83	38.75	4.85
5	Other Expenses	0.00	0.00	0.00	0.00	0.00
6	Income Tax	45.94	1.26	16.86	11.55	16.26
7	**Total Fixed Expenditure**	**359.74**	**10.84**	**155.99**	**121.32**	**71.59**
9	Return on Equity Capital	96.53	2.63	35.43	24.28	34.19
11	Less: Non-Tariff Income	21.75	0.78	6.72	5.85	8.40
12	**Aggregate Revenue Requirement**	**434.53**	**12.69**	**184.70**	**139.75**	**97.38**

Similarly, the total fixed cost of hydro Stations has been further allocated between the different hydro Stations on the basis of the Net Fixed Assets of the Units as shown below:

Table: Fixed Cost Allocation between Hydro Stations (Rs. Crore)

Sl.	Particulars	Approved			
		Total Hydro	Khopoli	Bhivpuri	Bhira
1	Operation & Maintenance Expenses	60.22	19.44	14.87	25.91
2	Depreciation, including advance against depreciation	28.31	9.95	7.48	10.88
3	Interest on Long-term Loan Capital	4.62	3.29	0.28	1.05
4	Interest on Working Capital	4.34	1.48	1.16	1.70
5	Other Expenses	0.00	0.00	0.00	0.00
6	Income Tax	25.57	8.84	7.31	9.41
7	**Total Fixed Expenditure**	**123.05**	**43.00**	**31.10**	**48.95**
9	Return on Equity Capital	53.73	18.58	15.36	19.79
11	Less: Non-Tariff Income	18.26	7.46	4.75	6.05
12	**Aggregate Revenue Requirement**	**158.52**	**54.12**	**41.71**	**62.69**

4.16 TARIFF OF TPC'S GENERATING STATIONS FOR FY 2006-07

4.16.1 Tariff for Thermal Power Generating Stations

Components of Tariff

Clause 28 of the MERC Tariff Regulations specifies that *"Tariff for sale of electricity from a thermal power generating station shall comprise of two parts, namely, the recovery of annual fixed charges and energy charges"*.

The methodology and assumptions for estimating station-wise Annual Fixed Charges and Energy Charges have been discussed in earlier sections of this Order.

i) Approved Annual Fixed Charges

As regards the recovery of Annual Fixed Charges, Regulation 33.1.1 of MERC Tariff Regulations stipulates that the target availability for full recovery of annual fixed charges shall be 80 percent. The availability projected by TPC for its Thermal Station Units is more than 80%. The Commission hence, approves the full recovery of fixed charges during FY 2006-07 for all the units of the thermal station. However, in the event of actual availability for the year being less than 80%, the fixed charges shall be proportionately adjusted as per MERC Tariff Regulations, while truing up the revenue requirement in the next year. The approved unit-wise Annual Fixed Charges for TPC Thermal Station is given in following Table:

Table: Approved Annual Fixed Charge of Trombay Thermal Station (Rs. Crore)

Station	Annual Fixed Charge (Rs. Crore)	Monthly Fixed Charge (Rs. Crore.)
Unit 4	12.69	1.06
Unit 5	184.70	15.39
Unit 6	139.75	11.65
Unit 7	97.38	8.12

ii) Sharing of Annual Fixed Charges amongst Distribution Licensees

TPC-G supplies power to three Distribution Licensees, viz, REL, TPC-D and BEST. Ideally the annual fixed charges of TPC's thermal station should be shared by three Licensees based on contracted capacity allocated to Licensees from each unit of thermal station. However, the formal power purchase agreements alongwith allocation of capacity is yet to be finalised between the parties.

The Commission vide its Order dated December 9, 2005 in Case 4 of 2003 directed REL and TPC to enter into long power purchase agreement within 3 months from the date of the Order. However, the Commission has not received any Draft PPA for approval between TPC and REL. As regards PPA between TPC and BEST, the Commission has issued the Order on the Petition filed by BEST for approval of PPA between TPC and BEST in Case 27 of 2005 and has directed BEST to re-submit the PPA after incorporating the additional provisions and changes suggested in the Order.

In the absence of any agreement between TPC Generation Business with the distribution business of its own as well as that of REL and BEST, the Commission is of the opinion that in the interim, the annual fixed charges of TPC-G and net energy available from TPC-D needs to be allocated in proportion to non coincident peak demand of Distribution Licensees. However, in case of REL, the peak demand of REL is met partly from REL-G Dahanu Generating Station and partly through supply of power by TPC-G and other sources. Therefore, the Commission has considered the average non-coincident peak demand of three Distribution Licensees i.e. TPC-D, REL-D and BEST met by TPC during FY 2005-06.

TPC should bill the total Annual Fixed Charges of all the units of its thermal station to three Distribution Licensees in proportion of their average non-coincident peak demand met by TPC during FY 2005-06. This interim arrangement will continue till the PPAs are executed between the parties and approved by the Commission. Considering the average non-coincident peak demand of three Distribution Licensees met by TPC during FY 2005-06, the approved Annual Fixed Charges of TPC Thermal Stations to be shared amongst three Distribution Licensees is given in Following Table:

Table: Annual Fixed Charges of TPC Thermal Generating Station

Licensee	**Non CPD met by TPC**	**Non CPD met by TPC**	**Sharing of Annual Fixed Charges**
	MW	**%**	**Rs Crore**
TPC-D	458	22.14%	96.20
REL	836	40.44%	175.74
BEST	774	37.42%	162.59
Total	2068	100.00%	**434.53**

The Annual Fixed Charges of TPC Thermal Generating Stations shall be billed on monthly basis on pro-rata basis.

ii) Energy Charge

The rate of energy charge (ex-bus) has been approved for each station, based on approved operational parameters and assumed fuel price for FY 2006-07. Any variations in the fuel price shall be dealt with under FAC process. The following table elaborates the station-wise energy charge to be charged to TPC for sale of power from the units of TPC's thermal Trombay Station.

Table: Approved Energy Charge for Trombay Thermal Station

Unit	**Fuel**	**Rate of Energy Charge (Rs/kWh)**
Unit 4	Fuel Oil	6.02
Unit 5	Coal	1.47
Unit 5	Fuel Oil	5.69
Unit 6	Gas	0.90
Unit 6	Fuel Oil	5.38
Unit 7	Gas	0.74

iii) Incentive

As per Clause 37 of MERC Tariff Regulations, TPC shall be eligible for an incentive of 25.0 paise/kWh for ex-bus scheduled energy corresponding to scheduled generation in excess of ex-bus energy corresponding to a target Plant Load Factor of 80 percent.

To even out the cash flow on account of the incentives, TPC shall determine the incentives at the end of September 2006, and March 2007 on the basis of actual performance and shall submit that amount to be billed to TPC-D, REL-D and BEST as an additional charge payable on this account.

At the end of the financial year, i.e. 31st March, 2007, the actual availability for the entire year shall be considered while truing up the incentive.

4.16.2 Tariff for Hydel Power Generating Stations

Components of Tariff

The Electricity Act, 2003 requires the Commission to encourage economical use of the resources while determining terms and conditions of tariff. Accordingly, the MERC Tariff Regulations propose an energy rate, which is equal to the variable cost of the least-cost, available alternative source of power if such hydropower generating station was not to be dispatched in accordance with the final dispatch schedule of the State Load Dispatch Centre.

The MERC Tariff Regulations in this regard specify that,

"Tariff for sale of electricity from a hydro power generating station shall comprise of two-parts, namely, recovery of annual capacity charge and energy charges.

Provided that the annual capacity charges for a hydro power generating station shall be computed in accordance with the following formula:

Annual Capacity Charges = (Annual Fixed Charge- Energy Charge)

Provided further that the Energy Charge shall not exceed the Annual Fixed Charge under these Regulations" **(emphasis added)**

As per the Tariff Regulations, the effective energy charge in the case of TPC's hydro generating stations work out to Rs 1.06 /kWh which is lower than the other-wise applicable energy charges (variable cost of the least-cost, available alternative source of power).

In this context, where the pricing of hydro generation fails to send any economic signal and, guided by Section 61 of the Electricity Act, 2003, which calls for economic use of resources, the Commission has decided to adopt a one part (energy based) differential peaking tariff (for peak and non peak hours) for hydel generation.

i) Implementation of differential hydro peaking tariff

The Commission believes that an efficient peaking tariff should be structured so as to provide economic signals for optimal usage of the water resources for the hydel generating stations and also to provide the right signal in the merit order dispatch for TPC. Accordingly, the Commission has adopted a differential pricing for peak and non peak period while implementing peaking tariff for hydro generation plants.

Differential pricing for peak and non-peak period has been structured to provide economic signal to generating companies to maximise hydel generation during peak period and thereby reduce utilization of hydro resources during the non peak hours.

Ideally, the peaking tariff should be the least cost available alternative source of power if such hydel generation is not available in those hours. In the present deficit situation, the least-cost available alternative source of power would be the traded power which is ranging between Rs 3 per unit to Rs 5 per unit in both peak and non-peak hours. However, the traded price is uncertain based on the duration and time of purchase, hence, for the present Tariff Order, i.e., till March 31, 2007, the Commission has adopted indicative rates.

The Commission has approved the indicative tariff for MSPGCL's hydro generation during peak and non-peak period in its Order dated September 7, 2006, on MSPGCL ARR and Tariff Petition for FY 2006-07. The Commission is of the opinion that the indicative tariff for hydro generation during peak and non-peak period in the State should be uniform. Accordingly, the Commission approves the hydro tariff for Hydro Generating Stations of TPC for FY 2006-07 as follows:

Table : Approved Hydro Peaking Tariff for Hydro Generating Stations for FY 2006-07

Differential Energy Charges for peak and non-peak hours	**Rs/kWh**
Peak Hours (0900 to 1200 hrs & 1800 to 2200 hrs)	2.00
Non Peak Hours (Other than peak hours)	1.65

This pricing (peaking tariffs) shall ensure that Hydro stations are rightly placed in the merit order.

ii) Estimated Generation during peak and non-peak hours

The Commission has estimated the hydro generation during peak hours as 50% of the total hydro generation based on the past trends of hydro generation during peak and non-peak hours. Accordingly, the estimated generation during peak and non-peak hours is given in Table below

Table: Hydro Generation during peak and non-peak hours

Source	Total Generation	Generation during peak hours	Generation during non-peak hours
Total	1493*	747	746

*** - Total Generation – As per TPC's ARR estimates**

iii) Billing of Energy Charge for Thermal Generating Stations and Single Part Tariff for Hydel Stations

Ideally, the Rate of Energy Charge for Thermal Generating Stations and Single Part Tariff approved for Hydel stations should be billed unit wise based on the energy supplied by each unit of thermal station and each hydel station to respective Distribution Licensees. However, the formal power purchase agreements alongwith allocation of capacity is yet to be finalised between the parties. In the absence of PPAs and allocation of capacity, the Commission approves the interim mechanism for billing of Energy Charge for Thermal Generating Stations and Single Part Tariff for Hydel Stations as follows:

TPC should bill the Energy Charge for Thermal Generating Stations and Single Part Tariff approved for Hydel Stations per unit to Distribution Licensees based on the weighted average energy rate per unit (pooled energy rate) of all units of its thermal stations and single part tariff of hydel stations. This interim arrangement will continue till the PPAs are executed between the parties and approved by the Commission.

Considering the approved unit-wise energy rate for thermal generating stations and single part tariff for hydel stations, the average rate works out to Rs 2.72/kWh. The summary of average rate computations is given in the following Table:

Table: Summary of Average Rate (Rs/kWh)

	Net Gen. MU	Tariff Rs/kWh	Total Rs Crore
Hydel-Single Part Tariff			
Hydel - Peak	746.5	2.00	149
Hydel - Off Peak	746.5	1.65	123
Thermal Station-Variable Charge			
Unit 7 Gas	1378.5	0.74	103
Unit 6 Gas	23.1	0.90	2
Unit 5 Coal	3729.0	1.47	548
Unit 6 Oil	2894.3	5.38	1556
Unit 5 Oil	159.4	5.69	91
Unit 4 Oil	168.0	6.02	101
sub-total	**9845.3**	**2.72**	**2673**

TPC-G shall raise the bills for the net energy supplied to three Distribution Licensees at weighted average rate of Rs 2.72/kWh plus FAC as applicable from time to time.

