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**Before the**  
**MAHARASHTRA ELECTRICITY REGULATORY COMMISSION**  
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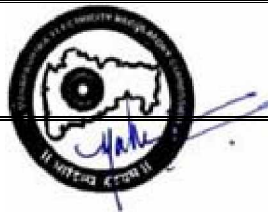
Case No. 48 of 2005

**In the matter of**  
**Approval of Maharashtra State Power Generation Company Limited (MSPGCL)'s Annual**  
**Revenue Requirements for FY 2005-06 & FY 2006-07,**  
**and**  
**Determination of Tariff for FY2006-07**

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

**Date of Order: September 7, 2006.**

Upon directions from the Maharashtra Electricity Regulatory Commission (Commission), Maharashtra State Power Generation Company Limited (MSPGCL) filed its tariff petition on 10<sup>th</sup> Feb, 2006, which came up for public hearing before several consumers, the representatives of various consumer organizations, and other stakeholders on 13<sup>th</sup> June, 2006 and having stood over for consideration till this day, the Commission passes the following **ORDER**.

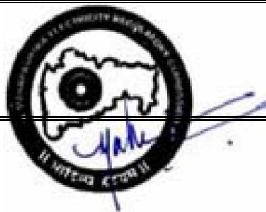


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## ORDER

1. The Maharashtra Electricity Regulatory Commission (hereinafter called “the Commission”) having heard the applicant, interveners, consumers, consumer representatives of various consumer groups on 13th June, 2006 at Mumbai, having had formal interactions with the officers of the Maharashtra State Power Generating Company Ltd. (MSPGCL) and having considered the information and documents available on record and Transfer Scheme Order issued by Government of Maharashtra on 5 June, 2005, hereby accepts the application with modifications, conditions and directions as herein attached.
2. The Commission has made some modification to the estimates of the Annual Revenue Requirement proposals for FY 2005-06 and FY 2006-07 and has used efficient and reasonable estimates for technical parameters and costs to arrive at tariff as stated in the detailed Order.
3. The Commission, in exercise of the powers vested in it under Section 64 of the Electricity Act, 2003, directs that the station-wise generation tariff determined by this present Order on the basis of approved ARR for FY 2006-07 shall be deemed to be effective prospectively from the month of September 2006 for all billing purposes and will continue to be effective till March 31, 2007.
4. The Commission, in exercise of the powers vested in it under Section 61 of the Electricity Act, 2003, issues directives to MSPGCL in this Order, in the matters of power purchase agreements, efficiency improvement, tariff filing and maintenance of accounts as per MERC (Terms and Conditions of Tariff) Regulations, August 2005.

Ordered as above and read with attached detailed reasons and grounds



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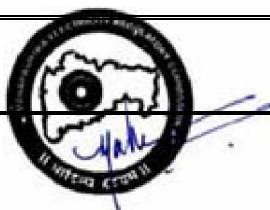
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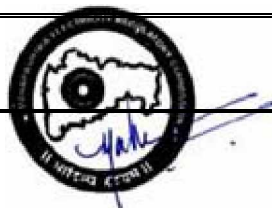
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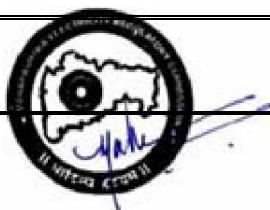
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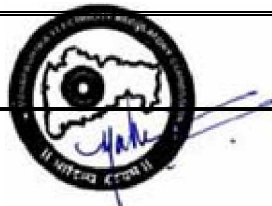
## LIST OF ABBREVIATIONS USED IN THIS ORDER

A&G Expenses	Administrative and General Expenses
ARR	Annual Revenue Requirement
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
Commission / MERC	Maharashtra Electricity Regulatory Commission
ERDA	Electrical Research and Development Agency
FAC /FOCA	Fuel adjustment cost/Fuel & other cost adjustment
GFA	Gross Fixed Assets
GoM	Government of Maharashtra
GR	Government Resolution
HO	Head office
JD	Janata Dal
KEA	Kolhapur Engineering Association
kWh	kilo Watt hour
Previous Tariff Order	MSEB Tariff Order for FY 2003-04, dated 10 March, 2004
MCL	Mahanadi Coalfields Limited
MERC Tariff Regulations	MERC (Terms and Conditions of Tariff) Regulations, 2005
MoP	Ministry of Power
MSEB	Maharashtra State Electricity Board
MSEDCL	Maharashtra State Electricity Distribution Co. Ltd.
MSPGCL	Maharashtra State Power Generation Co. Ltd
MU	Million Units / Million kWh



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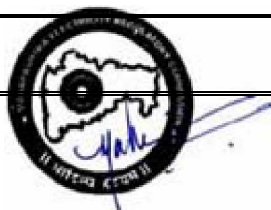
MW	Mega Watt
ONGC	Oil and Natural Gas Corporation
PLF	Plant Load Factor
R&M	Repair and Maintenance
RLC	Regulatory Liability Charges
RoE	Return on Equity
SBI PLR	State Bank of India Prime Lending Rate
SECL	South Eastern Coalfields Limited
SHR	Station Heat Rate
TERI	Tata Energy Research Institute
TPC	The Tata Power Company
TPS	Thermal power station
WCL	Western Coalfields Limited



## SALIENT FEATURES OF THE TARIFF ORDER

The salient features of this Tariff Order are as follows:

1. This Tariff Order approves the two part station-wise generation tariffs for FY 2006-07 based on the approved ARR for the year.
2. For FY 2006-07, the station-wise tariffs have been determined on the basis of trial balances of the generating stations, and wherever the trial balance details are not available viz., debt and equity, the fixed costs have been allocated based on the Net Fixed Assets of the Generating Stations.
3. For hydro generating stations, a differential energy tariff for peak and non-peak hours has been specified. The peaking tariff during peak hours is equal to Rs 2.00 / kWh, fixed at 20% higher than the tariff for non-peak hours. The tariff for non-peak hours is based on the highest variable cost of the thermal generating stations of MSPGCL and is fixed at Rs 1.65 /kWh.
4. In accordance with the Commission's Order dated April 13, 2006, the determination of ARR for FY 2005-06 is based on the principles of the previous Tariff Order, which in MSPGCL's case is MSEB Tariff Order for FY 2003-04 dated March 10, 2004 (*hereinafter referred to as "the previous Tariff Order"*). The variable costs for FY 2005-06 have been matched to the recoveries already made under FAC.
5. The determination of ARR for FY 2006-07 is based on the norms in MERC (Terms and Conditions of Tariff) Regulations, August 2005 (*hereinafter referred to as "MERC Tariff Regulations"*), with the following exceptions.
  - a) For approving O&M Expenses and depreciation, the norms for new stations as per MERC Tariff Regulations have been considered for existing stations also.
  - b) For approving SHR norms and auxiliary consumption norms for existing stations, where the units are more than 25 years old and are of non-standard sizes, the CEA norms and principles of the previous Tariff Order have been considered.



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6. The Commission shall consider truing up of following expenses, subject to prudence check, MERC Tariff Regulations and compliance of Commission's directives
    - a) One-time R&M expenses over and above the approved amount to compensate inadequate spending in the past.
    - b) Income Tax
    - c) Interest expenses gap/surplus arising as a result of notification of the final Transfer Scheme
    - d) Non-Tariff Income
  7. The Commission has provisionally approved tariffs for the New Paras and New Parli units based on the estimated costs submitted by MSPGCL. The tariffs for these units will be finalised after the commencement of commercial operation through appropriate regulatory process
  8. The aggregate gain or loss to MSPGCL in FY 2006-07 based on its audited accounts, on account of controllable or uncontrollable factors, shall be approved and shared as per the MERC Tariff Regulations.
  9. For FY 2005-06, an amount of Rs. 6,556 Crore has been approved as the Annual Revenue Requirement (ARR) against Rs. 7, 465 Crore, indicated in MSPGCL's Tariff petition.
  10. For FY 2006-07, an amount of Rs. 7,163 Crore has been approved as the ARR against MSPGCL's estimation of Rs. 8,476 Crore as per their tariff petition.

The details of the ARR components as approved by the Commission and the determined tariffs have been summarized in the tables given below.



### A. Summary of Fixed & Variable Costs for FY 2005-06

Parameter	ARR petition FY 2005-06	Approved Values for FY 2005-06	Previous Tariff Order FY 2003-04
Net Generation (MU)	46,459	46,532	46,470
Fixed Cost (Rs. Crore)	2,476	1,676	N.A
Variable Cost (Rs. Crore)	4,989	4,880	4,111
Total ARR (Rs. Crore)	7,465	6,556	N.A
Fixed Cost (Rs./kWh)	0.53	0.36	N.A
Variable Cost (Rs./kWh)	1.08	1.05	0.89
Total Cost (Rs./kWh)	1.61	1.41	N.A

In Rs. Crore	FY 2005-06 Petition	FY 2005-06 Approved	Basis for Petition	Basis for Approval
Fuel Expenses	4989	4880	Considered escalation of 4% on actual fuel costs for the estimations	FAC Approved coal costs have been considered
R&M Expenses	485	356	5% on GFA has been considered without any supporting R&M expenses plan	3.8% on GFA on the basis of the principles of the previous Tariff Order
Employee Expense	374	401	4% inflationary increase on FY 2004-05 estimates	5 year CAGR of actuals ending FY 2004-05 has been considered on FY 2004-05 estimates, on



In Rs. Crore	FY 2005-06 Petition	FY 2005-06 Approved	Basis for Petition	Basis for Approval
				the basis of principles of the previous Order.
A&G Expense	25	23	5% increase over FY 2004-05 estimates	4.2% increase year on year over FY 2003-04 approved values, on the basis of principles of the previous Tariff Order.
O&M Expenses (Sum of R&M, Employee and A&G Expenses)	883	779	-	-
Depreciation & Advance against Depreciation	448	488	Depreciation rate of 4.7% as per MoP Notification	Average of last 3-year depreciation rates (5.17%) has been considered, on the basis of principles of the previous Tariff Order.
Interest Expenses	116	64	As per actuals and considering 80% debt financing for cap-ex	Considered opening balances of Transfer Scheme and there on only the approved borrowings
Interest on Working Capital	178	68	As per MERC Tariff Regulations	As per the previous Tariff Order  0.75*(current assets – current liabilities)

In Rs. Crore	FY 2005-06 Petition	FY 2005-06 Approved	Basis for Petition	Basis for Approval
Other Finance Charges	28	16	As per actuals	As a % of total interest expenses
Lease Rentals	387	85	As per a study conducted and presented to GoM.	As per the latest GR
Return on equity	332	159	As per MERC Tariff Regulations	As per the previous Tariff Order
Income Tax	104	17	33% on RoE	MAT at 10% on book profits has been approved
<b>Total ARR</b>	<b>7465</b>	<b>6556</b>	<b>Net adjustments of Rs.909 Crore</b>	



## B. Summary of Fixed & Variable Costs for FY 2006-07

Parameter	As per FY 2006-07 ARR petition	Approved Values for FY 2006-07	Approved Values for FY 2005-06
Net Generation (MU)	47,976	49,575	46,532
Fixed Cost (Rs. Crore)	2,895	1,922	1,676
Variable Cost (Rs. Crore)	5,581	5,241	4,880
Total ARR (Rs. Crore)	8,476	7,163	6,556
Fixed Cost (Rs./kWh)	0.61	0.39	0.36
Variable Cost (Rs./kWh)	1.16	1.06	1.05
Total Cost (Rs./kWh)	1.77	1.45	1.41

In Rs. Crore	FY 2006-07 Petition	FY 2006-07 Approved	Basis for Petition	Basis for Approval
Fuel Expenses	5581	5241	Considered escalation of 4% on FAC approved fuel costs	FAC Approved coal costs & oil costs have been considered, with out any escalation
O&M Expenses	1121	817	7% on GFA has been considered with out any supporting R&M expenses plan	Norms for new stations as per MERC Tariff Regulations have been applied for existing stations as well.



In Rs. Crore	FY 2006-07 Petition	FY 2006-07 Approved	Basis for Petition	Basis for Approval
Depreciation & Advance against Depreciation	467	305	Depreciation rate of 4.7% as per MoP Notification	Depreciation norm of 3.6% as per MERC Tariff Regulations, with necessary assumptions
Interest Expenses	84	36	As per actuals and considering 80% debt financing for R&M cap-ex	Considered opening balances of transfer scheme and there on only the approved borrowings & repayments.
Interest on Working Capital	196	171	As per MERC Tariff Regulations	As per MERC Tariff Regulations
Other Finance Charges	27	10	As per actuals	As a % of total interest expenses
Lease Rentals	373	85	As per a study conducted and presented to GoM.	As per the latest GR
Return on equity	377	377	As per MERC Tariff Regulations	As per MERC Tariff Regulations
Income Tax	127	48	33% on RoE	MAT has been approved



In Rs. Crore	FY 2006-07 Petition	FY 2006-07 Approved	Basis for Petition	Basis for Approval
Fixed Cost for Paras & Parli Expansion	93	73	As per MERC Tariff Regulations  Interest Expenses & RoE determined on normative debt to equity ratio of 80:20	As per MERC Tariff Regulations  Interest Expenses & RoE determined on actual basis after disregarding loans that are forming part of transfer scheme balances.
Total ARR	8476	7163	Net adjustments of Rs.1317 Crore	



## GENERATION TARIFF

The approved station-wise Annual Fixed Charge and Energy Charges for FY 2006-07 proposed to be charged to MSEDCL for sale of power is given in Table below

Table 1 : Station-wise Tariff for Generating Stations for FY 2006-07

Station	Annual Fixed Charge (Rs. Crore)	Monthly Fixed Charge (Rs. Crore.)	Energy Charge (Rs/kWh)
Khaparkhedda	387.27	32.27	1.09
Paras	10.33	0.86	1.40
Bhusawal	91.26	7.60	1.30
Nasik	181.82	15.15	1.64
Parli	155.52	12.96	1.39
Koradi	186.91	15.58	1.10
Chandrapur	527.18	43.93	0.94
Paras Expansion	12.37	9.76	1.40
Parli Expansion	60.73	10.65	1.27
Uran Gas	175.43	14.62	0.77
Hydel – Peak Hours (0900 to 1200 hrs & 1800 to 2200 hrs)			2.00
Hydel – Non Peak Hours (Other than peak hours)			1.65



## SECTION I: INTRODUCTION

### CHAPTER 1: BACKGROUND OF THE ORDER

#### A. Introduction

1. This Order relates to Case 48 of 2005 filed by the Maharashtra State Power Generating Company Limited (MSPGCL) for determination of tariff for electricity to be sold to Maharashtra State Electricity Distribution Company Limited (MSEDCL) by MSPGCL for FY 2006-07.
2. The State Government issued an Order on 6th June, 2005 giving effect to the reorganization of Maharashtra State Electricity Board in terms of the Maharashtra Electricity Reforms Transfer Scheme 2004. As per this Order, the Maharashtra State Electricity Board (MSEB) has been restructured into four entities – MSPGCL, MSETCL, MSEDCL and MSEB Holding Company. MSPGCL is a company incorporated under the Companies Act, 1956 on 6th June, 2005. The State Government as a part of this transfer scheme had allocated the generating stations of MSEB to MSPGCL. MSPGCL also maintains & operates the hydro plants owned by the Irrigation Department, Government of Maharashtra as a lessee.
3. The Government of Maharashtra in its notified provisional transfer scheme assigned assets and liabilities to MSPGCL, as per the table given below. This balance sheet is as on 31<sup>st</sup> March, 2004 and is based on the MSEB accounts for FY2003-04 audited by Comptroller and Auditor General of India.

**Table 2: Balance Sheet of MSPGCL as per Transfer Scheme – As on 31<sup>st</sup> March, 2004**

Assets	In Rs. Crore.	Liabilities	In Rs. Crore.
Gross Fixed Assets	9,359	GoM Equity	2,691
Less: Acc. Depreciation	5,456	Long term Loans	1,305
Net Fixed Assets	3,903	Current Liabilities	1,280
Other Fixed Assets	195		
Current Assets	1,177		
<b>Total Assets</b>	<b>5,275</b>	<b>Total Liabilities</b>	<b>5,275</b>

4. The State Government had allocated the generating stations of MSEB to MSPGCL. As per section 86(1)(a) of the Act, the State Commission shall determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State. As per Section 86(1)(b) of the Act, the Commission shall regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State. As MSPGCL will be supplying electricity in bulk to MSEDCL, the Commission has determined the tariff for the generating stations of MSPGCL in this Order in accordance with the MERC Tariff Regulations

## **B. Regulatory Process**

1. The Commission notified the MERC (Terms and Conditions of Tariff) Regulations, 2005 (referred to as MERC Tariff Regulations in this document) in the Maharashtra Government Gazette on 23rd August 2005. As per clause 1.3 of the said Regulations, the Regulations shall come into force from the date of their publication in the official Gazette of the Government of Maharashtra. Further, MERC issued an Order dated 13th April, 2006, stating that for FY 2005-06, the tariff determination for all licensees shall be based on the principles of the previous Tariff Order of that licensee.
2. As per the MERC Tariff Regulations, the MYT regime was to be introduced with effect from FY 2006-07. However, the Commission vide its Order dated 20th December 2005 granted exemption to utilities for implementation of MYT by one year and directed utilities to file ARR and Tariff Petition for FY 2006-07.
3. As per the MERC Tariff Regulations, the application for the determination of Tariff shall be made to Commission not less than 120 days before the date from when the tariff is intended to be made effective. Thus for the determination of tariff applicable for FY 2006-07, the petition is required to be submitted by 30th November 2005. MSPGCL filed the petition on 10th Feb, 2006, and requested the Commission to condone the delay in filing the petition. The Commission condoned the delay and accepted the petition.
4. MSPGCL had filed through its petition the technical and financial data for FY 2004-05, FY 2005-06 and FY 2006-07. For FY 2004-05, when they were a part of integrated MSEB, MSPGCL has apportioned the cost on reasonable basis.



5. The Commission raised queries on account of some inconsistencies observed in the petition filed by MSPGCL and subsequently held the technical validation session on 7th April, 2006. The Commission through its letters and discussions indicated the gaps in the petition and directed MSPGCL to re-submit the petition. The Commission admitted the re-submitted petition that incorporated replies to all the queries raised on 18th May 2006.

### **C. Public Hearing**

1. The Commission directed MSPGCL to issue a public notice for inviting comments from the stakeholders on the Petition filed by MSPGCL. The Public notice was published in Lokmat, Saamna, Hitwad, Sakal, Ratnagri Times, Gavkari and Loksatta (in Marathi, All Maharashtra Editions); and The Indian Express and Hindustan Times (English, All Maharashtra Edition) on 22nd May, 2006.
2. The Commission held a public hearing on the tariff petition of MSPGCL at Centrum Hall, 1st Floor, World Trade Centre No.1, Cuffe Parade, Mumbai on 13th June, 2006.
3. The Commission held a public hearing on the tariff petition of MSPGCL at Centrum Hall, 1st Floor, World Trade Centre No.1, Cuffe Parade, Mumbai on 13th June, 2006. The various objections that were raised and discussed after issuing the public notice both in writing as well as during the public hearing, along with MSPGCL's response and Commission's Rulings have been detailed in Section II of this Order.



## SECTION II: PUBLIC HEARING

### CHAPTER 3: OBJECTIONS & REPLIES

#### A. PLF of Thermal Power Plants

##### Objections:

Tata Motors stated that MSPGCL is not adhering to the earlier Orders of the Commission to improve PLF of its Thermal Power Stations.

Kolhapur Engineering Association mentioned that the PLF of power stations like Nashik, Chandrapur, Koradi is less than the specified norms as per the Tariff Order principles. Gokul Shirgaon Manufacturer's Association objected that PLF of power stations like Nashik, Chandrapur, Koradi is less than the norms specified in the MERC terms and conditions of tariff (2005) and efforts are needed to be made by MSPGCL to improve the performance.

Gopani Iron and Power (GIP) mentioned that only 3 plants of MSPGCL, i.e., Khaperkheda, Paras and Parli have performed above the benchmark PLF of 80% and these are contributing a mere 27% of total generation, while all the remaining are under-performing. They also wanted to know the measures taken by MSPGCL to improve PLF at its stations.

##### MSPGCL's Reply:

MSPGCL replied that it is making efforts to maximize the generation and has hence projected rise in PLF from 73% in FY 2005-06 to 76% in FY 2006-07, as mentioned in the ARR. MSPGCL said that the projected PLF of three of its thermal stations, i.e., Nasik, Koradi and Chandrapur in the petition is lower than the normative PLF of 80% due to the following specific reasons:

- a) Chandrapur TPS: Unit 5 is under forced outage and the unit is expected to be commissioned in October 2006.
- b) Koradi TPS: The Stage I of Koradi TPS consists of 4 units of 120 MW each and the PLF of 120 MW units is low due to chronic problem of loadability since its commissioning. The maximum PLF achieved by Stage I during the last five years is in the range of 65%. Also, the age of Stage I of the Station is around 30 to 31 years and that of Stage II is between 22 to 27 years.



Because of the lower unit sizes of Stage I and considering the age of the stations, it is very difficult to achieve the normative PLF of 80% in these cases.

- c) Nasik TPS: The Nasik TPS consists of 2 units of 140 MW each and 3 units of 210 MW each. The maximum PLF achieved by Nasik TPS during the last five years is in the range of 70%. During 2005-06, Unit-1 Generator Transformer failed on 14th July 2005 and was put on overhaul till 8th August 2005 and Unit-5 Generator Transformer failed in February-2005 and was put on overhaul till 2<sup>nd</sup> June 2005. Hence, the PLF of Nashik TPS was low during FY 2005-06.

### **Commission's Ruling:**

- a) The Commission is of the opinion that MSPGCL has to reduce its forced outages by efficiently monitoring the operational procedures and through better R&M practices. In fact analysis of the data of forced outages from January to May 2006, has shown that approximately 40 instances of forced outages of the thermal units of MSPGCL occur each month. While approximately 25 % of these outages are due to Boiler tube leakages, nearly 40 to 50 % of the forced outages are "short outages" (less than 6 hours duration).

Further scrutiny of the "causes of these forced outages" reveals that many of these are short forced outages, such as those due to operational mistakes or due to control / protection/instrumentation failures. These would be avoidable through better R&M practices and more vigilance in Operations process.

In view of the above "ageing of units" and "non-availability of time for Planned Outages" can not be considered as reasonable causes for high SHR or low PLF, and MSPGCL should explore all avenues for improvement in its plant operations, routine maintenance, and capital maintenance to enhance reliability and efficiency of their thermal generating units.

The Commission has accordingly set the target PLF for each station for FY 2006-07 in Section III of this Order.

## **B. PLF of Uran Power Station**

### **Objections:**

KEA mentioned that as per the petition, Uran Power station has produced 4021 MU in FY 2004-05 but only 3713 MU generation is considered in the petition for FY 2006-07.



The reasons for such reduction should be looked into and steps should be taken by MSPGCL to improve plant performance.

JD (Secular) raised the issue of non-availability of Gas for Uran power station and questioned why MSPGCL has not followed the directives of the Commission to make gas available for this power station.

**MSPGCL's Reply:**

MSPGCL submitted that the projected Plant Load Factor for Uran gas station is much lower than the normative PLF of 80% because of non-availability of adequate gas. MSPGCL has gas supply agreement with Gas Authority of India Limited (GAIL) for supply of 3.5 mmscmd, however the average gas availability to MSPGCL is only 2.5-2.7 mmscmd. Gas supply was further curtailed due to fire at ONGC platform in the month of July 2005. MSPGCL said that this matter has been taken up with the Government of India for additional gas allocation for Uran power station.

**Commission's Ruling:**

The Commission agrees that the non-availability of gas is an issue for the power sector as a whole. However, the utility should undertake all efforts to utilise Uran to its maximum capacity possible.

**C. Hydro Generation**

**Objections:**

KEA objected that even after advent of monsoon on 31st May 2006, MSPGCL has considered only 3964 MU hydel generation for FY 2006-07 instead of a 25% increase on 5510 MU generation in FY 2005-06.

**MSPGCL's Reply:**

MSPGCL replied that the hydel generation during FY 2006-07 has been assumed as 3933 MU, which is equivalent to the actual generation achieved during FY 2004-05 considering the normal monsoon year. MSPGCL has also taken into consideration the generation from hydel stations during the last 5 years, which is also in the range of 3900-4100 MU.



Although there have been good rains for two days on 31st May 2006 and 1st June 2006, MSPGCL feels it would be inappropriate to assume a good monsoon during FY 2006-07 based on two days rainfall. Hence, it will be more appropriate to project the hydel generation considering a normal monsoon in FY 2006-07.

#### **Commission's Ruling:**

The Commission has considered the hydel generation as estimated by MSPGCL as the hydel power generation varies greatly from year to year depending on the monsoon. However, in the event of higher hydel generation than estimated in FY2006-07, the Commission while truing up the revenue recovery in the next year will take into account the benefit on this account.

#### **D. Fuel Cost - Coal Price**

##### **Objections:**

GIP objected to the wide disparity in the coal prices given in the petition by MSPGCL, e.g.: landed price of coal for Chandrapur at about Rs.924/MT and for Koradi about Rs.1356/MT. They mentioned that the Commission should look into the reasons for such huge difference in prices even though these stations are in the same area geographically and hence should have the same source of coal supply.

##### **MSPGCL's Reply:**

MSPGCL replied that during the year 2003-04 imported coal to the tune of 219000MT was used at Koradi Thermal Power Station, whereas at Chandrapur station raw coal was used. Due to this reason the landed cost of Koradi station was high as compared to Chandrapur. MSPGCL has submitted in Form 2.1 of its ARR the average calorific value of coal as 3528 kcal/kg for Chandrapur and 4201 kcal/kg for Koradi TPS for FY 2003-04.

##### **Commission's Ruling:**

The fuel cost for various thermal power stations has been vetted and approved for FY 2004-05 and FY 2005-06 after due examination. For FY 2006-07, the Commission has disallowed the fuel cost escalation of 4% as submitted by the petitioner in the ARR. The Commission has calculated the variable cost of fuel for FY 2006-07 based on the actual cost of fuel in the month of March 2006, details of which are covered in Section III of this Order. Any changes in the actual cost of fuel in FY 2006-07 would be adjusted through vetting of FAC claims.



## E. Fuel Cost – Usage of Imported Coal

### Objections:

Tata Motors raised the objection that cost of imported coal and their benefits are not prima facie justifiable from the performance of MSPGCL's plants. They requested that MSPGCL submit details of impact of imported coal over indigenous coal along with a detailed cost analysis. Tata Motors wanted to know what options were considered by MSPGCL before it decided to use imported coal in its thermal power plants. Tata Motors also wanted to know how MSPGCL decided from where to procure and use imported coal, and the basis for the same should be supported with data. They mentioned that this information is missing in the application submitted by MSPGCL.