Further, in the absence of approved agreements towards capacity allocation, the Commission has allocated the net energy available from TPC Generating Stations in proportion to average non coincident peak demand of three Distribution Licensees met by TPC during FY 2005-06. The summary of net energy allocated to three Distribution Licensees and cost for purchase of energy by applying average composite rate towards variable charge of thermal generating stations and hydel stations tariff is given in following Table:

Table : Allocation of Net Energy and Costs for FY 2006-07

Licensee	**Energy**	**Rate**	**Cost**
	MU	**Rs/kWh**	**Rs Crore**
TPC-D	2180	2.72	592
REL	3982	2.72	1081
BEST	3684	2.72	1000
Total	**9845**	**2.72**	**2673**

iv) Treatment of excess amount recovered on account of hydro peaking tariff

Based on the above assumption of generation in the peak and non-peak hours and the corresponding energy tariffs during those hours, the total revenue recovery exceeds the annual fixed charge of hydro generating stations by Rs. 113.95 Crore.

The Commission's intention is to ensure that the economic signals have to be provided to the users of the resources, i.e., generating stations and distribution utilities, while at the same time without putting extra burden on the consumers by way of higher tariffs. Hence, the Commission directs adjustment of excess recovery of Rs. 113.95 Crore from hydro generating stations in the bills for sale of power to be raised by TPC-G to TPC-E, REL and BEST. The amount of reduction towards excess recovery should be allocated between the three Licensees in proportion to non coincident peak demand of these Distribution Licensees during FY 2005-06. The reduction towards excess recovery charges should be provided on monthly basis on pro-rata basis. The summary of total rebate to be given to Distribution Licensees during FY 2006-07 is given in following Table:

Table : Rebate to Distribution Licensees (Rs Crore)

TPC-D	25.23
REL-D	46.09
BEST	42.64
Total	**113.95**

v) Incentive

TPC shall be eligible for an incentive payable in accordance with Section 37.2 of MERC Tariff Regulations. TPC shall compute the incentives on the basis of the actual performance and shall bill the same as an additional charge, payable at the end of the year. There shall be pro rata recovery of annual fixed charges in case the generating station achieves capacity index below the prescribed normative levels.

4.17 SHARING OF GAINS AND LOSSES

The gains and losses on account of controllable and uncontrollable factors will be shared at the time of truing up of ARR based on actuals between the Utility and the consumers in accordance with Regulation 19 of the MERC (Terms and Conditions of Tariff) Regulations, 2005, which stipulates

> *"19.1 The approved aggregate gain to the Generating Company or Licensee on account of controllable factors shall be dealt with in the following manner:*
>
> *(a) One-third of the amount of such gain shall be passed on as a rebate in tariffs over such period as may be specified in the Order of the Commission under Regulation 17.10;*
>
> *(b) In case of a Licensee, one-third of the amount of such gain shall be retained in a special reserve for the purpose of absorbing the impact of any future losses on account of controllable factors under clause (b) of Regulation 19.2; and*
>
> *(c) The balance amount of gain may be utilized at the discretion of the Generating Company or Licensee.*
>
> *19.2 The approved aggregate loss to the Generating Company or Licensee on account of controllable factors shall be dealt with in the following manner:*
>
> *(a) One-third of the amount of such loss may be passed on as an additional charge in tariffs over such period as may be specified in the Order of the Commission under Regulation 17.10; and*
>
> *(b) The balance amount of loss shall be absorbed by the Generating Company or Licensee."*

5 ANNUAL REVENUE REQUIREMENT OF TPC'S TRANSMISSION BUSINESS FOR FY 2006-07

TPC submitted that the Transmission Business of TPC (TPC-T) caters to the distribution licensees' viz. REL, BEST and TPC's own distribution business. TPC added that the energy generated from TPC's generating stations and power purchased from external sources is evacuated through the transmission lines of TPC-T to reach the three distribution licensees. TPC submitted that the costs related to the transmission network were earlier considered an integral part of the Generation Business of TPC. However, in view of the Commission's directive, the Annual Revenue Requirement of the Transmission Business has been submitted.

This aspect has been addressed in the Commission's Order on transmission pricing framework in Case No. 58 of 2005 issued on June 27, 2006, wherein the transmission network of TPC has been considered as a part of the intra-State transmission network.

Accordingly, the Commission has determined the ARR of the transmission business of TPC for FY 2006-07, in accordance with the MERC (Terms and Conditions of Tariff) Regulations, 2005, in this Section.

5.1 OPERATION & MAINTENANCE EXPENSES

5.1.1 Employee Expenses

TPC has projected employee expenses of Rs. 47.8 Cr in FY 2006-07, including terminal benefits. TPC has provided details of the employee expenses under various heads in accordance with the Formats stipulated by the Commission. The main heads of employee expenses are salaries and wages, dearness allowance, other allowances/bonus/benefits and terminal benefits.

The Commission has considered an increase of around 5% over the allowed level of expenses in FY 2005-06 (after truing-up), based on the increase in CPI, though the actual annual increase is around 2.9%, based on 5 year CAGR. This will give some incentive to TPC for reducing the expenditure on this count. As the break-up of employee expenses for the transmission business in previous years is not available, the share of TPC's transmission business in previous years was allocated proportionately, to study the trend. The Commission has thus allowed employee expenditure of Rs. 40.8 crore for FY 2006-07 as given in the following Table:

Employee Expenses (Rs. Crore)

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1	Salaries, Wages & staff welfare expenses	38.00	
2	Terminal Benefits	8.00	
3	VRS Expenses	1.81	
4	**Total Employee Expenses**	**47.81**	**40.82**

5.1.2 Administration & General Expenses

TPC has projected A&G expenses of Rs. 28 Cr in FY 2006-07. TPC has provided details of the A&G expenses under various heads in accordance with the Formats stipulated by the Commission. The main heads of A&G expenses are cost of services procured and others.

The Commission has considered an increase of around 5% over the allowed level of expenses in FY 2005-06 (after truing-up), based on the increase in CPI, though the actual annual increase is around 2.4%, based on 5 year CAGR. This will give some incentive to TPC for reducing the expenditure on this count. As the break-up of A&G expenses for the transmission business in previous years is not available, the share of TPC's transmission business in previous years was allocated proportionately, to study the trend. The Commission has thus allowed A&G expenditure of Rs. 23.7 crore for FY 2006-07, as given in the following Table:.

A&G Expenses (Rs. Crore)

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1	**Net A&G Expenses**	**28.00**	**23.73**

5.1.3 Repair & Maintenance Expenses

TPC has projected R&M expenses of Rs. 14 Cr for FY 2006-07, which is about 1.3% of the Gross Fixed Assets (GFA) at the beginning of the year. The Commission has allowed R&M expenses at 3% of the Gross Fixed Assets (GFA) for TPC as a whole, and allocated the share of TPC's transmission business proportionately. The Commission has thus allowed R&M expenditure of Rs. 13.1 crore for FY 2006-07, which works out to 1.3% of opening GFA for the Transmission Business, as shown in the following Table:.

R&M Expenses (Rs. Crore)

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1	Net R&M Expenses	14.00	13.07
2	Gross Fixed Assets at beginning of year	1,042.54	973.44
3	R&M Expenses as % of GFA at beginning of year	1.3%	1.3%

5.2 DEPRECIATION

TPC, in its ARR Petition, proposed depreciation expenditure for FY 2006-07 for the Transmission business as Rs 30.20 Crore. The overall depreciation rate amounts to 2.90% corresponding to opening GFA of Rs 1042.54 Crore. TPC submitted that depreciation expenditure projected for FY 2006-07 is in accordance with depreciation rates provided under MERC (Terms and Conditions of Tariff) Regulations, 2005. Further, TPC proposed to undertake capital expenditure of Rs 64.57 Crore during FY 2006-07 corresponding to its transmission business with capitalisation of Rs 56.53 Crore during FY 2006-07.

The Commission has examined the depreciation and capitalisation proposed by TPC in detail as against the various transmission related capex schemes approved by the Commission. TPC had submitted two capex scheme pertaining to transmission activity, namely, (i) augmentation of 110 kV Mahalaxmi Receiving Station including GIS, at a total cost of Rs 52.19 Crore (ii) 220 kV Trombay-Dharavi-Salsette line for total cost of Rs 153.18 Crore. Both the schemes will not be completed during FY 2006-07. Accordingly, the Commission has not considered the same for capitalisation during FY 2006-07. Thus, out of proposed capitalisation of Rs 56.53 during FY 2006-07, the Commission has not considered capitalisation of Rs 30 Crore towards augmentation of 110 kV Mahalaxmi Receiving station, as proposed by TPC. However, the Commission has considered capitalisation of remaining non-DPR related schemes amounting to Rs 26.53 Crore as proposed by TPC during FY 2006-07.

The opening level of GFA for FY 2006-07 amounts to Rs 973.44 Crore as against Rs 1042.54 Crore claimed by TPC. Further, TPC has not proposed any interest capitalisation and only works capitalisation has been proposed. The Commission is of the opinion that interest cost during construction (IDC) should not be considered as part of revenue expense, however, the same should be capitalised along with assets, as and when put to use. Accordingly, the Commission had considered capitalised cost including IDC derived based on normative debt (70% of works capitalised) at the interest rate of 10% for the schemes initiated during FY

2004-05 and FY 2005-06 and at the rate of 8% for the schemes initiated during FY 2006-07. The capitalisation details during FY 2006-07 are summarised in the following Table:

Table: Capitalisation (Transmission) (Rs Crore)

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1	Works capitalized	56.53	28.97
2	Interest capitalized	0.00	1.76
3	**Total Capitalisation**	**56.53**	**30.72**

Further, as elaborated under Section 3, the Depreciation Rates as stipulated under MERC (Terms and Conditions of Tariff) Regulations, 2005 shall be applicable for FY 2006-07. The average depreciation rate as considered by TPC for transmission assets for FY 2006-07 works out to 2.90% of Opening level of GFA. Further, as per Clause (C)(I)(i) of the Depreciation Schedule under the MERC Tariff Regulations, rate of depreciation for overhead transmission lines operating at nominal voltage above 66 kV is 2.57% and for other overhead lines and cables, it is 3.60%. Accordingly, the Commission has allowed depreciation expenditure for FY 2006-07 at an average depreciation rate of 3.08% of opening level of GFA. The depreciation expenditure projected by TPC and approved by the Commission for FY 2006-07 has been summarised in the following Table:

Table: Depreciation Expense (Transmission) (Rs Crore)

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1	Depreciation	30.20	29.95
2	Opening GFA	1042.54	973.44
3	**% Depreciation**	**2.90%**	**3.08%**

5.3 INTEREST ON LONG TERM LOAN

TPC proposed interest expenditure of Rs 7.14 Crore for FY 2006-07 corresponding to its transmission function, considering normative debt:equity of 70:30 for financing of capital expenditure at a normative interest rate of 10% p.a. and normative loan repayment of 8 years.