### MSPGCL's Reply:

MSPGCL replied that following the Commission's earlier directives to the erstwhile MSEB and Govt. of India's directive to increase the use of imported coal, it has started using imported/washed coal in order to improve plant performance. The petitioner said that using washed/imported coal, the loadability of 210 MW Unit has increased by about 15 MW, and by 30 MW in case of Chandrapur 500 MW unit. Intangible benefits of utilizing washed coal are reduction in coal handling process cost, coal-milling process cost, ash handling process cost and auxiliary consumption. Further, it is planned to increase the use of washed coal at Chandrapur Koradi and Khaperkheda TPS, and thereby loadability is expected to improve by about 120 MW.

Presently, washed coal is being used partially at Chandrapur, Koradi and Khaperkheda TPS and imported coal is being partially used at Nasik and Bhusawal TPS.

In order to load the units to full capacity, MSPGCL has imported the coal for Nasik and Bhusawal TPS. Further, as per the directives of Ministry of Coal, Govt of India, orders have been placed for import of 6.3 Lakh MT Coal for Nasik and 3.6 Lakh MT coal for Bhusawal TPS.



### **Commission's Ruling:**

The primary reason for advocating the use of imported coal is the marked deviation between the design GCV and the actual GCV of the domestic coal used for most power plants. The deviation is in the range of 15-25% for most stations. From the data given by MSPGCL regarding the quality of coal received, most of the coal is Grade D, E and F (calorific value range from 4939 to 2400 kcal/kg), with Grades E & F having a high ash content between 35% to 45 % or greater.

However, it is not possible to quantify the benefits of the usage of imported coal as there is no systematic measurement of Gross Calorific Value of coal in MSPGCL. The Commission hereby directs MSPGCL to install and maintain the required meters with in next three months for measurement of Coal GCV and then carry out the cost benefit analysis of the usage of imported coal at its generating stations.

### **F. Fuel Cost – Transit Loss**

#### **Objections:**

Tata Motors raised the objection that the Commission should consider the transit loss as per the trajectory given in the previous Tariff Order and requested the Commission not to pass the inefficiencies of MSPGCL on to the consumers.

Prayas Energy Group requested the Commission to direct MSPGCL to explore measures for efficient procurement and transportation of coal so as to reduce high freight and transit losses.

Kolhapur Engineering Association mentioned that although high coal transit losses in various station of MSPGCL are evident, no steps are being taken to stop the menace of pilferage. For example, KEA mentioned that ash, stones, soil, etc. are being deliberately added in the supplied coal and theft from stores is also prevalent.

Gopani Iron and Power noted that the transit losses at MSPGCL stations was rising, giving the example of transit loss for Bhusawal TPS being 0.38% for FY 2004-05, which was projected to increase to 2% for FY 2006-07.



**MSPGCL's Reply:**

MSPGCL replied that the transit losses for Bhusawal TPS for FY 2004-05 were not measured accurately, while the transit loss for FY 2006-07 has been projected based on the actual transit loss during FY 2005-06. The petitioner replied that although the transit losses are not under its control, it is seriously looking for a solution to control the transit losses.

MSPGCL said that the key factors contributing to transit loss of coal are:

- a) Evaporation of surface moisture in transit
- b) Error/Deviations in Weighbridges
- c) Coal theft in transit
- d) Long distances involved in coal transport

MSPGCL mentioned that it has already submitted in its ARR the measures that are being initiated for reducing the transit losses, which are as follows:

- a) The petitioner has contacted the Railway Protection Force in respective area for eliminating coal theft from loaded rakes.
- b) Periodical calibration and maintenance of the Power Station weighbridges is being undertaken.
- c) A team has been formed for checking weighbridges at colliery end on periodical basis for WCL, SECL & MCL collieries.
- d) MSPGCL has lodged claims for transit losses with the railways.

**Commission's Ruling:**

The Commission has observed - based on the discussions with the utility during the technical validations session and the information furnished by them - that in most of the units there are no weightometers and hence accurate measurements of coal is not being done.



The weight of coal is calculated by periodic assessment of sizes of the coal stacks in the coal yard, and hence these measurements cannot give an accurate idea regarding transit and stacking losses. The Commission has therefore not accepted the MSPGCL's projections and approved transit loss as per MERC Tariff Regulations only, as given in the section III.

## **G. Variable Cost of Generation of MSPGCL plants vs. TPC plants**

### **Objections:**

GIP wanted to know the basis of variable price increase ranging from 4 to 6% as shown by MSPGCL in their petition and how MSPGCL's variable cost compared with the variable cost of generation by The Tata Power Company.

### **MSPGCL's Reply:**

In comparison to MSPGCL's cost of Rs. 1.17/unit, the variable cost of Tata Power as proposed in their petition for 2006-07 is Rs. 2.83/unit. The O&M expenses for TPC projected for the year 2006-07 are 299.79 Crore which is approximately Rs.0.30 per unit generated (Gross Generation of TPC 9892 MU), whereas for MSPGCL it is Rs.0.22 per unit generated (based on gross generation of 50484 MU). MSPGCL mentioned that based on these figures, MSPGCL cannot be considered inefficient as compared to TPC.

### **Commission's Ruling:**

The details of fuel cost calculations as approved by the Commission are given in Section III of the Order.

## **H. R&M Expenses**

### **Objections:**

Prayas raised the objection regarding the high R&M expenses shown by MSPGCL in its petition. Prayas mentioned that there should be proper scrutiny of R& M Expenditure, Capital Expenditure and normal expenses by the Commission and MSPGCL should establish a rationale between R&M and plant performance to justify the high R&M expenses shown in the ARR petition.

**MSPGCL's Reply:**

MSPGCL replied that it has been unable to undertake adequate R&M of its generating stations, with even planned outages being delayed, due to the severe supply shortage in the State and liquidity problems which has led to forced outages at several units in the past. Poor quality of coal being supplied to MSPGCL stations has also lead to an increase in the R&M expenditure.

MSPGCL stated that it has reduced the overhaul cycle to 12-15 months, and the increased frequency of overhauls would result in proper planned outage and reduction in forced outages. Unless R&M expenditure is increased significantly and planned outages are undertaken as scheduled, it will be very difficult to maintain generation at desired levels. MSPGCL also mentioned that in comparison to FY 2004-05, more units are being planned for major overhaul, as shown below:

- a) FY 2004-05 – 17 units
- b) FY 2005-06 – 22 units
- c) FY 2006-07 – 29 units

Hence, MSPGCL requested for higher R&M expenses for FY 2006-07 as compared to actual R&M expenses incurred in FY 2004-05.

**Commission's Ruling:**

In response to the Commission's query regarding the details of R&M expenses actually incurred during FY 2005-06 and resultant technical efficiency improvements from these R&M expenses, MSPGCL has not provided any supporting information. Hence the Commission can not accept MSPGCL contentions

However, considering the need for clearing backlogs for R&M, the Commission hereby directs MSPGCL to get its detailed R&M Expenses plan approved by the Commission, and the actual expenses incurred on the approved R&M plan in FY 2006-07 shall be considered while truing up in the following year.

The Commission has approved the R&M expenses for FY 2005-06 based on the principles of previous Tariff Order. For FY 2006-07, the Commission has followed the norms for the new stations as per the MERC Tariff Regulations. The details are covered in Section III of this Order.

## **I. Lease Rentals for Hydro Stations**

### **Objections:**

Prayas raised the issue of revision of lease rent of Hydro Stations and requested the Commission that as the lease rent of hydro stations involves many fundamental questions, it should be dealt with through separate process. Prayas requested the Commission that for FY 2006-07, the Commission should allow a lease rent at old rate of Rs 85 Crore/year and MSPGCL should be directed to submit separate petition for fixation of hydro tariff.

### **MSPGCL's Reply:**

MSPGCL replied that as the Hydro Stations are owned by Government of Maharashtra and are not under its purview, MSPGCL has to pay the lease rent to the Government of Maharashtra as communicated by them to MSPGCL. The cost of Hydro Stations as considered by the consultant for estimating the lease rent is based on audited actual cost of Hydro Stations under consideration. MSPGCL said that the Commission may take an appropriate view in the matter with respect to separate process for determination of lease rent.

### **Commission's Ruling:**

The Commission approves lease rentals according to the latest GR. However, in the event of Government notification (GR) communicating change in lease rentals, the Commission shall carry out a prudence check on the rates before adopting them for the purpose of tariff determination, prospectively.

## **J. Return on Equity and Income Tax**

### **Objections:**

Tata Motors objected that the return on equity capital and income tax is based on principles of profit and it is unjustifiable to consider these in the ARR and hence, the Commission should disallow these.



**MSPGCL's Reply:**

The Return on Equity is projected as per the MERC Tariff Regulations and is based on the opening equity capital as per the provisional transfer scheme approved by Govt. of Maharashtra. Further, as per the Regulation 28.3 of MERC (Terms and Conditions of Tariff) Regulations, 2005, income tax is a permissible expense as a part of Annual Fixed Charges.

**Commission's Ruling:**

The Commission has followed the MERC Tariff Regulations for computing the Return on Equity. The basis for allowing income tax has been elaborated in Section III.

**K. Non-Tariff Income**

**Objections:**

Prayas objected that MSPGCL has not included any non-tariff income in its ARR petition during FY 2005-06 and FY 2006-07. Prayas requested the Commission to ascertain whether such income is considered in the ARR. They requested the Commission to pass the benefit of any non-tariff income to consumers.

**MSPGCL's Reply:**

MSPGCL has replied that its non-tariff income for coal rejects is very meagre and is adjusted in FAC on month- to- month basis, and is already being passed on to the consumers. As far as the utilization of ash is concerned, since MSPGCL is not selling the ash, there is no income resulting from the same.

**Commission's Ruling:**

In absence of historical actuals for MSPGCL, Commission is not projecting non-tariff income. Any non-tariff income at actuals shall be adjusted during the truing up of the ARR during the ensuing year.



## L. Other Fixed Cost Parameters

### Objections:

Prayas requested that the Commission should allow costs like depreciation, reasonable return and interest on working capital in the MSPGCL ARR in conformity with MERC Tariff Regulations and/or previous Tariff Order principles.

### MSPGCL's Reply:

MSPGCL replied that it has considered the depreciation rate on the basis of the actual depreciation rates for each group of assets as recorded in the books of MSPGCL, which is based on the depreciation rates notified by the Ministry of Power (MoP) vide its circular in 1994. MSPGCL further claimed that the effective depreciation rate for MSPGCL, which works out to 4.72%, is lower than the overall rate of depreciation of 6.36% approved by the Hon'ble Commission for the erstwhile MSEB in earlier Tariff Orders.

MSPGCL mentioned that it has estimated Return on Equity in accordance with the MERC (Terms and Conditions of Tariff) Regulations, 2005 and based on the opening equity capital as per the provisional Transfer Scheme approved by Govt. of Maharashtra.

MSPGCL mentioned that it has estimated interest on working capital for each station separately as per the Regulation 34.5 of MERC (Terms and Conditions of Tariff) Regulations, 2005.

### Commission's Ruling:

The Commission in this regard has applied MERC Tariff Regulations along with necessary assumptions. The Commission's analysis on these aspects is covered in Section III of this Order.



## **M. New Projects**

### **Objections:**

Prayas raised the objection that Commission should consider new projects of MSPGCL through a separate public process. It requested that the Commission also present the adequate background information and preliminary analysis to the public. They also submitted that no new project should be considered for approval by the Commission unless a comprehensive demand forecast is undertaken and a total capacity addition plan is evaluated to justify the need for new capacity addition.

MGP and TPC expressed that due cognisance should be taken by MSPGCL of power generation projects planned by other power producers in the State as these will also be competing with MSPGCL to sell power to the distribution licensees in the State.

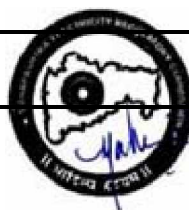
### **MSPGCL's Reply:**

MSPGCL has already submitted a "Detailed project report" of some new projects and is in the process of submitting the same for remaining projects to the Commission for in-principle approval. The Commission may take an appropriate view with regards to separate public process for new projects. MSPGCL would provide all the necessary information desired by the Commission for scrutiny of new projects. MSPGCL mentioned that it has already submitted its capital expenditure rolling plan along with the ARR petition.

### **Commission's Ruling:**

As per National Tariff Policy and Electricity Act, 2003, no prior approval for setting up of additional generation capacity is required. However, the tariff for such new additions has to be determined by the Appropriate Commissions and the Commission will conduct the due regulatory process for such capacity addition.

The Commission has at this stage provisionally approved the tariffs for New Paras and New Parli stations in this Order and the final tariffs will be determined after the projects are commissioned, by following appropriate regulatory process.



## **N. Other Issues**

### **Use of Audited Results in Petition**

#### **Objections:**

GIP & MIDC objected that the ARR proposal submitted by MSPGCL is based on un-audited results, hence MSPGCL should be asked to re submit the ARR based on audited figures.

#### **MSPGCL's Reply:**

MSPGCL replied that the statement of accounts for FY2004-05 is audited by the Comptroller and Auditor General of India, which is the statutory authority for this purpose. The statement of accounts for FY 2004-05 has also been placed before the legislature during the budget session of FY 2005-06, As per the provisions of Regulations, the ARR and Tariff Petition for the ensuing year have to be filed in the current year based on the actuals for previous year and for first half of current year. MSPGCL has estimated the ARR for second half of current year FY 2005-06 and projected the ARR for FY 2006-07 in accordance with the Regulations. Further, the Regulations also provides for truing up of various elements of actual costs and revenue as per the audited accounts with respect to the costs and revenue approved in the Order subject to prudence check by the Commission at the end of the year.

#### **Commission's Ruling**

The accounts for MSEB for FY 2004-05, duly audited by the Comptroller and Auditor General of India, who is the statutory auditor, has been submitted to the Commission. As regards the finalisation and audit of the first Statement of Accounts for FY 2005-06, the Companies Act (Section 210 (3) &166(1)) provides for time up to 18 months from the date of incorporation in case of newly formed Companies. Therefore, the Commission has proceeded with ARR determination on the basis of available audited accounts and estimates for future periods, and any modifications to ARR on account of audited results of FY 2005-06 shall be trued up subsequently.



### **Energy Conservation & Energy Efficiency**

#### **Objections:**

MEL mentioned that the Energy Conservation Act 2001 is in force since March 2002 and MSPGCL needs to take Energy Conservation measures to improve energy efficiency and minimize environmental impact and also take advantage of CDM.

Gokul Shirgaon Manufacturers Association and KEA raised the issue of Energy Audit. They observed that the production cost of thermal power plants can be curtailed by doing Energy audit and wanted to know the measures taken by MSPGCL regarding the same.

#### **MSPGCL's Reply:**

MSPGCL submitted that it has already initiated efforts for conservation of energy and Energy Managers have been appointed in each of the power stations. Besides, energy conservation cells are also being established at all the thermal power stations. Regarding energy audit, MSPGCL has undertaken energy audit at Khaperkheda Units 1&2 by M/s. ERDA in the year 2003-04, Parli Unit 3 by M/s. TERI in the year 2001-02, and Chandrapur Unit 6 in the year 2003. Most of the suggestions given by the auditor have been implemented. For all other units, it is planned to carry out the energy audits during FY 2006-07. MSPGCL stated that auxiliary consumption is already included as one of the parameters for Energy Audit.

#### **Commission's Ruling:**

The Commission supports the initiatives towards energy conservation and considers energy audit to be necessary for improving the system efficiency. The Commission has issued directives to MSPGCL in this regard in this Order.

### **Regulatory Liability Charges (RLC)**

#### **Objections:**

MEL objected that in their petition, the expenses of MSPGCL have been apportioned from the total expenses of erstwhile MSEDCL. Therefore, they requested the Commission to ensure that MSPGCL returns the proportionate amount of RLC to consumers by reduction in generation tariff, over and above generation tariff rationalization by meeting the norms fixed by the Commission.

**MSPGCL's Reply:**

MSPGCL replied that as it does not supply directly to any retail consumers, it has not collected any RLC from the consumers. MSPGCL submitted that there is hence, no question of refund of RLC by MSPGCL.

**Commission's Ruling:**

The Commission accepts MSPGCL's contention and will address the issue of RLC in its Order for MSEDCL.



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## SECTION III – COMMISSION'S ANALYSIS AND DECISION ON MSPGCL'S ANNUAL REVENUE REQUIREMENT & TARIFF PROPOSAL

### CHAPTER 4: ARR DETERMINATION FOR FY 2005-06

#### A. Applicability of Norms

The Commission, in its Order dated April 13, 2006, had indicated that for FY 2005-06, the determination of ARR shall be according to the principles stipulated in the previous Tariff Order for that utility. For MSPGCL, this is the MSEB Tariff Order for FY 2003-04 dated March 10, 2004.

#### B. Principles of Determination of ARR for FY 2005-06

1. Determination of ARR includes computation of the annual fixed charges computation, as per the principles of the previous Tariff Order. The annual energy charges, however, have been computed based on the fuel costs that have already been approved by the Commission for all the months of FY 2005-06 in the respective FAC Orders.
2. MSPGCL having come into independent functioning only in FY 2005-06, has got no separate accounts in place for its historical costs. The Commission for the purpose of ARR determination has estimated the historical costs of MSPGCL from the details of generation function as per the audited accounts of MSEB
3. The costs under H.O accounting units (common for the three functions of MSEB viz., Generation, Transmission and Distribution) for a particular cost head have been allocated to the three companies in the ratio of total costs under their independent trial balances.

The methodology of the computation of components of ARR has been explained in the subsequent sections of this Chapter.



## C. Computation of Annual Fixed Cost for FY 2005-06

### 1. R&M Expenses

As per the previous Tariff Order, R&M expenses are to be determined at an average of actuals as a percentage of GFA for the preceding five (5) years. Accordingly, as per the table below the normative amount comes to Rs. 356 Crore.

Table 3 : R&M Expenses for FY 2005-06

In Rs. Crore	FY2002-03	FY2003-04	FY 2004-05	FY 2005-06 Projected	FY 2005-06 Approved
GFA	9005	9180	9359	9437	9437
R&M Expense	286	394	361	485	356
% of GFA	3.18%	4.29%	3.86%	5.13%	3.78%
Capitalization Rate	0.14%	0.14%	0.16%	0.15%	0.15%
Net R&M Expense	286	393	360	484	356

MSPGCL has projected R&M expenses of Rs. 484.60 Crore for FY 2005-06. This is a 35% increase over the normative amount for FY2005-06. MSPGCL has not provided item wise plan for the proposed higher expenditure. The only justification is the lack of resources in the erstwhile MSEB and hence the backlog of R&M activities of the past.

In the absence of detailed action plan and past experience, where MSPGCL/erstwhile MSEB failed to spend the approved amount, the Commission approves Rs. 356 Crore as per the previous Tariff Order principles.

### 2. Employee Expenses

The Commission, going by the principles of previous Tariff Order, has approved the employee expenses based on the CAGR of actuals of last 5 years (6.67%) as per the table given below. The capitalization rate adopted is the average of the actual capitalization rate (capitalization rate of employee and A&G expenses) for the last 3 years as stipulated in the previous Tariff Order.

**Table 4 : Employee expenses for FY 2005-06**

In Rs. Crore	FY 2002-03	FY 2003-04	FY 2004-05	FY2005-06 Projected	FY2005-06 Approved
Employee Expenses	324.85	348.54	385.46	415.81	435.44
Capitalization	7.90%	8.10%	8.00%	10.00%	8.00%
Net Emp. Expenses	299.18	320.30	375.36	374.23	400.61

### 3. A&G Expense

The Commission has approved the A&G expenses after considering a year on year increase of 4.2% on the approved values of FY 2003-04 as per previous Tariff Order principles. The capitalization rate assumed is the average of the actual capitalization rate (capitalization rate of employee and A&G expenses) for the last 3 years, as stipulated by the principles of previous Tariff Order. MSPGCL has projected A&G expense of Rs. 29.64 Crore for FY 2005-06 by considering an increase of 5% over the actuals of FY 2004-05. The Commission is of the view that A&G expenses can and should be controlled by the utility and it cannot allow an increase over the actual expenses.

**Table 5 : A&G Expenses for FY 2005-06**

In Rs. Crore	FY2002-03	FY2003-04	FY2004-05	FY2005-06 Projected	FY2005-06 Approved
A&G Exp.	23.12	22.53	24.00	29.64	24.46
Capitalization	7.90%	8.10%	8.00%	17.00%	8.00%
Net A&G. Expenses	21.29	20.70	22.08	24.60	22.41

### 4. Depreciation

Going by the principles of previous Tariff Order, the Commission approves the depreciation for FY 2005-06 based on average of the actuals for the last 3 years in terms of % of GFA. The table below elaborates the approved amount.

**Table 6 : Depreciation for FY 2005-06**

<b>In Rs. Crore</b>	<b>FY2002-03</b>	<b>FY2003-04</b>	<b>FY2004-05</b>	<b>FY2005-06 Projected</b>	<b>FY2005-06 Approved</b>
GFA	9005	9180	9319	9437	9437
Depreciation	513	474	472	448	488
Dep. Rate	5.70%	5.17%	5.06%	4.74%	5.31%

## 5. Interest & Other Finance Charges

### 5.1 Capital Expenditure & Opening Loan Balances

MSPGCL has proposed a capital expenditure of Rs. 34.80 Crore on existing generating stations in FY 2005-06. It considered a debt:equity ratio of 80:20 for funding these investments. It has shown a capital expenditure of Rs. 208 Crore as incurred in FY 2004-05 and has not shown any equity contribution for this cap-ex.

**Table 7 : Capital Expenditure for FY 2004-05 and FY 2005-06**

<b>In Rs. Crore</b>	<b>FY 2004-05</b>	<b>FY 2005-06</b>
Capital Expenditure	208.42	34.80
Debt:Equity	100:0	80:20
Debt	208.42	27.84

Based on this capital expenditure, MSPGCL has projected interest expenses of Rs. 116.17 Crore for FY 2005-06. The Opening Balances and Closing balances as submitted by MSPGCL for the last year FY 2004-05 are as under.

**Table 8 : Submitted Opening and Closing Balances of loans for FY2004-05**

<b>Rs. Crore</b>	<b>Opening Balance</b>	<b>New Borrowings</b>	<b>Repayments</b>	<b>Closing Balance</b>
Loan Items	2648.47	946.24	461.16	3133.55

MSPGCL has considered new borrowings of Rs. 946.24 Crore for determining interest expenses of existing stations for FY 2004-05. This is substantially higher than the capital expenditure for that year which is only Rs 208.42 Crore. The Commission views this seriously and shall not allow any loans that are borrowed on account of revenue/cash deficit or unapproved investments. It is also to be noted that the borrowings for new generating stations have to be considered separately and can be charged to ARR only after their capitalization and start of commercial operation.

The Commission has therefore reworked the interest expenses based on the opening balance as per the provisional transfer scheme and allowable borrowings and repayments there on. The Commission further clarifies that for ARR determination in future years, these approved opening balances of loans shall be considered and not the actual balances.

The following tables elaborate the approved opening balances and closing balances for FY 2004-05 and FY 2005-06.

**Table 9 : Approved Opening and Closing Balances of loans for FY 2004-05**

In Rs. Crore	Opening Balance	Approved Borrowings	Repayments	Closing Balance
Loans	1304	208	378	1134

\* - As per provisional Transfer Scheme as on March 31, 2004

**Table 10: Approved Opening and Closing Balances of loans for FY 2005-06**

In Rs. Crore	Opening Balance	Approved Borrowings	Repayments	Closing Balance
Loans	1134	28	243	919

## 5.2 Interest Expenses

The Commission approves interest expenses on the average of the reworked opening balance and closing balance considering repayments at actuals, at the average interest rates as submitted in the petition. The following table elaborates the approved interest expenses.

Table 11: Interest Expenses for FY 2005-06

In Rs. Crore	Average Balance Projected	Interest Expense Projected	Average Balance Approved	Interest Expense Approved
Loans	1838.82	140.94	1027.50	77.64

### Interest Expenses Capitalized

MSPGCL has projected capitalization of interest expenses on the basis of historical trends. The Commission is of the view that for interest expenses, capitalization based on historical trends will not be proper and all the interest expenses on the amount invested on capital works during capitalization period will be capitalized. The Commission hence approves the Interest Capitalized amount based on the capitalization schedule provided by MSPGCL.

Table 12 : Interest expenses capitalized for FY 2005-06

For FY2005-06	Capitalization Projected	Capitalization Approved
In Rs. Crore	24.77	13.24

Considering the above the net interest expenses (Interest Expenses 'minus' Interest Expenses Capitalized) allowed by the Commission for FY2005-06 comes to Rs. 64.40 Crore

### 5.3 Other Finance Charges

The previous Tariff Order does not provide any norms for these expenses. MSPGCL in its petition have proposed Rs. 28.42 Crore on this account. Since the interest expenses approved in 5.2 above are lower than MSPGCL's projections, the Other Finance Charges have been proportionately adjusted to Rs. 15.65 Crore.

## 6. Interest on Working Capital

MSPGCL has projected its working capital for FY 2005-06 as Rs. 178.36 Crore. MSPGCL has followed MERC Tariff Regulations to determine the interest on working capital. The Commission has not accepted this, as the principles of previous Tariff Order would be applicable for determining ARR for FY2005-06 and not the MERC Tariff Regulations.

Accordingly, working capital has been considered as  $0.75 \times (\text{Current Assets} - \text{Current Liabilities})$ , where current assets are 2 months of receivables and 15 days of generation costs, and current liabilities are 1 month of fuel expenses. Interest rate of 10.25%, which is the SBI PLR has been considered to determine the interest on working capital. The table below elaborates the approved working capital and the interest there on.

**Table 13: Interest on Working Capital for FY 2005-06**

In Rs. Crore	Current Assets	Current Liabilities	Working Capital	Interest on Working Capital Approved	Interest on Working Capital Projected
	1296	407	667	68	178

### 7. Lease rentals for Hydel Stations

MSPGCL has considered Rs. 386.50 Crore as lease rentals on hydel plants. This is an increase of Rs. 301.50 Crore on the actuals of FY 2004-05. MSPGCL in its submission stated that GoM has approved the stated lease rentals in principle. The Commission cannot consider this until a notification (GR) is issued by GoM in this regard. The Commission approves lease rentals according to the latest GR of GoM. The table below mentions the approved lease rental.

**Table 14: Lease Rentals of Hydel Stations for FY 2005-06**

In Rs. Crore	FY 2004-05	FY 2005-06 Projected	FY 2005-06 Approved
Lease Rentals	85	387	85

### 8. Return

MSPGCL has projected a return of Rs. 332.04 Crore. It has considered a return of 4.5% on NFA for the period 1 Apr 2005 to 5 Jun 2005 and a return on equity of 14% for the rest of the period. MSPGCL has asked for a return on equity of 14% for the period in which it was operating as a registered company, in accordance with the MERC Tariff Regulations.

The Commission has not considered this, as it has already ruled in its Order dated 13 April 2006 that ARR determination for all the utilities for the year FY 2005-06 shall be based on the previous Tariff Order. Accordingly the return has been approved as 4.5% on the opening

NFA. The Commission has considered the balance sheet of MSPGCL given in the provisional Transfer Scheme to determine the opening NFA for FY 2005-06.