TPC has computed interest costs for the normative debt corresponding to entire capital expenditure proposed to be incurred during that year. In this context, the Commission observes that as per MERC (Terms and Conditions of Tariff) Regulations, 2005, the permissible interest cost in this case will have to be determined based on 'normative loan capital', as per Regulation 50.3.2, 47.1 and 47.2 of the Tariff Regulations, as reproduced below:

50.3.2 The Transmission Licensee shall be allowed to recover the interest rate on loan capital for approved capital expenditure projects commenced on or after April 1, 2005, approved additions to fixed assets and approved purchases of fixed assets on or after such date based on the following terms and conditions:

47.1 Any capital expenditure incurred during a financial year on a capital expenditure project commenced on or after April 1, 2005 and/ or on purchase of fixed asset on or after such date shall be assumed to be financed at a normative debt:equity ratio of 70:30, to be applied on the annual allowable capital cost for such financial year: (emphasis added)

47.2 Any fixed asset capitalized on account of a capital expenditure project commenced on or after April 1, 2005 or on account of fixed asset purchased on or after such date shall be assumed to have been financed at a normative debt:equity ratio of 70:30 to be applied on the original cost of such project/ fixed asset. (emphasis added)

Thus, the 'normative loan capital' should be linked to approved capital expenditure for the assets put to use. The Commission is of the opinion that interest expense towards capital expenditure needs to be capitalised as and when the asset is put to use and should not be charged to revenue expense. However, pursuant to such capitalisation, interest costs can be charged to revenue expense over the repayment tenure of such outstanding debt. Accordingly, the Commission has considered interest cost of normative debt corresponding to capitalised assets only. The Commission has considered interest cost at the interest rate of 10% p.a. for the assets put to use during FY 2004-05 and FY 2005-06 and at the interest rate of 8% p.a. for assets put to use during FY 2006-07. Accordingly, the weighted average rate of interest cost works out to 9%.

Further, as per Regulation 48.2, normative loan repayment schedule for each year shall be equal to amount of depreciation for fixed assets to which such loan relates. Accordingly, the Commission has considered loan repayment schedule of 27 years for the loans drawn during FY 2006-07, however, the loan repayment for loans drawn during FY 2004-05 continue to be 10 years as provided earlier. The details of interest cost are summarised in the following Table:

Table: Interest cost (Transmission) (Rs Crore)

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1	Opening Bal. of Loan	30.48	11.99
2	Additions	43.15	21.51

Sl.	Particulars	FY 2006-07	
		Petition	Commission
3	Repayment	(2.24)	(1.40)
4	Closing Bal. of loan	71.39	32.10
5	**Interest cost**	**7.14**	**1.99**
6	Overall Interest Rate (%)	14.0%	9.0%

5.4 INTEREST ON WORKING CAPITAL

TPC, in its Petition, submitted that the Working Capital requirement has been computed in accordance with the Commission's Tariff Regulations, which stipulate the components of working capital of the transmission business. TPC further submitted that the normative interest rate of 10.25% as indicated by SBI has been considered for estimating interest on working capital. TPC projected interest on working capital of Rs 4.6 Crore for FY 2006-07. In addition, TPC projected financing charges of Rs. 0.09 crore.

The Commission has estimated the total working capital requirement in accordance with the provisions of Tariff Regulations. The total working capital estimated by the Commission for FY 2006-07 works out to Rs 18.1 Crore as against Rs 45.13 crore estimated by TPC.

Further, the Tariff Regulations stipulates that Rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on the date on which the application for determination of tariff is made. As the short-term Prime Lending Rate of State Bank of India is 10.25%, the Commission has considered the interest rate of 10.25% for estimating the interest on working capital.

The interest on working capital for FY 2006-07 as estimated by the Commission works out to Rs 1.94 Crore as against Rs 4.6 Crore estimated by TPC. This includes finance charges of Rs. 0.09 crore.

5.5 INCOME TAX

TPC has projected income tax of Rs. 26.0 crore for its transmission business, by adding back the book depreciation to the RoE component, and deducting the tax depreciation.

As explained earlier in para 4.11, the income tax liability for FY 2006-07 for TPC's Mumbai license area works out to Rs. 107.5 crore. The apportioned income tax liability of the transmission business of TPC in FY 2006-07, has been estimated as Rs. 26.9 crore.

5.6 NON-TARIFF INCOME

TPC has projected non-tariff income of Rs. 9.3 Cr in FY 2006-07, due to income from statutory investments, income from services rendered, miscellaneous receipts and others.

There is no clear trend in non-tariff income in the past years, and the average non-tariff income in the last three years is quite close to the actual income in FY 2005-06. Hence, the non-tariff income in FY 2006-07 has been projected at the same levels as in FY 2005-06, and the share of TPC's transmission business has been allocated proportionately. The non-tariff income projected by TPC and that considered by the Commission for FY 2006-07 is given in the following Table:

Non-Tariff Income (Rs. Crore)

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1.0	Rental (land, bldg, plant & m/cery)	1.93	
2.0	Income on services rendered	1.30	
3.0	Delayed Payment Charges	-	
4.0	Sale of Scrap and Stores	0.34	
5.0	Miscellaneous Revenue	0.11	
6.0	Interest on call money		
7.0	Other Interest	-	
8.0	Income from Statutory Investments	5.58	
9.0	**Total Other Income**	**9.28**	**12.77**

5.7 RETURN ON EQUITY

TPC submitted that it has projected the Return on Equity (RoE) for FY 2006-07 for its transmission business in accordance with the Tariff Regulations notified by the Commission, which stipulates a 14% return on equity per annum on the regulatory equity at the beginning of the Financial Year for which the return is being computed. TPC has also considered RoE on the entire assets added during the year, though the Tariff Regulations provide for return only on 50% of the assets added during the year.

TPC submitted that since TPC is an integrated Utility having other businesses as well, the equity of the licensed business has been worked out from the Balance Sheets, and the equity of the licensed business has been further allocated to the generation business, transmission business and distribution businesses, on the basis of the asset base. TPC submitted an Auditor's certificate for the computation of opening equity in FY 2004-05. Since all assets of TPC are financed from own equity, a normative equity of 30% of total equity employed for transmission assets added during the years FY 2004-05 and FY 2005-06 has been considered, based on the Tariff Regulations.

The Commission has computed the allowable RoE for FY 2006-07 on the opening equity base in FY 2006-07, based on the opening equity levels in FY 2004-05, and the normative equity component of the addition to capital assets considered for the transmission function for FY 2004-05, FY 2005-06 and FY 2006-07. The RoE projected by TPC and that considered by the Commission for FY 2006-07 is given in the following Table:

Return on Equity (Rs. Crore)

S.no.	Particulars	Ref.	FY 2006-07	
			Petition	**Approved**
1	Regulatory Equity at the beginning of the year		407.66	399.14
2	Capital Expenditure		61.64	30.72
3	Equity portion of capital expenditure		18.49	9.22
4	Regulatory Equity at the end of the year		426.15	408.36
	Return Computation			
5	Return on Regulatory Equity at the beginning of the year	14%	57.07	55.88
6	Return on Equity portion of capital expenditure	14%*(3)/2	2.59	0.65
7	**Total Return on Regulatory Equity**		59.66	56.53

5.8 AGGREGATE REVENUE REQUIREMENT (ARR)

The ARR of the transmission business of TPC is the summation of all the expenses and RoE. TPC has projected the ARR for FY 2006-07 at Rs. 184 crore. The Commission has determined the ARR for FY 2006-07, based on the expenses allowed under various heads and RoE allowed, as discussed above. The ARR projected by TPC and that allowed by the Commission for FY 2006-07 is given in the following Table:

Aggregate Revenue Requirement – TPC (T) (Rs. Crore)

S.no.	Particulars	Ensuing Year FY 2006-07	
		Petition	Approved
1	Operation & Maintenance Expenses	89.81	77.62
1.1	Employee Expenses	47.81	40.82
1.2	Administration & General Expenses	28.00	23.73
1.3	Repair & Maintenance Expenses	14.00	13.07
2	Depreciation, including advance against depreciation	30.20	29.95
3	Interest on Long-term Loan Capital	7.14	1.99
4	Interest on Working Capital and on consumer security deposits	4.71	1.94
5	Other Expenses	0.00	0.00
6	Income Tax	26.00	26.90
7	Contribution to contingency reserves	0.00	0.00
8	**Total Revenue Expenditure**	**157.86**	**138.40**
9	Return on Equity Capital / Reasonable Return on Capital Base	59.66	56.53
10	**Aggregate Revenue Requirement**	**217.52**	**194.92**
11	Less: Non Tariff Income	9.28	2.34
12	Less: Income from Other Business	24.00	24.00
13	**Aggregate Revenue Requirement from Transmission Tariff**	**184.25**	**168.58**

6 ANNUAL REVENUE REQUIREMENT OF TPC'S DISTRIBUTION BUSINESS FOR FY 2006-07

6.1 SALES PROJECTIONS

TPC, in its Petition, mentioned that the retail consumer base of TPC-D comprises Railways, Textiles, Industrial, Commercial and Residential consumers and it has been observed from past experience that the historical trend method has proved to be a reasonably accurate estimation for forecasting the load of TPC-D consumers. TPC submitted that the analysis of historical category wise sales reveals the following:

- Consumption by HT Industrial consumers and textiles has been declining rapidly over the years due to the shift of industrial units from Mumbai and closure of textile mills and the declining trend in HT sales is expected to continue during FY 2006-07
- Sales to LT consumers were steadily increasing over the past 5 years, however, the growth rate is not expected to continue as TPC-D has been restrained by the Commission to supply to customers below one MVA.

TPC projected the sales for FY 2006-07 based on CAGR of sales to various categories during the past few years and considering the addition of new consumers. TPC, in its Petition, estimated total sales for FY 2005-06 at 2303 MU. As discussed in section 3 of the Order, the Commission directed TPC to submit the category-wise sales for FY 2005-06 and TPC submitted the total sales for FY 2005-06 as 2336 MU. The Commission has analysed the actual category wise sales for the years FY 2001-02 to FY 2005-06 and the summary of the same is given in the following Table:

Table: Category-wise Sales from FY 2001-02 to FY 2005-06

	FY 02	FY 03	FY 04	FY 05	FY 06	4 years CAGR	2 years CAGR
Railways	712	736	753	782	766	1.84%	0.86%
HT Consumers	**527**	**488**	**508**	**528**	**531**	**0.19%**	**2.24%**
HT Industries	467	431	442	445	415	-2.91%	-3.10%
HT Commercial	60	57	66	83	116	17.92%	32.57%
Public Services	230	237	250	255	256	2.71%	1.19%
CPP	9	8	8	21	61	61.35%	176.13%
Textiles	494	455	364	294	248	-15.83%	-17.46%
LT 2 Part	**50**	**85**	**143**	**209**	**273**	**52.86%**	**38.17%**
Industries	15	23	29	35	39	26.98%	15.97%
Commercial	35	62	114	174	234	60.80%	43.27%
LT 1 Part	**33**	**59**	**99**	**122**	**136**	**42.48%**	**17.21%**
Industries	7	17	42	49	51	64.29%	10.19%
Commercial	26	42	57	73	85	34.47%	22.12%
Residential	16	29	45	58	65	41.97%	20.19%
Total	**2071**	**2097**	**2170**	**2269**	**2336**	**3.06%**	**3.75%**

Considering the past trends in category-wise sales and TPC's sales projections for FY 2006-07, the Commission has accepted the TPC's projections for all the categories except Railways and LT-2 part commercial. The Commission has projected the sales to Railways by considering a growth rate equivalent to 4 year CAGR on actual sales during FY 2005-06 and by considering a growth rate of 10% for LT-2 part commercial. The summary of projected sales as estimated by TPC and as approved by the Commission for FY 2006-07 is given in the following Table:

Table : Category-wise Sales for FY 2006-07 (MU)

Particulars	**FY 07**	**FY 07**
	TPC	**Commission**
Railways	815	780
HT Consumers	**570**	570
HT Inds	404	404
HT Comml	166	166
Public Services	264	264
CPP	20	20
Textiles	209	209
LT 2 Part	**293**	**300**
Industries	43	43
Commercial	250	257
LT 1 Part	**151**	**151**
Industries	56	56
Commercial	95	95
Residential	**71**	71
Total	**2393**	**2365**

The total sales approved by the Commission for FY 2006-07 is 2365 MU as against sales of 2393 MU projected by TPC.

6.2 LOSSES AND PROJECTED ENERGY INPUT

TPC, in its Petition, submitted that based on past trends, the total losses for the TPC-D system at TPC-G and TPC-D interface is around 4.43%. Based on TPC's submissions on the transmission losses in its transmission network, the Commission has considered the distribution loss of 2.93% for projecting the energy required by TPC-D at Transmission-Distribution interface.

As regards transmission loss to be considered for estimating the energy input, Regulation 14 of the MERC (Transmission Open Access) Regulations, 2005 stipulates that the energy losses in the intra-State transmission system, as determined by SLDC and approved by the Commission are required to be borne by the Transmission System User pro-rata to their usage of intra- State transmission system. Based on CPRI study, the Commission has approved transmission losses for Intra-State Transmission system as 4.85% for FY 2006-07. In addition, the Commission in its Order dated June 27, 2005 (Case 58 of 2005) for Transmission Pricing Framework has extensively dealt with the issue of treatment of transmission loss for intra-State transmission system and energy accounting thereof. The relevant extract of said Order is as under:

> *4.2.10 Transmission loss shall be borne by all TSUs (off-takers) on pro-rata basis based on their energy drawal depending on actual transmission loss level. Any variation in the actual transmission loss level from the normative transmission loss level, if any, set by the Commission shall be adjusted in accordance with the provisions contained under MERC (Terms and Conditions for Tariff) Regulations 2005.*
>
> *4.2.13 MSETCL, as Government Company operating the SLDC, shall be responsible for undertaking recording of State-wide energy accounts, monitoring of power flows and recording of utilization of capacity across intra-State transmission system.*

In view of the above, the Commission has considered the intra-State transmission system loss of 4.85% for projecting TPC's Energy Input requirement for FY 2006-07. The summary of projected Energy Input for FY 2006-07 is given in the following Table:

Table : Projected Energy Input of TPC-D for FY 2006-07

Description	Unit	Approved
Total Sales	MU	2365
Distribution Losses	MU	72
Distribution Losses	%	2.93%
Energy Input to Distribution System	MU	2437
Intra-State Transmission System Losses	%	4.85%
Intra-State Transmission System Losses	MU	124
Projected Energy Input	**MU**	**2561**

Further, the Commission in its Order dated September 29, 2006 in Case 31 of 2006 in the matter of Determination of Transmission Tariff for Intra-State Transmission System (InSTS) for FY 2006-07 has approved the Energy Accounting mechanism amongst the Distribution Licensees (i.e., Transmission System Users-TSUs) in the State as follows:

> *"The actual energy units drawn by TSU (as recorded by T<>D interface) shall be grossed up by applying composite transmission loss factor (i.e. multiplication factor of 1/(1-loss%), as determined based on methodology outlined under Appendix-1 on monthly basis. The grossed up energy drawal by each TSU (or distribution licensee)*

shall be compared against the energy contracted (through own generation or power purchase by concerned TSU) to establish overdrawal or under-drawal by the concerned TSU (or distribution licensee). The overdrawal and underdrawal by various TSUs shall be settled on the basis of weighted average system marginal price prevalent for the month for the State and shall be paid for by overdrawing TSU to under-drawing TSU".

6.3 ENERGY AVAILABILITY AND POWER PURCHASE COST

TPC, in its Petition, submitted that the Power Purchase cost of TPC-D has been estimated as Rs 1620 Crore for FY 2006-07 as an aggregate of cost of procurement from TPC-G for self requirement, RPO of TPC-D for self requirement and for purchase of power from sources other than TPC-G for self requirement and for BEST and REL.

6.3.1 Power Purchase from TPC-G

TPC, in its Petition, submitted that based on the generation units allocated to TPC-D and considering the average tariff of Rs 4.02/kWh, the cost of power purchase from TPC-G is estimated at Rs 860 Crore for 2138 MU.

In the absence of any agreement between TPC Generation Business with the distribution business of its own as well as that of REL and BEST, the Commission has allocated the annual fixed charges of TPC-G and net energy available from TPC-D in proportion to non coincident peak demand of Distribution Licensees. However, in case of REL, the peak demand of REL is met partly from REL-G Dahanu Generating Station and partly through supply of power by TPC-G and other sources. Therefore, the Commission has considered the average non-coincident peak demand of three Distribution Licensees, i.e., TPC-D, REL-D and BEST, met by TPC during FY 2005-06. The methodology of allocation of energy from TPC-Generating Stations, Fixed Component of Tariff and Variable Charge per unit approved by Commission for FY 2006-07 is elaborated in Section 4 of the Order.

The summary of projected power purchase and costs for purchase of power by TPC-D from TPC-G is given in following Table:

Table: Power Purchase from TPC-G during FY 2006-07

Licensee	Quantum	Fixed Charges	Variable Charge	Incentive	Rebate (Excess Hydel Recovery)	Total Costs	Cost per unit
	MU	Rs Crore	Rs Crore	Rs Crore	Rs Crore	Rs Crore	Rs/kWh
TPC-D	2180	96.20	591.83	4.03	25.23	666.83	3.06

6.3.2 Power Purchase from Renewable Sources

TPC, in its Petition, submitted that the RPO obligation of TPC-D for FY 2006-07 based on the methodology approved by the Commission works out to 26 MU and based on average tariff of Rs 3.58/kWh, the cost of RPO obligation of TPC for FY 07 has been estimated at Rs 9 Crore.

The Commission, vide its Order dated August 16, 2006 in Case 6 of 2006 in the matter of Long term Development of Renewable Energy Sources and associated Regulatory (RPS) Framework has approved the Renewable Purchase Specification (RPS) for FY 2006-07 as 3% of energy requirement of the Distribution Licensee. Thus, the RPS obligation of TPC-D for FY 2006-07 works out to 77 MU. Further, the Commission has considered the average price of renewable energy during FY 2006-07 as Rs 3.30/kWh and the total cost of meeting RPS obligations by TPC-D during FY 2006-07 works out to Rs 25.35 Crore.

The summary of RPS for FY 2006-07 is given in the following Table:

Table: Summary of RPS for FY 2006-07

Sl.	Description	Unit	Approved
1	Quantum	MU	77
2	Average Rate	Rs/kWh	3.30
3	Total Costs	Rs Crore	25.35

6.3.3 Inter Utility Exchange of Power

The total generation from TPC Generation Business is not sufficient to meet the total demand and energy input requirement of the three Distribution Licensees in Mumbai, i.e., TPC-D, REL-D and BEST, and hence additional energy needs to be procured for meeting the overall energy requirement of Mumbai system.

TPC, in its Petition, submitted that TPC has an agreement with MSEDCL (erstwhile MSEB), for purchase of power to meet its requirement and mentioned though TPC-G has a right to purchase power as per the above agreement, however, in view of the current energy deficit situation in Maharashtra, it is assumed that power available from MSEDCL would be limited to 61 MU. Considering a rate of Rs 2.99/kWh as approved by the Commission in its previous Tariff Order plus FAC of Rs 0.25/kWh, TPC estimated the total cost of Rs 20 Crore for purchase of 61 MU from MSEB.

Considering the demand supply position of MSEDCL, the Commission has not considered any purchase of power by TPC from MSEDCL. Further, the Commission in its Order dated September 29, 2006, has approved the mechanism of exchange of power between the Distribution Licensees of the State as follows:

"The overdrawal and underdrawal by various TSUs shall be settled on the basis of weighted average system marginal price prevalent for the month for the State and shall be paid for by overdrawing TSU to under-drawing TSU".

6.3.4 Power Purchase from Other Sources

TPC, in its Petition, submitted that TPC-D will procure the additional energy requirement of Mumbai System for meeting the requirement of its own distribution network as well as for supplying the power to other two Distribution Licensees, i.e., REL-D and BEST to meet their overall energy requirement. TPC submitted that as per the current understanding/agreement, the net availability of power from alternate sources (M/s PTC/JTPCL) is estimated at 165 MW, ex-Kalwa after netting off the transmission losses. TPC has projected the net energy availability of 1438 MU from alternate sources during FY 2006-07 and the Commission has accepted the same.

As regards cost of power purchase, TPC submitted that the cost of power purchased from M/s JPTCL is Rs 2.963/kWh at source for the first three months of the year and is likely to be Rs 4.41/kWh for the remaining period. TPC further submitted that based on the current Regulations in force for the inter-regional transmission of power, suitable factoring of transmission losses and short-term open access charges have been considered for determining the average per unit cost for power purchase form JPTCL which works out to Rs 5.08/kWh. TPC estimated the total purchase cost for purchase of 1438 MU as Rs 731 Crore.

The Commission directed the TPC to submit the details of contractual arrangement made for purchase of power from Jindal along with supporting documents. TPC, in its reply, submitted that there is no contractual arrangement today with Jindal and the at the time of filing of ARR, it was envisaged that power would be available from Jindal through PTC and/or MSEDCL as TPC was to enter into a long term contract with M/s JPTCL/PTC. However, neither TPC nor MSEDCL has entered into a long term contract as the supplier has increased the price by about 50%. In the absence of any formal agreement, the Commission has considered the average landed rate of Rs 4.41/kWh for the purchase of power from alternate sources and any variation in average landed rate of power purchase will be considered as part of FAC.

The Commission opines that each Distribution Licensee should meet its power requirement by entering into appropriate contracts for sourcing of power. However, in the absence of formal agreements, the Commission has considered this additional power available to Mumbai system, for the purposes of this Order. The summary of this additional power purchase considered for TPC-D during FY 2006-07 is given in the following Table:

Table: Power Purchase by TPC-D from other sources during FY 2006-07

Particulars	Quantum MU	Rate Rs/kWh	Cost Rs Crore
Power Purchase from other sources	**305**	**4.41**	**134**

6.3.5 Standby Charges

Earlier, the erstwhile MSEB was providing standby facility to TPC. The total standby charges payable by TPC as approved by the Commission is around Rs 396 Crore. In the existing prevalent mechanism of sharing and recovery of standby charges, the standby charges to be paid by REL to TPC as approved by the Commission is of the order of Rs 91 Crore. The balance standby charges is paid by TPC and TPC is recovering these standby charges through bulk supply tariff levied to two Distribution Licensees, viz., REL and BEST and retail consumers of TPC.

However, with the restructuring of erstwhile MSEB, MSEDCL is providing standby support to meet the requirement of Mumbai system through its contracted capacity by shedding the load in its area of supply. Thus the standby charges of Rs 396 Crore are to be paid to MSEDCL.

As the Commission has approved the ARR and Tariff of Generation, Transmission and Distribution Business of TPC separately, TPC cannot recover Standby charges through bulk supply tariff. TPC, in its Petition, submitted that TPC is required to make standby arrangements for outage of generating units of TPC and REL with MSEB. TPC further submitted that as the Tariff Regulations do not explicitly recognise some of these arrangements, such costs were analysed based on the need for the same and benefits accrued for categorisation to a function. TPC further submitted that the standby charges being paid to MSEDCL are by their nature, meant to primarily augment and support the generation plants of TPC-G and energy availability from them, being shared by the three Licensees and hence these charges form an integral part of Generation costs and therefore the standby charge for the purpose of ARR and tariff determination have been considered in Generation function. TPC has considered the standby charges of Rs 396 Crore payable and revenue of Rs 91 Crore from REL towards standby charges as part of TPC-G ARR.