**Table 15: Return for FY 2005-06**

In Rs. Crore	Opening Balance of NFA for FY 2004-05*	Changes during FY 2004-05	Opening Balance of NFA for FY 2005-06	Return Projected	Return Approved
	3903	(374)	3529	332	159

\* - As per transfer scheme notified on 5 Jun, 2005

## 9. Income Tax

MSPGCL has projected an income tax payment of Rs. 104 Crore for FY 2005-06. The Commission is of the opinion that MSPGCL will not have any income tax liability because of the tax losses of the erstwhile MSEB. However, MSPGCL may have to pay Minimum Alternate Tax (10% on book profits, 10% surcharge and 2% cess there on). The Commission therefore approves the MAT payment corresponding to 10 months of its functioning as MSPGCL in FY 2005-06.

**Table 16: Income Tax for FY 2005-06**

In Rs. Crore	Income Tax Projected	Income Tax Approved
	103.88	16.72

The table below summarizes the approved annual fixed cost for FY2005-06

**Table 17: Annual Fixed Charges for FY 2005-06**

	FY 2005-06 As per petition	FY 2005-06 Approved
Net Generation (MU)	46,459	46,532
Annual Fixed Charges (Rs. Crore)	2,476	1,676

## D. Computation of Annual Variable Cost for FY 2005-06

Variable Costs along with the actual net generation for the period April 2005 to August 2005 are taken from the Fuel and Other Costs adjustment (FOCA) charges Order dated May 24, 2006. Variable costs for the period September 2005 to March 2006 are taken from the Fuel Adjustment Charges (FAC) Orders dated 24th February, 5th May and 1st June, 2006.

The table below elaborates the approved variable costs and net generation for all the months of FY 2005-06 for MSPGCL as a whole.

**Table 18 : Approved Variable Costs month-wise for FY 2005-06**

Month	Net Generation (MU)	Fuel Cost approved (Rs. Crore)	Per Unit Cost (Rs./kWh)
Apr-05	3673	392	1.07
May-05	3880	419	1.08
Jun-05	3756	432	1.15
Jul-05	2912	372	1.28
Aug-05	2643	326	1.23
Sep-05	2888	341	1.18
Oct-05	3337	414	1.24
Nov-05	3413	410	1.20
Dec-05	3709	441	1.19
Jan-06	3718	450	1.21
Feb-06	3326	416	1.25
Mar-06	3813	469	1.23

For the FAC/ FOCA calculations, the Auxiliary Consumption, Transit Losses, Station Heat Rate norms were taken on the basis of the previous Tariff Order. The same have been applied to the actual gross generation figures of each station to arrive at the normative variable cost. The table below summarizes the approved total variable cost for FY 2005-06.

**Table 19 : Total variable Cost for FY 2005-06**

	FY 2005-06 As per petition	FY 2005-06 Approved
Net Generation (MU)	46,459	46,532
Fuel Expenses (Rs. Crore)	4,989	4,880
Variable Cost (Rs/kWh)	1.07	1.05



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## CHAPTER 5: ARR DETERMINATION FOR FY 2006-07

### A. Applicability of MERC Tariff Regulations

The Commission, in its Order dated April 13, 2006, had indicated that for FY 2006-07, the determination of ARR & Tariff shall be according to the MERC Tariff Regulations. Wherever, MERC Tariff Regulations are silent or cannot be directly applied, the Commission has explained in detail its rationale in such cases.

### B. Principles of determination of ARR

Clause 27 of the MERC Tariff Regulations specifies that tariff in respect of generating stations shall be determined station-wise. Accordingly, the Commission has determined the station wise ARR. For this purpose, the Commission has allocated the capital cost relating to common facilities and common costs on the basis of opening balances of Net Fixed Assets for FY 2006-07. Determination of ARR includes computation of annual fixed charge components and variable charges as per MERC Tariff Regulations, and the methodology of the computation has been explained in the subsequent sections of this Chapter.

### C. Computation of Annual Fixed Charges for Existing Thermal Generating Stations

#### 1. O&M Expenses

MSPGCL in its petition has projected total O&M Expenses of Rs. 1137 Crore under heads R&M expenses, Employee Expenses and A&G Expenses. MSPGCL has projected R&M Expenses of Rs. 693.95 Crore for FY 2006-07 which is a 93% increase over the actuals for FY 2004-05. Under other operation & maintenance expenditure MSPGCL has projected employee expenses of Rs. 401.47 Crore and A&G expenses of Rs. 25.83 Crore.

MSPGCL has provided no justification for this proposed substantial increase in R&M Expenses (7% of GFA), apart from mentioning that due to cash crunch in the past, the expenditure on repairs and maintenance has been inadequate.



MSPGCL, in its response to the Commission's query regarding the complete details of planned R&M expenses and expected technical efficiency improvements, has not provided the station wise planned R&M expenses. The details of major R&M expenses as submitted correspond to just around Rs.200 Crore. More over in some cases the nature of R&M expenses cited is of the nature of capital works. The Commission views this seriously and will not allow any capital works expenditure to be recovered through R&M expenses in the ARR.

The Commission is therefore of the opinion that R&M expenses of the scale suggested by MSPGCL without proper planning cannot be allowed. The Commission advises MSPGCL to evaluate the short term and long-term benefits of the planned R&M expenditure before projecting them.

For approving O&M expenses, MERC Tariff Regulations specify the norms for existing stations as well as new generating stations. Going by this the projections for O&M expenses of existing stations will have to be based on the historical values. However, in the case of MSPGCL, the historical values do not appear to be the right basis for approving O&M costs for the following reasons

- a) O&M Expenses for the existing stations have been inadequate in the past. The expenses in the past are observed to be less than the norms for new stations.
- b) The station-wise trial balances as submitted by MSPGCL for this purpose, seem to be poorly maintained.
- c) From the information submitted by MSPGCL, it is clear that the station wise R&M expenses incurred in the past have been erratic. Estimation of R&M Expenses based on the erratic R&M expenditure in the past will not be appropriate.

Therefore, for FY 2006-07, the Commission approves O&M cost of existing thermal stations and gas based stations, based on the MERC Tariff Regulations for new generating stations. The amounts so determined are higher than the allowable amount as per MERC Tariff Regulations for existing stations but lower than that claimed by MSPGCL. The Commission desires that MSPGCL should spend the entire approved amount on R&M activities for all stations in a planned manner. The table below elaborates the approved amount for thermal power stations.



Table 20 : O&M expenses for FY 2006-07

Station	Norm for FY 2006-07	Capacity in MW	Approved O&M Expense for FY 2006-07
Khaperkheda	Rs. 11.25 lakh/MW	840	Rs. 94.52 Crore
Paras	Rs. 11.25 lakh/MW	58	Rs. 6.52 Crore
Bhusawal	Rs. 11.25 lakh/MW	478	Rs. 53.78 Crore
Nasik	Rs. 11.25 lakh/MW	910	Rs. 102.4 Crore
Parli	Rs. 11.25 lakh/MW	690	Rs. 77.64 Crore
Koradi	Rs. 11.25 lakh/MW	1080	Rs. 121.53 Crore
Chandrapur	Rs. 10.53 lakh/MW	2340	Rs. 246.31 Crore
Uran	Rs. 8.43 lakh/MW	852	Rs. 71.86 Crore
<b>Total</b>			<b>Rs. 774.58 Crore</b>

In Rs. Crore	FY 2005-06 (Estimate)	FY 2005-06 Approved	FY 2006-07 Projected	FY 2006-07 Approved
O&M Expenses*	684.92	725.49	1051.92	774.58

\* - Does not include O&M on hydel stations

The Commission shall consider any incurrence of one-time R&M expenses in FY 2006-07 over and above the approved R&M expenses for that year, for truing up in next year. However, to be eligible for such truing up, MSPGCL should get the Commission's prior approval on its detailed R&M Expenses plan supported by appropriate justification.

## 2. Depreciation, including advance against depreciation

MSPGCL has projected depreciation of Rs. 468.16 Crore for FY 2006-07 at an average depreciation rate of 4.72%. MSPGCL has not submitted the depreciation rates as per MERC Tariff Regulations but stated that it has based its calculations on depreciation rates notified by the Ministry of Power (MoP) vide its circular in 1994. The Commission made it clear in the technical validation session that MERC Tariff Regulations shall prevail over any such notification.

MSPGCL expressed its difficulty to compute the depreciation rates for existing stations as per MERC Tariff Regulations in the given time frame. Considering this, the Commission has adopted the depreciation rate @ 3.6%, which is the norm for new generating stations as per the MERC Tariff Regulations. The Commission directs MSPGCL to determine the asset-wise depreciation rates for all its existing stations as specified in MERC Tariff Regulations.

The MERC Tariff Regulations specify that the depreciation shall be allowed up to maximum of 90% of original cost of the asset at a normative rate of 3.6%. This translates to an asset life of 25 years. The Commission has considered this as normative life for all the existing stations and for the age of a station, the weighted average age of all its Units has been considered.

The station-wise depreciation amount has been determined by spreading the unaccounted depreciation of each station (limited to 90% of GFA) over its remaining life. For determining the life of the station, weighted average life (on the basis of capacity) of the units has been considered.

For the stations whose life is more than 25 years and whose NFA is primarily on account of R&M Cap-Ex, normative depreciation rate of 3.6% has been applied. In accordance with the MERC Tariff Regulations, advance against depreciation has been considered to match depreciation with loan repayments for FY 2006-07. MSPGCL has shown repayments of Rs. 303.16 Crore in its petition and the same have been considered to determine the advance against depreciation.

**Table 21 : Depreciation and advance against Depreciation for FY2006-07**

<b>In Rs. Crore</b>	<b>Average Age in Yrs</b>	<b>Opening GFA for FY2006-07</b>	<b>Accumulated Depreciation</b>	<b>Unaccounted Depreciation</b>	<b>Depreciation for FY 2006- 07</b>
Khaperkheda	10	2298	1171	898	59.87
Paras	38	34	25	6	0.21
Bhusawal	26	339	228	77	2.77
Nasik	28	577	343	176	6.34
Parli	22	655	507	83	25.68
Koradi	26	761	562	123	4.42
Chandrapur	15	3269	2347	595	58.60
Uran	18	1511	1154	205	29.17
<b>Total</b>		<b>9444</b>	<b>6337</b>	<b>2163</b>	<b>187.06</b>



In Rs. Crore For FY 2005-06	Loan Repayments	Depreciation Approved	Advance against depreciation
	303.15	187.06	116.09

### 3. Interest & Other Finance Charges

#### 3.1 Capital Expenditure & Opening Loan Balances

MSPGCL has proposed a capital expenditure of Rs. 648 Crore on existing generating stations in FY 2006-07, which is significantly higher than what it has undertaken in the last few years. It considered a debt:equity ratio of 80:20 for funding these investments.

The Commission after considering the importance and the time required to carry out a prudence check of the proposed capital expenditure plan has decided to approve the capital expenditure in a *separate exercise*.

For the present exercise of determining ARR and Tariffs for FY 2006-07, the Commission has considered the proposed figures. Any changes to Capital Expenditure Plan as approved by the Commission shall be adopted in the next tariff exercise retrospectively.

**Table 22 : Capital Expenditure for FY 2006-07**

In Rs. Crore	FY 2005-06 Approved	FY 2006-07 Projected
Capital Expenditure	34.80	648.00
Debt:Equity	80:20	80:20
Debt	208.42	518.40

Based on the above capital expenditure plan, MSPGCL has projected interest expenses of Rs. 111.94 Crore for FY 2006-07 based on actual opening balances and closing balances of the long term loans. As explained in the previous chapter on ARR and Tariff determination for FY 2005-06, the Commission has not accepted this and has approved interest expenses based on the approved closing balances of loans for FY 2005-06 and loan component of the approved capital expenditure plan for FY 2006-07.

Besides, MSPGCL has considered borrowings on new phase-I projects for determining interest expenses as chargeable to the ARR of FY 2006-07. The Commission has not accepted this and has approved interest expenses on loans taken for the stations in operation only. The Commission is of the opinion that interest on projects during construction has to be capitalized, and can be recovered through tariffs only after commercial operations have commenced.

**Table 23 : New borrowings for FY 2006-07**

<b>In Rs. Crore</b>	<b>Capital Expenditure</b>	<b>New Borrowings projected for FY 2006-07</b>	<b>New Borrowings approved for FY 2006-07</b>
R&M Expense	648.00	518.40	518.40
New Phase - I Projects	2046.00	1636.80	-
Paras & Parli Expansion	861.76	689.40	-
<b>Total</b>	<b>3555.76</b>	<b>2844.60</b>	<b>518.40</b>

The following table elaborates the approved opening balances and closing balances for FY 2006-07.

**Table 24: Opening & Closing Balances of Loans for FY 2006-07**

<b>Opening Balance for FY 2006-07</b>	<b>Approved Borrowings for FY 2006-07</b>	<b>Repayments for FY 2006-07</b>	<b>Closing Balance for FY 2006-07</b>
919.78	518.4	228.42	1209.31

### 3.2 Interest Expenses

The Commission approves interest expenses on the average of the reworked opening balance and closing balance at the average interest rates as submitted in the petition. The following table elaborates the approved interest expenses.

**Table 25: Interest Expenses for FY 2006-07**

For FY 2005-06	Average Balance Projected	Interest Expense Projected	Average Balance Approved	Interest Expense Approved
In Rs. Crore	4102.83	216.63	1065.09	50.36

### Interest Expenses Capitalized

MSPGCL has projected capitalization of interest expenses on the basis of historical trends. The Commission is of the view that for interest expenses, capitalization based on historical trends is not proper and all the interest expenses on the amount invested on capital works during capitalization period should be capitalized. The Commission approves the amounts based on the capitalization schedule provided by MSPGCL.