In view of the changed industry structure, the Commission does not agree with the views of TPC that MSEDCL is providing standby to TPC-G. The Commission is the opinion that the standby charges needs to be recovered by MSEDCL from the three Distribution Licensees of Mumbai System, i.e., REL-D, TPC-D and BEST to ensure that all the consumers of Mumbai system contribute to standby charges. The Commission has allocated the total standby charges payable to MSEDCL in proportion to average non-coincident peak demand of Distribution

Licensees in Mumbai system during FY 2005-06. The average non-coincident peak demand of Distribution Licensees in Mumbai System during FY 2005-06 and sharing of Standby Charges amongst Distribution Licensees is given in the Table below:

Table: Standby Charge for FY 2006-07

Particulars	TPC-D	REL-D	BEST	Total
Average Non Coincident Peak Demand (NCD) during FY 06 (MW)	458	1291	774	2523
% of NCD	18.2%	51.1%	30.7%	100%
Standby Charge (Rs Crore)	**71.9**	**202.6**	**121.5**	**396**

6.3.6 Summary of Power Purchase for FY 2006-07

The summary of Power Purchase for TPC-D as approved for FY 2006-07 is given in the following Table:

Table: Summary of Power Purchase for FY 2006-07

Particulars	Quantum MU	Total Cost (Rs Crore)	Unit Rate (Rs/kWh)
TPC-G	2180	666.8	3.06
Purchase from other sources	305	134.4	4.41
RPS	77	25.4	3.30
Total	**2561**	**826.6**	**3.23**
Standby Charges		**71.9**	
Total Incl. Standby Charges		**898.4**	

6.4 TRANSMISSION CHARGES

TPC, in its Petition, submitted that the transmission charges have to be paid to TPC-Transmission to compensate it for the usage of the network. TPC submitted that the transmission charges payable by TPC-D for its share of power transmitted over the TPC-T network works out to Rs 42 Crore.

The Commission issued an Order on June 27, 2006, in the matter of development of Transmission Pricing Framework for the State of Maharashtra and other related matters (Case 58 of 2005). Further, the Commission vide its Order dated September 29, 2006 in Case 31 of 2006, in the matter of Determination of Transmission Tariff for Intra-State Transmission System (InSTS) for FY 2006-07 has approved the base transmission tariff of Rs 110.20/kW/month. Further, the Commission in its Order on Determination of Transmission Tariff opined that *"The total transmission system cost (TTSC) shall be shared amongst the long term transmission system users comprising distribution licensees such as MSEDCL,* *TPC-D, REL-D and BEST-D in accordance with their share of non-coincident peak demand"* and in this Order, the Commission has approved the TPC-D share of transmission charges for FY 2006-07 as Rs. 60.55 Crore. Accordingly, the total transmission charges for TPC-D for use of intra-State transmission system as part of ARR for FY 2006-07 has been considered as Rs 60.55 Crore.

6.5 OPERATION & MAINTENANCE EXPENSES

6.5.1 Employee Expenses

TPC has projected employee expenses of Rs. 10.65 Crore for Distribution Business in FY 2006-07, including terminal benefits. TPC has provided details of the employee expenses under various heads in accordance with the Formats stipulated by the Commission. The main heads of employee expenses are salaries and wages, dearness allowance, other allowances/bonus/benefits and terminal benefits.

The Commission has considered an increase of around 5% over the allowed level of expenses in FY 2005-06 (after truing-up), based on the increase in CPI, though the actual annual increase is around 2.9%, based on 5 year CAGR. This will give some incentive to TPC for reducing the expenditure on this count. As the break-up of employee expenses for the distribution business in previous years is not available, the share of TPC's distribution business in previous years was allocated proportionately, to study the trend. The Commission has thus allowed employee expenditure of Rs. 9.97 Crore for FY 2006-07 as given in the following Table:

Employee Expenses (Rs. Crore)

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1	Salaries, Wages & staff welfare expenses	8.45	
2	Terminal Benefits	0.52	
3	VRS Expenses	1.68	
4	**Total Employee Expenses**	**10.65**	**9.97**

6.5.2 Administration & General Expenses

TPC has projected A&G expenses of Rs. 10.34 Cr in FY 2006-07. TPC has provided details of the A&G expenses under various heads in accordance with the Formats stipulated by the Commission. The main heads of A&G expenses are cost of services procured and others.

The Commission has considered an increase of around 5% over the allowed level of expenses in FY 2005-06 (after truing-up), based on the increase in CPI, though the actual annual increase is around 2.4%, based on 5 year CAGR. This will give some incentive to TPC for reducing the expenditure on this count. As the break-up of A&G expenses for the distribution business in previous years is not available, the share of TPC's distribution business in previous years was allocated proportionately, to study the trend. The Commission has thus allowed A&G expenditure of Rs. 9.2 crore for FY 2006-07, as given in the following Table:

A&G Expenses (Rs. Crore)

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1	Net A&G Expenses	10.34	9.17

6.5.3 Repair & Maintenance Expenses

TPC has projected R&M expenses of Rs. 3.11 Cr for FY 2006-07, which is about 0.8% of the Gross Fixed Assets (GFA) at the beginning of the year. The Commission has allowed R&M expenses at 3% of the Gross Fixed Assets (GFA) for TPC as a whole, and allocated the share of TPC's distribution business proportionately. The Commission has thus allowed R&M expenditure of Rs. 2.90 crore for FY 2006-07, which works out to 1% of opening GFA for the Generation Business, as shown in the following Table:.

R&M Expenses (Rs. Crore)

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1	Net R&M Expenses	3.11	2.90
2	Gross Fixed Assets at beginning of year	369.45	288.61
3	R&M Expenses as % of GFA at beginning of year	0.8%	1.0%

6.6 DEPRECIATION

TPC, in its ARR Petition, proposed depreciation expenditure for FY 2006-07 for the distribution business as Rs 14.82 Crore. The overall depreciation rate amounts to 4.01% corresponding to opening GFA of Rs 369.45 Crore. TPC submitted that depreciation expenditure projected for FY 2006-07 is in accordance with depreciation rates provided under MERC (Terms and Conditions of Tariff) Regulations, 2005. Further, TPC proposed to undertake capital expenditure of Rs 89.86 Crore during FY 2006-07 corresponding to its distribution business with capitalisation of Rs 92.56 Crore during FY 2006-07.

The Commission has examined the depreciation and capitalisation proposed by TPC in detail. The Commission notes that TPC has not submitted any distribution related capex schemes for approval of the Commission earlier. However, during FY 2006-07, TPC has proposed to incur capital expenditure of around Rs 78.41 Crore towards network development related activities. In addition, TPC has also proposed to incur capital expenditure pertaining to non-DPR related schemes involving outlay not exceeding Rs 10 Crore such as – data acquisition system, automatic meter reading system, feeder-wise metering system, replacement of single part energy meters with two part energy and demand meters for consumers having contract demand in excess of 20 kW, replacement of old breakers, etc. The Commission has considered capital expenditure pertaining to non-DPR related activities as proposed by TPC for FY 2006-07. However, Commission has not considered any capital expenditure related to network development activity, as TPC has not submitted any capex scheme for approval as yet. The Commission hereby directs TPC to submit its capex scheme pertaining to network development activity along with DPR.

Thus, out of proposed capitalisation of Rs 92.56 during FY 2006-07, the Commission has considered capitalisation pertaining to non-DPR related schemes amounting to Rs 12.90 Crore.

The opening level of GFA for FY 2006-07 amounts to Rs 288.61 Crore as against Rs 369.45 Crore claimed by TPC. Further, TPC has not proposed any interest capitalisation and only works capitalisation has been proposed. The Commission is of the opinion that interest cost during construction (IDC) should not be considered as part of revenue expense, however, the same should be capitalised along with assets, as and when put to use. Accordingly, the Commission had considered capitalised cost including IDC derived based on normative debt (70% of works capitalised) at the interest rate of 10% for the schemes initiated during FY 2004-05 and FY 2005-06 and at the rate of 8% for the schemes initiated during FY 2006-07. The capitalisation details during FY 2006-07 are summarised in the following Table:

Table: Capitalisation for TPC-D (Rs Crore)

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1	Works capitalized	92.56	12.90
2	Interest capitalized	0.00	0.90
3	**Total Capitalisation**	**92.56**	**13.81**

Further, the Depreciation Rates as stipulated under MERC (Terms and Conditions of Tariff) Regulations, 2005 shall be applicable for FY 2006-07. The average depreciation rate as considered by TPC for distribution assets for FY 2006-07 works out to 4.01% of Opening level of GFA. Accordingly, the Commission has allowed depreciation expenditure for FY 2006-07 at an average depreciation rate of 4.07% of opening level of GFA. The depreciation expenditure projected by TPC and approved by the Commission for FY 2006-07 has been summarised in the following Table:

Table: Depreciation Expense (TPC-D) (Rs Crore)

Sl.	Particulars	FY 2006-07	
		Petition	**Commission**
1	Depreciation	14.82	11.74
2	Opening GFA	369.45	288.61
3	**% Depreciation**	**4.01%**	**4.07%**

6.7 INTEREST ON LONG TERM LOAN

TPC proposed interest expenditure of Rs 11.23 Crore for FY 2006-07 corresponding to its distribution function, considering normative debt:equity of 70:30 for financing of capital expenditure at a normative interest rate of 10% p.a. and normative loan repayment of 8 years.

TPC has computed interest costs for the normative debt corresponding to entire capital expenditure proposed to be incurred during that year. In this context, the Commission observes that as per MERC (Terms and Conditions of Tariff) Regulations, 2005, the permissible interest cost in this case will have to be determined based on normative loan capital, as per Regulation 76.3.2, 73.1 and 73.2 of the Tariff Regulations. The relevant extract of the said Regulations is as under:

> *"76.3.2 The Distribution Licensee shall be allowed to recover the interest rate on all loans taken for approved capital expenditure projects commenced on or after April 1,*
> *2005, approved additions to fixed assets and approved purchases of fixed assets on or after such date based on the following terms and conditions:*
>
> *73.1 Any capital expenditure incurred during a financial year on a capital expenditure project commenced on or after April 1, 2005 and/ or on purchase of fixed asset on or after such date shall be assumed to be financed at a normative debt:equity ratio of 70:30, to be applied on the annual allowable capital cost for such financial year: (emphasis added)"*

Thus, the normative loan capital should be linked to approved capital expenditure for the assets put to use. The Commission is of the opinion that interest expense towards capital expenditure needs to be capitalised as and when the asset is put to use and should not be charged to revenue expense. However, pursuant to such capitalisation, interest costs can be charged to revenue expense over the repayment tenure of such outstanding debt. Accordingly, the Commission has considered interest cost of normative debt corresponding to capitalised assets only. The Commission has considered interest cost at the interest rate of 10% p.a. for the assets put to use during FY 2004-05 and FY 2005-06 and at the interest rate of 8% p.a. for assets put to use during FY 2006-07. Accordingly, the weighted average rate of interest cost works out to 9.6%.

Further, as per Regulation 74.2, normative loan repayment schedule for each year shall be equal to amount of depreciation for fixed assets to which such loan relates. Accordingly, the Commission has considered loan repayment schedule of 20 years for the loans drawn during FY 2006-07, however, the loan repayment for loans drawn during FY 2004-05 continue to be 10 years as provided earlier. The details of interest cost are summarised in the following Table:

Table: Interest cost for TPC-D (Rs Crore)

Sl.	Particulars	FY 2006-07	
		Petition	Commission
1	Opening Bal. of Loan	53.67	18.80
2	Additions	66.01	9.66
3	Repayment	(7.42)	(2.79)
4	Closing Bal. of loan	112.26	25.67
5	**Interest cost**	**11.23**	**2.13**
6	**Overall Interest Rate (%)**	**13.5%**	**9.6%**

6.8 INTEREST ON WORKING CAPITAL

TPC, in its Petition, submitted that the Working Capital requirement has been computed in accordance with the Commission's Tariff Regulations, which stipulate the components of working capital of the distribution business. TPC further submitted that the normative interest rate of 10.25% as indicated by SBI has been considered for estimating interest on working capital. TPC projected interest on working capital of Rs 6.64 Crore for FY 2006-07. In addition, TPC projected financing charges of Rs. 0.02 crore.

The Commission has estimated the total working capital requirement in accordance with the provisions of Tariff Regulations. The total working capital estimated by the Commission for FY 2006-07 works out to Rs 34 Crore.

Further, the Tariff Regulations stipulates that Rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on the date on which the application for determination of tariff is made. As the short-term Prime Lending Rate of State Bank of India is 10.25%, the Commission has considered the interest rate of 10.25% for estimating the interest on working capital.

The interest on working capital and security deposit for FY 2006-07 as estimated by the Commission works out to Rs 3.52 Crore, including finance charges of Rs. 0.02 Crore.

6.9 INTEREST ON SECURITY DEPOSIT

TPC, in its Petition, submitted that the Interest on Security Deposit from retail/commercial customers is considered at interest rate of 6% at the prevalent Bank rate in accordance with the Commission's Tariff Regulations. TPC projected interest on security deposit of Rs 3 Crore for FY 2006-07.

The interest on consumer security deposits has been projected by the Commission as Rs. 2.75 crore, @ 5.5% on the projected consumer security deposit of Rs. 50 crore.

6.10 PROVISIONING FOR DOUBTFUL DEBTS

TPC in its ARR and and Tariff Petition for FY 2006-07 has considered a provision of Rs 2 Crore towards bad and doubtful debts at the same level as approved by the Commission for FY 2004-05. The Commission has allowed provisioning for bad and doubtful debts to the extent of Rs. 2 Crore for FY 2006-07.

6.11 INCOME TAX

TPC has projected income tax of Rs. 13.0 crore for its distribution business, by adding back the book depreciation to the RoE component, and deducting the tax depreciation.

As explained earlier in para 4.11, the income tax liability for FY 2006-07 for TPC's Mumbai license area works out to Rs. 107.5 crore. The apportioned income tax liability of the distribution business of TPC in FY 2006-07, has been estimated as Rs. 9.11 Crore.

6.12 CONTRIBUTION TO CONTINGENCY RESERVES

TPC has considered contribution to contingency reserves @ 0.5% of the closing GFA for FY 2006-07, amounting to Rs. 2.31 crore. The Commission has however, considered contribution to contingency reserves @ 0.5% of the opening GFA for FY 2006-07, in accordance with the Commission's Tariff Regulations, amounting to Rs. 1.44 crore.

6.13 NON-TARIFF INCOME

TPC has projected non-tariff income of Rs. 2.34 Cr in FY 2006-07, due to income from statutory investments, income from services rendered, miscellaneous receipts, delayed payment charges and others.

There is no clear trend in non-tariff income in the past years, and the average non-tariff income in the last three years is quite close to the actual income in FY 2005-06. Hence, the non-tariff income in FY 2006-07 has been projected at the same levels as in FY 2005-06, and the share of TPC's distribution business has been allocated proportionately. The apportioned non tariff income of the distribution business of TPC in FY 2006-07, has been estimated as Rs. 3.22 Crore.

6.14 RETURN ON EQUITY

TPC submitted that it has projected the Return on Equity (RoE) for FY 2006-07 for its distribution business in accordance with the Tariff Regulations notified by the Commission, which stipulates a 16% return on equity per annum on the regulatory equity at the beginning of the Financial Year for which the return is being computed. TPC has also considered RoE @ 8% of the normative equity pertaining to the Assets put to use in FY 2006-07. The total RoE estimated by TPC for FY 2006-07 is Rs 24.79 Crore.

TPC submitted that since TPC is an integrated Utility having other businesses as well, the equity of the licensed business has been worked out from the Balance Sheets, and the equity of the licensed business has been further allocated to the generation business, transmission business and distribution businesses, on the basis of the asset base. TPC submitted an Auditor's certificate for the computation of opening equity in FY 2004-05. Since all assets of TPC are financed from own equity, a normative equity of 30% of total equity employed for distribution assets added during the years FY 2004-05 and FY 2005-06 has been considered, based on the Tariff Regulations.

The Commission has computed the allowable RoE for FY 2006-07 on the opening equity base in FY 2006-07, based on the opening equity levels in FY 2004-05, and the normative equity component of the addition to capital assets considered for the distribution function for FY 2004-05, FY 2005-06 and FY 2006-07. The RoE projected by TPC and that considered by the Commission for FY 2006-07 is given in the following Table:

Return on Equity (Rs. Crore)

S.no.	Particulars	Ref.	FY 2006-07	
			Petition	Approved
1	Regulatory Equity at the beginning of the year		141.03	117.64
2	Capital Expenditure		92.56	13.81
3	Equity portion of capital expenditure		27.77	4.14
4	Regulatory Equity at the end of the year		168.80	121.78
	Return Computation			

S.no.	Particulars	Ref.	FY 2006-07	
			Petition	Approved
5	Return on Regulatory Equity at the beginning of the year	16%	22.56	18.82
6	Return on Equity portion of capital expenditure	16%*(3)/2	2.22	0.33
7	**Total Return on Regulatory Equity**		24.79	19.15

6.15 DISTRIBUTABLE SURPLUS

In Section 3, the revenue surplus/gap of TPC in FY 2004-05 and FY 2005-06, as computed by the Commission, after truing up for the actual revenue and expenditure subject to prudence check, has been detailed. TPC has certain reserves available, which can be passed through to consumers. The Commission has detailed its philosophy of appropriating the reserves available with TPC, in its previous Tariff Order for TPC for FY 2004-05, in order to reduce the tariff burden on consumers, who have contributed to creation of these reserves in the past. The total reserves thus available with TPC at the end of FY 2005-06, have been appropriated towards the revenue shortfall in FY 2006-07, after adding the surplus/gap as computed by the Commission in Section 3, as shown in the Table below:

Table: TPC's Distributable Surplus

Sl	Particulars	Amount (Rs. Cr)
1	Revenue surplus earned in FY 2004-05	143.02
2	Interest on surplus earned in FY 2004-05	15.02
3	Revenue surplus earned in FY 2005-06	(313.10)
4	Interest on surplus earned in FY 2005-06	(9.39)
5	Reserves available for distribution	226.00
5.1	*Contingency Reserve*	183.00
5.2	*Debt Redemption Reserve*	37.00
5.3	*Tariff & Dividend Control Reserve*	3.00
5.4	*Consumer Benefit Account*	3.00
6	**Total Distributable Surplus**	**61.55**

Though the Commission has appropriated the available reserves for the purposes of tariff determination for FY 2006-07, the Commission has also ensured that these reserves will be built up again for future use, by providing for contribution to contingency reserves in accordance with the stipulations of the Commission's Tariff Regulations, which has been discussed in earlier paragraphs of this Order.

6.16 AGGREGATE REVENUE REQUIREMENT (ARR)

The ARR of the distribution business of TPC is the summation of all the expenses and RoE. TPC has projected the ARR for FY 2006-07 at Rs. 1021 crore. The Commission has determined the ARR for FY 2006-07, based on the expenses allowed under various heads and RoE allowed, as discussed above. The ARR projected by TPC and that allowed by the Commission for FY 2006-07 is given in the following Table:

Aggregate Revenue Requirement (TPC-D) (Rs. Crore)

S.no.	Particulars	Ensuing Year FY 2006-07	
		Petition	Approved
1	Power Purchase Expenses	921.49	958.99
1.1	Power Purchase [from TPC-G]	912.20	666.83
1.2	Power Purchase from Jindal, etc.		134.36
1.3	Power purchase - RPS Obligations	9.30	25.35
1.4	Share of Standby Charges		71.90
1.5	Transmission charges payable		60.55
2	Operation & Maintenance Expenses	24.10	22.04
2.1	Employee Expenses	10.65	9.97
2.2	Administration & General Expenses	10.34	9.17
2.3	Repair & Maintenance Expenses	3.11	2.90
3	Depreciation	14.82	11.74
4	Interest on Long-term Loan Capital	11.23	2.13
5	Interest on Working Capital and on consumer security deposits	9.64	6.27
6	Bad Debts Written off	2.00	2.00
7	Income Tax	12.54	9.11
8	Contribution to contingency reserves	2.31	1.44
9	**Total Revenue Expenditure**	**998.14**	**1013.72**
10	Return on Equity Capital / Reasonable Return on Capital Base	24.79	19.15
11	**Aggregate Revenue Requirement**	**1022.92**	**1032.87**
12	Less: Distributable surplus from previous years		61.55
13	Less: Non Tariff Income	2.34	3.22
14	**Aggregate Revenue Requirement from Retail Tariff**	**1,020.58**	**968.10**

6.17 SHARING OF GAINS AND LOSSES

The gains and losses on account of controllable and uncontrollable factors will be shared at the time of truing up of ARR based on actuals between the Utility and the consumers in accordance with Regulation 19 of the MERC (Terms and Conditions of Tariff) Regulations, 2005, which stipulates

> *"19.1 The approved aggregate gain to the Generating Company or Licensee on account of controllable factors shall be dealt with in the following manner:*
>
> *(a) One-third of the amount of such gain shall be passed on as a rebate in tariffs over such period as may be specified in the Order of the Commission under Regulation 17.10;*
>
> *(b) In case of a Licensee, one-third of the amount of such gain shall be retained in a special reserve for the purpose of absorbing the impact of any future losses on account of controllable factors under clause (b) of Regulation 19.2; and*
>
> *(c) The balance amount of gain may be utilized at the discretion of the Generating Company or Licensee.*
>
> *19.2 The approved aggregate loss to the Generating Company or Licensee on account of controllable factors shall be dealt with in the following manner:*
>
> *(a) One-third of the amount of such loss may be passed on as an additional charge in tariffs over such period as may be specified in the Order of the Commission under Regulation 17.10; and*
>
> *(b) The balance amount of loss shall be absorbed by the Generating Company or Licensee."*

7 TARIFF PHILOSOPHY APPLICABLE FOR TPC'S DISTRIBUTION BUSINESS FOR FY 2006-07

7.1 APPLICABILITY OF REVISED TARIFFS

The revised tariffs will be applicable prospectively from October 1, 2006 till March 31, 2007, in accordance with the principle that tariffs can be revised only prospectively. In cases, where there is a billing cycle difference of a consumer with respect to the date of applicability of the revised tariffs, then the revised tariff should be made applicable on a pro-rata basis for the consumption. The bills for the respective periods as per existing tariff and revised tariffs shall be calculated based on the pro-rata consumption (units consumption during respective period arrived at on the basis of average unit consumption per day multiplied by number of days in the respective period falling under the billing cycle).

The Commission has determined the tariffs and revenue from revised tariffs as if the revised tariffs are applicable for the entire year, in line with the philosophy adopted by the Commission in the past in case of TPC, REL and MSEDCL. In the previous Order for TPC for FY 2004-05, the tariffs were reduced prospectively, and the over-recovery of revenue due to higher effective tariffs being applicable for two months of FY 2004-05, have been adjusted under the truing up mechanism in this Order. Similarly, in case there is any shortfall in actual revenue due to the applicability of the revised tariffs for only six months of FY 2006-07, the same will be adjusted in the truing up process, while truing up for the actual expenses, subject to prudence check.

The Commission shall introduce Multi Year Tariff (hereinafter referred to as MYT) regime with effect from April 1, 2007 as mentioned in the Commission's Order dated December 20, 2005. In this regard, the Commission directs TPC to file the ARR and Tariff petition for MYT before November 30, 2006.

7.2 TARIFF PHILOSOPHY

The Commission has determined the tariffs in line with the tariff philosophy adopted by it in the past, and the provisions of law. The tariffs have been determined so that the cross-subsidy is reduced without subjecting any consumer category to a tariff shock, and also to consolidate the movement towards uniform tariffs throughout Mumbai.

The Commission has determined the tariffs applicable to TPC's consumers, keeping in mind the existing tariff structure of TPC, BEST, and the recently revised tariffs of MSEDCL and

REL, with the intention of reducing the imbalances between the tariffs applicable for the same consumer category across Licensees in the State.

The existing FAC has been equated to zero, on account of the adoption of the existing fuel costs for projection of the fuel expenses. In case of any variation in the fuel prices, TPC will be able to pass on the corresponding increase to the consumers through the existing FAC mechanism, subject to the stipulated ceiling of 10% of average energy charges. The FAC will be charged on a monthly basis.