**Table 26 : Interest expenses capitalized for FY2006-07**

For FY 2005-07	Capitalization Projected	Capitalization Approved	Net Interest Expenses Projected	Net Interest Expenses Approved
In Rs. Crore	104.69	14.86	111.94	35.50

Considering the above the net interest expenses (Interest Expenses 'minus' Interest Expenses Capitalized) allowed by the Commission for FY2006-07 comes to Rs. 35.50 Crore

### 3.3 Other Finance Charges

The MERC Tariff Regulations do not provide any norms for these expenses. MSPGCL in its petition have proposed Rs. 27.42 Crore on this account. Since the interest expenses approved

in 3.2 above are lower than MSPGCL's projections, the Other Finance Charges have been proportionately adjusted to Rs. 10.07 Crore.

**Table 27 : Interest and other Finance Charges for FY2006-07**

<b>In Rs. Crore</b>	<b>FY 2005-06 Approved</b>	<b>FY 2006-07 Projected</b>	<b>FY 2006-07 Approved</b>
Other Finance Charges	15.52	27.42	10.07
Interest Expenses	77.64	111.94	50.36

#### 4. Interest on Working Capital

The Commission has approved the interest on working capital as per MERC Norms. The station wise approved interest on working capital is given in the table below.

**Table 28 : Interest on Working Capital for FY2006-07**

<b>In Rs. Crore</b>	<b>Working Capital Projected</b>	<b>Working Capital Approved</b>	<b>Interest on W.C Projected</b>	<b>Interest on W.C Approved</b>
Khaperkheda	295.37	260.54	30.28	26.79
Paras	20.90	16.49	2.14	1.67
Bhusawal	143.02	122.07	14.66	12.37
Nasik	299.31	272.95	30.68	27.83
Parli	232.15	199.30	23.80	20.45
Koradi	239.81	227.36	24.58	22.95
Chandrapur	469.07	450.05	48.08	46.44
Uran	133.20	92.80	13.65	9.56
<b>Total</b>	<b>1832.86</b>	<b>1667.01</b>	<b>187.87</b>	<b>168.06</b>

#### 5. Return on Equity

MSPGCL has projected return on equity of Rs. 376.74 Crore for FY 2006-07. It has considered a return of 14% on the equity of MSPGCL. The equity considered is as per the provisional transfer scheme notified by GoM. As the computation is as per the MERC Tariff Regulations, the Commission approves the same.

Table 29: Return on Equity for FY 2006-07

In Rs. Crore	Opening Equity *	Return on Equity	Return Projected	Return Approved
	2691	14%	376.74	376.74

\* - As per transfer scheme notified on 5 Jun, 2005

## 6. Income Tax

MSPGCL has projected an income tax payment of Rs. 127 Crore for FY07. The Commission is of the opinion that MSPGCL will not have any income tax liability because of the tax losses of the erstwhile MSEB. However, MSPGCL may have to pay Minimum Alternate Tax (10% on book profits, 10% surcharge and 2% cess thereon). The Commission therefore approves the MAT payment for FY07 as given below.

Table 30: Income Tax for FY 2006-07

In Rs. Crore	Income Tax Projected	Income Tax Approved
	126.81	47.65

## D. Computation of Provisional Annual Fixed Charges for New Stations

New Paras and New Parli projects are proposed to get commissioned in FY 2006-07. MSPGCL has requested the Commission to approve ARR & Tariffs for these new projects. For this purpose MSPGCL should have given actual expenditure till 01<sup>st</sup> April, 2006, estimated expenditure during FY2006-07 and balance expenditure by indicating committed and non-committed expenditures. However MSPGCL has submitted only the estimated project cost and the details of sanctioned loans.

The Commission therefore provisionally approves the tariffs for New Paras and New Parli thermal power stations and, directs MSPGCL to submit actual expenditure incurred up to 30<sup>th</sup> September, 2006 and the details of balance expenditure for which commitments have been entered and likely to get discharged in FY 2006-07 & FY 2007-08. The tariffs for New Paras and New Parli will be finalised after the commencement of commercial operation through appropriate regulatory process.

## 1. O&M Expenses

The Commission has approved the O&M expenses based on the norms laid out for new generating stations in MERC Tariff Regulations. The approved amounts are elaborated in the table below

Table 31 : O& M expenses of New Stations for FY2006-07

	Capacity in MW	Norm for FY 2006-07	Days of operation	O&M Expenses Projected	O&M Expenses Approved
Paras Exp.	250	11.25 lakh/MW	38	3	3
Parli Exp.	250	11.25 lakh/MW	171	13	13

## 2. Depreciation & Advance against depreciation

The Commission has approved the depreciation based on the depreciation rate as per MERC norms. The total asset capitalization amount has been determined after considering the capitalization schedule as submitted by MSPGCL and the total investments proposed including interest during construction.

Table 32: Investments of New Stations for FY2006-07

In Rs. Crore	Opening CWIP for FY 2006-07	Investments	Capitalization in FY 2006-07	Closing CWIP
Paras Exp.	378	490	868	0
Parli Exp.	602	421	1023	0

After determining the asset value capitalized during the year, the depreciation has been determined on the basis of the norm for depreciation rate as per MERC Tariff Regulations and the indicated number of days of operation.



**Table 33: Depreciation of New Stations for FY2006-07**

<b>In Rs. Crore</b>	<b>Gross Fixed Assets</b>	<b>No. of days of operation</b>	<b>Depreciation Projected</b>	<b>Depreciation Approved</b>
Paras Exp.	868	38	4	3
Parli Exp.	1022	171	16	16

### 3. Interest Expenses

The Commission approves interest expenses to be charged to the ARR for New Paras and New Parli TPS only for the period they are in operation. Interest rate of 7.75%, as per the filing has been considered on the average of opening balance and closing balance of the loans borrowed for financing the total investments.

MSPGCL has considered 80% of the total capital cost as borrowings to determine the interest expenses. Commission has not accepted the total debt financing as borrowings because the borrowings prior to FY 2004-05 have become part of the Transfer Scheme and the interest expenses thereon are being considered as part of fixed charges for existing generating stations. The Commission has therefore worked out the opening balances and closing balances of the borrowings from FY 2004-05 onwards and determined the interest expenses. The table below elaborates the approved interest expense:

**Table 34: Interest Expenses of New Stations for FY2006-07**

<b>In Rs. Crore</b>	<b>Average Loan Balance Projected</b>	<b>Average Loan Balance Approved</b>	<b>Days of operation</b>	<b>Interest Expenses Projected</b>	<b>Interest Expenses Approved</b>
Paras Exp.	820	396	38	7	3
Parli Exp.	886	525	171	32	19

### 4. Interest on working capital

The Commission has approved the interest on working capital as per MERC Tariff Regulations.

Table 35 : Interest on working Capital of New Stations for FY2006-07

In Rs. Crore	Working Capital Projected	Working Capital Approved	Interest on W.C Projected	Interest on W.C Approved
Paras Exp.	13	13	1	1
Parli Exp.	38	38	4	4

## 5. Return on Equity

MSPGCL has considered 20% of the total capital cost as equity to determine the return on equity. The Commission has considered 20% equity financing only for the projected capital expenditure and for the capital expenditure already incurred, no equity financing has been considered as there has not been any equity infusion. The Commission makes it clear that return on equity shall be on the actual equity limited to 30% of the capitalized investments and cannot be on a normative basis. The Commission has accordingly considered 14% return on appropriate equity financing for FY 2005-06 and FY 2006-07. Also the return for FY 2006-07 has been prorated for the number of days the plants are in operation.

Table 36 : Return on Equity of New Stations for FY2006-07

In Rs. Crore	Equity Projected	Equity Approved	Days of operation	RoE Projected	RoE Approved
Paras	302	135.40	38	4	2
Parli	168	138.73	171	11	9

## E. Computation of Annual Fixed Charges for Hydro Generating Stations

### 1. O&M Expenses

MSPGCL has considered O&M expenses of Rs. 69.33 Crore for Hydel Stations. The Commission has applied the MERC Tariff Regulations, and accordingly the average of O&M Expenses for the last 5 years ending FY 2004-05 has been considered as base for FY 2001-02, and this has been escalated by 4% year on year to arrive at the norms for FY 2006-07. The actuals of last 5 years from trial balances of Hydel Stations have been submitted by MSPGCL, and the same have been considered for determining the norms for FY 2006-07.

Table 37: O&M Expenses of Hydro Stations for FY2006-07

In Rs. Crore	FY 2001-02 (Base Value)	FY 2006-07 Projected	FY 2006-07 Approved
Hydel	29	69	43

## 2. Depreciation

MSPGCL has projected a depreciation of Rs. 2.23 Crore on a gross block of Rs. 104 Crore (Average depreciation rate of 2.2%). MSPGCL has not provided the list of assets and the basis for projecting the depreciation rate.

The Commission urged MSPGCL to submit the reworked depreciation rates as per MERC Tariff Regulations. Further to this MSPGCL expressed its difficulty to compute the depreciation as per MERC Tariff Regulations with in the given time frame. Commission considers the difficulty in the present context, but directs MSPGCL to make the necessary details available at the earliest. In view of the inability of MSPGCL to compute the depreciation using depreciation rates as per MERC Tariff Regulations, the Commission approves the depreciation projected by MSPGCL @ 2.2% which is less than the normative rate of 3.6% as per MERC Tariff Regulations.

Table 38: Depreciation of Hydro Stations for FY2006-07

In Rs. Crore	Opening GFA	Depreciation Approved
Hydel	104.18	2.23

## 3. Lease rent for hydel plants

MSPGCL has considered Rs. 373.20 Crore as lease rentals on hydel plants. MSPGCL in its submission stated that GoM has approved the stated lease rentals in principle. The Commission cannot consider this until a notification (GR) is issued by GoM in this regard. The Commission approves lease rentals on actual basis and according to the latest GR. The table below mentions the approved lease rental.

**Table 39: Lease Rents of Hydro Stations for FY2006-07**

In Rs. Crore	FY 2004-05	FY 2006-07 Projected	FY 2006-07 Approved
Lease Rentals	85	373	85

#### 4. Interest on Working Capital

The Commission has approved the interest on working capital for hydro stations as per MERC Tariff Regulations. The table below elaborates the working capital requirement and interest on the same as approved by the Commission.

**Table 40: Interest on Working Capital of Hydro Stations for FY2006-07**

In Rs. Crore	Working Capital Projected	Working Capital Approved	Interest on W.C Projected	Interest on W.C Approved
Hydel	80.57	25.45	8.26	2.61

#### Summary of Fixed Costs of MSPGCL for FY 2006-07:

The following table summarizes the approved annual fixed costs of the MSPGCL's stations for FY 2006-07.

**Table 41: Approved Annual Fixed Costs of MSPGCL Stations for FY 2006-07**

Station	Annual Fixed Charge (Rs. Crore)
Khaparkheda	387.27
Paras	10.33
Bhusawal	91.26
Nasik	181.82
Parli	155.52
Koradi	186.91
Chandrapur	527.18

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Station	Annual Fixed Charge (Rs. Crore)
Paras Expansion	12.37
Parli Expansion	60.73
Uran Gas Station	175.43
Hydro Stations	132.87

## F. Computation of Annual Variable Cost for FY 2006-07

The variable costs for thermal generation depend on specific coal consumption, specific oil consumption and the delivered cost of coal and oil. The consumption of coal further depends upon the quality of the coal fired in the generation stations. The total fuel cost for thermal generation primarily depends on the following parameters:

- a) PLF & Availability
- b) Auxiliary Consumption
- c) Station Heat Rate
- d) Transit Loss
- e) Specific Oil Consumption
- f) Price of Fuel

### 1. Plant Load Factor & Availability

MSPGCL has estimated low PLF and availability for its stations, mentioning the following reasons:

- a) Low loadability
- b) Overhauling of units

The problem of loadability is entirely because of the ramping up limitations on the plant during resumption after tripping. In such cases the loadability of the units would be restricted in spite of the availability. However, the Commission has not considered this as an external factor and is of the opinion that MSPGCL has to restrict its forced outages by efficiently monitoring the operational procedures and through better R&M practices.

The Commission has estimated the availability based on the average of the actual availability of the last 3years. Based on these availability estimates, the Commission has set the target PLF for FY 2006-07 by considering 95% loadability for all the stations.

**Table 42 : Availability Factor for FY 2006-07**

<i>In Percentage</i>	<b>FY 2004-05</b>	<b>FY 2005-06</b>	<b>FY 2006-07 Targets</b>
Khaparkheda	91.99%	85.38%	89.96%
Paras	86.86%	98.91%	87.89%
Bhusawal	86.35%	85.11%	88.96%
Nasik	82.90%	82.01%	88.77%
Parli	83.76%	91.62%	87.93%
Koradi	80.78%	78.76%	84.35%
Chandrapur	86.88%	76.12%	80.36%

**Table 43 : Plant Load Factor for FY2006-07**

<i>In Percentage</i>	<b>FY 2006-07 Petition</b>	<b>FY 2006-07 Approved</b>
Khaparkheda	83.45%	84.24%
Paras	80.70%	81.09%
Bhusawal	80.06%	82.94%
Nasik	77.36%	81.66%
Parli	85.37%	85.37%
Koradi	72.83%	79.45%
Chandrapur	73.18%	74.26%
Uran Gas	51.00%	50.91%

## 2. Auxiliary Consumption

For FY2006-07, the Commission has adhered to the norms in the MERC Tariff Regulations for arriving at the target auxiliary consumption. For units of sizes 200 and 500 MW and above, Auxiliary Consumption has been approved as per MERC Tariff Regulations. For smaller capacity stations and stations where normative targets are significantly better than the actuals, the norms have been set on the lines of the previous Tariff Order.