The Commission has retained the existing categories and sub-categories/slabs, except for one or two instances. The consumer categories introduced by the Commission are detailed below:

1. In the Residential category, a new sub-category has been introduced, viz., Below the Poverty Line (BPL) category for consumers consuming less than 30 units per month, in line with the National Electricity Policy, and the two-part tariffs for this sub-category have been kept at the same levels as introduced for BEST. The Commission has been unable to determine the revenue impact of introduction of BPL category, due to the lack of adequate data. The Commission directs TPC to gather data regarding the consumption of such consumers and identify consumers who consume lower than 30 units per month, who are the real life-line category of consumers, so that the Commission can target the real life-line consumers by specifying lower tariffs (i.e. BPL category tariffs). In case the consumption of BPL category consumers exceeds 30 units in any month, then such consumers will thereafter be automatically considered under 'residential' category LF-1, and will be charged accordingly.

2. The number of slabs for Residential category consumers other than BPL category has been retained at three, viz., 0 to 100 units, 101 to 300 units, and consumption above 300 units.

3. The Commission has introduced a new category, viz., Advertisements & Hoardings. This category will include any supply to advertisements and hoardings.

4. Any HT Industrial and Commercial category consumer, as well as HT-Public consumers, undertaking sub-distribution to mixed loads shall continue to be under this category for a period of six months from the date of this Order keeping in view the metering constraints and identification of consumers. In future, the consumers belonging to this Category requiring a single point supply will have to either operate through a franchise route or take individual connections under relevant category

5. The impact of introduction of new categories and PF incentive, etc., has not been assessed, and TPC's revenues may be lower than estimated on this account. Hence, the

Commission has provided for additional revenue of around Rs. 4.6 crore, to take into account this uncertainty, and any shortfall/surplus due to these measures will be addressed at the time of truing up.

Standby charges applicable to CPPs have been retained at the existing levels, viz., the base demand charges and the energy charges have been kept same as that for other HT consumers, and additional demand charges Rs. 20 per kVA/month would be chargeable for the standby component only.

The Commission has decided that in case of any inter-utility power exchange within the State other than 'contracted' power procurement, the rate applicable shall be the marginal cost of the supplying utility and the same shall be applicable on the net supply between utilities for every thirty-minute time block.

The Billing Demand definition has been retained at the present levels, i.e.,

Monthly Billing Demand will be the higher of the following:

a. Actual Maximum Demand recorded in the month during 0600 hours to 2200 hours;
b. 75% of the highest billing demand/Contract Demand, whichever is lower, recorded during the preceding eleven months;
c. 50% of the Contract Demand.

In this Order, the Commission has introduced ToD for the HT industrial and commercial consumers, and LT industrial consumers, with the view to disincentivise consumption during evening system peak hours, viz., 18:00 to 22:00 hours.

The existing cross-subsidy and the reduction in cross-subsidy considered by the Commission is given in the Table below:

Consumer Category	Avg Cost of Supply (Rs/unit)	Average Billing Rate (Rs./unit)		Ratio of Average Billing Rate to Average Cost of Supply (%)			Percentage point increase/ decrease in Tariff w.r.t Avg. CoS
		Existing Tariff	Revised Tariff	Tariff Order - FY05	Existing Tariff	Revised Tariff	
Railways 22 kV	3.97	3.66	4.15	121%	92%	104%	12%
HT (textile)		3.88	3.83	136%	98%	96%	-1%
HT (nontextile)		4.01	4.32		101%	109%	8%
LT 2		4.28	4.37	162%	108%	110%	2%
LT 1		4.25	4.15	141%	107%	104%	-3%
Residential		3.22	3.49	105%	81%	88%	7%

The State of Maharashtra is passing through a phase of acute power shortage, and even Mumbai city, which so far has been spared of load shedding, is likely to face power shortages in the coming summer months. In the absence of additional capacity in the region and prevailing constraints of transmission corridor availability, there is an urgent need for energy conservation and load management by all power intensive consumers, in the short-term as well as long-term. In order to achieve this, the Commission has adopted the principle of economic signals for high consumption consumers, in order to inculcate the habit of energy conservation.

(i) All the residential and commercial consumers consuming more than 300 units per month henceforth, and all industrial consumers (irrespective of their level of consumption) in the TPC License area will have to reduce their monthly consumption to a level of 80% of their consumption in the corresponding month in the past year (January 2005 to December 2005). A "Load Management Charge" shall be applicable for the consumption exceeding the 80% limit at the rate of additional 100% of the highest tariff chargeable to the respective category, and will be charged in the energy bill of the consumer in that month.

(ii) The money collected through the levy of this "Load Management Charge" has to be maintained in a separate fund to be used for energy conservation and Demand Side Management (DSM) measures.

(iii) Any reduction in the monthly consumption below the 80% limit prescribed on a consumption in the corresponding month in the past year (January 2005 to December 2005) will be incentivised with a "Load Management Rebate" at the rate of 50% of the normal chargeable rate to the kWh units in the tariff slab applicable to the reduction in the number of units, vis-à-vis the benchmark consumption of 80% of the consumption in the corresponding month of the previous years, by adjusting the bill accordingly. This would be funded by the fund mentioned in paragraph 'ii' above, calculated in the energy bill of the consumer for that month.

(iv) In case of residential and commercial consumers having consumption greater than 300 units per month henceforth, and all LT/ HT industrial and HT commercial consumers who have already reduced their consumption in the corresponding months in the last year due to the load regulation measures introduced by the Commission in its Order in Case No. 4 of 2005, the load management target will be at the same level as that of the corresponding month last year, and further reduction to 80% of the consumption in the previous year is not mandatory in such cases.

(v) This monthly consumption reduction target will not be applicable for new consumers and in case of change in occupancy during the last one year for the existing consumers.

(vi) As regards the essential services, it is desirable that they should also try to reduce their monthly consumption, however, in case of failure to reduce the consumption to a level of 80% of their consumption in the corresponding month in the past year (January 2005 to December 2005), "Load Management Charge" as well as "Load Management Rebate" will not be applicable for the operational installations of following essential services:

a. Railways
b. Water Supply and Sewerage systems operated by Government/local authorities
c. Telephone exchanges
d. Defence Establishments
e. Ports and Harbours
f. Meteorological observatories
g. Hospitals
h. News Agencies
i. TV and Radio Stations
j. Posts & Telegraphs
k. Airports
l. Atomic energy establishments

(vii) In case of the above essential services, the restriction of reducing the monthly consumption to 80% of their consumption in the corresponding month of the past year will however, be applicable for the attached residential colonies and the "Load Management Charge/Rebate" shall be applicable as mentioned in paragraphs '(i)' to '(v)' above

7.3 REVISED TARIFFS WITH EFFECT FROM OCTOBER 1, 2006

The summary of the revised tariffs w.e.f. October 1, 2006 is given below:

Annexure -1: Summary of HT and LT Tariff effective from October 1, 2006 in TPC- D license area

Sl.	Consumer category & Consumption Slab	Tariffs	
		Fixed/Demand Charge (Rs/kVA/month)	Energy Charge (p/kWh)
	Low Tension Categories		
1	**Residential (LF-1)**		
	Below Poverty Line (BPL)	Rs. 3 per month	40
	Other Residential		
	0-100 units	Rs. 30 per month	160
	101-300 units	Rs. 50 per month[$$]	360
	Above 300 units (balance units)		575

Sl.	Consumer category & Consumption Slab	Tariffs	
		Fixed/Demand Charge (Rs/kVA/month)	Energy Charge (p/kWh)
2	**LT-1** (LT Industrial & Commercial below 15 HP load)	Rs. 150 per month	460
3	**LT-2** (LT Industrial & Commercial above 15 HP load)	374	350
	TOD Tariffs (in addition to above base tariffs)		
	1800 hours to 2200 hours		*60*
	Remaining hours of the day		*0*
4	Advertisement & Hoardings	Rs. 200 per month	1100
	High Tension Categories		
5	**HT Public**	374	290
6	**HT Industrial & Commercial**	374	315
	TOD Tariffs (in addition to above base tariffs)		
	1800 hours to 2200 hours		*60*
	Remaining hours of the day		*0*
7	**Railways**		
	33/22/11/6.6 kV	340	315
	100 kV		309

Notes:

1. Fuel Adjustment Cost (FAC) will be applicable to all consumers and will be charged over the above tariffs, on the basis of the FAC formula prescribed by the Commission, and computed on a monthly basis.
2. $$: Fixed charge of Rs. 100 per month will be levied on residential consumers availing 3 phase supply. Additional Fixed Charge of Rs. 100 per 10 kW load or part thereof above 10 kW load shall be payable.
3. $$$: In case of LF-2 (commercial) consumers and Temporary connections, additional Fixed Charge of Rs. 150 per 10 kW load or part thereof above 10 kW load shall be payable.

7.4 WHEELING CHARGES

The Commission has determined the wheeling charges for each voltage network based on the voltage-wise asset base and capacity levels at each voltage. The ARR has been segregated between wheeling business and retail supply business based on the submissions made by TPC. Consumers connected directly to the transmission network would not be required to pay the wheeling charges.

Table: Share of Wires Business in total TPC-D ARR

Sl.	Particulars	Ensuing Year (FY 2006-07)			Ensuing Year (FY 2006-07)		
		Approved ARR (Rs Cr)	Network cost (%)	Supply Cost (%)	Network Cost (Rs Cr)	Supply Cost (Rs Cr)	Total ARR (Rs Cr)
1	**Power Purchase Expenses**	**958.99**	**0%**	**100%**	**60.55**	**898.44**	**958.99**
1.1	Power Purchase [from TPC-G]	666.83	0%	100%	0.00	666.83	666.83
1.2	Power Purchase from REL-G	134.36	0%	100%	0.00	134.36	134.36
1.3	Power purchase - RPS Obligations	25.35	0%	100%	0.00	25.35	25.35
1.4	Share of Standby Charges	71.90	0%	100%	0.00	71.90	71.90
1.5	Transmission charges payable	60.55	100%	0%	60.55	0.00	60.55
2	**Operation & Maintenance Expenses**	**22.04**	**81.8%**	**18%**	**18.03**	**4.01**	**22.04**
2.1	Employee Expenses	9.97	80%	20%	7.97	1.99	9.97
2.2	Administration & General Expenses	9.17	78%	22%	7.15	2.02	9.17
2.3	Repair & Maintenance Expenses	2.90	100%	0%	2.90	0.00	2.90
3	Depreciation	11.74	96.50%	3.50%	11.32	0.41	11.74
4	Interest on Long-term Loan Capital	2.13	96.50%	3.50%	2.05	0.07	2.13
5	Interest on Working Capital and on consumer security deposits	6.29	0%	100%	0.00	6.29	6.29
6	Provisioning for Bad Debts	2.00	0%	100%	0.00	2.00	2.00
7	Income Tax	9.11	9%	91%	0.84	8.28	9.11
8	Contribution to contingency reserves	1.44	96.5%	3.5%	1.39	0.05	1.44
9	**Total Revenue Expenditure**	**1013.74**	**9%**	**91%**	**94.18**	**919.56**	**1013.74**
10	Return on Equity Capital / Reasonable Return on Capital Base	19.15	96.5%	3.5%	18.48	0.67	19.15
12	**Aggregate Revenue Requirement**	**1032.89**	**11%**	89%	**112.66**	**920.23**	**1032.89**
13	Less: Distributable surplus from previous years	56.85	0%	100%	0.00	56.85	56.85
14	Less: Non Tariff Income	3.22	0%	100%	-	3.22	3.22
15	**Aggregate Revenue Requirement from Retail Tariff**	**972.82**	**12%**	**88%**	**112.66**	**860.15**	**972.82**

The Commission has considered the allocation of expenses where submitted by TPC and applied certain assumptions to determine the allocation of expenses between wires and supply business, in the absence of allocation ratios. The Commission directs TPC to maintain the accounts for expenses incurred on wires business and supply business separately, and submit the same along with the MYT Petition for FY 2007-08 onwards.

The total ARR of the Wires business as computed above has been apportioned to HT and LT in the ratio of HT and LT sales, and the HT cost has further been apportioned to LT category, since the HT system is also being used for supply to the LT consumers. Based on available data, the Commission has considered that around 15% of the demand arises due to sale to HT consumers. Thus, the wheeling charge applicable to consumers connected on the HT network works out to Rs. 150 per kW per month.