**Table 44 : Auxiliary Consumption for FY2006-07**

<i>In Percentage</i>	<b>FY2006-07 Petition</b>	<b>FY2006-07 Approved</b>
Khaparkheda	9.00%	8.5%
Paras	10.00%	9.70%
Bhusawal	9.75%	9.75%
Nasik	9.00%	9.00%
Parli	9.00%	9.00%
Koradi	10.28%	9.80%
Chandrapur	7.90%	8.50%
Uran Gas	2.30%	2.30%
Hydel	0.83%	0.78%

Based on the above parameters fixed for FY 2006-07, the estimated gross generation and net generation are elaborated in the table below.

**Table 45 : Target Gross Generation for FY2006-07**

<i>In MU</i>	<b>FY 2006-07 Petition Estimates</b>	<b>FY 2006-07 Commission's Targets</b>
Khaperkheda	6141	6199
Paras	410	412
Bhusawal	3352	3473
Nasik	6167	6510
Parli	5160	5160
Koradi	6825	7517
Chandrapur	14665	15222
Sub-total	42720	44494

<i>In MU</i>	<b>FY 2006-07 Petition Estimates</b>	<b>FY 2006-07 Commission's Targets</b>
(Thermal - coal)		
Uran Gas	3800	3800
Hydel	3964	3964
New Paras	479	479
New Parli	1085	1085
Total MSPGCL MU	52408	53821

**Table 46 : Net Generation for FY2006-07**

<b>In MU</b>	<b>FY 2006-07 Petition Estimates</b>	<b>FY 2006-07 Commission's Targets</b>
Khaparkheda	5588	5672
Paras	359	372
Bhusawal	3025	3134
Nasik	5612	5924
Parli	4696	4696
Koradi	6123	6780
Chandrapur	13506	13928
Uran	3713	3713
Paras Ext	987	987
Parli Ext.	436	436
Hydel	3931	3933
Total	47976	49575

### 3. Station Heat Rate

In the previous Tariff Order, the Commission had emphasized the need for improvement of the Station Heat Rates gradually, and had accordingly specified a trajectory of 1% improvement in the SHR every year.

However, in most of the cases, MSPGCL has not achieved the specified norms. In the petition, MSPGCL has cited inconsistency of coal quality and low loadability due to poor quality of coal as reasons for poor performance at high Station Heat Rates. MSPGCL has claimed that deviations in SHR from design values up to approx 300 kCal are usually admissible on account of these factors.

However, it is observed from the data submitted by MSPGCL that the proposed heat rates are much higher than the design heat rates of the stations. They have further included “plant ageing” and “frequent start-stop” as factors causing excessive heat rate of the plants.

The Commission in its analysis has considered the guidelines given in the Central Electricity Authority's (CEA's) technical standard for operating norms (Dec 2004) for units which are of less than 200 MW and more than 25 years old,. These prescribe a 10% deviation from the design heat rates for units smaller than 200 MW.

For units of sizes 200 and 500 MW and above, Station Heat Rates have been approved as per MERC Tariff Regulations. However, in cases where normative targets are significantly better than the actuals, a trajectory has been specified on the lines of the previous Tariff Order.

A case by case justification of Station Heat rates for various stations is given below:

- a) Khaparkheda, Nasik and Paras: The MERC Tariff Regulations and the CEA norms suggest a heat rate of 2500, 2640 and 2955 kcal/kWh for Khaparkheda and Paras, respectively. Since all these stations are very old and the unit sizes are non-standard improvement over 3% improvement on actuals would not be achievable. Hence, for these stations the target SHRs have been set based on the 1% annual improvement trajectory specified in the previous Tariff Order.
- b) For Bhusawal and Parli the MERC Tariff Regulations and the CEA norms have been followed to determine the target SHR
- c) In case of Chandrapur, consideration was given to the fact that the plant would not be achieving the PLF of 80% during FY 2006-07. Hence, as per CEA norms, another 2.5 kcal/kwh for every 1% reduction in target PLF was added to the SHR.
- d) For Uran TPS the target SHR was taken at the normative level of 1950 kcal/unit as per MERC Tariff Regulations.



The approved SHR values are shown in the table below

**Table 47 : Approved SHR values for FY2006-07**

<i>In kcal/kWh</i>	<b>Approved by Commission</b>		<b>Petition</b>	<b>Approved SHR</b>
	FY 2001-02	FY 2003-04	FY 2006-07	FY 2006-07
Station				
Khaparkheda	2753	2725	2660	2644
Paras	3232	3200	3171	3105
Bhusawal	2763	2735	2673	2561
Nasik	2690	2663	2597	2584
Parli	2676	2649	2634	2573
Koradi	3026	2996	2977	2907
Chandrapur	2527	2502	2600	2480
(Thermal Coal)	2702	2675	2684	2533
Uran Gas	1966	1966	2010	1950

#### 4. Specific Oil Consumption

MSPGCL has estimated specific oil consumption at a much higher level than the norms specified in MERC Tariff Regulations. It has been observed that use of coal of quality inferior than design value has affected the plant's efficiency adversely and has resulted in higher Specific Oil Consumption. The Commission directs the utility to immediately undertake corrective steps to improve the coal quality. The Commission has approved the Specific Oil Consumption for FY2006-07 as per MERC Tariff Regulations.

**Table 48 : Approved Specific Oil Consumption for FY2006-07**

<i>In ml/kwh</i>	<b>FY 2006-07 ARR Projections</b>	<b>Approved for FY 2006-07</b>
Khaparkheda	2.00	2.00
Paras	3.50	2.00
Bhusawal	2.70	2.00
Nasik	3.30	2.00
Parli	2.50	2.00
Koradi	2.56	2.00
Chandrapur	1.16	2.00



## 5. Transit Loss

MSPGCL has considered the transit and stacking losses at a much higher level than the specified norms in MERC Tariff Regulations. The Commission had specified the trajectory of reduction in transit losses for the generation stations in the previous Order. If MSPGCL had reduced the transit losses in accordance with the trajectory specified in the Commission's Order, the value of transit losses for most of the Stations works out close to the normative level of 0.8%. Hence, the Commission has approved a transit loss of 0.80% for all the stations as per the Tariff Regulations.

## 6. Price of Fuel

For FY 2006-07, the Commission has considered the coal price and oil price as per the approved values in the FAC Order for the month of March 2006. Any fuel cost adjustments shall be adjusted through FAC process during the year.

The Fuel Cost for the purpose of computation of Fuel Adjustment Charges shall mean the landed cost of fuel at power station battery limits and will include the following components as considered the following cost heads as part of the fuel cost:

- 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.



A break-up of station-wise fuel price values for existing stations as per the FAC Order for the month of March, is given below:

**Table 49: Landed Cost of Coal considered for FY 2006-07**

Coal Price Break-up (Rs/MT)	Khaparkheda	Paras	Bhusawal	Nasik	Parli	Koradi	Ch'pur
Basic Price	679	1,120	1,052	1,160	936	700	958
Transportation	414	245	384	741	569	413	40
Insurance	0	-	-	1	-	-	-
Local Transport	131	-	-	27	-	-	-
Taxes	42	50	47	59	42	33	43
Duties SED	23	10	9	25	10	11	10
Royalty Charges	57	85	85	76	89	84	85
Other STC	37	30	31	27	26	35	30
Other	43	-	-	48	-	-	19
Total cost of coal	1,427	1,540	1,609	2,163	1,672	1,277	1,184
Transit Loss	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Effective Coal Price (Rs / MT)	1439	1552	1622	2180	1685	1287	1194

### Summary of Variable Costs:

The following table summarizes the station wise estimated net generation and approved variable costs for FY2006-07

**Table 50: Approved Station-wise Variable Costs for FY 2006-07**

<b>FY 2006-07</b>	<b>Approved Fuel Cost (Rs Crore)</b>	<b>Net Generation (MU)</b>
Khaparkheda	620.36	5672
Paras	52.12	372
Bhusawal	406.52	3134
Nasik	970.30	5924
Parli	654.43	4696
Koradi	746.44	6780
Chandrapur	1318.37	13928
Uran	286.42	3713
Paras Ext	61.19	987
Parli Ext.	125.00	436
Total	5241.14	45642

### G. Sharing of Gains or Losses

1. The aggregate gain or loss to MSPGCL in FY 2006-07 on account of uncontrollable factors, based on audited accounts, shall be approved and passed through in the trueing up process as an adjustment in the generation tariff. This shall however not cover the variations in the price of fuel as they shall be dealt with under FAC approval for every month.
2. The aggregate gain or loss to MSPGCL in FY2006-07 on account of controllable factors shall be approved and dealt with in the following manner
  - a. One-third of the amount of such gain or loss shall be passed through in the next years ARR as a rebate or additional charge respectively, in the generation tariff.
  - b. The balance amount of such gain or loss will be retained or absorbed respectively, by MSPGCL.



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## CHAPTER 6: TARIFF DETERMINATION FOR FY 2006-07

### A. Tariff for Thermal Power Generating Stations

#### 1. 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 parts C, D, E and F of Chapter 5.

#### 2. Annual Fixed Charges

As regards to 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 Commission while arriving at the total generation of MSPGCL's stations in FY2006-07 has taken higher than the normative availability of 80 percent into consideration. The Commission hence approves the full recovery of fixed charges during FY 2006-07 for all the stations. 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.

#### 3. Annual Variable Charges

The variable cost per unit (ex-bus) has been approved for each station, considering the total approved fuel costs and the estimated net generation. Any variations in the fuel price or estimated generation shall be dealt with under FAC process. The following table elaborates the station-wise tariffs to be charged to MSEDCL for sale of power from MSPGCL's Thermal Stations.

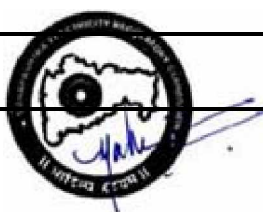


Table 51 : Approved Station-wise Tariff for Generating Stations for FY 2006-07

Station	Annual Fixed Charge (Rs. Crore)	Monthly Fixed Charge (Rs. Crore.)	Energy Charge (Rs/kWh)
Khaparkheda	387.27	32.27	1.09
Paras	10.33	0.86	1.40
Bhusawal	91.26	7.60	1.30
Nasik	181.82	15.15	1.64
Parli	155.52	12.96	1.39
Koradi	186.91	15.58	1.10
Chandrapur	527.18	43.93	0.94
Paras Expansion	12.37	9.76	1.40
Parli Expansion	60.73	10.65	1.27
Uran Gas	175.43	14.62	0.77

#### 4. Incentive

As per Clause 37 of MERC Tariff Regulations, MSPGCL 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, MSPGCL 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 MSEDCL as an additional charge payable on this account.

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

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## B. Tariff for Hydel Power Generating Stations

### 1. Components of Tariff

The Electricity Act 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 Regulations, the effective energy charge in the case of MSPGCL's hydro generating stations work out to be very minimal as the Annual Fixed Charge is far lesser 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.

## 2. Implementation of differential hydro peaking tariff

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 MSEDCL. 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 have 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 in the State of Maharashtra, the least-cost available alternative source of power would be the traded power or power from RGPPL which is ranging between Rs 3 per unit to Rs 7 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.

For the non-peak hours, the Commission has adopted the highest variable cost of thermal generating stations available for MSEDCL on long-term basis, i.e., from MSPGCL and Central Generating stations. The variable cost of Nasik Plant, which is about Rs 1.64 per kWh, is the highest variable cost and hence energy rate of Rs 1.65 per kWh has been used as the peaking tariff for non-peak hours.

For the peak hours, the peaking tariff has been assumed on an indicative basis to be 20% higher than the tariff for non-peak hours and hence, energy rate of Rs. 2.00 per kWh has been approved as the peaking tariff for peak hours. In this context, the period 0900-1200 hours and 1800-2200 hours shall be defined as peak hours and the remaining hours as non-peak hours.

**Table 52 : Approved Hydro Peaking Tariff for Hydro Generating Stations for FY 2006-07**

<i>Differential Energy Charges for peak and non-peak hours</i>	<i>Rs/kWh</i>
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 and would be dispatched only after utilisation of MSPGCL's thermal plants.*

### 3. Rationing of Hydro Generation during peak and non-peak hours

The Commission has estimated the hydro generation during peak and non-peak hours based on the following principles and assumptions

- a) Koyna Hydro Power Station shall be used only during the peak hours except for the ramping up requirement.
- b) Based on the data and information provided by MSPGCL and SLDC, in the case of Koyna around 40MW of its capacity is required to be in continuous operation. This is required for the purpose of ramping up the hydro generation at a short notice. This 40 MW usage round the year which translates to a total generation of 350MU has not been considered under estimated generation during peak hours
- c) Generation from Small Hydro Plants / Other Hydro Plants has not been considered under estimated generation during peak hours

The following table elaborates the estimated generation during peak and non-peak hours

**Table 53: Hydro Generation during peak and non-peak hours**

Source	Total Generation*	Generation during peak hours	Generation during non-peak hours
Koyna	3223	2873	350
Other Hydro	710	-	710
Total	3933	2873	1060

\* - Total Generation – As per MSPGCL's ARR estimates

#### **4. 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. 617 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 ensuring that extra burden is not put on the consumers by way of increase in overall costs. Hence, the Commission directs adjustment of excess recovery of Rs. 617 Crore from hydro generating stations in the bills for sale of power between MSPGCL and MSEDCL as a fixed reduction of Rs. 51.38 Crore per month.

**Any variations in the recovery of charges on account of differential peaking tariff, from the Commission's approved values shall not be trued up.**

#### **5. Incentive**

MSPGCL shall be eligible for an incentive payable in accordance with Section 37.2 of MERC Tariff Regulations. MSPGCL shall compute the incentives on the basis of the actual performance and shall present the amount to be billed to MSEDCL 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.

#### **C. Rebate and Late Payment Surcharge**

Clause 38 of MERC Tariff Regulations stipulates a rebate or late payment surcharge as the case may be on the bills payable by a distribution licensee to a generating company. Accordingly, the Commission has approved that MSPGCL shall pay a rebate of rebate of 1.25 per cent of the bill amount to MSEDCL, if the payments are made within one week of presentation of the bill.

In case the payment of bills is delayed beyond a period of two (2) months from the date of billing, the Commission approves that a late payment surcharge at the rate of 1.25 per cent per month shall be allowed to be levied by MSPGCL from MSEDCL.



## SECTION IV: COMMISSION'S OBSERVATIONS & DIRECTIVES

### CHAPTER 7: OBSERVATIONS AND DIRECTIVES

The Commission is issuing following directives to MSPGCL in this Order that are to be strictly complied with from the date of issue of this Order.

#### **Power Purchase Agreements:**

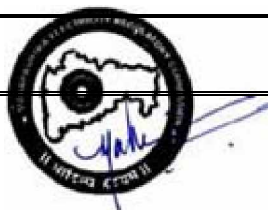
1. MSPGCL is directed to enter into proper commercial agreements in the form of Power Purchase Agreements for all its stations.

#### **Multi Year Tariff Filing:**

2. The Commission directs MSPGCL to file Multi Year Tariff (MYT) petition for the three-year Control Period starting from FY 2007-08. MSPGCL shall submit the proposal for the MYT determination, not less than 120 days before the date from when the tariff is intended to be made effective. Thus, the last date for submission of the MYT petition for the first Control Period FY2007-08 to FY 2009-10 shall be 30<sup>th</sup> November, 2006.

#### **Maintenance of Accounts:**

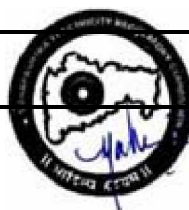
3. The Commission directs MSPGCL to carry out auditing of its financial statements as per Company Act, 1956 for every half year, and thus ensure that all its tariff petitions are based on audited financial results
4. The Commission directs MSPGCL to maintain station-wise accounts accurately for the purpose of station-wise tariff determination.
5. The new borrowings and their interest expenses are to be identified project wise and trial balances are to be maintained for all the stations in operation.
6. The Commission also directs MSPGCL to maintain the details of project wise borrowings and repayment schedule of the approved loans, hereafter.
7. As regards old borrowings MSPGCL has expressed inability in allocating these loans to existing stations. The break up as considered in this Order has to be adopted for maintaining station wise pro-forma balances and be used for all future tariff filings.



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8. MSPGCL has to submit asset wise details for all the stations and the corresponding depreciation rates as per MERC Tariff Regulations in the next tariff petition.
  9. The Commission directs MSPGCL to maintain the capitalization schedule of the proposed capital expenditure for the purpose of submission in all future tariff filings. These are necessary and shall be the basis for determining the interest expenses to be charged to ARR and in computation of Gross Fixed Assets for a given year

**Hydro Peaking Tariff:**

10. The hydro peaking tariff for FY 2006-07 advocates usage of hydro generation during peak hours through a differential tariff for peak and non-peak hours. However, it is also necessary that seasonal demand is taken into consideration and that hydro generation is mostly used in the peak months. The Commission in this regard directs MSPGCL to work out in consultation with MSEDCL, a reasonable and economical rationing of available water for different months and submit the same while proposing tariff for hydro plants in its next Tariff Petition.
11. The Commission directs MSPGCL to address the following issues while proposing tariff for hydro plants in its next Tariff Petition:
  - a) Working Capital requirement, if arising out of the energy pricing mechanism and corresponding adjustments in the fixed charges
  - b) Peaking Tariff proposal for the ensuing year with the following principles
    - i. Availability of the machine in various periods (time of the day and month of the year) planned according to the demand requirement during those periods
    - ii. Incentive framework for MSPGCL to make the plants available at the peak time or the most valuable time for MSEDCL
    - iii. Incentive framework for MSEDCL to promote dispatch of MSPGCL's generating stations based on the principles of efficiency and economical use of resources
    - iv. Assign weights to various periods of the demand, both by the time of the day (day / night – peak / non-peak) and also by season, based on the value of energy at that particular time



- v. Operating procedures to support the risk sharing mechanism between MSPGCL and MSEDCL. The actual off-take may be different from the forecasted generation for different reasons which may include the following- Hydro plant available but not dispatched by MSEDCL, incorrect estimate of the water levels, hydro plant not available when dispatch is required, etc. Hence, a mechanism should be established through operating procedures to reward efficiency of MSPGCL / MSEDCL and to promote economic use of resources.

**FAC:**

12. The Fuel Cost for the purpose of computation of Fuel Adjustment Charges shall mean the landed cost of fuel at power station battery limits and will include 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 with a ceiling on 'transportation service charge', at 2% of the freight charge
  - 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 & unloading charges for bringing fuel to the power station boundary.
  - e) The Generating Company shall submit the break up of total fuel price per unit in the above components, in order to arrive at the total landed cost of fuel at power station battery limits.
13. MSPGCL shall make FAC claims (surplus/deficit) each month to MSEDCL, who in turn shall submit their monthly claim for vetting and approval by the Commission.



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**Measurement of Station Heat Rate:**

14. MSPGCL should install weightometers at all units for accurate measurement of the amount of coal being fed to boilers within 3 months of the issue of this Order. All further FAC claims should be supported by this data indicating accurate measured quantum of coal
  
15. A systematic measurement of Gross calorific value of coal by taking periodic samples of coal being fired shall be institutionalised at all the stations.



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## APPLICABILITY OF ORDER

This Tariff Order for MSPGCL will be valid till March 31, 2007 and shall be deemed to be effective prospectively from the month of September 2006, for all billing purposes. The Commission acknowledges the efforts of Consumer Representatives, other individuals and organisations for their valuable contribution to the ARR and Tariff determination process. The Commission would also like to put on record the efforts of its advisors, PricewaterhouseCoopers Pvt. Ltd.

Sd/

S.B.Kulkarni  
Member

Sd/

A.Velayutham  
Member

Sd/

Pramod Deo  
Chairman, MERC


(Malini Shankar)  
Secretary, MERC

## APPENDIX – I

### Station wise Summary of the Components of ARR for FY2006-07

Table 54 : Station wise Summary of the Components of ARR for FY2006-07

Parameter	Kpkhd	Paras	Bhswl	Nasik	Parli	Koradi	Ch'pr	Uran	Hydel	ParasII	ParliII	Total
<i>Rs. Crore</i>												
GFA	2298	34	339	577	655	761	3269	1511	104	1026	1108	11578
NFA	1257	12	136	276	194	232	1073	396	N.A	1023	1091	5690
Debt	426	4	46	93	66	78	363	134	-	828	886	2924
Equity	946	9	103	208	146	175	807	298	-	198	222	3112
Capacity (MW)	840	58	478	910	690	1080	2340	852	2348	250	250	10.096
PLF (%)	84	81	83	82	85	80	74	51	-	80	80	78
Net Gen. (MU)	5672	372	3134	5924	4696	6780	13928	3713	3933	436	987	49575
SHR (kcal/kWh)	2644	3105	2561	2584	2573	2907	2480	2533	1950	2600	2600	-
Fuel Expenses	620	52	407	970	654	746	1318	286	0	61	125	5241
Fuel Expenses (Rs./kWh)	1.09	1.40	1.30	1.64	1.39	1.10	0.95	0.77	0	1.40	1.27	1.06
O&M Expenses	95	7	54	102	78	122	246	72	43	3	13	834
Depreciation & AAD	100	0	7	15	32	11	93	42	2	3	16	324
Interest Exp.	16	0	2	4	2	3	14	5	0	3	19	68
Interest on w.c	27	2	12	28	20	23	46	9	3	1	4	176
Lease Rentals									85			85
Return on equity	132	1	14	29	20	24	132	42	0	2	9	388
Income Tax	17	0	2	4	3	3	14	5	0	0	0	48
Total Fixed Cost	387	10	91	182	156	187	527	175	133	12	61	1922
Fixed Cost per unit (Rs./kWh)	0.68	0.28	0.29	0.31	0.33	0.28	0.38	0.47	0.34	0.28	0.62	0.39
Total Cost	1008	62	498	1152	810	933	1846	462	133	74	186	7163
<b>Total Cost (Rs./kWh)</b>	<b>1.77</b>	<b>1.68</b>	<b>1.59</b>	<b>1.95</b>	<b>1.73</b>	<b>1.38</b>	<b>1.33</b>	<b>1.24</b>	<b>0.34</b>	<b>1.68</b>	<b>1.89</b>	<b>1.45</b>

## APPENDIX - II

**Table 55: List of persons who attended the technical validation session on 7<sup>th</sup> April, 2006**

S.No	Name	Designation and Company/ institution
1	Ajay Mehta	MD, MSPGCL
2	Vinayaka Rao	Director (Finance), MSPGCL
3	VT Bapat	Director (Operations), MSPGCL
4	AR Kulkarni	MSPGCL
5	AG Khonde	MSPGCL
6	JK Srinivasan	MSPGCL
7	SB Joshi	MSPGCL
8	S Dixit	Prayas
9	N Abhyankar	Prayas
10	Ashok Pendse	MGP
11	M Palaniappan	ABPS infra
12	Dr.SL Patil	TBIA
13	Dr. Sambit Basu	PricewaterhouseCoopers
14	Dr. Tirthankar Nag	PricewaterhouseCoopers
15	Sunil Kumar	PricewaterhouseCoopers
16	Santrupta Padhi	PricewaterhouseCoopers
17	Aditya Bansal	PricewaterhouseCoopers
18	Anupam Ray	PricewaterhouseCoopers
19	Kiran Malla	PricewaterhouseCoopers
20	Chinmay Mesaria	PricewaterhouseCoopers

**Table 56 : List of persons who attended Public Hearing on 13th June, 2006**

S.No	Name	Designation and Company/ institution
1	N. Abhyankar	Prayas, Energy Group
2	Shantanu Dixit	Prayas, Energy Group
3	Nikit Abhyankar	Prayas, Energy Group
4	Dr. Pendse	Mumbai Grahak Panchayat
5	Dr.SL Patil	Thane Belapur Industrial Association
6	R. Venkatraman	Vidarbha Industries Association



7	Pritpal Singh	Maharashtra Elektros melt Ltd.
8	R.V. Athaiye	Maharashtra Elektros melt Ltd.
9	P. Dwiwedi	Gopani Iron and Power (I) Pvt. Ltd
10	Sanjeev Potdar	Secretary, Kolhapur Engineering Association
11	P.K.Puri	Lloyds Steel
12	Ajoy Mehta	MD, MSPGCL
13	Vinayak Rao	MSPGCL
14	V.T. Bapat	MSPGCL
15	J.K.Srinivasan	MSPGCL
16	W.R.Aswar	MSPGCL
17	S.L.Sahare	MSPGCL
18	S.N.Choudhari	MSPGCL
19	L.N.Ambekar	MSPGCL
20	S.B.Joshi	MSPGCL
21	S.R.Patil	MSEDCL
22	A.J. Deshpande	MSEDCL
23	R.Balachander	ISPAT
24	R.S.Pandey	ISPAT
25	Navraj Singh	TPC
26	Kiran Malla	PricewaterhouseCoopers
27	Chinmay Mesaria	PricewaterhouseCoopers



### APPENDIX - III

**Table 57 : List of Objectors**

S. No.	Name of Objector	Organisation and Address	Attended Public Hearing	Spoke at Public Hearing
<b>A : Consumer Representative u/s. 26 of the ERC Act, 1998</b>				
1	Shri Nikit Abhyankar	Prayas Energy Group,4, Om Krishna Kunj Society,Opp. Kamla Nehru Park,Ganagote Path, Erandavane,Pune - 411 004	Attended	Yes
2	Dr. Pendse	Mumbai Grahak Panchayat,Grahak Bhavan,Sant Dyaneshwar Marg, behind Cooper Hospital,Vile Parle (W),Mumbai - 400 056	Attended	Yes
3	Dr.SL Patil	Thane Belapur Ind. Association,Plot No. P-14, MIDC,Rabale Village, P.O. Ghansoli,Navi Mumbai - 400 701	Attended	Yes
4	Shri R. Venkatraman	Vidarbha Industries Association,1st Floor, Udyog Bhawan,Civil Lines, Nagpur - 440 001	not attended	No
<b>B : Objections / Suggestions</b>				
5	Shri R. Ashok Kumar, Company Secretary represented by Shri Prit Pal Singh	Maharashtra Elektros melt Ltd.10, Nirmal Building,Nariman Point,Mumbai – 400 021	Attended	Yes



6	Shri Sanjeev Potdar, Secretary	Kolhapur Engineering Association, Madhavrao Karajgar Road, Shivaji Udyamnagar, Kolhapur – 416 008	Attended	Yes
7	Shri P Dwivedi , DGM	Gopani Iron and Power (I) Pvt Ltd, Uttam House, office no.2 , Ground Floor, P D'Mello road, Carnac Bunder , Mumbai- 400 009	attended	Yes
8	Shri Pratap Hogde	Janta Dal(Secular), JD office, 10 CDO barracks, opposite Yugakshem, LIC marg, Churchgate, Mumbai -400 020	not attended	no
9	Shri Madhusudan H Rungta, President, MIDC	MIDC, MIDC industrial association, P-8 ,MIDC area, Chandrapur – 422406	not attended	No
10	Shri MB Kulkarni, AGM, CPED & Environment	Tata Motors, Pimpri, Pune -411018	not attended	No