7.5 CROSS-SUBSIDY SURCHARGE

The Commission in its Order (Case No.9 of 2006) dated September 5th 2006 has defined the methodology to be followed for determination of cross-subsidy surcharge, as follows:

"$S = T - [C (1+ L / 100) + D]$,

Where,

- *S is the surcharge*
- *T is the Tariff payable by the relevant category of consumers;*
- *C is the Weighted average cost of power purchase of top 5% at the margin excluding renewable power and purchase under UI*
- *D is the Wheeling charge*
- *L is the system loss for the applicable voltage level, expressed as a percentage*

L should be inclusive of transmission loss. For intra-State transactions, transmission loss prescribed by the Commission for the STU should be considered, while for inter-State transactions, additional loss compensation as provided by CERC in its Open Access Regulations should be considered"

The same methodology has been adopted by the Commission for determination of cross-subsidy surcharge. As per this methodology the Cross-Subsidy surcharge works out to zero, primarily because the weighted average cost of power purchase of top 5% at the margin works out to Rs. 6.11 per kWh, after adding the effective intra-State transmission tariff and the transmission loss, as compared to the average tariff of around Rs. 4 per kWh for TPC's HT categories.

7.6 INCENTIVES AND DISINCENTIVES

<u>Incentives</u>

Power Factor Incentive

Whenever the average power factor is more than 0.95, an incentive shall be given at the rate of 1% (one percent) of the amount of the monthly energy bill (excluding FAC charge, demand charge, electricity duty, TOSE, Load Management Charge and other taxes) for every 1% (one percent) improvement in the power factor above 0.95. For PF of 0.99, the effective incentive will amount to 5% (five percent) reduction in the energy bill and for unity PF, the effective incentive will amount to 7% (seven percent) reduction in the energy bill.

Prompt Payment discount

A prompt payment rebate of 1% will be allowed on the energy bill (excluding fixed/demand charges, FAC, TOSE, Load Management Charge and other taxes) for the HT and LT industrial and commercial categories, if the bill is paid within seven days from the date of the bill or within 5 days of the receipt of the bill, whichever is later.

Disincentives

Power factor Penalty

Whenever the average power factor is less than 0.92, penal charges shall be levied at the rate of 2% (two percent) of the amount of the demand charges for the first 1% (one percentage point) fall in the power factor below 0.92, beyond which the penal charges shall be levied at the rate of 1% (one percent) for each percentage point fall in the power factor below 0.91.

7.7 REVENUE WITH REVISED TARIFFS

In FY 2006-07, TPC will earn revenue for 6 months with existing tariff, while the revised tariffs will be applicable for 6 months, from October 1, 2006. The total revenue from sale of electricity based on revised tariffs if they were applicable for the entire year has been projected as Rs. 991 crore.

The detailed revenue computation with revised tariff has been given in **Appendix 3**. The impact of the tariff revision on the monthly electricity bills of the different consumer categories is presented in **Appendix 4**.

The Commission acknowledges the efforts taken by the Consumer Representatives and the various individuals, corporates and associations for their valuable contribution to the tariff process.

The Commission would also like to put on record, the efforts of its advisors, ABPS Infrastructure Advisory.

Sd/-	Sd/-	Sd/-
(S. B. Kulkarni)	(A. Velayutham)	(Dr. Pramod Deo)
Member	Member	Chairman, MERC

Sd/-
Secretary, MERC

APPENDIX 1 A

List of Individuals Who Attended The Technical Validation Session On 05.04.2006 In The Matter of ARR And Tariff Proposal For FY 05-06 & FY 06-07 of TPC

Sl.	NAME
TPC Officials	
1	Shri T.N.Ramakrishnan
2	Shri J.D.Kulkarani
3	Shri V.H.Wagle
4	Shri A.V.Katdare
5	Shri P.K.Anvekar
6	Shri M.K.Gupta
REL Officials	
7	Shri S.K.Shah
8	Shri M.Moolawaney
9	Shri D.R.Sukhtankar
10	Shri R.R.Mehta
11	Shri P.A.Shinde
12	Shri Siddarth Honn
13	Shri Kapil Sharma
14	Shri Zakir Khan
15	Shri P.Goyal
16	Shri Sharad Nath
Consumer Representatives	
17	Shri Ashok Pendse
18	Shri Shantanu Dixit
19	Shri Nikit Abhyankar
Consultants to Commission	
20	Shri Palaniappan M
21	Shri Suresh Gehani
22	Shri Ajit Pandit
23	Shri S R Karkhanis
24	Shri R S Deshpande
25	Shri D M Ranganekar
26	Shri Bapat
27	Shri D Thakur
28	Shri Kumar

APPENDIX 1 B

List of Individuals Who Attended The Technical Validation Session On 05.04.2006 In The Matter of ARR And Tariff Proposal For FY 05-06 & FY 06-07 of TPC

Sr. No	Name of the person
	TPC Officials
1	Shri A.V.Katdane
2	Shri M.K.Gupta
3	Shri J.D.Kulkarani
4	Shri R.Ramakrishna
5	Shri T.N.Ramakrishnan
6	Shri V.H.Wagle
	REL Officials
7	Shri Kapil Sharma
8	Shri Moolwaney
9	Shri Siddarath
10	Shri Praveen Goyal
11	Shri R.R.Mehta
12	Shri Nath
	Consumer Representatives
13	Dr. Ashok Pendse
14	Shri S.Dixit
15	Shri Nikit
	Consultants to Commission
16	Shri Palaniappan M
17	Shri Suresh Gehani
18	Shri Ajit Pandit
19	Shri S R Karkhanis
20	Shri R S Deshpande
21	Shri D M Ranganekar
22	Shri Bapat
23	Shri D Thakur
24	Shri Kumar
	Others
17	Shri Anand Dhavale

APPENDIX 2 : LIST OF PERSONS /OFFICIALS WHO ATTENDED THE PUBLIC HEARING HELD ON 12TH JUNE 2006

Sr. No	Name of the Person	Organization
	Objectors	
1	Shri Nikhit Abhyankar	Prayas
2	Shri Shantanu Dixit	Prayas
3	Captain N.B. Jamnerkar	Individual
4	Shri V.Y.Tamhane	Millowners Association
5	Shri Pendse	Mumbai Grahak Panchayat
6	Shri Mahesh Barbhaya	Lata Enterprises
7	Shri N.Ponarathnam	Vel Hardenings
8	Shri Abrol	Bombay Small Scale Industries Association
	TPC Officials	
9	Shri V.H.Wagle	TPC
10	Shri A.T.Katdare	TPC
11	Shri Snehal Parvati	TPC
12	Shri M.K.Gupta	TPC
13	Shri J.D.Kulkarani	TPC
14	Shri T.P.Mohan	TPC
15	Shri S.Ramakrishnan	TPC
16	Shri Prashant k.Anvekar	TPC
17	Shri M.S.Bapat	TPC
18	Shri P.L.Ganwir	TPC
19	Shri C.A.Colaco	TPC
20	Shri Navraj Singh	TPC
	REL Officials	
21	Shri Kaplil Sharma	REL
22	Shri R.R.Mehta	REL
23	Shri D.R. Sukhtankar	REL
24	Shri P.S.Pandya	REL
25	Shri Siddhartha	REL
26	Shri S.G.Nath	REL
27	Shri Surendra Khot	REL
	BEST Officials :-	
28	Shri A.V.Tendulkar	BEST
29	Shri Ch.Shinde	BEST
30	Shri A.G.Patil	BEST
31	Shri S.B.Dhole	BEST
32	Shri S.N.Pawar	BEST
	Consultants to Commission	
33	Shri Suresh Gehani	ABPS
34	Shri D.P.Thakur	WISE
35	Shri M.N.Bapat	SICOM
36	Shri Karkhanis	ABPS
37	Shri Rangnekar	ABPS
	Others	
38	Shri Binay P.Singh	JM Morgan Stanley

39	Shri Anirudh Gangahar	JM Morgan Stanley
40	Shri Anand Dhawale	Feedback Ventures
41	Shri Kamalesh Ratadia	ENAM
42	Shri Harash Dole	ENAM
43	Shri G.J.Kolhe	MSETCL
44	Shri Shweta Prasad	Rifo info Securities
45	Shri P.K.Sinha	Individual
46	Shri Jutlal	Individual
47	Shri John Gomes	Individual
48	Shri Roop Jhunjhunwalla	Individual
49	Shri Arvind Adavatkar	Individual
50	Shri Priyanka Kahodare	NDTV
51	Shri Sanjay Rokade	NDTV
52	Shri George Koshy	CNN-IBN

Appendix 3: FY 2006-07 (Revenue with revised tariff for the period October 2006 to March 2007)

	No of consumers	Components of tariff			Relevant annual sales & load/demand data for revenue		Revenue				Average Billing Rate
		Demand Charges (Rs./kVA - Fixed Charges)	Energy Charges (Paise/kWH)	Fuel surcharge per unit (paise/kWh)	Load (MVA)	Energy (MU)	Demand Charges (Rs. Crore)	Energy Charges (Rs. Crore)	Revenue from fuel surcharge	Total (Rs. Crore)	
Railways						**780**	**34.04**	**122.10**	**-**	**156.13**	4.00
- 22/33 kV	2	340.00	315.00	-	1,400	522	23.80	82.25	-	106.06	4.06
- 100kV	1	340.00	309.00	-	602	258	10.23	39.84	-	50.08	3.88
HT customers						**1,062**	**53.06**	**163.78**	**-**	**216.84**	4.08
- Industries	31	374.00	315.00	-	964	404	18.03	63.63	-	81.66	4.04
- Commercial	34	374.00	315.00	-	391	166	7.31	26.15	-	33.46	4.03
- Public	12	374.00	290.00		623	264	11.65	38.25		49.90	3.78
- CPP	2	374.00	290.00	-	397	20	7.43	2.84	-	10.27	10.49
- Textiles	36	374.00	315.00	-	462	209	8.64	32.92	-	41.56	3.98
LT-2						**300**	**16.04**	**52.55**	**-**	**68.60**	4.57
- Industries	61	374.00	350.00	-	153	43	2.86	7.51	-	10.37	4.83
- Commercial	179	374.00	350.00	-	705	257	13.18	45.05	-	58.23	4.52
LT-1						**151**	**0.36**	**34.73**	**-**	**35.09**	4.65
- Industries	1376	150.00	460.00	-	16,512	56	0.12	12.88	-	13.00	4.64
- Commercial	2646	150.00	460.00	-	31,752	95	0.24	21.85	-	22.09	4.65
Residential						**71**	**0.50**	**13.85**	**-**	**14.35**	4.04
- S1 (0-100 units)	4245	30.00	160.00	-	50,940	20	0.08	1.62	-	1.70	
- S2 (100-300 units)	3951	50.00	360.00	-	47,412	22	0.12	3.99	-	4.11	
- S3 (above 300 units)	10168	50.00	575.00	-	122,016	29	0.31	8.23	-	8.54	
Three Phase Consumers		100.00					-				
Total	**22756**					**2,365**	**104.00**	**387.01**	**-**	**491.01**	**4.15**

Appendix 4: Impact on Monthly Bills due to revised tariffs for TPC

Sl.	Consumer Category	Monthly Consumption (units)	Billing Demand (kVA)	Monthly Bill (Rs) Existing Tariff	Revised Tarif	Increase/ (Reduction)	
1	**Residential - BPL category**	25		61	13	(48)	-79%
2	**Residential Category**	75	0	134	150	16	12%
		125	0	266	300	34	13%
		400	0	1,248	1,505	257	21%
3	**LT-I**	4000	0	16,978	18,150	1,172	7%
4	**LT-II**	10000	40	47,030	48,960	1,930	4%
5	**HT - Public**	40000	500	299,280	303,000	3,720	1%
6	**Railways**	100000	500	450,700	485,000	34,300	8%
7	**HT Industries**						
	>1000 kW	250000	2000	1,512,250	1,535,500	23,250	2%